



Kevin Buchan
Senior Manager
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October 8, 2021

Evelia Rodriguez
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Department of Toxic Substances Control
1001 I Street
Sacramento CA 95814

sent via email: Evelia.Rodriguez@dtsc.ca.gov

Subject: WSPA Comments on the Department of Toxic Substances Control's SB 673 Cumulative Impacts and Community Vulnerability Draft Regulatory Framework (May 2021).

Dear Ms. Rodriguez:

The Western States Petroleum Association (WSPA) appreciates this opportunity to provide comments on the above referenced document. WSPA is a non-profit trade association representing twenty-six companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California, Arizona, Nevada, Oregon, and Washington.

We appreciate that DTSC has provided some additional clarification as to how the framework elements would be applied in a facility-specific context. DTSC has established a lower bound threshold for determining the applicability of the permitting enhancements (a composite CalEnviroScreen score of 60%). The revised framework document includes a few case studies that provide high level illustrations of how the screening and initial pathway designation process would work for hypothetical facilities. However, the document still lacks critical details, such as how DTSC will weigh individual facility characteristics for purposes of initial and final tiered pathway designations, and how it will address circumstances where available information indicates that the principal drivers of community vulnerability and cumulative impacts are unrelated to permitted hazardous waste facilities. It is difficult to provide meaningful commentary when so many elements are described only at a conceptual level and critical details remain undefined or in flux. Moreover, several of the framework elements lack a

solid scientific foundation, and the process is dominated by discretionary decisions that diminish certainty for both communities and permittees.

WSPA also incorporates by reference our previous comments on DTSC's initial SB 673 Track II framework document (January 2019). Several of those comments are not addressed in the revised draft framework and remain relevant to development of future regulations. For example, DTSC still has not addressed the potential negative effects of the framework design on community-facility relations resulting from preliminary facility pathway designations that are likely to change during the permit renewal process. Depending on where a facility is in its permit cycle, the initial designation may stand for several years, creating public perceptions about the impact of the facility on surrounding communities and expectations about the need for more stringent permit conditions. In these cases, community representatives may not support reassignment to a lower tier regardless of the strength of the available evidence. We request that DTSC reconsider these prior comments as it continues to evaluate public comments and further pre-rulemaking changes to the revised framework.

The Revised Framework Disregards CalEnviroScreen Limitations

DTSC intends to use CalEnviroScreen (CES) "as the primary tool to measure community vulnerability and cumulative impacts" for purposes of determining whether, and under what conditions, a hazardous waste facility should be permitted to operate. The revised framework document suggests that CES has widespread application in environmental policy and regulatory decision making, but CES was developed for much more specific purposes that are not compatible with this proposed application. These purposes were codified at Health and Safety Code Section 39711, which directs Cal-EPA to designate disadvantaged communities for purposes of guiding investment of Greenhouse Gas Reduction Fund (GGRF) revenues. The enabling legislation - SB 535 (De Leon, 2012) - requires that Cal-EPA direct 25% of GGRF revenue to projects benefitting disadvantaged communities designated pursuant to Section 39711. As discussed further in the attached document, Cal-EPA also acknowledges design limitations that should preclude the kind of site-specific regulatory application of CES envisioned in DTSC's revised draft framework document.

DTSC is proposing to use "the maximum CalEnviroScreen 3.0 score within a set distance surrounding a facility as the metric for the initial screening" to determine facility applicability and facility tiered pathways. DTSC asserts that this is "the most health protective approach." However, the example cited in the revised framework document (Figure 9, page 28) illustrates how ineffective this approach would be as a screening tool. It identifies a small sliver of a census tract at the outermost edge of the Area of Analysis (AoA) with a CES score above 90%.

Even though the vast majority of the AoA has a CES score of 75% or less, the 90% sliver would define the initial facility ranking (high). This approach strongly biases the draft facility tiered pathway designation toward the highest tier and would create expectations for corresponding facility actions and permit conditions, regardless of what a more data driven analysis would indicate. A weighted average of census tracts within the AoA is more likely to be representative of community vulnerability around the facility.

DTSC also anticipates incorporating updated versions of CES into future regulations. OEHHA recently completed public workshops on a fourth version of CES. The public comment period for draft version 4.0 closed on May 14, 2021. If the version 4.0 changes are incorporated by reference into DTSC's cumulative impacts permitting regulation, stakeholders will have had no opportunity to comment on the potential impact of those changes on facilities subject to the DTSC regulation. We recommend that any substantive changes made to CES or to other data, tools or methods used in DTSC's cumulative impacts permitting regulation, that occur after DTSC adopts the initial regulation, should be subject to a new rulemaking process that satisfies applicable California Administrative Procedures Act requirements.

For all of these reasons, use of CES to support SB 673 implementation should be limited to identification of census tracts around permitted facilities that may warrant further site- and facility-specific investigations to determine if any of the observed impacts are attributable to facility operations.

DTSC Must Establish Rigorous QA/QC Criteria to Guide Use of Supplemental Information

The revised draft framework envisions using "supplemental information" to adjust draft facility tiered pathway designations. Given the potential influence of this information on facility action requirements and future permit conditions, we support DTSC's stated intention to "include quality assurance/quality control standards in the regulation to ensure that any data, information, or tools submitted to the Department by the public meet scientific standards and is well documented and verifiable by multiple sources." We also appreciate DTSC's solicitation for input on criteria that should be used to screen supplemental information.

