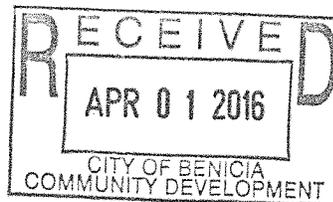




March 31, 2016

*Via email to*

Amy Million, Principal Planner  
Community Development Department  
250 East L Street  
Benicia, CA 94510  
amillion@ci.benicia.ca.us



Re: The Valero Benicia Crude-by-Rail Project

Dear Mayor Patterson and City Councilmembers,

The City Council can, and must, uphold the Planning Commission's unanimous decision to deny the use permit for the Valero crude-by-rail project. Federal law does not preempt the City from denying the permit for this project. Furthermore, the City should not tolerate Valero's delay tactic of seeking a declaratory order from the Surface Transportation Board (STB). As explained below, the STB does not have jurisdiction over this project and will almost certainly decline to hear Valero's petition for the very same reason that preemption does not apply. Finally, even if preemption were to apply here, the project's on-site impacts, especially the increases in refinery pollution, require the City to deny the permit.

The City Council's power to deny this project is not preempted by federal law. The Interstate Commerce Commission Termination Act (ICCTA) applies only if the activity being considered is "transportation by a rail carrier." 49 U.S.C. § 10501(b). Thus, finding preemption by ICCTA in these circumstances is a two-step inquiry. First, is the regulated activity undertaken by a rail carrier? Second, if the activity is undertaken by a rail carrier, is the local regulation of that activity preempted by ICCTA? **Because Valero is not a rail carrier, the answer to the first question is "no," and the analysis ends there – ICCTA does not apply.** See, e.g., *J.P. Rail, Inc. v. N.J. Pinelands Comm'n*, 404 F. Supp. 2d 636, 651–52 & n. 30 (D.N.J. 2005) (concluding that the challenged activity was not conducted by a rail carrier and explaining that "this conclusion ends the [c]ourt's preemption analysis . . .").

The City Attorney and Valero ignore the first question. They cite authorities – such as the *Alexandria* and *Winchester* cases – that deal only with the second question, because the projects in those cases involved local regulation of

NATURAL RESOURCES DEFENSE COUNCIL

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transportation by a “rail carrier.” In *Alexandria*, the court found that the city “has regulated ‘transportation by a rail carrier,’” because the project was proposed by Norfolk Southern, a railroad. *Norfolk S. Ry Co. v. City Of Alexandria*, 608 F.3d 150, 159 (4th Cir. 2010). In *Winchester*, the STB addressed a city “ban [on] certain rail transportation conducted by Pan Am,” a railroad. See *Boston & Me. Corp. and Springfield R.R. Co.*, FD 35749, 2013 WL 3788140, at \*3 (S.T.B. July 19, 2013).

But because Valero is not a rail carrier or performing activities under the auspices of a rail carrier (as the City has already correctly determined), its proposed terminal falls outside of ICCTA’s scope entirely. Valero, not Union Pacific, owns the land and would conduct operations at the terminal. Merely receiving goods by rail does not exempt a non-rail carrier from state and local laws. See *Florida E. Coast Ry. Co. v. City of W. Palm Beach*, 266 F.3d 1324, 1332 (11th Cir. 2001) (“[I]n no way does federal pre-emption under the ICCTA mandate that municipalities allow any private entity to operate . . . simply because the entity is under a lease from the railroad. The language of the ICCTA pre-emption provision in no way suggests that local regulation was to be so thoroughly disabled.”); *Hi Tech Trans, LLC v. New Jersey*, 382 F.3d 295, 309 (3d Cir. 2004) (rejecting the idea that ICCTA preempted regulation of a non-rail carrier’s operations whenever “at some point in a chain of distribution, it handles products that are eventually shipped by rail by a rail carrier,” because Congress could not have intended that ICCTA preemption “sweep that broadly”).

For this same reason, the City should not await a determination by the Surface Transportation Board, should Valero file a petition. The STB will almost certainly deny any such petition because Valero is not a rail carrier. Just last year, the STB denied a petition for a declaratory order that ICCTA preempted local regulation of a proposed liquefied petroleum gas transloading facility served by rail. The STB found that it did not have jurisdiction – and that the *Alexandria* and *Winchester* cases were inapplicable – because the project proponent was not a rail carrier. See *SEA-3, Inc. Petition for Declaratory Order*, FD 35853, 2015 WL 1215490, at \*4-5 (Mar. 16, 2015) (“[T]he only regulatory action at issue in this case is a local government’s participation in zoning litigation over the expansion of a non-carrier facility. Without more, this situation does not reflect undue interference with ‘transportation by rail carriers.’”). A copy of the STB’s decision in *SEA-3* is attached to this letter for the Council’s convenience (Attachment 1).

At the March 15, 2016, City Council hearing, the City Attorney stated that the Attorney General has not weighed in on preemption. But why would the Attorney General urge the City to revise its environmental review documents,

including the section on rail impacts, if she thought the City had no authority to deny the project? The Attorney General specifically noted in her comment letter (Attachment 2) that the City's ability to exercise its police power to lessen rail impacts would likely depend on, among other factors, "whether the project proponent is a 'rail carrier' subject to federal law." The City Attorney also mentioned the State's position on the high speed rail cases, but again, those cases involve a rail carrier (the State of California's High Speed Rail Authority). The City Attorney's implication that the Attorney General agrees with the City's preemption analysis here has no basis whatsoever.

The City Attorney also represented that San Luis Obispo County staff had determined that the County could not deny a similar project based on rail impacts. While it is true that the EIR for the San Luis Obispo project found significant on-site impacts, nothing in staff's recommendation prohibits the County from denying the project based on rail impacts as well. In fact, staff affirmatively recommended that the County deny the project precisely because of the mainline rail impacts. *See* Attachment 3 (Feb. 4, 2016, San Luis Obispo staff report) at 6 (recommending denial because, among other things, the "Project would result in 10 significant and unavoidable environmental impacts . . . with regards to the mainline rail operations beyond San Luis Obispo County and throughout the State.").

Finally, even putting aside mainline rail impacts, there are multiple, significant *on-site* environmental impacts that require denial of this project. Valero's appeal letter claims that "[a]ll of the public discussion about the Project has focused on the impacts of rail operations," but nothing could be further from the truth. We have repeatedly and consistently argued that the project would have significant non-rail impacts, especially air quality impacts that would occur at the refinery. Our prior comment letters – which we have attached for the Council's reference (Attachment 4) – discussed these impacts at length. We and others have also submitted numerous expert opinions about refinery impacts. There is overwhelming evidence in the record that this project would have significant on-site impacts, and the City Council should deny the project on those bases as well. While the EIR improperly fails to identify those impacts as significant under CEQA, nothing prohibits the City from denying the permit because of on-site impacts under its own municipal code. At the very least, the City must revise and recirculate the inadequate EIR if it intends to move forward with the project.

This project would harm Benicians and citizens throughout the state. We urge the City to deny the permit as soon as possible.

Sincerely,

Jackie Prange, Staff Attorney  
Natural Resources Defense Council

Colin Miller  
Bay Localize

Roger Lin, Staff Attorney  
Communities for a Better  
Environment

Denny Larson  
Community Science Institute

George Torgun, Managing Attorney  
San Francisco Baykeeper

Nancy Rieser  
Crockett-Rodeo United to Defend the  
Environment

Clare Lakewood, Staff Attorney  
Center for Biological Diversity

Steve Nadel  
Sunflower Alliance

Elly Benson, Staff Attorney  
Sierra Club

Kalli Graham  
Pittsburg Defense Council

Ethan Buckner  
ForestEthics

Richard Gray  
350 Bay Area and 350 Marin

Katherine Black  
Benicians for a Safe and Healthy  
Community

Bradley Angel  
Greenaction for Health and  
Environmental Justice

Janet Johnson  
Richmond Progressive Alliance

Sandy Saeturn  
Asian Pacific Environmental  
Network

Ethan Buckner  
ForestEthics

David McCoard  
Sierra Club SF Bay Chapter

Jessica Hendricks  
Global Community Monitor.

2015 WL 1215490 (S.T.B.)

Surface Transportation Board (S.T.B.)

SEA-3, INC.—PETITION FOR DECLARATORY ORDER

Decided: March 16, 2015

Service Date: March 17, 2015

**SURFACE TRANSPORTATION BOARD DECISION**

Docket No. FD 35853

\*1 By the Board, Acting Chairman Miller and Vice Chairman Begeman

Digest:<sup>1</sup> SEA-3, Inc. (SEA-3), a non-carrier, asks the Board to find that appeals by the City of Portsmouth, N.H., of a zoning decision—which approved SEA-3's construction of additional rail berths at the liquefied petroleum gas transload facility it owns and operates in the Town of Newington, N.H.—are preempted by federal law. The Board provides guidance on the issue but denies the petition for declaratory order because the law about the extent to which [49 U.S.C. § 10501\(b\)](#) preemption applies to transload facilities is clear.

By petition filed on August 4, 2014, SEA-3, Inc. (SEA-3), seeks a declaratory order holding that all claims made by the City of Portsmouth, N.H. (the City or Portsmouth), in certain zoning litigation are preempted by [49 U.S.C. § 10501\(b\)](#).<sup>2</sup> SEA-3 states that Portsmouth has appealed zoning decisions that approved SEA-3's plan to construct five additional rail berths at the liquefied petroleum gas (LPG or propane) transload facility it owns and operates on land it leases in the Town of Newington, N.H. (Newington). Portsmouth, in a reply filed on August 20, 2014, asks the Board to dismiss the petition for lack of standing or, in the alternative, to deny the petition and find that the City's appeals do not involve regulation of transportation by rail carrier or preclearance requirements that are federally preempted. On September 30, 2014, Boston and Maine Corporation and Springfield Terminal Railway Company d/b/a Pan Am Railways (Pan Am), the rail carrier serving the transload facility, filed comments in support of SEA-3's petition.<sup>3</sup> On January 20, 2015, Norfolk Southern Railway Company (NS) submitted comments as amicus curiae in support of SEA-3's petition. On February 10, 2015, the Propane Gas Association of New England (PGANE) also submitted comments as amicus curiae in support of SEA-3's petition. On February 12, 2015, CSX Transportation, Inc. (CSXT) submitted a petition to intervene and comments in support of SEA-3's petition.<sup>4</sup>

For the reasons discussed below, SEA-3's petition for a declaratory order will be denied.

**BACKGROUND**

SEA-3 states that Pan Am's Newington Branch is the only rail line serving the transload facility, which is one of only two propane storage and distribution terminals in New England and the only one with rail access. The facility, according to SEA-3, has been in continuous operation since 1975 and has a storage capacity of 560,000 barrels. While the majority of the propane delivered to the facility historically moved from overseas sources by ship, SEA-3 states that the facility has three rail berths that allow it to offload six rail cars of domestically produced propane per day. SEA-3 seeks to reconfigure and expand the facility by constructing five additional rail berths on land leased from Pan Am. SEA-3 claims that this is necessary because recent market changes have made the cost of overseas-produced propane prohibitively expensive. Asserting that the expansion project would allow it to satisfy the majority of its propane requirements from domestic sources, SEA-3 contends that the additional rail berths are essential if it is to continue supplying the New England market with propane.

\*2 According to SEA-3, the Newington Planning Board (Planning Board) approved SEA-3's application to expand the facility on May 19, 2014, and on June 16, 2014, Portsmouth filed an appeal with the Newington Zoning Board of Adjustment (NZBA). Also on June 16, 2014, according to SEA-3, Portsmouth filed with the New Hampshire Superior Court (Court) a petition to overturn the Planning Board's decision, or in the alternative to require a study of the rail effects of the expansion project.<sup>5</sup> SEA-3 contends that Portsmouth has been opposed to the expansion project since it received notice of the application from the Planning Board, and that Portsmouth's sole objective is to block additional LPG rail car traffic from moving through the City.

SEA-3 argues that any attempts by localities or states to direct rail traffic or impose preclearance requirements on transload facilities are federally preempted under § 10501(b). Section 10501(b), as broadened by the ICC Termination Act of 1995, Pub. L. No. 104-88, 109 Stat. 803, expressly provides that the jurisdiction of the Board over "transportation by rail carriers" is "exclusive." 49 U.S.C. § 10501(b). Section 10501(b) also explicitly states that "the remedies provided under [49 U.S.C. §§ 10101-11908] with respect to regulation of rail transportation are exclusive and preempt the remedies provided under Federal or State law." SEA-3 asks the Board to find that the claims Portsmouth has made to the NZBA and the Court, including any claims that are derived from, or depend on, allegations that Portsmouth would be adversely affected as a result of increased rail transportation, are preempted.

Portsmouth requests that the proceeding be dismissed for lack of standing, contending that SEA-3 is not a rail carrier; that SEA-3 built, owns, controls, insures, and advertises the facility; and that SEA-3 is the sole applicant for approval of, and is solely responsible for all of the costs of the instant expansion project. In the alternative, Portsmouth requests that the Board find the City's appeals, which include a request for a safety/hazard study of the SEA-3 expansion site, are not federally preempted preclearance requirements. Portsmouth denies: (1) that it is seeking a safety study of Pan Am's rail operations, as opposed to a study of the SEA-3 expansion site; (2) that it is seeking to deprive SEA-3 of its right to receive rail services; and (3) that it is using local site plan review regulations and zoning ordinances to regulate rail transportation.

\*3 Portsmouth contends that there is no conflict between its request for a safety/hazard study of the planned expansion of the facility and SEA-3's use of Pan Am for common carrier rail service. In appealing and filing for court review of the Planning Board's decision approving the expansion project, Portsmouth contends it "is simply asking Newington to comply with its site review regulations and zoning ordinances as they apply to the site itself, not the rails ... in order to assess whether the project promotes the health[[[.]] safety and welfare of the residents of Newington and [the] other affected communities."<sup>6</sup> Noting that similar studies were performed the last time SEA-3 expanded its facility in 1996, Portsmouth asserts that, in its zoning appeals, it merely seeks the ability to review and comment on a safety/hazard assessment, claiming that this "would not subject SEA-3 to an unreasonable delay and is not unreasonably burdensome, nor does it discriminate against railroads."<sup>7</sup>

Pan Am argues that Portsmouth's appeals to the NZBA and the Court are preempted by § 10501(b) because they would not have been filed absent a potential increase in rail traffic. Pan Am contends that Portsmouth, notwithstanding its denials, is in fact attempting to regulate rail transportation by Pan Am through litigation that would frustrate and delay increased rail service to SEA-3's transload facility. Pan Am also claims that Portsmouth remains adamantly opposed to the expansion project, even though Pan Am has provided substantial information to the community throughout the Planning Board's process, attended all Planning Board meetings, met with representatives of Portsmouth and surrounding communities on several occasions, and solicited input from the Federal Railroad Administration (FRA) and the New Hampshire Department of Transportation (NHDOT). Further, Pan Am states that during this community outreach it has pointed out that rail service on the Portsmouth and Newington Branches has continued for decades with at least four active customers now being served in Newington; that the only change in operations that would result from the expansion project would be an increase in rail service from two to potentially six days a week; and that FRA, NHDOT, and emergency responders "have reviewed the potential impact of an increase in rail service [and have] informed the Planning Board, Portsmouth, and other neighboring municipalities that no significant safety concerns exist."<sup>8</sup> Finally, Pan Am asserts that it has already begun work to upgrade the Portsmouth and Newington Branches from marginal FRA Class 1 to FRA Class 2 standards and that this work should be completed in the summer of 2015.

NS, in its amicus filing, states that it has an interest in this case because SEA-3 is its customer. NS argues that Portsmouth is attempting to regulate rail commerce and that therefore Portsmouth's position in this case is contrary to the Board's preemption precedent. NS also raises concerns that Portsmouth's "attempts to regulate the flow of commerce"<sup>9</sup> are part of a trend of localities enacting regulations that are preempted under § 10501. Similarly, PGANE argues that Portsmouth is seeking to interfere with the flow of interstate commerce by rail, and Portsmouth's actions would lead to a patchwork of conflicting local regulations over rail operations. CSXT, in its comments, asserts that Portsmouth is attempting to regulate the use of a railroad line through the zoning process, which is one of the most invasive forms of regulation and is clearly preempted under § 10501(b).

## DISCUSSION AND CONCLUSIONS

\*4 The Board has discretionary authority under 5 U.S.C. § 554(e) and 49 U.S.C. § 721 to issue a declaratory order to eliminate controversy or remove uncertainty in a matter related to the Board's subject matter jurisdiction.<sup>10</sup> Where the law is clear, the Board may decline to institute a proceeding and instead provide guidance on the preemption issue presented, and it is appropriate to do so here. See, e.g., 14500 Ltd.—Pet. for Declaratory Order, FD 35788, slip op. at 2 (STB served June 5, 2014).<sup>11</sup>

The Interstate Commerce Act (Act) is "among the most pervasive and comprehensive of federal regulatory schemes." Chi. & N.W. Transp. Co. v. Kalo Brick & Tile Co., 450 U.S. 311, 318 (1981). The federal preemption provision contained in § 10501(b) bars the application of most state and local laws to railroad operations that are subject to the Board's jurisdiction.<sup>12</sup> Because the Board has jurisdiction over "transportation by rail carrier," 49 U.S.C. § 10501(a), to be subject to the Board's jurisdiction and qualify for federal preemption under 49 U.S.C. § 10501(b), the activities at issue must be "transportation" and must be performed by, or under the auspices of, a "rail carrier." The statute defines "transportation" expansively to encompass any property, facility, structure or equipment of any kind related to the movement of passengers or property, or both, by rail, and services related to that movement, including receipt, delivery, transfer in transit, storage, and handling of property. 49 U.S.C. § 10102(9). Moreover, "'railroad" is defined broadly to include a switch, spur, track, terminal, terminal facility, freight depot, yard, and ground, used or necessary for transportation. 49 U.S.C. § 10102(6). Whether a particular activity is considered part of transportation by rail carrier under § 10501 is a case-by-case, fact-specific determination. See, e.g., Diana Del Grosso.—Pet. for Declaratory Order, FD 35652, slip op. at 5 (STB served Dec. 5, 2014).

The Board's jurisdiction extends to rail-related activities that take place at transloading facilities if the activities are performed by a rail carrier, the rail carrier holds out its own service through a third party that acts as the rail carrier's agent, or the rail carrier exerts control over the third party's operations.<sup>13</sup> The record presented to the Board in this case, however, does not demonstrate that SEA-3 is a carrier or that it is performing transportation-related activities on behalf of Pan Am or any other rail carrier at the transload facility.

\*5 Citing Norfolk Southern Railway v. City of Alexandria (Alexandria), 608 F.3d 150 (4th Cir. 2010), and Boston & Maine Corp.—Petition for Declaratory Order (Winchester), FD 35749 (STB served July 19, 2013), SEA-3 argues that any attempt by localities or states to direct rail traffic or impose preclearance requirements on this facility are federally preempted under § 10501(b). SEA-3 and the Petition Supporters further argue that Portsmouth is attempting to use its appeals of the Planning Board's decision to interfere with Pan Am's rail operations and to intrude into matters directly regulated by the Board. Portsmouth's sole objective, Pan Am and PGANE claim, is to prevent an increase in rail service to SEA-3 by blocking additional propane shipments from traveling through the City. Pan Am contends that Portsmouth will use the results of any litigation to impose restrictions on SEA-3's ability to use, and Pan Am's ability to provide, rail transportation. In support of preemption, Pan Am, NS, and CSXT also cite Winchester, which they assert has facts almost identical to those at issue here, and Pan Am and PGANE similarly rely on Ayer.

However, the facts in the cases relied on by SEA-3 and the Petition Supporters are very different from those at issue here. The cited cases involved local regulation of transloading performed by the rail carrier or under its auspices (Alexandria and Ayer), or local regulation of the railroad's ability to conduct common carrier transportation (Winchester). Alexandria involved

an ethanol transload facility constructed and owned by Norfolk Southern Railway Company and operated under its auspices. Ayer involved the construction and operation of an automobile unloading facility by Boston and Maine Corp. and Springfield Terminal Railway Co., and their corporate parent, Guilford Transportation Industries, Inc. (now Pan Am). SEA-3 and the Petition Supporters do not allege that SEA-3 is a rail carrier, or that its transloading is performed under the auspices of a rail carrier,<sup>14</sup> as was the case in Alexandria and Ayer.

Winchester involved a local regulation that would have prohibited a rail carrier (Pan Am) from operating trains over the line in question. The Board determined that § 10501(b) preempted this regulation because it prevented the rail carrier from conducting its operations in interstate commerce. Here, SEA-3 and the Petition Supporters have not identified an attempt by Portsmouth to regulate *Pan Am's* operations, as was the case in Winchester.<sup>15</sup> Instead, Portsmouth's litigation challenging the Planning Board's decision involves permitting of the expansion of SEA-3's facility, and as noted, it is undisputed that SEA-3 is not a rail carrier or acting under the auspices of a rail carrier.<sup>16</sup> Thus, it appears that the only regulatory action at issue in this case is a local government's participation in zoning litigation over the expansion of a non-carrier facility. Without more, this situation does not reflect undue interference with "transportation by rail carriers." See 49 U.S.C. § 10501(b). Accordingly, SEA-3 and the Petition Supporters have not demonstrated on this record that preemption under § 10501(b) applies to Portsmouth's zoning appeals.

\*6 If Portsmouth or any other state or local entity were to take actions as part of a proposed safety/hazard study, or otherwise, that interfere unduly with Pan Am's common carrier operations, those actions would be preempted under § 10501(b). See, e.g., Bos. & Me. Corp.—Pet. for Declaratory Order, FD 35749 (STB served Oct. 31, 2013) (confirming that the Town of Winchester's directive prohibiting Pan Am from conducting transportation over a rail line was preempted). As the Board and the courts have explained, Portsmouth may apply non-discriminatory regulations to protect public health and safety, but only provided that its regulations do not have the effect of foreclosing or unduly restricting Pan Am's ability to conduct operations over its Newington and Portsmouth Branches, or otherwise unreasonably burden interstate commerce.<sup>17</sup>

This action will not significantly affect either the quality of the human environment or the conservation of energy resources.

It is ordered:

1. SEA-3's petition for declaratory order is denied, and this proceeding is discontinued.
2. This decision is effective on the date of service.

Footnotes

- 1 The digest constitutes no part of the decision of the Board, but has been prepared for the convenience of the reader. It may not be cited to or relied upon as precedent. Policy Statement on Plain Language Digests in Decisions, EP 696 (STB served Sept. 2, 2010).
- 2 SEA-3 Pet. 20.
- 3 In a decision served on August 29, 2014, the Board granted Pan Am's request for leave to intervene and for a two-week extension to file substantive comments. Pan Am subsequently notified the Board that the parties were engaged in discussions to resolve the issues and requested a further extension to September 30, 2014. The Board granted that extension request in a decision served on September 5, 2014. Pan Am filed its comments on September 30, 2014, after negotiations proved unsuccessful.
- 4 Pan Am, NS, PGANE, and CSXT will be referred to as "Petition Supporters."
- 5 City of Portsmouth v. Newington Planning Bd., Rockingham County Superior Court Docket No. 218-2014-CV00654. Under New Hampshire law, according to SEA-3, any appeal of a zoning decision by a town's Planning Board must first be resolved by the town's Zoning Board of Adjustment (ZBA). SEA-3 states that when dual appeals are filed, as in this case, court action is stayed pending a ZBA decision, and if the ZBA decision is appealed, the two appeals are consolidated in the court.
- 6 Portsmouth Reply 10-11.
- 7 Id. at 16.
- 8 Id. at 5-6.

- 9 NS Comments 1.
- 10 See, e.g., Bos. & Me. Corp. v. Town of Ayer, 330 F.3d 12, 14 n.2 (1st Cir. 2003); Delegation of Auth.—Declaratory Order Proceedings, 5 I.C.C. 2d 675, 675 (1989).
- 11 We also note that, according to Pan Am, the NZBA held a hearing on September 15, 2014, and denied all of Portsmouth's claims. Pan Am Reply 3 n.1 & Ex. A. Thus, it appears that SEA-3 has prevailed at every stage of the zoning process to date.
- 12 State or local permitting or preclearance requirements, including building permits, zoning ordinances, and environmental and land use permitting requirements, are categorically preempted as to any facilities that are an integral part of rail transportation. See Green Mountain R.R. v. Vermont, 404 F.3d 638, 643 (2d Cir. 2005). Other state actions may be preempted as applied—that is, only if they would have the effect of unreasonably burdening or interfering with rail transportation. See N.Y. Susquehanna & W. Ry. v. Jackson, 500 F.3d 238, 252 (3d Cir. 2007); Joint Pet. for Declaratory Order—Bos. & Me. Corp. & Town of Ayer (Ayer), 5 S.T.B. 500, 507-508 (2001), reconsideration denied (STB served Oct. 5, 2001). Even where § 10501(b) preemption applies, there are limits to its scope. Overlapping federal statutes are to be harmonized, with each statute given effect to the extent possible. Moreover, states retain police powers to protect the public health and safety on railroad property so long as state and local regulation do not unreasonably interfere with interstate commerce. Green Mountain, 404 F.3d at 643.
- 13 Id. Compare Green Mountain, 404 F.3d at 642 (transloading and temporary storage of bulk salt, cement, and non-bulk foods by a rail carrier qualified for preemption); Lone Star Steel Co. v. McGee, 380 F.2d 640, 647 (5th Cir. 1967), and Ass'n of P&C Dock Longshoremen v. Pittsburgh & Conneaut Dock Co., 8 I.C.C. 2d 280, 290-95 (1992) (an agent undertaking the obligations of a common carrier (i.e., performing services as part of the total rail service contracted for by a member of the public) also holds itself out to the public as being a common carrier by rail, and is therefore subject to federal regulation), with Town of Milford, Mass.—Pet. for Declaratory Order, FD 34444, slip op. at 3-4 (STB served Aug. 12, 2004) (Board lacked jurisdiction over noncarrier operating a rail yard where it transloaded steel pursuant to an agreement with the rail carrier, but the transloading services were not being offered as part of common carrier services offered to the public); High Tech Trans, LLC—Pet. for Declaratory Order—Newark, N.J., FD 34192 (Sub-No. 1), slip op. at 7 (STB served Aug. 14, 2003) (no STB jurisdiction over truck-to-truck transloading prior to commodities being delivered to rail); and Town of Babylon & Pinelawn Cemetery—Pet. for Declaratory Order, FD 35057, slip op. at 5 (STB served Feb. 1, 2008) (Board lacked jurisdiction over activities of a noncarrier transloader offering its own services directly to customers).
- 14 See n.13, supra.
- 15 NS is incorrect when it suggests that Winchester addressed a “contested municipal zoning ordinance ... applied to the shipper facility ....” NS Comments 3. As noted above, the municipal ordinance at issue in Winchester would have prohibited *the rail carrier* from operating trains over the line in question. See Bos. & Me. Corp.—Pet. for Declaratory Order, FD 35749, slip op. at 4-5 n.17 (STB served Oct. 31, 2013) (observing that the Winchester decision applied to the rail carrier's operations over the line, not to the shipper facility).
- 16 See SEA-3 Pet. 20 (requested declaratory order would find preemption only with respect to “claims made in Portsmouth's Superior Court Petition and ZBA Appeal”).
- 17 As discussed above, state and local regulation is not preempted where it does not interfere with rail operations. Localities retain their reserved police powers to protect the public health and safety so long as their actions do not unreasonably burden interstate commerce. See Green Mountain, 404 F.3d at 643. Electrical, plumbing, and fire codes also are generally applicable. See Green Mountain, 404 F.3d at 643. State and local action, however, must not have the effect of foreclosing or unduly restricting the rail carrier's ability to conduct its operations or otherwise unreasonably burden interstate commerce. See CSX Transp. Inc.—Pet. for Declaratory Order, FD 34662, slip op. at 5 (STB served May 3, 2005).

2015 WL 1215490 (S.T.B.)

**KAMALA D. HARRIS**  
**Attorney General**

**State of California**  
**DEPARTMENT OF JUSTICE**



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October 2, 2014

**Via U.S. and Electronic Mail**

Amy E. Million  
Community Development Department  
City of Benicia  
250 East L Street  
Benicia, CA 94510

**RE: Attorney General's Comments on the Draft Environmental Impact Report for the Valero Benicia Crude-By-Rail Project**

Dear Ms. Million:

Attorney General Kamala D. Harris submits the following comments on the Draft Environmental Impact Report (DEIR) for the Valero Benicia Crude-By-Rail Project (Project).<sup>1</sup> The Project proposes improvements to Valero's Benicia Refinery (Refinery) that, if approved, will allow Valero to receive and process up to 100 tank cars of crude oil by railway per day from North American sources.

With this and other projects like it, California is faced with a dramatic increase in the amount of highly-flammable crude oils proposed to be transported by rail throughout the State, the result of a recent oil boom from North American sources, including the Bakken shale in North Dakota and Canadian tar sands. According to the federal government, rail shipments of certain crude feedstocks, including Bakken shale, represent an "*imminent hazard*," such that a "substantial likelihood that death, serious illness, severe personal injury, or a substantial endangerment to health, property, or the environment may occur."<sup>2</sup> Indeed, accidents involving these trains have already resulted in catastrophic consequences, including one recent calamity that killed 47 people, incinerated an entire downtown area, and is expected to require the

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<sup>1</sup> The Attorney General submits these comments pursuant to her independent power and duty to protect the environment and natural resources of the State. See Cal. Const., art. V, § 13; Gov. Code, §§ 12511, 12600-12612; *D'Amico v. Bd. of Medical Examiners* (1974) 11 Cal.3d 1, 1415. This letter is not intended, and should not be construed, as an exhaustive discussion of the DEIR's compliance with the California Environmental Quality Act.

<sup>2</sup> See U.S. Dept. of Transportation (DOT), Emergency Order: Petroleum Crude Oil Railroad Carriers, Docket No. DOT-OST-2014-0067 (May 7, 2014).

expenditure of \$400 million in taxpayer funds to remediate its disastrous environmental impacts.<sup>3</sup>

In the face of this unprecedented risk, it is important that the infrastructure and facilities transporting and processing these feedstocks are specifically designed to present minimal risk to life, public and private property, and the environment. In particular, officials entrusted with protecting public health and safety must ensure that the hazards from these projects are fully and accurately assessed, and the identified risks are mitigated to the fullest extent possible by law.

Unfortunately, the DEIR for this Project fails to properly account for many of the Project's potentially significant impacts pursuant to the California Environmental Quality Act (CEQA). Specifically, the DEIR:

1. Underestimates the probability of an accidental release from the Project by considering only a fraction of the rail miles travelled when calculating the risk of derailment, by relying on a currently unenforceable assumption that newer, safer tank cars will be used, by failing to adequately describe the potential consequences of an accident resulting in a release of crude oil, and by improperly minimizing the risk to public safety from increased rail-use;
2. Improperly asserts that the proper baseline for the Project's impact on air emissions is determined by the Refinery's maximum permitted emissions;
3. Fails to analyze the impacts on air quality from the foreseeable change in the mix of crude oils processed at the Refinery;
4. Ignores reasonably foreseeable Project impacts by impermissibly limiting the scope of the affected environment analyzed to only the 69-mile stretch from Benicia to Roseville;
5. Fails to consider the cumulative impacts on public safety and the environment from the proliferation of crude-by-rail projects proposed in California; and
6. Employs an overly broad determination of trade secrets, which results in the nondisclosure of the types of crude oil to be shipped by rail and refined onsite. As a result, the DEIR fails to provide sufficient information for an adequate analysis of the safety risks from transportation or the air quality impacts from refining the new crude.

These issues must be addressed and corrected before the City Council of Benicia takes action pursuant to CEQA on the DEIR or the Project.

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<sup>3</sup> Fishell, "Quebec government seeking \$400 million for Lac-Mégantic rail disaster cleanup," Bangor Daily News (September 19, 2014).

## Background

### Crude-by-Rail in California

From 2012 to 2013, crude-by-rail in California increased from one million barrels imported to 6.3 million barrels imported, a rise of 506%.<sup>4</sup> This surge in the amount of crude-by-rail imports is replacing crude oil previously transported by ship or pipeline. The trend shows no sign of abatement, and the California Energy Commission projects that by 2016, the State will import up to 150 million barrels of crude-by-rail.<sup>5</sup>

Crude feedstocks from North American sources such as the Bakken shale in North Dakota and tar sands in Canada have only recently been introduced to refineries, made available by a combination of new extraction techniques and higher energy prices. Bakken crude is unlike other crude being produced or shipped in this country, and it presents an “imminent hazard” because it is more ignitable and flammable and thus more likely to cause large, potentially catastrophic impacts from a train crash or derailment.<sup>6</sup> On the other end of the spectrum, crude oil extracted from Canadian tar sands is a low-grade, high sulfur feedstock that is not as volatile as light crudes like Bakken but contains chemical properties that make it particularly damaging to the environment when spilled and/or burned.<sup>7</sup>

This dramatic increase in crude-by-rail represents a new potential hazard to public safety and the environment in part because the crude oil is regularly transported by “high hazard flammable trains” (HHFT), which are trains comprising 20 or more carloads of flammable liquids such as crude oil.<sup>8</sup> The DOT has determined that derailments of HHFTs will continue to be more severe, “involve[ing] more cars than derailments of other types of trains” because HHFTs are uniquely heavier and longer and therefore harder to control and less stable than other rail traffic.<sup>9</sup>

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<sup>4</sup> Interagency Rail Safety Working Group, Oil by Rail Safety in California (June 10, 2014) p.1.

<sup>5</sup> *Id.*

<sup>6</sup> See Pipeline and Hazardous Materials Safety Administration, Dept. of Transportation, Operation Safe Delivery Update (2014) p. 1. See also U.S. DOT Emergency Order, Petroleum Crude Oil Railroad Carriers, Docket No. DOT-OST-2014-0067 (May 7, 2014).

<sup>7</sup> U.S. Dept. of Transportation, Draft Regulatory Impact Analysis, “Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains; Notice of Proposed Rulemaking.” July 2014 [Docket No. PHMSA-2012-0082] (HM-251), p.81.

<sup>8</sup> DOT proposed regulations define a “high hazard flammable train” as a train comprised of 20 or more carloads of Class 3 flammable liquids such as crude oil. 79 Fed.Reg. 45017 (August 1, 2014).

<sup>9</sup> U.S. Dept. of Transportation, Draft Regulatory Impact Analysis, “Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains; Notice of Proposed Rulemaking.” July 2014 [Docket No. PHMSA-2012-0082] (HM-251), p.24.

This boom in crude oil being transported by rail has corresponded with a major increase in the number of accidents involving such trains. In 2013 alone, trains spilled 1.1 million gallons of crude oil, a 72% increase over the total amount of oil spilled by rail *in the nearly four previous decades combined*.<sup>10</sup> Since the beginning of 2013, at least nine major accidents related to crude-by-rail have occurred. Among the most notorious include:

- **Lac Mégantic, Quebec**—On July 5, 2013, a train loaded with 72 tank cars of crude oil being transported from North Dakota to New Brunswick stopped on a track with a descending grade. The train later began rolling downhill toward the town of Lac-Mégantic, about 30 miles from the U.S. border. Near the center of town, 63 tank cars derailed, resulting in multiple explosions and subsequent fires. The accident killed 47 people and destroyed substantial sections of the town, causing the evacuation of 2,000 people. It was later determined that the crude oil released was more volatile than the transporter had originally reported to Canadian authorities.
- **Aliceville, Alabama**—On November 8, 2013, a train hauling 90 cars of crude oil from North Dakota to a refinery near Mobile derailed on a section of track through a wetland near Aliceville. Thirty tank cars derailed and a dozen of these burned. The derailment occurred on a shortline railroad's track that had been inspected and cleared only a few days earlier. The train was travelling under the speed limit for this track.
- **Casselton, North Dakota**—On December 30, 2013, an eastbound BNSF Railway train hauling 106 tank cars of crude oil struck a westbound train carrying grain that shortly before had derailed onto the eastbound track. Some 34 cars from both trains derailed, including 20 cars carrying crude, which exploded and burned for over 24 hours. About 1,400 residents of Casselton were evacuated.
- **Lynchburg, Virginia**—On April 30, 2014, 15 cars in a crude oil train derailed in Lynchburg's downtown area. Three cars caught fire, and some cars derailed into a river along the tracks. The immediate area surrounding the derailment was evacuated.<sup>11</sup>

Crude-by-rail projects employing HHFTs continue to profligate in California, and economic factors suggest that this trend will continue for the foreseeable future. This Project in Benicia is but one of *at least twelve* other crude-by-rail related projects that are either already

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<sup>10</sup> Tate, "More oil spilled from trains in 2013 than in previous 4 decades, federal data show," McClatchyDC (January 20, 2014).

<sup>11</sup> Crude-by-rail accidents have also occurred in Philadelphia, PA, Vandergrift, PA, and LaSalle, CO, in addition to the Canadian provinces of Alberta and New Brunswick. Congressional Research Service, "U.S. Rail Transportation of Crude Oil: Background and Issues for Congress" (May 5, 2014); Associated Press, "Colorado derailment: Six crude oil tankers jump track" (May 10, 2014).

operational or being considered in California. In addition to Benicia, crude-by-rail projects exist in Richmond, Pittsburg,<sup>12</sup> Martinez, Santa Maria, Stockton, Los Angeles, Bakersfield (two projects), Wilmington (two projects), and Sacramento (two projects).<sup>13</sup> If approved, these projects would cumulatively result in billions of gallons of crude oil being transported by HHFTs annually throughout California.

#### The Valero Benicia Crude-by-Rail Project

Valero has applied to the City of Benicia for a Use Permit to construct improvements and install equipment that would allow the existing Refinery to begin receiving and refining crude feedstocks by rail, at a level of 100 tank cars daily. The crude-by-rail would be delivered in two, 50 car trains each day to the Refinery, totaling 70,000 barrels of North American crudes. The crude-by-rail deliveries would purportedly replace crude oil feedstocks currently arriving by ship. The significant components of the Project, as presented in the DEIR, include construction of offloading racks, rail spurs and new track, and additional supply piping from the rail spur to the Refinery. (DEIR 3-5).

#### **Comments on the DEIR**

##### The DEIR fails to adequately analyze the Project's impacts to up-rail communities.

The DEIR employs improper standards of significance, unenforceable mitigation measures, and inadequate analyses to conclude that the Project will not have a significant impact on "up-rail" communities, including those communities located between Roseville and Benicia through which HHFTs will pass if the Project is approved. This analysis, broken up in the DEIR into five subsections, is defective in the following areas:

##### *(1) The probability of an accidental release of crude oil from a train*

The DEIR employs a flawed quantitative analysis to conclude that the probability of an accidental release of crude oil from a train is only one in 111 years. (DEIR App. F). First, because the DEIR limits its analysis to only the 69 mile rail stretch from the Union Pacific Railroad ("UPRR") Roseville Terminal to Benicia, it severely underestimates the risk of an accident related to the Project. The tank cars containing crude oil do not originate in Roseville, they are delivered by rail from particular sources, including North Dakota and Canada. While the precise route from these sources throughout North America to the Refinery may be somewhat indeterminate, the potential rail routes from within the California borders to the Roseville terminal are limited to a handful of options, and an assessment of these foreseeable impacts using

<sup>12</sup> The Attorney General submitted a CEQA comment letter on the Recirculated DEIR for the WesPac Pittsburg Energy Infrastructure Project on January 15, 2014.

<sup>13</sup> Hays, Kristen, "Factbox – California crude slates and oil-by-rail projects," Reuters (September 10, 2014).

reasonable assumptions of future crude oil sources should have been performed. This is particularly true given that, despite claiming that the routes are too speculative to analyze for purposes of public safety, the DEIR does, in fact, analyze these very routes in its discussion of both air quality impacts (DEIR 4.1-22) and greenhouse gas emissions (GHG) (DEIR 4.6-9).

Second, the DEIR's risk analysis assumes that Valero will only transport crude oil in newer model "1232" tank cars, which reduces the estimate of public health risks to up-rail communities. These newer, presumptively safer tank cars, however, are not required by current federal regulations.<sup>14</sup> The DEIR presents no evidence to support the assumption that only the newer tank cars will be used, because Valero only makes a voluntary commitment to upgrade its tank cars, a commitment that appears to be unenforceable as the Project is now proposed. Such an unenforceable mitigation measure and/or condition of Project approval is a violation of CEQA's requirement that these commitments be "fully enforceable through permit conditions, agreements, or other legally binding instruments."<sup>15</sup> The City of Benicia itself asserts that it is preempted from enforcing Valero's obligation to use the newer and safer rail cars and states that it "must rely on the federal authorities to ensure that any such risks are mitigated as appropriate."<sup>16</sup> (DEIR 4.7-20). But, since DOT regulations currently allow use of DOT-111

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<sup>14</sup> 49 C.F.R. 179. On August 1, 2014, the DOT published a Notice of Proposed Rulemaking seeking comments on new tank car standards for the transport of materials such as crude oil and ethanol. The proposed rules include a variety of options for phasing out the currently-used DOT-111 tank cars in favor of safer tank cars such as the 1232 tank car, or other improved designs. It is unclear when these new regulations might take effect, but the earliest proposal for the elimination of DOT-111 tank cars to transport crude oil is 2017, and oil corporations are advocating for additional delay due to the increased costs associated with upgraded tank cars and a shortage of supply of 1232 tank cars. See 79 Fed.Reg. 45016 (August 1, 2014).

<sup>15</sup> CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.4, subd. (a)(2).

<sup>16</sup> We do not express an opinion regarding whether Benicia's legal analysis is correct. The extent that federal law, including the Interstate Commerce Termination Act (ICCTA), preempts a state or local jurisdiction's ability to minimize impacts associated with rail transportation projects has not been definitely determined by the courts. "The circuits appear generally, for example, to find preemption of environmental regulations, or similar exercises of police powers relating to public health and safety, only when the state regulations are either discriminatory or unduly burdensome." *Fayus Enters. v. BNSF Ry.* (D.C. Cir. 2010) 602 F.3d 444, 451. The Ninth Circuit has most recently determined that, "Generally speaking, ICCTA does not preempt state or local laws if they are laws of general applicability that do not unreasonably interfere with interstate commerce." *Association of American Railroads v. South Coast Air Quality Management Dist.* (9th Cir. 2010) 622 F.3d 1094, 1097-1098. Nonetheless, California law on rail preemption issues is currently in flux. See *Town of Atherton, et al., v California High-Speed Rail Authority* (2014) 228 Cal.App.4th 314 (request for depublication filed September 22, 2014); see also *Friends of Eel River v. North Coast Railroad Authority, et al.*, (September 29, 2014) First Appellate District, Case No. CIV1103605. Factors relevant to Benicia's ability to exercise its police powers to lessen the Project's significant impacts would likely hinge upon,

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tank cars for these purposes, there is no reasonable expectation that DOT (or any entity other than Benicia) would enforce Valero's commitment to use the 1232 cars. Furthermore, the DEIR provides no evidence that Valero has enough stock of the upgraded 1232 tank cars (a scarce commodity) to completely avoid use of the older DOT-111 legacy cars.<sup>17</sup>

Finally, the analysis is flawed because it only considers crude oil releases of over 100 gallons as significant, despite the potential for significant impacts due to a crude oil spill of less than 100 gallons. (App. F-2). Given the volatility and flammability of the crude feedstocks to be imported, combined with the potential ignition sources during a derailment, the DEIR's decision to ignore the impacts associated with a release of less than 100 gallons is unsupported.

*(2) The consequences of a release*

The DEIR's analysis recognizes that serious, even catastrophic, consequences may occur from a release (and conflagration) of crude oil during a train accident. Among the potential impacts, the DEIR acknowledges that: (1) a release in any area could require a significant hazardous materials cleanup; (2) a release in an urban area that were to ignite and/or explode could result in property damage and/or injury and/or loss of life; and (3) a release into the Suisun Marsh could result in significant damage to biological resources. The costs borne by the California taxpayer from such a calamity could be substantial, given the DOT's recent acknowledgment that the insurance policies currently carried by crude-by-rail transporters are typically insufficient to cover even a moderate crude-by-rail accident, much less a major disaster involving significant releases.<sup>18</sup> Nevertheless, the DEIR declares these potential consequences to be insignificant under the flawed quantitative risk assessment discussed above.

Even if the risk analysis were supportable, the DEIR provides no explanation for why the potential for a major catastrophe involving crude-by-rail, even once every 111 years, is an insignificant impact. The DEIR, other than a brief mention, gives little consideration to the potentially serious, even catastrophic, impacts that a release of highly volatile and flammable crude oil would have on communities and the environment. The DEIR also gives no consideration to the public health and safety risks presented by the proximity of 27 schools located within ¼ mile of the UPRR rail line between Roseville and Benicia along which HHFTs

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*(...continued)*

amongst other things: (1) whether any proposed condition unreasonably burdens rail transportation, (2) whether the condition is one of general applicability, and (3) whether the project proponent is a "rail carrier" subject to federal law.

<sup>17</sup> Despite Benicia's assertion that it is preempted from enforcing such a mitigation measure, nothing precludes Benicia and Valero from executing an agreement to convert Valero's voluntary commitment to one that is enforceable under CEQA. Should Benicia and Valero come to such an agreement, the assumption of use of exclusively 1232 tank cars could become supportable.

<sup>18</sup> Wolfe, "DOT: Rail insurance inadequate for oil train accidents," PoliticoPro (August 6, 2014).

will travel. (DEIR 4.7-23-24). The federal government has declared that the shipment of Bakken crude represents an “imminent hazard” because it is unlike other materials being shipped by rail. These particular high-risk characteristics must be considered to adequately support a determination of no significant impact.

*(3) The reduction in the risk of accidental releases from a marine vessel, based on the reduction in marine trips that would be caused by the Project*

The risks associated with a release of crude oil in the ocean are fundamentally different than the risks associated with crude-by-rail travelling long distances through urban communities and environmentally sensitive lands. Nevertheless, the DEIR gives qualitative “credit” from the decrease in ship miles travelled and uses that “credit” to lower the Project’s overall risk. Any benefit to up-rail communities from a reduction in ship use 50 to 100 miles away is tenuous at best and can not reasonably be factored into the risk equation for the Project.

*(4) The recent history of accidents involving DOT-111 tank cars carrying crude oil*

The DEIR implies that since the majority of previous major accidents involving crude-by-rail involved DOT-111 tank cars, those accidents are comparatively of little significance because Valero has committed to using only the newer, safer 1232 tank cars. (DEIR 4.7-19). Setting aside the issue of the enforceability of this “commitment,” the DEIR provides no evidence to support a determination that these HHFT accidents would have been of a substantially smaller scope had 1232 tank cars been used. In fact, as the DEIR recognizes, just a few months ago, a 1232 tank car ruptured and released crude oil during an HHFT derailment at low speeds in Lynchburg, Virginia. (DEIR 4.7-19). The safety benefit of using 1232 tank cars for HHFTs is currently the subject of significant scientific and regulatory debate and should not be given substantial consideration in a qualitative risk analysis.

*(5) The regulatory requirements designed to prevent releases and/or mitigate the consequences in the event of a release from trains*

The DEIR unreasonably relies on both recently promulgated regulations as well as speculative future regulatory changes as a significant factor for determining that the Project will cause no significant impact. The efficacy of new DOT regulations is yet to be determined, and crude-by-rail accidents continue to occur. Furthermore, the DEIR’s determination of no significance relies in part on *future* DOT HHFT tank car regulations possibly being “more stringent” than even the 1232 tank car standards, an uncertain result given that the regulatory changes are not final.<sup>19</sup> (DEIR 4.7-19). In short, future changes made by DOT to regulations for

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<sup>19</sup> The DOT regulatory proposals are the subject of extensive industry group interest. See Vantuono, William C., “DOT crude oil NPRM: Will cooler heads prevail?” *Railway Age* (August 7, 2014) [During a recent crude-by-rail forum, one industry insider declared that he believed, “the final draft of the [Notice of Proposed Rulemaking on High-Hazard Flammable

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crude-by-rail are speculative, and their potential effectiveness is currently the subject of considerable disagreement amongst various stakeholders.

By employing an incorrect baseline, the DEIR minimizes potential impacts to air quality.

Under CEQA, the project baseline against which project emissions are measured is “normally” defined as the physical conditions of the environment as it exists at the time of publication of the Notice of Preparation (“NOP”) of the project EIR or at the time the environmental analysis commenced.<sup>20</sup> Courts have held that an agency has discretion to select an alternative baseline, but only if its choice is supported by substantial evidence, such as when existing conditions are not representative of “generally existing” or “historic” conditions.<sup>21</sup> Thus, except in limited circumstances, CEQA does not allow an existing facility to define the project baseline by what it *could* emit, only what it actually *does* emit. As the Supreme Court found in *Communities for a Better Environment (CBE) v. South Coast Air Quality Management District* (2010) 48 Cal.4th 310, 322, “[a]n approach using hypothetical allowable conditions as the baseline results in ‘illusory’ comparisons that ‘can only mislead the public as to the reality of the impacts and subvert full consideration of the actual environmental impacts,’ a result at direct odds with CEQA’s intent.”<sup>22</sup>

Here, the DEIR concludes that the project will have no significant impact on air quality because, even if Refinery emissions were to increase under the Project, those increased emissions would not exceed the maximum emissions allowed under existing permit limits (or “maximum permitted emissions”). Rather than using a baseline describing “existing conditions,” Benicia incorrectly uses the maximum permitted emissions as the baseline, asserting that this is proper because Valero holds permits for the Refinery’s process equipment issued pursuant to a 2003 EIR for the Valero Improvement Project (VIP).<sup>23</sup> (DEIR C.1-3).

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Trains and DOT 111 tank cars] could be more friendly to shippers than the first proposal.” Railway Age’s Editor-in-Chief stated that this assertion, “helped affirm our view that the final version of the DOT’s safety rules may include some changes to the ones proposed on July 23.”]

<sup>20</sup> See CEQA Guidelines, Cal. Code Regs., tit. 14, § 15125, subd. (a).

<sup>21</sup> For example, in *Fairview Neighbors v. County of Ventura* (1999) 70 Cal.App.4<sup>th</sup> 238, the court approved a baseline that reflected maximum permitted use (“daily truck trips”), because there was record of actual daily truck trips meeting and even *exceeding* what was allowed under the current permit. The court reasoned that use of actual traffic counts would be “misleading and illusory.” *Fairview Neighbors, supra*, at p. 243.

<sup>22</sup> *CBE, supra*, at p. 322, citing *Environmental Planning Information Council v. County of El Dorado* (1982) 131 Cal.App.3d 350, 358.

<sup>23</sup> The baseline actually used in the DEIR is unclear, since the DEIR alternatively claims that the baseline is both maximum permitted operations and annual average emissions, depending on the section. (DEIR 4.1-10-11). This comment addresses the DEIR’s assertion, made repeatedly on

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There is no evidence, however, that the Refinery has ever operated at maximum permitted emissions levels since the VIP was completed, and Benicia does not attempt to justify that the permitted capacity reflects existing physical conditions. Under well-established CEQA case law, this approach to baseline emissions is improper.

Further, the DEIR's discussion of the *CBE* decision mischaracterizes and misinterprets the California Supreme Court's holding. (DEIR C.1-2). The section to which Benicia cites merely allows a projected maximum baseline for projects that were *exempt from CEQA review entirely* either (1) as a modification of a previously analyzed project,<sup>24</sup> or (2) as the continued operation of an existing facility without significant expansion of use.<sup>25</sup>

Benicia has not, nor can it, claim that either of these two exemptions to CEQA apply here. To the contrary, the Project gives Valero the ability to process a crude feedstock with chemical properties never contemplated during previous project review that the Refinery, as currently constructed, cannot readily access. (DEIR 1-1). As in *CBE*, this qualifies as a new project subject to CEQA review for the first time. Similarly, Benicia cannot claim that the Project constitutes the continued operation of an existing facility without significant expansion. The 2003 VIP DEIR specifically excluded expansion of the refinery to use crude oil feedstocks delivered by rail from the impact analysis of the project.<sup>26</sup> Therefore, pursuant to the *CBE* holding, without any substantial evidence to support use of a baseline constituting maximum permitted emissions, the proper baseline from which to compare air quality emissions is the Refinery's existing conditions.

The DEIR fails to adequately analyze the potential air quality impacts from new crude feedstocks.

The DEIR fails to include supportable analysis that Refinery emissions will not increase upon Project completion. Although acknowledging that the North American crude feedstocks that could be delivered upon Project completion may be of higher gravity and sulfur content than the crudes currently processed, the DEIR nevertheless asserts that the Project will not result in air quality impacts, based on the assumption that – through blending – the average API gravity and sulfur levels of the crude slate that would be processed upon Project completion would remain within the same range as the crude slate previously processed at the Refinery. (DEIR 3-24, 4.1-

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DEIR 4.1-11 and in Attachments C.1 and C.2, that the proper baseline is maximum permitted operations and not existing conditions.

<sup>24</sup> CEQA Guidelines, Cal.Code Regs., tit. 14, § 15162.

<sup>25</sup> CEQA Guidelines, Cal.Code Regs., tit. 14, § 15301.

<sup>26</sup> See VIP DEIR 3-52 and 4.8-14. (“Transportation accidents related to railcar shipments of volatile hydrocarbon liquids can result in fires or explosions. However, the VIP will not increase the rail shipment of these materials.”)

17). This conclusory assertion is not supported by substantial evidence or any analysis. Even if the crude-by-rail processed by the Refinery is blended to the existing range of gravity and sulfur content, studies show that certain North American crudes often contain higher levels of other pollution-causing chemicals that would persist at higher levels despite blending to meet existing gravity and sulfur limits.<sup>27</sup> The DEIR does not assess this possibility and its effects, nor does it disclose the composition of the expected crude slate to allow proper public scrutiny. (DEIR 3-14).

The Project as defined in the DEIR impermissibly limits the geographic scope and ignores foreseeable, significant impacts that will occur beyond the Project's arbitrary boundaries.

By limiting the analysis to only the 69-mile rail section from the UPRR Roseville Terminal to Benicia and excluding the thousand-plus mile rail trip from the crude source to Roseville, the DEIR violates CEQA by not analyzing the Project's foreseeable impacts, including impacts along hundreds of miles of track within California. In evaluating the significance of a Project's environmental effects, the lead agency must consider not only direct physical changes, but also reasonably foreseeable indirect physical changes to the environment.<sup>28</sup> CEQA further defines "environment" as "the physical conditions that exist within the area that will be affected by the proposed Project."<sup>29</sup>

The DEIR largely ignores the Project's impacts up-rail from Roseville, claiming that analyzing the potential impacts along these routes would be "speculative," because future crude oil feedstocks could originate from multiple North American sources. (DEIR 4.7-1). However, it is a *certainty*, not speculation, that the Project will result in HHFTs traveling long distances with the potential to create significant environmental impacts before reaching the Roseville Terminal, and, pursuant to CEQA, an analysis of these potential impacts is necessary. While the particular routes may not yet be determined, there are a limited number of potential paths for trains to travel by rail to the Refinery, and the DEIR elsewhere makes similar projections for the purposes of studying air quality and GHG impacts, approximating that HHFTs will travel 195 miles from the California border to the Refinery. (DEIR 4.6-9). Instead of limiting the analysis of impacts along these routes to only air quality impacts, the DEIR should have used comparable estimates to analyze all of the Project's potential impacts. By arbitrarily setting the Project boundary at the UPRR Roseville Terminal, the DEIR fails to analyze reasonably

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<sup>27</sup> For example, tar sands bitumens contains 102 times more copper, 21 times more vanadium, 11 times more sulfur, six times more nitrogen, 11 times more nickel, and 5 times more lead than conventional heavy crude oil. These pollutants contribute to smog, soot, acid rain, and odors that affect residents nearby. R.F. Meyer, E.D. Attanasi, and P.A. Freeman, "Heavy Oil and Natural Bitumen Resources in Geological Basins of the World," U.S. Geological Survey Open-File Report 2007-1084 (2007) p. 14, Table 1 (*available at*: <http://pubs.usgs.gov/of/2007/1084/>).

<sup>28</sup> CEQA Guidelines, Cal. Code of Regs., tit. 14, § 15064, subd. (d).

<sup>29</sup> Pub. Resources Code, § 21060.5.

foreseeable impacts related to the transport of crude oil by HHFTs over those significant distances.

The DEIR fails to consider foreseeable cumulative impacts and risks

The DEIR impermissibly narrows the scope of potential cumulative impacts analyzed. Under CEQA, a DEIR first considers whether the combined effects from both the proposed project and other projects would be cumulatively significant. If the answer is affirmative, the DEIR must consider whether the proposed project's incremental effects are cumulative considerable.<sup>30</sup> Absent this analysis, piecemeal approval of multiple projects with related impacts could lead to severe environmental harm.<sup>31</sup>

Despite the "imminent hazard" that the transport of certain crudes present and the substantial proliferation of crude-by-rail projects throughout California, the DEIR relies on its flawed analysis, discussed above, to determine that no significant cumulative impacts exist to up-rail communities from an increased risk of crude-by-rail accidents. The DEIR further declares that:

[F]or the Project to make a cumulatively considerable contribution to the impact of hazards, two or more events (from the Project and another cumulative project) would have to occur at the same time and affect the same places. The likelihood of such a cumulative accident event would be even smaller than the estimated low probability of a Project-related accident and spill." (DEIR 5-17).

This limited analysis of only a so-called "cumulative impact event" involving the Project and "another cumulative project" ignores the entirety of the cumulative impacts caused by a large rise in the number of HHFTs traveling through both highly populated and environmentally sensitive areas and the corresponding increase in the risk of an accident. As the DEIR's own analysis demonstrates, the risk of a derailment and accident involving HHFTs escalates with a corresponding increase in the number of miles travelled and the number of train cars on the tracks. (DEIR App. F-3). Despite the substantial increase in both of these metrics, the DEIR dismisses any cumulative impact as irrelevant unless it also directly involves a derailment from one of the listed projects. But the potential cumulative impacts go far beyond these "cumulative impact events," to the combined higher safety risks from increases in other train cars (carrying crude oil or not) and increases in truck crossings. For example, the 2013 crude-by-rail derailment and fire in Casselton, ND, was caused when a train transporting grain derailed onto a second track into the path of an HHFT, which had too little time to stop before crashing into the grain train.<sup>32</sup> The possible impact of a similar accident is completely ignored in the DEIR's cumulative impacts analysis. Only by focusing exclusively on these "cumulative impact events"

<sup>30</sup> CEQA Guidelines, Cal. Code Regs., tit. 14, § 15130, subd. (a).

<sup>31</sup> *San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 720.

<sup>32</sup> 79 Fed.Reg. 45019 (August 1, 2014).

and not the larger cumulative increased risks to up-rail communities from a dramatic upsurge in HHFTs and other train traffic does the DEIR determine that the Project will have no significant cumulative impacts.

The cumulative impacts analysis is also deficient because it fails to consider the severity of the cumulative impacts, a necessary component of CEQA analysis.<sup>33</sup> Here, the extraordinary flammability and volatility of the crude oil feedstocks merits discussion given the serious, potentially catastrophic, impacts related to an HHFT accident. As a result, there is no basis for the DEIR's conclusion that the project will not cause any significant cumulative impacts.

An overly broad grant of trade secret protection prevents adequate public review of potential significant impacts.

The DEIR frustrates the purpose of CEQA by not disclosing information regarding the particular crude oil feedstocks expected to be delivered upon Project completion. Instead, the DEIR classifies *all* information regarding the characteristics of *past, present, and future* crude oil refined onsite as a "trade secret" exempt from disclosure under CEQA.<sup>34</sup> This missing information includes the weight, sulfur content, vapor pressure, and acidity of these crude oil feedstocks, information critical for an adequate analysis of the Project's impacts, particularly with regard to public safety and air quality.

This broad grant of trade secret protection directly conflicts with recent 2014 decisions by both the DOT and the California Governor's Office of Emergency Services (OES) that information about the specific characteristics of crude oil currently traveling by rail are not protected trade secrets and should be publicly released.<sup>35</sup> Indeed, OES has published disclosures of crude-by-rail shipments of Bakken crude oil by Burlington Northern Santa Fe Railroad (BNSF) associated with a different project.<sup>36</sup> This failure of transparency in the DEIR is particularly improper given that, under the same DOT Emergency Order that compelled BNSF's disclosure, Valero must submit to OES the withheld information regarding the properties of crude feedstocks imported by rail, and OES will then release it to the public. Benicia's

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<sup>33</sup> CEQA Guidelines, Cal. Code Regs., tit. 14, § 15130, subd. (b).

<sup>34</sup> See DEIR 1-5 and Appendix D: Discussion of Confidential Business Information. Trade secrets are exempt from disclosure pursuant to CEQA. (Pub. Resources Code, § 21160). California law defines a "trade secret" in the Government Code. (See Gov't Code, § 6254.7, subd. (d).)

<sup>35</sup> See OES website, "Public Records: Bakken Shipment Notices & Correspondence" (*available at*: [www.caloes.ca.gov/HazardousMaterials/Pages/Oil-By-Rail.aspx](http://www.caloes.ca.gov/HazardousMaterials/Pages/Oil-By-Rail.aspx)); see also Tate, "Norfolk Southern sues to block disclosure of crude oil shipments," Miami Herald (July 27, 2014).

<sup>36</sup> *Id.*

nondisclosure of this information deprives both the public and Benicia officials of the informed decision making process that is the “heart” of CEQA.<sup>37</sup>

The DEIR’s public disclosure of the crude oil as simply “Alaskan North Slope (ANS) look-alikes or sweeter” does not allow for an accurate public review of Benicia’s analysis regarding the significance of the Project’s impacts. (DEIR 3-24). The undisclosed properties of the Refinery’s projected crude feedstocks are necessary to assess the volatility and flammability of the particular types of crude-by-rail, crucial factors in any determination that no significant impact exists. As the DEIR itself explicitly recognizes, “the consequences of a release of crude oil for a rail tank car depend on the properties of the crude oil...” (DEIR 4.7-13). In other words, potential releases associated with transporting and storing crude will vary based on the crude’s chemical composition, including the contaminants it contains, its sulfur content, and whether it is blended with other chemicals. Nonetheless, and despite this acknowledgment, the DEIR includes no information regarding the characteristics of the crude oil that could be transported by rail upon Project approval, undermining CEQA’s purpose by precluding any ability by the public or government officials to assess the true nature of the Project’s risks and impacts.

Furthermore, the failure to disclose the characteristics of the crude oil to be processed at the Refinery infects the air quality analysis and subsequent determination that the crude-by-rail will cause no significant impacts to Refinery emissions. As only one example, the determination that any difference in crude feedstocks created by the Project will not cause a significant impact is based in part on a comparison of API gravity and sulfur content of “various specific crudes that Valero has purchased in the past three years.” (DEIR Figure 3-8, 3-13). The DEIR discloses no information regarding the frequency that these “various” crudes were processed at the Refinery or how and why these particular crudes were chosen as representative of Refinery emissions. Without explanation that these particular crude feedstocks are an appropriate proxy for the crude oil to be processed after Project completion, the determination of no significant impact is not supported by substantial evidence.

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<sup>37</sup> *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 392.

**Conclusion**

We urge the City of Benicia to revise the Project's DEIR to address the deficiencies explained in this letter so that the City Council and general public are provided a full and accurate accounting of the Project's environmental impacts.

We appreciate your consideration of these comments.

