Setback Distance

DTSC Department of Toxic Substances Control

BACKGROUND

Senate Bill (SB) 673 (2015) required the Department of Toxic Substances Control (DTSC) to consider adopting new hazardous waste permit criteria in California regulations and to implement programmatic reforms.[1] DTSC began adopting new permit regulations and programmatic reforms in 2019. In 2021, DTSC proposed a framework to implement the permit criteria related to community vulnerability and setback distance.

In response to the public input received, DTSC has revised the framework to better address the public's comments and propose further programmatic reform.

The revised framework has three main goals:

GOAL 1: Provide earlier opportunities for public input

GOAL 2: Consider community vulnerability in permit decisions and conditions

GOAL 3: Develop science-based setback distance for community protection

DTSC has prepared three information sheets to communicate the revised regulatory framework that is guiding regulation development to enhance community protections. This information sheet shares DTSC's plan to achieve the final goal, GOAL 3.

How we plan to achieve GOAL 3

PROPOSED ACTION

- Require facility-specific evaluation to determine if setback distances between facilities and nearby communities are protective of human health.

WHO DOES THIS APPLY TO?

- All applicants for a new permit, permit renewal, and major (Class 3) permit modification.

KEY OUTCOMES

- Assessment of community exposures to facility hazards, including toxic chemical emissions from permitted facility operations, previous toxic chemical spills or releases that remain present, and potential emergency events (e.g., explosion, fire) identified in the facility contingency plan.[2]
- Evaluation of facility-attributable health risks for sensitive receptors in the nearby community.
- Clearer risk communication documents.

Key Terms

Hazard - A potential source of harm or adverse health effect.

Health Risk - The probability that someone is harmed if they are exposed to a hazard.

Sensitive Receptor - People including children, the elderly, asthmatics and others who are more susceptible to negative health effects from exposure to pollution. Sensitive receptor locations can include but are not limited to residences, schools, childcare centers, hospitals, elder care facilities, and prisons.

Setback Distance - Distance between the sensitive receptor location with the greatest exposure to facility-attributable hazards and the facility's nearest property line.

[1] Health and Safety Code sections 25200.21 and 25200.23
[2] California Code of Regulations, Title 22, Section 66264.51

PROPOSED SETBACK DISTANCE FRAMEWORK DETAIL

Hazardous waste facilities may share a fenceline with or may be located near sensitive land uses (i.e., homes, schools, childcare centers) in communities that are already overburdened with pollution. The objective of the framework is to leverage DTSC's authority and work collaboratively with partner agencies to ensure the protection of human health and the environment and improve the quality of life in communities impacted by hazardous waste management activities. Therefore, DTSC proposes to create new regulations around the following framework:

1 **Require applicants to complete a Screening Level HHRA and analysis of any potential emergency event impacts identified in the facility contingency plan.**
- Evaluate the potential for facility-attributable cancer and non-cancer health effects in the community and potential for acute (short-term) hazards (e.g., explosions, fires).
- Determine where the MEISR is located and if the setback distance is protective.
- The requirements would apply to all applicants for a new permit, permit renewal, and major permit modification.

2 **Require applicants that are also cleaning up past releases of toxic chemicals at the time of permit renewal or modification to complete a Baseline HHRA, unless the cleanup work has been shown to be complete at the time of the application submittal.**
- Baseline HHRA would evaluate sensitive receptor exposures to both toxic chemicals in operating emissions and toxic chemicals accidentally released from permitted operations.

3 **Require applicants to incorporate public risk communication materials in all HHRAs.**
- Health risk assessment summary of chronic (long-term) and acute (short-term) health risks from facility operations (page 4) and map of long-term community health risks from facility operations (page 5).

4 **Require operating facilities to complete a setback distance review every five years, after the issuance of a permit or major permit modification.**
- Determine if new sensitive receptors are present in closer proximity to the facility than the existing MEISR.

KEY TERMS

Excess Lifetime Cancer Risk. The extra potential cancer, above background, as the result of a lifetime exposure to a specific carcinogen or source of carcinogens.

Hazard Index (HI). A calculation to evaluate non-cancer health hazards (e.g., kidney or liver toxicity), using a ratio between an exposure to a contaminant or mixture of contaminants and the exposure level at which no harm is expected.

Screening Level Human Health Risk Assessment (HHRA). An HHRA that uses standard assumptions to estimate health risks from chemical exposure for a person or population.

Baseline HHRA. A more detailed HHRA that includes additional site-specific information such as the distribution and movement of contaminants in the environment, frequency and duration of exposure, and further refined chemical concentrations for exposure scenarios.