Section III of the document lists *possible* QA/QC standards, including publication in scientifically peer reviewed reports, or reports issued by the National Academy of Sciences or international, federal, state, or local regulatory agencies responsible for implementing environmental or public health laws. This list is appropriately characterized as a starting point. It is important to recognize that scientific journals have varying standards for determining the quality of research selected for publication and for external peer review. Similarly, the standards employed by

different regulatory jurisdictions will vary based on differences in statutory mandates, agency expertise, and available resources. More rigorous standards are likely to produce information that is more accurate and therefore better suited to support enforceable regulatory decisions. DTSC's desire for flexibility to "include a range of research types" should not compromise the quality of the information it uses to support such decisions.

We recommend that DTSC employ a best practices approach to establishing QA/QC criteria for supplemental information, drawing from guidance for data quality assessment developed by US EPA¹, the National Institute of Standards and Technology,² the Organisation for Economic Cooperation and Development,³ Klimisch scoring⁴ and other credible sources. DTSC's QA/QC criteria should also incorporate more recently developed protocols for systematic review of evidence used to support public health decision-making. A 2021 report issued by the National Academies of Science on the use of systematic review by US EPA in Toxic Substances Control Act risk evaluations states that "well-conducted systematic reviews methodically identify, select, assess, and synthesize the relevant body of research, and clarify what is known and not known about the potential benefits and harms of the exposure being researched."⁵ The National Institute of Environmental Health Sciences has developed a "Risk of Bias Tool" that evaluates whether the design and conduct of a given study compromises the credibility of the reported link between exposure and outcome.⁶ DTSC's compilation of QA/QC criteria should employ the best available standards and methods to determine if supplemental information obtained from various sources are of the right type, quality, and quantity to support their intended use.

We note that the only examples of supplemental information cited in the case studies in Appendix 4 involve new community vulnerability indicators proposed by the University of California pursuant to research conducted under contract to DTSC and the California Air Resources Board (CARB)⁷. While we appreciate that these indicators were derived from state-

¹ <https://www.epa.gov/sites/default/files/2015-06/documents/g9-final.pdf>

² <https://www.nist.gov/nist-information-quality-standards>

³ Organisation for Economic Cooperation and Development, *Manual For Investigation of HPV Chemicals*, Chapter 3: Data Evaluation: <https://www.oecd.org/chemicalsafety/risk-assessment/49191960.pdf>

⁴ Klimisch et al., A Systematic Approach for Evaluating the Quality of Experimental Toxicological and Ecotoxicological Data: <https://pubmed.ncbi.nlm.nih.gov/9056496/>

⁵ <https://www.nap.edu/resource/25952/TSCA%204-pager%20final.pdf>

⁶ https://ntp.niehs.nih.gov/ntp/ohat/pubs/riskofbiastool_508.pdf

⁷ Integrating a Community Cumulative Impacts Framework in the implementation Of AB 617 and SB 673; Final Report: Contract CARB No. 17RD035/DTSC No.17-T4471; Principal Investigator: Rachel Morello-Frosch, PhD, MPH, University of California, Berkeley, Department of Environmental Science Policy and Management & School of Public Health.

sponsored research, our comments on the UC Study presented in the attached document raise important questions about the validity of using them to inform adjustment of draft facility tiered pathway designations.

DTSC's case studies should be expanded to demonstrate how the agency would utilize other types of supplemental data and tools identified in Section III of the revised framework document to inform pathway designations, such as "data on health risks generated pursuant to hazardous waste facility risk assessment or a facility risk assessment pursuant to the AB 2588 Hot Spots Information and Assessment Act" or "emerging health assessment or toxicological evaluation methodologies."

Finally, while health risk assessments for individual hazardous waste facilities may not address cumulative impacts in the manner envisioned by SB 673, they do provide critical information on the contribution of these facilities relative to other anthropogenic and natural hazards that may exist in the community of interest. Relative source contribution analysis is a requirement for the development of community emissions reduction programs to reduce high cumulative exposure burdens under AB 617^{8,9}. The purpose of this analysis to ensure that investment of state resources and regulatory responses are proportional to the impact of specific sources, and that those actions will yield material benefits in the target communities. For the same reasons, relative source contribution analysis should be a central feature in DTSC's evaluation of cumulative impacts in the hazardous waste facility permitting context.

Anticipated Uses of CalEnviroScreen and Supplemental Information Would Require External Scientific Peer Review

The revised framework document states that use of supplemental information *may require* an external scientific peer review pursuant to Health and Safety Code Section 57004 as a condition of a future rulemaking. DTSC acknowledges that this code section requires the agency to "submit to an outside party for external scientific peer review all proposed rules that have a scientific basis." Inevitably, any rulemaking requiring use of: 1) CalEnviroScreen, 2) new community vulnerability metrics and other recommendations from a state-sponsored

⁸ Health and Safety Code §44391.2(b)(2) requires development of "A methodology for assessing and identifying the contributing sources or categories of sources, including, but not limited to, stationary and mobile sources, and an estimate of their relative contribution to elevated exposure to air pollution in impacted communities identified pursuant to paragraph (1)"

⁹ Health and Safety Code §44391.2(b)(3) further requires "An assessment of whether a district should update and implement the risk reduction audit and emissions reduction plan developed pursuant to Section 44391 [AB 2588 HRAs] for any facility to achieve emission reductions commensurate with its relative contribution, if the facility's emissions either cause or significantly contribute to a material impact on a sensitive receptor location or disadvantaged community, based on any data available for assessment pursuant to paragraph (1) of subdivision (b) or other relevant data."