Sincerely,



SCOTT J. LICHTIG  
Deputy Attorney General

For KAMALA D. HARRIS  
Attorney General

cc: Paul King, California Public Utilities Commission  
Alice Reynolds, California Environmental Protection Agency  
Thomas Campbell, Governor's Office of Emergency Services



Promoting the wise use of land  
Helping build great communities

**COUNTY OF SAN LUIS OBISPO  
DEPARTMENT OF PLANNING AND BUILDING  
STAFF REPORT**

**PLANNING COMMISSION**

MEETING DATE	CONTACT/PHONE	APPLICANT	FILE NO.
February 4, 2016	Ryan Hostetter / Senior Planner (805) 788-2351 rhostetter@co.slo.ca.us	Phillips 66 Company	DRC2012-00095
SUBJECT			
<p>Hearing to consider a request by the Phillips 66 Company for a Development Plan/Coastal Development Permit to allow the modification of the existing rail spur currently on the southwest side of the Santa Maria Refinery in order to allow for the import/unloading of crude oil at the refinery via train. The rail spur project includes a 6,915-foot long rail spur, an unloading facility, onsite pipelines, replacement of coke rail loading tracks, the construction of five parallel tracks with the capacity to hold a 5,190-foot-long unit train consisting of 80 tank cars (60 feet each), two buffer cars (60 feet each), and three locomotives (90 feet each), and accessory improvements outlined in more detail below in the staff report as well as the Final Environmental Impact Report (FEIR). The site is in the South County Coastal Planning Area, in the Industrial Land Use Category, and is located at 2555 Willow Road, approximately 3 miles west of the Nipomo Urban Reserve Line and approximately 3,300 feet from the nearest residence. Also being considered is the Final EIR.</p>			
RECOMMENDED ACTION			
<p>Staff recommends the Planning Commission take the following action:</p> <ol style="list-style-type: none"> <li>1. Deny the application for the Development Plan/Coastal Development Permit; and</li> <li>2. Adopt the Findings included in Exhibit C.</li> </ol>			
ENVIRONMENTAL DETERMINATION			
<p>The Environmental Coordinator, after completion of the initial study, found that there was evidence that the project may have a significant effect on the environment, and therefore a Final Environmental Impact Report (FEIR) was prepared (pursuant to Public Resources Code Section 21000 et seq., and CA Code of Regulations Section 15000 et seq.) for this project. The FEIR considers the following issues: Aesthetics and Visual Resources, Agricultural Resources, Air Quality and Greenhouse Gases, Biological Resources, Cultural and Historical Resources, Geological Resources, Hazards and Hazardous Materials, Land Use and Recreation, Noise and Vibration, Population and Housing, Public Services and Utilities, Transportation and Circulation and Water Resources. The FEIR also considers alternatives in addition to the "No Project" alternative. Notice of the FEIR was provided to the public and copies were made available for public review. The FEIR was also distributed to the Planning Commission under separate cover. While a FEIR has been prepared, per the Public Resources Code 21080(b)(5) and CEQA Guidelines, CEQA does not apply to projects which a public agency rejects or disapproves. However, the FEIR has provided evidence and information to support this recommendation for denial, including an evaluation of the significant and unavoidable environmental impacts of the proposed project.</p>			
LAND USE CATEGORY	COMBINING DESIGNATION	ASSESSOR PARCEL NUMBER	SUPERVISOR DISTRICT(S)
Industrial	Coastal Appealable Zone, Flood Hazard Area, Local Coastal Plan Area	092-401-011, 092-401-013, 092-401-005, & 092-411-005	4
PLANNING AREA STANDARDS:			
South County Coastal Area Plan, Industrial Development			
EXISTING USES:			
Phillips 66 Company – Santa Maria Refinery			

<p>SURROUNDING LAND USE CATEGORIES AND USES:</p> <p><i>North:</i> Industrial and Agriculture/ mixture of industrial, large lot residential and open space</p> <p><i>East:</i> Agriculture, Industrial and Recreation / agriculture, open space and residential</p> <p><i>South:</i> Agriculture / agricultural uses</p> <p><i>West:</i> Open Space / open space, dunes, Oceano Dunes State Vehicle Recreational Area and Pacific Ocean</p>	
<p>OTHER AGENCY / ADVISORY GROUP &amp; PUBLIC INVOLVEMENT:</p> <p>The project was referred to: County Public Works, County Environmental Health, County Agricultural Commissioner, Air Pollution Control District, County General Services, County Building Division, Cal Fire, Cambria Community Services District, Los Osos Community Services District, Avila Community Services District, Cayucos Fire, Cayucos Sanitary, Paso Robles Beach Water Association, Oceano Community Services District, San Miguelito Water Association, San Simeon Community Services District, Coast Union Joint School District, San Luis Coastal School District, Cal Trans, Regional Water Quality Control Board, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, California Coastal Commission, California Department of Parks and Recreation, Cayucos Citizens Advisory Council, North Coast Advisory Council, Los Osos Community Advisory Council, South County Advisory Council and the Avila Valley Advisory Council, Pacific Gas and Electric, Santa Barbara County, City of San Luis Obispo, City of Santa Maria, Division of Oil and Gas, City of Grover Beach, and the City of Guadalupe.</p> <p>In addition, this project has received a vast amount of public input in the form of emails and letters in addition to those published in the Final EIR. This additional correspondence is posted on the Planning Department Website for review by the Public and Planning Commission as a part of the record for the project. The letters can be found here:</p> <p><a href="http://www.slocounty.ca.gov/planning/environmental/EnvironmentalNotices/Phillips_66_Company_Rail_Spur_Extension_Project/Project_Comment_Letters__Post_EIR_Comment_Period_.htm">http://www.slocounty.ca.gov/planning/environmental/EnvironmentalNotices/Phillips_66_Company_Rail_Spur_Extension_Project/Project_Comment_Letters__Post_EIR_Comment_Period_.htm</a></p>	
<p>TOPOGRAPHY:</p> <p>Nearly level to steeply sloping dunes.</p>	<p>VEGETATION:</p> <p>Dune vegetation and grasses.</p>
<p>PROPOSED SERVICES:</p> <p><i>Water supply:</i> Onsite well</p> <p><i>Sewage Disposal:</i> Individual septic system</p> <p><i>Fire Protection:</i> CAL FIRE</p>	<p>ACCEPTANCE DATE:</p> <p>July 12, 2013</p>

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## **I. STAFF RECOMMENDATION**

Staff recommends the Planning Commission take the following actions:

1. Deny the application for Development Plan and Coastal Development Permit DRC2012-00095; and
2. Adopt the Findings included in Exhibit C.

The detailed basis for this recommendation can be found in Section V below under “Project Analysis.”

## **II. SUMMARY**

### **A. Project Description:**

The project (“Project”) includes modification of the existing rail spur by constructing five parallel tracks and an unloading rack area. The Project would involve unloading of up to five unit trains per week, or a combined total of five unit and manifest trains (manifest trains contain a mixture of goods within separate railcars and are also known as a mixed freight train), with an annual maximum number of trains of 250. Trains would arrive from different North American oilfields and/or crude oil loading points depending on market availability. In a unit train configuration, each train would consist of three locomotives, two buffer cars, and 80 railcars carrying approximately 27,300 gallons each, for a total of approximately 2,190,000 gallons (52,000 bbls) of crude oil. The Project would not affect the amount of material processed at the refinery. Throughput levels at the refinery are capped by previous permits issued by the County and by the San Luis Obispo County Air Pollution Control District. In addition, no crude oil or refined product would be transported out of the refinery by rail. The refined product would be shipped to the Rodeo Refinery in Contra Costa County via pipeline which is the refinery’s current operation.

### **B. Community Concerns Regarding Health, Safety and Other Issues:**

Extensive community input has been submitted to the County with regards to the Project. Out of the approximately 24,500 comment letters received on the project (including comments on the Draft Environmental Impact Report, Recirculated Draft Environmental Impact Report and throughout the process) approximately 150 of these have been in support of the Project. A majority of the letters submitted with comments and opinions on the project have been submitted from persons outside of San Luis Obispo County. For the remainder of the letters and comments submitted by residents of San Luis Obispo County, a similar ratio of opposition versus support of the project was the case.

The general consensus among the comments received is that Project benefits do not outweigh the potential hazards it will bring to the public. These hazards mainly stem from rail accidents, oil spills, health hazards, and explosions/fires within communities along rail lines as a result of an increase of crude transport via rail. These hazards are also exacerbated because the County is not legally able, due to federal preemption, to require certain conditions of approval for Union Pacific along the main rail lines (e.g., require particular emergency response preparations, use of particular routes to avoid sensitive areas, or modifications to Union Pacific Railroad [UPRR] tracks or operations), therefore the County’s approval of the project would allow an increase in risk to the populations within the County along the mainline (as well as outside the County and throughout the state) without the ability to enforce any measures to mitigate off-site impacts to populations along the rail lines.

### **C. Recommendation for Denial:**

Significant local, regional, and statewide concern has been expressed throughout the various phases of the Project including land use incompatibilities, toxic air emissions adjacent to the project site and adjacent to the UPRR mainline; risk of derailment, spill, and explosion in areas adjacent to the mainline; threat of impact to agricultural, biological, cultural, and water resources due to spill, fire, and explosion along the mainline; and, inadequate fire and emergency response services along UPRR mainline throughout the state in the event of a spill, fire or explosion. The Final Environmental Impact Report (FEIR) concluded that the Project, for components only on the project site, would result in two significant and unavoidable impacts (Class I impacts) stemming from diesel particulate matter emissions and toxic air emissions generated by increased locomotive activity at the Santa Maria Refinery site.

The FEIR also concluded that ten Class I impacts would result along the UPRR mainline, beyond the project site, including impacts to agricultural resources, air quality, biological resources, cultural resources, hazards, public services, and water resources.

The Planning and Building Department recommends denial of the Project because the project would be inconsistent with goals and policies outlined in the County's Local Coastal Program, Coastal Zone Land Use Ordinance (CZLUO), Coastal Plan Policies, and other sections of the County's General Plan. In addition, the Project would include 11 "Class I" environmental impacts, (two of which are on the project site) and there are insufficient economic, social, technological, or other benefits of the Project to override its significant unavoidable environmental impacts.

1. The Department of Planning and Building has found the Project to be inconsistent with several goals and policies of the following plans:
  - a. Coastal Zone Framework for Planning
  - b. County's Conservation and Open Space Element
  - c. Coastal Plan Policies
  - d. Safety Element
  - e. Coastal Zone Land Use Ordinance
  - f. South County Area Plan
2. The Project would be detrimental to the health, safety and welfare of the public and the residents of San Luis Obispo County due to the increase of hazardous accidents as a result of the Project.
3. The Project includes a significant and unavoidable environmental impact with regards to cancer risk (air quality) for the population near the proposed rail spur.
4. The Project includes a significant and unavoidable environmental impact with regards to diesel particulate matter (air quality) due to an exceedance of the SLOCAPCD CEQA threshold.
5. The Project would result in 10 significant and unavoidable environmental impacts (agricultural resources, four which are air quality, biological, cultural, hazards, public services, and water resources), with regards to the mainline rail operations within the County as a result of the Project.

6. The Project would result in 10 significant and unavoidable environmental impacts (agricultural resources, four which are air quality, biological, cultural, hazards, public services, and water resources), with regards to the mainline rail operations beyond San Luis Obispo County and throughout the State.
7. There is a lack of specific overriding economic, legal, social, technological, or other benefits of the Project that outweigh the significant effects on the environment, as would be required to approve the Project pursuant to Public Resources Code section 21081.

*End of Summary*

### **III. PROJECT DESCRIPTION**

#### **A. Project Description**

Phillips 66 proposes to extend an existing rail spur which is currently used for shipment of coke (an oil refinement by-product) from the southwest side of the refinery extending east to add an unloading facility for crude oil trains, onsite pipelines, and replacement coke rail loading tracks (refer to Exhibit E). This project would allow up to five trains per week or 250 trains annually in order to deliver heavy crude for refinement at the Santa Maria Refinery. Additionally, an existing agricultural road would be improved as an unpaved eastern Emergency Vehicle Access route between the eastern end of the rail spur and State Route 1 (refer to Exhibit E-1). The tracks and unloading facilities would be designed to accommodate trains of approximately 80 tank cars and associated locomotives and buffer cars in unit trains or manifest train configurations. These trains would deliver crude oil to the facility for refining. The unloaded material would be transferred to the existing crude oil storage tanks via a new pipeline that would be constructed across the existing coke storage area and along an existing internal refinery road. The project construction would occur entirely within the existing Phillips 66 Santa Maria Refinery (SMR) boundary.

The project would also include work within the existing refinery connecting and upgrading existing infrastructure. This includes adding a new electricity cable to an existing pipeway and adding a new fire water pipeline to an existing pipe rack. The rails on the existing rail spur would also be replaced.

The new rail spur lines would extend from the terminus of the current spur. The unloading facility would be located at the end of the existing coke storage area and along an existing internal refinery road.

The construction areas are summarized below:

- 6,915 feet – Length of spur extension (including approximately 2,445 feet within the existing industrial coke plant area);
- 270 feet – Maximum width of construction area for rail extension;
- 2,325 feet – Length of the new pipeline route from the unloading facility to the internal refinery (an additional 2,800 feet would be constructed within the existing refinery connecting to the existing storage tanks and existing steam boilers); and
- 2,400 feet - Length of new steam pipelines from the unloading facility east between Tracks 1 and 2.

The maximum width of the temporary construction area for pipeline installation would be 25 feet. Acreage breakdowns (temporary + permanent) are summarized below:

- 41.6 acres – Rail Spur and Unloading Facility (25.3 acres permanent + 16.3 temporary),
- 3.8 acres – New Pipeline (1.8 acres permanent + 2 acres temporary), and
- 1.6 acres – Secondary Emergency Vehicle Access (1.6 acres permanent).

Collectively, the entire project, including temporary and permanent impacts, would affect approximately 47 acres. Of this area, 19.5 acres would occur within the existing refinery and coke area, and 27.5 acres would occur in undeveloped areas outside the refinery and coke facilities. A more detailed description of the Project can be found in section 2.0 of the Final EIR.

## B. Project Location

The Project is located approximately 3 miles west of the community of Nipomo on the west side of State Route 1, immediately east of the Oceano Dunes State Vehicle Recreation Area (ODSVRA). The project site is located at 2555 Willow Road, Arroyo Grande (SR 1) (APN 091-141-062, 092-391-021, 034, 092-401-005, 011, 013, 092-411-002, 005). The project site is located within the Industrial Land Use Category.

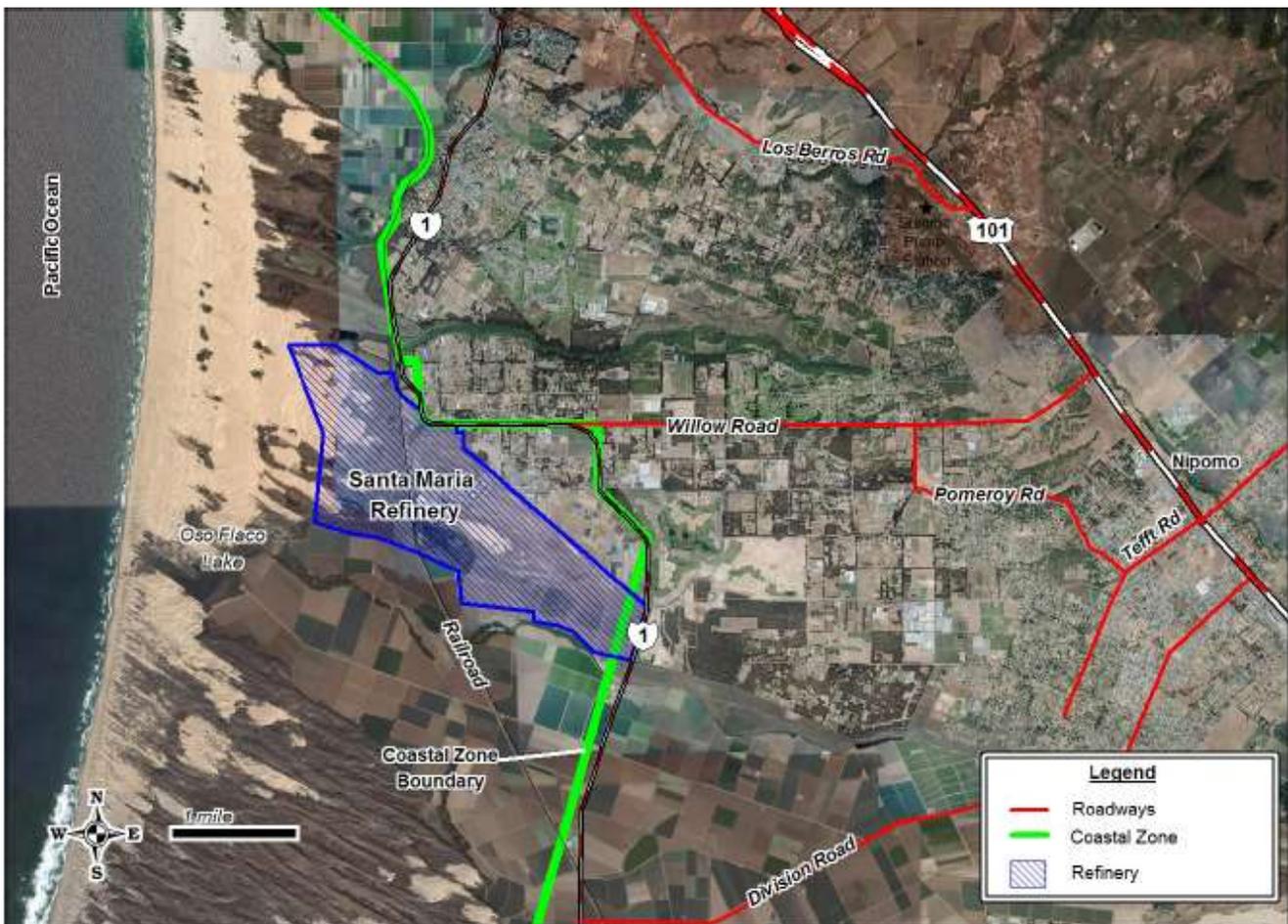


Figure 1 – Project Location Map

#### **IV. APPLICATION HISTORY**

An application for a Development Plan/Coastal Development Permit for the rail spur and crude oil delivery project (Project) was submitted to the Department of Planning and Building on April 30, 2013. The Project was accepted for processing in July of 2013. Upon preparation of the Initial Study, the County Planning Department determined that the Project would have the potential to result in significant and unavoidable impacts to the environment therefore an Environmental Impact Report (EIR) was required.

In July 2013, the County entered into a contract with Marine Research Specialists to prepare the EIR. A scoping meeting was held on July 29, 2013 to obtain public comments on the scope of the Draft EIR (DEIR). The DEIR was released for a 60-day public comment period in November 2013 and the public comment period closed on January 27, 2014. The Department held a public workshop during the public comment period (on December 12, 2013) and upon completion of the comment period received 201 comment letters, e-mails and comment cards (795 comments) on the DEIR.

Comments submitted on the DEIR included compelling arguments that, for purposes of full disclosure under CEQA, County decision makers need to be made aware of impacts of the Project beyond the project site along the mainline UPRR route, beyond the County of San Luis Obispo, and to the border of California. After lengthy discussions between the Applicant and the County, it was agreed in March 2014 that recirculation of the DEIR with an expanded geographic scope would make for a more legally defensible document.

Shortly before the release of the Recirculated Draft EIR (RDEIR), the County became aware of a comment letter dated October 2, 2014 from Attorney General Kamala D. Harris to the City of Benicia Community Development Department, on the proposed Valero Crude by Rail Project Draft EIR. This letter stated that impacts from the Valero crude by rail project listed in the City of Benicia's Draft EIR "Ignores reasonably foreseeable Project impacts by impermissibly limiting the scope of the affected environment analyzed to only the 69 mile stretch from Benicia to Roseville", reaffirming the County's decision to include evaluation of the mainline UPRR routes to the California border in the Project RDEIR.

Due to the extensive revisions to the original DEIR, a RDEIR was prepared and released for public review and specific written responses to DEIR comments were not prepared. The RDEIR was released for a 45-day public review comment period in October 2014 and the second public comment period closed on November 24, 2014. The Department held a public workshop during the public comment period (on November 5, 2014) and upon completion of the public comment period received 603 comment letters, e-mails and comment cards (2,206 comments). In addition, approximately 23,450 form letters were received during the RDEIR public review comment period. The Department reviewed all comments on the RDEIR and has provided responses to these comments which are contained in the Final EIR (FEIR) dated December 2015.

Based on Staff's review of the Project, including the information contained in the FEIR, Staff recommends that the Commission find that the Project is not consistent with the County General Plan. Applicable Development Plan findings cannot be made in support of the Project, and at the time of preparation of this Staff Report there are insufficient economic, social, technological, or other benefits of the Project to override its significant unavoidable environmental impacts.

## V. PROJECT ANALYSIS

### A. General Plan Consistency

Under State law, the County's decision makers must consider the Project's consistency with the County General Plan as a part of the decision making process. Staff recommends that the Project, as proposed, is inconsistent with the South County Coastal Area Plan, Coastal Plan Policies, Coastal Zone Framework for Planning, the Conservation and Open Space Element of the County General Plan, and the Environmentally Sensitive Habitat Area (ESHA) requirements of the CZLUO: all of which are part of the County's General Plan. The discussion below identifies these inconsistencies, environmental impacts, and the circumstances for which Staff is recommending denial of the Project. It is important to note that Staff's recommendation for denial of the Project does not preclude or set precedence for future projects or activities on the refinery property. This project was evaluated independently based on the currently proposed project characteristics. Future projects in this area will be evaluated based on proposed project characteristics at that time.

There are numerous policies that apply to the Project. While the Project is consistent with some of the County Policies and Ordinance requirements, there are many key policies and ordinance requirements with which this project is not in compliance. The policies and ordinance requirements with which the Project is not in compliance, and which staff is basing their recommendation, are summarized in the table below. A more detailed policy discussion is provided in Exhibits A and B for onsite and the mainline rail respectively.

The Project has been broken up into "onsite" versus "mainline" issues as they relate to the project discussion and evaluation here in the staff report. This has been done since different issues relate to the construction and operation of the rail spur on the Santa Maria Refinery property compared to the impacts related transportation of crude oil along the mainline rail routes.

<b>Policy Compliance Summary</b>	
<b>Policy, Goal, or Requirement Section</b>	<b>Compliance</b>
CZLUO Section 23.07.170, Environmentally Sensitive Habitats (ESHA)	Project not in compliance – Onsite
Coastal Plan Policies: Environmentally Sensitive Habitats, Sensitive Habitats, Policy 1, Land Uses Within or Adjacent to Environmentally Sensitive Habitats	Project not in compliance – Onsite
Coastal Plan Policies: Environmentally Sensitive Habitats, Sensitive Habitats, Policy 29, Protection of Terrestrial Habitats	Project not in compliance – Onsite & Mainline
Coastal Plan Policies: Environmentally Sensitive Habitat Area Policy 36, Protection of Dune Vegetation	Project not in compliance - Onsite
Framework for Planning: Land Use Goal 4, Land Use Compatibility	Project not in compliance – Onsite
Framework for Planning: Strategic Growth Goal 1 Objective 2 Air Quality	Project not in compliance – Onsite & Mainline
Framework for Planning: Sensitive Resource Area General Objective 1	Project not in compliance – Onsite
Conservation and Open Space Element: Air Quality Policy AQ 3.2 Attain Air Quality Standards	Project not in compliance – Onsite & Mainline
Conservation and Open Space Element: Air Quality Policy AQ 3.3 Avoid Air Pollution Increase	Project not in compliance – Onsite & Mainline

<b>Policy Compliance Summary</b>	
<b>Policy, Goal, or Requirement Section</b>	<b>Compliance</b>
Conservation and Open Space Element: Air Quality Policy AQ 3.4 Toxic Exposure	Project not in compliance – Onsite & Mainline
Conservation and Open Space Element: Air Quality Policy AQ 3.5 Equitable Decision Making	Project not in compliance – Onsite
Conservation and Open Space Element: Biological Resources Policy 1.2 Limit Development Impacts	Project not in compliance – Onsite
Conservation and Open Space Element: Non Renewable Energy Facility Siting Policy E 7.1	Project not in compliance – Onsite
South County Coastal Area Plan: Land Use Rural Area Industrial	Project not in compliance – Onsite
South County Coastal Area Plan: Industrial Air Pollution Standards	Project not in compliance – Onsite
Framework for Planning: Strategic Growth Goal 1 Preserve Resources	Project not in compliance – Mainline
Framework for Planning: Strategic Growth Goal 1 Objective 4 Agriculture	Project not in compliance – Mainline
Framework for Planning: Land Use Goal 2 Preserve Agriculture	Project not in compliance – Mainline
Coastal Plan Policies: Chapter 6 Environmentally Sensitive Habitats, Coastal Streams Policy 20	Project not in compliance – Mainline
Coastal Plan Policies: Chapter 7 Agriculture Policy 1	Project not in compliance – Mainline
Coastal Plan Policies: Chapter 12, Archaeology Policy 1, Protection of Archaeological Resources	Project not in compliance – Mainline
Conservation and Open Space Element: Air Quality Goal AQ 3, Implementation Strategy AQ 3.6.1, Identify Health Risks to Sensitive Receptors	Project not in compliance – Mainline
Conservation and Open Space Element: Biological Resources Policy BR 1.15 Restrict Disturbance in Sensitive Habitats, Nesting Birds	Project not in compliance – Mainline
Conservation and Open Space Element: Chapter 5 Energy Goal E7 Design Siting and Operation of Non Renewable Energy	Project not in compliance – Mainline
Conservation and Open Space Element: Chapter 4, Fire Safety Goal S-4, Reduce the threat to life, structures and the environment	Project not in compliance – Mainline
Conservation and Open Space Element: Chapter 4, Fire Safety Goal S-14, Reduce the threat to life structures and the environment	Project not in compliance – Mainline
Conservation and Open Space Element: Chapter 6, Other Safety Issues Goal S-6, Reduce the Potential for harm to individuals and damage to environment from hazards	Project not in compliance – Mainline

## VI. DEVELOPMENT PLAN FINDINGS

In order to approve a Development Plan, the CZLUO (Title 23.02.034(C) (4)) requires that the following findings must be made. Each finding must be supported by substantial evidence in the record. Based on staff's review of the Project, the staff report concludes that these findings cannot be made.

**Required findings.** The Review Authority shall not approve or conditionally approve a Development Plan unless it first finds that:

- a. *The proposed project or use is consistent with the Local Coastal Program and the Land Use Element of the General Plan; and*
- b. *The proposed project or use satisfies all applicable provisions of this Title; and*
- c. *The establishment and subsequent operation or conduct of the use will not, because of the circumstances and conditions applied in the particular case, be detrimental to the health, safety or welfare of the general public or persons residing or working in the neighborhood of the use, or be detrimental or injurious to property or improvements in the vicinity of the use; and*
- d. *That the proposed project or use will not be inconsistent with the character of the immediate neighborhood or contrary to its orderly development; and*
- e. *That the proposed use or project will not generate a volume of traffic beyond the safe capacity of all roads providing access to the project, either existing or to be improved with the project.*
- f. *The proposed use or land division (if located between the first public road and the sea or the shoreline of any body of water), is in conformity with the public access and recreation policies of Chapter 3 of the California Coastal Act.*
- g. *Any additional findings required by planning area standards (Part II of the Land Use Element), combining designation (Chapter 23.07), or special use (Chapter 23.08).*

Exhibit C includes a complete discussion of the findings based upon facts that have been presented at the time of staff report publication. The Development Plan findings overlap to a certain extent with the issue of General Plan consistency and impact issue areas addressed in the Final EIR, and thus some issues may be discussed several times under different headings. In addition, many of these include issues related to the construction and operation of the spur and unloading facilities within the Santa Maria Refinery property (i.e., onsite) as well as inconsistencies related to the transportation of crude oil via rail along the mainline rail routes. These issues are discussed separately as either onsite or mainline impacts and are additionally reflected as such in the Final Environmental Impact Report (FEIR) and General Plan analysis.

In summary, the required findings for issuance of the Development Plan and Coastal Development Permit cannot be met. The Project does not comply with the County's Local Coastal Program and Land Use Element of the General Plan. As shown under the Project Analysis Section V of this Staff Report and Exhibits A and B, the Project does not comply with numerous General Plan policies, programs, and ordinance requirements as they relate to environmentally sensitive habitats, air quality,

safety, hazards, energy development, water resources, riparian areas, cultural resources, and agricultural resources.

The Project would adversely impact the health, safety, and welfare of the public as a result of significant and unavoidable impacts related to air quality, cancer risk, accidental release, fire and potential explosions as a result of the construction and operation of the Project. Public concerns have been expressed regarding the safety of the unloading process on the project site, as well as along the rail lines through the County and through the State. Some of the concern related to mainline rail also has to do with the County likely being preempted from mitigating or conditioning impacts to areas beyond the project site (refer to Section VII below for further discussion on preemption).

## VII. FEDERAL PREEMPTION

The federal government has historically, and heavily, regulated rail transportation in the U.S., beginning with the Interstate Commerce Act of 1887. In 1995, Congress enacted the Interstate Commerce Commission Termination Act (ICCTA), which replaced the Interstate Commerce Commission with the Surface Transportation Board. The ICCTA also included a broad statement of preemption of state and local regulation of rail transportation. In essence, this means that the federal government through the Surface Transportation Board has full authority over all rail transportation and therefore the County is unable to require local regulation within these areas:

As outlined in the ICCTA the jurisdiction of the [Surface Transportation] Board includes:

- (1) transportation by rail carriers, and the remedies provided in this part with respect to rates, classifications, rules (including car service, interchange, and other operating rules), practices, routes, services and facilities of such carriers; and
- (2) the construction, acquisition, operation, abandonment, or discontinuance of spur, industrial, team, switching, or side tracks, or facilities, even if the tracks are located, or intended to be located, entirely in one State, is exclusive. Except as otherwise provided in this part, the remedies provided under this part with respect to regulation of rail transportation are exclusive and preempt the remedies provided under Federal or State law.

This law preempts state and local regulation “that may reasonably be said to have the effect of managing or governing rail transportation, while permitting the continued application of laws of general application having a more remote or incidental effect on rail transportation.” (*People v. Burlington Northern Santa Fe Railroad* (2012) 209 Cal.App.4th 1513, 1528.). A project falling under the Surface Transportation Board’s jurisdiction is not subject to CEQA or to local regulation, except for ministerial permits and generally applicable codes protecting the public health and safety such as electrical, plumbing, and fire codes.

The Applicant has asserted that the ICCTA preempts the County from subjecting the rail component of the proposed project to CEQA review and from mitigating any of the potential impacts identified from project-related mainline activities. UPRR has generally concurred, pointing to cases where courts have found that local conditions imposed on permits unreasonably burdened rail carriage and were therefore preempted. (See Exhibit J for correspondence from the Applicant and UPRR regarding federal preemption.)

Opponents of this and other recently proposed rail projects state the regulatory authority granted by the ICCTA is not limitless, does not preempt CEQA, that CEQA is an information statute which does not interfere with interstate commerce, and that CEQA requires that all significant impacts of a project be mitigated if reasonably feasible.

In the case of this Project, it is clear that for activities performed within the Santa Maria Refinery (SMR) site the County is not preempted by federal law since these activities would not occur on UPRR property and would not involve infrastructure or trains operated by UPRR. However, federal law would likely limit the ability of the County to regulate the type and design of locomotives since they are owned and operated by UPRR to transport goods throughout the nation and because regulation of the types of locomotives that could be used for this project would likely interfere with interstate commerce. The impacts of the activities that occur on the Project Site are described and evaluated in the FEIR, and the County as CEQA Lead Agency has the authority to impose mitigation measures or conditions of approval to reduce potential impacts within the boundaries of the SMR.

As lead agency, the County determined that it would analyze potential project-related impacts that may occur along UPRR's mainline in order to meet the information disclosure requirements of CEQA. While the FEIR describes these potential impacts of project-related train movements along the UPRR mainline throughout the state, the County Department of Planning and Building, based on input from legal counsel, understands the County as CEQA Lead Agency may be preempted from imposing mitigation measures disclosed in the FEIR on UPRR equipment and train movements statewide on the mainline. This information was included in the FEIR to ensure full disclosure of impacts and mitigations.

## **VIII. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)**

### **A. Geographic Scope of Analysis**

The FEIR evaluates the environmental issues associated with the Project, both on the project site and beyond the boundaries of the project site onto the UPRR mainline throughout California and beyond. The operation of trains to and from the Santa Maria Refinery (SMR) would be performed by UPRR, on UPRR property, and on trains operated by UPRR employees.

Trains could enter California at five different locations. Depending upon the route taken by the train they could arrive at the project site from the north or the south. It is unknown what route UPRR would use to deliver the trains to the SMR. Coming from the north the routes merge at the UPRR Roseville Rail Yard. From the south the routes merge at the Colton Rail Yard. Given that the route the trains would travel to get to these two UPRR yards is speculative, the FEIR has evaluated in more detail the impacts of trains traveling from these two UPRR yards to the SMR.

Beyond the two UPRR Yards, trains could travel any number of routes. Crude oil delivered to California by UPRR would generally pass through either of these two rail yards in route to the SMR. Depending upon the source of the crude oil, crude oil trains could use any portion of the UPRR network between Roseville/Colton and the source location for the crude oil. The exact route that would be taken would depend upon a number of factors, that could include the source of the crude oil, weather conditions, train traffic conditions, etc. Since the routes past Roseville and Colton are somewhat speculative, the FEIR has discussed in a more qualitative nature the potential impacts of train traffic beyond these two rail yards.

Once the train arrives at the SMR, it would be operated by Phillips 66 personnel on property owned by Phillips 66. Therefore, activities performed within the SMR would not be preempted by federal law since they would not occur on UPRR property and would not be operated by UPRR employees. For the impacts of the activities that occur within the SMR, the County as CEQA Lead Agency, and other state and local responsible agencies have clear authority to impose mitigation measures. The following are discussions of the significant and unavoidable impacts associated with the Project at the SMR (refer to Section VII.B below) and on the mainline (refer to Section VII.C below).

## B. Project Site – CEQA Discussion

The FEIR identifies several project site-specific impacts (versus railroad mainline impacts) that would result from implementation of the project (i.e., impacts that would result solely based on activities on the project site). Of these impacts, most can be reduced to a level of insignificance through the County's ability to require implementation of various mitigation measures (i.e., resulting in Class II impacts). Issue areas where impacts can be reduced to insignificant include aesthetics/visual resources, water resources, biological, cultural, geological, noise, public services, traffic, and air quality impacts.

However, there would remain two project site-specific significant and unavoidable adverse air quality impacts (i.e., Class I impact) for operational activities at the SMR.

- 1. Air Quality (AQ.2):** The Project would exceed the diesel particulate matter (DPM) emission threshold of 1.25 pounds per day at the Santa Maria Refinery. The onsite DPM emissions for the project would be about 8.15 lbs per day. The use of Tier 4 locomotives and reduced idling time for locomotives onsite as mitigation would reduce the DPM emissions to 0.72 lbs per day. However, since UPRR (and not the Project Applicant) would own the locomotives, and the locomotives are used for interstate commerce, the mitigation measure to use Tier 4 locomotives would likely be preempted by Federal law, and therefore may not be a feasible mitigation measure. Without the use of Tier 4 engines the DPM emissions would be 7.45 lbs per day (this includes the reduction in idling at the site). DPM is an air toxic and would contribute to the local PM<sub>10</sub> emissions, which already exceed the State PM<sub>10</sub> air quality standard. Therefore, even with all of the proposed mitigation the County could feasibly implement, the impact would remain significant and unavoidable (Class I).
- 2. Air Quality (AQ.4):** The Project would generate toxic air emissions in the vicinity of the Santa Maria Refinery that exceed San Luis Obispo County Air Pollution Control District (SLOCAPCD) health risk thresholds when factoring in the 2012 California Office of Environmental Health Hazard Assessment (OEHHA) childhood exposure and breathing rate adjustments (refer to FEIR, Section 4.3.4.2, Impact AQ.4). The SLOCAPCD cancer risk CEQA threshold is 10 in a million for toxic emissions.

In assessing health risk impacts, the state-approved Hotspots Analysis and Reporting Program (HARP) model was used for the FEIR. In late April of 2015 OEHHA issued the final Guidance Manual for Preparation of Health Risk Assessments, as well as an updated health risk assessment model (HARP2). Given that this is the most recent up to date HRA model approved by the State, San Luis Obispo County Planning decided that all of the HRA analysis in the FEIR should be updated to reflect the final HRA guidance and HRA model from OEHHA. The California Air Pollution Control Officers Association (CAPCOA) guidelines for Health Risk Assessments (which are the guidelines the SLOCAPCD uses) requires that the health risk assessment for a facility include all existing fixed and mobile sources plus the proposed Project.

HARP2 modeling for the Project, when taking into consideration the existing SMR, all existing trucking operations, and the proposed project, results in a maximum exposed individual resident (MEIR) cancer risk of 26.5 in a million. This includes emission sources at the project site as well as the mainline emissions near the SMR. Both of these sources affect the same receptors near the SMR. The SLOCAPCD cancer risk threshold is 10 in a million for toxic emissions. Note that the APCD considers all sources (both the project site sources and the mainline sources) in comparison to the thresholds when determining significance (see section C.4 below). The maximum exposed individual location is the residential area north of the SMR.

The use of Tier 4 locomotives and reduced idling time for locomotives onsite as mitigation would reduce the MEIR to 6.0 in a million at the same receptor. However, since UPRR (and not the Project Applicant) would own the locomotives, and the locomotives are used for interstate commerce, the mitigation measure requiring the use Tier 4 locomotives would likely be preempted by Federal law, and therefore may not be a feasible mitigation measure. Without the use of Tier 4 engines but with implementation of other mitigation measures, the MEIR would be 13.6 in a million at the same receptor (this includes the reduction in idling at the site, use of cleaner truck engines, and daytime unloading only). Therefore, even with all of the proposed mitigation measures the County could implement, the impact would remain significant and unavoidable (Class I).

### C. Union Pacific Rail Road (UPRR) Mainline – CEQA discussion

The FEIR identifies ten impacts from operation on the mainline that are considered significant unavoidable (i.e., Class I impacts). The following is summary of the ten Class I impacts.

1. **Agricultural Resources (AR.5):** The Project would result in effects that impair adjacent agricultural resources and uses along the UPRR mainline in the event of a derailment and/or spill, including the generation of contaminated air emissions, soil and surface water contamination, and increased risk of fire, which have the potential to adversely affect adjacent agricultural areas. Implementation of mitigation measures have been recommended (i.e., measures that would reduce the likelihood of an oil spill and increase the ability of first response agencies to respond to a crude oil spill along the mainline); however, even with full implementation of these measures impacts to agricultural resources would be significant. In addition, Federal preemption would likely prevent local agency (County) regulation of rail lines and implementation of appropriate mitigation measures to protect and reduce impacts to agricultural resources along the mainline may not be feasible or enforceable. Therefore, oil spill impacts to agricultural resources along the UPRR mainline tracks would be significant and unavoidable (Class I).
2. **Air Quality (AQ.2):** Operational activities associated with the Project within San Luis Obispo County (SLOC) along the UPRR mainline would generate nitrogen oxide (NO<sub>x</sub>), reactive organic gases (ROG), and diesel particulate matter (DPM) emissions that exceed SLOCAPCD thresholds. For the mainline rail emissions it is possible that contractually the Applicant could require the use of lower emission locomotives such as Tier 4 locomotives. However, since these are operated by UPRR on UPRR tracks, a requirement that the Applicant enter into this type of contractual provision is likely preempted by Federal law and therefore unenforceable. The County may also be preempted by Federal law from requiring emission reduction credits for mainline rail emissions. Due to the possible preemption by Federal law which could prevent the mitigation measures from being implemented (outside of the SMR facility boundary), emission reduction credits might not be achievable and impacts would remain significant and unavoidable (Class I).
3. **Air Quality (AQ.3):** Operational activities of trains along the mainline rail route outside of SLOC associated with the Project would generate NO<sub>x</sub> and ROG emissions that exceed thresholds of 15 air districts other than SLOCAPCD. For three of these districts impacts cannot be mitigated to less than significant levels. Mitigation has been recommended that includes use of Tier 4 locomotives and the purchase of emission credits. For the mainline rail emissions it is possible that contractually the Applicant could require the use of lower emission locomotives such as Tier 4 locomotives. However, since these are operated by UPRR on UPRR tracks, a requirement that the

Applicant enter into this type of contractual provision would likely be preempted by Federal law and therefore unenforceable. The County may also be preempted by Federal law from requiring emission reduction credits for mainline rail emissions. Since it is unlikely that these mitigation measures will be implementable and it is uncertain if the other Air Districts could require emission reduction credits, the impacts associated with the mainline rail operation would remain significant and unavoidable (Class I).

4. **Air Quality (AQ. 5):** Operational activities of trains along the mainline rail route associated with the Project would generate toxic air emissions that exceed the San Luis Obispo County Air Pollution Control District (SLOCAPCD) health risk thresholds when factoring in the 2012 California Office of Environmental Health Hazard Assessment (OEHHA) childhood exposure and breathing rate adjustments (refer to FEIR, Section 4.3.4.2, Impact AQ.5). The SLOCAPCD cancer risk CEQA threshold is 10 in a million for toxic emissions. These activities include movement of the locomotives on the mainline (and in areas near the SMR which are also impacted by project site activities) due to the emissions of air toxics such as diesel particulate matter. Calculations in the FEIR show that this Project would exceed the cancer threshold of 10 in a million for areas where trains speeds are limited to 30 miles per hour or less. Mitigation has been recommended that includes use of Tier 4 locomotives and the purchase of emission credits. Since it is unlikely that these mitigation measures will be implementable due to Federal preemption, and it is uncertain if the other Air Districts could require emission reduction credits, the air toxic emission impacts associated with the mainline rail operation would remain significant and unavoidable (Class I).
5. **Air Quality (AQ.6):** Operational activities along the mainline rail routes would generate greenhouse gas (GHG) emissions that exceed SLOCAPCD thresholds. Emissions of GHG would result from locomotives operating along the mainline. Project-related GHG emissions within California would exceed the SLOCAPCD thresholds and therefore would be considered significant. Since the State does not have a GHG threshold, the FEIR used the SLOCAPCD threshold for determining the significance of GHG emissions for mainline operations. For the mainline rail GHG emissions it is possible that the Applicant could be required to obtain GHG emission reduction credits. However, the County may also be preempted by Federal law from requiring emission credits for mainline rail GHG emissions. Due to the possible preemption by Federal law which could prevent mitigation measures from being implemented (outside of the SMR facility boundary), emission reduction credits might not be achievable and impacts would remain significant and unavoidable (Class I).
6. **Biological Resources (BIO.11):** Transport of crude oil by rail, along the UPRR mainline, could result in a crude oil spill that significantly impacts sensitive plant and wildlife species, wetlands, creeks, rivers and waterways. Implementation of oil spill prevention plan and first response mitigation measures (i.e., BIO-11 and PS-4a through PS-4e in the FEIR) would serve to reduce the likelihood of an oil spill and enhance the ability of first response agencies to respond to a crude oil spill. The County may be preempted by federal law from implementing these measures as they require particular contractual provisions that might be determined to improperly impact interstate commerce. There are several state and federal laws and rules that are proposed to help minimize impacts from rail-related oil spills (e.g., SB 861 to be implemented by California Department of Fish and Wildlife/Office of Spill Prevention and Response (CDFW/OSPR) and United States Department of Transportation's (USDOT's) proposal for oil trains to have comprehensive Oil Spill Response Plans in place). Given the uncertain timing of these rules and that the County may be

preempted from implementing mitigation measures for the mainline rail oil spills, potential impacts to biological resources along the UPRR mainline tracks would be significant and unavoidable (Class I).

7. **Cultural Resources (CR.6):** Train traffic associated with the importation of crude oil to the project site could result in a derailment or a material spill, which could result in the disturbance and destruction of cultural resources along the mainline routes. Clean-up of an oil spill would likely require the use of bulldozers, front end loaders, and other construction equipment to remove any contaminated soil. Use of this type of construction equipment could impact both known and unknown cultural, historic, and paleontological resources. Implementing cultural resources emergency contingency and treatment plan mitigation measure CR.6 in the FEIR could reduce potential impacts; however, there is the potential that a derailment or a spill may destroy a significant cultural or historic resource, and remediation actions may not result in the recovery of significant resources. In the event this occurs, the residual effect could be significant and unavoidable (Class I).
8. **Hazards and Hazardous Materials (HM.2):** The potential for a crude oil unit train derailment would increase the risk to the public in the vicinity of the UPRR right-of-way. It is unknown what route UPRR would use to deliver the trains to the SMR. Coming from the north the routes merge at the UPRR Roseville Rail Yard and from the south the Colton Rail Yard. Modeled scenarios ranged from small releases from a tank car, to the complete loss of multiple tank cars. The worst case spill was assumed to be 180,000 gallons (about six tanker cars). An explosion of tank cars, simulated as a Boiling Liquid Expanding Vapor Explosion (BLEVE), was also evaluated. Implementing tank car design improvements, route analysis, positive train control (which is a system of functions for safety control such as GPS and other electronic safety features), and first responder mitigation measures would reduce the potential for a rail accident and loss of containment, and would also improve emergency response in the event of an accident. Even with this reduction in release probability, the hazards associated with the project risk along the UPRR right-of-way would still be significant in the event of a release of crude oil that resulted in a fire or explosion. The County may be preempted by federal law from implementing these measures, particularly those that would require particular contractual provisions that would improperly impact interstate commerce or conflict with the Interstate Commerce Commission Termination Act (ICCTA). Therefore, the risk to the public along the UPRR mainline tracks would be significant and unavoidable (Class I).
9. **Public Services (PS.4):** Operations of the crude oil train on the mainline UPRR tracks would increase demand for fire protection and emergency response services along the rail routes. As discussed above, the worst case spill from a unit train on the mainline tracks was assumed to be 180,000 gallons (about six tanker cars). An accident along the UPRR mainline tracks could result in an oil spill or fire, which would place demand on fire and emergency responders. Mitigation identified for this impact includes requiring the Applicant, as part of their contract with UPRR, to provide for advanced notice of shipments to the SMR, use of enhanced rail cars, annual funding for first responder training, and emergency notification in the event of an accident. It is not certain that implementation of the mitigation measures discussed above is feasible given that the County may be preempted by federal law. Therefore, oil spill impacts to fire protection and emergency response services along the UPRR mainline tracks would be significant and unavoidable (Class I).

10. **Water Resources (WR.3):** A rupture or leak from a rail car on the UPRR mainline track could substantially degrade surface water quality. While the exact route the trains would take to get to these two rail yards is speculative, all of the routes within and outside of California would traverse numerous creeks, washes, rivers, wetlands, and sloughs, which would increase the probability of a spill impacting water resource areas such as surface water bodies. Implementation of oil spill prevention plan and first response mitigation measures (i.e., BIO-11 and PS-4a through PS-4e in the FEIR) would serve to reduce the likelihood of an oil spill and the ability of first response agencies to respond to a crude oil spill. The County may be preempted by federal law from implementing these measures as they require particular contractual provisions that might be determined to improperly impact interstate commerce. There are several laws and rules that are proposed to help minimize impacts from rail-related oil spills (e.g., SB 861 to be implemented by CDFW/OSPR and USDOT proposal for oil trains to have comprehensive Oil Spill Response Plans in place). Given the uncertain timing of these rules and that the County may be preempted from implementing the identified mitigation measures, impacts to water resources along the mainline would be potentially significant and unavoidable (Class I).

## **IX. OTHER ISSUES / MAJOR ISSUES RECEIVED FROM PUBLIC COMMENTS**

### **A. Neighboring Governmental Entities**

In addition to the comments received during the public comment period for the EIR, the Department has continued to receive comments subsequent to the comment period from private individuals and others. Of note are the comments that have been received from state and local governmental officials, counties, cities, schools and fire protection districts expressing concern over the Project's use of the mainline to transfer crude oil through their communities and past their facilities (refer to Exhibit F for a list of post comment period agency and special district commenters). The comments generally request that County decision-makers do not approve the project; or, if they do consider Project approval to first conduct additional risk analysis, adopt the best available tank car standards and ensure that they are adhered to, and require that better crude by rail safety standards be implemented. The letters listed in Exhibit F as well as all others received, including those from private individuals, are included as a part of the record.

Because the Interstate Commerce Commission Termination Act (ICCTA) may preempt the County from imposing a number of conditions that would mitigate project-related impacts along UPRR's mainline, certain impacts would remain unmitigated. Some of those impacts, such as those to fire protection or first responder services, have the potential to negatively affect public health and safety and the health and safety of residents and workers outside of the County. Even though those impacts would occur outside of the County's jurisdiction, these are legitimate concerns to be considered by your Commission. As a political subdivision of the state, created for the purpose of "advancing the policy of the state at large," the County may appropriately consider the impacts its decisions may make on citizens of the state at large. As a result, the proposed findings included in Exhibit C hereto address some of these state-wide concerns.

### **B. Hazard Zone**

An ongoing issue of state and national controversy and concern, for this Project as well as other proposed rail projects, relates to Impact HM.2 (Hazards and Hazardous Materials) in the FEIR and described above. This impact deals with the potential for a crude oil unit train derailment that would increase risk to the public in the form of fire, explosion, and exposure in the vicinity of the UPRR right-of-way. The issue of rail car safety has come to the forefront

over that last several years due to the number train derailment and explosion incidents that have occurred (refer to Exhibit I, which provides a list of the 24 crude by rail accidents over the past few years). A related, and commonly discussed, issue is the exposure of the general public to the “blast zone” (properly referred to as the hazard zone). The hazard zone is an area where people could be injured or killed during an explosion and is an area calculated as part of consequence modeling. For some emergency response activities the hazard zone is typically referred to as the area that should be evacuated, which is usually larger than the area where people could be injured or killed.

For crude oil the hazard zone is typically driven by heat from a fire, or what is called thermal radiation. In recent crude by rail accidents rail cars have been punctured or valves/fittings have been damaged, oil spills and ignites, resulting in what is called a pool fire. A pool fire gives off a large amount of heat, which can injure or kill people who are too close to the fire. Depending upon the amount of oil spilled these pool fires can burn for a long period of time.

If a pool fire occurs underneath undamaged rail cars the cars can heat up and the tank can fail via what some people call a thermal tear. This can result in a boiling liquid expanding vapor explosion (BLEVE). A BLEVE can result in a fire ball, which burns very quickly and gives off large amounts of heat in a short period of time, which can injure or kill people who are too close to the fire. The extent of the fire and level of possible heat from the fire can be dependent upon a number of factors, one being the level of volatility of the crude oil. The volatility of crude oil is primarily driven by how much light end material is in the crude. Typically Bakken crude has more light ends than does Canadian Dil-bit crude.

Table 4.7.12 in the FEIR provides the estimated hazard zones for a mainline rail accident for the Canadian crudes evaluated in the FEIR. The maximum hazard zone was estimated to be about 1,690 feet. Canadian tar sands are not as “explosive” as Bakken crude oil. The FEIR does not include consequence modeling on Bakken crude as part of the proposed Project because the project would be prohibited from receiving Bakken as well as other light end crude and petroleum products with an API Gravity of 30° or greater. However, the FEIR did look at Bakken crude hazard zones as part of the cumulative analysis for other crude by rail projects. Consequence modeling of Bakken crude had a maximum hazard zone of about 2,340 feet. Hazard zones are specific to each type of crude based upon the composition of the crude and in particular the amount of light ends in the crude.

A 1.0 mile impact or “blast” zone was mentioned often in comment letters. The 0.5 mile U.S. Department of Transportation (USDOT) Evacuation Zone for Oil Train Derailments and 1.0 Mile USDOT Potential Impact Zone in case of Oil Train Fire numbers are derived from the 2012 Emergency Response Guidebook offered by the USDOT, and used throughout North America for initial response hazardous material releases. 0.5 mile is the recommended initial evacuation distance for a tank, rail car, or tank truck carrying a flammable liquid involved in a fire, while 1.0 mile is the recommended initial evacuation distance for a tank, rail car, or tank truck carrying a liquefied/flammable gas. The 2012 Emergency Response Guidebook offered by the USDOT also states that for large spills of flammable liquids without a fire the recommended evacuation zone is 1,000 feet. For large spills of flammable gasses without a fire the recommended evacuation zone is 0.5 mile.

### **C. Tank Car Regulations**

As a result of the numerous crude oil tank car derailments that have occurred over the last two years in conjunction with the rapid increase in transport of crude oil by rail, the USDOT, in coordination with the Federal Railroad Administration, National Transportation and Safety Board, Pipeline Hazardous Materials and Safety Administration, American Association of Railroads, as well as numerous state and local regulatory agencies have been active in

making recommendations and passing new laws with the objective of increasing the level of safety for transporting crude by rail. The USDOT (May 1, 2015) issued their final rule covering enhanced tank car standards and operational controls for high-hazard flammable trains. The final rule defines certain trains transporting large volumes of flammable liquids as “high-hazard flammable trains” (HHFT) and regulates their operation in terms of speed restrictions, braking systems, and routing. The final rule also adopts safety improvements in tank car design standards, a sampling and classification program for unrefined petroleum-based products, and notification requirements. Exhibit G, Table G-1 provides a summary of the elements of the final rule and Table G-2 further summarizes the design specifications for tank cars allowed under the final rule. New tank cars built after October 1, 2015 would be required to meet the new DOT-117 standard. All existing Non-Jacketed CPC-1232 tank cars in Packing Group I service (i.e., tank cars proposed for use by the project Applicant) would have to meet the DOT-117R standard by April 1, 2020.

Use of DOT-117 tanker cars would reduce the probability of a release from a rail car by about 73.9% percent over the rail car design that is currently proposed by the Applicant. Use of the DOT-117R tanker cars would reduce the probability of a release from a rail car by about 65.9% percent over the rail car design that is currently proposed by the Applicant. Exhibit G, Figure G-1 shows the risk for the mainline rail transport between the SMR and state line assuming the use of either DOT-117 or DOT-117R tanker cars. The FEIR recommends a tank car design mitigation measure that is more stringent and safer than the May 1, 2015 final rule (the DOT-117/117R requirements) issued by the USDOT (refer to FEIR, Section 4.7, Table 4.7.6, Option 1; and, Mitigation Measure HM-2a). The Applicant has stated that the County is preempted from requiring implementation of this and other mitigation measures associated with the mainline portion of the Project. The primary difference between the FEIR recommended tank car design and the DOT-117 tank car design is that the FEIR recommended Option 1 tank cars would have top fittings that would be less likely to be compromised in a tank car roll over and would initially also have a more advanced and safer braking system (refer to Exhibit G, Table G-3).

## **X. ALTERNATIVE PROJECT / REDUCED PROJECT**

The FEIR includes an alternatives section which describes multiple project alternatives such as a revised onsite rail spur configuration; shorter unit trains, hauling of crude by truck to a nearby pump station, and a reduced rail delivery project versus the proposed project of five trains per week. These alternatives are a requirement of CEQA in order to provide the public and decision makers an opportunity to review other potential project designs that could meet most of the project’s objectives and reduce or eliminate significant impacts on the environment.

Generally County Planning staff could recommend approval of a project alternative if it would lessen or avoid significant environmental impacts, and complied with the requirements set forth in the General Plan/CZLUO, including the findings regarding health, safety, welfare, and compatibility with surrounding uses. The Project however is unique in that all alternative designs of the rail spur project on the Santa Maria Refinery site do not comply with the County’s General Plan with regards to removal of environmentally sensitive habitat areas, and raise concerns in regards to health and safety, significant environmental impacts, and compatibility with surrounding uses at the project site and in communities along the mainline. Therefore, Planning staff is not recommending approval of an alternative version of the Project that modifies layout and design of the rail spur at the Santa Maria Refinery.

The FEIR evaluated a reduced delivery project alternative of three trains per week (versus five). Although this alternative reduces some impacts, significant environmental impacts would still result along with health and safety concerns which remain an issue.

The reduced delivery project alternative (three trains per week) would reduce the “Class I” significant toxic air emissions impact at the Santa Maria Refinery discussed above in Section VIII.B by lowering the cancer risk to below the San Luis Obispo County Air Pollution Control District threshold of 10 in a million. At three trains per week, or 150 trains per year, this alternative would result in a cancer risk of 9.5 in a million, which is below the 10 in a million threshold. Due to being below the SLOCAPCD threshold, this would no longer be considered a Class I significant impact. While no longer significant, health and safety risks, other significant environmental impacts, and other compatibility concerns remain a concern for affected communities and neighbors.

Air emissions of diesel particulate matter onsite (which are based on the peak day and would not change regardless of the number of trains used) would still be above the SLOCAPCD CEQA thresholds of 1.25 lbs per day even with partial mitigation, and would remain a Class I impact under the three train per week alternative. The diesel particulate matter emissions, which are an air toxic, would contribute to the localized PM<sub>10</sub> emissions, which already exceed the State PM<sub>10</sub> air quality standard. This onsite Class I impact would require the adoption of overriding considerations as discussed below in Section XI.

The reduced alternative of three trains per week would still require construction of the same facilities as the proposed Project with the same level of disturbance to environmentally sensitive habitat. Thus the three train per week alternative would still not comply with the environmentally sensitive habitat area requirements set forth in the General Plan, Local Coastal Program, and CZLUO.

While the reduced delivery alternative of three trains per week, would reduce the likelihood of a train accident and resultant oil spill along the mainline rail routes, the ten “Class I” mainline impacts would remain significant and unavoidable (Class I) resulting in the need for the adoption of overriding considerations as discussed below. Since the reduced delivery alternative would still result in the same Class I impacts for the mainline rail routes as the proposed Project, the areas of non-compliance with the General Plan and CZLUO identified for the proposed Project along the mainline rail route would remain the same for the reduced delivery alternative. Concerns regarding health and safety, compatibility with properties and neighbors of the project site, and with communities along the mainline remain considerable.

The table below has been included to show how the reduced delivery alternative of three trains per week would affect General Plan/CZLUO policy inconsistencies and Class I impacts onsite and along the mainline rail routes. Exhibit K provides a more detailed table on the comparison of Class I impacts and General Plan/CZLUO inconsistencies between the proposed Project (5 trains per week) and the reduced delivery alternative (3 trains per week).

<b>Reduced Rail Delivery Comparison</b>				
<b>Project/Alternative</b>	<b>Onsite</b>		<b>Mainline Rail Routes</b>	
	<b># Class I Impacts</b>	<b># of General Plan/CZLUO Inconsistencies</b>	<b># Class I Impacts</b>	<b># of General Plan/CZLUO Inconsistencies</b>
Proposed Project (5 trains per week)	2	15	10	17
Reduced Delivery Alternative (3 trains per week)	1	14	10	17

One of the Class I impacts (AQ.2) applies to both onsite and along the mainline rail route since it covers air emissions within San Luis Obispo County.  
 See Exhibit K for a detailed breakdown of the Class I impacts and General Plan/CZLUO inconsistencies.

In summary, staff carefully considered, and the FEIR evaluated, a range of project alternatives including a reduced rail delivery alternative of three trains per week. While a reduced rail delivery project reduced the severity of the Class I impacts associated with the Project, including a reduction of the significant cancer risk onsite, other impacts related to air quality onsite, as well as numerous significant impacts along the mainline, and health and safety concerns would remain. A reduced project would reduce some compatibility issues with surrounding properties as well as communities along the mainline, but significant compatibility and General Plan policy inconsistencies would remain along with lingering health and safety concerns. Staff does not recommend approval of the reduced rail delivery alternative.

## **XI. OVERRIDING CONSIDERATIONS REQUIRED**

In order to approve a project with significant and unavoidable impacts, the California Environmental Quality Act (CEQA) requires decision makers to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental impacts when determining whether to approve or deny the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of the proposed project outweigh the unavoidable adverse environmental effects, the adverse effects may be considered acceptable.

Based on Staff's review of the proposed project and the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits presented at this time, Staff is recommending that the proposed project be denied. At this time, the benefits of the project do not appear to outweigh the significant environmental impacts identified in the FEIR.

## **XII. STAFF COMMENTS**

A large volume of public and agency comments have been received from throughout the state of California during public review of the DEIR and the RDEIR as well as subsequent to the close of the RDEIR public comment period. Comments have been received both in support and in opposition to the Project (primarily the latter). As discussed above, the Project would result in significant and unavoidable impacts (Class I) which cannot be mitigated to a level of insignificance. The Project raises health and safety concerns and is inconsistent with provisions of the General Plan and with the findings required to approve a Development Plan and Coastal Development Permit. Through the public hearing process, your Commission may determine, based on public comment and other input from members of the public and / or the Applicant to either approve or deny the Project.

### **A. FEIR Certification**

Staff is recommending denial of the project; therefore staff and County Counsel are also recommending that the Final EIR not be certified by the Planning Commission. If the Planning Commission denies the project, the FEIR should not be certified for the following reasons:

1. CEQA does not apply to projects rejected or disapproved by a public agency (Pub. Res. Code 21080);
2. Were the EIR to be certified, anyone wishing to challenge the adequacy of the EIR must file a lawsuit within 30 days after the Notice of Determination is filed;
3. Without an approved Development Plan/Coastal Development Permit, the applicant would be under no obligation to defend or indemnify the County for the time and money required to defend such a lawsuit. Nor would the applicant be required to reimburse the County for any attorney's fees that the County might have to pay to the litigants in the event the EIR is found to be inadequate for any reason; and,

4. Certification opens the County to potential liability even though no project is approved.

### **XIII. AGENCY REVIEW**

There are numerous agencies which have submitted comments regarding the Project. Comments were submitted during the EIR process and many were submitted later for the Planning Commission's review as a part of the record for the deliberation process (a complete list of comment letters from agencies submitted after the close of the EIR comment period can be found in Exhibit F attached). In addition to the agencies listed on the first page of this staff report which received referrals when the project was initially submitted to the County Planning and Building Department, the following agencies have been involved in the project throughout the EIR process and their comments are listed in the Final EIR along with responses:

- Berkeley (City of);
- Davis (City of);
- Placer County Air Pollution Control District;
- Sacramento Area Council of Governments;
- Sacramento Metro Air Quality Management District;
- San Luis Obispo Council of Governments;
- Santa Barbara (County of);
- Santa Barbara County Air Pollution Control District;
- South Coast Air Quality Management District; and,
- Ventura County Air Pollution Control District.

### **XIV. LEGAL LOT STATUS**

The one existing parcel is a portion of Lots C, F, G, M and N and all of Lots H, I, J, K, and L of the Standard Eucalyptus Tract filed in the office of the County Recorder of said County of San Luis Obispo on 11/1/1909 and recorded in Book 1, at Page 12 of maps thereof, and also Lots 1-6 inclusive and Lots 9 to 19 inclusive of the map entitled "Map of the Subdivisions of Lot "E" of the Standard Eucalyptus Tract" filed in the office of the County Recorder of said County of San Luis Obispo on 3/10/1910 and recorded in Book 1, at Page 17 of maps thereof. The parcel was legally created by deeds, Public Lot 80-88 and Parcel Map CO73-350, at a time when that was a legal method of creating parcels.

The Staff Report was prepared by the County of San Luis Obispo Department of Planning and Building with assistance from SWCA, Inc., and Marine Research Specialists.

## **EXHIBITS**

- Exhibit A – Project Analysis, General Plan and Ordinance INCONSISTENCIES “Onsite”
- Exhibit B – Project Analysis, General Plan and Ordinance INCONSISTENCIES “Mainline”
- Exhibit C – Findings for Denial
- Exhibit D – California Coastal Commission Site Visit Letter
- Exhibit E – Project Graphics
- Exhibit F – Post Comment Period Agency & Special District Comments
- Exhibit G – USDPT Rail Car Specifications and Risk Levels
- Exhibit H – Agencies and Individuals Consulted During EIR
- Exhibit I – Crude by Rail Accident Table
- Exhibit J – Correspondence from the Applicant and UPRR Regarding Federal Preemption
- Exhibit K – Detailed Reduce Rail Delivery Comparisons



September 15, 2014

*Via email and FedEx to*  
Amy Million, Principal Planner  
Community Development Department  
250 East L Street  
Benicia, CA 94510  
[amillion@ci.benicia.ca.us](mailto:amillion@ci.benicia.ca.us)

Re: The City of Benicia's Draft Environmental Impact Report for the  
Valero Benicia Crude by Rail Project

Dear Ms. Million,

On behalf of the Natural Resources Defense Council (NRDC), and the undersigned groups, we submit the following comments on the City of Benicia's Draft Environmental Impact Report (DEIR) for the Valero Benicia Crude by Rail Project (the Project). The Project, if approved, would allow the Valero refinery to receive up to 70,000 barrels per day of crude oil by train. Our evaluation of the Project, as well as that of two independent experts retained by NRDC, indicates that it will result in very significant environmental impacts that have not been disclosed or mitigated in the DEIR.<sup>1</sup>

Most notably, the DEIR fails to adequately evaluate the significant air quality, health, and safety hazard impacts of the Project. By relying on an incorrect baseline, the DEIR fails to assess how changes in crude slate or throughput will affect refinery emissions. The DEIR also misleadingly downplays the risk of a significant crude-by-rail accident, even though there have been at least twelve serious crude-by-rail accidents in North America in the past year-and-a-half alone—including one in Lac-Mégantic, Quebec, that killed 47 people and leveled the center of that town.

Because this Project would result in significant environmental impacts, the City cannot certify the DEIR before adopting all feasible

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<sup>1</sup> Selected sources cited have been provided to the City of Benicia in hard copy. Other sources cited in these comments and in the expert reports will be provided in CD to follow.

mitigation measures. Yet the DEIR fails to identify and analyze mitigation measures that would reduce the Project's impacts, incorrectly claiming that no mitigation measures are available. In fact, there are numerous mitigation measures and alternatives that would reduce the impacts of the Project. These measures must be analyzed in the DEIR, so that the full range of options are publicly disclosed and considered by decision-makers.

In light of the Project's significant, unmitigated impacts, the people of Benicia, as well as up-rail communities, will be protected only if the City denies the permit for the Project. However, if the City intends to move forward notwithstanding the Project's significant impacts, the City must comply with the law. At the very least, the City must revise the DEIR to address these concerns and those raised by community members and public agencies, and recirculate the revised DEIR for public comment.

#### **I. THE DEIR FAILS TO DISCLOSE, ANALYZE, AND MITIGATE THE PROJECT'S SIGNIFICANT AIR QUALITY IMPACTS**

With the exception of the impacts from railroad emission in Yolo and Sacramento air basins, the DEIR concludes that the Project will not have any significant air quality impacts. DEIR at 4.1-16 to 4.1-26. The DEIR fails to disclose and analyze many important factors that clearly demonstrate that the Project would have significant air quality impacts both here in the San Francisco Bay Area, where the Project is located, and in other up-rail regions to the east. As described in more detail below and in the accompanying report by Dr. Phyllis Fox (Attachment 1), the DEIR:

- uses an improper, hypothetical baseline to avoid evaluating increased refinery emissions that may result from changes in crude slates or increases in throughput;
- incorrectly claims that crude slate and emissions data are trade secrets;
- fails to disclose the actual increases in criteria and toxic air pollutants that will result from refining new types of crudes, including Bakken and tar sands crudes;
- fails to disclose the increases in fugitive toxic and organic air emissions from storage tanks and unloading equipment due to the higher volatility of new crudes;

- relies on Valero's unenforceable promise that the Project's crude will displace crude shipped by marine tanker to conclude that the Project will reduce transportation emissions;
- fails to properly disclose the increases in criteria and toxic air pollutants during the transportation of the crude, both from fugitive emissions and from the locomotives themselves;
- uses an outdated emissions model for construction emissions and underestimates key factors affecting those emissions; and
- provides a Health Risk Assessment that vastly underestimates toxic air contaminant emissions.

In addition to failing to disclose and analyze all of these significant impacts, the DEIR fails to include any mitigation measures, claiming that no mitigation measures are available. That is an error: there are many feasible mitigation measures the City could implement, as described below. In light of these deficiencies, the City must revise the DEIR to address the significant air quality impacts described here and recirculate it for public comment.