Maximally Exposed Individual Sensitive Receptor (MEISR). The sensitive receptor with the greatest exposure to toxic chemicals from the facility.

HOW WOULD CURRENT REQUIREMENTS CHANGE?

The revised framework would:

- Replace current health risk assessment questionnaire with a more comprehensive Screening Level HHRA and emergency event analysis as a minimum application requirement
- Address hazards from potential emergency events and exposures to past chemicals releases and spills from permitted operations at the facility
- Revise and clarify criteria that necessitate a Baseline HHRA
- Require additional information in HHRAs, including:
  - ❖ Setback distance to MEISR
  - ❖ HHRA Summary (see page 4)
  - ❖ Map of facility-attributable health risks in surrounding community (see page 5)

BENEFITS

Community Members

- ✓ Promotes health-protective permits, ensuring that health risks to sensitive receptors are comprehensively evaluated and communicated to the public
- ✓ Creates new mechanisms to ensure HHRAs capture changes to the facility and the community over time

Permit Applicants

- ✓ Clarifies the nexus between facility impact and permit decisions and permit conditions that are based on human health risk
- ✓ Allows the permit applicant to work with DTSC to determine how to achieve operating requirements that protect the community based on facility-specific assessments

Summary of Changes

Permit Applicant Type	Current Requirement[3]	Proposed Requirement
• Class I landfills • Hazardous waste facilities with Title V air permits • Hazardous waste incinerators • Boiler or industrial furnaces	Baseline HHRA	Baseline HHRA
Applicants currently addressing chemical releases[4]	DTSC determines need for Screening Level or Baseline HHRA	Baseline HHRA
Applicants seeking a major (Class 3) permit modification	DTSC determines need for Screening Level or Baseline HHRA	Submit an HHRA consistent with facility requirements for a new permit application
All other applicants	Health risk assessment questionnaire	Screening Level HHRA

[3] California Health and Safety Code section 66270.14

[4] Not including Class I landfills, Title V permitted treatment facilities, hazardous waste incinerators, or boiler or industrial furnaces

EXAMPLE OF HHRA SUMMARY[5]

FACILITY DETAIL

- Facility name and address
- Census tract
- EnviroStor/EPA ID
- Description of hazardous waste treatment, storage, or disposal operations carried out at the facility

MEISR DETAIL

- MEISR location and type (e.g., residence, school, elder-care facility)
- Setback distance from facility
- Defining hazards and health effects (cancer/non-cancer), primary chemical exposures, and primary contributing permitted units or operations

CANCER ASSESSMENT

Maximum Facility-Attributable Risk

- Sensitive Receptor
  - Sensitive receptor type and location
  - Setback distance from facility
  - Key source contribution (chemicals and permitted units)
- Worker
  - Location
  - Source contribution (chemicals and permitted units)
- Point of Maximum Impact
  - Location
  - Key source contribution (chemicals and permitted units)