University of California research project, 3) information obtained from the scientific literature and 4) data from regional or local research projects to inform facility actions and enforceable permit conditions would be subject to this code section. The external scientific peer review process is an important safeguard against agency reliance on scientifically deficient information. The language in the draft framework should be revised to clarify that a 57004 peer review would be required to support a future regulation.

Mitigation Measures Exceed DTSC's Regulatory Authority

Elements 3 and 4 require covered facilities to submit workplans with their permit applications that detail how the facility will mitigate cumulative impacts in the community. The workplan would require the permit applicant to "evaluate the data for indicators contributing to community vulnerability in the Area of Analysis and include mitigation measures selected from a menu of options specified in the regulation." The menu of options includes several measures that could become enforceable permit conditions, but which DTSC has neither the expertise to evaluate nor the authority to enforce. Examples include replacing diesel powered trucks with zero emission trucks, installation of Best Available Control Technology or Lowest Achievable Emission Rate technology for criteria air pollutants or Maximum Achievable Control Technology for toxic air contaminants, and development of community air or water quality monitoring networks. DTSC does acknowledge the need to coordinate monitoring measures with "other state and local environmental agencies with applicable jurisdiction," but does not address its lack of authority to enforce other measures, or the need to avoid actions that would duplicate measures already being developed or implemented by authorized agencies.

We note that DTSC's regulatory authority is derived entirely from the Hazardous Waste Control Law, and caselaw establishes that any agency action reaching beyond the scope of its statutory authority is void¹⁰. As it relates to air emissions, the state Legislature has vested authority to regulate mobile sources in the California Air Resources Board (CARB) and authority to regulate stationary sources with local and regional air pollution control and air quality management districts.¹¹ Where a statute grants authority to one agency, it is presumed to extend only to that agency. Thus, by vesting authority to regulate air emissions exclusively in CARB and local air districts, the Legislature prohibited DTSC from regulating air emissions.

¹⁰ Ass'n for Retarded Citizens v. Dep't of Developmental Serv., 38 Cal.3d 384,391 (1985) ("Administrative action that is not authorized by, or is inconsistent with, acts of the Legislature is void."); City of South Pasadena v. Slater, 56 F. Supp 2d 1106, 1144 (C.D. Cal. 1999) ("An administrative agency's failure to comply with the law invokes a public interest of the highest order: the interest in having government officials act in accordance with the law").

¹¹ Health and Safety Code §39002 and §40000

Minimum Setback Distances Lack Sufficient Scientific Basis

Element 3 proposes minimum setback distances for new facilities or major permit modifications at existing facilities – from a quarter mile to a half mile – depending on the type of facility and the maximum CalEnviroScreen score within the Area of Analysis (AoA). These features are adapted from the UC research and appear to apply independently of risk-based permit conditions developed by DTSC or other regulatory agencies. The analysis attached to this letter identifies several concerns with the UC Study findings that call into question the scientific basis for the AoA approach and the minimum setback distances, which would also apply under Element 6. In addition, DTSC’s clarification that “setback distances *may not apply* to existing facilities that are subject to new permitting requirements, such as a new hazardous waste classification or a new regulation for an existing hazardous waste activity” (emphasis added) is unhelpful because it leaves open the possibility that minimum setback distances could still be used for these or other, yet to be specified purposes.

The revised framework document also states that “The workplan must address an indicator or indicators of community vulnerability and cumulative impacts that have a high score in the AoA for the facility either (1) in CalEnviroScreen or (2) that has been submitted by the public as supplemental data on cumulative impacts or community vulnerability for the facility and that meets the criteria for supplemental information.”

Both the application of default AoAs and setbacks, and the requirement that a facility operator address screening-level indicator(s) of community vulnerability and cumulative environmental and socio-economic impacts, are inconsistent with cumulative environmental impact assessment practice and the reasonable nexus for mitigation measures required by the California Environmental Quality Act (CEQA). Under CEQA, lead agencies are required to analyze potential environmental impacts to sensitive receptors caused by proposed projects.¹² In addition to addressing direct environmental impacts, a CEQA Environmental Impact Report (EIR) must investigate potential cumulative environmental impacts when potential project impacts are determined to be “cumulatively considerable.”¹³ Cumulative impacts are defined as two or more individual effects which, when considered together, are considerable or compound or increase other environmental effects. The evaluation of cumulative impacts must reflect the severity of cumulative impacts and their likelihood of occurrence.¹⁴ A cumulative impact analysis will be considered inadequate if it lacks “a minimal degree of specificity or detail” and is “devoid of any reasoned analysis.”¹⁵

¹² Citizens for Responsible Equitable Environmental Development v. City of Chula Vista (2011) 1 97 Cal.App.4th 327, 332

¹³ 14 Cal. Code Reg. § 15065(a)(3). 14 Cal. Code Reg. § 15130(a)

¹⁴ 14 Cal. Code Reg. § 15130(b).