For context of the gravity of the air pollution impacts of this project, we note that although emissions of some pollutants from Valero's Benicia refinery (such as sulfur dioxide due to installation of a scrubber) have decreased over recent years, the refinery continues to emit dangerous and unhealthy levels of toxic air pollutants.<sup>2</sup> According to Toxics Release Inventory reports, Valero releases 70 percent more toxic chemicals than the California refinery average, putting the surrounding community at much greater risk of adverse health impacts such as cancer, chronic disease, lower IQ, reproductive problems and developmental delays.<sup>3</sup>

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<sup>2</sup> See EPA Region 9 Toxics Release Inventory, 2012 California Refineries Report, available at: <http://www.epa.gov/region09/tri/report/12/tri-calif-refineries-2012.pdf>

<sup>3</sup> In 2012, Valero Benicia released 5 pounds of toxic chemicals per barrel per day vs. a statewide refinery average of 2.9 pounds of toxic chemicals released per barrel per day. This comparison is based on the total toxic releases in 2012 reported by EPA Region 9, normalized to capacity for each refinery based on California Energy Commissions refinery capacity data available at: <http://energyalmanac.ca.gov/petroleum/refineries.html>

**A. The DEIR Uses an Improper Baseline for Refinery Emissions**

To evaluate the environmental impacts of a proposed project, a lead agency must first determine the environmental setting, or baseline. 14 Cal. Code Regs. (“Guidelines”) § 15125(a). Under CEQA, the baseline consists of “the physical environmental conditions in the vicinity of the project, as they exist at the time . . . environmental analysis is commenced.” Guidelines § 15125(a). In other words, the baseline is the actual physical conditions that exist at the site—not hypothetically permitted conditions. *Communities For A Better Env’t v. S. Coast Air Quality Mgmt. Dist.*, 48 Cal. 4th 310, 315(2010).

The DEIR states that the air emissions baseline for the Project is the full scope of operations allowed under current permits, including those issued for the Valero Improvement Project. DEIR, Appx. C at C.1-3. It states that if refinery emissions were to increase based on Valero’s purchase of heavy sour Canadian crudes or Bakken crudes, “any such emissions increases would properly be considered part of the baseline because the baseline includes the full scope of operations allowed under existing permits that were issued based upon prior CEQA review.” DEIR Appx. C.1 at C.1-1; DEIR Appx. C.2 at C.2-1.

The DEIR’s analysis fails to meet CEQA’s requirement that agencies analyze the impacts of a project compared to the actual physical conditions, rather than hypothetically permitted conditions. As the California Supreme Court explained in *Communities for a Better Environment v. South Coast Air Quality Management District*, the City must compare the change in emissions that result from the Project to the current emissions at the refinery. Without this baseline, neither the City nor the public can determine whether the Project will increase emissions, either because of an increase in the total amount of crude refined or because of changes in the crude slate. Knowing these baseline conditions is essential to understanding the Project’s impact on the environment.

The DEIR half-heartedly claims that the Project is not a new project, but rather a modification of the Valero Improvement Project (VIP). DEIR, Appx. C.1 at C.1-3; DEIR, Appx. C.2 at C.2-3. To the contrary, the City has consistently treated the Project as a new project, requiring a new set of permits and preparing environmental review documents from scratch, rather than preparing any of the subsequent environmental review documents contemplated by Public Resources Code section 21166 and Guidelines section 15162. Those sections do not apply to new projects. *Save Our Neighborhood v. Lishman*, 140 Cal. App. 4th 1288, 1301 (2006). The VIP

environmental analysis was performed over 10 years ago. Much has changed in the last 10 years, including the suite of crudes available in the market, the transportation options, and the regulations and standards governing air emissions. Accordingly, the baseline for purposes of analyzing the Project's impacts is the current level of emissions, not the maximum permitted emissions.

Even if this Project were a modification of the VIP—which it is not—the City must still properly analyze the impacts of the Project relative to that baseline. As discussed in the attached report by Dr. Phyllis Fox, the refining of Canadian tar sands or Bakken crudes will have significant air quality impacts, even beyond what was permitted in the VIP. The City cannot simply assume that the emissions from the Project would be within the emissions permitted by the VIP without conducting a detailed analysis of how refining these new types of crudes would change refinery emissions.

**B. The City Cannot Skirt Its Duty to Evaluate Project Impacts by Claiming Some of the Information Submitted By Valero Constitutes Trade Secrets**

The DEIR states that “Valero has submitted data and information regarding the proposed project, including data and information regarding the past and anticipated future crude oil slate at the Valero Benicia refinery.” DEIR, Appx. D at D-1. This information includes the identity of the specific crudes Valero has previously purchased and plans to purchase as part of the Project, as well as the properties of those crudes (weight, sulfur content, vapor pressure, and acidity). *Id.* Despite having this information at its disposal, the City has determined that it should be withheld from public review, citing Government Code section 6254.7 and Public Resources Code section 21160.

In our comments on the Mitigated Negative Declaration, we called for the City to disclose the crudes Valero is likely to transport as a result of the Project, so that the City and the public can fully evaluate the potential air impacts from refining these crudes and the spill risks from transporting them. As explained below, the information most relevant to evaluating these impacts is not a trade secret. But even if some information provided to the City were a trade secret, the City still would have a duty to disclose and analyze the reasonably foreseeable impacts of the Project in the DEIR.

As an initial matter, Valero's intent to transport Bakken and tar sands crudes is not a trade secret. The City admits as much in its DEIR, listing the potential crudes the Project may import. DEIR, Appx. K at K-12, K-13. And

crude “assay” data, which includes details about the specific properties and chemical content of a crude oil, is widely reported.<sup>4</sup> Because this information is widely available, it is not “known only to certain individuals within a commercial concern,” and therefore is not a “trade secret” under Government Code section 6254.7. Accordingly, the DEIR must also disclose the characteristics of these crudes that are relevant to environmental concerns.

Furthermore, the City may not rely on its “trade secret” designation to avoid analyzing the impacts of the proposed Project. Air emissions from refinery changes are not trade secrets and must be disclosed. Government Code section 6254.7, which the City cites in support of withholding Valero’s crude slate information, explains that “all air pollution emission data, including those emission data which constitute trade secrets . . . are public records.” Thus, even assuming that Valero’s specific crude slate is a trade secret, the change in emissions that it will produce is not. For example, the City of Richmond recently evaluated and disclosed how operations could change at the Richmond Refinery under several crude input scenarios.<sup>5</sup> Likewise, the City of Benicia should evaluate and disclose the reasonably foreseeable crude blend changes and the resulting environmental consequences. Because Valero has provided the City with its prior and anticipated crude slate, DEIR at D-1, the City has the information necessary to determine the reasonably foreseeable changes in air emissions that that will occur due to changes in the crude slate. These changes in air emissions must be disclosed.

### **C. The DEIR Failed to Consider Impacts on Refinery Emissions**

On July 1, 2013 we submitted comments on the Mitigated Negative Declaration for the Project, explaining in detail that this Project would facilitate significant changes in crude oil slate quality, which would result in emission increases that were not considered. The DEIR fails to correct the defects that we identified in those comments and the accompanying report by Dr. Fox; thus we include them here as Attachments 2 and 3.

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<sup>4</sup> Jeff Thompson, Public Crude Assay Websites, February 24, 2011. [http://www.coqa-inc.org/docs/default-source/meeting-presentations/20110224\\_Thompson\\_Jeff.pdf](http://www.coqa-inc.org/docs/default-source/meeting-presentations/20110224_Thompson_Jeff.pdf).

<sup>5</sup> Chevron Refinery Modernization Project, Draft EIR 4.3 (March 2014), *available at* [http://chevronmodernization.com/wp-content/uploads/2014/03/Volume-1\\_DEIR.pdf](http://chevronmodernization.com/wp-content/uploads/2014/03/Volume-1_DEIR.pdf).

The DEIR lists 38 “available North American crudes” that could be imported by the Project. DEIR, Table 3-1. Regardless of which of these 38 crudes are ultimately shipped to the Project, the DEIR must analyze the full range of resulting impacts from all of the 38 crude oil types available, as the DEIR suggests that it is reasonably foreseeable that each of them will be refined. Impacts would vary greatly between tar sands crudes (on the heavy, high-sulfur end) and Bakken crudes (on the light, sweet end), with unique and significant impacts from each end of this range. The DEIR does not analyze impacts from either of these, but instead inappropriately considers an unidentified default crude that is not representative of *any* of the 38 possible types.

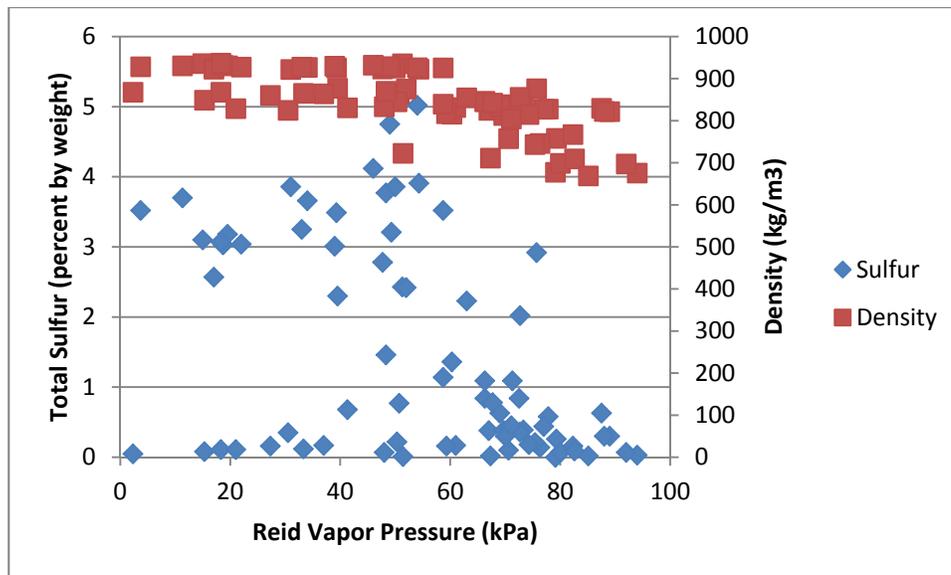
The DEIR incorrectly asserts that blending of the rail-imported crudes with other crudes to meet current sulfur and specific gravity (“weight”)<sup>6</sup> requirements will mean that emissions would not change. DEIR, Appendices C.1, C.2 and K. This assertion is an error for several reasons.

Crudes exhibit important differences that are not related to the weight and sulfur content of the crude, such as chemical composition, vapor pressure, and other physical and chemical attributes. These differences can significantly affect refinery emissions. For example, the chemical components of the crude (such as toxic air contaminants (TACs) like benzene, or highly malodorous compounds such as mercaptans) may be present at much higher concentrations in one crude than in other crudes with identical sulfur content and API gravity. Fox DEIR Comments at 5.

Further, other characteristics, such as vapor pressure or flammability, differ in significant ways among crudes with similar sulfur and weight. The DEIR actually concedes that there is no relationship between vapor pressure (expressed as RVP) and weight (expressed as API) for different crude types. DEIR, Appx. K at K-18. This is further substantiated by analysis of data published by Enbridge, summarized here in Figure 1. The Enbridge data covering 76 different types of crude oil show that crude oil attributes of sulfur content and density are completely independent of vapor pressure. Fox DEIR Comments at 4.

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<sup>6</sup> Note that throughout the DEIR, the term “weight” is used to indicate API gravity or density, where “density” is technically what is meant. We will use the same terminology in these comments; “weight” indicates density.



**Figure 1: Reid Vapor Pressure Compared to Total Sulfur and Density for 76 different types of Crude Oil**

Source: Enbridge Pipelines Inc., 2013 Crude Characteristics<sup>7</sup>

The vapor pressure of crude determines to a large extent the amount of reactive organic gases (ROG) and toxic air contaminants (TAC) that are emitted when the crude is transported, stored, and refined. Thus, a crude slate may have identical sulfur content and weight, but dramatically different ROG and TAC emissions.

Similarly, the nature of the crude's chemical bonds determines the amount of energy and hydrogen that must be supplied to refine it. Thus, a crude slate may have identical sulfur and weight, but a different mix of chemicals that would affect the amount of energy and hydrogen required to convert it into refined products. Put another way, one crude slate may require more refining than another, even though the two slates have the same sulfur and weight. This means that total refinery emissions are affected by crude slate characteristics other than sulfur and weight. Fox DEIR Comments at 5.

These impacts have not been considered in the DEIR. The DEIR ignores significant increases in ROG emissions, contributing to existing violations of ozone ambient air quality standards; significant increases in TAC emissions, resulting in significant health impacts; significant increases in malodorous sulfur compounds, resulting in significant odor impacts;

<sup>7</sup> Available at

<http://www.enbridge.com/~media/www/Site%20Documents/Delivering%20Energy/2013%20Crude%20Characteristics.pdf>

significant increases in combustion emissions, contributing to existing violations of particulate matter (PM) standards; and significant increases in flammability—and the resulting potential for more dangerous accidents if and when trains derail or spills occur, off-site or on-site.

*1. Import of Tar Sands or Other Heavy Crudes Would Increase Refinery Emissions*

Although the DEIR asserts that “[t]here is no reason to believe that . . . Valero would be more likely to purchase heavy Canadian crudes than any number of other North American crudes that are lighter and/or sweeter . . .,” DEIR, Appx. C.1 at C.1-1, the DEIR is required to consider scenarios that are reasonably foreseeable. Table 3-1 lists 38 “available North American crudes” that could be imported by the Project, of which at least 15 are tar sands crudes.

Tar sands crudes are chemically distinct from the current crude slate and thus will result in significant impacts that were not analyzed in the DEIR. Fox DEIR Comments at 5; Fox IS/MD Comments at 25-28. The DEIR discusses heavy sour crude slate issues in Appendix C.1, focusing on the weight and sulfur content of the crude, to the exclusion of other important factors such as chemical composition, volatility, and corrosivity. Appendix C.1 asserts that emissions would not increase because the blended crude slate would remain within Valero’s operating range for both weight and sulfur. DEIR, Appx. C.1 at C.1-3.

As an initial matter, the argument that sulfur levels and weight of the crude slate will stay within a narrow range ignores the possibility of a change that, while within that range, would nonetheless be significant. This recently occurred at the nearby Chevron Richmond Refinery. This refinery gradually changed crude slates, while staying within its established crude unit design basis for total weight percent sulfur of the blended oil going into the crude unit.<sup>8</sup> This change increased corrosion rates, which led to a catastrophic pipe failure in the #4 Crude Unit on August 6, 2012. This accident sent 15,000 people from the surrounding area for medical treatment due to the release and resulting fire that created huge black

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<sup>8</sup> US Chemical Safety and Hazard Investigation Board, Chevron Richmond Refinery Pipe Rupture and Fire, August 6, 2012, p.34 (“While Chevron stayed under its established crude unit design basis for total wt. % sulfur of the blended feed to the crude unit, the sulfur composition significantly increased over time. This increase in sulfur composition likely increased corrosion rates in the 4-sidecut line.”).

clouds of pollution over the surrounding community. Fox DEIR Comments at 6; Fox IS/MND Comments at 25-26.

These types of accidents can be reasonably expected to result from incorporating tar sands crudes into the Benicia crude slate, even if the range of sulfur and weight of the crudes remain the same, unless significant upgrades in metallurgy were to occur. Yet the DEIR fails to propose any measures to upgrade metallurgy or address the potential for increased corrosion that could contribute to accidents. Tar sands crudes have a significant concentration of sulfur in the heavy components of the crude coupled with high TAN and high solids, which aggravate corrosion. The gas oil and vacuum resid piping, for example, may not be able to withstand naphthenic acid or sulfidation corrosion from tar sands crudes, leading to catastrophic releases.<sup>9</sup> Fox DEIR Comments at 6; Fox IS/MND Comments at 35-36.

The DEIR fails to consider catastrophic releases of air pollution from accidents that would be a reasonably foreseeable result of the use of more corrosive crude oil. Rather, the DEIR relies on the Refinery's existing Process Safety Management program, including the Management of Change (MOC) and Mechanical Integrity (MI) programs, to prevent corrosion. DEIR at 3-16. However, similar programs were also in place at Chevron at the time of the August 2012 accident discussed above, and they did not prevent a catastrophic accident caused by sulfur creep. The recent Chevron FEIR incorporated many additional mitigation measures to improve these programs,<sup>10</sup> which should be required for the Project. Fox DEIR Comments at 6.

As discussed above, the weight and sulfur content are not the only characteristics of crude oil that determine environmental impacts. Other important factors include volatility, flammability, metal content, ROG speciation profile, the specific suite of heavy organic compounds in the crude, and the TAC and sulfur speciation profile (i.e., the concentration of individual TAC and sulfur compounds present in the crude). The DEIR fails

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<sup>9</sup> See, for example, K. Turini, J. Turner, A. Chu, and S. Vaidyanathan, Processing Heavy Crudes in Existing Refineries. In: Proceedings of the AIChE Spring Meeting, Chicago, IL, American Institute of Chemical Engineers, New York, NY, Available at: <http://www.aiche-fpd.org/listing/112.pdf>.

<sup>10</sup> See, e.g., Chevron Refinery Modernization Project, Revisions to Draft EIR Volumes 1 & 2, p. 4-40, Mitigation Measure 4.13-7h, Available at: <http://chevronmodernization.com/project-documents/>.

to assess increases in refinery emissions of sulfur compounds, heavy metals, benzene and other TACs, as well as increased production of contaminated petroleum coke that would occur with the import of tar sands crude.

Tar sands crudes are derived from bitumen, a semi-solid tar-like substance that is contaminated with five times more lead, 20 times more vanadium, and higher levels of other heavy metals and pollutants than conventional crude, according to the U.S. Geological Survey. Fox IS/MND Comments at 22. The tar sands crude that would be imported by this Project is likely to be a “dilbit” blend of tar sands with a very light diluent to make the semi-solid tar sands flow like conventional oil. Dilbits contain high levels of VOCs, sulfur compounds, and HAPs, such as benzene. Fox IS/MND Comments at 26.

Elevated levels of benzene or hydrogen sulfide in dilbit cannot be blended out because they are emitted from tanks and fugitive components before the crudes reach the mixing tanks. The majority of the toxic TACs and malodorous chemicals are emitted before blending occurs, during unloading and from fugitive components along the pipeline and at the storage tanks. Blending itself does not eliminate them.

Similarly, elevated metals that end up in coke fugitive particulate emissions cannot be blended out. No matter how much blending is done with relatively less contaminated crudes, a significant amount of heavy metals from lower quality rail-imported crude would still remain. Blending also does not remove, but rather only dilutes, elevated concentrations of high molecular weight organic compounds such as asphaltenes and resins that require high energy input to break down into marketable products. Fox IS/MND Comments at 4-10. These characteristics may vary in significant ways among crudes with the same range of API gravity and sulfur, resulting in significant environmental impacts. Fox IS/MND Comments at 29-30. The DEIR must be revised to address potential impacts from increased contamination with heavy metals and other TACs, increased refinery air emissions, and increased petroleum coke production.

## *2. Import of Bakken and Other Light Crudes Would Increase Refinery Emissions*

The DEIR concedes that Valero is likely to import large amounts of light sweet North American crudes, specifically crudes that are, on average, lighter and sweeter than Valero’s current feedstocks. DEIR at 3-24; Appx. C at C.2-1. Light sweet crudes such as Bakken could result in a dramatic increase in fugitive ROG and TAC emissions from all aspects of the refinery,

most notably storage tanks, pumps, compressors, valves, and connectors. Like the IS/MND, the DEIR fails to evaluate these impacts. Fox IS/MND Comments at 11, 25-28; Fox DEIR Comments at 11.

According to Valero, the refinery will use rail imports to create an “Alaskan North Slope (ANS) look-alike blend.” DEIR at 3-24. The closest and most cost advantaged of light sweet North American crudes listed in DEIR Table 3-1 that could be blended to be an ANS look-alike is Bakken crude. For example, a blend of 55% Bakken and 45% Western Canadian Select (tar sands) could potentially cost far less than the ANS market price. The resulting mix has the same API gravity and slightly higher sulfur than ANS, and virtually identical distillation yields.<sup>11</sup> Alternatively, some of the lighter crudes, such as Bakken, could be fed directly to refining units, such as the FCCU, eliminating the need for blending. Fox DEIR Comments at 11.

The DEIR did not analyze the full emissions profile of these specific, reasonably foreseeable crude blends. However, the emissions increases could be significant. As discussed above, the amount of ROG and TAC emissions that will be emitted from refinery tanks, pumps, compressors, valves, and connectors is determined by the volatility of the crude oil and the concentration of TACs within the crude, not by its weight or sulfur content. The volatility can vary widely for “light sweet crudes,” independent of weight and sulfur content. Processing in the oil fields, in particular, significantly affects volatility of shipped crudes, as discussed below.

Bakken crudes have unique chemical and physical characteristics that distinguish them from currently refined crudes and that would result in significant environmental impacts not identified in the DEIR, including significant risk of upset, air quality, odor, and public health impacts. These unique characteristics include high volatility, flammability, and elevated concentrations of TACs and ROG. The Bakken crudes that the Project is likely to import are at least twice as volatile as the Alaska North Slope (ANS) crude and other foreign imports that would be replaced. Specifically, ANS crude has a Reid Vapor Pressure (RVP)—a common measure of volatility—of 6.3

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<sup>11</sup> John R. Auers and John Mayes, North American Production Boom Pushes Crude Blending, Oil & Gas Journal, May 6, 2013, Available at: <http://www.ogj.com/articles/print/volume-111/issue-5/processing/north-american-production-boom-pushes.html>.

pounds per square inch (psi) compared to Bakken crude, which can have a RVP of up to 15.5 psi.<sup>12</sup> Fox DEIR Comments at 12-17.

Thus, replacing ANS and foreign imports with Bakken would increase ROG and TAC emissions from refinery fugitive sources by a factor of two or more (as is also true for other sources discussed below). The TAC emissions would increase even more, because the concentration of TACs in the DEIR Table 3-1 crudes that are likely to be imported by the Project are much higher than in the current crude slate. Fox DEIR Comments at 13.

In addition, Bakken crudes, when blended with heavy crudes to stay within the refinery operating envelope, have resulted in many refinery operating issues that increase emissions. These issues include fouling of the cold preheat train; desalter upsets; and fouling of hot preheater exchangers and furnaces; as well as corrosion.<sup>13</sup> The DEIR unlawfully failed to disclose these reasonably foreseeable operating problems and resulting emission increases. Fox DEIR Comments at 17.

#### **D. The DEIR Failed to Consider Impacts on Emissions from Storage Tanks and Loading Areas**

Because the Project will import Bakken or similar crudes, it will significantly increase ROG and TAC emissions during unloading from the rail cars, pipeline fugitive components (valves, pumps, connectors), and crude storage tanks. The DEIR inaccurately asserts that the baseline for any increase in emissions from the refinery's eight crude oil storage tanks is the level permitted in the Valero Improvement Project (VIP) approved by the

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<sup>12</sup> ExxonMobil Refining and Supply Company, ANS11U, Available at: [http://www.exxonmobil.com/crudeoil/about\\_crudes\\_ans.aspx](http://www.exxonmobil.com/crudeoil/about_crudes_ans.aspx) and <http://www.exxonmobil.com/crudeoil/download/ans11u.pdf>.

Classification and Hazard Communication Provisions for Crude Oil – Bakken Crude Oil Data, June 13, 2014, Available at: <http://www.unece.org/fileadmin/DAM/trans/doc/2014/dgac10c3/UN-SCETDG-45-INF26e.pdf>; Dangerous Goods Transport Consulting, Inc., A Survey of Bakken Crude Oil Characteristics Assembled for the U.S. Department of Transportation, Submitted by American Fuel & Petrochemical Manufacturers, May 14, 2014, at 5, 19, Available for download from: <https://www.afpm.org>; North Dakota Petroleum Council, Bakken Crude Quality Assurance Study, Available at: [http://www.ndoil.org/image/cache/Summary\\_2.pdf](http://www.ndoil.org/image/cache/Summary_2.pdf).

<sup>13</sup> Innovative Solutions for Processing Shale Oils, Hydrocarbon Processing, 7/10/2013, <http://www.hydrocarbonprocessing.com/Article/3223989/Innovative-solutions-for-processing-shale-oils.html>.

City in 2003. DEIR, Appx. C.2 at C.2-3. As explained above, because the Project is a new project, the correct baseline is determined by actual, physical conditions, not by hypothetical permitted conditions. *Communities For A Better Env't v. S. Coast Air Quality Mgmt. Dist.*, 48 Cal. 4th 310, 315(2010).

Compared to existing conditions, the Project will significantly increase ROG and TAC emissions from storage tanks and unloading areas. The VIP environmental documents, which analyzed the crudes that are currently stored and unloaded at the refinery, illuminate these impacts. For example, the assessment of tank emissions for the VIP assumed benzene levels in the crude stored in tanks would be 0.009 wt.%,<sup>14</sup> but the benzene levels in the suite of crude oils potentially imported by the Project are up to **700** times higher than those currently refined, ranging from 0.02 wt.% to 7 wt.%.<sup>15</sup> Benzene is a known human carcinogen. Human exposure to benzene has been associated with a range of acute and long-term adverse health effects and diseases, including cancer and adverse hematological, reproductive and development effects.<sup>16</sup> Fox DEIR Comments at 19. The DEIR unlawfully fails to disclose and discuss the potentially significant

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<sup>14</sup> The benzene concentration assumed in the storage tanks is calculated from post-VIP ROG emissions of 193 ton/yr (VIP DEIR, Table 4.2-9) and the post-VIP benzene emissions of 33.93 lb/yr (VIP DEIR, Table 4.7-6) as:  $100 \times [33.93 \text{ lb/yr} / (193 \text{ ton/yr})(2000 \text{ lb/ton})] = 0.009 \text{ wt}\%$ .

<sup>15</sup> [www.crudemonitor.ca](http://www.crudemonitor.ca). Concentrations reported in volume % (v/v) in this source were converted to weight % by dividing by the ratio of compound density in kg/m<sup>3</sup> at 25 C (benzene = 876.5 kg/m<sup>3</sup>) to crude oil density in kg/m<sup>3</sup>, based on the most recent sample, as of June 27, 2014.

TSBC 2013; Tesoro Savage, Application for Site Certification Agreement, vol. 2, Appendix G: Material Safety Data Sheets for Enbridge Bakken (n-hexane = 11%); sour heavy crude oil (benzene = 7%; toluene = 7%; ethylbenzene = 7%; xylene = 7%); sweet heavy crude oil (toluene = 7%); light sweet crude oil (benzene = 7%; toluene = 7%; ethylbenzene = 7%; xylene = 7%), August 29, 2013, Available at:

<http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013-01%20Volume%20II%20-%20Appendices/EFSEC%202013-01%20Compiled%20Volume%20II.pdf>.

<sup>16</sup> CARB, Report to the Scientific Review Panel on Benzene, Prepared by the Staffs of The Air Resources Board and The Department of Health Services, November 27, 1984, Available at: <http://www.arb.ca.gov/toxics/id/summary/benzene.pdf>; Chronic Toxicity Summary: Benzene, Available at: [http://www.oehha.org/air/chronic\\_rels/pdf/71432.pdf](http://www.oehha.org/air/chronic_rels/pdf/71432.pdf); World Health Organization, Exposure to Benzene: A Major Public Health Concern, Available at: <http://www.who.int/ipcs/features/benzene.pdf>.

health and environmental impacts of increased emissions of benzene and other ROG and TAC constituents.

*1. The DEIR Omits Significant ROG and TAC Emissions Increases from Tanks*

The DEIR did not adequately quantify emissions from the tanks that would store the crude oil delivered by rail. The emissions from floating-roof tanks include: tank breathing losses (the sum of rim seal losses, withdrawal losses, deck fitting losses, and deck seam losses estimated by the U.S. EPA Model TANKS 4.0.9d) and roof landing losses.

First, the DEIR fails to consider tank breathing losses. Valero originally proposed repurposing a tank currently used to store non-crude products (tank 1776) to store Project crude. In the initial study, the City calculated the increase in ROG emissions from that new tank to be 23.7 pounds per day, using an RVP of 9.4.<sup>17</sup> Valero modified the Project in November 2013 to use other existing external floating roof tanks (tanks 1701 through 1708, which are currently permitted to store crude oil) rather than repurposing tank 1776. DEIR, Appx. E.4 (11/13 Ap., p. 6). These other existing external floating roof tanks currently store both San Joaquin Valley crudes, ANS crude, and other ship-imported crudes. *Id.*

Replacing the crudes currently stored in these tanks with Bakken crudes would significantly increase emissions due to the much higher volatility of Bakken crudes discussed above. A simple calculation, much like the one the City previously did for tank 1776, shows that substituting Bakken crudes for San Joaquin Valley crude in particular would significantly increase ROG emissions:

- 1) The IS/MND estimated total ROG emissions from tanks of 39.3 lb/day for the 70,000 bbl/day throughput Project.
- 2) The IS/MND used an RVP estimate of 9.4 psi for the crude.

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<sup>17</sup> That analysis considered changing the service of tank 1776 from jet fuel and other refinery products to crude oil. The ROG emissions were estimated with the U.S. EPA TANKS 4.0.9d model for a throughput of 70,000 bbl/day and a crude oil RVP of 9.4 psi. The net ROG emission increase, relative to December 2009 through November 2012 baseline, was 4.33 ton/yr. DEIR, Appx. E.3 (2/13 Ap., Table 3-2). The supporting calculations for these emission increases (in Appendix B to the February 2012 Application, DEIR Attachments B-1 and B-2) were withheld from the DEIR as confidential business information (CBI).

- 3) Compare that to the crude oil it could replace, in this example, San Joaquin Valley (or similarly stable) crude that has an RVP of 0.04 psi.<sup>18</sup>
- 4) Assuming the RVP of the crude is proportional to tank emissions of ROG, the storage of 70,000 bbl/day of SJV crude = (39.3 lb/day) (0.04 psi/9.4 psi) = 0.17 lb/day, representing current conditions of stored SJV crude.
- 5) The increase in ROG tank emissions from storing 70,000 bbl/day of Bakken crude, assuming the reported upper-bound vapor pressure for Bakken crude of 15.5 psi<sup>19</sup> would be (39.3 lb/day)(15.5 psi/9.4 psi) = 64.8 lb/day.
- 6) The net increase in ROG tank emissions from replacing 70,000 bbl/day of pipeline-imported SJV crude with 70,000 bbl/day of rail-imported Bakken is (64.8-0.2) 64.6 lb/day The corresponding net increase in annual tank emissions would be (64.6 x 365/2000) 11.8 ton/year if all of the rail-imported crude were Bakken.

Similarly, replacing ANS crude with Bakken crude utilizing the same method described above would lead to increased ROG emissions from tanks of 38.5 lb/day or 7.0 tons/year from the Project.<sup>20</sup> Fox DEIR Comments at 23. *The resulting net increase in ROG emissions from the Project if Bakken or similarly volatile light crudes are imported would be 58 to 84 lb/day, as shown in Table 1. This exceeds the BAAQMD CEQA significance threshold of 54 lb/day. This increase in ROG emissions is a significant impact that the DEIR unlawfully fails to disclose. Fox DEIR Comments at 23-24.*

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<sup>18</sup> Emission Calculation Protocol for Oil Production Tanks, September 1, 2000.

<sup>19</sup> Classification and Hazard Communication Provisions for Crude Oil – Bakken Crude Oil Data, June 13, 2014.

<sup>20</sup> This assumes an RVP equal to that for Alaska North Slope crude, or 6.3 psi. ExxonMobil Refining and Supply Company, ANS11U, Available at: [http://www.exxonmobil.com/crudeoil/about\\_crudes\\_ans.aspx](http://www.exxonmobil.com/crudeoil/about_crudes_ans.aspx) and <http://www.exxonmobil.com/crudeoil/download/ans11u.pdf>.

**Table 1: Revised Daily Net Operational Emissions  
Including ROG Emissions from Tanks**

Source	ROG (lb/day)		
	DEIR Table 4.1-5	Scenario 1: SJV baseline	Scenario 2: ANS baseline
Unloading Rack & Pipeline Fugitive Components	10.3	10.3*	10.3*
Locomotives	19.3	19.3*	19.3*
<b>Storage Tanks</b>	<b>Not Included</b>	<b>64.6</b>	<b>38.5</b>
Marine Vessels (Displaced Baseline)	-28.3	0**	0**
<b>Total Net Emissions</b>	<b>-8.8</b>	<b>84.2</b>	<b>58.1</b>
BAAQMD CEQA Significance Threshold	54	54	54

Source: DEIR Table 4.1-5 was modified to include tank emissions, estimated according to the above described methodology.

“Scenario 1: SJV baseline” represents the replacement of SJV crude with Bakken crude described above.

“Scenario 2: ANS baseline” represents the replacement of ANS crude with Bakken crude described above.

\* These emissions are likely to be much higher per the discussion below.

\*\* The current marine vessel emissions cannot be discounted per the discussion below.

The increase in ROG emissions reflected in Table 1 would be accompanied by an increase in TAC emissions, which are estimated by multiplying the ROG emission increase by the weight percent of each TAC in the ROG emissions (i.e., the TAC speciation profile). These omissions are discussed in detail below in the Health Risk Assessment section.

The increase in ROG emissions estimated above is actually an underestimate because the model used, EPA’s TANKS 4.0.9d model (TANKS), omits a number of important fugitive sources. The TANKS model estimates only rim seal losses, withdrawal losses, deck fitting losses, and deck seam losses. It does not estimate other fugitive ROG emissions from roof landing losses, inspection losses, or flashing losses. These additional emissions should be estimated, added to other tank emissions, and mitigated when the DEIR is revised. Fox DEIR Comments at 25.

Roof landing losses can occur when a tank is emptied, and there is a gap between the roof and the bottom of the tank. These losses are not accounted for in EPA’s TANKS model, and EPA recommends that they be calculated separately. These evaporative roof landing losses could be

substantially higher for Bakken crudes than for other types of crude. Bakken crudes leave waxy deposits in pipelines and tanks, which require more frequent cleaning,<sup>21</sup> and thus higher emissions, than the crudes they would replace. Roof landing losses, can be easily estimated and are routinely included in emission inventories.<sup>22</sup> They are required to be reported, for example, in Texas.<sup>23</sup> They are also included in the emission inventory for Tesoro's Vancouver Terminal, which imports similar crudes by rail, and stores those crudes in tanks.<sup>24</sup> Fox DEIR Comments at 25-26.

Tank flashing emissions would increase ROG emissions as well and were not accounted for in the DEIR. Most Bakken crudes are transported raw, without stabilization, as discussed elsewhere in these Comments. Unstabilized or "live" crude oils have high concentrations of volatile materials entrained in the bulk crude oil. Tank flashing emissions occur when these live crude oils, such as Bakken crudes, are exposed to temperature increases or pressure drops. In such circumstances, some of the compounds that are liquids at the initial pressure/temperature transform into gases and are released (or "flashed") from the liquid. These emissions are not estimated by the EPA TANKS model, but should have been calculated separately using standard procedures.<sup>25</sup> The DEIR failed to

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<sup>21</sup> Innovative Solutions for Processing Shale Oils, Hydrocarbon Processing, 7/10/2013, Available at: <http://www.hydrocarbonprocessing.com/Article/3223989/Innovative-solutions-for-processing-shale-oils.html>.

<sup>22</sup> "How Can I Estimate Emissions from Degassing and Cleaning Operation During a Tank Turnaround? And How Can I Estimate Emissions from Roof Landing Losses in the TANKS Program:?", Available at: <http://www.epa.gov/ttnchie1/faq/tanksfaq.html#13>.

<sup>23</sup> Memorandum from Dan Eden, Deputy Director, Office of Permitting, Remediation, and Registration; David C. Schanbacher, Chief Engineer; and John Steib, Deputy Director, Office of Compliance and Enforcement, Re: Air Emissions During Tank Floating Roof Landings, December 5, 2006, Available at: [http://www.tceq.state.tx.us/assets/public/permitting/air/memos/tank\\_landing\\_final.pdf](http://www.tceq.state.tx.us/assets/public/permitting/air/memos/tank_landing_final.pdf).

<sup>24</sup> Tesoro Savage, Application for Site Certification Agreement, Section 5.1.2.1.4, Available at: <http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013-01%20Volume%20I/EFSEC%202013-01%20-%20Compiled%20PDF%20Volume%20I.pdf>.

<sup>25</sup> See, e.g., calculation methods at: Paul Peacock, Marathon, Bakken Oil Storage Tank Emission Models, March 23, 2010, Available at: [file:///C:/Users/Phyllis/Downloads/Peacock - March 23 2010. ppt.pdf](file:///C:/Users/Phyllis/Downloads/Peacock_-_March_23_2010.ppt.pdf); TCEQ, Air Permit Reference Guide APDG 5941, Available at: [http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/guidance\\_flashemission.pdf](http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/guidance_flashemission.pdf); Kansas Dept. of Health & Environment, Available at:

mention, calculate, or take into account these emissions, and does not include mitigation measures that would allow only stabilized crude oils to be received. Fox DEIR Comments at 28.

Finally, the DEIR fails to analyze water draw tank emissions. Crude oil typically contains small amounts of water. The water separates from the crude oil and accumulates in the bottom of storage tanks. This accumulated water, referred to as water draw, is typically transferred from the crude oil storage tanks into a smaller water draw surge tank for processing prior to disposal. Over time, a thick layer of crude oil forms in the water draw surge tank. The water draw surge tank and processing of wastewaters from it emit ROG and TACs. The DEIR fails to mention water draw, or include emissions from storing or processing it. This omission is material, because emissions associated with water draw will increase as the vapor pressure of the stored crude increases, and vapor pressure will increase when, for example, Bakken crude is substituted for San Joaquin Valley crude. Fox DEIR Comments at 28.

## *2. The DEIR Omits Rail Car Unloading Emissions*

The Project includes a rail car unloading rack capable of unloading two parallel rows of 25 crude oil rail cars simultaneously. DEIR at ES-3. The DEIR fails, however, to properly analyze the emissions from the unloading process.

A typical rail car unloading system consists of an adapter unit that connects the rail car to couplings, hoses, valves and piping. These in turn connect to a positive displacement pump. Air and crude oil vapors are commonly mixed in with crude oil, due to loading and evaporation during transit. Because these vapors present an explosion risk for downstream equipment, they are typically removed with air eliminators. The vapors also contain high concentrations of ROG and TACs, thus they are typically routed to carbon columns or an incinerator to control the emissions. Fox DEIR Comments at 29.

The DEIR does not mention these vapors or indicate how they will be controlled. The DEIR only notes that “the BAAQMD will consider locomotive

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[http://www.kdheks.gov/bar/download/Calculation\\_Flashing\\_Losses\\_Handout.pdf](http://www.kdheks.gov/bar/download/Calculation_Flashing_Losses_Handout.pdf); B. Gidney and S. Pena, Upstream Oil and Gas Storage Tank Project Flash Emissions Models Evaluation, July 16, 2009, Available at: <http://www.bdlaw.com/assets/htmldocuments/TCEQ%20Final%20Report%20Oil%20Gas%20Storage%20Tank%20Project.pdf>.

emissions and tank car unloading emissions as may be caused by the Project.” DEIR at 3-2. This is not adequate. If unloading emissions will occur, at an air eliminator or other release point, the DEIR must disclose and analyze those emissions now. If unloading emissions will not occur, then the DEIR should provide sufficient documentation to prove that and explain how or whether the explosion hazard typically associated with unloading cargos such as Bakken crude will be addressed. It is not clear that the air equalization system discussed in the DEIR would eliminate this hazard. Fox DEIR Comments at 29.

The unloading facility also includes a liquid spill containment sump with the capacity to contain the contents of at least one tank car. DEIR at ES-2. Crude oil that spills into this sump would release vapors including ROG and TAC emissions. The DEIR unlawfully failed to disclose or analyze these emissions. Fox DEIR Comments at 29.

#### **E. The DEIR Improperly Assumes that the Project Will Offset Ship Emissions**

The DEIR assumes that the Project’s crude would “replace” marine deliveries, rather than replacing pipeline deliveries or simply increasing the total amount of deliveries. DEIR at ES-1, ES-3, 1-1. Based on this assumption, the DEIR claims that the Project will decrease emissions from marine vessels. DEIR at 4.1-19. Specifically, the DEIR claims an emission reduction of 5.18 tons/year, (see Table 1 for example) by assuming that 73 vessel trips would be eliminated. DEIR at 4.1-16. This description of the project is misleading. There is no enforceable requirement that would require Valero to reduce marine deliveries to offset new rail deliveries. And it is reasonably foreseeable that such an offset will not occur, or not occur in full.

Instead, it is reasonably foreseeable that crude arriving by rail due to the project will replace existing albeit declining supplies of San Joaquin Valley crude oil,<sup>26</sup> which are presently delivered by pipeline, rather than replacing (or just replacing) crudes delivered by ship. Fox DEIR Comments at 20. The nearby Shell Oil Refinery in Martinez, for example, recently increased crude storage capacity to substitute imported crude oil by marine vessel “for diminishing San Joaquin Valley crude by pipeline.” DEIR, Table 5-1. The City's consultant, ESA, similarly expressed concern that ship

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<sup>26</sup> California Energy Commission, Margaret Sheridan, California Crude Oil Production and Imports, April 2006, Available at: <http://www.energy.ca.gov/2006publications/CEC-600-2006-006/CEC-600-2006-006.PDF>.

deliveries could increase in the future to replace diminishing supplies of crude oil available by pipeline. Fox DEIR Comments at 20.<sup>27</sup> Further, the BAAQMD Statement of Basis for the VIP Project states: “Valero anticipates the possibility that crude may no longer be brought in by pipeline. This could result from a problem with the pipeline, or a change in the cost of crude that makes pipeline supply no longer economical.”<sup>28</sup> Thus, it is reasonably foreseeable—especially in the absence of any contrary, enforceable conditions of approval—that the Project would not decrease marine deliveries to the extent claimed in the DEIR, or perhaps would not decrease them at all. The DEIR fails to disclose or analyze this scenario.

The DEIR also unlawfully fails to analyze whether the Project’s crude will be additional to what is already being imported under baseline conditions. Indeed, the DEIR lacks any information whatsoever about the current baseline throughput. Without such information, it is impossible to know whether the Project will allow throughput to increase. Obviously, to the extent that Valero *adds* the Project crude to its existing sources, there will be no decrease in marine shipments of crude.

Agencies may not incorporate proposed mitigation measures into the description of the project to skirt CEQA’s requirement to disclose significant impacts. *Lotus v. Dep’t of Transp.*, 223 Cal. App. 4th 645, 655-56 (2014). And if an agency relies on such measures to reduce the significance of the project, it must ensure that they are enforceable. *Id.* at 652. Here, the City may not simply rely on Valero’s unenforceable statements that the Project would reduce marine shipments. There is certainly nothing inherent in the project that would prevent marine shipments to continue at their present level. If the City wishes to rely on Valero’s statement that marine shipments will decrease, it must make that an enforceable condition of approval. If the City believes it cannot make an offsetting reduction in marine crude shipments enforceable, then the City must analyze the increase in train emissions without any offsets for reductions in marine emissions. The DEIR fails on both fronts.

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<sup>27</sup> Valero Responses to: Valero Crude by Rail Project Data Request Number 2, April 2, 2013.

<sup>28</sup> Available at [http://www.baaqmd.gov/~media/Files/Engineering/Title%20V%20Permits/B2626/B2626\\_2010-05\\_renewal\\_03.ashx?la=en](http://www.baaqmd.gov/~media/Files/Engineering/Title%20V%20Permits/B2626/B2626_2010-05_renewal_03.ashx?la=en).

**F. The DEIR Fails to Adequately Analyze Substantial Fugitive ROG and TAC Emissions from Rail Transport**

Because rail cars are not vapor tight, ROG and TACs from Bakken or similar crudes will be emitted from rail cars from their point of origin through unloading. Each rail tank car filled with crude oil has head space to accommodate expansion during shipping. This free space at the top of the tank car, allows entrained gases to be released from the crude oil<sup>29</sup> and emitted to the atmosphere during transit and idling in rail yards.<sup>30</sup> Because most Bakken crudes are shipped live, they can flash in the tank cars when exposed to temperature increases or pressure drops, causing valves to open, emitting ROG and TACs. Fox DEIR Comments at 30.

These losses are consistent with the well-known “crude shrinkage” issue associated with crude by rail: The quantity of crude delivered is significantly less than the quantity of crude that was loaded. The reported range in crude shrinkage is 0.5% to 3% of the loaded crude.<sup>31</sup> Some of this shrinkage is likely due to emissions of ROG and TAC from the rail car during transit, which has been confirmed by field measurements. The DEIR did not include these ROG and TAC emissions in its emission calculations or the health risk assessment. Fox DEIR Comments at 30.

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<sup>29</sup> Anthony Andrews, Congressional Research Service, Crude Oil Properties Relevant to Rail Transport Safety: In Brief, February 18, 2012, at 8-9.

<sup>30</sup> A DOT 111 (or comparable) tank car generally has a capacity of 34,500 gallons or 263,000 lbs. gross weight on rail. Under some conditions, the maximum gross weight can be increased to 286,000 lbs. At an API gravity of 50°, a tank car can hold its maximum volume of 31,800 gallons and not exceed the 286,000 lb gross weight on rail limit. As the API gravity drops, the amount of oil that can be carried must also drop. Thus, a tank car of Bakken crude, at its highest density of 39.7° API, can only hold 30,488 gallons, a volume reduction of about 1,300 gallons. Further, as crude oil density (and thus API gravity) is temperature dependent, volume will increase as temperature increases. Thus, the shipper may have to reduce the shipped volume even further. This volume reduction creates a space above the crude oil where vapors accumulate.

<sup>31</sup> Alan Mazaud, Exergy Resources, Pennsylvania Rail Freight Seminar, May 23, 2013, p. 17. Available at: <http://www.parailseminar.com/site/Portals/3/docs/Alan%20Mazaud%20Presentation%20-%20AM.pptx>.

Additionally, the domes covering the access point to each tank cars have vents and safety valves to let out vapors,<sup>32</sup> creating another source of ROG emissions that were omitted from the emission calculations. Occasionally dome covers are left open (e.g. for inspections or repairs), allowing residual vapors to escape to atmosphere. Crude oil residue coats the bottom and sides of empty rail cars, offgassing ROG and TAC while the rail cars idle at the site, waiting for the entire unit train to be unloaded. The ROG and TAC emissions from these sources were omitted from the DEIR's emission inventory. Fox DEIR Comments at 31.

Further, each tank car has a bottom outlet that is used for loading and unloading that includes pumps, manifolds, and valves, all of which leak ROG and TACs. Finally, liquid leaks occur when unloading arms are disconnected, even for the so-called no leak arms proposed for the Project. These disconnect leaks evaporate, contributing to ROG and TAC emissions. Fox DEIR Comments at 31.

Assuming the very low end of the range of crude shrinkage discussed above, 0.5%, increases in fugitive ROGs can be estimated as follows:

- The maximum freight weight per rail tank car is 106 tons.<sup>33</sup>
- ROG emissions from two unit trains per day with 50 cars each total 53 tons/day.<sup>34</sup>
- ROG can be emitted as the trains traverse the 1500 miles between the shipping point and the Valero rail terminal.
- Of this 1500 miles, 263 miles are within California.<sup>35</sup> Thus, 9.3 tons/day of ROG can be emitted within California from rail car leakage.<sup>36</sup>

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<sup>32</sup> Chapter 11. Tank Car Operations, Available at: <http://www.globalsecurity.org/military/library/policy/army/fm/10-67-1/CHAP11.HTML>.

<sup>33</sup> TRN Spec Sheet-1. DEIR, Ex. E.6 (6/11/14 Memo to Morgan from Velzy, pdf 1208).

<sup>34</sup> ROG emissions from train transit = (106 tons/car)(50 car/train)(2 train/day)(0.005) = 53 tons/day.

<sup>35</sup> DEIR, App. E.5 (Air Quality & GHG Supplement, pdf 1198) Distance within California = (136 + 390)/2 = 263 mi.

<sup>36</sup> DEIR, App. E.5 ROG emitted within California = (53 tons/day)(263/1500) = 9.3 tons/day.

- Of the 263 miles within California, 22 miles are within the boundary of the BAAQMD. Thus, 0.8 tons/day (1,555 lb/day) of ROG emissions can be emitted within the BAAQMD.<sup>37</sup>

These are material and unlawful oversights. ROG emissions of 1,555 lb/day exceed the BAAQMD daily CEQA significance threshold for ROG of 54 lb/day by over an order of magnitude. Further, these ROG emissions contain some of the same chemicals found in crude oil, including benzene, toluene, xylene, hexane, and ethylbenzene. As discussed below, some crudes can contain up to 7% benzene by weight (see Table 2 below). Thus, up to 1,301 lb/day of benzene could be emitted in California and up to 109 lb/day within the BAAQMD from rail car leakage. This rail car leakage is much greater than the amount of benzene (and other TACs) included in the DEIR's HRA. For example, the HRA included only 0.06 lb/day of benzene<sup>38</sup> from fugitive components—a tiny fraction of the 109 lb/day of benzene that could be emitted within the BAAQMD from the rail cars themselves. Fox DEIR Comments at 31.

These emissions greatly exceed the ROG (and HRA) CEQA significance thresholds of the BAAQMD and other air districts along the rail route. DEIR at 4.1-17, 4.1-18. The City must disclose, analyze, and require mitigation for these ROG and TAC emissions.

### **G. The DEIR Failed to Properly Analyze Construction Emissions**

The DEIR finds that there are no significant air quality impacts from construction activities, including diesel engine exhaust from equipment and haul trucks. DEIR at 4.1-15. However, the underlying analysis is flawed; in fact, daily construction emission estimates may exceed significance thresholds for NO<sub>x</sub>, a precursor to both ozone and particulate matter.<sup>39</sup>

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<sup>37</sup> ROG emitted within BAAQMD = (53 tons/day)(22/1500) = 0.8 tons/day.

<sup>38</sup> Benzene in fugitive emissions from DEIR, Appx. E.4, pdf 1160; Table 3-5: (2.57E-3 lb/hr)(24 hr/day)/2000 lb/ton = 3.1E-5 ton/day.

<sup>39</sup> Based on comments provided by Petra Pless, Pless Environmental, Inc. San Rafael, CA, prepared for Adams Broadwell Joseph & Cardozo and dated September 15, 2014 ("Pless Comments").

The DEIR relies on an outdated emissions model, URBEMIS, that was previously included in BAAQMD CEQA Guidelines.<sup>40</sup> More recent BAAQMD guidance recommends CalEEMod 2013.2, noting that URBEMIS is no longer supported.<sup>41</sup> The CalEEMod 2013.2 model has been used to estimate construction emissions for other refinery crude-by-rail projects.<sup>42</sup>

Additionally, the DEIR's approach relied on *average* daily construction emissions, which is inconsistent with the BAAQMD guidance to determine *maximum* daily construction emissions. Consequently, it substantially underestimates emissions on a short-term basis because it does not take into account the daily emissions during the various, potentially overlapping construction phases.<sup>43</sup>

In addition to the above methodological error in determining daily construction emissions, the DEIR also substantially underestimates emissions from material delivery trucks. The DEIR assumes a one-way trip distance of 7.3 miles for material delivery trucks, based on URBEMIS default values for urban commercial-non-work delivery trucks in Solano County.

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<sup>40</sup> BAAQMD, California Environmental Quality Act Air Quality Guidelines, updated May 2012; p. 8-1.

[http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQM%20CEQA%20Guidelines\\_Final\\_May%202012.ashx?la=en](http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQM%20CEQA%20Guidelines_Final_May%202012.ashx?la=en).

<sup>41</sup> BAAQMD, CalEEMod Release, Update August 5, 2013, website last updated January 16, 2014; <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx>.

<sup>42</sup> See, for example, the Draft EIR for the Phillips 66 Rail Spur Extension Project in Santa Maria, November 2013, Appendix B "Air Emission Calculations"; [http://www.slocounty.ca.gov/Assets/PL/Santa+Maria+Refinery+Rail+Project/Draft+EIR-Phillips+66+Rail+Spur+Extension+Project+\(November+2013\)/Appendices/Appendix+B+-+Air+Emission+Calculations.pdf](http://www.slocounty.ca.gov/Assets/PL/Santa+Maria+Refinery+Rail+Project/Draft+EIR-Phillips+66+Rail+Spur+Extension+Project+(November+2013)/Appendices/Appendix+B+-+Air+Emission+Calculations.pdf); and the Recirculated Draft EIR for the WesPac Pittsburg Energy Infrastructure Project, July 2013, Appendix C "Emission Estimation and Modeling Protocol"; <http://www.ci.pittsburg.ca.us/Modules/ShowDocument.aspx?documentid=5646>; (As recommended by BAAQMD (A. Kirk, personal communication, February 25, 2013), the California Emissions Estimator Model (CalEEMod) (version 2011.1) was used to quantify the construction emissions associated with the proposed project and Alternative 1.").

<sup>43</sup> CAPCOA, California Emissions Estimator Model, User's Guide, Version 2013.2, July 2013, p. 25-27; <http://www.aqmd.gov/docs/default-source/caleemod/usersguide.pdf?sfvrsn=2>. CAPCOA, California Emissions Estimator Model, User's Guide, Appendix A, Calculation Details for CalEEMod, revised July 2013, CalEEMod v.2013.2; available at <http://www.aqmd.gov/caleemod/doc/AppendixA.pdf>.

These county-average default trip lengths likely substantially underestimate actual trip lengths for Project construction, given that large amounts of specialized materials are required—*e.g.*, rail tracks, pumps, etc. —that may have to be brought in from a seaport or trucked in over long distances. Similarly, the DEIR's calculations do not appear to take into account delivery of the numerous pieces of construction equipment to the site, most of which will require delivery by heavy duty diesel trucks.

The DEIR's failure to account for these factors is material. Because the DEIR reported NO<sub>x</sub> emissions were so close to the threshold of significance (51.9 lb/day vs. a 54 lb/day threshold), it is highly likely that a more accurate accounting of construction emissions from the Project would have shown exceedances of the significance threshold and required mitigation. The City must correct these emissions calculations, recirculate the DEIR for public comment, and mitigate any significant impacts.

#### **H. The DEIR Fails to Properly Analyze and Disclose ROG Emissions Outside the Bay Area**

The DEIR neglects to properly assess, disclose, and mitigate the Project's air quality impacts in three affected air basins outside of the Bay Area: the Yolo-Solano, Sacramento and Placer air basins.<sup>44</sup> Although the DEIR quantifies indirect emissions from locomotives hauling crude oil within the jurisdictional boundaries of each of these air districts and finds significant impacts due to NO<sub>x</sub> emissions for the Yolo-Solano and Sacramento air basins, it fails to include fugitive ROG emissions from tank cars, discussed at length above. Utilizing the same method outlined above, we find that fugitive ROG emissions from tank cars exceed the threshold of significance for ROG in all three air basins outside the SF Bay Area:<sup>45</sup>

- Fugitive ROG emissions in the Yolo-Solano Air Basin are 413 tons per year, which is 40 times the significance threshold of 10 tons ROG per year.
- Fugitive locomotive ROG emissions in the Sacramento Air Basin are 1,095 lb/day, which is more than 16 times the significance threshold of 65 lbs ROG per day.

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<sup>44</sup> Pless Comments at 19-20.

<sup>45</sup> Locomotive roundtrip track distances were taken from DEIR Appendix E.5 at page 3, Yolo-Solano Air Basin = 32 miles, Sacramento AB = 15.5 miles, and Placer AB = 2.5 miles. Significance thresholds for the Air Basins are listed in DEIR Table 4.1-6

- Fugitive locomotive ROG emissions in Placer County Air Basin are 177 lb/day, which is more than twice the significance threshold of 82 lb ROG/day.

The DEIR fails entirely to identify and assess these excess ROG emissions outside of the Bay Area, and fails to provide any mitigation for them.

### **I. The DEIR Fails to Disclose and Underestimates TAC Emissions Used in Health Risk Assessment**

The Health Risk Assessment (HRA) for the Project fails to include most of the key information, such as emissions calculations for TACs, necessary to evaluate the increased health risks that could result from air emissions from the Project. As such, there is no evident basis to conclude that the Project would not result in significant health impacts; in fact, the Project raises serious potential health impacts, described below.

The HRA included diesel particulate matter and PM2.5 emissions but no other TACs (e.g. fugitive emissions) from locomotives. While TAC emissions were considered for some fugitive sources, such as rail car unloading, the HRA failed to include many other more significant sources of TAC emissions outlined above (e.g. storage tanks, rail cars, etc.).

Even when considering the TAC emissions from fugitive sources (mainly from rail car unloading), the HRA underestimated those emissions. The DEIR estimated TAC emissions from fugitive components using entirely inappropriate default emission factors that are not at all representative of the types of crude oil that could be imported at the rail terminal. DEIR, Appx. E.4-1 (11/13 Ap., pdf 1179, footnote). The emissions factors used by the HRA to estimate TACs are significantly lower than the levels of key TACs actually measured in some of the crude oil that it is reasonably foreseeable the project will import (according to DEIR Table 3-1). The emissions factors used by the HRA also significantly underestimate TACs as reported in publicly available Material Safety Data Sheets (MSDSs) for North American crudes.<sup>46</sup> Fox DEIR Comments at 32-33.

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<sup>46</sup> Tesoro Application to SCAQMD for Tank 80079 Throughput Increase, October 3, 2013, PRN 556835 (10/3/13 Application), MSDS for Light Sweet Crude, pdf 12; Tesoro Savage, Application for Site Certification Agreement, vol. 2, Appendix G: Material Safety Data Sheets, August 29, 2013, Available at:

<http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013->

The upper bound concentration of key TACs measured in North American crudes are summarized in Table 2 and compared with the emission factors used in the DEIR. This table shows that the HRA significantly underestimated all of the organic TACs included in the HRA by a factor of five to 28. Fox DEIR Comments at 33.

**Table 2: Comparison of HRA Speciation Profile for Fugitive Emissions with Maxima Reported in MSDS(s)<sup>47</sup>**

TAC	Weight Percent	
	HRA Speciation Profile <sup>48</sup>	Maxima MSDS
Benzene	0.6	7
Ethyl Benzene	0.4	7
Hexane	0.4	11
Toluene	1	7
Xylenes	1.4	7

Actual TAC emissions, after adjusting for the correct contaminant concentration, would be much higher. For example, benzene emissions could be ten times higher than reported in the DEIR, for those sources that were evaluated—and potentially orders of magnitude higher, if all of the appropriate sources of ROG emissions that would contribute TAC were evaluated. This increase in benzene alone is large enough to increase the cancer risk at the maximum exposed individual worker (MEIW) to a level that exceeds the BAAQMD significance threshold of 1 in one million. DEIR, Appx. E.4-1 (11/13 Ap., pdf 1189). Fox DEIR Comments at 34.

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[01%20Volume%20II%20-%20Appendices/EFSEC%202013-01%20Compiled%20Volume%20II.pdf](#)

<sup>47</sup> Tesoro Savage, Application for Site Certification Agreement, vol. 2, Appendix G: Material Safety Data Sheets for Enbridge Bakken (n-hexane = 11%); sour heavy crude oil (benzene = 7%; toluene = 7%; ethylbenzene = 7%; xylene = 7%); sweet heavy crude oil (toluene = 7%); light sweet crude oil (benzene = 7%; toluene = 7%; ethylbenzene = 7%; xylene = 7%), August 29, 2013, Available at: <http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013-01%20Volume%20II%20-%20Appendices/EFSEC%202013-01%20Compiled%20Volume%20II.pdf>. See also 3/7/13 Revised Application, pdf 96-115.

<sup>48</sup> DEIR, Appx. E.4, Table 3-5, pdf 1160.

Further, while the DEIR focuses on the benzene content of two Canadian crudes that are on average lower than the benzene content of Alaska North Slope crude (0.33%), the design crude for the refinery, DEIR, Appx. K at K-17, the DEIR entirely fails to account for the fact that other crudes that it is reasonably foreseeable will be imported by rail due to the project have higher average benzene content than ANS. Light crudes, like Bakken, have been reported to contain benzene concentrations of up to 7 percent by weight, which is twenty-one times higher than the design ANS crude. Fox DEIR Comments at 34.

In sum, the DEIR unlawfully fails to properly disclose and analyze the health impacts of importing, storing, and refining the crude oil that it is reasonably foreseeable the Project will bring to Valero.

**J. The DEIR Incorrectly Concludes That There Are No Feasible Mitigation Measures for Air Quality**

If an EIR concludes that a project will have a significant impact, CEQA requires the lead agency to adopt feasible mitigation measures or alternatives that reduce that impact to a level of insignificance. Pub. Res. Code § 21081, 21002. If the agency believes that there are no feasible mitigation measures or alternatives that reduce the project's impacts to less than significant, it must explain why and adopt a statement of overriding considerations before approving the project. Pub. Res. Code § 21081(a), 21002; Guidelines, §§ 15043, 15093.

The DEIR concludes in several places that no mitigation measures are available or are required because the City of Benicia purportedly lacks authority to adopt them. For example, the DEIR states that air emissions from tanker car locomotives would be a significant impact, but because it determined that “[t]he City has no jurisdiction to impose any emission controls on the tanker car locomotives,” it concluded that “there is no feasible mitigation available to reduce this significant impact to a less-than-significant level.” DEIR at 4.1-20.

The City is incorrect that it lacks any authority or ability to impose mitigation measures for the Project's significant air quality impacts; there are many possible mitigation measures within the City's authority. Most notably, the City could reduce the Project's impacts by limiting the number of rail cars that can be unloaded per day or otherwise reducing the offloading capacity of the Project. Valero is not a rail carrier as defined by federal law, and the City is not preempted from regulating Valero's actions. Chapter 6, which claims that this alternative is legally infeasible, should be

revised accordingly. In addition, the DEIR should analyze the following mitigation measures.

### 3. *The City Must Mitigate Fugitive ROG Emissions*

To mitigate the Project's significant ROG emissions, the City should consider feasible mitigation measures such as the use of zero-leak fugitive components; use of geodesic domes on fixed roof as well as external floating roof tanks; and cable-suspended, full-contact floating roof tanks.<sup>49</sup> Fox DEIR Comments at 24-26.

To reduce fugitive emissions from tanks including breathing losses, degassing, cleaning, and roof landing losses, the City should require Valero to install geodesic domes on any tanks that would store rail-imported crudes, thus avoiding emissions from tanks storing highly volatile crude oil. Over 10,000 aluminum domes have been installed on petrochemical storage tanks in the United States.<sup>50</sup> For example, ExxonMobil's Torrance Refinery covered all floating roof tanks with geodesic domes in 2008, reducing ROG emissions by 80 percent.<sup>51</sup> Similarly, a crude storage project recently proposed at the Phillips 66 Los Angeles Carson Refinery required external

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<sup>49</sup> See, e.g., Phillips 66 Los Angeles Refinery Carson Plant – Crude Oil Storage Capacity Project, September 6, 2013, Draft Negative Declaration (Carson Neg.Dec.), Available at: [https://www.aqmd.gov/CEQA/documents/2013/nonaqmd/Draft ND Phillips 66 Crude Storage.pdf](https://www.aqmd.gov/CEQA/documents/2013/nonaqmd/Draft%20ND%20Phillips%2066%20Crude%20Storage.pdf) and City of Richmond, Chevron Refinery Modernization Project DEIR (Chevron DEIR), Chapter 4.3, at 4.3-92, Available at: [http://chevronmodernization.com/wp-content/uploads/2014/03/4.3 Air-Quality.pdf](http://chevronmodernization.com/wp-content/uploads/2014/03/4.3%20Air-Quality.pdf).

<sup>50</sup> M. Doxey and M. Trinidad, Aluminum Geodesic Dome Roof for Both New and Tank Retrofit Projects, Materials Forum, v. 30, 2006, Available at: <http://www.materialsaustralia.com.au/lib/pdf/Mats.%20Forum%20page%20164-169.pdf>. Numerous vendors have provided geodesic domes for refinery tanks. See, e.g., Aluminum Geodesic Dome, Available at: <http://tankaluminumcover.com/Aluminum-Geodesic-Dome>; Larco Storage Tank Equipments, Available at: [http://www.larco.fr/aluminum\\_domes.html](http://www.larco.fr/aluminum_domes.html); Vacono Dome, Available at: [http://www.easyfairs.com/uploads/tx\\_ef/VACONODOME\\_2014.pdf](http://www.easyfairs.com/uploads/tx_ef/VACONODOME_2014.pdf); Peksay Ltd., Available at: <http://www.thomasnet.com/productsearch/item/10039789-13068-1008-1008/united-industries-group-inc/geodesic-aluminum-dome-roofs/>; United Industries Group, Inc., Available at: <http://www.thomasnet.com/productsearch/item/10039789-13068-1008-1008/united-industries-group-inc/geodesic-aluminum-dome-roofs/>.

<sup>51</sup> Torrance Refinery: An Overview of our Environmental and Social Programs, 2010, Available at: [http://www.exxonmobil.com/NA-English/Files/About Where Ref TorranceReport.pdf](http://www.exxonmobil.com/NA-English/Files/About%20Where%20Ref%20TorranceReport.pdf).

floating roof tanks with geodesic domes to store crude oil with an RVP of 11;<sup>52</sup> and other examples abound.<sup>53</sup> The crudes that would be stored in the Project tanks have vapor pressures that are comparable to gasoline, justifying the use of geodesic domes to control tank emissions. Fox DEIR Comments at 26.

Additionally, to prevent flashing emissions from tanks and dangerous transport conditions caused by entrained volatile gases (NGL) in crude oil, discussed at length above, permit conditions for this Project should allow only stabilized crude oils to be received.

#### *4. The City Must Mitigate Diesel Emissions from Locomotives*

Diesel emissions from locomotives are extremely harmful to public health, have been associated with a wide array of impacts, and are responsible for extremely high cancer risks documented around busy railyards in California.<sup>54</sup> NRDC MND comments at 26-30. Nationwide,

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<sup>52</sup> See, e.g., Phillips 66 Los Angeles Refinery Carson Plant – Crude Oil Storage Capacity Project, September 6, 2013, Table 1-1, Draft Negative Declaration, Available at: [https://www.aqmd.gov/CEQA/documents/2013/nonaqmd/Draft\\_ND\\_Phillips\\_66\\_Crude\\_Storage.pdf](https://www.aqmd.gov/CEQA/documents/2013/nonaqmd/Draft_ND_Phillips_66_Crude_Storage.pdf).