NON-CANCER ASSESSMENT

Maximum Chronic Hazard Indices

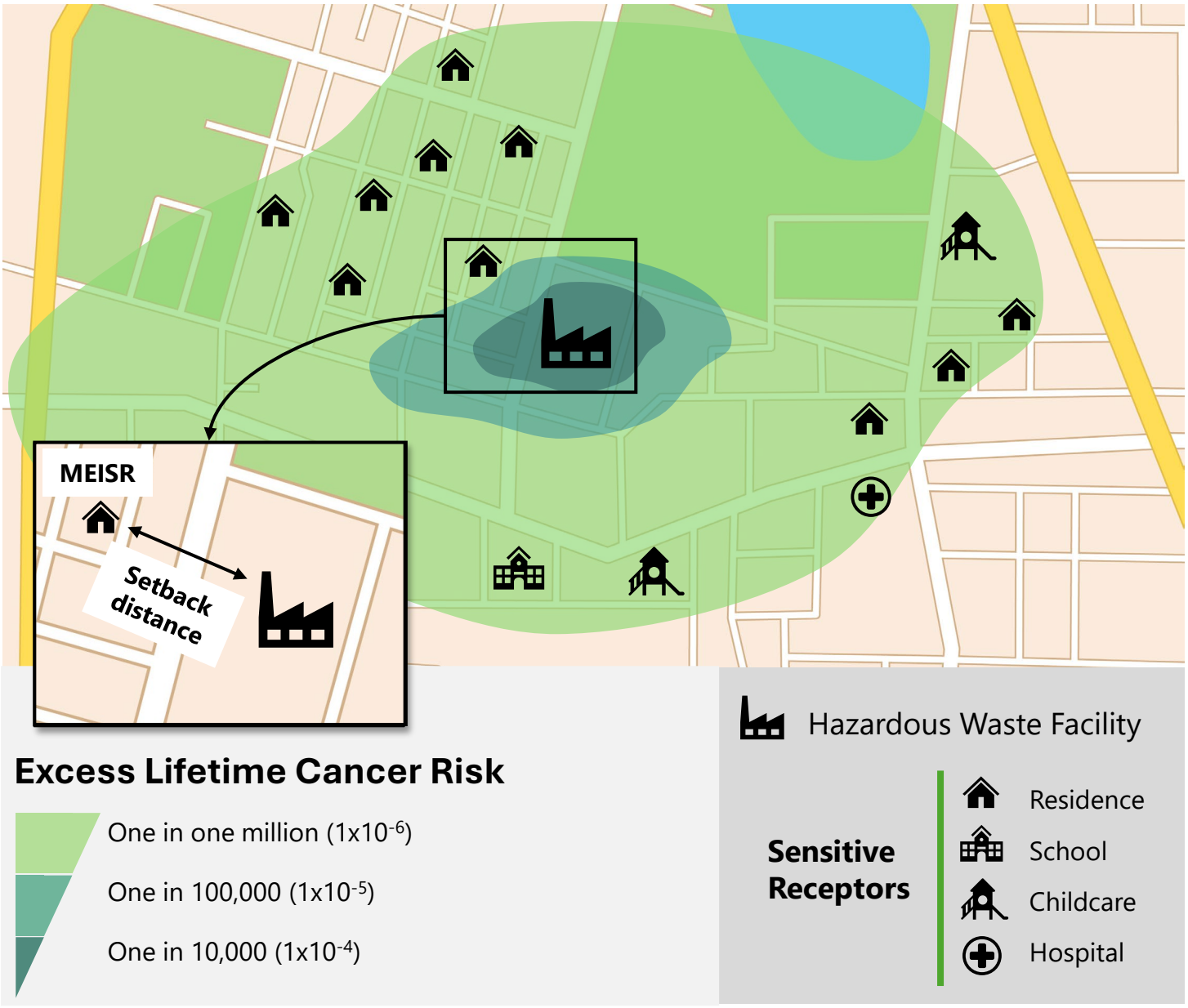
- Sensitive Receptor
  - Location
  - Key source contribution (chemicals and permitted units)
- Point of Maximum Impact
  - Location
  - Key source contribution (chemicals and permitted units)

Maximum Acute Hazard Indices

- Point of Maximum Impact
  - Location
  - Key source contribution (chemicals and permitted units)

[5] This example HHRA summary shown here is not a final product and is not comprehensive

EXAMPLE OF SCREENING LEVEL OR BASELINE HHRA MAP



- The map shown above is for illustration purposes only. It is a hypothetical, simplistic scenario where the zone of impact (green shaded areas) for the facility-attributable excess lifetime cancer risk is shown around a hazardous waste facility.
- The health risk-based zones of impact would be based on the modeling of toxic chemical emissions from permitted units at the facility and local meteorological conditions.
- These maps would show sensitive receptor locations, including the MEISR, relative to the facility location and the facility attributable health hazards.
- The HHRA summary and map are both intended to help inform the Community Vulnerability Assessments discussed in Information Sheet #2.

SETBACK DISTANCE & PERMIT DECISION-MAKING

Under this proposed framework, DTSC would use its existing authority to suspend or deny a permit application under the following conditions:

- A facility introduces a hazard or a risk to human health or the environment that cannot be regulated to an acceptable level
- A facility is not following permit conditions
- A permit applicant withholds or misrepresents facts in a permit application
- A permit applicant fails to respond to or resolve multiple notices of deficiency

DTSC proposes to incorporate the following risk management framework into regulation to guide permit decisions and determine the need for health-risk based permit conditions:

Cancer Risk and/or Hazard Index	Risk Management Decision	Potential Actions
Cancer risk < 1 in a million and Non-cancer HI < 1	Low priority	• No required actions
Cancer risk ≥ 1 in a million and < 1 in 10,000 and Non-cancer HI < 1	Determine need for risk management or reduction action on site-specific basis	• Monitoring • Additional data collection and refined risk assessment • Risk reduction measures
Cancer risk ≥ 1 in 10,000 or Non-cancer HI ≥ 1	Action required, including risk reduction actions or potential permit denial	• Risk reduction measures • Permit application denial

Why is it a range?