¹⁵ Whitman v. Board of Supervisors (1979) 88 Cal. App. 3d 397, 411, 151 Cal. Rptr. 866.; See, e.g., Sierra Club v. County of Fresno (2018) 6 Cal. 5th 502, 521, 241 Cal. Rptr. 3d 508, 431 P.3d 1151; see also City of Long Beach v.

Undefined “Weight of Evidence” Approach and “Specific Baseline” Increases Uncertainty in Permitting Process

Element 5 would create a weight of evidence (WOE) approach for determining whether to reject a permit application, revoke an existing permit or impose more restrictive conditions on facility operation. The WOE analysis would expand the Department’s existing discretion by incorporating the factors specified in the statute (e.g., number and types of past violations, indicators of community vulnerability, setback distances, adequacy of financial assurances, etc.). The revised framework document does not define these additional factors beyond the statutory language, nor does it define the “specific baseline” that would be the frame of reference for determining facility actions. Thus, it is impossible to know how DTSC would weigh them in the context of a WOE analysis.

Additionally, with regard to the listed financial responsibility and financial assurance criteria, we respectfully remind DTSC that SB 1082 (Calderon, 1993) gave sole authority to the Water Boards for 1) continued oversight of corrective action (including financial assurance) if the facility was currently undergoing corrective action, and 2) oversight of any future corrective action should there be a release of hazardous waste or hazardous substances. DTSC typically issues a permit for these facilities if they have regulated hazardous waste units, but with respect to corrective action, the DTSC permits should only reference applicable Water Board orders. DTSC should not issue separate corrective action requirements for SB 1082 facilities through a future SB 673 rule making or any permits issued pursuant to such rulemaking.

The statement of findings described in this section appears to be limited to circumstances where DTSC would grant the permit application or retain the existing permit. There is no indication that similar evidentiary standards would apply in cases where DTSC proposes to reject an application, revoke a permit, or impose more stringent conditions on a permit. This section also indicates that DTSC “reserves the right to require a facility to reduce its size, scope, or footprint through the permit process to protect community and environmental health.” We note that any such actions would likely run afoul of regulatory takings jurisprudence.

These features would introduce greater uncertainty into the permitting process and increase the risk of permit denial, revocation or imposition of new standards that could render the facility inoperable, with limited administrative recourse for the facility operator.

City of Los Angeles (2018) 19 Cal. App. 5th 465, 487; Bakersfield Citizens for Local Control v. City of Bakersfield (2004) 124 Cal. App. 4th 1184, 1216, 22 Cal. Rptr. 3d 203

Violation Scoring Enhancements Lack Sufficient Scientific Basis

Element 6 proposes a new scheme for weighting violations if a facility is located in an environmental justice area or within specified distances of sensitive land uses. DTSC is proposing to amend its existing Violation Scoring Procedure (VSP) regulation to increase scores for “certain Class 1 violations” (undefined) by 25-100% for facilities in census tracts with a maximum CES score of 75%. The extent of the enhancement would depend on facility proximity to sensitive receptors. As with the minimum setback distances envisioned in Elements 3 and 4, the violation scoring adjustments appear to be based on arbitrary distances between the facility and sensitive receptors ranging from 0.25 mile to 1.0 mile, rather than any actual evidence indicating that any particular violation would impact any receptors within these isopleths.

Under the VSP regulations, this approach is likely to result in reassignment of some facilities from the “conditionally acceptable” compliance tier to the “unacceptable” tier, requiring DTSC to initiate a process to deny, suspend, or revoke operating permits for these facilities. These actions could be unwarranted in many cases. The potentially severe consequences of reassignment under the VSP regulation necessitate a more rigorous and data-driven approach to any supplemental weighting scheme for permit violations.

Process for Integration of New Scientific Information Must be Transparent and Predictable

Element 7 states DTSC’s commitment to “incorporate advances in science and technology to ensure that the most current and accurate data and information are used to assess cumulative impacts and community vulnerability.” While we support this goal in concept, DTSC does not discuss the potential frequency of this review, or how new information would be incorporated into the permitting process (e.g., through new rulemaking or administrative guidance). Absent a more clearly defined process, with opportunities for stakeholder review and comment and external scientific peer review, the standards governing permit reviews and approvals would become a moving target for both community stakeholders and permittees.

DTSC must also ensure that the tools and methods it adopts in the baseline regulation incorporate the best available information. For example, CalEnviroScreen Version 4.0, which is still under development at OEHHA, uses air toxics data for the South Coast Air Basin that predates the South Coast Air Quality Management District’s recently completed Multiple Air Toxics Exposure Study (MATES) V. MATES V documents a 54% reduction in multi-pathway cancer risk relative to MATES IV (2012 data), from implementation of measures to reduce emissions of diesel particulate matter and other toxic air contaminants. Given changes of this

magnitude, use of outdated, inaccurate data in a methodology that is central to the envisioned permitting scheme is likely to result in misclassification of some facilities, exposing them to new permit conditions that may not be necessary to protect public health, or worse, to denial of a permit application or revocation of an existing permit.