<sup>53</sup> The ConocoPhillips Wilmington Refinery added a geodesic dome to an existing oil storage tank to satisfy BACT. SCAQMD Letter to G. Rios, December 4, 2009, Available at: [http://yosemite.epa.gov/r9/air/epss.nsf/e0c49a10c792e06f8825657e007654a3/e97e6a905737c9bd882576cd0064b56a/\\$FILE/ATTTOA6X.pdf/ID%20800363%20ConocoPhillips%20Wilmington%20-%20EPA%20Cover%20Letter%20%20-AN%20501727%20501735%20457557.pdf](http://yosemite.epa.gov/r9/air/epss.nsf/e0c49a10c792e06f8825657e007654a3/e97e6a905737c9bd882576cd0064b56a/$FILE/ATTTOA6X.pdf/ID%20800363%20ConocoPhillips%20Wilmington%20-%20EPA%20Cover%20Letter%20%20-AN%20501727%20501735%20457557.pdf).

Chevron proposes to use domes on several existing tanks to mitigate VOC emission increases at its Richmond Refinery.

City of Richmond, Chevron Refinery Modernization Project, Environmental Impact Report, Volume 1: Draft EIR, March 2014 (Chevron DEIR), Chapter 4-3; Available at: <http://chevronmodernization.com/project-documents/>.

The U.S. Department of Justice CITGO Consent Decree required a geodesic dome on a gasoline storage tank at the Lamont, Texas refinery.

CITGO Petroleum Corp. Clean Air Act Settlement, Available at:

<http://www2.epa.gov/enforcement/citgo-petroleum-corporation-clean-air-act-settlement>.

<sup>54</sup> California Air Resources Board, Railyard Health Risk Assessments and Mitigation Measures, [www.arb.ca.gov/railyard/hra/hra.htm](http://www.arb.ca.gov/railyard/hra/hra.htm). Cancer risks exceed 1,000 per million next to some of the largest railyards.

pollution from locomotives contributes to 4,500 premature deaths per year.<sup>55</sup>

In 2015, tier 4 locomotives will be available that emit 80 percent less NO<sub>x</sub> and 90 percent less PM than a train engine built in 2008.<sup>56</sup> Where Tier 4 locomotives are not yet available, diesel particulate filters (DPFs) and selective catalytic reduction (SCR, a common catalyst based technology used to reduce NO<sub>x</sub> emissions) can be installed on existing locomotives to achieve emissions reductions similar to those of certified Tier 4s.<sup>57</sup> Locomotives serving this Project must meet tier 4 or equivalent emissions standards.

Locomotive emissions can and must be further mitigated by using an electronic positioning system,<sup>58</sup> rather than the locomotive engine, to move the cars through the unloading facility, and by installing automatic controls to minimize locomotive engine idling in the unloading facility.<sup>59</sup>

### *5. The City Must Mitigate Diesel Emissions from Construction*

Diesel emissions from construction activity would be significant and highly likely to exceed thresholds of significance requiring mitigation. The mitigation measures for construction discussed in the DEIR are minimal: dust control steps that are already required by BAAQMD. DEIR at 4.1-15 to 4.1-16. The BAAQMD recently recommended the following additional feasible measures to reduce NO<sub>x</sub> emissions during construction of the WesPac Pittsburg Energy Infrastructure project:

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<sup>55</sup> Fabio Caiazzo et. al, Air Pollution and early deaths in the United States. Part 1: Quantifying the impact of major sectors in 2005. *Atmospheric Environment* 79 (2013) 198-208.

<sup>56</sup> U.S. Environmental Protection Agency. "EPA Finalizes More Stringent Emissions Standards for Locomotives and Marine Compression-Ignition Engines." Regulatory Announcement EPA420-F-08-004, March 2008. Available at: <http://www.epa.gov/otaq/regs/nonroad/420f08004.htm>.

<sup>57</sup> West Coast Collaborative, Locomotive and Rail Sector meeting materials, 2012, <http://westcoastcollaborative.org/wkgrp-loco.htm>.

<sup>58</sup> See, for example, Oregon Department of Environmental Quality, Standard Air Contaminant Discharge Permit, Coyote Island Terminal, LLC, July 24, 2012, p. 3, Condition 1.1.a (an electric powered positioning system for maneuvering railcars through the Railcar Unloading Building).

<sup>59</sup> See, for example, EPA Smartway program; <http://www.epa.gov/otaq/smartway/idlingtechnologies.htm#loco-mobile-sdsu>

- Prohibit diesel generators where access to the electrical grid is available.
- Require electrification of motors, pumps, and other power tools whenever feasible.
- Require the use of biodiesel or other alternative fuels in generators, construction equipment, and/or off-road vehicles.

In addition, all construction equipment should meet EPA Tier 4 emission standards or utilize the best available control technology (BACT)<sup>60</sup> for emissions reductions of PM.<sup>61</sup> On-road trucks, such as dump trucks, should meet current EPA emissions standards or be equipped with diesel particulate filters.

## **II. THE DEIR FAILS TO PROPERLY DISCLOSE, ANALYZE, AND MITIGATE THE PROJECT'S SIGNIFICANT GREENHOUSE GAS IMPACTS**

CEQA requires agencies to analyze and mitigate a project's greenhouse gases impacts. Pub. Res. Code § 21083.05; Guidelines § 15064.4. Under the Bay Area Air Quality Management District threshold of significance used by the City, a stationary source project will have significant climate impact if it will emit more than 10,000 metric tons per year of carbon dioxide equivalent. DEIR at 4.6-9. The DEIR, looking solely at transportation emissions, concludes that the Project will not have significant climate impacts. DEIR at 4.6-11 to 4.6-14.

As with its analysis of air quality impacts, the DEIR improperly fails to disclose or analyze how changes in the crude slate or the total throughput at the refinery, enabled by the Project, will affect greenhouse gas emissions. The DEIR does not provide the current baseline for greenhouse gas

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<sup>60</sup> Here, BACT refers to the "most effective verified diesel emission control strategy" (VDECS), which is a device, system, or strategy that is verified pursuant to Division 3, Chapter 14 of Title 13 of the California Code of Regulations to achieve the highest level of pollution control for an off-road vehicle.

<sup>61</sup> This could include natural gas or biodiesel (derived from vegetable oils or animal fats, meeting the requirements of ASTM D 6751). However, biodiesel must be proven to be sourced from sustainable feedstocks including waste grease, fats or oil, and, under certain circumstances, farmed oils that can be proven to be sustainable.

emissions, beyond the emissions of marine tankers. DEIR at 4.6-8. Accordingly, it does not even mention possibly increases in refinery emissions, even though the refining of tar sands causes increased greenhouse gas emissions relative to traditional crudes. Fox IS/MND Comments at 29. The DEIR must analyze whether changes in the crude slate or increases in the total throughput would affect greenhouse gas emissions.

Furthermore, the DEIR's conclusion that the Project would not have a significant impact based on changes in transportation emissions is flawed. This conclusion, like the conclusion for air quality, assumes without any assurances that the Project's crude would necessarily replace crude imported by ship, rather than crude imported by pipeline. DEIR at 4.6-14. As discussed above, there is no enforceable mitigation measure requiring this result, and thus no guarantee that emissions will actually go down as promised by the DEIR.

### **III. THE DEIR FAILS TO PROPERLY DISCLOSE, ANALYZE, AND MITIGATE THE PROJECT'S SIGNIFICANT HAZARDS IMPACTS**

The City concedes that the Project will bring in crude from the Bakken region. DEIR at 3-23, 4.7-6 to 4.7-10. Bakken and other similar light crudes taken straight from the well are typically called "live" crudes because they contain large amounts of volatile natural gas liquids. The high concentration of these liquids in live crudes makes them highly flammable and more likely to form fire balls and boiling liquid expanding vapor explosions (BLEVES) in accidents. In most petroleum-producing regions, volatile components are removed before shipping using a stabilizer. However, in the Bakken fields, this infrastructure is rare, and so the crudes are shipped live. Thus, shipping Bakken crudes by rail poses unique risks. Fox DEIR Comments at 16-17.

In the past year and a half alone, there have been twelve serious crude-by-rail accidents in North America resulting in deaths, injuries, major evacuations, and millions of gallons of spilled oil. Attachment 4, Diane Bailey, *It Could Happen Here: The Exploding Threat of Crude by Rail in California*, NRDC Fact Sheet, June 2014 (Bailey Report) at 1. Most notably, on July 6, 2013, a train carrying Bakken crude oil derailed and exploded in Lac-Mégantic, Quebec, killing 47 people and destroying 30 downtown buildings. DEIR at 4.7-6, 4.7-8. The federal government has recognized the significant hazards presented by shipping Bakken crude by rail, calling it an "imminent

hazard to public health and safety and the environment.”<sup>62</sup>



Aftermath of crude-by-rail accident in Lac-Mégantic, Quebec  
(The Canadian Press/Ryan Remiorz)



Crude-by-rail accident in Casselton, North Dakota (Zuma Press)

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<sup>62</sup> U.S. DOT, Emergency Order re Petroleum Crude Oil Railroad Carriers, , May 7, 2014, available at <http://www.dot.gov/briefing-room/emergency-order>.

Despite the clear risks of transporting crude by rail, the DEIR, and the Barkan Report it relies on, claim that the Project will have no significant hazards impacts. DEIR at 4.7-15 to 4.7-27, Appx. F. As explained in detail below and in the attached report by rail safety expert Dr. Fred Millar, the DEIR improperly limits the scope of its analysis, overlooks relevant data, and downplays the effects of a serious accident. Once these factors are properly taken into account, there can be no dispute that the Project will have significant hazards impacts.

**A. The DEIR Improperly Limits the Geographic Scope to the Area Between Roseville and Benicia**

An EIR must discuss the significant impacts that the proposed project will have in the relevant geographic area. Guidelines § 15126.2(a). Agencies must “provide a reasonable explanation for the geographic limitation used,” Guidelines § 15130(b)(1)(B)(3), and the geographic scope “cannot be so narrowly defined that it necessarily eliminates a portion of the affected environmental setting,” *Bakersfield Citizens for Local Control v. City of Bakersfield*, 124 Cal. App. 4th 1184, 1216 (2004).

For the purposes of the hazards analysis, the DEIR limits the study area to the “rail corridor between Roseville and Benicia.” DEIR at 4.7-1. It claims that analyzing any impacts beyond Roseville would be “speculative” because crude oil shipments could come from regions “all over North America.” *Id.*

The DEIR’s restriction of the geographic scope to Roseville—a town just northeast of Sacramento and less than 80 miles from Benicia—is arbitrary and violates CEQA. Although the DEIR claims that analysis beyond Roseville would be speculative, there is no evidence that the City attempted to determine to possible routes upstream of Roseville. There are only a handful of rail lines that would serve the Project, so analysis of the potential impacts along those lines would have been far from speculative. In fact, within California, there are only three branches of Union Pacific rail lines that lead to Roseville, and it is possible that only one or two of those routes might be used to ship crude to Benicia for economic or other reasons. But because the City did not bother to investigate, the DEIR does not contain this analysis.

As Dr. Millar points out in his report (Attachment 5), the DEIR’s failure to analyze the probability of accidents upstream from Roseville is a major flaw in the Barkan Report. Millar Report at 3. The number of miles

travelled by the trains is a critical factor in the Barkan Report, so these additional miles would affect the likelihood of accidents. *Id.* Yet the report says nothing about what length of track trains will travel before arriving in Roseville, what the physical conditions of that track are like, or what the probability of release is on those stretches. *Id.* The DEIR must analyze the risk of accidents beyond Roseville, both within California and in other states.

**B. The DEIR Fails to Analyze Specific Characteristics of the Rail Route That Could Affect the Likelihood or Severity of an Accident**

Even assuming it were sufficient for the DEIR to analyze just the route between Benicia and Roseville, the DEIR fails to take into account specific physical features of the route that would affect both the likelihood and the severity of an accident.

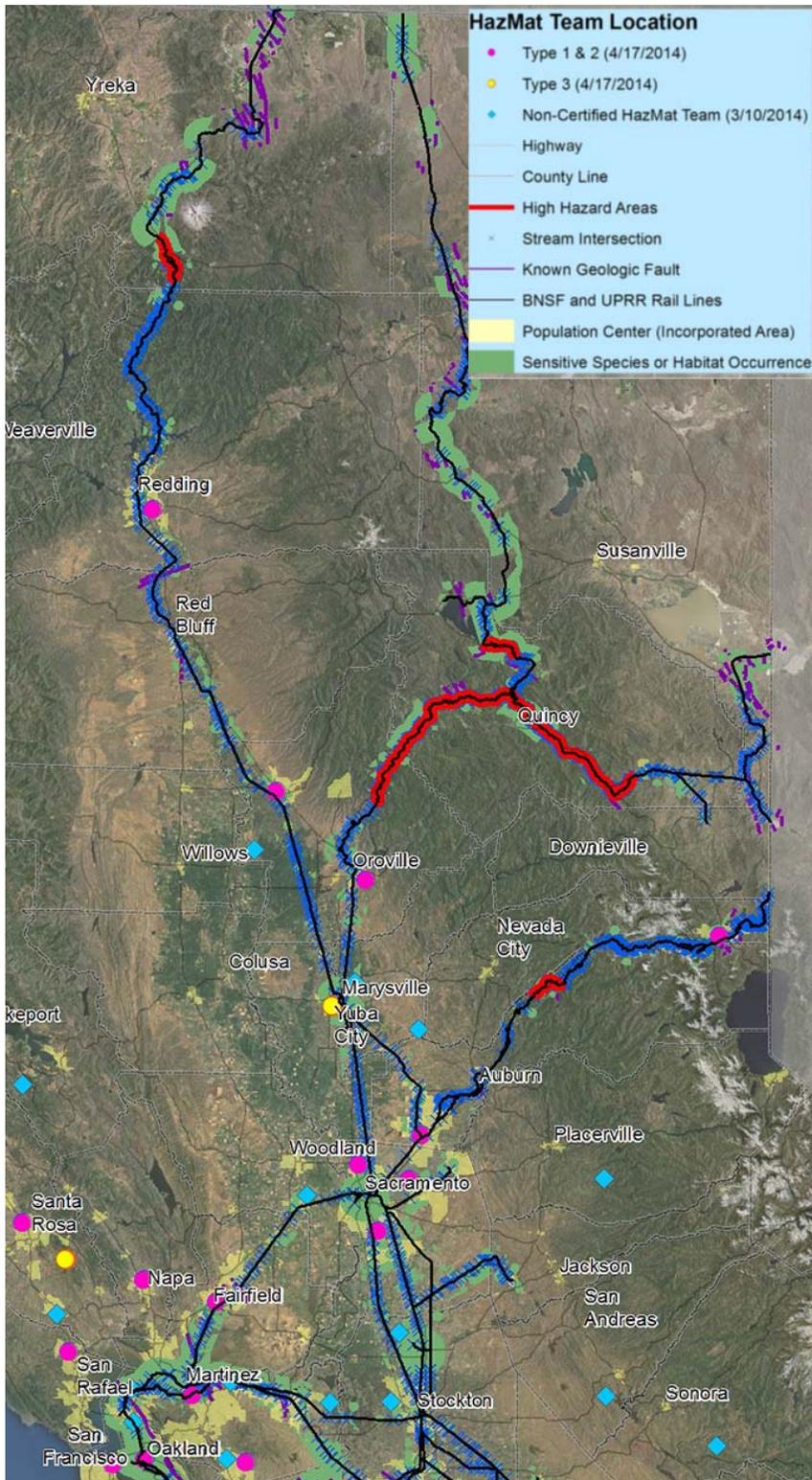
First, the probability calculations in the Barkan Report fail to take into account any features of the track beyond the class of track. Millar Report at 3-4. These include things like dangerous curves, washout potentials, trestles, or tunnels. *Id.* The Governor's Office of Emergency Services has prepared a map of rail risk areas that shows multiple high-risk areas upstream from Roseville. These types of local conditions contributed significantly to the accidents in the Lac-Mégantic and Lynchburg accidents. Millar Report at 3-4. And Dr. Barkan himself has acknowledged in prior work that local track conditions have an impact on the likelihood of an accident. *Id.*

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**Crude by Rail Areas of Concern**

Source: *Oil by Rail Safety in California*, California Interagency Rail Safety Working Group, Governor's Office of Emergency Services, June 10, 2014, attached as Attachment 6.

Second, the DEIR fails to adequately take into account the environmental setting surrounding the rail lines, which could affect the severity of any accident. “An EIR must include a description of the environment in the vicinity of the project, as it exists before the commencement of the project, from both a local and regional perspective.” Guidelines § 15125; *San Joaquin Raptor/Wildlife Rescue Ctr. v. Cnty. of Stanislaus*, 27 Cal. App. 4th 713, 722 (1994). The DEIR acknowledges that the consequences of a release would depend on the location of that release, yet beyond calculating a specific rate for the route traversing the Suisun wetlands, it makes no attempt to analyze what an accident in a sensitive area would look like. DEIR at 4.7-17; Appx. F at 7.

For example, a derailment near a school or a major population center could have catastrophic consequences. The DEIR acknowledges that there are at least 27 schools within one-fourth of a mile of the rail line on the Benicia to Roseville route alone. DEIR at 4.7-23. But the DEIR claims that this close proximity poses no significant risk. *Id.* And the DEIR does not even attempt to analyze whether there are other types of sensitive areas, such as areas with high population densities or hospitals, near the rail line. In fact, there are millions of people living within close proximity to certain sections of these rail lines. Bailey Report at 3; see also Attachment 7 (rail risk maps). Such factors are critical to analyzing the actual risks the Project poses. Millar Report at 4-5.

Likewise, the rail line crosses through many forested areas, and a derailment that causes a fire—even a small fire—could easily trigger a wildfire. Nonetheless, the DEIR dismissed the risk of wildfire from the Project as insignificant without even considering this possibility. DEIR at 4.7-27. The City must revise the DEIR to adequately describe the conditions surrounding the rail line, to give a full and accurate picture of the Project’s potential impacts.

**C. The DEIR Relies on Speculative and Unenforceable Mitigation Measures to Conclude That the Risk Is Less Than Significant**

The DEIR claims that the Project’s hazards impacts are less than significant in part because “Valero . . . would use only 1232 Tank Cars to transport oil from Roseville to Benicia.” DEIR at 4.7-19. The CPC-1232 tank car, named for the American Association of Railroads’ Casualty Prevention Circular 1232, is a tank car designed in 2011 to meet voluntary standards after the industry experienced a series of serious accidents with the puncture-prone DOT-111 tank cars. DEIR at 4.7-6. Nonetheless, the DOT-

111 continues to be the most commonly used tank car for transporting crude oil—there are over 80,500 DOT-111 tank cars in flammable liquid service compared to just 17,300 CPC-1232 tank cars. *Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains*, 79 Fed. Reg. 45016 (Proposed Rule) at 45025 (Aug. 1, 2014).<sup>63</sup>

The DEIR's entire analysis of risk is premised on Valero's promise to use CPC-1232 tank cars. However, agencies may not incorporate proposed mitigation measures into the description of the project to skirt CEQA's requirement to disclose significant impacts. *Lotus v. Dep't of Transp.*, 223 Cal. App. 4th 645, 655-56 (2014). If an agency relies on such measures to reduce the significance of the project, it must ensure that they are enforceable. *Id.* at 652. Here, the City may not simply rely on Valero's assurances that only CPC-1232 tank cars will be used. Because there are far fewer CPC-1232 tank cars available, Valero will surely have an incentive to use DOT-111 cars. If the City wishes to rely on this mitigation measure, it must ensure that the requirement is enforceable by making it a condition of approval. If the City believes it cannot make the condition enforceable because of preemption or other concerns, it must analyze the risk assuming DOT-111 cars, which are likely to be used. The City cannot have it both ways—claiming both that the use of CPC-1232 tank cars reduces the risk of the Project and that the CPC-1232 tank car requirement is not enforceable.

Even if Valero were to use only CPC-1232 tank cars, the Project will still have significant hazards impacts. As the DEIR admits, CPC-1232 tank cars were involved in the April 30, 2014 Lynchburg, Virginia accident. DEIR at 4.7-8. At least one of the CPC-1232 tank cars ruptured in that event and released its contents. *Id.* Flames shot 100 feet into the air, and the downtown had to be evacuated. The train was traveling just 24 miles per hour.<sup>64</sup>

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<sup>63</sup> The Proposed Rule is included on the accompanying CD as a reference to the Millar Report.

<sup>64</sup> Besty Morris and Laura Stevens, *Oil Train That Crashed in Lynchburg Was Moving Below New Speed Limit*, Wall Street Journal, available at <http://online.wsj.com/news/articles/SB10001424052702304178104579535732934152004>



Lynchburg, Virginia crude-by-rail accident involving 1232 cars (Sheri Felipe)

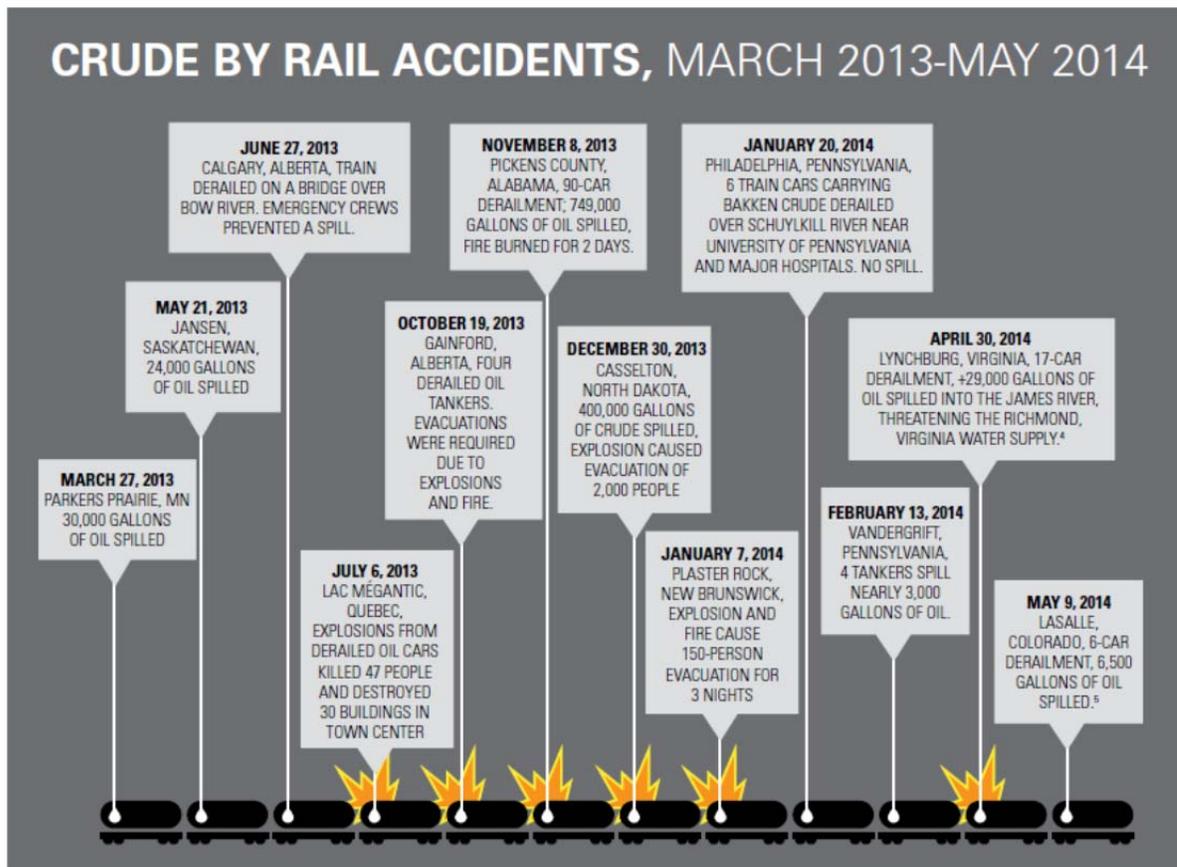
The DEIR also claims that crude oil trains will be subject to “new, more stringent requirements” from the Department of Transportation and Pipeline and Hazardous Materials Safety Administration (PHMSA). DEIR at 4.7-20. This is apparently a reference to PHMSA’s proposed rule, which was released for public review on August 1, 2014.

Present law does not require any of those “new, more stringent requirements.” The City cannot rely on safety measures that are not yet—and may never be—adopted to find that there is no significant safety risk. PHMSA’s proposed rule provides for a wide range of possible options, including three different potential tank car standards. Proposed Rule at 45018-19. Notably, the CPC-1232 tank car that Valero promises to use for this Project is the least safe of the three options evaluated in the proposed rule. *Id.* at 45019. There will certainly be heavy industry lobbying to adopt the least protective standards, or to do nothing at all. Furthermore, PHMSA has proposed a lengthy phase-out period for DOT-111 tank cars, allowing their use until 2018 or 2020. 45043. If the City wishes to use the new PHMSA rules in its analysis, it must wait until the final rule is issued. And even if PHMSA ultimately adopts more stringent tank car standards, the City cannot simply assume that compliance with those standards would ameliorate any significant impacts. *See Communities for a Better Env't v. California Res. Agency*, 103 Cal. App. 4th 98, 114 (2002) (rejecting the

argument that a project's impacts are insignificant simply because they comply with regulatory standards).

#### D. In Evaluating the Risk of an Accident, the DEIR Ignores the Most Recent and Relevant Data About Crude Oil Train Derailments

Among the most serious flaws in the DEIR is its failure to fully reckon with the serious accidents that have accompanied the rise of crude-by-rail shipments over the past five years. The amount of crude shipped by rail has increased drastically in recent years, from 45,000 barrels in 2009 to 6 million barrels in 2013. Bailey Report at 1. In the past year and a half alone, there have been twelve serious crude-by-rail accidents in North America resulting in millions of gallons of spilled oil, major evacuations, and, in Lac-Mégantic, 47 deaths. Bailey Report at 1. Nonetheless, the DEIR states that the “rate of hazardous material releases from trains has declined since the rate estimates were developed; the accident rate has been declining for decades . . .” DEIR at 4.7-18. Given the sharp increase in crude-by-rail accidents over the past two years, this language is misleading.



Source: Bailey Report at 2.

The Barkan Report, which underlies much of the DEIR's discussion of risk, fails to consider a number of important factors about crude-by-rail accidents. First, it relies solely on data from 2009 and earlier—before the boom in crude-by-rail shipments. The failure to use this more recent data is fatal to the report. Millar Report at 5-6. The City must use more recent and relevant data that takes into account the true probability and severity of crude-by-rail accidents, which can result in explosions and fires in addition to the “releases” discussed in the Barkan Report. For example, the Department of Transportation, in evaluating the risk of crude-by-rail accidents, uses recent data that includes years in which there were substantial crude-by-rail shipments. Millar Report at 6.

The Barkan Report also fails to take into consideration the unique characteristics of crude oil unit trains that could increase derailment rates. Millar Report at 5. It assumes an average train derailment rate based on all kinds of trains. *Id.* In fact, the Department of Transportation, the Association of American Railroads, and the NTSB have all recognized that crude oil unit trains are more likely to derail than average trains. *Id.* As the Department of Transportation recently stated:

The trains are longer, heavier in total, more challenging to control, and can produce considerably higher buff and draft forces which affect train stability. In addition, these trains can be more challenging to slow down or stop, can be more prone to derailments when put in emergency braking, and the loaded tank cars are stiffer and do not react well to track warp which when combined with high buff/draft forces can increase the risk of derailments.

Millar Report at 5. The Barkan Report failed to acknowledge this risk in its assumptions about derailment rates.

The Barkan Report also makes other assumptions about crude unit trains that contradict real-world data. For example, the report assumes an average of six derailed cars per derailment, and then uses that number to determine the probability of at least one car releasing crude oil per derailment. DEIR, Appx. F at 5. But in fact, actual data from the past year show that many more than six cars often derail during crude-by-rail accidents. And many of those cars release their contents. Proposed Rule at 45020 (showing that over 17 cars derailed in five recent crude-by-rail accidents, resulting in up to 25 tank cars being punctured). More broadly, the report fails to take into account the number of cars per train in the

analysis at all, assuming without support that both long and short trains would have identical derailment rates.

Instead of relying on actual data about crude-by-rail accidents, the Barkan Report uses a method of calculating the resistance of tank cars to puncture that is not transparent or sufficiently supported by empirical evidence. The report claims that the “conditional probability of release” for CPC-1232 tank cars is 0.103, but it fails to explain where that number comes from, other than to state that it was estimated based on statistics developed by the Railway Supply Institute (RSI) – Association of American Railroads (AAR) Railroad Tank Car Safety Research and Test Project.” DEIR, Appx. F at 5. Even assuming that it were proper to assume that only CPC-1232 tank cars would be used, there are many problems with this figure. The conditional probability of release for CPC-1232 tank cars is an estimate, not a figure drawn from actual data. Millar Report at 7. At a recent NTSB Forum, Todd Treichel, the director of the RSI-AAR Railroad Tank Car Safety Research and Test Project stated, “the CPC-1232 cars in particular remain fairly scarce in our data, so the specific question how have they performed in accidents so far doesn't really confirm or dispute the CPR estimates until there are many more cars that have been derailed in many more types of accidents.”<sup>65</sup> Similarly, the conditional probability of release applies to derailments that happen at a speed of 27 miles per hour, much lower than the voluntary limit of 40 to 50 miles per hour currently used by the railroads. Millar Report at 6.

Finally, the DEIR compares its calculated probability of a crude-by-rail accident to the probability of a marine tanker or automobile accident. DEIR at 4.7-18. This language is merely an attempt by the DEIR to minimize the appearance of the risk. The risk of a train carrying explosive Bakken crude derailed and decimating a town is simply not comparable to the risks of marine or auto accidents. Because they are misleading, these comparisons should be removed from the DEIR.

#### **E. The DEIR Fails to Disclose the Significance of Low Probability, High Consequence Events**

The DEIR acknowledges that the consequences of a release are “potentially severe,” but it dismisses those consequences by saying that the likelihood of a severe event occurring is low. DEIR at 4.7-20. The DEIR

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<sup>65</sup> NTSB Rail Safety Forum: Transportation of Crude Oil and Ethanol at 82, April 22, 2014, Washington, D.C., available at

<http://dms.nts.gov/pubdms/search/hitlist.cfm?docketID=56186>

devotes only one terse sentence to these types of impacts: “If a release in an urban area were to ignite and/or explode, depending on the specific circumstances, the release could result in property damage and/or injury and/or loss of life.” DEIR at 4.7-17.

Quite simply, the risk of a Lac-Mégantic-type accident happening, even if it were to happen only once every 111 years as estimated by the Barkan Report, is significant and the DEIR must disclose it as such. Millar Report at 9. Because the significance of an accident depends both on its probability of occurring and its magnitude, high magnitude-low probability risks are significant impacts under CEQA. Guidelines § 15143 (“The significant effects should be discussed with emphasis in proportion to their severity and probability of occurrence.”).

#### **F. The DEIR Fails to Adequately Analyze the Impacts of a Tar Sands Spill**

In addition to Bakken crude, Valero will likely also import Canadian tar sands by rail. The majority of tar sands currently being shipped by rail is bitumen blended with diluent, also known as diluted bitumen, or “dilbit.” Most formulations of diluent include natural gas liquid condensate containing volatile hydrocarbons such as benzene, toluene, ethyl benzene and xylene. A spokesperson for PHMSA recently stated that diluted bitumen would qualify as a flammable Class 3 material, like Bakken crudes.<sup>66</sup> Therefore, because diluent is volatile, dilbit could pose similar explosion hazards as Bakken crudes. The DEIR should analyze this risk.

Furthermore, because diluent evaporates after a spill and leaves the heavy crude behind, dilbit spills are particularly difficult to clean up. EPA recently noted that spills of diluted bitumen require different response action and equipment than conventional oil spills. In fact, three years after a major spill of dilbit into the Kalamazoo River in Michigan, heavy oil remained at the bottom of the river and will require dredging to clean up.<sup>67</sup> That effort has cost over \$1 billion so far. The DEIR fails to consider the possibility of a dilbit spill into the fragile San Francisco Bay Delta or other

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<sup>66</sup> Elana Schor, “Canadian oil sands crude is the X factor in crude-by-rail rule,” Energy Wire (Aug. 13, 2014), available at <http://www.eenews.net/energywire/stories/1060004416>.

<sup>67</sup> EPA, Comment letter to US Department of State regarding the Supplemental Draft Environmental Impact Statement for TransCanada’s proposed Keystone XL project, 2013, available at <http://www.epa.gov/compliance/nepa/keystone-xl-project-epa-comment-letter-20130056.pdf>.

sensitive areas, and what the wildlife, ecosystem, economic and human health implications would be.

**G. The DEIR Fails to Properly Analyze the Cumulative Impacts of Crude-by-Rail Projects**

The DEIR claims that “two or more events (from the Project and another cumulative project)” would need to occur “at the same time” for the Project’s cumulative hazards impacts to be significant. DEIR at 5-17. This statement fails to take into account the cumulatively significant increase in risk that communities near rail lines will face. In addition to the proposed WesPac Project in Pittsburg, which the DEIR lists on page 5-6, there are existing or proposed crude-by-rail projects in Sacramento, Richmond, and Stockton that may use the same rail lines as the Project. The additional risk posed by the Project is cumulatively significant in light of these other projects. Therefore, the DEIR must disclose this risk as significant and adopt mitigation measure to reduce the risk.

Similarly, because the Project would increase the rail traffic on these rail lines considerably, the DEIR must also analyze whether the additional traffic on the line could increase releases, either through increasing the probability of collision or contributing to wear and tear of the tracks.

**H. The DEIR Incorrectly Concludes That There Are No Feasible Mitigation Measures for Hazards**

As discussed above, the risk of accidents and spills due to transporting crude oil by rail is a significant impact of the Project. To comply with CEQA, the City must adopt all feasible mitigation measures to reduce the risk and severity of an accident along the rail line and enhance the City’s ability to respond to such an accident. The DEIR states that no mitigation measures are required to mitigate upset and accident conditions, in part because “federal law preempts the ability of state and local governments to regulate rail activity and/or impose any requirements that burden the unrestricted movement of trains in interstate commerce” and that the City “must rely on the federal authorities to ensure that any such risks are mitigated as appropriate.” DEIR at 4.7-20.

As with air impacts, the City is incorrect that it lacks any authority or ability to impose mitigation measures for the Project’s significant hazards impacts; there are many possibly mitigation measures within the City’s authority. The following mitigation measures can and should be adopted to

mitigate impacts from tanker car locomotives and to mitigate the risks of spills and accidents.

Most notably, the City can reduce the Project's impacts by limiting the number of rail cars that can be unloaded per day or otherwise reducing the offloading capacity of the Project. Valero is not a rail carrier as defined by federal law, so the City is not preempted from regulating Valero's actions. Chapter 6, which claims that this alternative is legally infeasible, should be revised accordingly. Likewise, the City can and should require Valero to have spill containment for more than one car at the offloading facility. Spill containment for just one car is insufficient if multiple cars can be unloaded at same time. DEIR at 3-17 to 3-21.

The City can also impose a variety of other mitigation measures that address the risks of the Project without regulating rail transportation. For example, the City should impose a fee or bonding requirement for crude shipments, with the proceeds to go toward accident preparedness and response. Likewise, the City should require Valero to insure itself up to the amount of damage that a significant accident in Benicia would cause. The City should also require Valero to contribute annually to the Benicia Fire Department for its reverse 911 system.<sup>68</sup>

Similarly, the City should require that Valero provide training and tuition assistance for emergency responders in consultation with the Fire Department.<sup>69</sup> Likewise, the City should require Valero to provide the Fire Department with a Fire Protection Engineering Consultant;<sup>70</sup> to provide a consultant to develop a Fire and Life Safety Plan;<sup>71</sup> and to buy an industrial foam pumper/tender, along with a cache of foam, all of which will be necessary for the Fire Department to respond to accidents effectively.<sup>72</sup> Lastly, the City should require Valero to fund a fair-share grant program for response preparedness in communities along the rail line. All of these

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<sup>68</sup> See Kern Cnty Planning & Devt. Dep't, Draft Environmental Impact Report: Alon Bakersfield Refinery Crude Flexibility Project (Alon EIR) 1-59 (May 2014), available at <http://pcd.kerndsa.com/planning/environmental-documents/350-alon-bakersfield-refinery-crude-flexibility-project>

<sup>69</sup> See *id.* at 1-62.

<sup>70</sup> See *id.* at 1-57.

<sup>71</sup> See *id.*

<sup>72</sup> See *id.* at 1-60.

measures would help offset the costs of the added vigilance that the Project would require of accident responders and would help ensure that Valero would pay its share of the remediation should an accident occur.

The City should also impose several informational requirements on Valero. First, the City should require Valero to work with it and other communities along the rail line to address local concerns. As part of this collaboration, it should require Valero to provide a brochure for local residences and businesses, informing them of how crude-by-rail deliveries will affect them, how they can prepare for an accident, and how they should respond after such an accident occurs.<sup>73</sup> The City should also require that Valero maintain a log of all crude deliveries, document the type of oil, its source, and the type of tank car that delivered it, and have all deliveries labelled with their volatility<sup>74</sup>—measures that would better enable accident responders to adequately respond to any accident or spill.

Next, the City should ensure that Valero provides the means to monitor conditions surrounding crude shipments so that conditions leading to accidents can be detected and accidents prevented. To that end, the City should require Valero to provide sensors or detectors for toxic or flammable gasses or vapors at the refinery and along the rail line.<sup>75</sup> Finally, the City should require Valero to ensure that Union Pacific conducts frequent and thorough track inspections.

In addition to mitigating risks through funding and informational measures, the City should impose procedural and planning requirements on Valero. These could include ensuring compliance with all Certified Unified Program Agency requirements, which contain numerous emergency plan requirements.<sup>76</sup> The City should require Valero to adhere to Best Management Practices in its crude-by-rail operation, to provide training for equipment use and spill cleanup, and to contain and clean spills according to the California Stormwater Quality Association Best Management Practice Handbook.<sup>77</sup> Moreover, the City should require Valero to update its refinery

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<sup>73</sup> See *id.* at 1-59.

<sup>74</sup> See *id.* at 1-61.

<sup>75</sup> See *id.* at 1-58.

<sup>76</sup> See *id.* at 1-58.

<sup>77</sup> See *id.* at 1-63.

safety procedures<sup>78</sup> and to amend its spill and accident prevention and response documents to take into account the new risks introduced by the Project.

None of these funding measures, informational requirements, or planning procedures would regulate rail transportation or have the effect of interfering with railroad operations. Moreover, most of these proposed requirements have been included in the EIR for the Alon crude by rail project in Bakersfield, indicating that both agencies and industry groups may be amenable to them.

#### **IV. THE DEIR FAILS TO PROPERLY DISCLOSE, ANALYZE, AND MITIGATE THE PROJECT'S SIGNIFICANT TRAFFIC IMPACTS**

The Project will add four train crossings a day to the at-grade crossing at Park Road in Benicia. The Project's traffic impacts are important to many of the small businesses and community members that use Park Road to access their places of work. These additional crossings could also affect emergency access to the refinery in the event of an accident, should additional emergency response be needed from points east. Under the DEIR's significance criteria, the Project would have a significant impact on traffic if it would cause an intersection's operations to degrade from LOS D or better to LOS E or F; substantially increase delays at an intersection that currently operates at LOS E or F; or increase the average vehicle delay by one second or more at a train crossing that currently operates at LOS F. DEIR at 4.11-5. The DEIR concludes that the traffic created by the Project will not exceed any of these thresholds. DEIR at 4.11-6. To the contrary, the Project will have significant traffic impacts by nearly any measure.

To understand the flaw in the DEIR's reasoning, it is first essential to understand how the Project will affect traffic. Under the existing conditions, on weekdays there are, on average, 10 crossings per day of 2.83 minutes a crossing, or 28.3 minutes total a day. On weekends, there are, on average, 7 crossings per day of 1.7 minutes, or 11.9 minutes total per day. DEIR at 4.11-7. According to the DEIR, the Project will increase train crossings at Park Road by four trains a day (two 50-car trains arriving and leaving). DEIR at 4.11-1. Each train crossing will take approximately 8.3 minutes. DEIR at 4.11-9. Thus the Project will increase train crossing time by 33.2 (4 x 8.3) minutes a day; it will more than double the waiting time on weekdays, and

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<sup>78</sup> See *id.* at 1-56 to 1-57.

nearly triple the waiting time on weekends. On their face, these impacts are significant.

Because of the unique traffic impact of train crossings, the DEIR's reliance on more traditional LOS thresholds is inappropriate. But the Project will have significant impacts even using those inappropriate thresholds. The DEIR's own analysis shows that train crossings cause the Park Road intersection to degrade from LOS A to LOS F, substantially increase delays at the intersection even compared to other train crossings, and increase the average vehicle delay by more than one second at the intersection compared to existing train crossings. DEIR at 4.11-8, 4.11-10.

Furthermore, the DEIR bases its analysis on a voluntary agreement by the railroad that that train crossings "will be scheduled to avoid the [rush] hours of 6:00 AM to 9:00 AM and 4:00 PM and 6:00 PM." DEIR at 4.11-1. However, Union Pacific has made clear that it does not view this measure as enforceable. DEIR, Appx. L. If this mitigation measure is not enforceable, the City must analyze the impacts of the Project in the absence of the measure. Train crossings during rush hour would drastically increase the Project's impacts.

Because this impact is significant, the City must adopt all feasible mitigation measures. Here, that could include reducing the number of cars that can be offloaded per day, or contributing a fair share to road improvements, such as an over or under pass (e.g. grade separation), that would lessen the traffic impacts.

Finally, the DEIR makes no attempt whatsoever to analyze traffic impacts at crossings outside the City. The DEIR must identify other at-grade crossings that may be affected, busy intersections in uprail Davis for example, and analyze whether those impacts would be significant.

## **V. THE DEIR FAILS TO PROPERLY DISCLOSE, ANALYZE, AND MITIGATE THE PROJECT'S SIGNIFICANT NOISE IMPACTS**

Under CEQA, "it is the policy of the state" to "[t]ake all action necessary to provide the people of this state with . . . freedom from excessive noise." Pub. Res. Code § 21001(b). The Project will add new sources of noise, both during the rail haul and on the Valero property during offloading activities. DEIR at 4.10-3. These noises will affect the residents in Benicia as well as those in uprail communities, some of whom may be as close as 50 feet from the rail line. DEIR at 4.10-14. It is well known that trains can cause

significant noise impacts. Nonetheless, the DEIR concludes that Project will not have any significant noise impacts. DEIR at 4.10-13, 4.10-14.

The DEIR uses the performance standards from the Benicia General Plan to evaluate noise. Those standards are 55 dBA hourly  $L_{eq}$  during the daytime hours of 7 a.m. to 10 p.m., and 50 dBA hourly  $L_{eq}$  during the daytime hours of 10 p.m. to 7 a.m.<sup>79</sup> DEIR at 4.10-9; Benicia General Plan at 178, Table 4-4. According to the general plan, the “an increase of 3dB or greater constitutes a significant environmental impact, unless the increase does not cause the standards in Table 4-4 to be exceeded.” General Plan page 178, notes to Table 4-4; DEIR at 4.10-9. In other words, a project will have a significant impact in an area that already exceeds the City standards (55 or 50 dBA hourly  $L_{eq}$ ) if it will increase noise by 3 dBA. Furthermore, according to the DEIR, a project will have a significant impact if in an area that does not already exceed City standards if it will increase noise by 5 dBA. DEIR at 4.10-11.

Based on the analysis of the City’s own noise expert, the existing noise at four residential receptor areas already exceeds the City’s threshold of 50 dBA hourly  $L_{eq}$  during the night. DEIR Wilson Ihrig & Associates Noise Study (Noise Study) at 6. The noise at one of those four residential receptors also exceeds the City’s 55 dBA hourly  $L_{eq}$  threshold for the day, and the other three receptors are just one or two dBA below that standard. *Id.* at 6. Thus, an increase in 3 dBA hourly  $L_{eq}$  or more would be significant for any of these receptors.

The DEIR claims that the noise levels would be 3 dBA hourly  $L_{eq}$  from the unloading rack pump noise and 33 dBA hourly  $L_{eq}$  from the train car movements. DEIR at 4.10-13. The DEIR fails to explain whether this noise is *in addition* to the existing baseline. It appears that these numbers simply represent the noise generated by the Project itself. If that is true, then the DEIR fails entirely to evaluate the impacts of the Project in combination with the existing noise levels, and fails to answer the question of whether noise levels will increase by 3 dBA hourly  $L_{eq}$ . Quite simply, the DEIR fails to answer the crucial question of what the actual noise levels will be *with* the Project. Given the already high baseline and the fairly large increase in noise from train car movements, which will occur between 10 p.m. and 5 a.m., Noise Study at 3, it appears the Project will exceed the City’s thresholds of

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<sup>79</sup> DBA stands for A-weighted decibel.  $L_{eq}$  stands for the equivalent sound level, which is used to describe noise over a specified period of time. DEIR at 4.10-3.

significance. The DEIR must better explain its analysis so that the public can understand the true noise impacts.

The DEIR also improperly uses an hourly  $L_{eq}$  to evaluate the Project's noise along the rail line. Using an hourly average to measure noise from a passing train, including the horn, is misleading. *Berkeley Keep Jets Over the Bay Comm. v. Bd. of Port Comm'rs*, 91 Cal. App. 4th 1344, 1377-83 (2001). The DEIR admits that the noise from a train horn will be 110 dBA at 100 feet, which is twice as far as some residences will be from the rail line. DEIR at 4.10-13. That level of noise is louder than a rock concert or a jet flyover at 1,000 feet. DEIR at 4.10-2. Even in Benicia itself, noise from the train horn would be as loud as 62 dBA at the nearest residence, which is as loud as heavy traffic at 300 feet. DEIR at 4.10-2, 4.10-14. These impacts, especially if at night, would be significant.

The DEIR also fails to adequately describe what these increases in noise will mean in terms of communication interference, sleep interference, physiological responses, and annoyance. A description of each of these problems, and at what noise levels they occur, is included in our comments on the Mitigated Negative Declaration.

Given these significant impacts, the City must adopt all feasible mitigation measures. Some of the mitigation measures discussed above, such as reducing the offloading capacity of the terminal, would also reduce noise impacts by reducing the number of trains. And even putting aside changes to the Project itself, the City could include a variety of residential sound insulation measures in nearby homes that would mitigate noise impacts. These measures include funding for new windows, exterior doors, and attic insulation. Residential sound insulation is a common mitigation measure that has been adopted at many airports around the state, including at LAX and Ontario.<sup>80</sup>

## **VI. CONCLUSION**

Valero's proposed Project would fundamentally change the quality of life not only for thousands of Benicia residents and small businesses but for those living in uprail communities spanning from Fairfield, Davis, and Sacramento to far beyond. The profound risks to public health and safety from the Project have been completely obscured, robbing the public of its

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<sup>80</sup> Los Angeles World Airports, Residential Sound Insulation, [http://www.lawa.org/welcome\\_LAWA.aspx?id=1092](http://www.lawa.org/welcome_LAWA.aspx?id=1092)

right to engage in the CEQA process. The DEIR fails to adequately disclose, analyze, and mitigate the Project's significant environmental impacts. The City should ultimately reject this dangerous Project and at the very least must address these flaws in a revised DEIR and recirculate the DEIR for public comment.

Sincerely,  
Diane Bailey, Senior Scientist  
Jackie Prange, Attorney  
Natural Resources Defense Council

Katherine Black  
Benicians for a Safe and Healthy Community

Roger Lin, Staff Attorney  
Communities for a Better Environment

Greg Wannier, Associate Attorney  
Sierra Club

Tamhas Griffith  
Martinez Environmental Group (MEG)

Aimee Durfee  
Bay Area Refinery Corridor Coalition (BARCC)

Kalli Graham  
Pittsburg Defense Council

Ann Puntch  
Crockett-Rodeo United to Defend the Environment (C.R.U.D.E.)

Pamela Arauz  
Global Community Monitor

Shoshana Wechsler  
Sunflower Alliance

Kassie Siegel, Director Climate Law Institute  
Center for Biological Diversity

Copy:

Jack Broadbent, Air Pollution Control Officer, Bay Area Air Quality Management District  
Richard Corey, Executive Officer, California Air Resources Board  
Matt Rodriguez, Secretary, California Environmental Protection Agency  
Gina Solomon, Deputy Secretary for Science and Health, CalEPA  
Ken Alex, Senior Policy Advisor to Governor Jerry Brown and the Director of the Office of Planning and Research  
Cliff Rechtschaffen, Senior Advisor to Governor Jerry Brown on energy and environmental issues  
Michael Peevey, President, California Public Utilities Commission  
Paul W. King, Deputy Director, Rail Safety Programs, CPUC  
Janea Scott, Commissioner, California Energy Commission  
Gordon Schremp, Senior Fuels Specialist, CEC  
Tom Cullen, Administrator, Office of Spill Prevention and Response  
Tom Campbell, Hazardous Materials Program Chief, Office of Emergency Services  
Sally Magnani, Senior Assistant Attorney General, California Department of Justice, Environment Section

List of Attachments:

Attachment 1: Comments by Dr. Phyllis Fox on the Draft Environmental Impact Report for the Valero Benicia Crude by Rail Project, September 15, 2014  
Attachment 2: NRDC Comments on the Initial Study/Mitigated Negative Declaration for the Valero Benicia Crude by Rail Project, July 1, 2013  
Attachment 3: Comments by Dr. Phyllis Fox on the Initial Study/Mitigated Negative Declaration for the Valero Benicia Crude by Rail Project, July 1, 2013  
Attachment 4: Report by Diane Bailey, *It Could Happen Here: The Exploding Threat of Crude by Rail in California*, NRDC Fact Sheet, June 2014  
Attachment 5: Comments by Dr. Fred Millar on the Draft Environmental Impact Report for the Valero Benicia Crude by Rail Project, September 15, 2014  
Attachment 6: *Oil by Rail Safety in California*, California Interagency Rail Safety Working Group, Governor's Office of Emergency Services, June 10, 2014  
Attachment 7: Crude Oil Train Derailment Risk Zones in California for Selected Cities, NRDC, 2014

**Comments**  
**on the**  
**Draft Environmental Impact Report (DEIR)**  
**for the**  
**Valero Benicia Crude by Rail Project**

Benicia, California

September 15, 2014

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I have reviewed the Draft Environmental Impact Report (DEIR)<sup>1</sup> for the Valero Benicia Crude by Rail Project (CBR Project) prepared for the City of Benicia (City) by ESA, as well as records referenced in the DEIR and files obtained from the Bay Area Air Quality Management District (BAAQMD).

The CBR Project will install facilities to allow the Valero Benicia Refinery (Refinery) to receive up to 70,000 barrels per day (bbl/day) of North American crude oils by rail. The facilities that would be installed include about 8,880 feet of new track; a new tank car unloading rack capable of unloading two parallel rows of tank cars simultaneously; and 4,000 feet of 16-inch diameter crude oil pipeline and associated fugitive components (valves, flanges, pumps) connecting the offloading rack and an existing crude supply pipeline. DEIR, pp. ES-1 to ES-4.

Based on my review, I conclude this DEIR is fundamentally defective in that it omits crucial information to understanding the Project's significant impacts. Specifically, the DEIR does not disclose the Project's crude slate, relies on flawed analyses in addressing whether the Project would enable refining of substantial quantities of tar sands and Bakken crudes, relies on unsupported assumptions as to the Project's light crude composition, and underestimates the Project's operational emissions of reactive organic gases ("ROG") and toxic air contaminants ("TAC"). When these underestimates are corrected, the CBR Project results in significant air quality and public health impacts. The City must correct these defects and recirculate the DEIR, so that the public and decision-makers can be fully informed of the Project's air quality and public health and safety impacts.

My resume is included in Exhibit A to these Comments. I have over 40 years of experience in the field of environmental engineering, including air emissions and air pollution control; greenhouse gas (GHG) emission inventory and control; air quality management; water quality and water supply investigations; hazardous waste investigations; hazard investigations; risk of upset modeling; environmental permitting; nuisance investigations (odor, noise); environmental impact reports, including CEQA/NEPA documentation; risk assessments; and litigation support.

I have M.S. and Ph.D. degrees in environmental engineering from the University of California at Berkeley with minors in Hydrology and Mathematics. I am a licensed professional engineer (chemical, environmental) in five states, including California; a Board Certified Environmental Engineer, certified in Air Pollution Control by the American Academy of Environmental Engineers; and a Qualified Environmental Professional, certified by the Institute of Professional Environmental Practice.

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<sup>1</sup> ESA, Valero Benicia Crude by Rail Project, Draft Environmental Impact Report, SCH # 2013052074, Use Permit Application 12PLN-00063, June 2014.

I have prepared comments, responses to comments and sections of EIRs for both proponents and opponents of projects on air quality, water supply, water quality, hazardous waste, public health, risk assessment, worker health and safety, odor, risk of upset, noise, land use and other areas for well over 100 CEQA documents. This work includes Environmental Impact Reports (EIRs), Negative Declarations (NDs), and Mitigated Negative Declarations (MNDs) for all California refineries; crude oil and rail terminals in California, Louisiana, Oregon, New York, Texas, and Washington; and various other permitting actions for tar sands and light shale crude refinery upgrades in Indiana, Louisiana, Michigan, Ohio, South Dakota, Utah, and Texas and liquefied natural gas (LNG) facilities in Texas, Louisiana, and New York.

My work has been cited in two published CEQA opinions: (1) *Berkeley Keep Jets Over the Bay Committee, City of San Leandro, and City of Alameda et al. v. Board of Port Commissioners* (2001) 111 Cal.Rptr.2d 598 and *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310.

I commented on the Initial Study/Mitigated Negative Declaration (IS/MND) (attached to the DEIR as Appx. A<sup>2</sup>) that the CBR Project would allow a change in crude oil slate quality, to heavier higher sulfur crudes and/or to lighter sweeter crudes, which would result in emission increases that were not considered in the CEQA review. Fox IS/MND Comments<sup>3</sup>, pp. 2-35. The DEIR does not correct the defects that I identified in my IS/MND comments. Rather, it advances an argument that the rail-imported crudes will be blended with other crudes to meet the same sulfur and weight specifications as in the baseline Refinery. Thus, the DEIR asserts that crude slate quality and emissions from refining it would not change. This is incorrect. This does not address my comments on the IS/MND. Therefore, I reassert my IS/MND comments and incorporate them here by reference. The following sections present my evaluation of the DEIR's response to my previous crude slate switch comments, point by point. The DEIR's response to my comments is included in Appendices C.1 and C.2, based on a report contained in Appendix K. The following comments on Appendices C.1 and C.2 apply equally to the underlying analyses in Appendix K.

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<sup>2</sup> ESA, Valero Crude by Rail Project, Initial Study/Mitigated Negative Declaration, Use Permit Application 12PLN-00063, Prepared for City of Benicia, May 2013.

<sup>3</sup> Phyllis Fox, Comments on Initial Study/Mitigated Negative Declaration for the Valero Crude by Rail Project, Benicia, California, Use Permit Application 12PLN-00063, July 1, 2013; [http://www.ci.benicia.ca.us/vertical/sites/%7B3436CBED-6A58-4FEF-BFDF-5F9331215932%7D/uploads/Report\\_by\\_Dr.\\_Phyllis\\_Fox.pdf](http://www.ci.benicia.ca.us/vertical/sites/%7B3436CBED-6A58-4FEF-BFDF-5F9331215932%7D/uploads/Report_by_Dr._Phyllis_Fox.pdf).

## **I. THE DEIR FAILS TO ANALYZE THE AIR QUALITY IMPACTS FROM REFINING DIFFERENT TYPES OF CRUDE**

### **A. Heavy Sour Crudes**

The CBR Project DEIR responds to the heavy sour crude slate issues that I raised in Appendix C.1. The thrust of the CBR Project DEIR's response is based on the "weight" (API gravity)<sup>4</sup> and sulfur content of the crude, which it argues would not change due to the Project, but rather would remain within a narrow range. Therefore, the CBR Project DEIR argues, emissions would not increase. The CBR Project DEIR argues: "Thus, to the extent that the Project would cause an increase in emissions based on an increase in the weight and sulfur content of crude feedstocks – any such emissions increase would be within the baseline environmental conditions." DEIR, Appx. C.1, p. C.1-3.

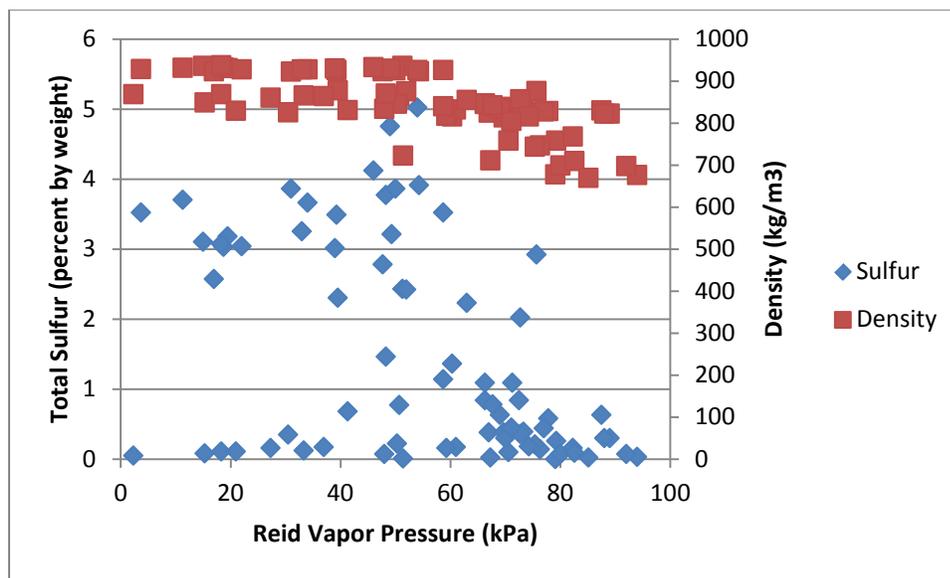
*First*, this misses the point, as explained in my previous comments at Section II.D, pp. 19-31. There are important differences between crudes that are not related to the weight and sulfur content of the crude that result in adverse impacts. Even if the weight and sulfur content of a particular crude blend fall within the range specified in the DEIR, or don't change at all, other components in the crude, such as TACs like benzene, or highly malodorous compounds such as mercaptans, may be present at much higher concentrations than in the crudes they replace with identical sulfur and API gravity.

Further, other characteristics of the crude, such as its vapor pressure or flammability, may differ in significant ways from the crudes they would replace. These other constituents and properties are not a function of the API gravity or the sulfur content and are present independent of them. The DEIR's consultant, Dr. McGovern, demonstrated there is no relationship between vapor pressure (expressed as RVP) and crude gravity (expressed as API). DEIR, Appx. K, p. K-18. This is further substantiated by analysis of data published by Enbridge, summarized here in Figure 1. The Enbridge data covering 76 different types of crude oil show that crude oil attributes of sulfur content and density are completely independent of vapor pressure.

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<sup>4</sup> Note that throughout the DEIR, the term "weight" is used to indicate API gravity or density, where "density" is technically what is meant. We will use the same terminology in this report; "weight" indicates density.

**Figure 1: Reid Vapor Pressure Compared to Total Sulfur and Density for 76 different types of Crude Oil**



Source: Enbridge Pipelines Inc., 2013 Crude Characteristics, <http://www.enbridge.com/~media/www/Site%20Documents/Delivering%20Energy/2013%20Crude%20Characteristics.pdf>

The vapor pressure of crude determines to a large extent the amount of ROG and TAC emissions that are emitted when it is transported, stored, and refined. Thus, a crude slate may have identical sulfur content and weight, but would result in dramatically different ROG and TAC emissions. Similarly, the nature of the chemical bonds in crude determines the amount of energy and hydrogen that must be supplied to refine it. Thus, a crude slate may have identical sulfur and weight, but a different mix of chemicals that would affect the amount of energy and hydrogen required to convert it into refined products.

These differences—in both chemical and physical characteristics other than API gravity and sulfur content—fluctuate independent of sulfur content and API gravity and will result in significant impacts that have not been considered in the DEIR. These impacts include, for example, significant increases in ROG emissions, contributing to existing violations of ozone ambient air quality standards; significant increases in TAC emissions, resulting in significant health impacts; significant increases in malodorous sulfur compounds, resulting in significant odor impacts; significant increases in combustion emissions, contributing to existing violations of ambient air quality standards; and significant increases in flammability and thus the potential for more dangerous accidents involving train derailments or spills on-site. The DEIR fails to consider these significant impacts by raising irrelevant issues.

*Second*, the rationale that sulfur levels and density of the crude slate would stay within a narrow range ignores the possibility of gradual creep within that range that would still be

significant. This recently occurred at the nearby Chevron Richmond Refinery. This refinery gradually changed crude slates, while staying within its established crude unit design basis for total weight percent sulfur of the blended feed to the crude unit.<sup>5</sup> This change increased corrosion rates in the 4-sidecut line, which led to a catastrophic pipe failure in the #4 Crude Unit on August 6, 2012. This accident sent 15,000 people from the surrounding area for medical treatment due to the release and resulting fire that created huge black clouds of pollution over the surrounding community. Fox IS/MND Comments, pp. 25–26.

These types of accidents can be reasonably expected to result from incorporating tar sands crudes into the Benicia crude slate, even if the range of sulfur and gravity of the crudes remain the same, unless significant upgrades in metallurgy occur, as these crudes have a significant concentration of sulfur in the heavy components of the crude coupled with high total acid number (TAN) and high solids, which aggravate corrosion. The gas oil and vacuum resid piping, for example, may not be able to withstand naphthenic acid or sulfidation corrosion from tar sands crudes, leading to catastrophic releases.<sup>6</sup> Fox IS/MND Comments, pp. 35-36.

Catastrophic releases of air pollution from these types of accidents were not considered in the DEIR. Rather, the DEIR relies on the Refinery's existing Process Safety Management program, including the Management of Change (MOC) and Mechanical Integrity (MI) programs, to prevent corrosion. DEIR, p. 3-16. However, these programs were also in place at Chevron at the time of the August 2012 accident discussed above, and they did not prevent a catastrophic accident caused by sulfur creep. The recent Chevron FEIR incorporated many additional mitigation measures to improve these programs,<sup>7</sup> which should be required for the Valero Rail Project.

*Third*, the unloading rack, storage tanks and associated fugitive components are major sources of the ROG and TAC emissions. These unload, transport, and store crude oil as delivered, before it is blended. Therefore, the argument that the rail-imported crude is blended before it is refined is irrelevant.

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<sup>5</sup> US Chemical Safety and Hazard Investigation Board, Chevron Richmond Refinery Pipe Rupture and Fire, August 6, 2012, p.34 ("While Chevron stayed under its established crude unit design basis for total wt. % sulfur of the blended feed to the crude unit, the sulfur composition significantly increased over time. This increase in sulfur composition likely increased corrosion rates in the 4-sidecut line.").

<sup>6</sup> See, for example, K. Turini, J. Turner, A. Chu, and S. Vaidyanathan, Processing Heavy Crudes in Existing Refineries. In: Proceedings of the AIChE Spring Meeting, Chicago, IL, American Institute of Chemical Engineers, New York, NY, Available at: <http://www.aiche-fpd.org/listing/112.pdf>.

<sup>7</sup> See, for example, Chevron Refinery Modernization Project, Revisions to Draft EIR Volumes 1 & 2, p. 4-40, Mitigation Measure 4.13-7h, Available at: <http://chevronmodernization.com/project-documents/>.

1. The CBR Project DEIR Must Evaluate the Potential Impacts of the Full Range of Crude Oil Types That Could Be Imported

The CBR Project DEIR asserts: “There is no reason to believe that...Valero would be more likely to purchase heavy Canadian crudes than any number of other North American crudes that are lighter and/or sweeter...” DEIR, Appx. C.1, p. C.1-1. The CBR Project DEIR presents a table that lists 38 “available North American crudes” that could potentially be imported by the proposed rail facilities. DEIR, Table 3-1. Of these 38 crudes, 87% or 33 of them, are Canadian tar sands crudes and of the tar sands, 15 are “heavy sour” and 5 are “medium sour.” Canadian tar sands crudes are chemically distinct from the current crude slate and thus will result in significant impacts that were not analyzed in the CBR Project DEIR. Fox IS/MND Comments, pp. 25-28. DEIR Table 3-1 is prima facie evidence that tar sands crudes are likely to be in the mix of crudes that will be imported by the CBR Project.

Regardless of which of these 38 crudes is selected, the DEIR must analyze the full range of resulting impacts, from all of the 38, as the DEIR suggests all or any of them may be refined. Impacts would vary greatly between tar sands crudes on the heavy high sulfur end and by Bakken crudes on the light sweet end, each end of this range with unique and significant impacts. The DEIR does not include impacts from either of these, but rather only an unidentified default crude that is not representative of any of the 38. See Comment III.

2. Blended Weight and Sulfur Content Do Not Determine ROG and TAC Emissions

The CBR Project DEIR argues that “even if Valero were to purchase large amounts of heavy sour Canadian crudes as a result of the Project, this would not cause an increase in refinery emissions because Valero must blend crude feedstocks to a narrow range of weight and sulfur content before processing them.” DEIR, pp. 3-14, 3-24, 4.1-17, C.1-1/2. This is insufficient information to analyze impacts, as noted above, because the weight (API gravity) and sulfur content are not the only characteristics of crude oil that determine environmental impacts. Other important factors include volatility, flammability, metal content, ROG speciation profile, the specific suit of heavy organic compounds in the crude, and the TAC and sulfur speciation profile (i.e., the concentration of individual TAC and sulfur compounds present in the crude).