A risk management range is typically used when evaluating health risk assessments. This is because of the uncertainties related to the data and assumptions used in a health risk assessment.

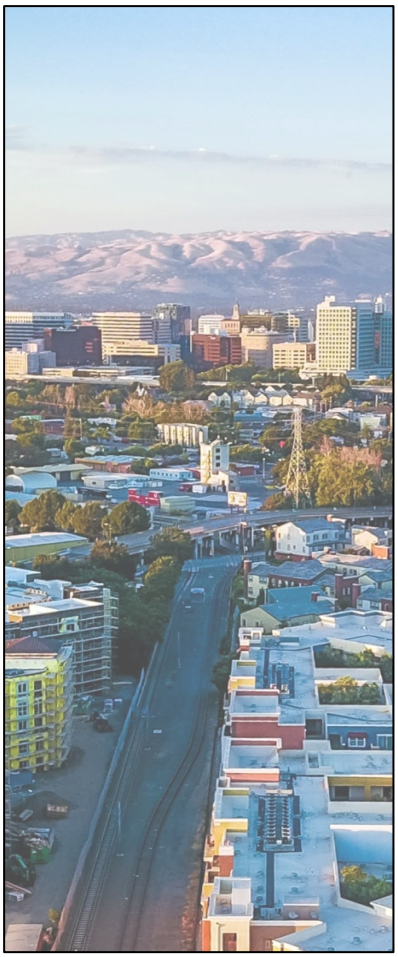
PERMIT CONDITIONS RELATED TO SETBACK DISTANCE

- DTSC may create permit conditions based on the applicant's Screening Level or Baseline HHRA and setback distance in order to require additional monitoring, risk mitigation, or elimination of risk.
- DTSC may create permit conditions based on the applicant's potential emergency events and setback distance.
- DTSC will use the HHRA and setback distance data along with community input (Information Sheet #1) to further inform permit conditions related to the Community Vulnerability Assessment (Information Sheet #2).

WHY ISN'T THE SETBACK DISTANCE A FIXED NUMBER?

DTSC researched and considered many alternatives for setback distance requirements. DTSC initially proposed a numeric setback distance in SB 673 Cumulative Impacts and Community Vulnerability Draft Regulatory Framework, which was shared with the public in 2021. However, DTSC is currently proposing a facility-specific, risk-based approach. DTSC's revised approach was shaped by the following considerations:

- Statutory requirements
- Public input on 2021 proposed framework requesting strengthened community protections and a practical, science-based approach
- Fit-for-purpose approach for assessing and addressing cumulative impacts proposed by US Environmental Protection Agency (USEPA)[6]
- Diversity of regulated community (size, permit type, activity type, location, facility age, new or existing facilities, chemicals released, etc.)
- Unique communities and sensitive receptors located near DTSC-permitted facilities
- Enforceability
- Adaptability to new scientific knowledge and new sensitive receptor locations



Did you know?

Local governments have the authority to establish setback distances.

- The California Constitution gives local governments broad powers to protect the health, safety, and welfare of their residents.
- Local governments determine how land can be used (e.g., industrial, commercial, residential). Nuisance issues like noise, light, and odors are also controlled at the local level.
- DTSC will continue to work with local governments to advance health-protective policies, as the Hazardous Waste Control Law allows for the collaboration between state and local authorities.

[6] Interim Framework for Advancing Consideration of Cumulative Impacts

ADDITIONAL FACTORS INFLUENCING SETBACK DISTANCE

Tanner Act

The **Tanner Act** requires local agencies to coordinate with DTSC and other state agencies when making land use decisions related to new and expanding hazardous waste facilities. Under the Act, local governments are required to form a Local Assessment Committee, which serves to advise the local agency of the conditions under which the proposed project may be acceptable to the community, including conditions pertaining to locally-required setbacks.

California Environmental Quality Act (CEQA)

The **California Environmental Quality Act (CEQA)** requires DTSC to consider the environmental consequences of our permit decisions. CEQA analysis incorporates 21 resource areas, including aesthetics, noise, and land use and planning. CEQA analysis also requires assessment and disclosure of potential impacts on sensitive receptors and can include potential mitigation measures for project-related impacts to the environment.

This information sheet is the last in a series of three.

We encourage you to read all three information sheets and provide feedback. The proposed regulatory framework and public input received will guide regulation development.

We welcome your input!

CONTACT US

Find More Info

Find additional information on our webpage.

VISIT US

Provide Input

Fill out our revised framework Information Sheet online survey.

TELL US

Questions?

Email us at permits_hwm@dtsc.ca.gov.

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