Additional Procedural Complexity Will Further Delay an Already Indeterminate Process

Every step of the permitting process envisioned in the revised draft framework would be subject to extensive public review and comment including 1) the draft facility tiered pathway designation, 2) a pre-permit application process involving a facility-developed community engagement plan that includes a community advisory group and community meetings, 3) a permit application review with a DTSC-developed public participation plan, 4) DTSC's proposed final facility tiered pathway designation and 5) a draft facility action workplan with community outreach and engagement elements. Each of these steps would add complexity and delay to an existing permitting process that already takes several years to complete, even under optimal circumstances. The current process, which has allowed many facilities to operate under interim status well beyond their designated permit terms, has been the subject of extensive public debate leading to adoption of multiple administrative and legislative reforms. The most recent of these, SB 158 (2021), creates a five-member Board to oversee implementation of DTSC's core programs, and is likely to result in additional changes to the hazardous waste permitting process that are yet to be defined.

We support public engagement in the permitting process, and we believe that communities and facility operators deserve much more transparency and predictability than the current process has provided. For these reasons, DTSC must balance additional public participation mechanisms with substantive process streamlining measures that facilitate transparent processing of permit renewals within reasonable timeframes.

Need for Additional Public Review of Supporting Research

In addition to the above recommendations, DTSC's framework development process should include a separate opportunity for public review and comment on the final report from the UC Cumulative Impacts Study. We appreciate that DTSC has made the documents available upon request, but given the extent to which the revised draft framework relies on findings and recommendations from this research, a more comprehensive public review of the UC Study is both appropriate and necessary. We look forward to a future presentation, public discussion and comment periods on these materials.

Ms. Evelia Rodriguez
October 8, 2021
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Sincerely,

A handwritten signature in black ink that reads "Kevin Buchan". The signature is written in a cursive style and is enclosed within a thin black rectangular border.

cc: Meredith Williams – DTSC Director
Jared Blumenfeld – Cal-EPA Secretary
Christine Hironaka – Governor’s Office

Preliminary Comments on University of California Study Report Integrating a Community Cumulative Impacts Framework in the Implementation Of AB 617 and SB 673

(FINAL REPORT: CONTRACT CARB No. 17RD035/DTSC No.17-T4471; Principal Investigator:
Rachel Morello-Frosch, PhD, MPH, University of California, Berkeley, Department of
Environmental Science Policy and Management & School of Public Health

Overview of Element 3 (Development and Application of Geographic Indicators for Cumulative Impact Assessment)

According to the UC Study report, “The objective of this third contract element was twofold: 1) to conduct spatial analysis to characterize communities near currently operating hazardous waste facilities regulated by DTSC with respect to their proximity to multiple environmental hazards and vulnerability to the health impacts of pollution; 2) generate statewide data layers of supplemental metrics not currently included in CalEnviroScreen (CES) for CARB’s (Office of Community Air Protection) and DTSC.”

The UC Study proposes to add the following thirteen additional community vulnerability/cumulative impact metrics to the 20 metrics already included in the Office of Environmental Health Hazard Assessment’s CalEnviroScreen Version 3.0:

- Mean CalEnviroScreen 3.0 Score & Percentile;
- Maximum CalEnviroScreen 3.0 Score & Percentile;
- Racial/ethnic composition (% people of color);
- Domestic drinking water well count;
- Active oil and gas well count;
- Average voter turnout in the 2012 and 2016 general elections (% of registered voters casting votes);
- Sensitive Land Use (SLU) Count – Parks;
- SLU Count – Prisons;
- SLU Count – Healthcare Facilities;
- SLU Count – Senior Care Facilities;
- SLU Count – Schools;
- SLU Count – Childcare & Daycare Facilities; and
- SLU Count (All) – Parks, Prisons, Healthcare Facilities, Senior Care Facilities, Public Schools, Childcare and Daycare Facilities.

“Areas of Analysis” Construct Lacks a Clear Scientific Basis

The authors considered 13 different “buffer distances” ranging from 0.1 to 7 miles to define Areas of Analysis (AoA) for purposes of assessing “the characteristics of communities” surrounding permitted hazardous waste facilities. The UC Study report provides no explanation of the scientific basis for these benchmarks beyond general references to studies identifying “adverse health effects associated with residences more than 0.25 miles and up to 6 miles from facilities and hazardous waste sites.” The report does not explain how the findings reported in these studies are the result of exposures to hazardous materials or other environmental stressors originating from discrete facilities or sites. It is also unclear whether findings from studies conducted in other states (e.g., New York and Washington) or other countries (e.g., England) are relevant to California, given that the environmental laws, regulations and permit conditions that apply to California facilities tend to be significantly more stringent than corresponding requirements for similar facilities operating in other jurisdictions.

By extension, there is no clear scientific justification for DTSC’s proposed use of these AoA benchmarks as triggers either for minimum setback distances for new and modified facilities (DTSC framework Element 3) or for permit revocation proceedings (DTSC framework Element 6).

Process for Selecting Additional Community Vulnerability Metrics is Not Defined

According to the UC Study report, the 13 supplemental metrics “were chosen in consultation with DTSC and CARB staff.” However, nothing in the report or the companion document, “Cumulative Impacts Near California Hazardous Waste Operating Facilities: Data Analysis and Methods,” explains the process by which these metrics were selected. Neither document offers any insight into other potential metrics that may have been considered, or why the authors rejected them.