Elevated levels of benzene or hydrogen sulfide, for example, cannot be blended out because they are emitted from tanks and fugitive components before the crudes reach the mixing tanks. The majority of the toxic TACs and malodorous chemicals are emitted before blending occurs, during unloading and from fugitive components along the pipeline and at the storage tanks. Blending by itself does not eliminate them.

Similarly, elevated metals that end up in coke fugitive particulate emissions cannot be blended out. No matter how much blending is done with relatively less contaminated crudes, a significant amount of heavy metals from lower quality rail-imported crude would still remain, mostly partitioning to the coke. Blending also does not remove but only dilutes elevated concentrations of high molecular weight organic compounds such as asphaltenes and resins that require high energy input to break down into marketable products. Fox IS/MND Comments, pp. 4-10. These characteristics may vary in significant ways among crudes with the same range of API gravity and sulfur, resulting in significant environmental impacts. Fox IS/MND Comments, pp. 29-30.

### 3. Crude Slate Impacts Are Not Part of the Baseline

The CBR Project DEIR indicates that Valero made significant modifications to the Refinery between 2004 and 2010. These modifications are collectively known as the “Valero Improvement Project” or VIP. The City certified the VIP project EIR and approved the VIP project in April 2003. It later certified the VIP EIR addendum in July 2008. DEIR, p. 3-12.

The CBR Project DEIR argues that crude slate impacts are part of the VIP baseline, “[e]ven if refinery emissions were to increase based on Valero’s purchase of heavy sour Canadian crudes, any such emissions increases would properly be considered part of the baseline because the baseline includes the full scope of operation allowed under existing permits that were issued based upon prior CEQA review.” DEIR, p. C.1-1. The DEIR cites several CEQA cases regarding subsequent environmental review for modifications to existing projects.

Setting aside legal considerations, this argument has no technical merits for three reasons. First, the scope of operations previously approved did not include any impacts from a crude slate change and did not contemplate the crudes listed in DEIR Table 3-1. Second, the CBR Project is not a modification of the previously permitted VIP, which underwent CEQA review. Third, even assuming the VIP EIR evaluated a crude slate change and the CBR Project is just a modification of the VIP, both of which are false, the regulatory framework has changed, requiring additional CEQA review.

#### *a. The Scope of the VIP Project Did Not Include Impacts from Crude Slate Change*

Even if the CBR Project were simply a modification of the VIP Project, the VIP EIR did not evaluate impacts from a crude slate change. The existence of permits, absent CEQA review of the proposed change, is not determinative.

The VIP CEQA documents do not discuss cost-advantaged North American crudes, such as those in CBR Project DEIR Table 3-1. None of these crudes is evaluated, or even identified,

in the VIP EIR. Thus, the impacts of refining these crudes were in no way considered or incorporated. Therefore, the CBR Project DEIR cannot rely on the VIP CEQA review to address the impacts of refining any of them. Rather, the VIP EIR proposed to import heavy sour crudes by ship. The crudes available by ship in 2002 are chemically and physically different from the crudes available by rail in 2014, over a decade later. The oil markets have changed dramatically due to the advent of fracking and the development of tar sands, all of which occurred long after the VIP EIR analyses were performed.

There are many cost-advantaged, heavy high sulfur crudes that likely were the target of the VIP analyses prepared in 2002, such as heavy sour crudes from Ecuador, Venezuela, Colombia and Iraq, which were refined at the post-VIP Refinery. Fox IS/MND Comments, Figure 1. These heavy sour crudes are distinguishable from the crudes that are currently the target of the CBR Project, which are tar sands crudes and light sweet crudes with distinct physical and chemical characteristics. DEIR, p. C.2-1. The crudes that are currently the target of the CBR Project (DEIR, Table 3-1) were not available in the marketplace in 2002 when the VIP CEQA analysis was performed and thus were not considered in prior CEQA analyses. The differences between the crudes considered in the VIP EIR and those that would be imported by the CBR Project are discussed in my July 2013 comments on the IS/MND.

There is no evidence that the VIP was designed to refine, and that the VIP CEQA review addressed, the unique impacts of refining any of the cost-advantaged North American crudes listed in DEIR Table 3-1. Further, the lynchpin of the VIP EIR, a new, bigger hydrogen plant to allow refining of more heavy sour crude, may not be built as Valero has enough hydrogen to meet its current needs. DEIR, p. 3-12. This could be due to the availability of hydrogen from another source or a change in crude slate to lighter crudes that do not require more hydrogen to refine.

Bakken and Bakken blends with tar sands crudes, for example, would fall into this class. Further, the rail emissions assume a line haul one-way distance of 1,500 miles (DEIR, p. 4.1-22 and Appx. E.5, pdf 1197), which is consistent with Bakken crudes. There is no evidence in the record that impacts from refining this lighter, sweeter crude were considered in the VIP EIR. These impacts are discussed below in Comment I.B.

*b. The CBR Project Is a New Project*

The City did not treat the CBR Project as a modification of a previously permitted project in the IS/MND, but rather as a new project. Furthermore, even the DEIR refers to the VIP as a “previous” project. DEIR at 1-4. The characterization of the CBR Project as a modification of the VIP Project in the DEIR for baseline purposes improperly characterizes the projects and causes the CBR Project DEIR to underestimate or ignore real environmental impacts.

*c. The Regulatory Framework Has Changed, Requiring Additional CEQA Review*

Even if one hypothetically assumed that the VIP EIR evaluated the crude slate switch facilitated by the CBR Project, the regulatory and informational framework within which the CBR Project would be developed has changed dramatically, rendering the 2002 analysis obsolete. The City certified the VIP project EIR and approved the VIP project in April 2003. It later certified a VIP EIR addendum in July 2008. DEIR, p. 3-12. The Addendum incorporated a flue gas change related to the Main Stack Scrubber and added an analysis of greenhouse gas emissions. These changes do not affect any of the issues discussed here.<sup>8</sup>

When the VIP CEQA analysis was performed, none of the cost-advantaged crudes listed in Table 3-1 were in the marketplace. In response to ESA questions, for example, Valero responded that the CBR Project “was implemented to take advantage of land-locked North American crudes that have **recently** become available.” Valero 2013,<sup>9</sup> p. 1 (emphasis added). As discussed earlier, these crudes are notably different from the current crude slate, in ways that are much broader than just sulfur content and weight. Thus, none of the impacts of refining these physically and chemically distinct crudes could have been anticipated and evaluated in 2002 when the VIP CEQA analysis was performed. Further, as explained in my comments on the IS/MND, the regulatory framework has significantly changed, requiring additional CEQA review even if the Project were a modification of a project that had previously undergone CEQA review. Fox IS/MND Comments, pp. 33-34.

Since the VIP FEIR was certified in 2003, new scientific evidence about the potential adverse impacts of air pollutants has become available, and in response, new guidance has been published and several federal and state ambient air quality standards have been revised. These include:

- The 8-hour state ozone standard was approved by the California Air Resources Board (CARB) on April 28, 2005 and became effective on May 17, 2006;
- The U.S. Environmental Protection Agency (EPA) lowered the 24-hour PM<sub>2.5</sub> (particulate matter equal to or smaller than 2.5 micrometers) standard from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup> in 2006. EPA designated the Bay Area as nonattainment of this PM<sub>2.5</sub> standard on October 8, 2009;
- On June 2, 2010, the EPA established a new 1-hour SO<sub>2</sub> (sulfur dioxide) standard, effective August 23, 2010;

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<sup>8</sup> Valero Improvement Project, Addendum to VIP EIR, June 2008, Available at: <http://www.ci.benicia.ca.us/vertical/sites/%7B3436CBED-6A58-4FEF-BFDF-5F9331215932%7D/uploads/%7B5A35F17D-5E23-404C-8032-6597BE84B5F9%7D.PDF>.

<sup>9</sup> Valero Responses to: Valero Crude by Rail Project Data Request Number 2, April 2, 2013.

- The EPA promulgated a new 1-hour NO<sub>2</sub> (nitrogen dioxide) standard of 0.1 ppm, effective January 22, 2010;
- The EPA issued the greenhouse gas tailoring rule in May 2010, which requires controls of GHG emissions not contemplated in the VIP FEIR or the 2008 Addendum;
- The CARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure below which there are no adverse health effects determined;
- The EPA issued a final rule for a national lead standard, rolling 3-month average, on October 15, 2008. The Project would increase lead emissions. Fox IS/MND Comments, p. 1, 20;
- Various BAAQMD regulations, including Regulation 2-2 (adopted December 19, 2012); and
- BAAQMD is currently developing a regional refinery regulation that could require additional emission controls.

## **B. Light Sweet Crudes**

Light sweet crudes such as Bakken could be imported by rail and could result in an increase in ROG and TAC emissions from storage tanks, pumps, compressors, valves, and connectors that were not considered in the IS/MND. Fox IS/MND Comments, pp. 11, 25-28. The CBR Project DEIR concedes that “[o]nce the Project is constructed and operational, Valero may well purchase large amounts of light sweet North American crudes. In fact, this is Valero’s stated plan.” DEIR, p. C.2-1. Elsewhere, the DEIR notes that “[o]nce the Project is complete, Valero plans to obtain North American crudes that are, on average, lighter and sweeter than Valero’s current feedstocks. According to Valero, the North American crudes will be ‘Alaskan North Slope (ANS) look-alikes or sweeter’ (Valero, 2013).” DEIR, p. 3-24. The closest and most cost advantaged of light sweet North American crudes listed in Table 3-1 that could be blended to be an ANS look-alike is Bakken crude.

An ANS look-alike crude, for example, could be created by blending 55% Bakken and 45% Western Canadian Select at a cost potentially far less than the ANS market price. The resulting mix has the same API gravity and slightly higher sulfur than ANS, and virtually identical distillation yields.<sup>10</sup> Both of these crudes are listed as available North American crudes in the DEIR. DEIR, Table 3-1. See also DEIR, pp. K-16/17. Alternatively, some of the lighter crudes, such as Bakken, could be fed directly to refining units, such as the fluid catalytic cracking unit (FCCU), eliminating the need for blending. Thus, the DEIR must evaluate the

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<sup>10</sup> John R. Auers and John Mayes, North American Production Boom Pushes Crude Blending, Oil & Gas Journal, May 6, 2013, Available at: <http://www.ogj.com/articles/print/volume-111/issue-5/processing/north-american-production-boom-pushes.html>.

impacts of importing by rail and processing both Bakken and tar sands crudes, which span the range of likely impacts.

1. Bakken Crudes Have Properties That Will Result in Significant Impacts Not Evaluated in the DEIR

The DEIR makes the same arguments as to weight and sulfur content as previously made with respect to heavy sour crudes. The DEIR asserts that refining 70,000 bbl/day of light sweet crude would not cause an increase in ROG emissions because: “(a) Valero must blend crude feedstocks to a narrow range of weight and sulfur content before processing them, and (b) therefore, the average weight and sulfur content of crudes delivered to the Refinery will remain the same. In other words, any deliveries of light North American crudes by rail would simply replace the delivery of other light crudes by ship.” DEIR, p. C.2-1. This is wrong for two principal reasons.

*First*, this is wrong because most of the ROG and TACs are emitted before the crudes are blended, from the rail cars, unloading, pipeline fugitive components (valves, pumps, connectors), and crude storage tanks. According to the Project description, two unit trains, each potentially carrying Bakken crude oil, would be unloading within a 24-hour period. DEIR, p. 3-22. This would result in an increase in daily ROG and TAC emissions, regardless of blending downstream to meet ANS-lookalike quality.

*Second*, this is wrong because all light sweet crudes are not created equal. The average weight (API gravity) and amount of sulfur in light sweet crudes do not determine the amount of ROG and TACs that will be emitted from Refinery tanks, pumps, compressors, valves, and connectors. The DEIR is correct when it asserts that “there is no relationship between the weight of a particular crude oil and the amount of fugitive emissions released from equipment containing that crude oil.” DEIR, p. C.2-1. See also Figure 1.

The amount of ROG and TAC emissions is determined by the “volatility” of the crude and the concentration of TACs within the crude, not by its weight or sulfur content. The volatility can vary widely for “light sweet crudes,” independent of weight and sulfur content. Processing in the oil fields, in particular, significantly affects volatility of shipped crudes, as discussed below. Bakken crudes, which are likely to be imported by the CBR Project, have uniquely elevated volatility, which has led to many spectacular accidents, such as those that occurred at Lac-Mégantic<sup>11</sup>; Casselton, North Dakota<sup>12</sup>; Alabama<sup>13</sup>; and more recently, Lynchburg, Virginia.<sup>14</sup>

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<sup>11</sup> NTSB, Safety Recommendation In reply refer to: R-14-4 through -6; January 21, 2014. Available at: <http://www.nts.gov/doclib/reclatters/2014/R-14-004-006.pdf>.

Volatility is measured in pounds per square inch (psi) and is typically reported as Reid Vapor Pressure (RVP).<sup>15</sup> Vapor pressure is an indirect measure of the evaporation rate of volatile compounds in the crude oil, with higher vapor pressures indicating greater losses from evaporation. The DEIR neglected to disclose the well-known relationship between the vapor pressure of a crude and the amount of emissions released from equipment containing the crude,<sup>16</sup> which is incorporated into the EPA TANK 4.0.9d model, universally used to estimate ROG and TAC emissions from tanks, including in the DEIR for this Project.

The CBR Project would facilitate the import of Bakken crudes, which have uniquely elevated vapor pressures compared to the light sweet crudes they would replace. As discussed elsewhere in these comments, most of the imported crude that would be replaced is Alaska North Slope (ANS) crude (API gravity = 31.6°, S = 0.96%) and similar or heavier foreign imports. The ANS crude has a Reid Vapor Pressure (RVP) of 6.3 psi.<sup>17</sup> Most foreign imports have an even lower RVP. In comparison, Bakken crudes (API gravity = 38-40°, S = 0.2%), the most likely replacement, have a RVP of up to 15.5 psi.<sup>18</sup> Thus, replacing ANS and foreign imports with Bakken would increase ROG and TAC emissions from tanks and fugitive sources by up to a factor of 2.5. The TAC emissions would increase even more as the concentration of TACs in the Table 3-1 crudes are much higher than in the current crude slate.

The volatility and TAC speciation information required to evaluate this crude switch, from ANS, to an ANS-look alike based on a Bakken blend, is completely absent from the DEIR. Vapor pressure and crude TAC speciation information are not confidential and are routinely

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<sup>12</sup> NTSB, Preliminary Report; DCA14MR004, 2014. Available at: [https://www.nts.gov/doclib/reports/2014/Casselton\\_ND\\_Preliminary.pdf](https://www.nts.gov/doclib/reports/2014/Casselton_ND_Preliminary.pdf).

<sup>13</sup> Karlamangla, Soumya, "Train in Alabama oil spill was carrying 2.7 million gallons of crude." Los Angeles Times, <http://articles.latimes.com/2013/nov/09/nation/la-na-nn-train-crash-alabama-oil-20131109>, November 9, 2013.

<sup>14</sup> Los Angeles Times, May 1 2014, <http://www.latimes.com/nation/nationnow/la-na-nn-ntsb-investigation-fiery-crude-oil-train-derailment-virginia-20140501-story.html>.

<sup>15</sup> Measured by American Society for Testing and Materials Method ASTM D323-08, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method) is used to determine the vapor pressure at 100 F with initial boiling point above 32 F.

<sup>16</sup> See AP-42, Section 7.1: Organic Liquid Storage Tanks.

<sup>17</sup> ExxonMobil Refining and Supply Company, ANS11U, Available at: [http://www.exxonmobil.com/crudeoil/about\\_crudes\\_ans.aspx](http://www.exxonmobil.com/crudeoil/about_crudes_ans.aspx) and <http://www.exxonmobil.com/crudeoil/download/ans11u.pdf>.

<sup>18</sup> Classification and Hazard Communication Provisions for Crude Oil – Bakken Crude Oil Data, June 13, 2014, Available at: <http://www.unece.org/fileadmin/DAM/trans/doc/2014/dgac10c3/UN-SCETDG-45-INF26e.pdf>; Dangerous Goods Transport Consulting, Inc., A Survey of Bakken Crude Oil Characteristics Assembled for the U.S. Department of Transportation, Submitted by American Fuel & Petrochemical Manufacturers, May 14, 2014, pp. 5, 19, Available for download from: <https://www.afpm.org>;

North Dakota Petroleum Council, Bakken Crude Quality Assurance Study, Available at: [http://www.ndoil.org/image/cache/Summary\\_2.pdf](http://www.ndoil.org/image/cache/Summary_2.pdf);

included in public documents to support tank and fugitive emission calculations. Further, crude assay data is widely reported.<sup>19</sup> See, for example, the Tesoro Vancouver Application.<sup>20</sup>

The DEIR offers irrelevant information to support its theory, arguing that “the amount of fugitive emissions from a piece of equipment is a function of the mechanical integrity of the equipment and the pressure applied to its contents. The weight of the crude oil is not a factor.” DEIR, p. C.2-2. While this is partially correct, in that the design of the equipment and the pressure exerted by the contained crude oil on this design are important factors that determine the amount of emissions during routine operations, it fails to acknowledge other key factors such as RVP and TAC concentrations in the crude discussed above. The DEIR must evaluate the foreseeable scenarios of both light sweet crude, including Bakken, and heavy sour crude, including tar sands.

The foreseeable switch from ANS and other current components of Valero’s crude slate to a Bakken crude or a Bakken-tar sands mix, included in DEIR Table 3-1, is a feedstock change that should have been explicitly identified and evaluated in the DEIR. These new crudes are chemically and physically different from the current crude slate and the crude slate evaluated in the VIP EIR in ways that are not captured by exclusive consideration of crude slate sulfur content and API gravity. These differences will result in significant impacts not evaluated or disclosed in the CBR Project DEIR.

Bakken crudes have unique chemical and physical characteristics that distinguish them from currently refined crudes and which would result in significant environmental impacts not identified in the DEIR, including significant risk of upset, air quality, odor, and public health impacts. These unique characteristics include high volatility, flammability,<sup>21</sup> and elevated concentrations of TACs and ROG.

The amount of TACs and ROG released from storage tanks and fugitive components depends upon the vapor pressure of the crude oil. Bakken crude oils are the most volatile of the

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<sup>19</sup> Jeff Thompson, Public Crude Assay Websites, February 24, 2011. [http://www.coqa-inc.org/docs/default-source/meeting-presentations/20110224\\_Thompson\\_Jeff.pdf](http://www.coqa-inc.org/docs/default-source/meeting-presentations/20110224_Thompson_Jeff.pdf).

<sup>20</sup> Tesoro Savage, Application for Site Certification Agreement (Vancouver Application), vol. 1, August 29, 2013, Available at: <http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013-01%20Volume%20I/EFSEC%202013-01%20-%20Compiled%20PDF%20Volume%20I.pdf> and vol. 2, Available at: <http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013-01%20Volume%20II%20-%20Appendices/EFSEC%202013-01%20Compiled%20Volume%20II.pdf>.

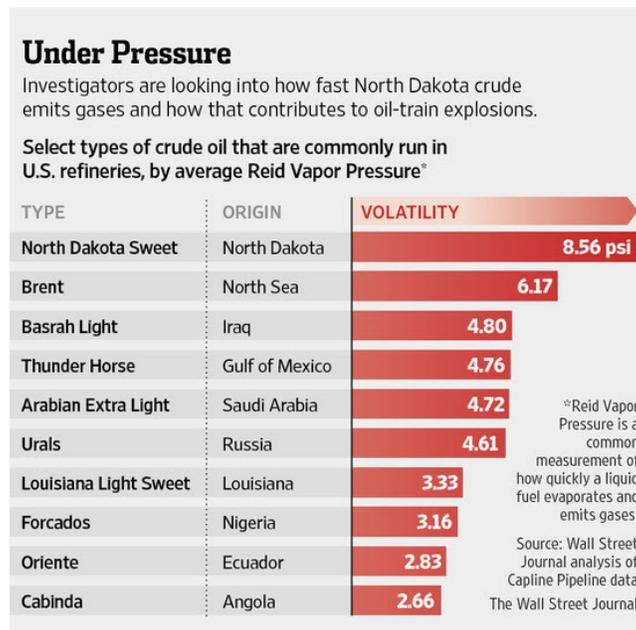
<sup>21</sup> Flammable crude oils will ignite when they are mixed with air in certain concentration ranges. The lowest temperature at which they produce sufficient vapor to support combustion is called the “flash point”.

crudes listed in DEIR Table 3-1. Crude oil data collected by Capline Pipeline, which tested crudes from 86 locations world-wide for vapor pressure, found the following:<sup>22</sup>

“[L]ight, sweet oil from the Bakken Shale had a far higher vapor pressure – making it much more likely to throw off combustible gases – than crude from dozens of other locations... According to the data, oil from North Dakota and the Eagle Ford Shale in Texas had vapor-pressure readings of over 8 pounds per square inch, although Bakken readings reached as high as 9.7 PSI. U.S. refiner Tesoro Corp., a major transporter of Bakken crude to the West Coast, said it regularly has received oil from North Dakota with even more volatile pressure readings – up to 12 PSI. By comparison, Louisiana Light Sweet from the Gulf of Mexico, had vapor pressure of 3.33 PSI, according to the Capline data.”

This data, summarized in Figure 1, shows that “light” crude oils vary substantially in vapor pressure and thus would have a wide range of environmental impacts when stored and transported. The more volatile the crude, the higher the ROG, TACs, and methane (a potent greenhouse gas) emissions, the higher the flammability, and the greater the potential consequences in the event of an accident. Thus, the DEIR’s assertions that there will be no increase in ROG and TACs as lights will replace lights is simply inaccurate.

**Figure 2: Volatility (psi) of Some Commonly Refined Crude Oils**

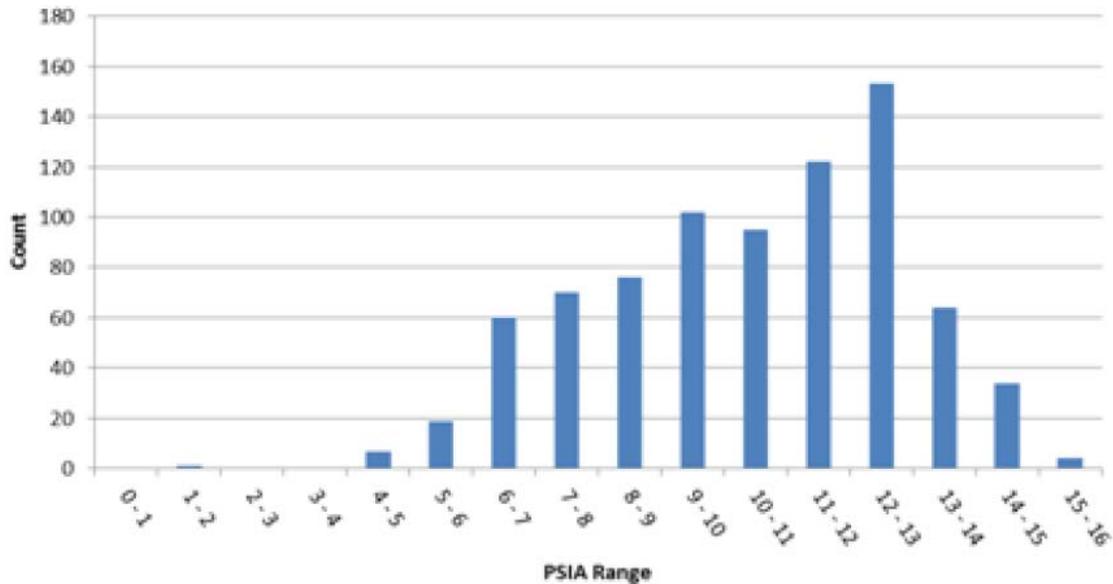


Source: Wall Street Journal, February 23, 2014

<sup>22</sup> Russell Gold, Analysis of Crude From North Dakota Raises Further Questions About Rail Transportation, Wall Street Journal, February 23, 2014.

Other data, summarized by American Fuel & Petrochemical Manufacturers<sup>23</sup> indicate that the RVP of Bakken crude oil can be substantially higher than the value reported based on Capline Pipeline data. A study of Bakken crudes involved in the Lac-Mégantic accident by the Transportation Safety Board of Canada (TSBC)<sup>24</sup> concluded that the volatility and flammability of Bakken crudes were more similar to gasoline than to crude oil, distinguishing Bakken crudes from conventional crude oils.

**Figure 3**  
**RVP Frequency for Bakken Crudes**



Source: Dangerous Goods Transport Consulting, Inc., 2014

Bakken and other light crude oils taken straight from the well typically contain large amounts of natural gas liquids (NGLs), known as light ends or condensate.<sup>25</sup> These include C2 to C5 hydrocarbons: methane, propane, butane, ethane, and pentane. These are the components most likely to volatilize, burn, or explode in an accident. These light ends have the effect of increasing a crude’s vapor pressure, lowering its flash point and lowering its initial boiling point, all of which result in increased environmental risks. These are called “live” crude oils. The high concentration of light ends makes them highly flammable, more likely to form fire balls and

<sup>23</sup> Dangerous Goods Transport Consulting, Inc., 2014, North Dakota Petroleum Council.

<sup>24</sup> Transportation Safety Board of Canada, TSB Laboratory Report LP148/2013 (TSBC 2013), Available at: <http://www.bst-tsb.gc.ca/eng/lab/rail/2013/lp1482013/LP1482013.asp>.

<sup>25</sup> Dangerous Goods Transport Consulting, Inc., 2014, <https://www.afpm.org/WorkArea/DownloadAsset.aspx?id=4229>.

boiling liquid expanding vapor explosions (BLEVES) in accidents. The failure to recognize this resulted in a significant underestimate of ROG and TAC emissions and hazards in the CBR Project DEIR.

In most petroleum-producing regions, light ends are removed before they are shipped using a stabilizer—a tall, cylindrical tower that uses heat to separate the light ends, which are then condensed and sent to a fractionator for processing. Crude stabilizers and NGL pipelines to send the recovered NGLs to market are ubiquitous in oil fields that produce light crude oils as crude pipeline specifications set pressure limits that force stripping of the NGLs. However, in the Bakken fields, this infrastructure is rare and most Bakken crude that is shipped by rail is shipped live. This distinguishes it from other light crudes, which are shipped dry, e.g., Eagle Ford crudes in Texas, where oil field infrastructure exists to process it and most of it is shipped by pipeline, which requires that NGLs be stripped.<sup>26</sup>

Other crudes that Bakken would replace, such as ANS, are hard to ignite because they do not have as much combustible light ends. Most light crudes, including the imported foreign crudes currently processed, are stabilized. These stabilized crudes will not actively boil at ambient temperature and can be more safely shipped, stored, and refined. Thus, while “light” crude may replace other types of “light” crude, there are major differences in composition that affect environmental impacts. The CBR Project DEIR does not impose any condition(s) that require that NGLs be removed from received crudes to mitigate these impacts. Thus, analyses must assume that they will be present.

In addition, Bakken crudes, when blended with heavy crudes to meet crude slate requirements, have resulted in many refinery operating issues, which increase emissions. These include fouling of the cold preheat train; desalter upsets; and fouling of hot preheater exchangers and furnaces; as well as corrosion.<sup>27</sup> These operating problems increase emissions. These operating problems and attendant emission increases were not disclosed in the CBR Project DEIR.

## 2. Crude Slate Impacts Are Not Part of the Baseline

The DEIR next asserts that “[e]ven if VOC emissions were to increase based on Valero’s purchase of light North American crudes, any such emissions increases would properly be considered part of the baseline because the baseline includes the full scope of operations allowed under existing permits that were issued based upon prior CEQA review.” DEIR, p. C.2-1.

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<sup>26</sup> ‘Degassing’ North Dakota Crude Oil Before Shipping Among Safety Ideas, Insurance Journal, May 14, 2014, Available at: <http://www.insurancejournal.com/news/national/2014/05/14/329095.htm>.

<sup>27</sup> Innovative Solutions for Processing Shale Oils, Hydrocarbon Processing, 7/10/2013, <http://www.hydrocarbonprocessing.com/Article/3223989/Innovative-solutions-for-processing-shale-oils.html>.

Elsewhere, the DEIR asserts, “Finally, even if one assumed that Valero will purchase 70,000 barrels per day of light sweet North American crude, and the crudes delivered and processed became substantially lighter, any resulting increase in emissions would be within the baseline for operational air quality impact.” This is supported by citing the same suite of CEQA cases relied on for the parallel argument with respect to heavy sour crudes discussed above. DEIR, p. C.2-2. The response to this argument around heavy sour crudes applies equally here and is incorporated by reference.

The baseline argument for light sweet crudes goes a step further than for heavy sour crudes, arguing that “Valero holds permits for all of the Refinery’s process equipment... The City and the BAAQMD issued these permits based on the environmental impact report (EIR) for the Valero Improvement Project (VIP) prepared and certified by the City in 2003. The baseline includes the full scope of operations allowed under these permits. In particular, the baseline includes the permitted operation of the Refinery’s eight crude oil storage tanks (storage tanks S-57 through S-62, S-1047, and S-1048). In connection with the VIP, the BAAQMD issued permits based on the City’s EIR.” DEIR, p. C.2-3.

This mischaracterizes the VIP EIR and the permits for the subject tanks. The VIP EIR evaluated only the two new storage tanks (VIP DEIR, p. 3-51) and the increase in ROG emissions from several other unidentified tanks up to a 5 ton/year increase in ROG relative to a 3-year baseline, based on a vapor pressure of 5 psi.<sup>28</sup> VIP DEIR, Table 4.2-9. The CBR Project would facilitate an additional increase in ROG and TAC emissions from these tanks over the same 3-year baseline, due to an increase in the vapor pressure of the stored crude oils and higher amounts of TACs in the rail-imported crudes. Thus, the VIP EIR did not evaluate the full scope of the ROG and TAC emissions that would occur as a result of the CBR Project.

In addition, the VIP EIR analyzed the TAC emissions from these tanks. These emissions were based on a speciation profile that assumes far less toxic air contaminants than would be present in the crudes listed in the CBR Project. DEIR Table 3-1. For example, the VIP EIR calculations assumed that benzene would be present in the crudes stored in new Tanks 1707 and 1708 at 0.009 weight percent (wt.%).<sup>29</sup> The benzene content of the suite of tar sands crudes listed in DEIR Table 3-1 are substantially higher than 0.009 wt.%, ranging from 0.02 wt.% to

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<sup>28</sup> The BAAQMD Permit Handbook in Chapter 3.1 refers to U.S. EPA’s AP-42 guidelines, Chapter 5.2, in which a default RVP for crude oil is listed as 5 psi, though it is noted that RVP of crude oils can range from less than 1 up to 10 psi. See: [http://hank.baaqmd.gov/pmt/handbook/rev02/PH\\_00\\_05\\_03\\_01.pdf](http://hank.baaqmd.gov/pmt/handbook/rev02/PH_00_05_03_01.pdf) and <http://www.epa.gov/ttnchie1/ap42/>.

<sup>29</sup> The benzene concentration assumed in the storage tanks is calculated from post-VIP ROG emissions of 193 ton/yr (VIP DEIR, Table 4.2-9) and the post-VIP benzene emissions of 33.93 lb/yr (VIP DEIR, Table 4.7-6) as:  $100 \times [33.93 \text{ lb/yr} / (193 \text{ ton/yr})(2000 \text{ lb/ton})] = 0.009 \text{ wt\%}$ .

0.81 wt.%,<sup>30</sup> or over 2 to 90 times higher. Similarly, Material Safety Data Sheets (MSDSs) submitted by others seeking to import similar cost-advantaged North American crudes, including Bakken, indicate benzene concentrations up to 7 wt.%,<sup>31</sup> with Bakken crudes generally having the highest concentrations of benzene among all those evaluated. Benzene is a known human carcinogen. Human exposure to benzene has been associated with a range of acute and long-term adverse health effects and diseases, including cancer and adverse hematological, reproductive and development effects.<sup>32</sup>

The CBR Project DEIR incorrectly asserts that “even if the Project were to cause an increase in ROG emissions from storage tanks, any such increase would be considered part of the baseline conditions.” DEIR, p. C.2-3. The CEQA baseline is not determined by permit conditions, but rather by actual conditions. The full scope of tank operations, i.e., storing crude oils that have much higher vapor pressures and concentrations of TACs than existed in the market place at the time of the 2002 VIP CEQA review, were never subject to CEQA review and must be evaluated in the instant case.

## II. THE DEIR UNDERESTIMATED ROG EMISSIONS

The DEIR estimated that the Project would result in a net decrease in ROG emissions of 1.61 ton/yr, as summarized in Table 1. DEIR, Table 4.1-5.

**Table 1: Annual and Daily Net Operational ROG Emissions**

<b>Source</b>	<b>ROG*</b> (ton/yr)	<b>ROG**</b> (lb/day)
Unloading Rack & Pipeline Fugitive Components	1.88	10.30
Locomotives	1.70	9.32
Marine Vessels (Displaced Baseline)	-5.18	-28.38
<b>Total Net Emissions</b>	<b>-1.61</b>	<b>-8.77</b>

\* Source: DEIR Table 4.1-5

\*\* Calculated as (ton/year)(2000 lbs/ton)/(365 days/year)

<sup>30</sup> [www.crudemonitor.ca](http://www.crudemonitor.ca). Concentrations reported in volume % (v/v) in this source were converted to weight % by dividing by the ratio of compound density in kg/m<sup>3</sup> at 25 C (benzene = 876.5 kg/m<sup>3</sup>) to crude oil density in kg/m<sup>3</sup>, based on the most recent sample, as of June 27, 2014.

<sup>31</sup> TSBC 2013; Tesoro Savage, Application for Site Certification Agreement, vol. 2, Appendix G: Material Safety Data Sheets for Enbridge Bakken (n-hexane = 11%); sour heavy crude oil (benzene = 7%; toluene = 7%; ethylbenzene = 7%; xylene = 7%); sweet heavy crude oil (toluene = 7%); light sweet crude oil (benzene = 7%; toluene = 7%; ethylbenzene = 7%; xylene = 7%), August 29, 2013, Available at: <http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013-01%20Volume%20II%20-%20Appendices/EFSEC%202013-01%20Compiled%20Volume%20IL.pdf>.

<sup>32</sup> CARB, Report to the Scientific Review Panel on Benzene, Prepared by the Staffs of The Air Resources Board and The Department of Health Services, November 27, 1984, Available at:

<http://www.arb.ca.gov/toxics/id/summary/benzene.pdf>; Chronic Toxicity Summary: Benzene, Available at: [http://www.oehha.org/air/chronic\\_rels/pdf/71432.pdf](http://www.oehha.org/air/chronic_rels/pdf/71432.pdf); World Health Organization, Exposure to Benzene: A Major Public Health Concern, Available at: <http://www.who.int/ipcs/features/benzene.pdf>.

The DEIR underestimated ROG emissions as it excluded many sources of ROG emissions from the Project, discussed below. The *increase* in ROG emissions is significant when these omissions are cured.

#### **A. Decrease In Ship Emissions Are Not Real Or Enforceable**

The ROG emissions in Table 1 assume marine vessel emissions would be reduced by 5.18 ton/yr, by eliminating 73 vessel trips (70,000 bbl/day x 365 day/350,000 bbl/vessel). DEIR, p. 4.1-16. The DEIR asserts that “[c]rude oil delivered to the Refinery by tank car would not displace crude oil delivered to the Refinery by pipeline.” DEIR, p. ES-3, 1-1.

However, it is well known that San Joaquin Valley crude oil production is declining.<sup>33</sup> The nearby Shell Oil Refinery in Martinez, for example, recently increased crude storage capacity to substitute imported crude oil by marine vessel “for diminishing San Joaquin Valley crude by pipeline.” DEIR, Table 5-1. ESA expressed concern that ship deliveries could increase in the future to replace diminishing supplies of crude oil available by pipeline. Valero 2013, Data Request No. 2, Item 1.<sup>34</sup> Further, the BAAQMD Statement of Basis for the VIP Project states: “Valero anticipates the possibility that crude may no longer be brought in by pipeline. This could result from a problem with the pipeline, or a change in the cost of crude that makes pipeline supply no longer economical.”<sup>35</sup> Thus, it is entirely possible, especially in the absence of any enforceable conditions of approval, that the Project would not decrease marine deliveries to the extent claimed in the DEIR.

The DEIR must be modified to include clearly stated and enforceable provisions to assure that any increase in ROG and TAC emissions from importing crude by rail rather than by marine vessel or pipeline are fully offset by reductions in ship emissions and that the reductions are achieved in practice. These conditions should include requirements to test, record, and report to the City the RVP of all crude oil delivered by ship, rail, and pipeline and source testing of representative ship and locomotive emissions to assure the reductions are achieved.

#### **B. Storage Tanks ROG and TAC Emissions Were Omitted**

The DEIR did not adequately quantify emissions from the tanks that would store the crude oil delivered by rail. The emissions from floating-roof tanks include: tank breathing losses

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<sup>33</sup> California Energy Commission, Margaret Sheridan, California Crude Oil Production and Imports, April 2006, Available at: <http://www.energy.ca.gov/2006publications/CEC-600-2006-006/CEC-600-2006-006.PDF>.

<sup>34</sup> Valero Responses to: Valero Crude by Rail Project Data Request Number 2, April 2, 2013.

<sup>35</sup> [http://www.baaqmd.gov/~media/Files/Engineering/Title%20V%20Permits/B2626/B2626\\_2010-05\\_renewal\\_03.ashx?la=en](http://www.baaqmd.gov/~media/Files/Engineering/Title%20V%20Permits/B2626/B2626_2010-05_renewal_03.ashx?la=en).

(the sum of rim seal losses, withdrawal losses, deck fitting losses, and deck seam losses estimated by the EPA model TANKS 4.0.9d) and roof landing losses.

#### 1. Significant Tank Breathing Losses Were Omitted

Tank breathing losses are estimated using the EPA model: TANKS 4.0.9d. The CBR Project DEIR did not include any emissions from the tanks that would store the rail-imported crude.

The CBR Project DEIR describes the Project as replacing 70,000 bbl/day of crude oil delivered by ship with 70,000 bbl/day of crude oil delivered by train. The CBR Project DEIR fails to consider what happens to the crude oil after it is transferred from the rail cars through a new pipeline. DEIR, Sec. 3.2. It simply states that the contents of each tank car will be pumped “into storage tankage located in the Refinery’s crude oil storage tank field.” DEIR, p. 3-20. This crude oil will be stored in existing storage tanks. As the imported crude oil will have a higher vapor pressure than current crude oils stored in these tanks, ROG and TAC emissions from the tanks will increase. The VIP EIR did not evaluate these emission increases. The CBR Project DEIR also does not include these ROG and TAC emissions.

The Project described in the IS/MND included transferring crude oil from rail cars into existing external floating roof tank 1776. This required changing the service of this tank from jet fuel and other refinery products to crude oil. The ROG emissions were estimated with the EPA TANKS 4.0.9d model for a throughput of 70,000 bbl/day and a crude oil RVP of 9.4 psi. The resulting ROG emissions were 39.3 lb/day and 7.18 ton/yr. The net ROG emission increase, relative to December 2009 through November 2012 baseline, was 23.7 lb/day and 4.33 ton/yr. DEIR, Appx. E.3 (2/13 Application, Table 3-2). The supporting calculations for these emission increases (in Appendix B to the February 2013 Application, provided in DEIR, Appx. E.3, Attachments B-1 and B-2) were withheld from the DEIR as confidential business information (CBI).

The Project was modified in November 2013 to replace Tank 1776 with Tanks 1701 through 1708 (S-57 through S-62). These are existing external floating roof tanks that are currently permitted to store crude oil and have historically stored crude oil delivered by both ship and pipeline. DEIR, Appx. E.4 (11/13 Application, p. 6). Thus, the baseline emissions from these tanks include both San Joaquin Valley crudes and ANS and other ship-imported crudes. These tanks are not in the Title V permit for the Valero Refinery, but rather in the Title V Permit for NuStar Logistics, L.P., Facility B5574. The November 2013 Application incorrectly asserts that these tanks are neither altered nor modified sources and thus are not subject to Authority to Construct and New Source Review requirements for the CBR Project. DEIR, Appx. E.4 (11/13 Application, p. 7). The November 2013 Application at p. 7 (DEIR, Appx. E.4) asserts:

“Changes in material stored. The tanks are currently permitted to store crude oil received by marine vessels and pipeline. With the implementation of this project, the tanks will continue to store crude oil. The crude oil will be received from rail cars, as well as from marine vessels and pipeline. Tanks 1701 through 1706 have historically stored crude oil delivered by ships and pipeline. Tanks 1707 and 1708 were recently constructed and were permitted under NSR to store crude oil. These tanks currently comply with all the requirements in Regulation 8, Rule 5, and associated permit conditions.”

Similarly, the DEIR argues (DEIR, p. 4.1-17):

“Nor would the Project cause any emissions increases from storage tanks. Currently, the Refinery stores crude oil delivered by ship and pipeline in eight existing storage tanks numbered 1701 through 1708. Crude oil delivered by rail would be stored in the same tanks. The tanks would not be modified, and would continue to be subject to the same throughput limit and other permit conditions.”

Thus, the DEIR does not include any ROG or TAC emissions from these tanks. However, this assertion is invalid, as explained above. The basis of this argument is that “Valero must blend crude feedstocks to a narrow range of weight and sulfur content before they can be processed into marketable products. Because the crude oil blends cannot become significantly heavier or lighter, nor contain significantly more sulfur, there would be no increase in processing emissions.” DEIR, p. 4.1.17. This is immaterial as to ROG and TAC emissions because they do not depend on weight and sulfur content of the crude, but rather on vapor pressure and TAC speciation of the crude. These are not related to the gravity or sulfur content of the crude oil.

The ROG and TAC emissions from the receiving storage tanks would increase if 70,000 bbl/day of ship-imported or pipeline-imported crude were replaced with 70,000 bbl/day of rail-imported crude. The DEIR is deficient for failing to include any estimate of these emission increases and for withholding all information required to estimate these emissions, information that is never classified as CBI in public documents—vapor pressures, tank characteristics, baseline emissions, etc.

An approximate estimate of the increase in daily ROG emissions can be made from the previously reported daily ROG emissions for Tank 1776. The IS/MND estimated daily ROG emissions of 39.3 lb/day for a 70,000 bbl/day throughput of crude with an RVP of 9.4 psi. The RVP of the baseline crude in the seven storage tanks that would be used is unknown. However, the DEIR indicates that it is either San Joaquin Valley crude (pipeline) or Alaska North Slope lookalikes.

*First*, assuming the baseline crude has an RVP equal to that for Alaska North Slope crude, or 6.3 psi,<sup>36</sup> the baseline ROG emissions for 70,000 bbl/day would be **26.3 lb/day**.<sup>37</sup> The increase in ROG emissions, from storing 70,000 bbl/day of Bakken crude in the same tank(s), assuming the reported upper-bound vapor pressure for Bakken crude (15.5 psi)<sup>38</sup> would be **64.8 lb/day**.<sup>39</sup> Thus, the net increase in ROG emissions from replacing 70,000 bbl/day of ship-imported ANS with 70,000 bbl/day of rail-imported Bakken is **38.5 lb/day** (64.8 - 26.3 = 38.5). The corresponding net increase in annual emissions would be **7.0 ton/year**<sup>40</sup> if all of the rail-imported crude were Bakken. This is a reasonably foreseeable scenario as crudes required to blend 100% Bakken to an ANS-lookalike crude could be imported by marine vessel

*Second*, assuming the baseline crude has an RVP equal to that of San Joaquin Valley crude or other similar heavy sour crudes, 0.04 psi,<sup>41</sup> the baseline ROG emissions for 70,000 bbl/day would be **0.2 lb/day**.<sup>42</sup> As detailed above, the increase in ROG emissions, from storing 70,000 bbl/day of Bakken crude in the same tank(s), assuming the reported upper-bound vapor pressure for Bakken crude (15.5 psi)<sup>43</sup> would be **64.8 lb/day**.<sup>44</sup> Thus, the net increase in ROG emissions from replacing 70,000 bbl/day of pipeline-imported San Joaquin Valley or other similar heavy sour crudes with 70,000 bbl/day of rail-imported Bakken is **64.6 lb/day** (64.8 - 0.2 = 64.6). The corresponding net increase in annual emissions would be **11.8 ton/year** if all of the rail-imported crude were Bakken. This is a reasonably foreseeable scenario as crudes required to blend 100% Bakken to an ANS-lookalike could be imported by marine vessel.

The resulting daily net increase in ROG emissions for a San Joaquin Valley or other similar heavy crude baseline, but otherwise assuming all of the CBR Project DEIR's emissions, is 56 lb/day, as shown in Table 2. This increase in ROG emissions is significant, as it exceeds

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<sup>36</sup> ExxonMobil Refining and Supply Company, ANS11U, Available at: [http://www.exxonmobil.com/crudeoil/about\\_crudes\\_ans.aspx](http://www.exxonmobil.com/crudeoil/about_crudes_ans.aspx) and <http://www.exxonmobil.com/crudeoil/download/ans11u.pdf>.

<sup>37</sup> Baseline ROG emissions from storage of 70,000 bbl/day of ANS in one or more of existing tanks 1701 - 1708 = (39.3 lb/day) (6.3 psi/9.4 psi) = **26.3 lb/day**.

<sup>38</sup> Classification and Hazard Communication Provisions for Crude Oil – Bakken Crude Oil Data, June 13, 2014.

<sup>39</sup> Increase in POC emissions from storing 70,000 bbl/day of Bakken crude in one or more of existing tanks 1701-1708 = (39.3 lb/day)(15.5 psi/9.4 psi) = **64.8 lb/day**.

<sup>40</sup> Increase in annual emissions = (38.5 lb/day)(365 days/year)/(2000 lb/ton) = **7.02 ton/yr**.

<sup>41</sup> Emission Calculation Protocol for Oil Production Tanks, September 1, 2000.

<sup>42</sup> Baseline ROG emissions from storage of 70,000 bbl/day of ANS in one or more of existing tanks 1701 - 1708 = (39.3 lb/day) (0.04 psi/9.4 psi) = **0.17 lb/day**.

<sup>43</sup> Classification and Hazard Communication Provisions for Crude Oil – Bakken Crude Oil Data, June 13, 2014.

<sup>44</sup> Increase in ROG emissions from storing 70,000 bbl/day of Bakken crude in one or more of existing tanks 1701 - 1708 = (39.3 lb/day)(15.5 psi/9.4 psi) = **64.8 lb/day**.

the BAAQMD CEQA significance threshold<sup>45</sup> of 54 lb/day and triggers New Source Review thresholds that require Best Available Control Technology. This is a significant impact that was not disclosed in the DEIR. The total Project increase would be even greater than the emissions in Table 2, which do not include ROG increases from other omitted sources, discussed below.

**Table 2: Revised Annual and Daily Net Operational ROG Emissions  
San Joaquin Valley Crude Baseline**

<b>Source</b>	<b>ROG (ton/year)</b>	<b>ROG (lb/day)</b>
Unloading Rack & Pipeline Fugitive Components	1.88	10.30
Locomotives	1.70	9.32
<b><i>Storage Tank (SJV Crude Baseline)</i></b>	<b><i>11.79</i></b>	<b><i>64.60</i></b>
Marine Vessels (Displaced Baseline)	-5.18	-28.38
<b>Total Net Emissions</b>	<b>10.19</b>	<b>55.83</b>
BAAQMD CEQA Significance Threshold	10	54
Significant?	<b>YES</b>	<b>YES</b>

The increase in ROG emissions in Table 2 would be accompanied by an increase in TAC emissions, which are estimated by multiplying the ROG emission increase by the weight percent of each TAC in the ROG emissions (i.e., the TAC speciation profile). The contribution of TAC emissions from these tanks were not included in the DEIR's health risk assessment, which only evaluated diesel particulate matter and PM2.5.

Because the Project would result in significant ROG emissions, the lead agency is required to examine the impact of the increase in localized ROG emissions on ambient air quality and the local community and identify mitigation that is capable of reducing or eliminating these impacts to below a level of significance. To mitigate the Project's significant ROG emissions, the City should consider feasible mitigation measures such as the use of zero-leak fugitive components; use of geodesic domes on external floating roof tanks, which are commonly used on tanks that store RVP 11 crude oils; cable-suspended, full-contact floating roofs; and the use geodesic domes on the existing fixed roof tanks.<sup>46</sup>

<sup>45</sup> BAAQMD Proposed Air Quality CEQA Thresholds of Significance, May 3, 2010, Available at: [http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/Summary\\_Table\\_Proposed\\_BAAQMD\\_CEQA\\_Thresholds\\_May\\_3\\_2010.ashx?la=en](http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/Summary_Table_Proposed_BAAQMD_CEQA_Thresholds_May_3_2010.ashx?la=en).

<sup>46</sup> See, e.g., Phillips 66 Los Angeles Refinery Carson Plant – Crude Oil Storage Capacity Project, September 6, 2013, Draft Negative Declaration (Carson Neg. Dec.), Available at: [https://www.aqmd.gov/CEQA/documents/2013/nonaqmd/Draft\\_ND\\_Phillips\\_66\\_Crude\\_Storage.pdf](https://www.aqmd.gov/CEQA/documents/2013/nonaqmd/Draft_ND_Phillips_66_Crude_Storage.pdf) and City of Richmond, Chevron Refinery Modernization Project DEIR (Chevron DEIR), Chapter 4.3, pp. 4.3-92, Available at: [http://chevronmodernization.com/wp-content/uploads/2014/03/4.3\\_Air-Quality.pdf](http://chevronmodernization.com/wp-content/uploads/2014/03/4.3_Air-Quality.pdf).

## 2. Roof Landing, Degassing, and Cleaning Emissions Were Omitted

The increase in ROG emissions estimated above is based on an adjustment of a calculation in the IS/MND based on EPA's TANKS 4.0.9d model (TANKS). However, this model only estimates rim seal losses, withdrawal losses, deck fitting losses, and deck seam losses. It does not estimate roof landing losses, inspection losses, or flashing losses. Thus, it underestimated tank emissions. Therefore, the above estimate of the increase in ROG emissions in Table 2 is an underestimate. These additional emissions should be estimated, added to other tank emissions, and mitigated when the DEIR is revised.

The Project involves seven existing external floating roof tanks configured to comply with BAAQMD Regulation 8-5. DEIR, p. 3-5. These tanks are pontoon-type tanks. DEIR, Appx. E.4 (2/13 Application, p. 1-8). Pontoon tank roofs are supported on legs. In floating roof tanks with leg-supported roofs, the roof floats on the surface of the liquid inside the tank and reduces evaporative losses during normal operations. However, when the tank is emptied, the roof sits on the legs and is essentially uncontrolled.

The EPA has explained that the TANKS model does not include roof landings, and recommended that they be estimated with the equations in AP-42. In other words, the EPA TANKS model estimates evaporative emissions for normal operations only, *i.e.*, it assumes that the floating tank roof is always floating.<sup>47</sup> However, when a tank is emptied to the point that the roof no longer floats on the liquid but lands on deck legs, evaporative losses occur.

After the floating roof is landed and the liquid level in the tank continues to drop, a vacuum is created which could cause the floating roof to collapse. To prevent damage and to equalize the pressure, a breather vent is actuated. Then, a vapor space is formed between the floating roof and the liquid. The breather vent remains open until the roof is again floated, so whenever the roof is landed, vapor can be lost through this vent.<sup>48</sup>

These losses are called "roof landing losses."

In addition, "degassing and cleaning losses" occur when tanks are drained and degassed for inspection and/or cleaning. These include both roof landing emissions, complete tank

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<sup>47</sup> EPA, TANKS Software Frequent Questions, Updated February 2010, Available at: <http://www.epa.gov/ttnchie1/faq/tanksfaq.html>. ("How can I estimate emissions from roof landing losses in the tanks program? ... In November 2006, Section 7.1 of AP42 was updated with subsection 7.1.3.2.2 Roof Landings. The TANKS program has not been updated with these new algorithms for internal floating roof tanks. It is based on the 1997 version of section 7.1.")

<sup>48</sup> EPA, AP-42, Chapter 7.1 Organic Liquid Storage Tanks, November 2006, Available at: <http://www.epa.gov/ttn/chief/ap42/ch07/final/c07s01.pdf>.

degassing, and emissions from cleaning out accumulated sludge. These emissions are essentially uncontrolled tank emissions.<sup>49</sup>

The tank cleaning emissions could be substantially higher for Bakken crudes than for other types of crude. Bakken crudes leave waxy deposits in pipelines and tanks, which require more frequent cleaning,<sup>50</sup> and thus higher emissions, than the crudes they would replace. Environmental impacts from chemical dispersants used to control these waxy deposits in tanks and pipelines also should be evaluated.

The EPA recommends methods to estimate emissions from degassing and cleaning and roof landing losses.<sup>51</sup> The method for estimating emissions depends on the construction of the tank, *e.g.*, the flatness of the tank bottom and the position of the withdrawal line (the so-called liquid “heel”). Degassing, cleaning, and roof landing losses continue until the tank is refilled to a sufficient level to again float the tank roof. Total ROG emissions from floating roof tanks during a roof landing is the sum of standing idle losses and filling losses. They can be estimated using formulas contained in EPA’s *Compilation of Air Pollutant Emission Factors* (“AP-42”), Chapter 7.1, Organic Liquid Storage Tanks, Section 7.1.3.2.2. These emissions are routinely included in emission inventories. They are required to be reported, for example, in Texas.<sup>52</sup> They are also included in the emission inventory for Tesoro’s Vancouver Terminal, which imports similar crudes by rail, and stores them in tanks.<sup>53</sup>

To reduce emissions from tank breathing losses (Comment II.B.1), degassing, cleaning and roof landing losses, the City should require the Applicant to install geodesic domes on the tanks that would store rail-imported crudes, thus avoiding emissions from these and other tank sources.

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<sup>49</sup> See EPA guidance on estimating these emissions at: <http://www.epa.gov/ttnchie1/faq/tanksfaq.html#13> .

<sup>50</sup> Innovative Solutions for Processing Shale Oils, Hydrocarbon Processing, 7/10/2013, Available at: <http://www.hydrocarbonprocessing.com/Article/3223989/Innovative-solutions-for-processing-shale-oils.html>.

<sup>51</sup> “How Can I Estimate Emissions from Degassing and Cleaning Operation During a Tank Turnaround? And How Can I Estimate Emissions from Roof Landing Losses in the TANKS Program:?” , Available at: <http://www.epa.gov/ttnchie1/faq/tanksfaq.html#13> .

<sup>52</sup> Memorandum from Dan Eden, Deputy Director, Office of Permitting, Remediation, and Registration; David C. Schanbacher, Chief Engineer; and John Steib, Deputy Director, Office of Compliance and Enforcement, Re: Air Emissions During Tank Floating Roof Landings, December 5, 2006, Available at: [http://www.tceq.state.tx.us/assets/public/permitting/air/memos/tank\\_landing\\_final.pdf](http://www.tceq.state.tx.us/assets/public/permitting/air/memos/tank_landing_final.pdf) .

<sup>53</sup> Tesoro Savage, Application for Site Certification Agreement, Section 5.1.2.1.4, Available at: <http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013-01%20Volume%20I/EFSEC%202013-01%20-%20Compiled%20PDF%20Volume%20I.pdf> .

Over 10,000 aluminum domes have been installed on petrochemical storage tanks in the United States.<sup>54</sup> The ExxonMobil Torrance Refinery: “completed the process of covering all floating roof tanks with geodesic domes to reduce volatile organic compound (VOCs) emissions from facility storage tanks in 2008. By installing domes on our storage tanks, we’ve reduced our VOC emissions from these tanks by 80 percent. These domes, installed on tanks that are used to store gasoline and other similar petroleum-derived materials, help reduce VOC emissions by blocking much of the wind that constantly flows across the tank roofs, thus decreasing evaporation from these tanks.”<sup>55</sup>

A crude storage project, recently proposed at the Phillips 66 Los Angeles Carson Refinery, required external floating roof tanks with geodesic domes to store crude oil with an RVP of 11.<sup>56</sup> Carson Neg. Dec. Table 1-1. The ConocoPhillips Wilmington Refinery added a geodesic dome to an existing oil storage tank to satisfy BACT.<sup>57</sup> Similarly, Chevron proposes<sup>58</sup> to use domes on several existing tanks to mitigate VOC emission increases at its Richmond Refinery.<sup>59</sup> The U.S. Department of Justice CITGO Consent Decree required a geodesic dome on a gasoline storage tank at the Lamont, Texas refinery.<sup>60</sup> Further, numerous vendors have provided geodesic domes for refinery tanks.<sup>61</sup> The crudes that would be stored in the Project tanks have vapor pressures that are comparable to gasoline (TSBC 2013, Sec. 3.2.7), justifying the use of geodesic domes to control tank emissions.

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<sup>54</sup> M. Doxey and M. Trinidad, Aluminum Geodesic Dome Roof for Both New and Tank Retrofit Projects, Materials Forum, v. 30, 2006, Available at: [http://www.materialsaustralia.com.au/lib/pdf/Mats.%20Forum%20page%20164\\_169.pdf](http://www.materialsaustralia.com.au/lib/pdf/Mats.%20Forum%20page%20164_169.pdf).

<sup>55</sup> Torrance Refinery: An Overview of our Environmental and Social Programs, 2010, Available at: [http://www.exxonmobil.com/NA-English/Files/About\\_Where\\_Ref\\_TorranceReport.pdf](http://www.exxonmobil.com/NA-English/Files/About_Where_Ref_TorranceReport.pdf).

<sup>56</sup> See, e.g., Phillips 66 Los Angeles Refinery Carson Plant – Crude Oil Storage Capacity Project, September 6, 2013, Table 1-1, Draft Negative Declaration, Available at: [https://www.aqmd.gov/CEQA/documents/2013/nonaqmd/Draft\\_ND\\_Phillips\\_66\\_Crude\\_Storage.pdf](https://www.aqmd.gov/CEQA/documents/2013/nonaqmd/Draft_ND_Phillips_66_Crude_Storage.pdf).

<sup>57</sup> SCAQMD Letter to G. Rios, December 4, 2009, Available at: [http://yosemite.epa.gov/r9/air/epss.nsf/e0c49a10c792e06f8825657e007654a3/e97e6a905737c9bd882576cd0064b56a/\\$FILE/ATTT0A6X.pdf/ID%20800363%20ConocoPhillips%20Wilmington%20-%20EPA%20Cover%20Letter%20%20-AN%20501727%20501735%20457557.pdf](http://yosemite.epa.gov/r9/air/epss.nsf/e0c49a10c792e06f8825657e007654a3/e97e6a905737c9bd882576cd0064b56a/$FILE/ATTT0A6X.pdf/ID%20800363%20ConocoPhillips%20Wilmington%20-%20EPA%20Cover%20Letter%20%20-AN%20501727%20501735%20457557.pdf).

<sup>58</sup> City of Richmond, Chevron Refinery Modernization Project, Environmental Impact Report, Volume 1: Draft EIR, March 2014 (Chevron DEIR), Available at: <http://chevronmodernization.com/project-documents/>.

<sup>59</sup> Chevron DEIR, Chapter 4.3.

<sup>60</sup> CITGO Petroleum Corp. Clean Air Act Settlement, Available at: <http://www2.epa.gov/enforcement/citgo-petroleum-corporation-clean-air-act-settlement>.

<sup>61</sup> See, e.g., Aluminum Geodesic Dome, Available at: <http://tankaluminumcover.com/Aluminum-Geodesic-Dome>; Larco Storage Tank Equipments, Available at: [http://www.larco.fr/aluminum\\_domes.html](http://www.larco.fr/aluminum_domes.html); Vacono Dome, Available at: [http://www.easyfairs.com/uploads/tx\\_ef/VACONODOME\\_2014.pdf](http://www.easyfairs.com/uploads/tx_ef/VACONODOME_2014.pdf); United Industries Group, Inc., Available at: <http://www.thomasnet.com/productsearch/item/10039789-13068-1008-1008/united-industries-group-inc/geodesic-aluminum-dome-roofs/>.

### 3. Tank Flashing Emissions Were Omitted

Most Bakken crudes are transported raw, without stabilization, due to the lack of facilities in the oil fields, as discussed elsewhere in these Comments. Unstabilized or “live” crude oils have high concentrations of volatile materials entrained in the bulk crude oil. Tank flashing emissions occur when these crude oils, such as Bakken, are exposed to temperature increases or pressure drops. When this occurs, some of the compounds that are liquids at the initial pressure/temperature transform into gases and are released or “flashed” from the liquid. These emissions are in addition to working and breathing emissions from tanks and are not estimated by the EPA TANKS 4.0.9d model. These emissions can be calculated using standard procedures.<sup>62</sup> The DEIR did not mention or calculate these emissions, nor does it include permit conditions that would allow only stabilized crude oils to be received.

### 4. Water Draw Tank Emissions Were Omitted

Crude oil typically contains small amounts of water, which is separated from the crude oil and accumulates in the bottom of storage tanks. This accumulated water, referred to as water draw, is typically transferred from the crude oil storage tanks into a smaller water draw surge tank for processing prior to disposal. Over time, a thick layer of crude oil forms in the water draw surge tank. The water draw surge tank and processing of wastewaters from it emit ROG and TACs. The DEIR does not mention water draw, or include emissions from storing or processing it, which would increase as the vapor pressure of the stored crude increases, i.e., as from a switch from San Joaquin Valley to Bakken crude.

## **C. Rail Car Unloading Emissions Were Omitted**

The Project includes a rail car unloading rack capable of unloading two parallel rows of 25 crude oil rail cars simultaneously. DEIR, p. ES-3. The DEIR does not disclose any emissions from the unloading process, while EIRs for other similar facilities such as the proposed Phillips 66 CBR Project in Santa Maria, report unloading emissions.<sup>63</sup>

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<sup>62</sup> See, e.g., calculation methods at: Paul Peacock, Marathon, Bakken Oil Storage Tank Emission Models, March 23, 2010; TCEQ, Air Permit Reference Guide APDG 5941, Available at: [http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/guidance\\_flashemission.pdf](http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/guidance_flashemission.pdf); Kansas Dept. of Health & Environment, Available at: [http://www.kdheks.gov/bar/download/Calculation\\_Flashing\\_Losses\\_Handout.pdf](http://www.kdheks.gov/bar/download/Calculation_Flashing_Losses_Handout.pdf); B. Gidney and S. Pena, Upstream Oil and Gas Storage Tank Project Flash Emissions Models Evaluation, July 16, 2009, Available at: <http://www.bdlaw.com/assets/htmldocuments/TCEQ%20Final%20Report%20Oil%20Gas%20Storage%20Tank%20Project.pdf>.

<sup>63</sup> Marine Research Specialists (MRS), Phillips 66 Company Rail Spur Extension Project Public Draft Environmental Impact Report and Vertical Coastal Access Assessment, November 2013; p. 2-14, Available at: [http://www.slocounty.ca.gov/Assets/PL/Santa+Maria+Refinery+Rail+Project/Draft+EIR-Phillips+66+Rail+Spur+Extension+Project+\(November+2013\)/Full+EIR++Large+File/p66.pdf](http://www.slocounty.ca.gov/Assets/PL/Santa+Maria+Refinery+Rail+Project/Draft+EIR-Phillips+66+Rail+Spur+Extension+Project+(November+2013)/Full+EIR++Large+File/p66.pdf).

At Valero, each side of the rack would have 25 unloading stations, which would “bottom-unload” closed-dome tank cars using 4-inch-diameter hoses, with dry disconnect couplings that would connect to a common header between the two sides of the rack (a check valve, connected to the top of each tank car via 2-inch-diameter hose would open to allow ambient air to enter during unloading and immediately close when unloading is finished). DEIR, p. 3-2.

A check valve would be installed onto each vent valve on the top of each tank car. The vent valve on the top of each tank car would be opened and the accompanying check valve would only allow fresh air into each tank car, and would prevent release of hydrocarbon fugitive emissions to the atmosphere. At each end car and on approximately every 8 tank cars in the 25 tank car string, a hose would be connected from the tank car’s vent connection to a separate “equalization header.” The equalization header would ensure the vapor spaces above the stored liquid crude in the tank cars is equalized between the tank cars. Individual drain hoses would be manually connected to the bottom of each tank car by on-site workers. The contents of each tank car would be drained by gravity into a collection pipe (collection header) and then pumped directly into storage tanks. DEIR, p. 3-21.

A typical rail car unloading system is described differently in the Santa Maria Rail DEIR. Santa Maria DEIR, p. 2-14. In that DEIR, the rail car unloading system consists of an adapter unit that connects the rail car to couplings, hoses, valves and piping that connect to a positive displacement pump. Air and crude oil vapors are commonly mixed in with crude oil, from loading and evaporation during transit. These vapors can present an explosion risk for downstream equipment and are typically removed with air eliminators. As the vapors contain high concentrations of ROG and TACs, they are typically routed to carbon columns or an incinerator to control the emissions.

The Valero CBR Project DEIR does not mention these vapors, an air eliminator, or indicate how they will be controlled. The Valero CBR Project DEIR only notes that “the BAAQMD will consider locomotive emissions and tank car unloading emissions as may be caused by the Project.” DEIR, p. 3-2. This is not adequate. If unloading emissions will occur, at an air eliminator or other release point, the DEIR should be modified to describe them and to quantify them. If they are not present, the DEIR should explain how the explosion hazard typically associated with unloading cargos such as Bakken crude will be addressed as it is not clear that the air equalization system would eliminate this hazard.

#### **D. Sump Emissions Were Omitted**

The unloading facility includes a liquid spill containment sump with the capacity to contain the contents of at least one tank car. DEIR, p. ES-2. Crude oil that spills into this sump

would release vapors including ROG and TAC emissions. The DEIR did not include these emissions.

### **E. Rail Car Fugitive Emissions Were Omitted**

ROG and TACs will be emitted from rail cars from their point of origin through unloading as rail cars are not vapor tight. The DEIR did not include these emissions.

The crude oil would be shipped in tank cars, such that the volume of loaded crude oil shipped is less than the capacity of the rail car to accommodate expansion during shipping. This volume reduction creates free space at the top of the tank car, which provides space for entrained gases to be released from the crude oil<sup>64</sup> and emitted to the atmosphere during transit and idling in rail yards.<sup>65</sup>

As rail cars are not vapor tight, these vapors in the head space above the oil are emitted to the atmosphere during rail transport and at the unloading terminal. Further, most Bakken crudes are shipped live as discussed earlier. These crudes will flash in the tank cars when exposed to temperature increases or pressure drops, causing valves to open, emitting ROG and TACs.

These losses are consistent with the well-known “crude shrinkage” issue associated with crude by rail. The crude delivered is significantly less than the crude loaded. The reported range in crude shrinkage is 0.5% to 3% of the loaded crude.<sup>66</sup> Some of this shrinkage is likely due to emissions from the rail car during transit. The emissions of ROG and TACs from rail cars has been confirmed by field measurements.<sup>67</sup> The DEIR did not include these ROG and TAC emissions in its emission calculations or the health risk assessment.

Tank cars have domes to allow space for the product to expand as temperatures rise. Each dome has a manhole through which the tank car can be loaded, unloaded, inspected, cleaned, and repaired. Dome covers may be hinged and bolted on or screwed on. Most domes

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<sup>64</sup> Anthony Andrews, Congressional Research Service, Crude Oil Properties Relevant to Rail Transport Safety: In Brief, February 18, 2014, pp. 8-9.

<sup>65</sup> A DOT 111 (or comparable) tank car generally has a capacity of 34,500 gallons or 263,000 lbs. gross weight on rail. Under some conditions, the maximum gross weight can be increased to 286,000 lbs. At an API gravity of 50°, a tank car can hold its maximum volume of 31,800 gallons and not exceed the 286,000 lb gross weight on rail limit. As the API gravity drops, the amount of oil that can be carried must also drop. Thus, a tank car of Bakken crude, at its highest density of 39.7° API, can only hold 30,488 gallons, a volume reduction of about 1,300 gallons. Further, as crude oil density (and thus API gravity) is temperature dependent, volume will increase as temperature increases. Thus, the shipper may have to reduce the shipped volume even further. This volume reduction creates a space above the crude oil where vapors accumulate.

<sup>66</sup> Alan Mazaud, Exergy Resources, Pennsylvania Rail Freight Seminar, May 23, 2013, p. 17. Available at: <http://www.parailseminar.com/site/Portals/3/docs/Alan%20Mazaud%20Presentation%20-%20AM.pptx>

<sup>67</sup> <http://www.youtube.com/watch?v=35uClgLctnw>.

have vents and safety valves to let out vapors.<sup>68</sup> Thus, they are sources of ROG emissions that were omitted from the emission calculations. Further, when dome covers are left open, any residual vapors escape to atmosphere. Residual material clings to the bottom and sides of empty rail cars and emits ROG and TAC while the rail cars idle at the site, waiting for the entire unit train to be unloaded. Open covers are common in railyards as they are opened for inspections and repairs. The ROG and TAC emissions from these sources were omitted from the DEIR's emission inventory.

Further, each tank car has a bottom outlet which is used for loading and unloading that includes pumps, manifolds, and valves, all of which leak ROG and TACs. Finally, liquid leaks occur when unloading arms are disconnected, even for the so-called no leak arms proposed for the Project. These disconnect leaks evaporate, contributing to ROG and TAC emissions.

An estimate of these emissions can be based conservatively on the lower end of the range of crude shrinkage (0.5%) discussed above and the maximum freight weight per car of 106 tons from the TRN Spec Sheet-1. DEIR, Appx. E.6 (6/11/14 Memo to Morgan from Velzy, pdf 1208). Assuming 50 cars/train and two unit trains per day, a total of 53 ton/day<sup>69</sup> of ROG can be emitted as the trains traverse the 1500 miles between the shipping point and the Valero rail terminal. Of these 1500 miles, 263 miles are within California.<sup>70</sup> DEIR, Appx. E.5 (Air Quality & GHG Supplement, pdf 1198). Thus, 9.3 ton/day of ROG (18,600 lb/day) can be emitted within California from rail car leakage.<sup>71</sup> Of the 263 miles within California, 22 miles are within the boundary of the BAAQMD. *Ibid.* Thus, 0.8 ton/day (1,555 lb/day) of ROG emissions can be emitted within the BAAQMD.<sup>72</sup> These daily emissions greatly exceed the BAAQMD daily CEQA significance threshold for ROG of 54 lb/day, requiring mitigation.

Additional ROG would be emitted at the Valero railyard, while railcars wait for the entire train to be unloaded, and from the emptied railcars, enroute to the cleaning facility, from residual product that clings to the bottom and sides of the railcars.

These ROG emissions contain the same chemicals found in the crude oil, including benzene, toluene, xylene, hexane, and ethylbenzene. As discussed below, some crudes can contain up to 7% benzene by weight. See Table 3 below. Thus, greater than 1,301 lb/day of benzene could be emitted in California and greater than 109 lb/day of benzene within the

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<sup>68</sup> Chapter 11. Tank Car Operations, Available at: <http://www.globalsecurity.org/military/library/policy/army/fm/10-67-1/CHAP11.HTML>.

<sup>69</sup> ROG emissions from train transit = (106 ton/car)(50 car/train)(2 train/day)(0.005) = **53 ton/day**.

<sup>70</sup> Distance within California = (136+390)/2 = 263 mi.

<sup>71</sup> ROG emitted within California = (318 ton/day)(263/1500) = **9.3 ton/day**.

<sup>72</sup> ROG emitted within BAAQMD = (318 ton/day)(22/1500) = **0.8 ton/day**.

BAAQMD from rail car leakage. This rail car leakage is much greater than the amount of benzene (and other TACs) included in the HRA. For example, the HRA included only 0.06 lb/day of benzene<sup>73</sup> from fugitive components (DEIR, Appx. E.4, pdf 1160) or a tiny fraction of the 109 lb/day of benzene that could be emitted within the BAAQMD from the rail cars themselves.

These are huge emissions, greatly exceeding the ROG (and HRA) CEQA significance thresholds of the BAAQMD and other air district along the rail route. See DEIR, Tables 4.1-5 and 4.1-6. The City must require mitigation for these ROG and TAC emissions.

### **III. THE DEIR FAILS TO DISCLOSE AND UNDERESTIMATES TAC EMISSIONS USED IN HEALTH RISK ASSESSMENT**

Health Risk Assessments (HRAs) typically contain tables that summarize the amount of each TAC and the corresponding cancer, chronic, and acute health risk due to each. The supporting TAC emission calculations are presented in an appendix. The modelling files are separately attached. The HRA in this DEIR does not include most of this information. (Modelling files are available on a CD, which must be requested.) The supporting emission calculations are incomplete and scattered throughout many appendices with no road map explaining how it all fits together, with many analyses superseded.

There is no evident basis for concluding the Project would not result in a significant health impacts as the results are simply stated without the supporting emission calculations, leaving the reader the chore of digging through thousands of pages of appendices to make guesses at the TAC emissions included in the HRA analysis.

My analysis of this material indicates that the HRA only included diesel particulate matter and PM2.5 emissions from locomotives and TAC emissions from fugitive sources, a comparatively minor source of TAC emissions. The TAC emissions from all other sources (storage tanks, idling rail cars) discussed in Comment II were excluded. The TAC emissions from fugitive sources were underestimated, as explained below.

The unloaded crude oil will be transported from the unloading rack to existing crude supply piping in a 4,000-foot-long pipeline. DEIR, p. 1-2. The connecting system includes 3 pumps, 521 valves, 940 flanges, 295 connectors, and 6 pressure relief valves (plus a 15% contingency for valves, flanges and connectors). DEIR, Appx. E.4-1 (11/13 Application, pdf 1179). Crude oil vapors will be emitted from all of these components. The DEIR estimated TAC emissions from these components by first estimating ROG emissions using CARB

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<sup>73</sup> Benzene in fugitive emissions from Ex. E.4, Table 3-5:  $(2.57E-3 \text{ lb/hr})(24 \text{ hr/day})/(2000 \text{ lb/ton}) = 3.1E-5 \text{ ton/day}$ .

emissions factors. The ROG emissions were then multiplied by the weight percent of each TAC in the crude.

The TAC emissions from fugitive components were estimated using the “default speciation profile” for crude oil from the EPA program, TANKS4.09.<sup>74</sup> DEIR, Appx. E.4-1 (11/13 Application, pdf 1179, footnote). A “speciation profile” for a petroleum product identifies each chemical in the liquid and its concentration, reported as volume or weight percent. The default speciation profile used in the DEIR is not representative of the crude oil(s) that could be imported at the rail terminal and is entirely hypothetical. DEIR, Table 3-1. The conclusion that the hypothetical speciation profile is appropriate to evaluate Project health impacts is unsupported.

My review of the HRA speciation profile indicates that it is not based on the maximum amount of each TAC found in the crude oils that could be stored in the tanks. Material Safety Data Sheets (MSDSs) submitted in other applications to import cost-advantaged North American crudes<sup>75</sup> indicate that much higher concentrations of TACs could be present in the crude oils unloaded at the Valero Rail Terminal.

The upper bound values from these MSDSs are summarized in Table 3 and compared with the speciation profile used in the DEIR. This table shows that the HRA significantly underestimated all of the organic TACs included in the HRA. Similar information for diesel particulate matter, the only other TAC included in the HRA, is not available in the documents I reviewed.

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<sup>74</sup> Crude oil component speciation data was obtained by using the TANKS409d model available at <http://www.epa.gov/ttnchie1/software/tanks/> using the database interface to export the speciation profile for the TANKS default crude oil, viz., "Data --> Speciation Profiles --> Export" menu selection and choosing crude oil. This spreadsheet confirms that the default benzene level for crude oils is 0.6 wt.%.

<sup>75</sup> Tesoro Application to SCAQMD for Tank 80079 Throughput Increase, October 3, 2013, PRN 556835 (10/3/13 Application), MSDS for Light Sweet Crude, pdf 12; Tesoro Savage, Application for Site Certification Agreement, vol. 2, Appendix G: Material Safety Data Sheets, August 29, 2013, Available at: <http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013-01%20Volume%20II%20-%20Appendices/EFSEC%202013-01%20Compiled%20Volume%20II.pdf>.

**Table 3: Comparison of DEIR Draft EIR, Appx. E.4, Table 3-5, HRA Speciation Profile for Fugitive Emissions with Maxima Reported in MSDS(s)<sup>76</sup>**

TAC	HRA Speciation Profile <sup>77</sup>	Weight Percent	
		Maxima MSDS	Factor Difference
Benzene	0.6	7	11.7
Ethyl Benzene	0.4	7	17.5
Hexane	0.4	11	27.5
Toluene	1	7	7.0
Xylenes	1.4	7	5.0

Table 3 shows that the risk assessment underestimated the amount of benzene, ethyl benzene, hexane, toluene and xylenes in emissions by factors of 5 (xylenes) to 28 (hexane). Actual TAC emissions, after adjusting for the speciation profile, would be much higher as the DEIR excluded most of the sources of ROG emissions that would contribute TACs. The increase in benzene alone is large enough to increase the cancer risk at the maximum exposed individual worker (MEIW) over the BAAQMD Regulation 2-5 significance threshold of 1 in one million. DEIR, Appx. E.4-1 (11/13 Application, pdf 1189).

The DEIR argues that the benzene content of two Canadian crudes are on average lower than the benzene content of Alaska North Slope crude (0.33%), the design crude for the refinery. DEIR, Appx. K, p. K-17. However, the benzene content of other crudes listed in DEIR Table 3-1 are on average much higher than ANS. Light crudes, like Bakken, have been reported to contain benzene concentrations of up to 7 weight %, or twenty-one times more than the design ANS crude.

In sum, the DEIR fails to properly analyze the health impacts of importing, storing, and refining the crude oil that the CBR Project will likely bring to Valero.

<sup>76</sup> Tesoro Savage, Application for Site Certification Agreement, vol. 2, Appendix G: Material Safety Data Sheets for Enbridge Bakken (n-hexane = 11%); sour heavy crude oil (benzene = 7%; toluene = 7%; ethylbenzene = 7%; xylene = 7%); sweet heavy crude oil (toluene = 7%); light sweet crude oil (benzene = 7%; toluene = 7%; ethylbenzene = 7%; xylene = 7%), August 29, 2013, Available at: <http://www.efsec.wa.gov/Tesoro%20Savage/Application/EFSEC%202013-01%20Volume%20II%20-%20Appendices/EFSEC%202013-01%20Compiled%20Volume%20II.pdf>. See also 3/7/13 Revised Application, pdf 96-115.

<sup>77</sup> DEIR, Appx. E.4, Table 3-5, pdf 1160.

# **Comments on the Draft Environmental Impact Report for the Valero Benicia Crude-by-Rail Project**

**September 15, 2014**

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I am a policy analyst, researcher, educator, and consultant with more than three decades of experience assessing the risks associated with transporting hazardous materials. Over the course of my career, I have advised governmental bodies, national chemical and oil worker unions, insurance companies, universities, and environmental groups on the unique health and safety hazards of shipping hazardous materials—including crude oil—by rail. I have testified before both houses of the United States Congress, and have presented as an invited lecturer in twelve countries on chemical transportation accident prevention. As a pro bono consultant, I have provided specific analyses of risks associated with transporting crude oil by rail in and around cities across the United States, including Albany, New York and Washington, D.C.

I am familiar with Valero’s proposal to begin accepting crude oil shipments by rail at its Benicia refinery. I have reviewed the draft Environmental Impact Report (EIR)’s discussion of the hazardous impacts associated with this proposal, including a report by Dr. Christopher Barkan and others, purporting to calculate the probability of crude oil release due to tank car derailment on the portion of the rail route between Roseville and Benicia (Appendix F to the draft EIR).

The draft EIR fails to fully analyze, disclose, and mitigate significant hazardous impacts of shipping crude oil by rail to the Benicia refinery. First, the probability analysis referenced in the draft EIR and explained more fully in the Barkan Report fails to consider multiple important risk factors, described in detail below. As a result of these omissions, the draft EIR incorrectly concludes that the probability of crude oil release, and thus the potential for significant impact, is low. Second, the draft fails to adequately disclose and analyze the consequences of events it considers low-probability, thereby ignoring that even low-probability impacts can be significant if their consequences are sufficiently grave. Because it assumes that hazardous impacts from crude by rail transport are insignificant, the draft EIR also fails to require any of the various possible mitigation measures.

**I. There are gaps in the draft EIR’s analysis of the probability of a crude oil release from rail cars; as a result, it overlooks potentially significant hazardous impacts.**

The draft EIR’s conclusion that hazardous impacts related to transporting crude oil to the Benicia Valero refinery are not significant stems directly from the

Barkan Report's conclusion that the risk of a crude oil release from rail cars is low. However, the Barkan Report is flawed and overlooks important risks. Several of the Barkan Report's major omissions follow below.

**A. The draft EIR fails to disclose the probability of a release on railroad miles outside the Roseville to Benicia route.**

To begin, the Barkan Report looks only at the probability of crude oil release due to tank car derailment between Roseville and Benicia; it contains no discussion whatsoever of the risk of release on the longer route before arriving in Roseville through perhaps much more challenging California landscapes. The formula the Report uses to calculate probability shows that the greater length of track a tank car travels, the higher its probability of release. *See* App. F at 2. Yet it makes no attempt to calculate the length of track the tank cars will travel within or beyond California before arriving in Roseville, let alone the conditions along that route. Given that there are limited potential rail paths that the tank cars could take, the draft EIR could easily have analyzed the risks along the longer route; it simply chose not to.

**B. The draft EIR's probability calculation fails to take into account specific physical features of the Roseville-Benicia route, beyond what classes of track are present.**

Even for the segment of the rail route the Barkan Report does analyze, it fails to look at risk factors related to local conditions along the route. The Barkan Report's probability analysis takes into account one physical characteristic of the track between Roseville and Benicia: the type of "track classes" present, as defined by the Federal Railroad Administration (FRA). *See* App. F at 2-4, 6-7. The Report contains no discussion of the many other potential segment-specific infrastructure risk issues associated with the track structures and roadbed present, such as dangerous curves, washout potentials, trestles or tunnels, etc.

It is well-established that local route conditions can pose serious derailment risks. For example, it is clear that specific route characteristics were centrally important in the Lac-Megantic, Quebec crude oil train derailment and fire on July 2, 2013. Although the draft EIR dismissively pigeon-holes the cause of the Lac-Megantic accident as "human error," *see* Draft EIR at 4.7-19, the disaster was also the result of infrastructure issues involving downhill grades and the presence of

curves/switches in the downtown area. Local conditions also influenced the derailment and oil spill in Lynchburg, Virginia on April 20, 2014.<sup>1</sup>

The Barkan Report's neglect of route-specific factors and the history of accidents, violations, etc. along the Roseville-Benicia route is especially puzzling given that Dr. Barkan's own past work acknowledges the importance of looking at local features when assessing risk. For example, in a 2003 study, Dr. Barkan noted that "[t]he severity of a particular hazardous materials accident" relates to "the particular circumstances and location of the release."<sup>2</sup> In that same study, Dr. Barkan vividly highlighted the very top risk factors in accident causation on a given stretch of track as including broken rails and welds and buckled track—neither of which is discussed for the Roseville-Benicia route.

Instead, the Barkan Report attempts to estimate the probability of derailment in a specific local area by combining the local track class data point with generic national data on release rates derived from previous accidents of all kinds. A closer look at specific infrastructure features of the Roseville-Benicia route is required to reach any fair estimate of probability of accidental crude oil releases, especially given possible new operations challenges caused by the expected heavy volumes of unit trains.

**C. The draft EIR fails to calculate the probability of release along particularly vulnerable segments of the Roseville-Benicia route, other than the Suisun wetlands.**

The Barkan Report analyzes the probability that a crude oil release will occur anywhere along the Roseville-Benicia train route. It does not ask whether local track

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<sup>1</sup> *Va. oil train derailment is latest "wake-up call": expert*, CBS/AP, May 1, 2014, [http://www.pennlive.com/midstate/index.ssf/2014/05/oil\\_tankers\\_fall\\_into\\_james\\_ri.html](http://www.pennlive.com/midstate/index.ssf/2014/05/oil_tankers_fall_into_james_ri.html) ("Grady Cothen, a former Federal Railroad Administration official, said given the recent wet weather in Virginia and the accident's location near a river, it's possible that soft subsoil may have weakened the track, Cothen speculated.").

<sup>2</sup> Christopher Barkan et al., *Railroad Derailment Factors Affecting Hazardous Materials Transportation Risk*, Transportation Research Record 1825, Paper No. 03-4429 at 67 (2003) (hereinafter "Barkan 2003"), available at [http://railtec.illinois.edu/cee/pdf/Barkan\\_et\\_al\\_2003.pdf](http://railtec.illinois.edu/cee/pdf/Barkan_et_al_2003.pdf).

conditions or other factors make an accident on any subsection of that route more probable, with one exception: the report does derive a specific probability of crude oil release on the section of track that passes through the Suisun wetlands. However, the Suisun wetlands are not the only vulnerable location along the Roseville-Benicia route. Other sensitive off-track receptors, such as high-population density centers, schools, hospitals, etc., may make the consequences of a crude oil release at certain locations particularly grave. Neither the Barkan Report nor the draft EIR discloses any of these other sensitive areas along the train route. Nor do they analyze whether the specific risk to such areas may be heightened.

**D. The probability calculation fails to consider the most recent data available on crude-by-rail accidents, or the risks specific to operation of crude oil unit trains.**

The Barkan Report also ignores potentially significant hazardous impacts because its probability calculation does not take into account the unique risks that crude oil unit trains pose. Unit trains tend to be longer and heavier than traditional shipping trains. As explained by the United States Department of Transportation, crude oil unit trains

are longer, heavier in total, more challenging to control, and can produce considerably higher buff and draft forces which affect train stability. In addition, these trains can be more challenging to slow down or stop, can be more prone to derailments when put in emergency braking, and the loaded tank cars are stiffer and do not react well to track warp which when combined with high buff/draft forces can increase the risk of derailments.<sup>3</sup>

A credible probability analysis depends crucially on a complete, relevant dataset. No analysis of the probability of a crude oil release from a unit train can be

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<sup>3</sup> Dept. of Transportation, Pipeline and Hazardous Materials Safety Administration, Draft Regulatory Impact Analysis for Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains; Notice of Proposed Rulemaking, July 2013 (“Draft RIA”) at 24.

complete without data from 2010 and later, when transportation of crude oil in unit trains took off in the United States. However, the Barkan Report derives its probability calculation from historical train and railcar accident data that pre-dates 2010. It does not explain why this outdated accident data is applicable to predicting the behavior of longer, heavier unit trains; nor is it clear how such data is relevant.

As just one example, the Report calculates a train derailment rate (one variable in its probability equation) from pre-2010 accident statistics in the FRA's Rail Equipment Accident database. App. F at 2-3. According to the FRA database, the average speed of a train involved in a reported accident was 27 miles per hour. But modern unit trains travel much faster: freight railroads have recently announced their intention to voluntarily *reduce* the speeds of unit trains carrying crude oil to 50 miles per hour, or 40 miles in "high-threat" urban areas.<sup>4</sup> Dr. Barkan's prior work indicates that speed is one of the most important factors determining whether a derailment will lead to a significant hazardous materials accident.<sup>5</sup>

Likewise, the Barkan Report's analysis assumed that in an average derailment event, six individual cars would derail, again based on the outmoded FRA accident data. App. F at 5. The Report contains no discussion of how realistic this assumption is for crude oil unit trains, which contain more cars on average. National data on train accidents from 2010 and later is available. The Department of Transportation, for example, recently used 2006 through 2013 data to estimate the severity of accidents from crude oil unit train derailments in a recent rulemaking.<sup>6</sup> The draft EIR simply chose to ignore the most recent, most relevant data.

The draft EIR and underlying analysis made no attempt to otherwise account for the acute dangers that are particular to unit train operation. Multiple professional outlets have recognized the huge difference in risk between transporting crude oil by unit train and traditional rail shipment, including the Association of American Railroads' August 2013 Circular OT-55N (dated August 5,

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<sup>4</sup> Association of American Railroads, *Freight Railroads Join U.S. Transportation Secretary Foxx in Announcing Industry Crude By Rail Safety Initiative*, Feb. 21, 2014, <https://www.aar.org/newsandevents/Press-Releases/Pages/Freight-Railroads-Join-U-S-Transportation-Secretary-Foxx-in-Announcing-Industry-Crude-By-Rail-Safety-Initiative.aspx>

<sup>5</sup> See Barkan 2003, at 64.

<sup>6</sup> Draft RIA at 25.

2013) and the National Traffic Safety Board's April 2014 Safety Forum. Various federal safety studies and federal agency directives have also cited unit trains as a key safety concern. In fact, Dr. Barkan's own prior scholarship suggests that special characteristics of unit trains are important to assessing risk. Adequately predicting the probability of accidental release of crude oil from a rail line would require an assessment of the particular operations, behavior, and risk of flammable unit trains, especially their history and potential for multi-car derailment. The Barkan Report and draft EIR do no such thing.

**E. Instead of relying on real-world data about crude-by-rail accidents, the Barkan Report uses a method of calculating the resistance of tank cars to puncture that is non-transparent, untested, and unreliable.**

As explained above, many of the variables the Barkan Report uses to calculate the probability of a crude oil release are deficient because they ignore the most recent, most relevant data on unit train derailment. Another variable—the conditional probability of release (CPR), or imperviousness of a derailed car to puncture—is suspect for additional reasons. The Barkan Report derives its CPR value from non-transparent industry sources, in some places without citation to any specific documents. The method used to derive the CPR is quite new and relatively untested in the scientific literature. Moreover, calculated CPR values are particularly unreliable as a proxy for the resistance of 1232 tank cars, which the Barkan Report assumes will be used to transport crude to Benicia. As discussed at the National Transportation Safety Board's April 2014 Safety Forum, there is simply not enough data from crashes involving 1232 cars to constitute a strong empirical basis for CPR projections. At that forum, Todd Treichel, the director of the RSI-AAR Railroad Tank Car Safety Research and Test Project stated, "The 1232 cars, the CPC-1232 cars in particular remain fairly scarce in our data, so the specific question how have they performed in accidents so far doesn't really confirm or dispute the CPR estimates until there are many more cars that have been derailed in many more types of accidents."<sup>7</sup> The Barkan Report does not disclose this weakness in its chosen

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<sup>7</sup> NTSB Rail Safety Forum: Transportation of Crude Oil and Ethanol, Washington, D.C., April 22, 2014, transcript at 82, available at <http://dms.nts.gov/pubdms/search/hitlist.cfm?docketID=56186>

methodology. Nor does it provide any explanation of why CPR values based on other types of cars in the national dataset should be applied to 1232 tank cars.

**F. The draft EIR fails to consider whether some risk factors should be weighted more heavily than others in assessing the probability of hazardous impact.**

The Barkan Report and draft EIR fail to take into account many factors, described above, that suggest that the proposed crude-by-rail project has significant hazardous impacts. Even among the risk factors it does consider, the Barkan Report does not discuss or rank which factors are most important, and by how much, in accounting for releases from trains. Diminishing the weight given to the most important risk factors necessarily skews a risk analysis toward underestimating the risks present.

**G. The draft EIR's method of calculating risk is not safety conservative.**

Despite all the foregoing omissions and oversights in its analysis, the Barkan Report asserts that its method of calculating the probability of a crude oil release is "probably" safety conservative. App. F. at 8-9. There is no reason to think this is the case, and in fact, as detailed above, there are many reasons to think the analysis underestimates the potential public safety risk inherent in Valero's proposal.

The short life of the crude-by-rail industry in North America has already seen a number of serious crude oil releases. The Barkan Report makes no effort to suggest that the probability of release derived from its equation is either higher or lower than real-world release rates. Instead, the Report touts the overall decline in hazardous materials release rates from trains over the past decades. But that trend is irrelevant, and even misleading, without taking into account the recent history of crude-by-rail operations.

**II. The draft EIR fails to take into account the potential significance of foreseeable low-probability, high-impact risks of transporting crude oil by unit train.**

Even if the probability of a crude oil release between Roseville and Benicia were as low as the Barkan Report says it is, the draft EIR's conclusion that there are no potentially significant hazardous impacts is unjustified. The draft EIR assumes that the potential significance of a crude oil release is based solely on probability that the release will take place. However, the existence of a potentially significant impact stems not just from the probability of the impact, but also its foreseeable consequences. Put most simply: risk = consequence x probability.

The Barkan Report neither discloses nor analyzes the consequences of any of the risks it identifies. The draft EIR's hazardous impacts section contains a brief description of the fallout from major crude-by-rail accidents at Lac-Megantic; Lynchburg, Virginia; Aliceville, Alabama; and Casselton, North Dakota. Draft EIR at 4.7-6 to 4.7-8. However, it fails to disclose or analyze the reasonably foreseeable local impact of a comparable accident between Roseville and Benicia. For example, at Lac-Megantic, 63 tank cars derailed, releasing 1.6 million gallons of crude oil, which then ignited, killing 47 people. Draft EIR at 4.7-8. The City of Davis has a population 10 times greater than Lac-Megantic, and is almost 10 times as densely populated. A Lac-Megantic-style inferno in Davis would be devastatingly significant even if, as the draft EIR assumes, it would only happen once in 111 years.

\* \* \*

Based on the foregoing, I conclude that the draft EIR and underlying Barkan Report fail to disclose and analyze the potentially significant hazardous impacts of transporting crude oil by rail to the Benicia Valero refinery: first, by failing to consider evidence tending to show that the probability of a crude oil release is higher than the draft EIR posits, and second, by ignoring the impacts of low-risk, high-consequence events. The final EIR must account for and mitigate these significant impacts.



December 5, 2014

**Comments sent via email and overnight mail**

Amy Million, Principal Planner  
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Re: The City of Benicia's Draft Environmental Impact Report for the Valero Benicia Crude by Rail Project

Dear Ms. Million,

On behalf of the Center for Biological Diversity, Communities for a Better Environment, and Natural Resources Defense Council, we submit the following comments on the City of Benicia's Draft Environmental Impact Report (DEIR) for the Valero Benicia Crude by Rail Project (Project). The Project, if approved, would allow the Valero refinery to receive up to 70,000 barrels per day of crude oil by train, which equates to a potential for 1.07 billion gallons of crude oil imported by train each year.

These comments supplement prior comment letters by detailing the significant deficiencies in the DEIR's assessment of impacts to Biological Resources in Section 4.2. Specifically the DEIR (1) fails to adequately analyze and mitigate impacts to biological resources at the Project area; (2) fails to adequately analyze and mitigate impacts along the rail lines serving the Project; (3) fails to properly analyze the cumulative impacts of increased crude oil shipments on biological resources; and (4) fails to adequately evaluate impacts related to climate change.

Because this Project would result in significant impacts to biological resources, the City cannot certify the DEIR before adopting all feasible mitigation measures. At present, the DEIR fails to identify and analyze mitigation measures that would reduce the Project's impacts. However, there are numerous mitigation measures and alternatives that would reduce the impacts of the Project. These measures must be analyzed in the DEIR, so that the full range of options are publicly disclosed and considered by decision-makers.

## **I. The DEIR Fails To Adequately Analyze and Mitigate Impacts to Biological Resources in the Project Area.**

The Project will increase rail traffic activity significantly at the Project site (also called Project study area or Project area) by up to 730 oil trains each year, each carrying up to 50 tank cars,<sup>1</sup> with the potential of 1.07 billion gallons of crude oil per year imported to the Project area. The increased rail traffic and heightened probability of an oil spill from these oil trains pose significant risks to numerous special-status species occurring at the Project area. The DEIR fails to fully disclose and analyze the significant impacts to special-status species at the Project area, and fails to propose sufficient mitigation for these impacts.

### **A. The DEIR incorrectly categorizes numerous special-status species as “absent” from the Project area, and thereby avoids analyzing and mitigating impacts to these species.**

The DEIR improperly classifies numerous special-status species as “absent” from the Project study area, and thereby avoids analyzing impacts from the Project on these species. The DEIR states that the Project study area includes the Sulphur Springs Creek riparian area and the adjacent Project construction footprint. DEIR at 4.2-1. The DEIR acknowledges that Sulphur Springs Creek riparian area provides suitable habitat for numerous special-status species:

Sulphur Springs Creek and its associated riparian corridor and in-stream marshes provide potentially suitable habitat for the following special-status species: California red-legged frog, western pond turtle, tri-colored blackbird, yellow-headed blackbird, Suisun song sparrow, Samuel’s song sparrow, grasshopper sparrow, loggerhead shrike, yellow breasted chat, San Francisco common yellowthroat, and short-eared owl. DEIR at 4.2-27.

The DEIR also discusses the potential for the federally and/or state listed California black rail, California clapper rail, and salt marsh harvest mouse to occur in the Sulphur Springs Creek riparian area, but then arbitrarily dismisses their presence in the Project area without citing any evidence showing their absence or conducting any surveys:

Though brackish and salt marshes at the mouth of Sulphur Springs Creek provide habitat occupied by California black rail, California clapper rail, and salt marsh harvest mouse (CDFW, 2013a), only California black rail has the potential to occur in freshwater marshes of upstream Sulphur Springs Creek; this would be unlikely due to the small patch sizes of creek marshes and the industrial surroundings. DEIR at 4.2-28.

This is especially troubling given that one of the twelve Salt Marsh Harvest Mouse Conservation Areas in the Suisun Marsh is directly adjacent to the Project area. *See* Figure 1. Furthermore, the salt marsh harvest mouse, California clapper rail, and California black rail are State Fully Protected Species which means that no take or permits for take are allowed.<sup>2</sup>

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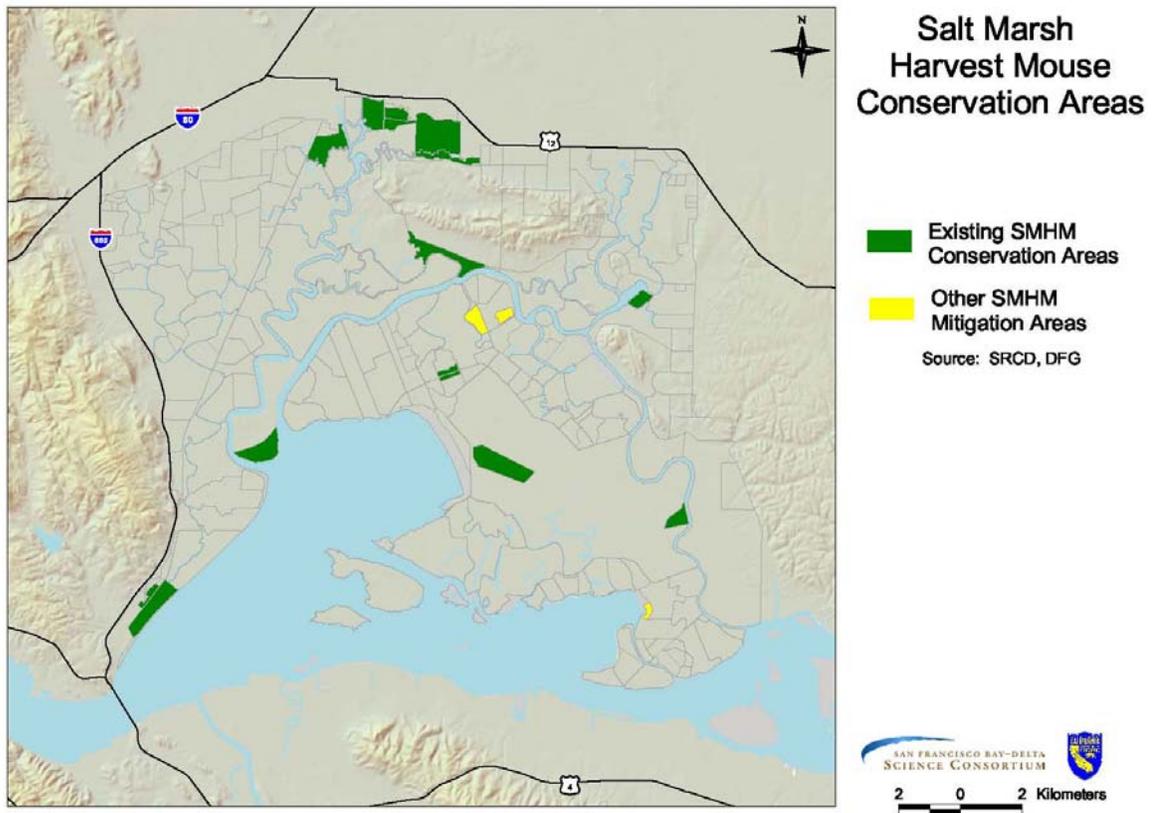
<sup>1</sup> The Project would allow Valero to accept up to 100 tank cars of crude oil a day in two 50-car trains. DEIR at 3-1.

<sup>2</sup> [http://www.dfg.ca.gov/wildlife/nongame/t\\_e\\_spp/fully\\_pro.html](http://www.dfg.ca.gov/wildlife/nongame/t_e_spp/fully_pro.html)

The DEIR fails to consider special-status fish that have the potential to occur in the Sulphur Springs Creek riparian area, even though the federally and/or state listed delta smelt, Central Valley steelhead, and longfin smelt use the Suisun Marsh and its network of sloughs for feeding, rearing, and/or migration as juveniles or adults. DEIR at Table 4.2-1.

Figure 1. Twelve Salt Marsh Harvest Mouse Conservation Areas in Suisun Marsh.

Source: <http://www.dfg.ca.gov/delta/suisunmarsh/atlas/images/smhm%20cons%20areas.jpg>



The DEIR also fails to consider special-status plants occurring in the Project area. Table 4.2-1 of “Special Status Species Considered for the Proposed Project” irrationally excludes plant species because they were judged to not experience secondary disturbance-related impacts: “Statements regarding the potential for species to occur in Sulphur Springs Creek (a component of the Project Study Area) do not extend to plants because they would not experience secondary disturbance-related impacts (e.g., noise, visual) from the project.” DEIR at 4.2-5. However, plants at Sulphur Springs Creek are vulnerable to oil spills, erosion, sediment loading, chemical runoff, and other impacts from the Project, as acknowledged by the DEIR (DEIR at 4.8-15), and these impacts must be analyzed and mitigated.

In sum, despite the potential presence of numerous special-status species in the Project area, Table 4.2-1 erroneously lists all special-status species as absent from the Project Study Area, with the sole exception of the California red-legged frog which is listed as “unlikely.” The DEIR concludes without basis that the only “special-status species potentially occurring in the Sulphur Springs Creek riparian corridor are California red-legged frog (*Rana draytonii*), western pond turtle (*Actinemys marmorata*), and nesting birds.” DEIR at 4.2-19.

The Project applicant did not conduct any field surveys for special-status species in the Project area. Without USFWS protocol-level surveys for special-status species, the DEIR must assume they are present and treat any potential habitat as occupied habitat, and impacts to these species must be fully analyzed and mitigated.

**B. The DEIR fails to analyze and mitigate foreseeable impacts on special-status species in the Project area.**

Under CEQA Guidelines, a project would cause significant adverse impacts to biological resources if it would “have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species.” The DEIR’s cursory and incomplete three-paragraph analysis of the potential impacts of Project activities on special-status species (DEIR at 4.2-27-28) has several fatal flaws:

(1) As detailed above, the DEIR only considers a subset of the special-status species that may occur in the Project area, and thus its analysis is incomplete.

(2) The DEIR completely fails to analyze the potential for an oil spill from the ~730 crude oil trains arriving each year at the Project area to reach and harm the Sulphur Springs Creek riparian corridor and adjacent Suisun Marsh. DEIR at 4.2-27-28. The Sulphur Springs Creek riparian corridor is immediately adjacent to the northeast Project boundary, separated only by chain-link fencing. DEIR at 4.2-19. Due to the proximity of sensitive wetland habitat and special-status species, the impacts of an oil spill in the Project area could be significant. However, the DEIR irrationally fails to analyze the impacts from a spill in the Project area or require mitigation measures to prevent a worst-case scenario oil spill from reaching sensitive wetlands. For example, the DEIR fails to require mitigation plans, procedures, and contractual arrangements to enable a rapid response to an oil spill in sensitive habitats, such as contracts to bring personnel to the site to contain an oil spill in wetland habitat, bird rescue personnel and rehabilitators immediately after onset of a spill event, and personnel to conduct clean-up in sensitive habitat in consultation with the California Department of Fish and Wildlife, National Marine Fisheries Service, and U.S. Fish and Wildlife Service.

(3) The DEIR fails to analyze and mitigate many construction-related and operational impacts at the Project area to special-status species. DEIR at 4.2-27-28. The DEIR must analyze and mitigate the full range of impacts to special-status species imposed by construction and increased rail activity due to Project operation, including increased noise pollution, night lighting, collisions with trains, barriers to movement, disturbance from human presence, spread of invasive species from imported soils, and storm-water runoff containing pollutants from oil and other chemicals used at the facility. In its incomplete analysis, the DEIR irrationally concludes that the Project is only likely to affect nesting birds, indirectly, and only through construction-related activities. DEIR at 4.2-28. Even for nesting birds, the DEIR completely evades evaluating whether operational effects could disrupt nesting birds or feeding migratory waterfowl by presuming that these species are “tolerant” without providing any scientific evidence, monitoring, or analysis to verify that no harm is occurring: “[d]uring operation, the noise, vibrations, visual disturbance, and increased human activity associated with the Project

become part of the ambient environment, so any birds that subsequently nest nearby are presumed to be tolerant of the disturbance." DEIR at 4.2-28. The DEIR must properly evaluate and mitigate the full range of construction-related and operational impacts to special-status species in the Project area.

## **II. The DEIR Fails To Properly Analyze and Mitigate Off-Site Impacts to Biological Resources Outside of the Immediate Project Area.**

The DEIR's analysis of Project impacts to Biological Resources outside the Project area suffers from numerous fatal flaws: (1) the DEIR arbitrarily limits the scope of its off-site biological resources impacts analysis to the ~18 miles of rail line running through the Suisun Marsh; (2) the DEIR improperly limits its rail accident risk analysis to the ~18 miles of track passing through the Suisun Marsh and significantly underestimates the spill risk; (3) the DEIR fails to disclose the significance of low-probability, high-consequence oil spill events or mitigate oil spill impacts; and (4) the DEIR fails to analyze and mitigate impacts from increased rail activity along the rail lines serving the Project.

### **A. The DEIR irrationally and improperly limits the geographic scope of its off-site biological resources impacts analysis.**

Despite the fact that the Project will vastly increase rail activity to and from the refinery across California and other states, the DEIR irrationally and improperly fails to analyze the Project's off-site impacts to biological resources beyond the ~18 mile stretch of rail line running through the Suisun Marsh. The DEIR's restriction of the geographic scope is arbitrary and violates CEQA.

CEQA requires an EIR to discuss the significant impacts that the proposed project will have in the relevant geographic area. Guidelines § 15126.2(a). Agencies must "provide a reasonable explanation for the geographic limitation used," Guidelines § 15130(b)(1)(B)(3), and the geographic scope "cannot be so narrowly defined that it necessarily eliminates a portion of the affected environmental setting," *Bakersfield Citizens for Local Control v. City of Bakersfield*, 124 Cal. App. 4th 1184, 1216 (2004).

The DEIR acknowledges that impacts from the Project could extend to areas outside of the Suisun Marsh along the railroad track used to transport crude oil: "potential indirect impacts of accidental releases related to this proposed new transport on the [Suisun] Marsh ... also may apply to other sensitive areas anywhere along the railroad tracks used to transport crude feedstocks." DEIR at 4.2-31. However, the DEIR fails to explain why it has limited the geographic scope to Suisun Marsh, and inexplicably fails to evaluate impacts along the rail lines that will be used by the Project.

Because only a handful of rail lines would serve the Project, the analysis of the potential impacts to special-status species along these lines is eminently feasible. Within California and many western states, for example, very few branches of Union Pacific and BNSF rail lines lead to Roseville. *See* Figures 2 and 3.

Figure 2. Union Pacific Railroad Crude-By-Rail Routes.  
 Source: <http://www.up.com/customers/chemical/crude/index.htm>

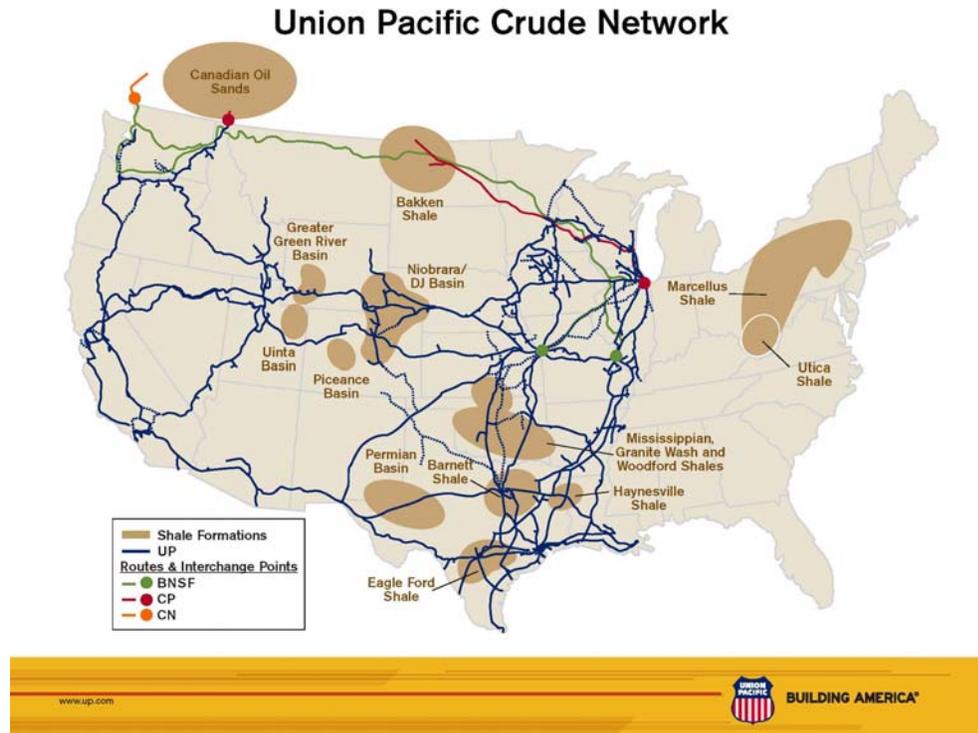


Figure 3. BNSF Crude-By-Rail Routes.  
 Source: <http://www.bnsf.com/customers/oil-gas/>



The narrow geographic scope of the biological resources impacts analysis is a serious deficiency, particularly because significant train-related harms to species from oil and chemical spills, train collisions, noise pollution, and barriers to movement have been scientifically documented as detailed below, and these harms will worsen with increased rail activity.

The DEIR should include a full discussion of the impacts of the Project's rail activity on biological resources, including the full range of potential impacts from increased rail activity, the origin and route of train trips, the species and habitats that will be impacted along the train routes, and mitigation measures. The DEIR's failure to address these important topics violates CEQA.

**B. The crude-by-rail routes for UPRR pass through occupied habitat for many special-status species.**

Union Pacific Railroad (UPRR) rail lines cut through critical habitat for many threatened and endangered species along the mainline rail network. In California alone, UPRR track with UPRR ownership rights pass directly through critical habitat for 25 federally protected species, including terrestrial and aquatic animals and plants. *See* Table 1 and Figure 4. The Project would enable the rail transport and processing of Bakken and Canadian tar sands crude oil to the refinery. As shown by the maps of UPRR and BNSF crude-by-rail routes (i.e., Figures 2 and 3), the rail lines transporting crude oil from the Bakken shale deposit on the North Dakota-Montana border would pass through occupied habitat for many threatened and endangered species, such as the grizzly bear in the Northern Continental Divide Ecosystem (NCDE) in northwest Montana. The DEIR's failure to disclose and analyze these impacts to special-status species and sensitive habitats along the rail lines violates CEQA.

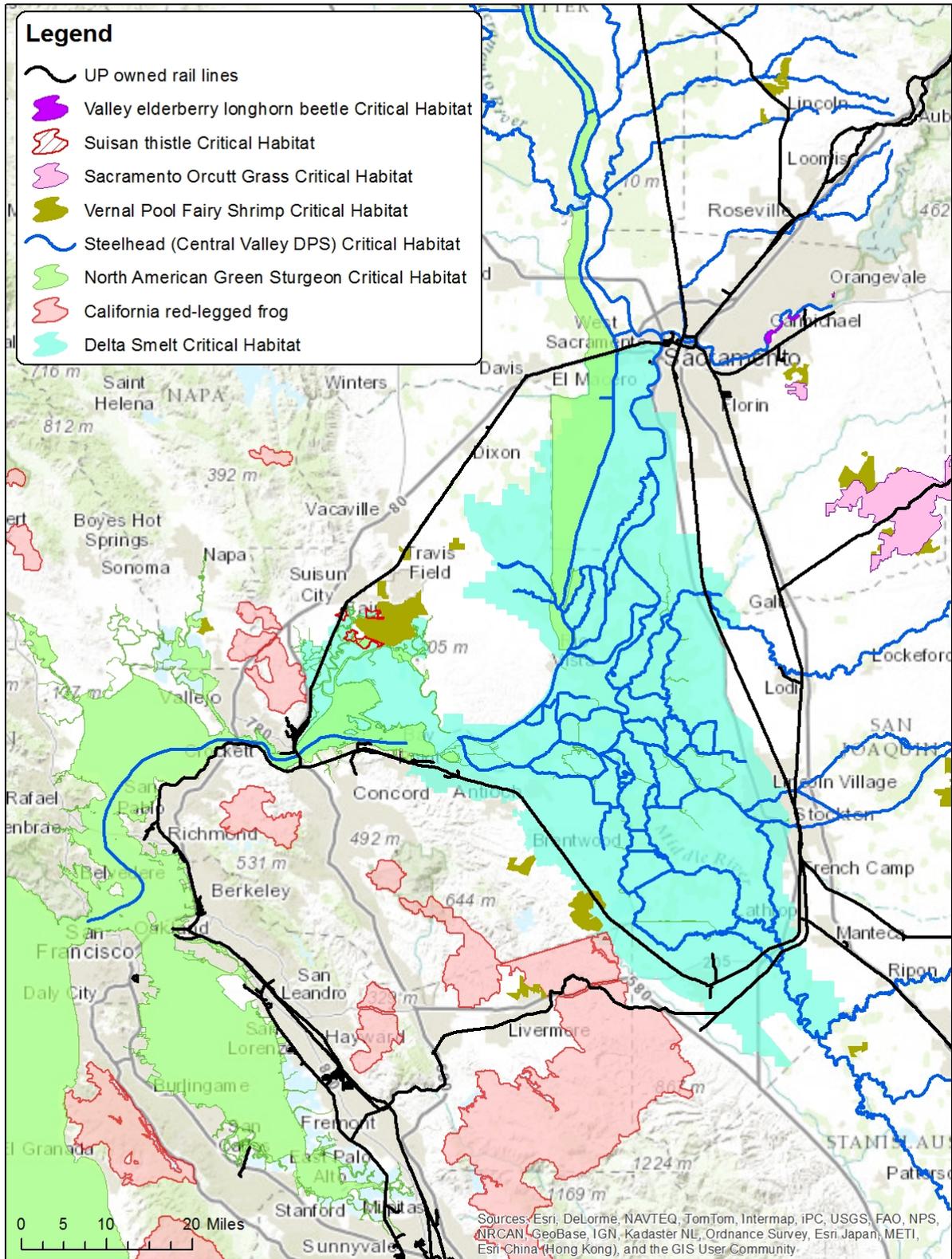
**C. The DEIR improperly limits its off-site oil spill risk analysis to 18 miles of track passing through the Suisun Marsh and significantly underestimates the risk of an accident resulting in an oil spill.**

The DEIR improperly narrows the scope of its oil spill risk analysis to an ~18 mile stretch of rail line passing through Suisun Marsh, although it admits that "a spill could occur anywhere along the line." DEIR at 4.2-33. The DEIR should have evaluated the probability of an oil spill on the mainline track outside of Suisun Marsh, which would have yielded a significantly greater risk of oil spill resulting from the Project due to the larger number of rail miles traveled. By improperly limiting the scope of the analysis, the DEIR significantly underestimates the probability of an oil spill resulting from the Project. The DEIR's restriction of its oil spill risk analysis to Suisun Marsh is arbitrary and violates CEQA.

Table 1. UPRR track with UPRR ownership rights passes directly through critical habitat for 25 federally protected species in California.

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status</b>
Sacramento Orcutt grass	<i>Orcuttia viscida</i>	Endangered
Desert tortoise	<i>Gopherus agassizii</i>	Threatened
Bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>	Threatened
Suisun thistle	<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>	Endangered
Arroyo toad	<i>Anaxyrus californicus</i>	Endangered
Contra Costa goldfields	<i>Lasthenia conjugens</i>	Endangered
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	Endangered
La Graciosa thistle	<i>Cirsium loncholepis</i>	Endangered
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Threatened
California tiger Salamander (Santa Barbara County DPS)	<i>Ambystoma californiense</i>	Endangered
Marbled murrelet	<i>Brachyramphus marmoratus</i>	Threatened
California tiger Salamander (Central California DPS)	<i>Ambystoma californiense</i>	Threatened
Delta smelt	<i>Hypomesus transpacificus</i>	Threatened
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered
California red-legged frog	<i>Rana draytonii</i>	Threatened
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	Threatened
Coachella Valley milk-vetch	<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Endangered
Santa Ana sucker	<i>Catostomus santaanae</i>	Threatened
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Endangered
Ventura Marsh Milk-vetch	<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	Endangered
Gaviota Tarplant	<i>Deinandra increscens</i> ssp. <i>villosa</i>	Endangered
Tidewater goby	<i>Eucyclogobius newberryi</i>	Endangered
North American green sturgeon (southern DPS)	<i>Acipenser medirostris</i>	Threatened
San Bernardino Merriam's kangaroo rat	<i>Dipodomys merriami parvus</i>	Endangered

Figure 4. Critical habitat for threatened and endangered species bisected by UPRR track with ownership rights in the San Francisco Bay Area in California.



#### **D. The DEIR fails to disclose the significance of low-probability, high-consequence oil spill events resulting from the Project or mitigate oil spill impacts.**

The DEIR acknowledges that the consequences of an oil spill in Suisun Marsh could be “significant.” DEIR at 4.2-33. However, the DEIR dismisses those consequences by arguing that the likelihood of a severe event occurring is low, and irrationally concludes that the impacts from a train accident that involves a relatively large amount of oil spilled from one or more tank cars is less than significant. DEIR at 4.2-33. This analysis errs in several fundamental ways. First, as detailed in the 15 September NRDC et al. letter, the DEIR’s hazards analysis for the risk of oil spills suffers from numerous deficiencies which underestimate the risk of accidents. Second, even using the Barken report’s flawed estimate, the risk of an oil spill that releases greater than 100 gallons along the portion of the route traversing the Suisun wetland area (0.381% per year) equates to an 11% probability over a 30-year period which is a significant risk. Third, because the significance of an accident depends both on its probability of occurring and its magnitude, high-magnitude-low-probability risks like large oil spills are significant impacts under CEQA, and must be mitigated. Guidelines § 15143 (“The significant effects should be discussed with emphasis in proportion to their severity and probability of occurrence.”).

Oil spills have well-documented lethal and sublethal impacts on species, including immediate and long-term effects (Bhattacharyya et al. 2003, Holdway 2002), that must be considered in the DEIR. Petroleum oil is a complex mixture of hundreds of different compounds, mostly hydrocarbons, with different levels of toxicity to wildlife. Polycyclic aromatic hydrocarbons (PAHs) are among the most toxic oil components and have been documented to cause significant impacts on wildlife. Direct impacts to wildlife from exposure to oil include behavioral alteration, suppressed growth, induced or inhibited enzyme systems and other molecular effects, physiological responses, reduced immunity to disease and parasites, histopathological lesions and other cellular effects, tainted flesh, and chronic mortality (Holdway 2002). Oil can also exert indirect effects on wildlife through reduction of key prey species (Peterson et al. 2003).

The persistence of toxic subsurface oil leading to chronic exposure, even at sublethal levels, can impact wildlife species and ecosystems for decades (Bhattacharyya et al. 2003, Peterson et al. 2003). Exposure to crude oil in rivers and streams has been linked to long-term population effects in freshwater fish (Krahn et al. 1986), river otters (Duffy et al. 1993, Bowyer et al. 1995), and other freshwater species (Harrel 1985). For example, pink salmon embryos exposed to oil under conditions similar to those observed after the *Exxon Valdez* spill exhibited delayed effects of reduced growth and significantly lower marine survival (Heintz et al. 2000). Crude oil from the *Exxon Valdez* spill is thought to have caused the elevated mortality of pink salmon eggs in oiled streams for at least four years after the spill (Peterson et al. 2003).

One recent example of the significant impacts of low-probability, high-consequence oil spill events occurred in Suisun Marsh in 2004 when a Kinder Morgan pipeline spilled approximately 123,774 gallons of diesel fuel into Suisun marsh, adjacent to the Union Pacific rail line that would carry crude to the refinery if this project is approved.<sup>3</sup> The Natural Resource Damage Assessment for the spill documents injury and/or death of numerous birds, small

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<sup>3</sup> <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=22852&inline=true>

mammals, reptiles, fish, aquatic and terrestrial invertebrates, and marsh plants, including deaths of the federally and state-listed salt marsh harvest mouse. The most-heavily impacted areas included a 9.25-acre area reduced to a plowed field with a projected recovery time of 10-years from restoration, and a 68.54-acre area that was 80% injured with a 4-year recovery timeline.

**E. The DEIR fails to adequately analyze off-site impacts from increased rail activity along the rail lines serving the Project.**

Although the Project will vastly increase rail activity by up to four train trips per day (i.e., two trains coming and the same trains leaving), equating to up to 1460 trips per year (DEIR at 4.2-31), the DEIR fails to sufficiently analyze the range of off-site impacts from increased rail traffic to wildlife species along the rail lines serving the Project. The DEIR arbitrarily limits its off-site impacts analysis to oil spills and noise pollution along the rail line running through Suisun Marsh, and incorrectly determines that these impacts are not significant.

**1. The DEIR's analysis of noise pollution in Suisun Marsh incorrectly concludes that impacts are "less than significant."**

The DEIR acknowledges that noise pollution from increased rail traffic could affect a range of special-status species including California black rail, California clapper rail, burrowing owl, Suisun shrew, and salt marsh harvest mouse. DEIR at 4.2-31-32. It determines that "if all four trains were added during nighttime hours when presently only about 7 trains run, the percentage increase of train cars running during nighttime hours would be closer to 60%." DEIR at 4.2-32. This is a significant increase in noise pollution. However, the DEIR speculates that wildlife species "are expected to soon habituate to the increased noise," without providing any scientific evidence that increased noise pollution will not impact special-status species. The DEIR dispels any significant risks to special-status on the basis of generalized and conclusory statements unsupported by factual information that are specifically prohibited under CEQA.<sup>4</sup> This arbitrary analysis and lack of mitigation violate CEQA.

**2. The DEIR fails to analyze and mitigate the impacts of increased rail traffic on the rail lines serving the Project.**

Scientific studies have documented that train activity negatively affects wildlife through (1) mortality from collisions with trains, (2) disturbance from noise and artificial light causing stress and behavioral changes, (3) impeding natural movements, thereby restricting the animal's range, making habitat less accessible, and potentially leading to population fragmentation and isolation, and (4) pollution of the physical, chemical, and biological environment, for example through the emissions of contaminants like heavy metals, which can degrade habitat suitability in a much wider zone than the width of the railroad itself (Jackson 1999). Each of these impacts

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<sup>4</sup> See *Berkeley Keep Jets Over the Bay Com. v. Board of Port Cmrs.* (2001) 91 Cal. App. 4th 1344, 1371 (striking down an EIR "for failing to support its many conclusory statements by scientific or objective data"); *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal. App. 4th 645, 659 ("[D]ecision makers and general public should not be forced to . . . ferret out the fundamental baseline assumptions that are being used for purposes of the environmental analysis.").

would be worsened by the significantly increased rail traffic resulting from the Project, and the DEIR must analyze and mitigate the full range of impacts.

#### **a. Mortality from train collisions**

Mortality resulting from animal-train collisions has been documented for a wide range of species, including moose (Andreassen et al. 2005, Gundersen and Andreassen 1998, Gundersen et al. 1998), grizzly bears (Benn and Herrero 2002, Waller and Servheen 2005, Pissot 2007, USFWS 2013), black bears (Pace et al. 2000, Van Why and Chamberlain 2003), wolverines (Krebs et al. 2004), wolves (Mörner et al. 2005), deer (AP 2014, Kusta et al. 2011, Kusta et al. 2014), pronghorn (AP 2011), tortoises (Iosif 2012), amphibians (Budzik and Budzik 2014), and birds (Spencer 1965). The frequency of train trips was determined to be the most significant factor in the number of deer-train collisions across study sites (Kusta et al. 2014). Railroad fatalities can have detrimental impacts on animal populations. For example, train-moose fatalities in the lower Susitna Valley, Alaska, were a primary contributor to population reductions (Modafferi 1991).

Illustrating the impacts of train collisions to special-status species, the BNSF railway in northwestern Montana has long been responsible for killing threatened grizzly bears from the Northern Continental Divide Ecosystem (NCDE) population. According to recent data, 50 grizzly bears from the NCDE population were documented as killed by train collisions between 1984 and 2013 (USFWS 2014). In 2014 at least two grizzly bears from this threatened population were killed by train collisions (Daily Inter Lake 2014). Although BNSF has taken some steps to clean up grain spills attracting bears, grizzly bears continue to be killed along this section of railroad, which has been attributed in large part to the high volume of rail traffic on this line (Waller and Servheen 2005). As a result, the average number of grizzly bear deaths from train collisions has not declined over time (USFWS 2014).

#### **b. Noise pollution**

Noise from rail activity has been found to cause adverse impacts to species. Chronic noise pollution from road, rail, and other anthropogenic activity is an issue of increasing concern (Morley et al. 2014). Birds are particularly vulnerable to noise because it can mask their vocal communication, with consequent effects on their health and survival. Schroeder et al (2012) documented reduced reproductive fitness in birds exposed to chronic noise from generators. Intermittent noise, the expected pattern along a rail line, may also cause stronger effects and decrease the ability of birds to habituate to noise (Blickley et al. 2012). While some birds may utilize vocal adjustments in response to chronic noise pollution, those adjustments are likely to have direct and indirect fitness costs (Read et al. 2014).

#### **c. Barriers to movement**

Railways can act as barriers to movement that can result in population fragmentation and isolation. Increased train traffic can increase the impact of the barrier. For example, studies indicate that railways act as a barrier to movement for the federally threatened grizzly bear population in the Northern Continental Divide Ecosystem (NCDE) in northwest Montana

(Waller and Servheen 2005, Kendall et al. 2009). Kendall et al. (2009) found evidence for population fragmentation across the western side of the BNSF rail line and Hwy. 2 corridor between Glacier National Park and National Forest lands. Population differentiation across the corridor indicated that reduced genetic interchange was occurring. Waller and Servheen (2005) similarly found that train traffic posed a significant movement challenge for bears. Furthermore, their research indicated that the high rail traffic volume was particularly problematic for bear mortalities:

While grizzly bears appeared to make behavioral adjustments to temporal patterns of highway traffic volume, they were faced with a different situation along the railroad. During hours of low highway traffic, when grizzly bears were choosing to cross US-2, railroad traffic was high. Trains were more frequent, longer, and faster at night than during daylight hours. Furthermore, rail traffic was greater during fall when bears were in hyperphagia. This situation arose for a number of reasons. First, most track maintenance work was accomplished during daylight hours; thus, freight traffic was often curtailed during the day to allow track work to proceed. Second, arrival times for freight trains depended partially on their departure time. Freight trains loaded on the Pacific coast (approx 800 km to the west) during the day left in the evening and arrived in our study area at night the next day, 24–36 hr later. The result was that grizzly bears had to contend with high railroad traffic when highway traffic was lowest. We observed greater grizzly bear mortality caused by trains than that caused by cars on the highway. (Waller and Servheen 2005: 997).

Railroads have also been shown to inhibit movement of bumblebees (Bhattacharya et al. 2003) and pronghorn (Ockenfels et al. 1997). Fenced railroads in Arizona posed movement barriers that isolated pronghorn into different populations and shaped home ranges, resulting in population fragmentation (Ockenfels et al. 1997).

### **III. The DEIR Fails to Properly Analyze the Cumulative Impacts of Increased Crude Oil Shipments on Biological Resources.**

The DEIR's cumulative impacts analysis for biological resources (DEIR at 5-15-16) is wholly inadequate. The DEIR lists numerous current and proposed projects that will increase crude oil transport in the San Francisco Bay area by railcar and ship in Table 5-1. However, the DEIR concludes without basis that the cumulative impacts from noise pollution, light pollution, and oil spills from these projects will be less than significant. For example, the DEIR acknowledges that these projects will lead to "a regionwide increase in all types of vessel traffic (frequency and/or duration of ships, railcars, etc.), along with an increased number of conveyance pipelines planned under regional projects... which would increase the overall likelihood of a spill in the region." However, the DEIR concludes that cumulative impacts would be less than significant because the probability of a spill would be small: "a spill would only occur under circumstances of an upset or accident, and the probability of occurrence of any single event is small; the probability of two or more events occurring at the same time (from the Project and another cumulative project) is even smaller." DEIR at 5-16. As detailed above, the significance of an accident depends both on its probability of occurring and its magnitude, so that

high magnitude-low probability risks like large oil spills are significant impacts under CEQA (CEQA Guidelines § 15143). The additional risk posed by the Project is clearly cumulatively significant in light of the other existing and proposed crude-by-rail projects in the region which may use the same rail lines as the project. Therefore, the DEIR must disclose this risk as significant and adopt mitigation measure to reduce the risk.

#### **IV. The DEIR Inadequately Evaluates Impacts Related To Climate Change.**

The DEIR fails to assess the potential impacts of climate change on the Project, particularly from sea level rise and storm surge, which could undermine the railroad tracks along the Suisun Marsh. As admitted by the DEIR, flooding can cause train derailment, leading to possible fires or spills. However, the DEIR fails to assess whether the railroad lines carrying crude-by-rail for the Project would be affected by rising water levels and increased risk of floods.

#### **V. Conclusion**

The DEIR has failed to adequately disclose, analyze, and mitigate numerous significant impacts to biological resources. These fatal flaws must be corrected before this project may lawfully be approved.

We are submitting copies of the cited studies with these comments. Please contact Shaye Wolf at (415) 632-5301 if you have any questions about these comments.

Sincerely,



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Heather Lewis  
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Natural Resources Defense Council

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February 8, 2015

***Via email to***

Amy Million, Principal Planner  
Community Development Department  
250 East L Street  
Benicia, CA 94510  
amillion@ci.benicia.ca.us

Re: The City of Benicia's Final Environmental Impact Report for the  
Valero Benicia Crude-by-Rail Project

Dear Ms. Million,

On behalf of the undersigned groups, we submit the following comments on the City of Benicia's Final Environmental Impact Report (Final EIR) for the Valero Benicia Crude-by-Rail Project (the Project). The City released a Draft EIR for public comment in June 2014. After receiving numerous comments pointing out the deficiencies in the Draft EIR, the City recirculated the Revised Draft EIR in August 2015. The City published a Final EIR, which includes responses to comments, on January 5, 2016.

As described below, the EIR does not meet the requirements of the California Environmental Quality Act (CEQA) because it fails to properly analyze, disclose, and mitigate the Project's significant environmental impacts. Furthermore, the Final EIR fails to adequately respond to our prior comments submitted on October 30, 2015 and in the fall of 2014. We highlight the major deficiencies in the Final EIR below. We have also reviewed the staff report for the Planning Commission hearing on the Project and include our response to staff's recommendations in this letter.