Proposed Supplemental Metrics are Not Suitable for Regulatory Purposes

One of the stated purposes of Element 3 is to supplement the existing community vulnerability and cumulative impact metrics in CalEnviroScreen (CES) Version 3.0. Version 3.0 includes a statement from the Cal-EPA Secretary explaining some of the limitations of this screening tool:

“To ensure proper use and understanding we explained that the tool is not a substitute for a cumulative impacts analysis under the California Environmental Quality Act (CEQA). Nor is the intent to restrict the authority of government

agencies in permit and land-use decisions. Furthermore, CalEnviroScreen may not be the appropriate tool to guide all public policy decisions. Other tools – or individual data layers – might be more useful for different purposes, such as for identifying communities facing socioeconomic disadvantage or health disadvantage.”

The UC Study report states that CES “is widely used both by policy-makers, practitioners, academics and community organizations in order to identify and implement policies that are sensitive and responsive to environmental inequities.” Actual use of CES to date has been to identify disadvantaged communities and to prioritize expenditure of grant funding to help mitigate environmental impacts in those communities. This use is consistent with state law directing Cal-EPA to identify disadvantaged communities for purposes of allocating Greenhouse Gas Reduction Fund Revenues.¹⁶ It is inappropriate to use screening metrics developed for this purpose to support regulatory decisions affecting individual facilities.

OEHHA closed the public comment period on CES version 4.0 (May 2021) before the UC Study became available to the public (June 2021). It is unclear how the new metrics and “data layers” would be incorporated into CES, or whether the public would have an opportunity to comment on those proposed enhancements in the CES context. Thus, we request that DTSC either: 1) suspend further consideration of CES in SB 673 implementation, or 2) suspend the framework development process until CES Version 4.0 is adopted and DTSC is able to clarify how use of that version would support the stated objectives of the permitting framework without violating DTSC’s obligations to establish nexus under the California Hazardous Waste Control Law and CEQA.

Relevance of Oil and Gas Metric to Hazardous Waste Permitting is Not Established

The UC Report does not establish the relevance of the “active oil and gas well count” metric to a statewide permitting process for hazardous waste facilities. There are relatively few facilities with hazardous waste operating permits in the San Joaquin Valley, where most California oil and gas production activity occurs, and there is minimal oil and gas production in the Bay Area, which is one of the two regions with the highest concentrations of hazardous waste facilities. Moreover, there are no oil and gas production sites in California that hold hazardous waste operating permits.¹⁷ And, as noted below, the 20 community vulnerability metrics in CES

¹⁶ Health and Safety Code Sections 39117 et. seq.

¹⁷ https://www.envirostor.dtsc.ca.gov/public/report_permitted_public.asp

version 3.0 already include multiple pollution burden indicators that will capture potential impacts from oil and gas operations.

Oil and Gas Metric is Duplicative

The UC Study reports state that active oil and gas wells “are associated with diverse environmental hazards including air and water pollutants, noise, odors, excessive and inappropriate lighting, and undesired land use changes.” Some of these asserted impacts are aesthetic and subjective, and not comparable to quantifiable environmental impacts. More importantly, the impacts cited above have already been identified, analyzed and as necessary mitigated through CEQA reviews, regulations and permit conditions. For example, in the San Joaquin Valley, Kern County recently adopted an updated Zoning Ordinance and Environmental Impact Report for local permitting of oil and gas production operations. Finally, the UC Study’s broad-brush statement about “undesired land use changes” is misplaced in the context of oil and gas well permitting as changes generally do not occur in areas where oil and gas operations are proximate to residential or urban centers. In most cases, these facilities are established, and land use changes would only occur in remote areas.

Additionally, CES Version 3.0 already includes metrics to assess a broad range of potential environmental impacts, including multiple air quality indicators (ozone, PM 2.5, diesel particulate matter), multiple water quality indicators (drinking water contaminants, groundwater threats, impaired water bodies), toxic releases from facilities and environmental effects from hazardous waste generators and contaminated sites. Scores for these metrics contribute to the composite CES scores for all census tracts that include oil and gas operations. Including a separate catch-all oil and gas well count metric would inappropriately double-count the environmental impacts of oil and gas operations.

Referenced Studies are Prone to Bias and Confounding

The UC Study reports cite population-level epidemiology studies reporting associations between oil and gas development and various adverse health outcomes (e.g., reductions in term birth weight, increased odds/incidence of low birth weight, preterm birth, asthma exacerbation). The observational epidemiological literature purporting associations between oil and gas development (OGD) and various adverse human health outcomes in nearby populations has been reviewed by government and independent public health research

bodies.¹⁸ These reviews have identified several limitations in study design and execution that can bias study results, including:

- Varying, subjective approaches to estimating exposure and defining health outcomes - in some cases outcomes are only evaluated by a single study - result in inconsistent findings;
- Reliance on surrogate measures of exposure which may not represent actual chemical and non-chemical exposures to OGD;
- Inability or failure to account for population migration into or out of the study area, which can lead to changing local rates of disease incidence or hospitalization;
- Potential for confounding due to lack of data on important variables such as individual- and community-level socioeconomic status, baseline health (e.g., co-morbidities and genetic factors), environmental factors (e.g., other sources of exposure), or lifestyle factors (e.g., smoking and diet); and
- Inconsistent strength or direction of reported associations; in some cases, study results indicated increasing effects with decreasing levels of exposure, indicating fundamental flaws in study design.

Finally, most of the studies in question were conducted outside of California, casting doubt on their relevance to more highly regulated in-state operations. These limitations render the current body of epidemiological evidence on OGD inadequate to guide policy development, much less regulatory decision making.

One of the most recent studies investigating the relationship between residential proximity to OGD and birth outcomes in California (Tran et. al)¹⁹ illustrates the many deficiencies in this type of research that undermine the reliability of study results:

1. The Tran study does not provide evidence of a causal relationship between the presence of a production well and the occurrence of adverse birth outcomes.
2. Controlling for a range of risk factors (e.g. prenatal care) that may impact birth outcomes is an important consideration for this type of research. However, the Tran

¹⁸ Bamber et al., A Systematic Review of the Epidemiologic Literature Assessing Health Outcomes in Populations Living near Oil and Natural Gas Operations: Study Quality and Future Recommendations: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6616936/>;

Health Effects Institute, Potential Human Health Effects Associated with Unconventional Oil and Gas Development: A Systematic Review of the Epidemiology Literature (FINAL REPORT): <https://hei-energy.org/publication/potential-human-health-effects-associated-unconventional-oil-and-gas-development>

¹⁹ Tran, Kathy V., Casey, Joan A., Cushing, Lara J., Morello-Frosch, Rachel. (2020). Residential proximity to oil and gas development and birth outcomes in California: a retrospective cohort study of 2006-2015 births. *Environmental Health Perspectives*. 128:6.

study was narrowly focused and did not account for a broader range of risk factors that are known to be relevant to birth outcomes.

3. The Tran study did not attempt to measure any chemicals in any environmental or biological media and instead assumed that living in proximity to industrial activity leads to exposures of concern. This assumption can lead to assigning levels of exposure to target populations (e.g., pregnant women) that are higher or lower than actual exposures.
4. This study is preliminary in scope and should not be relied upon to support new policy decisions. As evidence of this point, the authors expressed caution about viewing their study as conclusive and determinative by expressly acknowledging that additional work was needed to confirm their findings and, more importantly, the need to improve exposure assessment measures.

The retrospective, proximity-based study design employed by Tran et al. to investigate the relationship between residential proximity to OGD and birth outcomes in California has been used by other researchers (e.g. Casey et al. 2016¹) for other OGD areas of the United States (Colorado, Oklahoma, Pennsylvania, and Texas). The limitations with this approach have been noted in each instance and are summarized below:

1. These studies do not provide evidence of a causal relationship between the presence of a production well and the occurrence of adverse birth outcomes.

- In a 2019 study conducted by the Colorado Department of Public Health and the Environment and the Pennsylvania Department of Health (Bamber et al.)²⁰, investigators concluded that the type of study design used by Tran et al. is not sufficient to determine causality.
 - The Health Effects Institute (HEI 2019)²¹ reviewed the epidemiological literature related to potential health effects from unconventional OGD (which employed similar methodology to Tran et al.) and determined the current literature only *“represents an early phase in research intended to understand the potential health effects of unconventional OGD.”*

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Bamber et al., A Systematic Review of the Epidemiologic Literature Assessing Health Outcomes in Populations Living near Oil and Natural Gas Operations: Study Quality and Future Recommendations: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6616936/>

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Health Effects Institute, Potential Human Health Effects Associated with Unconventional Oil and Gas Development: A Systematic Review of the Epidemiology Literature (FINAL REPORT): <https://hei-energy.org/publication/potential-human-health-effects-associated-unconventional-oil-and-gas-development>

2. The authors did not attempt to measure any chemicals in any environmental or biological media and instead assumed that living in proximity to industrial activity leads to exposures of concern. This assumption is likely to result in exposure misclassification bias.

- In their review of the epidemiological literature, HEI (2019) identified the main limitations in studies of similar design to Tran et al. as *“the lack of quantified exposures, the potential for residual confounding, inconsistencies in design and results across studies, and the limited number of studies for any one outcome.”*
- Bamber et al. 2019 concluded that epidemiological studies similar to Tran et al. have failed to adequately quantify exposure either directly or through a proxy/surrogate estimate, and that exposure concentrations and complete routes of exposure from OGD operations have not been well characterized.
- Tran et al did not validate their exposure metrics and did not use any monitoring data (e.g., drinking water, air quality, etc.), so it is unknown whether the surrogate metrics of distance to inactive and active wells and active well production accurately reflect true exposures.
- Tran et al. relied on the mother’s address-at-birth to classify exposure during the prenatal period, which doesn’t account for population mobility nor reflect the actual location at the time of any potential exposures during pregnancy.

3. Controlling for a range of risk factors that may impact birth outcomes is a critical consideration.

- Tran et al. cannot ascribe any OGD contribution to adverse health effects without also examining and accounting for potential contributions from non-OGD exposures (e.g. occupational exposures, non-OGD industry sources, mobile sources in congested areas, etc.).
- HEI (2019) found that an issue common to perinatal retrospective studies is that socioeconomic status (SES), comorbidities, and quality of prenatal care can vary by exposure and outcome status.

Further, it is important to note that observational studies conducted at the population or group level, rather than at the individual level, while inexpensive and easy to conduct because they rely on routinely collected data, are frequently dismissed because of their subjective nature and multiple limitations that prevent consistent, reliable interpretation of study results. OEHHA has rejected use of similar studies in evaluating health risks from exposures to environmental contaminants. For example, in its Public Health Goal for Nitrate in Drinking Water (May 2018), OEHHA evaluated multiple population-level studies reporting associations between elevated

nitrate concentrations and adverse impacts on thyroid function, and identified the following deficiencies:

1. Lack of consistency in reported effects;
2. Lack of adjustment for baseline conditions in the study population;
3. Lack of adjustment for confounders (e.g., diet, age, smoking status, exposure to other chemicals that may have similar effects);
4. Possible measurement bias (exposure assessment/reconstruction can be a subjective process and non-blinded assessments can influence information provided by study participants leading to false associations); and
5. Ecologic assessment of exposure (data limitations inherent in population-level studies, such as lack of data on individual exposures and exposures from other sources, may bias reported associations in either direction).