**Air Quality.** In our prior comments, we explained that there is evidence that the Project will increase emissions from the refinery, either because it will increase total throughput or because it will increase the proportion of dirty crudes being refined. The Project also could cause additional transportation-related emissions. In the Final EIR, the City steadfastly maintains that there will be no increase in emissions, but its explanations do not hold water, given that the Project will add an entirely new method for importing crude oil.

First, the City fails to disclose and analyze the Project's effect on the throughput of the refinery, hindering the public's ability to evaluate whether the Project will increase refinery emissions. Indeed, evidence shows that the refinery is not currently operating at its maximum capacity. See Ex. A, Socio-economic Analysis of Proposed Regulation 12, Rule 15 (showing that Valero's recent effective throughput was 114,443 barrels per day);

Ex. B (Valero website claiming total throughput capacity of 170,000 barrels per day); DEIR at 3-2 (“The Refinery’s crude oil processing rate is limited to an annual average of 165,000 barrels per day (daily maximum of 180,000 barrels per day).”). The City’s responses to comments assert that any oil imported by rail would be offset by equal decreases in oil imported by ship. But the City does not explain why that is the case, except to say that it is a “project objective.” Final EIR at 3.5-57. Nor does the City make that tradeoff a binding requirement of approval. Accordingly, the City’s description of the Project as “changing” the shipment method of 70,000 barrels per day of oil is inaccurate and misleading. The also City states that if Valero desired to increase the amount of crude oil delivered to the refinery, it could do so now by increasing the amount delivered by ship. Final EIR 3.5-58. Even if true, that is irrelevant to whether *this Project* will cause an increase in refinery emissions. If so, that increase must be disclosed and analyzed under CEQA.

Second, there is no doubt that changes in crude slate can affect emissions, even if there are no changes to the process equipment. Yet the City continues to withhold critical information about the type of crudes the Project will import, incorrectly claiming that the information is confidential business information. To the contrary, the particular crudes proposed to be imported should be made public, and the EIR should evaluate possible changes in air quality based on those changes. The City also continues to claim that blending the crudes into a “narrow” range of weight and sulfur content will avoid any negative air quality effects. Final EIR at 3.5-58. But the EIR fails to explain why the blended range is “narrow”—indeed, the stated range from 20° to 36° API gravity, and from 0.4% to 1.9% sulfur content. Draft EIR at 3-13 (stating range); Draft EIR at 3-7 (showing that the range accounts for nearly all types of crude oil, from light sweet to heavy sour). Furthermore, although the EIR states that the crude imported by rail will be stored in the same tanks currently used to store oil, it fails to analyze whether the different types of crudes imported by rail (e.g., those with higher psi) could safely be stored in those tanks.

Third, the EIR claims there will be reductions in transportation-related air pollution based on reduced ship traffic. But as explained above, there is no requirement that ship traffic actually decrease. It could remain the same if throughput increases. And even if throughput remains the same, the Project’s crude could replace crude currently imported by pipeline. The Final EIR brushes aside this possibility, stating that Valero does not “anticipate” changes in amount of crude received by pipeline as a result of this Project. Final EIR at 3.5-57. However, as we explained in previous comments, it is clear that pipeline sources are diminishing. Finally, even if there were a proportionate decrease in ship traffic, the EIR fails to explain whether the resulting additional capacity at the port will be used by ships for other purposes. For example, will the additional port capacity be used to export refined products internationally? If so, then the supposed “decrease” in ships from the Project is illusory. The EIR must disclose any proposed or expected use of port capacity freed up by this Project.

**Environmental Justice.** There is ample evidence that the Project would disproportionately affect low-income communities and communities of color. Yet in the response to comments, the City claims that it need not include an environmental justice analysis at all. Final EIR at 3.5-59. To the contrary, state law requires this analysis. See Ex. C, Kamala D. Harris, Attorney General, *Environmental Justice at the Local and Regional Level, Legal Background*, May 2012. This analysis should be added to the EIR.

**Hazards.** The City fails entirely to respond to our comments explaining that federal law does not preempt regulation of Valero, which is not a rail carrier. The City continues to claim that any and all mitigation for this Project is preempted (except for the condition that Valero use CPC-1232 tank cars—the City does not explain this inconsistency). To the contrary, there are many legally feasible mitigation measures that the City could impose on Valero. Most notably, the city could require Valero to pay emissions offset credits or reduce the capacity of unloading operations, which, in and of themselves have serious air quality and hazards impacts. Neither of those actions has the effect of managing rail operations as defined under federal law because Valero is not a rail carrier. Nor do they “indirectly” regulate rail, as the City claims; neither of those mitigation measures would prevent Valero from receiving common carrier services more generally.

**Water Quality.** In our comments on the Revised Draft EIR, we pointed out that the Project would have significant impacts on water bodies during routine operations. In response, the City claims these impacts were analyzed, but points to a section of the Draft EIR that says nothing about these impacts. Final EIR at 3.5-61. The City’s analysis of the Project’s impacts to water during routine operations remains insufficient. And as explained above, there are many mitigation measures that can be imposed on Valero, such as emissions offsets, oil spill planning requirements, and financial contributions to water protection programs.

The City also asserts that it was not required to consider the potential impact of climate change-induced sea level rise on the Project, citing to *Ballona Wetlands Land Trust v. City of Los Angeles*, 201 Cal. App. 4th 455 (2011). However, the California Supreme Court recently upheld the validity of Guidelines section 15126.2(a), which requires an EIR to “evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas)” to the extent that it involves an analysis of “a project’s potentially significant *exacerbating* effects on existing environmental hazards.” *California Bldg. Industry Assn. v. Bay Area Air Quality Mgmt. Dist.*, 62 Cal.4th 369, 388-89 (2015). As the California Supreme Court found, the *Ballona* court did not consider these requirements (*id.* at 392), and thus it provides no authority for the City’s failure to analyze such impacts here.

**Biological Resources.** The City’s responses to our comments on biological impacts are similarly inadequate. Again, the City claims to have analyzed the impacts on

biological resources during routine operations, *see* Final EIR at 3.5-63, but that analysis, which is merely snippets pulled together from various sections, is inadequate under CEQA.

**Additional Impacts Not Analyzed.** We recently learned that the City is considering an application for the development of a 527-acre property between East Second Street and Lake Herman Road, commonly known as the Seeno Property. See Ex. D, April 20, 2015 Letter from SCO Planning & Engineering; Ex. E, September 3, 2015 email attaching conceptual land use diagram. The proposal includes industrial, commercial, and residential land uses—all adjacent to the refinery and the Project. Given that the City has known about this proposal since at least the spring of 2015, analysis of how the Project may affect any sensitive uses, especially residential uses, and whether any of the Project’s impacts will be cumulatively significant in light of the proposed new development, should have been included in the EIR.

**Staff report.** On January 28, 2016, the City released a staff report recommending that the Planning Commission certify the EIR and approve the use permit for the Project. As we explained above, the EIR fails as an informational document. At the very least, the City must revise the EIR and recirculate it for public comment. However, despite its faults, the EIR does disclose that this Project will have numerous significant and unavoidable environmental impacts, including serious safety and air quality impacts. On that basis alone, the City should deny the permit for this Project.

The staff report claims that the Interstate Commerce Commission Termination Act (ICCTA) preempts the City from mitigating effects in any way tangentially related to rail, even if the mitigation is imposed on Valero. It also claims that the City has no discretion to deny the use permit for the Project based on health and safety risks posed by rail operations.

However, the law is clear that ICCTA preemption applies only to rail carriers. ICCTA’s plain language states that federal jurisdiction over rail transportation is limited to “transportation *by rail carriers.*” 49 U.S.C. § 10501(b)(1) (emphasis added). “Rail carrier” is defined as a person providing “common carrier railroad transportation for compensation.” *Id.* § 10102(5). A long line of Surface Transportation Board orders and judicial decisions have found that “to be subject to the Board’s jurisdiction and qualify for Federal preemption under section 10501(b), the activities at issue must be transportation, *and that transportation must be performed by, or under the auspices of, a ‘rail carrier.’*” *Town of Babylon and Pinelawn Cemetery – Pet. for Decl. Order*, 2008 WL 275697, at \*3 (S.T.B. 2008) (emphasis added); *see also, e.g., Grafton and Upton R.R. Co. v. Town of Milford*, 417 F. Supp. 2d 171, 176 (D. Mass. 2006) (“As this Court reads the relevant statutory language, Congress intended the transportation and related activities undertaken by rail carriers to benefit from federal preemption but did not mean such preemption to extend to activity related to rail transportation undertaken by non-rail

carriers.”); *Hi Tech Trans, L.L.C. v. New Jersey*, 382 F.3d 295, 308-309 (3d Cir. 2004) (waste transloading rail facility operated by a non-rail carrier did not constitute rail transportation and was not governed by ICCTA); *New York & Atlantic Ry. Co.*, 635 F.3d 66, 73 (2nd Cir. 2011) (waste transfer rail facility operated by a non-rail carrier did not constitute rail transportation and was not governed by ICCTA); *Florida E. Coast Ry. Co. v. City of W. Palm Beach*, 266 F.3d 1324, 1332-1336 (11th Cir. 2001) (rail construction materials distribution center operated by a non-rail carrier did not constitute rail transportation and was not governed by ICCTA); *Girard v. Youngstown Belt Rwy.*, 134 Ohio St.3d 79, 90 (Sup. Ct. Ohio 2012) (“the mere fact” that materials are delivered to a facility by rail does not make their receipt “railway transportation” protected from local regulation); *Babylon*, 2008 WL 4377804 (transloading of construction and demolition debris by non-rail-carrier tenant of railway property did not constitute rail transportation and was not governed by the ICCTA); *Milford, Mass.—Petition for Declaratory Order*, STB Finance Docket No. 34444, 2004 WL 1802301 (Aug. 11, 2004) (despite contractual agreement with a rail carrier, the transloading of steel by a non-rail carrier in a manner that was not being offered as part of common-carrier services for the public did not constitute rail transportation and was not governed by ICCTA).

In contrast, the cases the City cites in the staff report involve the regulation of *rail carriers*. *Burlington N. Santa Fe R.R.*, 209 Cal. App. 4th 1513, 1528 (2012) (overturning conviction of Burlington Northern Santa Fe Railroad for blocking public grade crossing); *Town of Atherton v. California High-Speed Rail Auth.*, 228 Cal. App. 4th 314, 330 (2014) (referring to “any form of state or local permitting or preclearance that, by its nature, could be used to deny a *railroad* the ability to conduct some part of its operations or to proceed with activities that the [STB] has authorized”) (emphasis added).

In sum, no law prohibits the City from denying a use permit for this Project. The denial of a use permit for a refinery project proposed by a non-rail carrier simply does not trigger federal preemption. And even if the City were correct that it could not deny the permit on the basis of any impacts related to rail, there are significant impacts having nothing to do with rail that have not been mitigated and are, on their own, enough to warrant denial. Most notably, the Project will cause significant air quality impacts due to changes in refinery emissions, as explained above.

Benicia Municipal Code 17.104.060, prohibits the City from approving a project that will be detrimental “to the public health, safety, or welfare of persons residing or working” near the project, “to properties or improvements in the vicinity,” or “to the general welfare of the city.” For all the reasons stated above and in our prior comments, the Project will harm Benicians, other communities throughout the state, and our climate. The City should decline to certify the EIR and deny the permit for this Project.

Sincerely,

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Natural Resources Defense Council

Katherine Black  
Benicians for a Safe and Healthy  
Community

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# EXHIBIT A

**SOCIO-ECONOMIC ANALYSIS OF PROPOSED  
REGULATION 12, RULE 15: PETROLEUM  
REFINING EMISSIONS TRACKING AND  
REGULATION 12, RULE 16: PETROLEUM  
REFINING EMISSIONS LIMITS AND RISK  
THRESHOLDS**

Prepared for:

**Bay Area Air Quality  
Management District**

***Prepared by:***



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# 1. INTRODUCTION

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The Bay Area Air Quality Management District (“BAAQMD” or the “Air District”) seeks to adopt Regulation 12, Rule 15 (“Petroleum Refining Emissions Tracking” or “Regulation 12-15”) and Regulation 12, Rule 16 (“Petroleum Refining Emission Limits and Risk Thresholds” or “Regulation 12-16”). The purpose of Regulation 12-15 is to track air emissions and crude oil quality characteristics from petroleum refineries over time, to complete health risk assessments (HRAs) for each Bay Area petroleum refinery, and to establish monitoring systems to provide detailed air quality data along refinery boundaries and in nearby communities. The purpose of Regulation 12-16 is to establish action levels for public notification and risk reduction based on the results of the HRAs required in Regulation 12-15, and also to require demonstrations of local compliance with national ambient air quality standards (NAAQS) for SO<sub>2</sub> and PM<sub>2.5</sub>, which are the criteria pollutants with the greatest potential for local health impacts. After this introduction, this report discusses in greater detail the elements of Regulation 12-15 and Regulation 12-16 with cost impacts to Bay Area refineries (Section Two). A complete discussion of all of the elements of these rules is included in the Final Staff Report. After the discussion of cost impacts, the report describes the socioeconomic impact analysis methodology and data sources (Section Three). The report describes population and economic trends in the nine-county San Francisco Bay Area (Section Four), which serves as a backdrop against which the Air District is contemplating adopting Regulations 12-15 and 12-16. Finally, the socioeconomic impacts stemming from the proposed regulations are discussed in Section Five.

The report is prepared pursuant to Section 40728.5 of the California Health and Safety Code, which requires an assessment of socioeconomic impacts of proposed air quality rules. The findings in this report can assist Air District staff in understanding the socioeconomic impacts of the proposed requirements, and can assist staff in preparing a refined version of the rule. Figure 1 is a map of the nine-county region that comprises the San Francisco Bay Area Air Basin.



## 2. BACKGROUND OF BAAQMD'S RULE 12-15 AND RULE 12-16

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In general, the Air District regulates stationary sources of air pollution, which includes certain petroleum refineries that would be subject to proposed Regulation 12, Rule 15 ("Regulation 12-15") and Regulation 12, Rule 16 ("Regulation 12-16"). Bay Area refineries are currently subject to over 20 separate air quality rules, many of which focus on specific equipment in place at refineries, as well as different kinds of pollutants emitted by refineries.

In an effort to further improve air quality, the Air District seeks to adopt Regulation 12, Rule 15 and Regulation 12, Rule 16. The purpose of Regulation 12-15 is to track air emissions and crude oil quality characteristics from petroleum refineries over time, to complete health risk assessments (HRAs) for petroleum refineries, and to establish monitoring systems to provide detailed air quality data along refinery boundaries and in nearby communities. The purpose of Regulation 12-16 is to establish action levels for public notification and risk reduction based on the results of the HRAs required in Regulation 12-15, and also to require demonstrations of local compliance with national ambient air quality standards (NAAQS) for SO<sub>2</sub> and PM<sub>2.5</sub>, which are the criteria pollutants with the greatest potential for local health impacts. The rule covers three classes of regulated air pollutants, including "criteria pollutants", "toxic air contaminants" (TACs), and greenhouse gases (GHGs).<sup>1</sup>

The Air District proposed the new rules in light of changes with regard to "crude oil slates" at the five petroleum refineries in the Bay Area. Crude oil slates refers to the characteristics of crude oil such as sulfur content and other things. Some types of crude oil require more energy to refine, which could lead to higher emissions. Other types of crude oil may contain higher levels of contaminants which, if not removed, may find their way into the emissions stream. Some crude oils tend to be more corrosive which, if not properly regulated, could result in an increase in accidents.

Proposed Regulation 12, Rule 15 includes the following steps that will result in costs to the affected petroleum refineries:

- Report on-going **annual emissions inventories** of all regulated air pollutants based on upgraded methods, including emissions from cargo carriers
- Establish a **Petroleum Refinery Emissions Profile (PREP)**, and require that on-going inventories include comparisons with the PREP
- Report on-going **crude oil quality characteristics** with annual emissions inventories (e.g., sulfur, nitrogen content, API gravity, Total Acid Number)

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<sup>1</sup>Criteria pollutants are air pollutants for which there are ambient air quality standards that set levels of concentrations of pollutants designed to be protective of public health. Examples of criteria pollutants include ozone and particulate matter in the air. TACs refer to up to 200 air pollutant compounds that may have health impacts in terms of exposure though there are not yet any air quality standards. GHG refers to air pollutant compounds that affect global warming and climate change.

- Update refinery-wide **Health Risk Assessments (HRA)** with enhanced emissions inventories and revised OEHHA HRA guidelines
- **Enhance fence line systems and establish community air quality monitoring systems**

Proposed Regulation 12, Rule 16 includes the following steps that will result in costs to the affected petroleum refineries:

- Comply with public notification requirements and risk reduction requirements based on refinery-specific health risk established by HRA required by Regulation 12-15;
- Comply with NAAQS compliance demonstration for SO<sub>2</sub> and PM<sub>2.5</sub>.

The analysis of the socioeconomic impacts of new Regulations 12-15 and 12-16 in Section Five are based on the costs in Tables 1 and 2. The basis for these costs is provided after the tables.

<b>Table 1 - Regulation 12, Rule 15 Costs</b>		
<b>Section</b>	<b>Requirement</b>	<b>Cost (per refinery)</b>
12-15-401	Annual Petroleum Refinery Emissions Inventory (beginning with year 2015 data)	\$90,000 / year
	Monthly Crude Slate Report (beginning with year 2015 data)	
12-15-402	Petroleum Refinery Emissions Profile Report (one-time submittal)	
12-15-413	Provide Monthly Crude Slate Reports for 2012, 2013 & 2014 (one-time submittal)	
12-15-405	HRA Modeling Protocol and HRA (one-time submittals)	\$250,000 (one-time)
12-15-407	Fenceline and Community Air Monitoring Plans (one time submittal)	\$250,000 (one-time)
12-15-412	Provide available energy utilization data	Not significant
12-15-501	Community Air Monitoring System (construction and operation)	\$6,000,000 (one-time construction)
12-15-502	Fenceline Air Monitoring System (construction and operation)	\$125,000 / year (maintenance & operation)

**12-15-401, 402, 413**

These sections require one-time submittals related to the refinery inventory and crude slate, as well as ongoing (monthly crude slate reports and annual inventories) are assumed to constitute one-half of a full-time employee (FTE) with a resulting annualized cost of \$90,000 at each of the Bay Area refineries.

**12-15-405**

This section requires a one-time protocol submittal for the required Health Risk Assessment (HRA) and submittal of the HRA itself. These documents are expected to be prepared by an environmental consulting firm at a cost of no more than \$250,000 at each of the Bay Area refineries. Air District staff

has contracted this type of work in the past and are familiar with the resource requirements and cost of this type of project. Although there is a provision for a refinery to be required to submit additional updated HRAs in the future, no additional cost is attributed to this provision because it is not clear that this provision will ever be used.

**12-15-407**

The one-time fenceline and community monitoring plans are expected to be prepared by an environmental consulting firm at a cost of no more than \$250,000 at each of the Bay Area refineries. Air District staff is familiar with the required elements of type of document and the resources required to complete them.

**12-15-412**

The energy utilization data required to be provided by each refinery is data that has already been prepared for the refineries' own use. Therefore, no significant cost is associated with the submittal of this data.

**12-15-501 and 502**

The draft Air Monitoring Guidelines prepared as a companion document to Rule 12-15 suggest that 2 permanent fenceline monitors (upwind and downwind of the refinery) and 1 to 3 permanent community monitors (depending on meteorological conditions and the location of receptors) will be required. In addition, temporary monitors will probably be necessary to establish pollutant gradients to allow siting of community monitors. Total capital cost, including site development, infrastructure development (electricity and communications) and construction is not expected to exceed \$6,000,000 per refinery. Assuming \$25,000 per year for maintenance and operation at each monitor, and 5 monitors per refinery, the total annual cost is not expected to exceed \$125,000 per year per refinery. Air District staff have designed, constructed and operated similar monitoring facilities and are familiar with these costs.

<b>Table 2 - Regulation 12, Rule 16 Costs</b>		
<b>Section</b>	<b>Requirement</b>	<b>Cost (per refinery)</b>
12-16-301 and 302	Risk Reduction Audit and Plan (one-time submittal)	\$250,000 (one-time)
12-16-303	Implementation of Risk Reduction Plan.	\$600,000 (one-time) for diesel particulate filter installation on all permitted engines
12-16-304, 305.1 and 406	<u>SO<sub>2</sub> and PM<sub>2.5</sub> NAAQS compliance through air modeling or air monitoring with no capital costs.</u>	\$250,000 (one-time for preliminary work leading to compliance through Sections 12-16-305.2 and 408)
12-16-304, 305.2 and 408	<u>SO<sub>2</sub> and PM<sub>2.5</sub> NAAQS compliance through emission reductions (construction and operation of a wet gas scrubber system)</u>	Chevron, Shell, Tesoro, Valero: \$8,200,000 / year each (annualized); Phillips 66: \$3,000,000 / year (annualized)

### **12-16-301 and 302**

These sections establish three increasing health effect thresholds (“notification risk”, “significant risk” and “unreasonable risk”). Previous HRAs at the three refineries found that they were all below the “notification risk” threshold. However, the HRA methodology has been revised and the Air District has estimated, based on the new guidelines and the current refinery inventory data, that new HRAs required by Regulation 12-16 will place all five Bay Area refineries in the “significant risk” category, such that each refinery would perform the specified public notification of a significant risk finding, and also prepare a Risk Reduction Audit and Plan (RRAP). Air District staff estimate that public notification and preparation of a RRAP will cost no more than \$250,000 at each of the Bay Area refineries, if performed by an environmental consultant. The Air District regularly performs public notifications related to facility risk and is able to estimate these costs. The Air District also has engaged environmental consulting firms to perform work similar to an HRA and is able to estimate these costs.

### **12-16-303**

After a refinery has prepared a Risk Reduction Audit and Plan (RRAP), it must implement the elements of the RRAP. The RRAP itself will indicate the specific sources and operations within the refinery that contribute most to the refinery health impact on the public, and will allow the refinery operator to choose the most cost-effective approach to risk reduction.

For the purposes of estimating a cost of compliance for this report, it will be assumed that each refinery will be able to reduce significantly the health risk from all stationary sources at the refinery by installing particulate control filters (“diesel particulate filters” or “DPFs”) on all diesel engines onsite. DPFs are used here as the example risk reduction measure because: 1) refineries use many diesel engines, 2) most of these are older, uncontrolled engines with high emission rates, 3) the health impact of diesel particulate is very high relative to other toxic compounds, and 4) CARB has established that retrofits of DPFs are generally successful at achieving particulate emission reductions of 85% or more and maximum cost of \$55 per horsepower for a DPF retrofit, with no significant increase in operations or maintenance costs (from the CARB staff report for the 2011 Stationary Diesel Engine ATCM).

To estimate the highest expected cost of DPF implementation, the horsepower of all the permitted diesel engines at Chevron refinery (from 2014 Title V permit), the refinery with the highest crude oil processing rate, was summed and CARB’s retrofit cost estimate of \$55 per horsepower was applied:

Total diesel horsepower: 10,914 HP at 22 diesel engines

Total estimated cost: (10,914 HP)((\$55/HP) = \$600,000

### **12-16-304, 305.1 and 406**

Section 304 requires a demonstration of local compliance with SO<sub>2</sub> and PM<sub>2.5</sub> NAAQS through air modeling or air monitoring (Section 406). To provide a conservative cost estimate, it will be assumed that neither modeling nor monitoring demonstrate compliance and that emission reductions (Section 407) will be required. However, \$250,000 of preliminary work is estimated to occur to inform the finding that emission reductions will be required.

### **12-16-304, 305.2 and 408**

When compliance with the SO<sub>2</sub> and PM<sub>2.5</sub> NAAQS cannot be established through the air modeling or monitoring in Section 406, emission reductions of these pollutants will be required. For 3 refineries (Chevron, Shell, Tesoro), compliance cost is based on the installation of a wet scrubber system with an annualized cost of \$8.2 million on FCCU exhausts to address both SO<sub>2</sub> and PM<sub>2.5</sub> emissions. Valero Refinery has already installed a wet scrubbing system on their combined FCCU and Fluid Coker exhaust stack that has resulted in significant reductions of SO<sub>2</sub> and PM<sub>2.5</sub>. Valero therefore does not have the compliance option of installing a wet scrubber. But given that it has already achieved significant SO<sub>2</sub> and PM<sub>2.5</sub> emission reductions, the further cost of control is expected to be bounded by the same wet scrubber cost applied to the other refineries. Phillips 66 does not operate an FCCU and therefore does not have a single very large source of PM<sub>2.5</sub> emissions. To significantly reduce SO<sub>2</sub> emissions, Phillips 66 could install a hydrotreating system to reduce the sulfur content of the refinery fuel gas that is burned throughout the refinery. District staff have estimated such a system to have an annualized cost of \$3 million.

All costs are summarized in Table 7 of Section 5, with costs shown above as occurring one-time converted to annualized costs by applying a capital recovery factor of 0.14 to the one-time cost, as discussed in Table 7.

### 3. METHODOLOGY

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Applied Development Economics (ADE) began this analysis by preparing a statistical description of the industry groups of which the affected sources are a part, analyzing data on the number of establishments, jobs, and payroll. We also estimated sales generated by impacted industries, as well as net profits for each affected industry.

This report relies heavily on the most current data available from a variety of sources, particularly the State of California's Employment Development Department (EDD) Labor Market Information Division. In addition, this report relies on data from the State of California's Energy Commission (CEC), particularly with respect to measuring throughput capacity of the five refineries subject to these new regulations. From the CEC, we also obtained information on retail and wholesale prices of gasoline and other refinery products, as well as industry-specific profitability ratios.

With the above information, ADE was able to estimate net after tax profit ratios for sources affected by the proposed new regulations. ADE calculated ratios of profit per dollar of revenue for affected industries. The result of the socioeconomic analysis shows what proportion of profits the compliance costs represent. Based on assumed thresholds of significance, ADE discusses in the report whether the affected sources are likely to reduce jobs as a means of recouping the cost of compliance or as a result of reducing business operations. To the extent that such job losses appear likely, the indirect multiplier effects of the jobs losses are estimated using a regional IMPLAN input-output model. In some instances, particularly where consumers are the ultimately end-users of goods and services provided by the affected sources, we also analyzed whether costs could be passed to households in the region.

When analyzing the socioeconomic impacts of proposed new rules and amendments, ADE attempts to work closely within the parameters of accepted methodologies discussed in a 1995 California Air Resources Board (ARB) report called "Development of a Methodology to Assess the Economic Impact Required by SB513/AB969" (by Peter Berck, PhD, UC Berkeley Department of Agricultural and Resources Economics, Contract No. 93-314, August, 1995). The author of this report reviewed a methodology to assess the impact that California Environmental Protection Agency proposed regulations would have on the ability of California businesses to compete. The ARB has incorporated the methodologies described in this report in its own assessment of socioeconomic impacts of rules generated by the ARB. One methodology relates to determining a level above or below which a rule and its associated costs is deemed to have significant impacts. When analyzing the degree to which its rules are significant or insignificant, the ARB employs a threshold of significance that ADE follows. Berck reviewed the threshold in his analysis and wrote, "The Air Resources Board's (ARB) use of a 10 percent change in [Return on Equity] ROE (i.e. a change in ROE from 10 percent to a ROE of 9 percent) as a threshold for a finding of no significant, adverse impact on either competitiveness or jobs seems reasonable or even conservative."

## 4. REGIONAL DEMOGRAPHIC AND ECONOMIC TRENDS

This section of the report tracks economic and demographic contexts within which the Air District is contemplating new Regulations 12-15 and 12-16. Table 3 tracks population growth in the nine-county San Francisco Bay Area between 2003 and 2013, including data for the year 2008. Between 2003 and 2008, the region grew by approximately 1 percent a year. Between 2008 and 2013, the region grew annually at a much slower rate of 0.1 percent per year. Overall, there are 7,420,453 people in the region. At 1,868,558, Santa Clara County has the most people, while Napa has the least, at 139,255.

**TABLE 3:  
REGIONAL DEMOGRAPHIC TRENDS: 2003-2013  
POPULATION GROWTH: SAN FRANCISCO BAY AREA**

	Population			Annual Percent Change		
	2003	2008	2013	03 - 08	08 - 13	03 - 13
California	36,199,342	38,292,687	38,340,074	1.1%	0.0%	0.6%
<b>Bay Area</b>	<b>7,025,575</b>	<b>7,375,678</b>	<b>7,420,453</b>	<b>1.0%</b>	<b>0.1%</b>	<b>0.5%</b>
Alameda County	1,495,162	1,556,657	1,573,254	0.8%	0.2%	0.5%
Contra Costa County	1,005,590	1,060,435	1,087,008	1.1%	0.5%	0.8%
Marin County	250,793	258,618	255,846	0.6%	-0.2%	0.2%
Napa County	131,228	137,571	139,255	0.9%	0.2%	0.6%
San Francisco County	795,042	845,559	836,620	1.2%	-0.2%	0.5%
San Mateo County	717,921	745,858	745,193	0.8%	0.0%	0.4%
Santa Clara County	1,739,939	1,857,621	1,868,558	1.3%	0.1%	0.7%
Solano County	416,379	426,729	424,233	0.5%	-0.1%	0.2%
Sonoma County	473,521	486,630	490,486	0.5%	0.2%	0.4%

*Source: Applied Development Economics, based on total population estimates from The California Department of Finance (E-5 Report)*

Data in Table 4 describe the larger economic context within which officials are contemplating new Regulations 12-15 and 12-16. Businesses in the region employ over three million workers, or 3,376,819. The number of private and public sector jobs in the region grew annually by 0.5 percent between 2008 and 2013, after having grown somewhat slightly also between 2003 and 2008 by 0.8 percent a year. Of the 3,376,819 workers, 422,634, or 12.5 percent, are in the public sector, meaning 87.5 percent of all employment is in the private sector. In the state, almost 15 percent of all jobs are in the public sector, with 85 percent in the private sector. Relative to the state as a whole, manufacturing, professional/technical services, and education/health service sectors comprise a greater proportion of the regional employment base. In the region, these sectors comprise 9 percent (manufacturing), 11 percent (professional/technical services), and 15 percent (private education/health services) respectively of total employment. In the state, these sectors comprise 8 percent (manufacturing), 7 percent (professional/technical services), and 14.6 percent (private

education/health services) of the statewide job base. In other words, as a percent of total workforce, the region employs more people in sectors with occupations that presumptively require more skills and are higher-paying. Conversely, typically lower-paying sectors such as agriculture and retail represent a higher share of the overall statewide employment base relative to the Bay Area. In the state, 2.7 percent of all jobs are in agriculture, whereas in the region, the figure is 0.4 percent. Almost 10.5 percent of all jobs in the state are in retail, while in the region, 9.8 percent of all jobs are in retail.

**TABLE 4  
SAN FRANCISCO BAY AREA EMPLOYMENT TRENDS BY SECTOR: 2003-2013**

	Private and Public Sector Employment Trends			Employment Distribution		Ann. Percentage Chg: Bay Area	
	2003	2008	2013	Bay Area '13	State '13	03-08	08-13
<b>Private and Public Sectors</b>	<b>3,158,570</b>	<b>3,285,661</b>	<b>3,376,819</b>			<b>0.8%</b>	<b>0.5%</b>
<b>Private Sector Only</b>	<b>2,713,025</b>	<b>2,837,090</b>	<b>2,954,185</b>	<b>87.5%</b>	<b>85.2%</b>	<b>0.9%</b>	<b>0.8%</b>
11 Agriculture, Forestry, Fishing & Hunting	17,710	18,726	13,315	0.4%	2.7%	1.1%	-6.6%
21 Mining	1,744	982	1,876	0.1%	0.2%	-10.9%	13.8%
22 Utilities	4,639	5,497	5,591	0.2%	0.4%	3.5%	0.3%
23 Construction	177,987	178,171	151,847	4.5%	4.1%	0.0%	-3.1%
31-33 Manufacturing	361,948	343,551	308,961	9.1%	8.1%	-1.0%	-2.1%
42 Wholesale Trade	123,213	116,685	121,274	3.6%	4.5%	-1.1%	0.8%
44-45 Retail Trade	335,893	333,952	329,247	9.8%	10.4%	-0.1%	-0.3%
48-49 Transportation and Warehousing	51,995	54,050	68,846	2.0%	2.8%	0.8%	5.0%
51 Information	117,546	114,889	136,214	4.0%	2.9%	-0.5%	3.5%
52 Finance and Insurance	150,174	136,632	118,304	3.5%	3.4%	-1.9%	-2.8%
53 Real Estate and Rental and Leasing	61,693	58,089	55,222	1.6%	1.7%	-1.2%	-1.0%
54 Professional and Technical Services	277,412	344,560	378,755	11.2%	7.4%	4.4%	1.9%
55 Management of Companies and Enterprises	67,779	60,845	69,367	2.1%	1.4%	-2.1%	2.7%
56 Administrative and Waste Services	177,198	185,013	192,231	5.7%	6.4%	0.9%	0.8%
61 Educational Services	63,905	76,185	88,322	2.6%	2.0%	3.6%	3.0%
62 Health Care and Social Assistance	283,259	305,784	417,312	12.4%	12.6%	1.5%	6.4%
71 Arts, Entertainment, and Recreation	48,740	51,438	57,255	1.7%	1.7%	1.1%	2.2%
72 Accommodation and Food Services	252,693	283,578	314,978	9.3%	9.1%	2.3%	2.1%
81 Other Services, Ex. Public Admin	137,155	156,925	114,764	3.4%	3.1%	2.7%	-6.1%
99 UNCLASSIFIED ESTABLISHMENTS	342	11,538	10,504	0.3%	0.4%	102.1%	-1.9%
<b>Public Sector Only (Federal, State and Local)</b>	<b>445,545</b>	<b>448,571</b>	<b>422,634</b>	<b>12.5%</b>	<b>14.8%</b>	<b>0.1%</b>	<b>-1.2%</b>
Public Sector (excluding public educ.)	299,104	302,052	281,196	8.3%	8.2%	0.2%	-1.4%
6111 Public Education: Elementary and Secondary	112,275	105,053	104,467	3.1%	4.7%	-1.3%	-0.1%
6112 Public Education: Junior College	9,850	16,629	11,910	0.4%	0.6%	11.0%	-6.5%
6113 Public Education: Colleges and Universities	24,316	24,837	25,024	0.7%	1.2%	0.4%	0.2%
611z Public Education: Other			37	0.0%	0.0%		

Source: Applied Development Economics, based on California EDD LMID

Table 4 also shows the precipitous decline in employment in industries most-affected by the downturn in the economy that began in late 2007, namely housing. Construction employment declined by 3.1 percent per year between 2008 and 2013, with finance and insurance dropping by 2.8 percent per year, and real estate dropping by 1.0 percent. On a positive note, employment in health care increased annually by 6.4 percent annually between 2008 and 2013, and transportation-warehousing increased annually by five percent.

Proposed Regulations 12-15 and 12-16 affect one particular industry in the Bay Area, namely refineries. While the California EDD LMID reports that there are 23 refineries in the nine-county region, more than likely, this state agency applied a broader definition for refinery operations in the region. Appendix A identifies a number of “refineries” included in the EDD LMID’s database; as this shows, many are not full scale refineries but rather are engaged in a variety of petroleum-related operations. Nonetheless, Table 5 shows refinery trends *per* the EDD-LMID. What is striking about Table 5 is the high average pay workers garner in this industry.

TABLE 5: SF BAY AREA EDD-LMID REFINERY TRENDS, 1999-2009					
	2003	2008	2013	03-08 CAGR	08-13 CAGR
Establishments	35	23	23	-8.05%	0.00%
Employment	6,738	7,816	5,323	3.01%	-7.39%
Payroll	\$768,112,469	\$1,326,728,738	\$986,117,494	11.55%	-5.76%
Average Pay	\$114,006	\$169,756	\$185,250	8.29%	1.76%

Source: Applied Development Economics, Inc., based on California EDD LMID

Table 6 identifies the businesses in the Bay Area that are full-scale refineries. The list comes from the CEC, which also included each refinery’s throughput capacity. Of the five operating refineries in the region, Chevron is the largest, with the capacity to refine 245,271 42-gallon barrels of crude oil per day. At 78,400, Phillips 66 has the lowest throughput capacity.

TABLE 6 BAY AREA REFINERIES ( CALIFORNIA ENERGY COMMISSION ) AND CRUDE OIL CAPACITY	
Refinery	Barrels Per Day
Chevron U.S.A. Inc., Richmond Refinery	245,271
Tesoro Refining & Marketing Company, Golden Eagle (Avon/Rodeo) Refinery	166,000
Shell Oil Products US, Martinez Refinery	156,400
Valero Benicia Refinery	132,000
Phillips 66, Rodeo San Francisco Refinery	78,400

Source: Applied Development Economics, Inc., based on California Energy Commission

## 5. SOCIOECONOMIC IMPACT ANALYSIS

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This section of the report analyzes socioeconomic impacts stemming from new Regulations 12-15 and 12-16. If the proposed new regulations are adopted, the District estimates that the five impacted refineries would incur total annualized costs ranging from \$4.3 million to \$9.5 million for ten years, the period over which costs associated with capital equipment would be amortized. After the amortization period, ongoing costs of \$215,000 per year per refinery would continue for additional inventories, reports and operation and maintenance of air monitoring systems.

The five affected sources' combined throughput capacity is approximately 674,582 42-gallon barrels per day, which takes into consideration periods when refineries may be off-line. While the affected sources refine 674,582 barrels of crude oil per day, they generate an estimated 693,044 gallons of refined products a day. Assuming a 87 percent utilization rate, and further estimating the price of refined product at \$120 per barrel<sup>2</sup>, we estimate the affected refineries generate \$30.3 billion in revenues a year, from which is generated \$2.1 billion in after-tax net profits. When comparing these figures with the annualized costs stemming from the proposed new regulations, we obtain cost-to-net profit ratio ranging from 1.5 percent to 2.7 percent. **As a result, impacts are less than significant.** Moreover, because this establishment is not a small business, small businesses are not disproportionately impacted by the proposed regulations.

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<sup>2</sup> \$119.80 per barrel of gasoline = 
$$\frac{((436,600 * \$124.26)_{\text{GASOLINE}} + (124,748 * \$112.35)_{\text{JET FUEL}} + (131,748 * \$112.35)_{\text{KEROSENE, OTHERS}})}{(693,044)_{\text{TOTAT REFINED PRODUCTS}}}$$

**TABLE 7  
SOCIOECONOMIC IMPACT ANALYSIS: PROPOSED NEW RULES REGULATION 12, RULE 15 & REGULATION 12, RULE 16**

	<b>All Sources</b>	<b>Chevron</b>	<b>Tesoro</b>	<b>Shell</b>	<b>Valero</b>	<b>Phillips 66</b>
Effective Barrels of Crude Per Day	674,582	212,648	143,921	135,598	114,443	67,972
Estimated Revenues	\$30.3 billion	\$9.6 billion	\$6.5 billion	\$6.1 billion	\$5.1 billion	\$3.1 billion
Estimated Net Profits	\$2.1 billion	\$653 million	\$442 million	\$416 million	\$351 million	\$208 million
Annual Costs for Regulations 12-15, 12-16 with one-time costs annualized by applying a capital recovery factor (CRF) factor of 0.14. This CRF is derived using BAAQMD's cost-effectiveness methodology in the BACT-TBACT Workbook and assuming an interest rate of 6% and "project horizon" of 10 years.						
Reg 12-15-401, 402, 413, 405: Inventories and Crude Reports (Initial & Annual)	\$450,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000
Reg 12-15-405: HRA Protocol and HRA Preparation (annualized)	\$175,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
Reg 12-15-407: Fenceline and Community Air Monitoring Plans (annualized)	\$175,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
Reg 12-15-501 & 502: Fenceline & Community Monitoring Construction (annualized)	\$4,200,000	\$840,000	\$840,000	\$840,000	\$840,000	\$840,000
Reg 12-15-501 & 502: Fenceline & Community Monitoring, Operation & Maintenance	\$625,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000
Reg 12-16-301 and 302: Risk Reduction Audit and Plan Preparation (annualized)	\$175,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
Reg 12-16-303: Implementation of Risk Reduction Plan (annualized)	\$420,000	\$84,000	\$84,000	\$84,000	\$84,000	\$84,000
Reg 12-16-304, 305.1, 406: Preliminary Modeling or Monitoring (annualized)	\$175,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
Reg 12-16-304, 305.2, 407: SO <sub>2</sub> and PM <sub>2.5</sub> emission reductions (annualized)	\$35,800,000	\$8,200,000	\$8,200,000	\$8,200,000	\$8,200,000	\$3,000,000
<b>Total Annualized Costs</b>	<b>\$42,195,000</b>	<b>\$9,479,000</b>	<b>\$9,479,000</b>	<b>\$9,479,000</b>	<b>\$9,479,000</b>	<b>\$4,279,000</b>
Cost to Net Profits	2.0%	1.5%	2.1%	2.3%	2.7%	2.1%
Significant?	No, in all cases	No, in all cases	No, in all cases	No, in all cases	No, in all cases	No, in all cases

## 6. APPENDIX A: LIST OF EDD-LMID BAY AREA "REFINERIES"

County	Name of Establishments	City	Number of Workers
Alameda	DASSEL'S PETROLEUM INC	FREMONT	1-4 employees
Alameda	RCA OIL RECOVERY	NEWARK	1-4 employees
Contra Costa	BAY AREA DIABLO PETROLEUM CO	CONCORD	1-4 employees
Contra Costa	CHEVRON CORP	RICHMOND	1-4 employees
Contra Costa	CHEVRON CORP	PACHECO	20-49 employees
Contra Costa	CHEVRON CORPORATION	SAN RAMON	5,000-9,999
Contra Costa	PHILLIPS 66 RODEO REFINERY	RODEO	500-999 employees
Contra Costa	GENERAL PETROLEUM	RICHMOND	10-19 employees
Contra Costa	GOLDEN GATE PETROLEUM	RICHMOND	1-4 employees
Contra Costa	GOLDEN GATE PETROLEUM	RICHMOND	1-4 employees
Contra Costa	GOLDEN GATE PETROLEUM	CONCORD	1-4 employees
Contra Costa	NU STAR	MARTINEZ	20-49 employees
Contra Costa	PITCOCK PETROLEUM INC	PLEASANT HILL	10-19 employees
Contra Costa	SHELL MARTINEZ REFINERY	MARTINEZ	500-999 employees
Contra Costa	TESORO GOLDEN EAGLE REFINERY	PACHECO	500-999 employees
Contra Costa	UOP	DANVILLE	1-4 employees
Marin	GRAND PETROLEUM	SAN RAFAEL	1-4 employees
Marin	GREENLINE INDUSTRIES LLC	LARKSPUR	20-49 employees
San Francisco	DOUBLE AA CORP	SAN FRANCISCO	1-4 employees
San Francisco	R B PETROLEUM SVC	SAN FRANCISCO	5-9 employees
San Francisco	SEAYU ENTERPRISES INC	SAN FRANCISCO	5-9 employees
San Mateo	DOUBLE AA CORP	SOUTH SAN FRANCISCO	5-9 employees
San Mateo	SABEK INC	SOUTH SAN FRANCISCO	5-9 employees
San Mateo	SEAPORT REFINING & ENVRNMNTL	REDWOOD CITY	5-9 employees
Santa Clara	COAST OIL CO LLC	SAN JOSE	20-49 employees
Santa Clara	SHELL OIL PRODUCTS US	SAN JOSE	1-4 employees
Solano	BAY AREA DIABLO PETROLEUM CO	BENICIA	1-4 employees
Solano	CAT TECH INC	DIXON	1-4 employees
Solano	DANVILLE PETROLEUM	VALLEJO	5-9 employees
Solano	GOLDEN GATE PETROLEUM	BENICIA	1-4 employees
Solano	RUBICON OIL	BENICIA	1-4 employees
Solano	TIMEC CO INC	VALLEJO	20-49 employees
Solano	VALERO BENICIA REFINERY	BENICIA	250-499 employees
Solano	VALERO REFINING CO	BENICIA	1-4 employees
Solano	VALERO REFINING CO	BENICIA	1-4 employees
Sonoma	BAY AREA DIABLO PETROLEUM CO	CLOVERDALE	1-4 employees
Sonoma	ROYAL PETROLEUM CO INC	PETALUMA	5-9 employees

Source: ADE, Inc., based on California EDD LMID "Employers By Industry" Database

# EXHIBIT B



Valero > Our Business > Our Locations > Refineries > Benicia

# Benicia

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## Overview

Valero acquired the Benicia Refinery in 2000. Built as a grass-roots project in 1968, this plant has undergone significant modifications and upgrades to become what it is today one of the most complex refineries in the United States. Approximately 70 percent of the refinery's product slate is CARB gasoline, California's clean-burning fuel. The refinery also has significant asphalt production capabilities and produces 35 percent of the asphalt supply in northern California. Currently, the refinery processes domestic crude from the San Joaquin Valley in California and the Alaska North Slope, along with foreign sour crudes.

- Commissioned in 1968, with significant upgrades since that time
- Acquired from ExxonMobil in 2000
- Total feedstock throughput capacity of 170,000 barrels per day
- Products including propane, butane, CARB gasoline, ultra-low-sulfur diesel (ULSD), jet fuel, fuel oil, residual oil and asphalt
- Produces 10 percent of the clean-burning California Air Resources Board (CARB) gasoline used in California and 25 percent of the CARB used in the San Francisco Bay Area
- Located on 800 acres on the Carquinez Strait, a tributary of San Francisco Bay
- Strategic position allowing refinery to receive feedstocks by both ship and pipeline
- Products shipped via pipeline, truck, rail, barge and ship
- Employs approximately 480 personnel

Work at this location.

Open Positions

## Contact Us

**Benicia Refinery**  
3400 East 2nd Street  
Benicia, California 94510-1097

Send Email

(707) 745-7011

## Community Relations

Send Email

(210) 345-2000

## Awards & Honors

- Re-approved as a Cal/OSHA Voluntary Protection Program Star Site in 2014, the agency's highest plant safety designation
- Received three American Fuel & Petrochemical Manufacturers (AFPM) safety awards for 2014, including:
  - Meritorious Safety Performance Award – 0.0 Total Recordable Incidence Rate (TRIR)
  - Award for Safety Achievement – 1 million-plus employee hours without a lost employee workday case involving days away from work (2,583,278)
  - Award for Safety Achievement – 1+ years without a lost workday case involving days away from work (2 years)
- Recognized as a multiple-time winner of the United Way of the Bay Area's Spirit of the Bay Award, the organization's top honor
- Past winner of the Benicia Chamber of Commerce Business of the Year award



## Community Activities

- Employees pledged more than \$482,000 to the United Way of the Bay Area for 2015, with company match projected to bring total donations to approximately \$723,000
- Nominated 20 organizations to receive \$345,000 in donations from the Valero Texas Open Benefit for Children in 2014. Recipients included:
  - Bay Area Crisis Nursery
  - Benicia Community Action Council
  - Benicia Education Foundation
  - Boys & Girls Club of El Sobrante
  - Camp Taylor
  - Child Haven
  - Childrens Music and Arts Foundation

- o Childrens Nurturing Project
- o Continentals of Omega Boys & Girls Club
- o Court Appointed Special Advocates CASA
- o Cystic Fibrosis Foundation-NorCal Chapter
- o East Bay College Fund
- o Harbor House
- o Horseplay Therapeutic Riding Center
- o Junior Achievement of Northern California
- o Loma Vista Farm
- o Matt Garcia Foundation
- o Royal Family Kids Camps Inc.
- o Take Wings
- o Vacaville Neighborhood Boys & Girls Club
- Employees logged 1,924 volunteer hours for a variety of projects in 2014.
- Current and past activities include:
  - o Collaborating with United Way of the Bay Area to launch the 2-1-1 phone number in Solano County
  - o Supported the Food Bank of Contra Costa and Solano Counties through a variety of events including the Motorcycle Food Run and the Stuff the Truck Campaign
  - o Organizing and staffing the Tutoring Program at Benicia schools
  - o Participating in blood drives benefiting the Blood Centers of the Pacific
  - o "Adopting" families during the holiday, providing them with clothing, shoes, toys, household appliances, furniture, beddings, bikes, strollers, food and gas certificates and holiday trees and ornaments

# EXHIBIT C



## **Environmental Justice at the Local and Regional Level** **Legal Background**

Cities, counties, and other local governmental entities have an important role to play in ensuring environmental justice for all of California's residents. Under state law:

“[E]nvironmental justice” means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.

(Gov. Code, § 65040.12, subd. (e).) Fairness in this context means that the *benefits* of a healthy environment should be available to everyone, and the *burdens* of pollution should not be focused on sensitive populations or on communities that already are experiencing its adverse effects.

Many local governments recognize the advantages of environmental justice; these include healthier children, fewer school days lost to illness and asthma, a more productive workforce, and a cleaner and more sustainable environment. Environmental justice cannot be achieved, however, simply by adopting generalized policies and goals. Instead, environmental justice requires an ongoing commitment to identifying existing and potential problems, and to finding and applying solutions, both in approving specific projects and planning for future development.

There are a number of state laws and programs relating to environmental justice. This document explains two sources of environmental justice-related responsibilities for local governments, which are contained in the Government Code and in the California Environmental Quality Act (CEQA).

### **Government Code**

Government Code section 11135, subdivision (a) provides in relevant part:

No person in the State of California shall, on the basis of race, national origin, ethnic group identification, religion, age, sex, sexual orientation, color, or disability, be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination under, any program or activity that is conducted, operated, or administered by the state or by any state agency, is funded directly by the state, or receives any financial assistance from the state....

While this provision does not include the words “environmental justice,” in certain circumstances, it can require local agencies to undertake the same consideration of fairness in the distribution of environmental benefits and burdens discussed above. Where, for example, a general plan update is funded by or receives financial assistance from the state or a state agency, the local government should take special care to ensure that the plan's goals, objectives, policies and implementation measures (a) foster equal access to a clean environment and public health benefits (such as parks, sidewalks, and public transportation); and (b) do not result in

concentration of polluting activities near communities that fall into the categories defined in Government Code section 11135.<sup>1</sup> In addition, in formulating its public outreach for the general plan update, the local agency should evaluate whether regulations governing equal “opportunity to participate” and requiring “alternative communication services” (e.g., translations) apply. (See Cal. Code Regs., tit. 22, §§ 98101, 98211.)

Government Code section 11136 provides for an administrative hearing by a state agency to decide whether a violation of Government Code section 11135 has occurred. If the state agency determines that the local government has violated the statute, it is required to take action to “curtail” state funding in whole or in part to the local agency. (Gov. Code, § 11137.) In addition, a civil action may be brought in state court to enforce section 11135. (Gov. Code, § 11139.)

### **California Environmental Quality Act (CEQA)**

Under CEQA, “public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects ....” (Pub. Res. Code, § 21002.) CEQA does not use the term “environmental justice.” Rather, CEQA centers on whether a project may have a significant effect on the physical environment. Under CEQA, human beings are an integral part of the “environment.” An agency is required to find that a “project may have a ‘significant effect on the environment’” if, among other things, “[t]he environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly[.]” (Pub. Res. Code, § 21083, subd. (b)(3); see also CEQA Guidelines,<sup>2</sup> § 15126.2 [noting that a project may cause a significant effect by bringing people to hazards].) As set out below, by following well-established CEQA principles, local governments can help achieve environmental justice.

#### CEQA’s Purposes

The importance of a healthy environment for all of California’s residents is reflected in CEQA’s purposes. In passing CEQA, the Legislature determined:

- “The maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern.” (Pub. Res. Code, § 21000, subd. (a).)
- We must “identify any critical thresholds for the health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds from being reached.” (*Id.* at subd. (d).)

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<sup>1</sup> To support a finding that such concentration will not occur, the local government likely will need to identify candidate communities and assess their current burdens.

<sup>2</sup> The CEQA Guidelines (Cal. Code Regs., tit. 14, §§ 15000, et seq.) are available at <http://ceres.ca.gov/ceqa/>.

- “[M]ajor consideration [must be] given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian.” (*Id.* at subd. (g).)
- We must “[t]ake all action necessary to provide the people of this state with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from excessive noise.” (Pub. Res. Code, § 21001, subd. (b).)

Specific provisions of CEQA and its Guidelines require that local lead agencies consider how the environmental and public health burdens of a project might specially affect certain communities. Several examples follow.

### Environmental Setting and Cumulative Impacts

There are a number of different types of projects that have the potential to cause physical impacts to low-income communities and communities of color. One example is a project that will emit pollution. Where a project will cause pollution, the relevant question under CEQA is whether the environmental effect of the pollution is significant. In making this determination, two long-standing CEQA considerations that may relate to environmental justice are relevant – setting and cumulative impacts.

It is well established that “[t]he significance of an activity depends upon the setting.” (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 718 [citing CEQA Guidelines, § 15064, subd. (b)]; see also *id.* at 721; CEQA Guidelines, § 15300.2, subd. (a) [noting that availability of listed CEQA exceptions “are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant.”]) For example, a proposed project’s particulate emissions might not be significant if the project will be located in a sparsely populated area, but may be significant if the project will be located in the air shed of a community whose residents may be particularly sensitive to this type of pollution, or already are experiencing higher-than-average asthma rates. A lead agency therefore should take special care to determine whether the project will expose “sensitive receptors” to pollution (see, e.g., CEQA Guidelines, App. G); if it will, the impacts of that pollution are more likely to be significant.<sup>3</sup>

In addition, CEQA requires a lead agency to consider whether a project’s effects, while they might appear limited on their own, are “cumulatively considerable” and therefore significant. (Pub. Res. Code, § 21083, subd. (b)(3).) “[C]umulatively considerable’ means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” (*Id.*) This requires a local lead agency to determine whether pollution from a

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<sup>3</sup> “[A] number of studies have reported increased sensitivity to pollution, for communities with low income levels, low education levels, and other biological and social factors. This combination of multiple pollutants and increased sensitivity in these communities can result in a higher cumulative pollution impact.” Office of Environmental Health Hazard Assessment, *Cumulative Impacts: Building a Scientific Foundation* (Dec. 2010), Exec. Summary, p. ix, available at <http://oehha.ca.gov/ej/cipa123110.html>.

proposed project will have significant effects on any nearby communities, when considered together with any pollution burdens those communities already are bearing, or may bear from probable future projects. Accordingly, the fact that an area already is polluted makes it *more likely* that any additional, unmitigated pollution will be significant. Where there already is a high pollution burden on a community, the “relevant question” is “whether any additional amount” of pollution “should be considered significant in light of the serious nature” of the existing problem. (*Hanford, supra*, 221 Cal.App.3d at 661; see also *Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1025 [holding that “the relevant issue ... is not the relative amount of traffic noise resulting from the project when compared to existing traffic noise, but whether any additional amount of traffic noise should be considered significant in light of the serious nature of the traffic noise problem already existing around the schools.”])

### The Role of Social and Economic Impacts Under CEQA

Although CEQA focuses on impacts to the physical environment, economic and social effects may be relevant in determining significance under CEQA in two ways. (See CEQA Guidelines, §§ 15064, subd. (e), 15131.) First, as the CEQA Guidelines note, social or economic impacts may lead to physical changes to the environment that are significant. (*Id.* at §§ 15064, subd. (e), 15131, subd. (a).) To illustrate, if a proposed development project may cause economic harm to a community’s existing businesses, and if that could in turn “result in business closures and physical deterioration” of that community, then the agency “should consider these problems to the extent that potential is demonstrated to be an indirect environmental effect of the proposed project.” (See *Citizens for Quality Growth v. City of Mt. Shasta* (1988) 198 Cal.App.3d 433, 446.)

Second, the economic and social effects of a physical change to the environment may be considered in determining whether that physical change is significant. (*Id.* at §§ 15064, subd. (e), 15131, subd. (b).) The CEQA Guidelines illustrate: “For example, if the construction of a new freeway or rail line divides an existing community, the construction would be the physical change, but the social effect on the community would be the basis for determining that the effect would be significant.” (*Id.* at § 15131, subd. (b); see also *id.* at § 15382 [“A social or economic change related to a physical change may be considered in determining whether the physical change is significant.”])

### Alternatives and Mitigation

CEQA’s “substantive mandate” prohibits agencies from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that would substantially lessen or avoid those effects. (*Mountain Lion Foundation v. Fish and Game Commission* (1997) 16 Cal.4th 105, 134.) Where a local agency has determined that a project may cause significant impacts to a particular community or sensitive subgroup, the alternative and mitigation analyses should address ways to reduce or eliminate the project’s impacts to that community or subgroup. (See CEQA Guidelines, § 15041, subd. (a) [noting need for “nexus” between required changes and project’s impacts].)

Depending on the circumstances of the project, the local agency may be required to consider alternative project locations (see *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 404) or alternative project designs (see *Citizens of Goleta*

*Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1183) that could reduce or eliminate the effects of the project on the affected community.

The lead agency should discuss and develop mitigation in a process that is accessible to the public and the affected community. “Fundamentally, the development of mitigation measures, as envisioned by CEQA, is not meant to be a bilateral negotiation between a project proponent and the lead agency after project approval; but rather, an open process that also involves other interested agencies and the public.” (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 93.) Further, “[m]itigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments.” (CEQA Guidelines, § 15126.4, subd. (a)(2).)

As part of the enforcement process, “[i]n order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented,” the local agency must also adopt a program for mitigation monitoring or reporting. (CEQA Guidelines, § 15097, subd. (a).) “The purpose of these [monitoring and reporting] requirements is to ensure that feasible mitigation measures will actually be implemented as a condition of development, and not merely adopted and then neglected or disregarded.” (*Federation of Hillside and Canyon Assns. v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261.) Where a local agency adopts a monitoring or reporting program related to the mitigation of impacts to a particular community or sensitive subgroup, its monitoring and reporting necessarily should focus on data from that community or subgroup.

#### Transparency in Statements of Overriding Consideration

Under CEQA, a local government is charged with the important task of “determining whether and how a project should be approved,” and must exercise its own best judgment to “balance a variety of public objectives, including economic, environmental, and social factors and in particular the goal of providing a decent home and satisfying living environment for every Californian.” (CEQA Guidelines, § 15021, subd. (d).) A local agency has discretion to approve a project even where, after application of all feasible mitigation, the project will have unavoidable adverse environmental impacts. (*Id.* at § 15093.) When the agency does so, however, it must be clear and transparent about the balance it has struck.

To satisfy CEQA’s public information and informed decision making purposes, in making a statement of overriding considerations, the agency should clearly state not only the “specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits” that, in its view, warrant approval of the project, but also the project’s “unavoidable adverse environmental effects[.]” (*Id.* at subd. (a).) If, for example, the benefits of the project will be enjoyed widely, but the environmental burdens of a project will be felt particularly by the neighboring communities, this should be set out plainly in the statement of overriding considerations.

\* \* \* \*

The Attorney General's Office appreciates the leadership role that local governments have played, and will continue to play, in ensuring that environmental justice is achieved for all of California's residents. Additional information about environmental justice may be found on the Attorney General's website at <http://oag.ca.gov/environment>.

# EXHIBIT D

**WEST COAST HOME BUILDERS, INC.**  
**4021 Port Chicago Highway, Concord, California 94520**  
**Telephone: (925) 671-7711 Fax (925) 687-3366**

April 27, 2015

Ms. Amy Million  
City of Benicia  
Community Development Department  
250 East L Street  
Benicia, California 94510

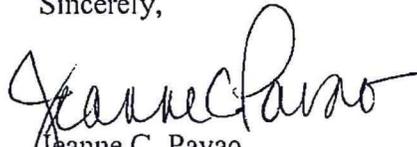


RE: Benicia Business Park Property

Dear Ms. Million:

On behalf of our Company ("Optionor") this letter confirms Robert Schwartz of Featherstone Enterprises, LLC dba Schwartz Land Development Company ("Optionee") has our consent and authority to process a General Plan Amendment application for the above-referenced property.

Sincerely,

  
Jeanne C. Pavao  
Senior Vice President  
and General Counsel



140 Litton Drive  
Suite 240  
Grass Valley, CA 95945  
Tel: 530.272.5841  
Fax: 530.272.5880  
Gen'l Email: [info@scopeinc.net](mailto:info@scopeinc.net)  
Truckee: 530.582.4043

April 20, 2015

*Via UPS Overnight Saver*

Amy E. Million  
Community Development Department  
City of Benicia  
250 East L Street  
Benicia, CA 94510

Re: **General Plan Amendment Request – Seeno Property**  
SCO Job No. 201424

Dear Amy,

Schwartz Land Development Company is requesting to initiate a General Plan Amendment (GPA) for consideration of a Mixed-Use Development project on approximately 527 acres of land located between East 2<sup>nd</sup> Street and Lake Herman Road, commonly known as the Seeno Property. The land use zoning categories proposed are as follows:

- IL (Limited Industrial) along East 2<sup>nd</sup> Street;
- IL (Modified Limited Industrial w/ targeted uses) along Industrial Way and within the mid portion of the site;
- CG (General Commercial) at the corner of Lake Herman Road and East 2<sup>nd</sup> Street;
- RS/RM/RH (residential) - Pockets of residential land uses accessible from Lake Herman Road, ranging from single family to high density multi-family zoning classifications;
- OS (Open Space) to provide significant physical and psychological buffer zones between land use clusters, and to protect natural drainages, steep slopes and environmentally sensitive areas.

The amount of acreage for each land use has not yet been confirmed or proposed. The land use ratio needs to provide economic and fiscal benefits to the City, enhance the economic climate of Benicia Business Park, reduce the potential for conflicting land uses, provide a competitive edge to allow the City to attract high wage industry and jobs and provide a diversified land use mix that encourages private investment. In an effort to determine the type of development concepts

Date: April 17, 2015  
To: Amy Million  
Re: **General Plan Amendment Request – Seeno Property**

that might address these various interests, we have prepared a “Project Justification Report” (see attached) that outlines what we believe to be prudent market projections and techniques that have been employed in other jurisdictions to accommodate the emerging lifestyles sought by knowledge-based and high wage employees and employers. Using this report, along with this GPA application, we respectfully ask the City to coordinate with Chabin Concepts to provide an economic analysis that tiers off the Benicia Industrial Park Market Study to assess opportunities a mixed-use development approach might provide to the city while still providing economic opportunity for private investment. From that assessment we hope to develop a Specific Plan that incorporates a successful land use mix that reflects the common interests outlined above.

We understand that an economic analysis is typically prepared later in the planning review process after a specific land use map and application have been filed. However, given this sites history, the City’s interest in economic development, and the unique opportunity of a large acreage single ownership parcel within the City’s urban planning boundary, we believe this approach offers the most productive path forward.

Thank you for your consideration of our request to initiate a General Plan Amendment. Please provide us with the initial application processing fees and a list of additional items that will be needed.

Sincerely,

**SCO Planning & Engineering, Inc.**

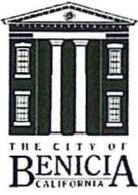


Dale T. Creighton, AICP  
Principal



Robert E. Wood, AICP  
Senior Planner

Attachments *(as stated herein)*



Community Development Department
Planning Division

Staff Use
30-Day Review:

PLANNING APPLICATION FORM

\*\* Applications are only accepted between the hours of 8:30 – 9:30 a.m. and 1:00 – 2:00 p.m.
To schedule an appointment outside of these hours, please call 707-746-4280.

1. Type of Application. Check all applicable items below.

- Use Permit (circle: PC, Staff, Day Care, Temp)
Design Review (circle: PC, HPRC, Staff, Minor)
Variance (circle: PC, SFR)
Planned Development
General Plan amendment
Zoning Text amendment
Zone Change/Overlay District
Extension of Approval
Revision to approved project
Other
Check here if project is located within 100 feet of the shoreline...
Check here if there will be any sale/service of alcoholic beverages...

2. Property Information.

Address/location East 2nd Street and Lake Herman Road, commonly known as "The Seeno Property"
APN(s) 080-010-030, 181-260-060, 080-030-060, -070, -140, -160 Parcel area (sq. ft. or ac) ~ 527 acres

3. Project Description. Describe the type of development, use being proposed, exterior alterations, need for variance, etc. Attach additional sheets if necessary.

Mixed-Use development consisting of limited industrial, general commercial and residential land uses (see Project Justification)

4. Contact Information. Check the [ ] to indicate the primary contact.

Property Owner

Name West Coast Home Builders, Inc. Organization
Mailing address
Phone Fax E-mail

Applicant, if different from owner

Name Robert K. Schwartz Organization Schwartz Land Development Company
Mailing address 114 Raven Hill Road, Orinda, CA 94563
Phone (925) 258-4277 Phone (2) (510) 409-7277
E-mail schwartzltd@yahoo.com Fax (925) 258-5277

Architect/Engineer/Contractor

License # License Type (Arch, Eng, Contr, etc.) Land Planner
Business SCO Planning & Engineering, Inc. Individual's Name Robert E. Wood
Mailing address 140 Litton Drive, Suite 240, Grass Valley, CA 95945
Phone (530) 272-5841 Fax (530) 272-5880 E-mail rob@scopeinc.net

5. Signatures. Applicant and Property Owner must sign on reverse side.

For Staff Use: Appl. #(s) Date Filed
Date Entered Entered By Receipt # Total Fees Paid \$
Fee Breakdown
GP designation Current zoning Historical Dist./designation

**5. Signatures. Applicant and Property Owner must sign on page 2. The signature of the architect and/or engineer is also required if drawings are submitted by professional architects and/or engineers.**

**Signatures of Applicant and Property Owner.** Both signature lines must be signed, even if the applicant and property owner are the same.

**Applicant**

As part of this application the applicant hereby agrees to defend, indemnify and hold harmless the City of Benicia, its Council, boards and commissions, officers, employees, volunteers and agents from any claim, action, or proceeding against the City of Benicia, its Council, boards and commissions, officers, employees, volunteers and agents, to attack, set aside, void or annul an approval of the application or related decision, including environmental documents, or to challenge a denial of the application or related decisions. The applicant's duty to defend, indemnify and hold harmless shall be subject to the City's promptly notifying the applicant of said claim, action or proceeding and the City's cooperation in the applicant's defense of said claims, actions or proceedings. The City of Benicia shall have the right to appear and defend its interests in any action through the City Attorney or outside counsel. The applicant shall not be required to reimburse the City for attorney's fees incurred by the City Attorney or its outside counsel if the City chooses to appear and defend itself in the litigation.

By signing below, I hereby certify that the application I am submitting, including all additional required information, is complete and accurate to the best of my knowledge. I understand that any misstatement or omission of the requested information or of any information subsequently requested may be grounds for rejecting the application, deeming the application incomplete, denying the application, suspending or revoking a permit issued on the basis of these or subsequent representations, or for the seeking of such other and further relief as may seem proper by the City of Benicia.

Applicant: Robert J. Fox; Schwartz Land Development Date: April 20, 2015

**Property owner**

By signing below, I hereby certify under penalty of perjury, that I am the owner of record of the property described herein and that I consent to the action requested herein. All other owners, lenders or other affected parties on the title to the property have been notified of the filing of this application. Further, I hereby authorize City of Benicia employees and officers to enter upon the subject property, as necessary to inspect the premises and process this application.

In order to facilitate the public review process, the City requires that property owners agree to allow any plans or drawings submitted as part of the application to be copied for members of the public. Property owner(s) hereby agree to allow the City to copy the plans or drawings for the limited purpose of facilitating the public review process.

Property owner: \_\_\_\_\_ Date: \_\_\_\_\_

**Architect/Engineer**

In order to facilitate the public review process, the City requires that architects and engineers agree to allow any plans or drawings submitted as part of the application to be copied for members of the public. Architect/Engineer hereby agree to allow the City to copy the plans or drawings for the limited purpose of facilitating the public review process.

Architect: \_\_\_\_\_ Date: \_\_\_\_\_  
Engineer: T. P. L. E. Wood Date: 4/20/15

**NOTE:** In addition to City and other government agency requirements, many development areas, particularly residential areas, are regulated by private agreements and/or private easements. Applicants should check project property descriptions, including title reports, to determine if such private contractual agreements ("CC&Rs") or easement descriptions impact the project proposal.

The City's issuance of a building or development permit does not indicate conformance to these private agreements.

**DESIGNATION OF A REPRESENTATIVE FORM**

Applicants or property owners who desire to authorize a representative or representatives to act on their behalf in conjunction with this application shall provide the following information:

Name of authorized representative(s): Robert E. Wood, AICP

Address of representative(s): 140 Litton Drive, Suite 240, Grass Valley, CA 95945

Phone number of representative(s): (530) 272-5841

The above named representative(s) is authorized as follows:

File any and all papers in conjunction with the application including the signing of the application. RS (initial)

Speak on behalf of, or representing, the [choose owner and/or applicant and fill in blank] Robert K. Schwartz/Owner at any staff meeting and/or public hearing. RS (initial)

Sign any and all papers on my behalf, with the exception of the application form. RS (initial)

This authorization is valid until revoked in writing and filed with the Community Development Department.

Robert K. Schwartz For Schwartz Land Development April 20, 2015  
Owner/ Applicant (specify) Date



# Community Development Department Planning Division

## PROJECT SUMMARY SHEET

### 1. Property Information.

Address(es)/location East 2nd Street and Lake Herman Road APN(s) See Below  
 Current use(s) Open Space; APN's: 181-260-060; 080-010-030; 080-030-060, -070, -100, -140, -160  
 Property area (sq ft or ac) 527 Acres # of structures 1 # of dwelling units 0  
 Zoning IL and CG Gen. Plan Limited Industrial and General Commercial  
 Historic Cons. Dist. \_\_\_\_\_ Historic designation \_\_\_\_\_

#### Setbacks and lot coverage

	Required	Existing	Proposed (if different from existing)
Front (ft)	_____	_____	_____
Side 1 (ft)	_____	_____	_____
Side 2 (ft)	_____	_____	_____
Rear (ft)	_____	_____	_____
Lot coverage, total of all structures (%)	_____	_____	_____

#### Adjacent properties and uses

North	<u>Undeveloped</u>	Zoning <u>OS</u>	Gen. Plan <u>Open Space</u>
East	<u>Highway 680</u>	Zoning <u>N/A</u>	Gen. Plan <u>N/A</u>
South	<u>Benicia Industrial Park (BIP)</u>	Zoning <u>IL</u>	Gen. Plan <u>Limited Industrial</u>
West	<u>BIP &amp; Residential Subdivision</u>	Zoning <u>IL, RS, OS</u>	Gen. Plan <u>Ltd. Ind., Res., Open Space</u>

#### Sitework

Trees over 12" in diameter,  
as measured 4 feet above grade Existing \_\_\_\_\_ To be removed \_\_\_\_\_  
 Estimated volume of cut and fill (cubic yds) Cut \_\_\_\_\_ Fill \_\_\_\_\_  
 Import/Export Balance (check one)  Net import  Net export  Balance  
 Utilities affected \_\_\_\_\_

### 2. Primary/Affected Building Information.

	Maximum	Existing	Proposed (if different from existing)
Total building floor area (sq ft)	_____	_____	_____
Floor-to-Area Ratio (FAR) (ratio)	_____	_____	_____
Building Footprint (sq ft)	_____	_____	_____
Height			
Wall	_____	_____	_____
Peak of roof	_____	_____	_____

### 3. Uses of the Property.

#### Building Uses (retail, residential, office, warehouse, manufacturing, etc.)

	Description	Floor Area (sq ft)
Use 1	_____	_____
Use 2	_____	_____
Use 3	_____	_____
Use 4	_____	_____

**Property Uses (parking lot, landscaping, patio, eating area, storage, garbage, etc.)**

	Description	Area (ac or sq ft)
Use 1	_____	_____
Use 2	_____	_____
Use 3	_____	_____
Use 4	_____	_____

**Housing Units (if any)**

Type	Existing	Proposed (if different from existing)
Single family detached units (#)	_____	_____
Apartment units (#)	_____	_____
Condominium units (#)	_____	_____

Bedrooms	Existing	Proposed (if different from existing)
Studio units (#)	_____	_____
1 or 2 bedroom units (#)	_____	_____
3+ bedroom units (#)	_____	_____

**Parking**

	Required	Existing	Proposed (if different from existing)
Regular spaces (#)	_____	_____	_____
Compact spaces (#)	_____	_____	_____

**Operating Information**

	Existing	Proposed (if different from existing)
Business name	_____	_____
Days of operation (circle)	S M T W T F S	S M T W T F S
Operating hours	_____	_____
Operating hours, cont.	_____	_____
Employees (#)	_____	_____
Vehicles (#)	_____	_____

	Existing	Proposed (if different from existing)
Outdoor storage or display (sq ft)	_____	_____
Outdoor food service (sq ft)	_____	_____
Live entertainment (sq ft)	_____	_____

<b>For Staff Use:</b>	Appl. #(s) _____	Date Filed _____
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# Community Development Department Planning Division

## ENVIRONMENTAL CHECKLIST FORM

### 1. Property Information.

Address/location East 2nd Street and Lake Herman Road

APN(s) 080-010-030;181-260-060;080-030-060,-070,-100,-140,-160 Parcel area (sq. ft. or ac) ~ 527 Acres

Other permits/approvals required for this project (federal, state, regional, etc.)

### 2. Project Information.

Indicate which of the following types of impacts may be applicable to or generated by the project. Discuss below all items checked "Yes" or "Maybe". Attach additional sheets if necessary.

Type of Impact	Yes	Maybe	No
a. Change in existing features of any bay, tidelands, beaches, lakes or hills, or substantial alteration of ground cover.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Change in scenic views or vistas from existing residential areas or public lands or roads.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Change in pattern, scale, or character of general area of project.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Creation of significant amounts of solid waste or litter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Change in dust, ash, smoke, fumes, or odors in vicinity.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Change in bay, lake, stream, or groundwater quality or quantity, or alteration of existing drainage patterns.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Change in existing noise or vibration levels in the vicinity.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Site on filled land or slope of 10 percent or more.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Use or disposal of potentially hazardous materials (toxic substances, flammables, explosives, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j. Substantial change in demand for municipal services (police, fire, water, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
k. Substantial increase in fossil fuel consumption (oil, natural gas, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
l. Relationship to a larger project or series of projects.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
m. Construction in a floodplain.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Use this space to discuss items checked "Yes" or "Maybe" (attach additional sheet if necessary)  
To be discussed and evaluated during Specific Plan and Environmental Review

### 3. Applicant's Signature.

By signing below, I hereby certify that the information I am submitting is complete and accurate to the best of my knowledge. I understand that any misstatement or omission of the requested information may cause unforeseen delays in the processing of my application.

Applicant Robert Schuy For: Schwartz Land Development Date April 20, 2015

**For Staff Use:** Appl. #(s) \_\_\_\_\_ Date Filed \_\_\_\_\_

# EXHIBIT E

## Suzanne Thorsen

---

**From:** Suzanne Thorsen  
**Sent:** Thursday, September 03, 2015 3:39 PM  
**To:** Jason Riley; Richard Ryan; Rick Knight  
**Cc:** Graham Wadsworth; Joshua Chadwick; Christina Ratcliffe; Mario Giuliani; cyoung (cyoung@beniciaunified.org)  
**Subject:** Northern Gateway - Conceptual Land Use Diagram & Phasing  
**Attachments:** Land Use Plan.pdf; phasing.pdf

Good afternoon,

Attached please find updated preliminary/conceptual information for the Northern Gateway project. This conceptual land use diagram is prepared for the purposes of an economic analysis (presently underway). The Planning Commission will consider the development concept (light industrial, commercial and residential uses) along with the economic analysis at a future public workshop. Following the workshop, the applicant will consider the City's feedback and, if he decides to move forward with the project, begin preparation of a Specific Plan. The Specific Plan will precede additional reviews and agreements, including environmental review and mitigations under the California Environmental Quality Act. In summary, this project is still in the very preliminary stages.

Please let me know if you have any questions or comments related to this information.

Suzanne Thorsen, Senior Planner  
City of Benicia  
sthorsen@benicia.org  
(p): 707.746.4279  
(f): 707.747.1637

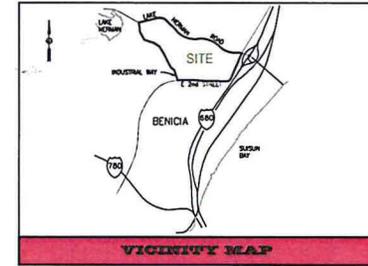
PROPOSED LAND USE		
ZONING DISTRICT	ACRES	UNITS / S.F.
OS - OPEN SPACE	246.0	-
RS - SINGLE FAMILY RESIDENTIAL	64.1	50 - 50
RM - MEDIUM DENSITY RESIDENTIAL	11.8	80 - 100
RH - HIGH DENSITY RESIDENTIAL	10.5	200 - 250
CC - COMMUNITY COMMERCIAL	21.7	200K SF - 250K SF
IL - LIMITED INDUSTRIAL	149.4	1.8M SF - 2.4M SF
<b>TOTAL</b>	<b>498.7 AC</b>	

# NORTHERN GATEWAY MIXED-USE DEVELOPMENT

## SCHWARTZ LAND DEVELOPMENT COMPANY

### CONCEPTUAL LAND USE EXHIBIT

AUGUST 25, 2015 Scale: 1"=300'



NO. REVISIONS	DATE	DESIGNED BY	DRAWN BY	PROJ. NO.	DATE
				MS-2014-17	AUGUST 14, 2015

LAND USE MAP  
NORTHERN GATEWAY MIXED-USE DEVELOPMENT  
SCHEMATIC DEVELOPMENT PLAN

SECO  
SCHWARTZ LAND DEVELOPMENT COMPANY  
ENGINEERING  
SURVEYING

1 OF 2

SCALE: 1"=300'



February 10, 2016

***Via email to***

Amy Million, Principal Planner  
Community Development Department  
250 East L Street  
Benicia, CA 94510  
amillion@ci.benicia.ca.us

Re: The Valero Benicia Crude-by-Rail Project

Dear Ms. Million and Planning Commissioners,

We appreciate the careful attention the Planning Commission has given the Valero Benicia Crude-by-Rail Project (the Project) during the public hearing that began on February 8, 2016. In light of the issues raised at the hearing on February 8 and 9, we submit the following comments. Further, to the extent that the Commission needs additional time to consider this Project in light of the significant number of public comments, the complex legal issues, and the Project's numerous significant impacts, it should continue the hearing to a later date.

As we have previously explained in our February 8, 2016, October 30, 2015, September 14, 2014, and other letters, the Environmental Impact Report for this Project is inadequate under the California Environmental Quality Act (CEQA). The Project is also inconsistent with the City's General Plan and the Benicia Municipal Code. Nothing in federal law preempts the City from declining to certify the EIR and denying the use permit for the Project. Accordingly, the Planning Commission should:

1. Decline to certify the EIR
2. Deny the use permit for the Project
3. Adopt findings similar to those described below

According to the staff report and the EIR, the Project will have 11 significant and unavoidable impacts related to rail, listed on page 30 and 31 of the staff report. Although we disagree that these are the only significant impacts from the Project and that they cannot be mitigated, at the very least, the City should find that the 11 impacts listed on those pages require denial of the permit for the Project. The City is not preempted from denying the Project based on concerns about rail impacts.

The City should also find that there are other impacts—**completely separate from and unrelated to the 11 significant rail-related impacts listed above**—that require, on their own, denial of the permit for the Project.

- **Air Quality – Refinery Emissions**
  - The Project would increase refinery emissions by increasing refinery throughput. Because the proposed reduction in crude from ships is not an enforceable condition of approval for the Project, the City must assume continued ship traffic at current levels. NRDC September 14, 2014 letter at 4-5, 33-34; NRDC October 30, 2015 letter at 1-2, 11; NRDC February 8, 2016 letter at 1-2.
  - The Project would increase refinery emissions, including emissions from storage tanks, by increasing the proportion of dirty and/or volatile crudes. NRDC September 14, 2014 letter at 5-20, 33-34; NRDC October 30, 2015 letter at 2-4, 11; NRDC February 8, 2016 letter at 1-2.
  
- **Air Quality – Non-rail Transportation Emissions**
  - The Project would not reduce ship traffic at the port, so there will be no “offset” of marine transportation emissions. Nothing in the proposed Project or conditions of approval require ship traffic to decrease. NRDC September 14, 2014 letter at 20-21, 33-34; NRDC October 30, 2015 letter at 11; NRDC February 8, 2016 letter at 1-2.
  
- **Air Quality – Construction Impacts**
  - The Project would have significant construction emissions. NRDC September 14, 2014 letter at 24-26, 32-33.
  
- **Environmental Justice**
  - The Project would have a disproportionate impact on low-income communities and communities of color due to the increase in refinery emissions. *See, supra*, sections re air quality; NRDC October 30, 2015 letter at 7.
  
- **Hazards – Crude Unloading and Other Activities on Valero Property**
  - The Project would pose a significant hazard risk due to the risk of a spill or accident during the offloading process or other activities on Valero property. These risks are similar in nature and severity to the risks posed along the rail line. *See* NRDC September 14, 2014 letter at 34-36, 37-46; NRDC October 30, 2015 letter at 12-15.

- **Water Quality**
  - o The Project would pose a significant risk of oil spills, especially to the Sulphur Springs Creek riparian corridor, during offloading or other activities on Valero property. *See* NRDC October 30, 2015 letter at 10.
  
- **Biological Resources**
  - o The Project would pose a significant risk to wildlife, especially special-status species in the Sulphur Springs Creek riparian corridor, due to the possibility of spills during the offloading of crude or other activities on Valero property. *See* NRDC October 30, 2015 letter at 26.
  
- **Noise**
  - o The Project will have significant noise impacts due to unloading and other activities on Valero’s property. *See* NRDC September 14, 2014 letter at 50-51.

Under Benicia Municipal Code section 17.104.060, the Planning Commission cannot approve a use permit unless it can make the following findings:

1. That the proposed location of the use is in accord with the objectives of this title and the purposes of the district in which the site is located;
2. That the proposed location of the conditional use and the proposed conditions under which it would be operated or maintained will be consistent with the general plan and will not be detrimental to the public health, safety, or welfare of persons residing or working in or adjacent to the neighborhood of such use, nor detrimental to properties or improvements in the vicinity or to the general welfare of the city;
3. That the proposed conditional use will comply with the provisions of this title, including any specific condition required for the proposed conditional use in the district in which it would be located.

As explained above, for reasons both related to rail and not related to rail, the Project will be “detrimental to the public health, safety, or welfare of persons residing or working in or adjacent to the neighborhood,” will be “detrimental to properties or improvements in the vicinity,” and will be detrimental “to the general welfare of the city.”

Furthermore, the Project is inconsistent with the City’s General Plan, both because of rail-related and non-rail-related impacts:

- **GOAL 2.5:** Facilitate and encourage new uses and development which provide substantial and sustainable fiscal and economic benefits to the City and the community while maintaining health, safety, and quality of life.

- For reasons both related and unrelated to rail impacts, the Project does not maintain the health, safety, and quality of life of the community.
- **GOAL 2.6:** Attract and retain a balance of different kinds of industrial uses to Benicia.
  - Policy 2.6.4:** Link any expansion of Industrial land use to the provision of infrastructure and public services that are to be developed and in place prior to the expansion.
  - Policy 2.6.5:** Establish and maintain a land buffer between industrial/commercial uses and existing and future residential uses for reasons of health, safety, and quality of life.
    - The Project does not contribute a “balance” of different kinds of industrial uses. Instead, it increases Benicia’s reliance on one oil company, an industrial use that will inevitably face decline as the country moves away from fossil fuels.
    - There is already an inadequate buffer between the refinery and existing residential uses; this Project does nothing to improve the buffer.
- **GOAL 4.1:** Make community health and safety a high priority for Benicia.
- **Policy 4.1.1:** Strive to protect and enhance the safety and health of Benicians when making planning and policy decisions.
  - Increasing the ability for a refinery to import dirty and dangerous crudes does not protect and enhance the safety and health of Benicians. The Project hinders, not furthers, this goal.
- **GOAL 4.7:** Ensure that existing and future neighborhoods are safe from risks to public health that could result from exposure to hazardous materials.
- **GOAL 4.8:** Protect sensitive receptors from hazards.
  - Policy 4.8.1:** Evaluate potential hazards and environmental risks to sensitive receptors before approving development.
    - The risks of this Project are clear. In fact, the City’s own EIR claims that they are significant and unavoidable as to rail impacts. Furthermore, the refinery air quality impacts of the Project are also significant, even though they remain unanalyzed. Thus, approval of the Project conflicts with these goals entirely.
- **GOAL 4.9:** Ensure clean air for Benicia residents.
  - The City’s EIR has steadfastly refused to even consider the air quality impacts this Project will cause, either by increasing throughput at the refinery or increasing the proportion of dirtier or more volatile crudes. The Project fails entirely to meet this goal.

- **Climate Action Plan Analysis/Consistency.**
  - The Project is inconsistent with the City's Climate Action Plan because it will increase greenhouse gas emissions, both from the refinery and from the transport of the crude by rail.

In sum, the City cannot approve the Project because the EIR is inadequate under CEQA. The City should deny the use permit for the project because the benefits of the project do not outweigh the significant impacts (both related to rail and not related to rail), as required by Public Resources Code section 21081. The City should also deny the Project because it is inconsistent with the General Plan and Benicia Municipal Code section 17.104.060, both because of impacts related to rail and impacts not related to rail. The City can, should, and *must* deny the permit for this Project.

Sincerely,

Jackie Prange, Staff Attorney

Natural Resources Defense Council

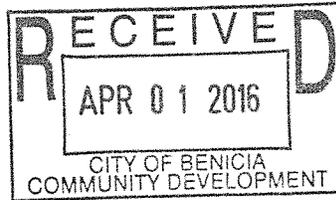


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jflynn@nossaman.com

Refer To File #: 290396-00017



April 1, 2016

Mayor Patterson and  
Members of the City Council  
City of Benicia  
250 East L Street  
Benicia, CA 94510

**Re: Valero Petition to the Surface Transportation Board for a Declaratory Order**

Dear Mayor Patterson and Members of the City Council:

I am writing on behalf of Valero Refining Company – California (“Valero”), concerning Valero’s request to continue the hearings on Valero’s Crude by Rail Project (“CBR” or “Project”) until after the Surface Transportation Board (“STB”) has responded to Valero’s petition for a declaratory order on the application of the Interstate Commerce Commission Termination Act (“ICCTA”) preemption to the Project. My letter is prompted in part by the speculation of Project opponents about Valero’s reasons for requesting the declaratory order. As we stated at the March 15 City Council hearing, our purpose is only to obtain a declaratory order or guidance that will benefit **all parties** on the single most important legal issue associated with this Project: Federal ICCTA preemption.

**1. Valero Will Seek the Declaratory Order Even If the Project Hearings Are Not Continued.**

We hope it is understood that Valero will proceed with the petition for a declaratory order whether or not the City continues the hearings on the CBR Project. At least one commenter has implied that Valero is seeking the City’s permission to petition the STB for the declaratory order. As you are no doubt already aware, we have not requested the City’s permission to seek the declaratory order, and, of course, no such permission is needed. We **have**, however, asked that you continue the hearings on the CBR Project until after the STB has issued an order or provided guidance on the ICCTA preemption issues. All parties will benefit from any guidance provided by the STB. While the scope of ICCTA preemption is clear to your own attorneys and to Valero, it is still the subject of intense debate and it is, as stated, the single most important legal issue affecting your decision about the Project.

**2. No Request for a TRO.**

There has also been a suggestion that Valero will be seeking a "temporary restraining order" from the STB. That is simply not true and has been suggested for the obvious purpose of causing confusion. Valero has not requested such an order and the STB has no authority to issue such an order.

**3. Valero's Purpose Is Only to Obtain a Declaratory Order or Guidance From the STB.**

Though we believe our reasons were very clearly stated at the March 15 hearing, they apparently bear repeating in light of some reckless comments that have been made about Valero's reasons for seeking the declaratory order: Given the agreement of City Staff, the City Attorney, Valero and Union Pacific on the principle that the City may not deny Valero's use permit application or condition the application because of rail operations, we were very surprised that the Planning Commission decided to ignore its own attorneys and to invoke numerous rail-based grounds in an attempt to justify the Commission's refusal to certify the Project Final Environmental Impact Report and its denial of Valero's permit application. Because of the paramount importance of the issue of preemption, and because the Planning Commission was not persuaded by its own attorneys, why not submit it to the one federal agency with the legal authority to issue declaratory orders on the scope of ICCTA preemption?

**4. The Petition Will Address Rail Operations Conducted by a Rail Carrier, Union Pacific.**

The same commenter referred to above has stated publicly that he had a conversation with an STB staff attorney in which the latter advised that the STB is "related to rail projects or projects that occur on railroad property, not off rail issues." Therefore, the commenter contends, the STB will refuse to consider Valero's petition. The commenter has entirely missed the point: The petition for declaratory order will primarily concern the City's right to require Valero to mitigate for alleged impacts of *Union Pacific's rail operations*. Valero's request for a declaratory order will therefore fall squarely within the decisionmaking authority of the STB.

**5. The California Attorney General Has No Jurisdiction Over Railroads.**

As for the suggestion that Valero should request a declaratory order from California Attorney General Kamala Harris rather than from the STB, that suggestion is, or so we hope, self-evidently erroneous: California Attorney General Harris has no authority over the railroads.

**6. All Parties Will Benefit From the Guidance Provided by the STB.**

No one who has paid the slightest attention to the environmental review of this project in the Planning Commission proceedings can with a straight face deny the paramount importance of the preemption question. Therefore, and especially in light of the doubts expressed by the Planning Commission on the scope of preemption, it is in the clear interest of all parties, regardless of where they stand on the Project itself, to obtain authoritative guidance from the STB on the application of ICCTA preemption to the CBR Project. We hope you will agree, and will also agree that further hearings on the Project should be continued until after the STB has

Mayor Patterson and  
Members of the City Council  
April 1, 2016  
Page 3

made a decision. However, even if the Council should decline to continue the hearings on the Project, Valero will proceed with the petition for declaratory order.

As stated above, the petition for declaratory order from the STB will address the purposeful misinformation and speculation that has been presented by Project opponents, and will assist the City in its effort to make an informed decision. Thank you once again for your consideration of our proposal. We will be available to answer any questions you might have at the hearing of April 4, and at any subsequent hearings.

Very truly yours,



John J. Flynn III  
of Nossaman LLP

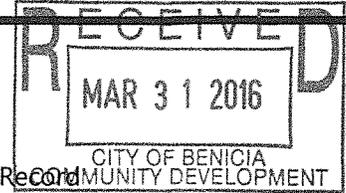
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cc: Heather McLaughlin, City Attorney  
Bradley R. Hogin, City Special Counsel

**Amy Million**

---

**From:** Elena Engel <elenajengel@gmail.com>  
**Sent:** Thursday, March 31, 2016 10:49 AM  
**To:** Amy Million  
**Subject:** Against Valero Crude by Rail-Comment for the Public Record



Dear Ms. Million,

I have recently heard about the refusal of the Benicia Planning Commission to allow Valero to construct a rail terminal to receive dirtier, more dangerous crude shale oil or tar sands oil to their refinery.

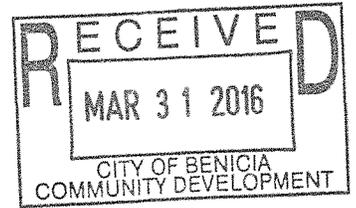
I applaud the refusal of the Planning Commission and want to register my unqualified support of that refusal. Whatever the justifications on the part of Valero Oil Company, we have to move away from the use of fossil fuels. I could write for quite a while about the dangers of their proposal to everyone along the rail line, to the local community in the refining of that oil, of the dangers from the increased particulates from that dirtier oil, and so on. But the truth remains: if we are going to save our own planet from serious changes that may prove destructive to our own lives and that of other species, we must stop this expansion of the use of fossil fuels.

Sincerely yours,  
Elena Engel

## Amy Million

---

**From:** Danny McNaughton <dkmcnaug@live.com>  
**Sent:** Thursday, March 31, 2016 9:41 AM  
**To:** Amy Million  
**Subject:** for the public comment on Valero crude by rail



Dear Amy Million,

I am a resident of Martinez, Ca and I urge you to do everything in your power to reject the transportation of very dangerous crude oil to and through Benicia.

We all know crude oil and fossil fuels are an environmental dead end for the world and our own beloved communities. As a representative of the local community, please stop this danger from entering our lives. The refining of this tar sands crude oil is in-efficient as a fuel source and is a continuation of the failed plans and policies that have created the environmental crisis our climate is now in.

Please work with the Benicia city council to reject this crude oil transport forever through our communities so we can shift to cleaner, sensible energy systems.

Thank you for taking the time to read this!

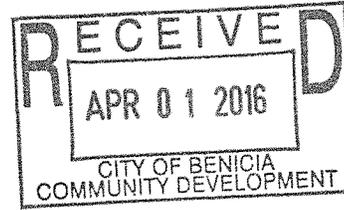
Thank you.

Sincerely,

Danny McNaughton

March 31, 2016

Amy Million  
Principal Planner  
Benicia community Development Department  
amillion@ci.benicia.ca.us



Dear Members of the Benicia City Council,

Please add these comments to the public record for the Valero Crude-by-rail Project. I hope this information will provide some useful background to inform your decision-making. I suggest at least scanning the varied topics I have included with some helpful links.

### **A three-year journey**

I've been involved with the Valero Crude-by-rail Project since fall of 2013 when I first heard that 100 tank cars of crude oil would be routed through my city, Davis, every day.

### **Value the hard work of the Planning Commission**

I have participated in the entire CEQA process through written and spoken testimony, and I have observed the Planning Commission in action multiple times. I commend them not just because I support the decisions they made, but because I saw that they read much of the material sent to them, which was thousands of pages. At hearings they were always courteous and listened carefully to each speaker. I know this from the remarks they made later.

I urge the City Council to appreciate and trust the three years of intensive study the Planning Commission put into the Valero Crude-by-rail Project. Their decision was informed by many sources from within Benicia as well as an outcry of voices from beyond Benicia, including governing bodies and agencies who took time to prepare detailed commentary. The Benicia staff is now advising the City Council to overturn the Planning Commission decisions, negating those three years of hard work. I urge city council members to value their judgement, especially if you have not read and listened to all the testimony yourselves.

### **What is your civic and moral duty? Is it acceptable to make uprail neighbors potential collateral damage victims?**

According to the City of Benicia staff, we uprail neighbors cannot expect even the consideration of mitigation for the "significant" pollution added to our daily lives, though we must endure the noise and vibration intrusion and accept the unwelcome added greenhouse gas emissions both from the trains passing through and from the future burning of the refined gas in this post-Paris-

Climate-Accord era when we should all be retreating from fossil fuels. Our sensitive habitats, much-needed water resources, and our lives will be at risk every day.

According to the city staff, the definition provided by Mr. Hogan of federal pre-emption is sufficient to free council members to concentrate on whether the Valero project meets the goals of the Benicia General Plan and whether the 120 temporary jobs and the 20 permanent new jobs are good for the people of Benicia. Because of federal pre-emption the City Council has permission to ignore those of us living along the rail line who will become potential collateral damage every day if the Planning Commission decision is overturned.

Additionally, every day a possible spill threatens to ignite a fire, particularly likely in our dry summers, or pollute our water sources as happened at the high hazard area at Dunsmuir in 1991 when a chemical spill poisoned 20 miles of the Sacramento River above Lake Shasta, killing all river life for a decade.

Does federal pre-emption apply when it puts people's health, safety, and lives at risk? Accepting federal preemption as defined by Mr. Hogan precludes any mitigation or even denial of the project based on the eleven identified "significant and unavoidable impacts" of the daily oil trains traveling through northern California. It is a way of shedding responsibility for moral and civic duty and also astonishingly calloused. Benicians are also Californians, after all.

### **Unresolved questions of liability**

The question of who is liable in the event of an accident remains unanswered. In Lac Megantic, the two railroads involved went bankrupt immediately, leaving the government to pay over a billion dollars in life and property damage. Would Benicia be held accountable? Valero? Pacific Union? Estimates to pay for the 47 lives lost and to rebuild the downtown in Lac Megantic approach 2.7 billion. Although the trains coming from Roseville to Benicia will only be 50 cars each, so far the trains coming into CA have been unit trains of 100+ cars traveling mostly over the Feather River Canyon with its many miles of high risk rail presumably at speeds of 50 miles or more per hour.

In November 2014, a train of corn derailed along the Feather River Canyon. Twelve cars fell down the steep embankment and one car spilled corn into the river. Luckily, the corn was easy to retrieve. Did the Valero project risk analysis take circumstances like the trestle track over the Feather River Canyon or the steep sides of the canyon that easily erode in heavy rains into account? How about the squishy rails crossing the Suisun Marsh? What happens as sea level rises?

Have you seen proof of adequate liability coverage from both UP and Valero?

Your own Fire Chief announced at a Planning Commission hearing that the worst case scenario is one car derailling. *The Oil by Rail Safety in California Report* prepared for the State of CA by

an interagency working group and submitted as evidence to the draft EIR in July 2014 includes a list of 8 crude-by-rail accidents which involved 13, 30, 34, 17, 7, 21, 15, and 6 derailed cars.

The report proposes a worst case scenario for testing and practice purposes as follows:  
“For oil by rail, a worst case scenario plan would likely involve a major derailment in a highly populated part of the state with 10 or more tank cars breaching, burning, exploding and spilling oil downhill, resulting in high loss of life and extensive damage to buildings and communities.”

### **What kind of crude?**

Since it was unclear what North American crude would be carried on any given train, I studied the heaviest crudes including Alberta tar sands, perhaps the dirtiest crude that could be transported and the hardest to clean up. For example, the Kalamazoo River is still polluted after \$1.2 billion dollars and 4 years since a 2010 ruptured pipeline spilled a million gallons of diluted bitumen tar sands into the river. The Valero representative said at one of the hearings that they have indeed refined tar sands at the refinery.

I also studied the lightest North Dakota Bakken crude with its high volatility prone to explosions that firefighters don't even try to put out. Bakken crude sometimes exceeds the 11 pressure per square inch (psi) that Valero says is its maximum, so perhaps we will be spared most Bakken crude. The Bakken crude in the Lac Megantic explosion was less than 9.6 psi.

### **Crude-by-Rail records at the CA Energy Commission**

A friend who works at the Office of Spill Prevention and Response (OSPR) whose job it is to track crude arrivals into CA and know their risks, taught me to use the CA Energy Commission website tracking information, and he has continued to send key articles throughout the last years.  
[http://energyalmanac.ca.gov/petroleum/statistics/2015\\_crude\\_by\\_rail.html](http://energyalmanac.ca.gov/petroleum/statistics/2015_crude_by_rail.html)

### ***Oil-by-Rail Safety in CA Report includes a useful Map of “areas of concern”***

The above report of June 2014 <https://www.cooldavis.org/wp-content/uploads/Oil-By-Rail-Safety-in-California-Report-6-10-14.pdf> provides the analysis of the interagency working group of the dangers of introducing crude-by-rail transport into CA. The last page is a very useful map of CA showing all rail lines, highlighting the high hazard areas in red. All routes into CA both north and south have significant stretches of high hazard rail, often over critical rivers such as the Feather River Canyon and the Sacramento River at Dunsmuir. There is a scarcity of hazmat teams in the same areas where the route is most dangerous.

The map also shows known earthquake faults with one along the tracks between Fairfield and Benicia, and another between Benicia and Martinez. Given the recent earthquake in Napa where the faults were unknown, there is a very real possibility that we don't know all the faults lines.

The map also locates all haz mat teams, both urban and rural, some trained and some volunteer, and makes it clear that there is absolutely no possibility of a hazmat team making it quickly to accidents happening along the vast rural stretches of rail from the CA borders to the north on their way to the Roseville hub. It is terrifying to think of a derailment along these high risk areas sparking a wildfire. This map is enough reason to deny the project.

[https://www.cooldavis.org/wp-content/uploads/Oil-by-Rail-Risk-and-Response\\_Map-haz-mat-team-locations-1.pdf](https://www.cooldavis.org/wp-content/uploads/Oil-by-Rail-Risk-and-Response_Map-haz-mat-team-locations-1.pdf)

It's simply too dangerous bringing crude of any kind into our island state by rail. My Powerpoint presentation explaining the map can be found here: <https://www.cooldavis.org/wp-content/uploads/2016/03/Oil-by-Rail-Safety-in-CA-map-1.pptx>

### **CA Legislative Response**

Senator Fran Pavley convened hearings at the state legislature in July 2014 as she and others responded to the new industry intent to introduce crude-by-rail into CA. They received testimony from a range of knowledgeable public servants including Mayor Patterson, who received a special commendation from Senator Lois Wolk for protecting the people of Benicia.

### **In CA, SB861 passed in June, 2014, but it will likely be challenged again by Union Pacific in court.**

SB861 calls for:

- 1) The \$.065 tax on each barrel of oil that Valero keeps citing as money that will go toward training for emergency firefighters, (This cost would be passed on to consumers in the cost of gasoline.)
- 2) worst case emergency plans have to be filed with the state (UP may comply or may use their law suit to fight this part of the law.)
- 3) Railroads have to file proof of sufficient liability. (Union Pacific has given no indication about liability since it is not yet delivering crude to Benicia. It is unknown whether they will comply or fight with their law suit.)

The railroads sued the State of CA the day after the Governor signed the bill into law. However, on June 18, 2015, the court dismissed the case saying it wasn't yet "ripe for review." If the project is permitted and trains come to Valero, the Railroad is likely to sue again. \*Read below for the case dismissal wording.

On September 18, 2015, CA legislation introduced by Senator Lois Wolk was signed into law requiring two engineers on oil trains in CA for greater safety, though the various railroads are pushing for a single engineer on these 100+ car oil trains in other states.

### **Action at the national level**

Our local members in Congress John, Garamendi, Doris Matsui, Mike Thompson, and George Miller co-wrote a letter to Dept. of Transportation (DOT) on July 1, 2014 on stabilization of Bakken crude in towers at the well head (removal of natural gases to greatly reduce volatility, as is required in Texas). In addition, the letter called for implementation of stronger rail cars and positive train control technology. These ideas did not advance.

**H.R. 1679 is Garamendi's current proposed legislation** to require the maximum Reid vapor pressure (RVP) of 9.5 psi for Bakken crude where it had ranged from 11.7 psi to 14.4 psi. Gasoline is 9.0 psi, so the tank cars are still likely to explode if they rupture on derailment. The bill was introduced on March 27, 2015, but no action was taken. He may reintroduce it in 2016.

### **New DOT Regulations**

The Department of Transportation (DOT) at last opened a period of public comment on proposed new regulations on new oil train regulations in the fall of 2015 covering train speeds in cities, types of cars required for crude and a timeline for upgrades, and braking systems required. DOT finally announced its new regulations in May 1, 2015. General consensus is they fail to make us much safer as they are too little, too slowly, too vague.

Here's the official summary and link to entire rule:

[http://www.fra.dot.gov/eLib/details/L16353#p1\\_z5\\_gD](http://www.fra.dot.gov/eLib/details/L16353#p1_z5_gD)

Here's a summary of the new Federal regulations from an OSPR person:

- New tank cars (after Oct 1): 9/16" shell and thermal protection
- Phase out DOT-111 in three years; CPC-1232 in five years
- Distributed power braking by 2021
- 50 mph max; 40 mph in urban areas (unless they have all new tank cars)

Current fireball accident rate is about 1 every 2 months. I would expect that to continue thru the phase-out period. Presumably the thicker shells will reduce the number of punctured cars (but maybe only a little) and the thermal protection will reduce the number of cars that split open from the fire heat. Thus, five years from now I would expect the rate of accidents to reduce somewhat and the # of cars rupturing to probably drop from an average of 12 to maybe 8. Obviously, still a substantial risk to our communities.

**Conclusion: There is no safe way to transport crude by rail, despite these regulations or any foreseeable federal regulations.**

I hope this information regarding just how dangerous it is to bring crude-by-rail into CA, and how little regulation we can hope for from the federal government oversight of the Railroads will help you recognize the importance of stopping crude-by-rail before it happens.

Thank you for your consideration.

Sincerely,

Lynne Nittler of Davis

[lnittler@sbcglobal.net](mailto:lnittler@sbcglobal.net)

530-756-8110

**\* Recent Litigation**

**A. Challenge to California's S.B. 861 Dismissed**

In a previous article, we discussed the industry challenge to California's oil train legislation then pending before the United States District Court for the Eastern District of California in *Association of American Railroads v. California Office of Spill Prevention and Response*.<sup>[65]</sup> In that case, the Association of American Railroads, Union Pacific Railroad Company, and BNSF Railway Company had argued that California's S.B. 861 is preempted by federal law, including most prominently the Federal Railroad Safety Act (FRSA) and the Interstate Commerce Commission Termination Act (ICCTA).<sup>[66]</sup> Most notably, the railroads argued that the California law's oil spill contingency planning requirements are preempted by the FRSA, and that the law's financial responsibility requirements are preempted by the ITTCA.<sup>[67]</sup>

On June 18, 2015, the court granted the defendants' motion to dismiss. The court refused to reach the merits of the case, finding instead that the dispute was not ripe for review. Specifically, the court found that because compliance with the forthcoming regulations would be within the plaintiff's control, and because the lack of implementing regulations meant the railroads had not been coerced into compliance, the plaintiffs could not establish "a concrete plan to violate the law."<sup>[68]</sup> Similarly, the court held that the plaintiffs failed to establish a genuine threat of prosecution, finding that letters from the state to the railroads discussing enforcement timelines were general statements, "not sufficiently imminent" threats.<sup>[69]</sup>

The railroads did not file a notice of appeal within the 30-day deadline.

<http://www.martenlaw.com/newsletter/20150729-oil-train-regulations-legislation-battles>

# Oil by Rail Safety in California Report

Interagency Rail Safety Working Group

June 10, 2014

## CA Oil by Rail Risk and Response Map

**High Hazard Areas,**

**Known Geologic Faults,**

**Sensitive Species/Habitat Occurrences,**

**HazMat Team Locations**



# Oil by Rail Safety in California

## Preliminary Findings and Recommendations



A crude oil train travels across the Clear Creek trestle in Plumas County, California and through the Feather River Canyon on June 5, 2014.

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California Department of Fish and Wildlife  
Office of Earth Protection and Response  
Title: Crude By Rail Areas of Concern  
Author: J. Walker  
Date Created: 01/2014  
Map: 00\_California\_Team\_V01

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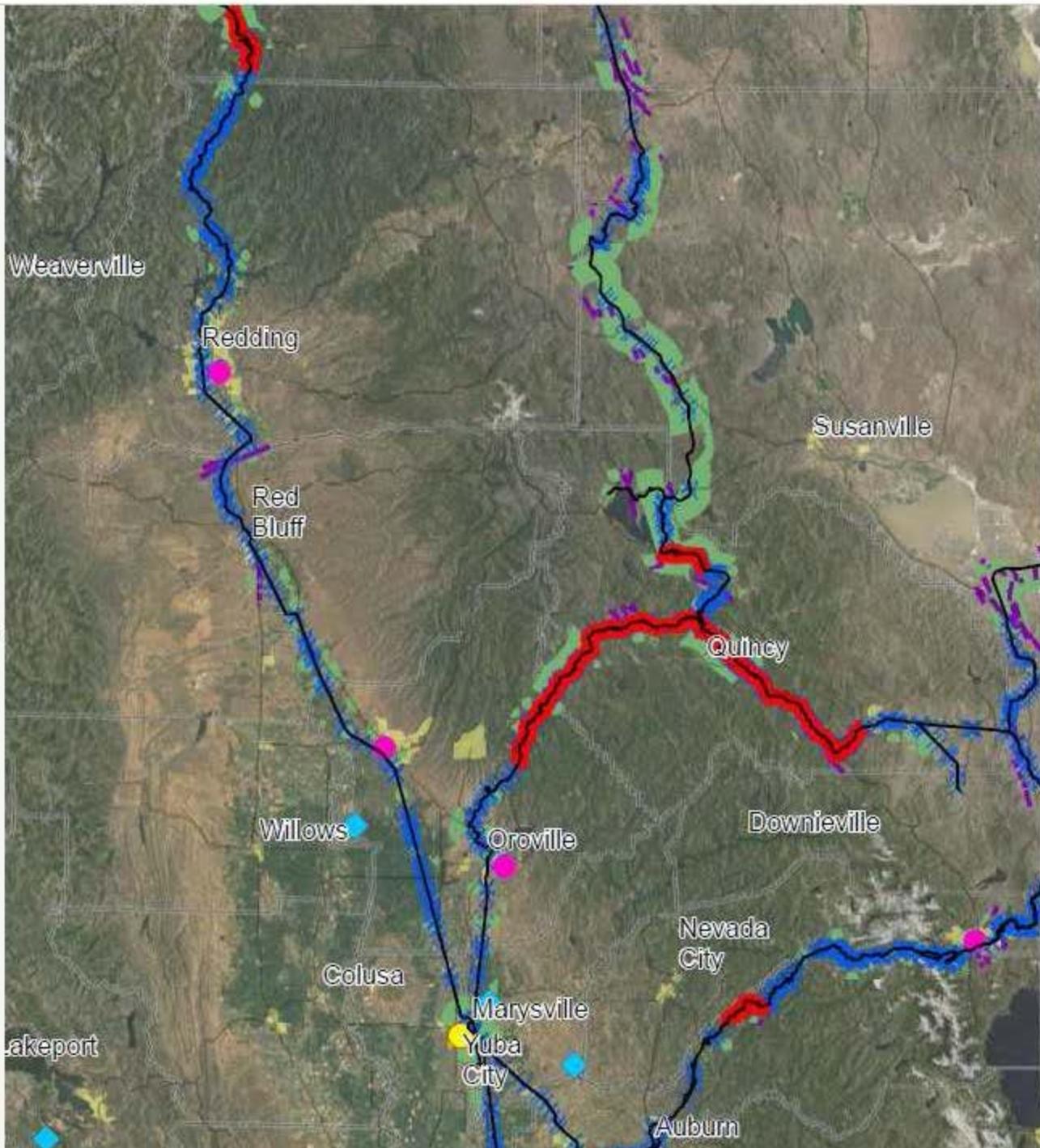
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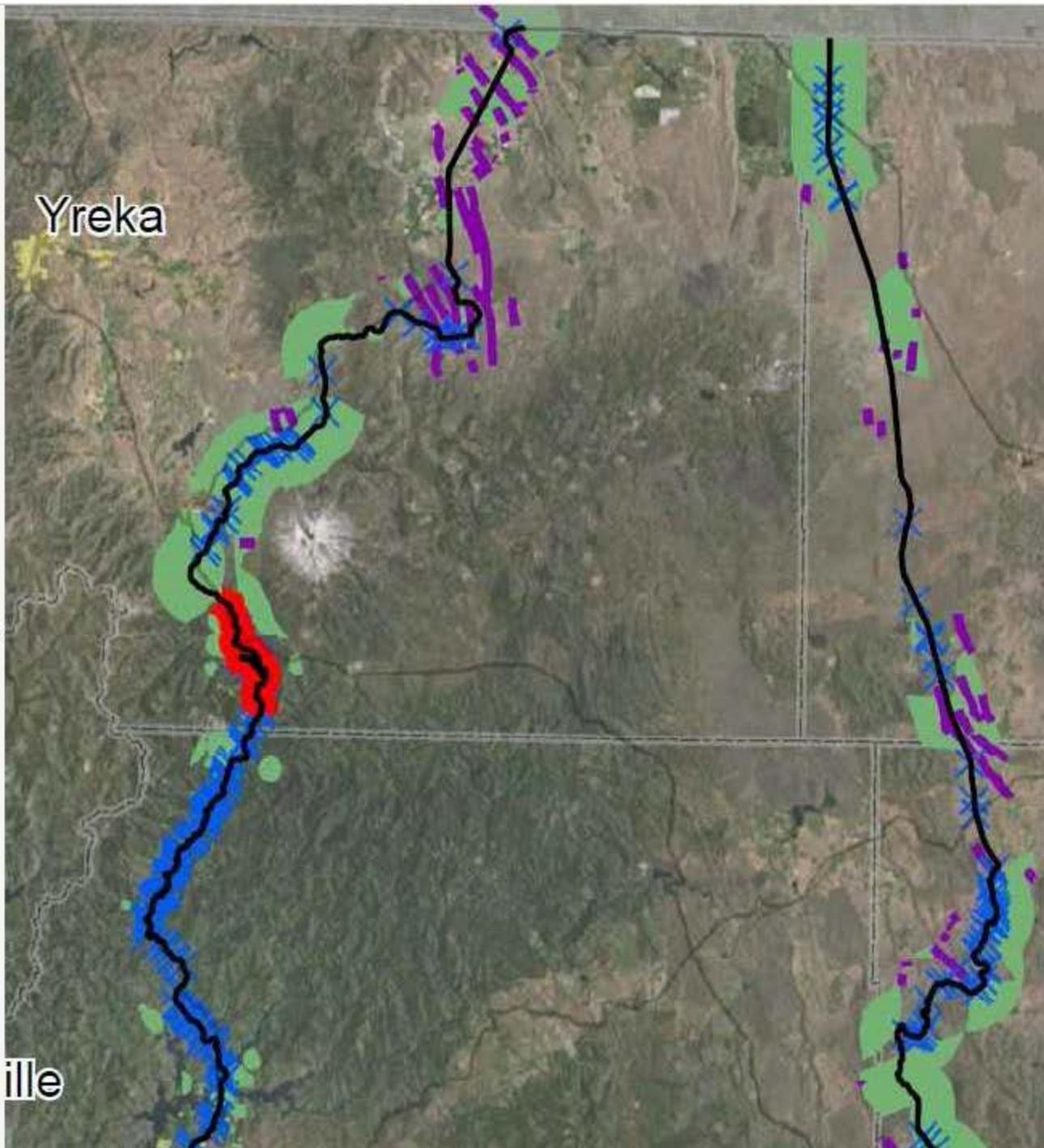
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# All three of the northern routes into CA have stretches of high hazard rail.

- Oregon through Dunsmuir and Redding to Roseville. An herbicide spill from a derailment near Dunsmuir killed everything for 20 miles of the Sacramento River; it took a decade to recover.
- Feather River Canyon, either from the north or from the east. A grain train derailed Nov. 2014. Cars breached as they rolled down the embankment and spilled corn into the river.
- Donner Pass over the Sierra Nevada Mountains requires 5 engines.



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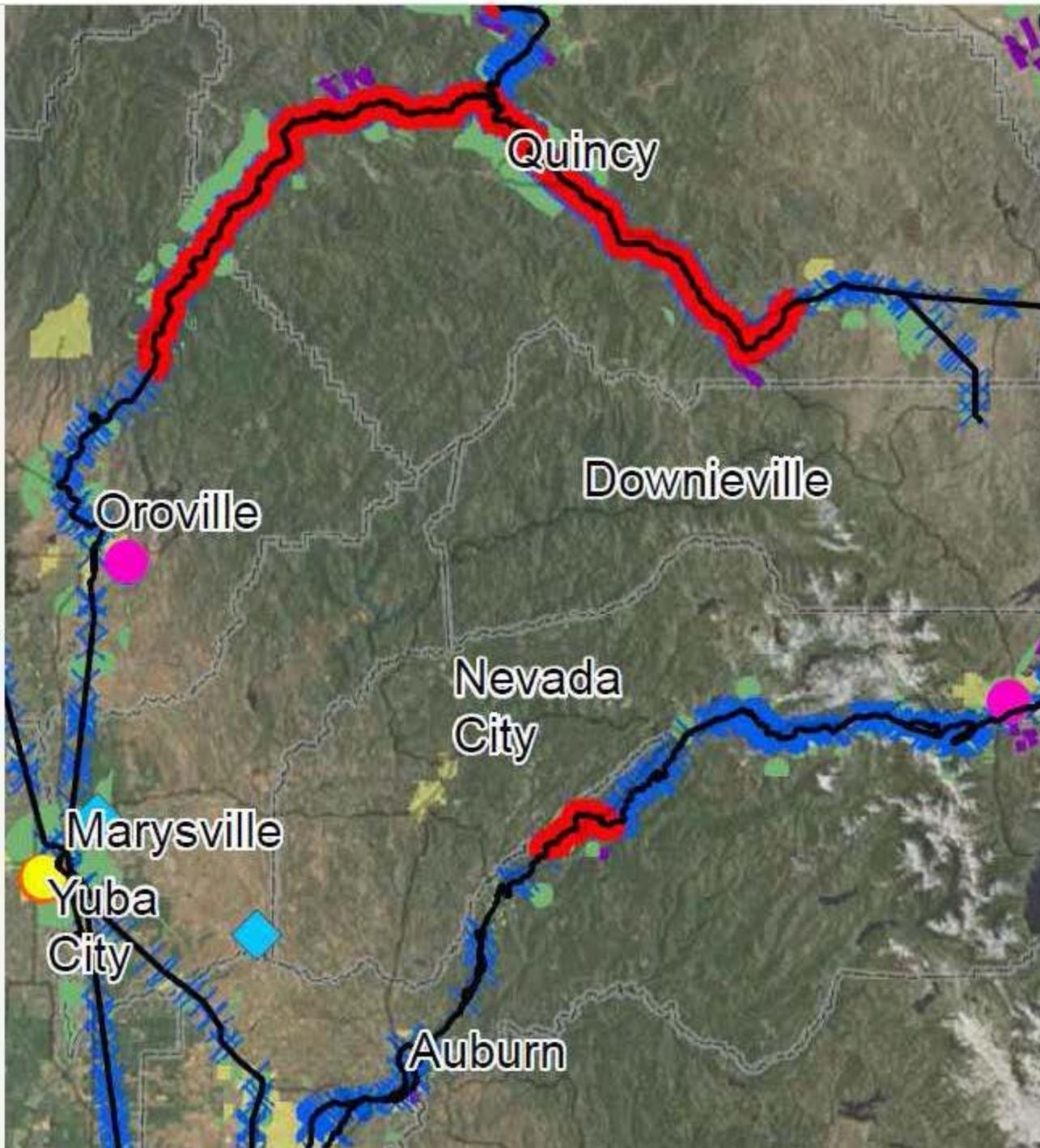
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# Zoom in on the Dunsmuir Area

1. Bright red = high hazard rail area
2. Purple lines = known geologic faults
3. Green = Sensitive Species or Habitat Occurrences
4. Blue = water, rivers,
5. Blue x's = river/creek crossings



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# Zoom in on Feather River Canyon and Donner Pass

- **Pink dot** = Type 1 & 2 teams with the most training;
- **yellow dot** = Type 3 teams to lend assistance
- **Blue squares** = non-certified teams

# HazMat Team Location

- Type 1 & 2 (4/17/2014)
- Type 3 (4/17/2014)
- ◆ Non-Certified HazMat Team (3/10/2014)

Highway

County Line

High Hazard Areas

× Stream Intersection

Known Geologic Fault

BNSF and UPRR Rail Lines

Population Center (Incorporated Area)

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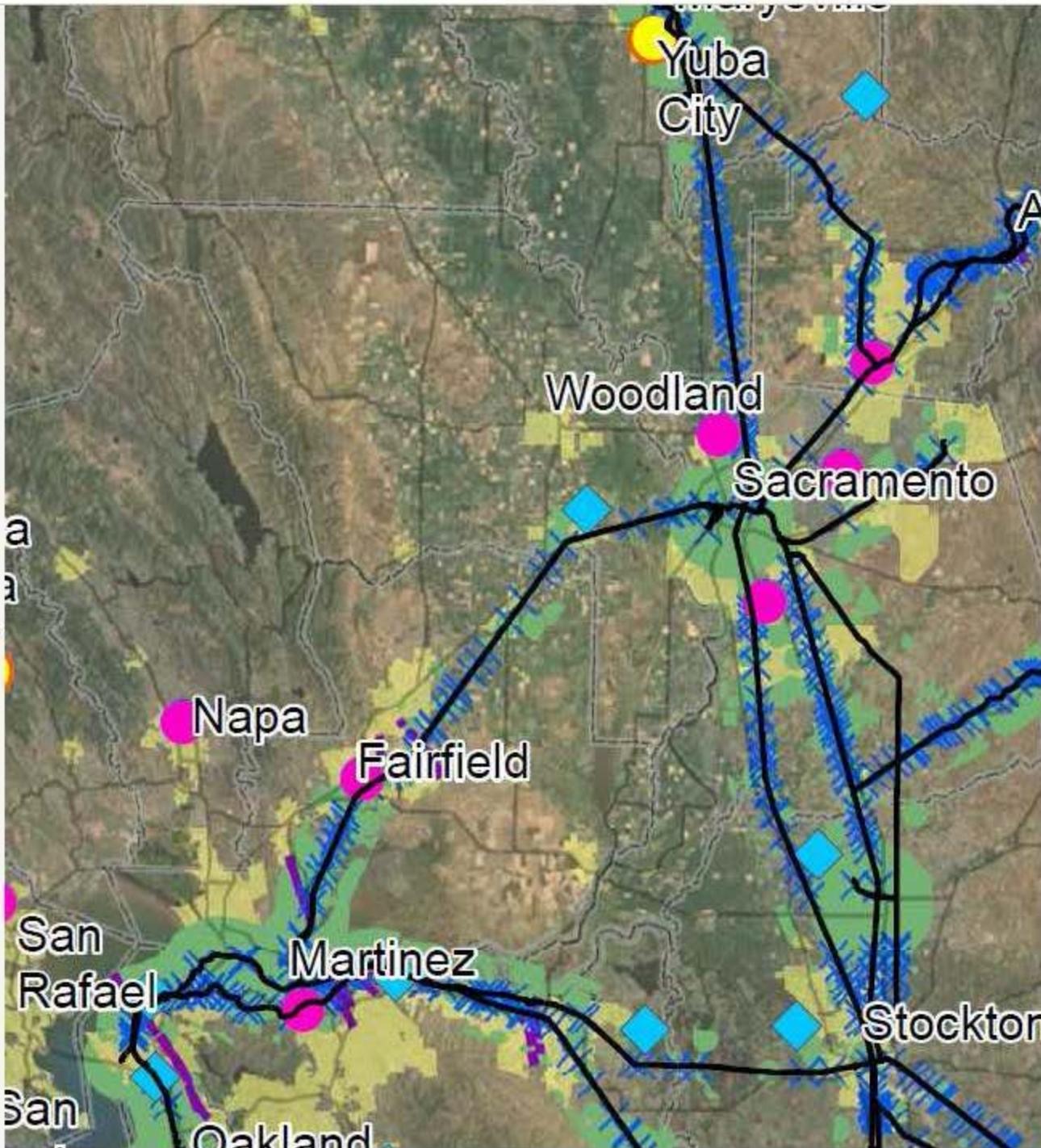
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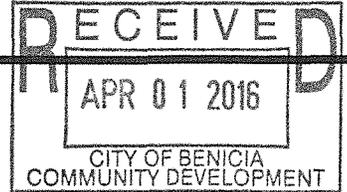
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# Regional Concerns for oil trains from Roseville to Benicia

- Trains run right through neighborhoods & downtowns, even threatening the Capitol.
- Tracks run beside and cross over critical water supplies.
- Trains run through sensitive species and habitat occurrence areas.
- Known geologic faults run close to Benicia and the tracks.
- Recent reports state that sea level is rising faster than predicted. The project is at sea level. What happens if the tracks flood?



**Amy Million**



**From:** KnowWho Services <noreply@knowwho.services>  
**Sent:** Thursday, March 31, 2016 11:00 PM  
**To:** Amy Million  
**Subject:** Public Comment re Valero Crude by Rail Project - Appeal Application No. 16PLN-00009

Dear Benicia City Council,

I'm writing to urge the Benicia City Council to back the Planning Commission's unanimous decision to reject Valero's proposal to transport explosive crude oil by rail through California communities to its refinery in Benicia, and to reject Valero's attempts to delay a final decision on this project.

The Planning Commission rightfully rejected this dangerous project because it "would be detrimental to the public health, safety, or welfare" of Benicians and communities along the oil train routes. The project's impacts include increased air pollution from refinery emissions (which could disproportionately affect low-income communities and communities of color) and oil spills during the offloading process (which could harm the Sulphur Springs Creek riparian corridor).

Furthermore, increases in the transportation of crude by rail has corresponded with an alarming increase in the number of derailments, spills, and explosions. More than five million Californians live in the blast zones of oil train routes, and this project would significantly increase the number of unsafe oil trains rolling through our communities.

As Attorney General Kamala Harris pointed out, the U.S. Department of Transportation found that rail shipments of highly volatile crude oil represent an "imminent hazard," such that a "substantial likelihood that death, serious illness, severe personal injury, or a substantial endangerment to health, property, or the environment may occur." I agree with regulators, elected officials, local residents, nurses, and the the many thousands of Californians who have sounded the alarm about the unacceptable risks posed by this project.

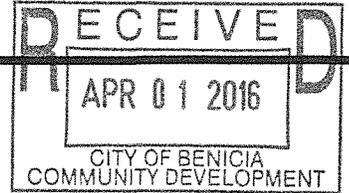
For these reasons, I again urge the City Council to reject Valero's oil train project, as well as its attempts to delay resolution of this issue.

Thank you for your consideration.

Sincerely,

Sue Alexander  
9073 Craydon Cir  
San Ramon, CA 94583-  
suealex22@sbcglobal.net  
(510) 246-1288

**Amy Million**



**From:** KnowWho Services <noreply@knowwho.services>  
**Sent:** Friday, April 01, 2016 11:36 AM  
**To:** Amy Million  
**Subject:** Public Comment re Valero Crude by Rail Project - Appeal Application No. 16PLN-00009

Dear Benicia City Council,

I am speaking for those who can not yet speak out against this proposal - the children in our community and in the communities "up-rail" of Benicia; The children whose schools' playgrounds are in the blast zone of the rail road tracks. The children's health and safety will surely be impacted if Valero's proposal continues in it forward motion and becomes a reality . The children's voices are yet silent; so we must remind you in their behalf, to be mindful of the wide spread local and regional opposition - deny Valero's Permit, deny Valero's request for delay and uphold the Panning Commission's universal decision to deny the oil by rail proposal.

So I write to urge the Benicia City Council to back the Planning Commission's unanimous decision to reject Valero's proposal to transport explosive crude oil by rail through California communities to its refinery in Benicia, and to reject Valero's attempts to delay a final decision on this project.

The Planning Commission rightfully rejected this dangerous project because it "would be detrimental to the public health, safety, or welfare" of Benicians and communities along the oil train routes. The project's impacts include increased air pollution from refinery emissions (which could disproportionately affect low-income communities and communities of color) and oil spills during the offloading process (which could harm the Sulphur Springs Creek riparian corridor).

Furthermore, increases in the transportation of crude by rail has corresponded with an alarming increase in the number of derailments, spills, and explosions. More than five million Californians live in the blast zones of oil train routes, and this project would significantly increase the number of unsafe oil trains rolling through our communities.

As Attorney General Kamala Harris pointed out, the U.S. Department of Transportation found that rail shipments of highly volatile crude oil represent an "imminent hazard," such that a "substantial likelihood that death, serious illness, severe personal injury, or a substantial endangerment to health, property, or the environment may occur." I agree with regulators, elected officials, local residents, nurses, and the the many thousands of Californians who have sounded the alarm about the unacceptable risks posed by this project.

For these reasons, I again urge the City Council to reject Valero's oil train project, as well as its attempts to delay resolution of this issue.

Thank you for your consideration.

Sincerely,

Bea Reynolds  
433 Heather Court  
Benicia, CA 94510-  
breycas@comcast.net  
(707) 750-5453

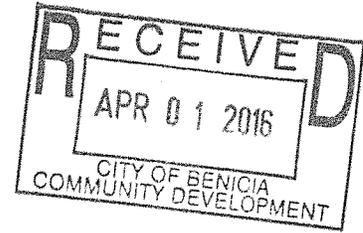
**Valero Crude by Rail Project**  
**Identical Comments**  
**"I support the Valero Crude by Rail project"**

Commenter	Date Received
<b>Individuals</b>	
Eliza Best	1-Apr-16
Michael Wilkinson	1-Apr-16
Bill Mooney	1-Apr-16
Errol Dely	1-Apr-16
Larry Hall	1-Apr-16
Gary McIntyre	1-Apr-16
Steve Callister	1-Apr-16
Mike Evans	1-Apr-16
Brun Johnson	1-Apr-16
Darren Ratekin	1-Apr-16
Jim Ponder	1-Apr-16
Alysia Porter	1-Apr-16
Anothony Van Zandt	1-Apr-16
Robert Hayward	1-Apr-16
John Robnett	1-Apr-16
William Ose	1-Apr-16
Elizabeth Trego	1-Apr-16
Joe Muehlbauer	1-Apr-16
Karen Quain	1-Apr-16
Jack Bell	1-Apr-16
Eddie Yarbrough	1-Apr-16
Iren Suhami	1-Apr-16
Brigit Versace	1-Apr-16
Michael Costa	1-Apr-16
Ed Bendix	1-Apr-16
Pierre Bidou	1-Apr-16
Dr F. Paul Brady	1-Apr-16
Michael Purdy	1-Apr-16
Robert Cline	1-Apr-16
Robert Livesay	1-Apr-16
Jason Wilde	1-Apr-16
Autumn Parrott	1-Apr-16
Eric Hogleund	1-Apr-16
Gary and Virginia Cady	1-Apr-16
Frank Hartig, Jr.	1-Apr-16
Richard Lundin	1-Apr-16
Lori Mathews	1-Apr-16
Paul Modjesky	1-Apr-16

## Amy Million

---

**From:** Eliza Best <eliza.best1970@gmail.com>  
**Sent:** Friday, April 01, 2016 2:29 PM  
**To:** Amy Million  
**Subject:** I support the Valero Crude by Rail project



Dear Ms. Million,

I write today urging City Council to stand with Benicians in support of Valero's Crude by Rail Project. Simple on-site infrastructure projects such as these create new jobs and generate millions of dollars in local tax revenues that help keep our community, economy and business running.

I am also writing to support the continuance for a Surface Transportation Board opinion.

An opinion from the STB should:

- provide City Councilmembers with clear legal guidance on federal railroad operation preemption laws.
- protect our City from potential, unnecessary, costly litigation.

The City of Benicia and independent experts have spent more than three years closely reviewing this project and developing a comprehensive Final Environmental Impact Report (FEIR). These analyses go well beyond California Environmental Quality Act (CEQA) requirements. Most of the analyses concerned rail activity which the railroad already has the legal authority to provide. In addition, the analyses illustrated the project's many benefits for Benicia.

According to the DEIR, RDEIR, FEIR and economic analyses, this project WILL:

- Create 20 permanent, local, well-paying jobs and require an additional 120 skilled craftsman jobs during construction;
- Improve air quality and help California and the Bay Area achieve its climate goals by reducing greenhouse gas emissions by 225,000 metric tons per year;
- Operate under current air permits with the Bay Area Air Quality Management District (BAAQMD);
- Protects home values. Benicia's median home value is higher than those of neighboring communities including Vallejo and Martinez; Benicia's home values increased by 6% last year and are projected to grow even further in 2016. The Refinery supports Benicia's higher median home value by providing significant funding for improved local services and facilities.

Importantly, according to these analyses this project:

- Will not create additional health risks associated with project emissions;
- Will not change the type or amount of crude that the refinery processes;
- Will not increase process emissions;
- Will not change refinery operations.

Projects like these are economic drivers that help to make our community the best it can possibly be, and I strongly urge City Councilmembers to stand with Benicians in supporting the well-being of our City.

Sincerely,

Eliza Best  
105 Carolina Dr  
Benicia, CA 94510