Based on these deficiencies, OEHHA concluded that the referenced studies “cannot be considered to present clear and consistent evidence of an association between exposure to nitrate and decreased thyroid function or IQ.”

To the extent the epidemiology studies referenced in support of the oil and gas metric are of similar design, they cannot establish a cause-and-effect relationship between oil and gas wells and health effects observed in surrounding communities.

Justification for Oil and Gas Metric Indicates Author Bias

The UC Study report asserts that oil and gas operations “are associated with diverse environmental hazards including air and water pollutants, noise, odors, excessive and inappropriate lighting, and undesired land use changes” (emphasis added). The report also states that “Drilling and production activities occur both during the daytime and nighttime, and light pollution has been previously reported as a nuisance in communities undergoing OGD, suggesting OGD may impact the health of nearby communities via increased psychosocial stress” (emphasis added). Speculative statements and value judgments do not support linkages between oil and gas operations and adverse health effects in nearby communities.

Rationale for Other Metrics Lacks Scientific Justification

The UC Study report states that voter turnout “may have implications for community engagement in permitting and regulatory decisions.” Four studies are cited in support of the proposed “voter turnout” metric, but only one is described in any detail. The authors of Boyce

et al. (1994, 1999) purportedly found that “an index of power equality that combined voter turnout, educational attainment, tax fairness, and access to Medicaid was associated with stronger environmental policies, which were, in turn, associated with less environmental stress.” The UC Study report offers no analysis of the influence of voter turnout relative to the other factors contributing to the reported association – which is based on data sets and methods that are more than 20 years old - or the strength of the association. There is no discussion of the other three referenced studies, much less any analysis of how they support the conclusion that voter turnout should influence future hazardous waste facility permitting decisions or be included as a distinct indicator of community vulnerability in future versions of CalEnviroScreen.

Any new metrics that influence composite CES scores, or facility permitting decisions in the case of DTSC’s revised draft framework, should be supported by clear and convincing scientific evidence.

Determination of Facility-Specific Impacts Requires More Rigorous Scientific Methods

In its 2018 draft framework document, DTSC stated that it was seeking “peer-reviewed research demonstrating potential facility impacts to a larger area around the facility than the suggested half-mile buffer in order to determine the level of scientific support for using cumulative impacts and community vulnerability assessments for a larger area.” The UC Study report claims that studies have found evidence of elevated risks of adverse health effects at distances of more than 6 miles from a permitted facility, yet as noted above, these studies typically are not capable of attributing population-level observations to environmental impacts from particular facilities.

In order to determine the potential impact of individual or area sources on surrounding populations with any degree of certainty, regulatory agencies must be able to measure concentrations of hazardous substances released from the source(s), predict how those concentrations will diminish with distance and direction from the source, identify concentrations at off-site receptors to characterize exposure potential from the source, identify potential exposure from other sources and by other pathways (e.g., ingestion of substances of concern in food or water), and estimate the theoretical health risk to exposed populations.

The methods for this type of analysis are well developed and thoroughly integrated into many state regulatory programs. They also incorporate extremely conservative assumptions to avoid underestimating exposure and health risk. For example, OEHHA updated its health risk assessment guidelines for the Air Toxics Hot Spots Program in 2015 to incorporate age-

sensitivity exposure adjustment factors. According to CARB and the California Air Pollution Control Officers Association, these and other changes have the effect of increasing health risk estimates for the same level of emissions by at least 1.5 to 3 times relative to the prior methodology. Similarly, DTSC adopted regulations in 2018 governing the use of toxicity criteria in *health risk assessments and in developing screening levels and remediation goals* for hazardous substance release sites. These regulations require responsible parties to use the most stringent toxicity criteria available from OEHHA, USEPA, or other designated authoritative sources. For many substances, the OEHHA criteria are much more stringent than the criteria adopted by authoritative bodies. For example, the OEHHA cancer potency factor for tetrachloroethylene (PCE) is 23 times more stringent than the corresponding USEPA value.

Relying solely on population-level epidemiology studies to draw conclusions about the impact of individual facilities on a given community is not scientifically defensible and is likely to result in misdirection of limited regulatory resources and public funding. Moreover, it is impossible to design effective mitigation measures for impacts that may be unrelated to the operation of a particular source.

The UC Study Reports and Supplemental Materials Must be Peer Reviewed

Health and Safety Code Section 57004 requires external scientific peer review of the scientific basis for any rule proposed for adoption by any board, department, or office within Cal-EPA. The UC Study reports, underlying data and referenced studies cannot be used for any environmental regulatory purpose until they are independently evaluated pursuant to this statutorily mandated peer review process.

While the H&SC 57004 peer review process is conducted through the University of California, the statute also explicitly prohibits participation in the peer review by any person who participated in the development of the scientific basis of the regulation. This provision would preclude the UC study authors from participating in peer reviews evaluating potential applications of their work.