D R A F T – VERSION 2

COMMUNITY RISK REDUCTION PLANS FOR TOXIC AIR CONTAMINANTS AND FINE PARTICULATE MATTER:

COMMUNITY DEVELOPMENT GUIDELINES

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET
SAN FRANCISCO, CA 94109

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Acronyms and Abbreviations

ARB	California Air Resources Board
BAAQMD, District	Bay Area Air Quality Management District
BACT	Best Available Control Technology
CAPCOA	California Air Pollution Control Officers Association
CARE	Community Air Risk Evaluation
CEQA	California Environmental Quality Act
CNG	compressed natural gas
CRRP	Community Risk Reduction Plan
DPM	diesel particulate matter
EPA	Environmental Protection Agency
GGRS	Greenhouse Gas Reduction Strategy
GDF	gasoline dispensing facility
HEPA	high efficiency particulate air
MOU	memorandum of understanding
OEHHA	Office of Environmental Health Hazard Assessment
PERC	perchloroethylene
PM2.5	particulate matter less than 2.5 microns in diameter
TACs	toxic air contaminants
TBACT	Best Available Control Technology for Toxics
TRUs	transportation refrigeration units

Draft – Version 2
Community Risk Reduction Plans for Toxic Air Contaminants and Fine Particulate Matter: Community Development Guidelines

This is the second version of a public review draft intended to outline the general elements of a Community Risk Reduction Plan (CRRP). This document is intended to provide Community Development Guidelines that will establish general guidance for CRRP development and community-specific guidelines and best practices for reducing local-scale exposures to toxic air contaminants and fine particulate matter. **Like the first draft, this document does not represent final decisions of the Bay Area Air Quality Management District (District, BAAQMD) and is intended to stimulate public input and discussion for the District's consideration in further developing guidance for the preparation of CRRPs.**

1. Introduction

a. Overview

For decades, environmental regulators—the U.S. Environmental Protection Agency (EPA) at the federal level, the California Air Resources Board (ARB) at the state level, and the Bay Area Air Quality Management District (BAAQMD) at the local level—have been actively engaged in regulating sources of air pollution in the Bay Area to improve air quality. Reducing pollution sources and working to achieve regional air quality standards have been, and continue to be, vital to maintaining and improving air quality and reducing exposures to harmful airborne pollutants. Working together, federal, state, and local regulators have produced great improvements in the Bay Area's air quality. Further strides can be made in reducing exposures to air pollutants by incorporating urban design and land use planning.

Urban design influences exposures to air pollutants in two important ways. First, infill development and high urban densities can promote the use of public transportation and reduce commute lengths, directly reducing pollutant emissions from motor vehicles, the greatest single source of air pollution. Second, thoughtful urban design separates residences and other sensitive land uses from industrial pollution sources and from busy freeways and roadways.

Cities and county governments have direct jurisdiction over land use decisions, but until recently they have not had clear guidance on what represents a significant risk from pollution sources to help aid planning decisions. The BAAQMD's *California Air Quality Act (CEQA) Air Quality Guidelines* (BAAQMD 2010a) has helped to provide such guidance for new development projects. While this represents an important step forward, CEQA only addresses new projects and not existing problems. Furthermore, because urban design and planning that is coordinated and consistent is often more effective than a project-by-project approach, the BAAQMD—with

input and suggestions from the Community Air Risk Evaluation (CARE) Task Force, local cities, and local health departments—has begun to develop elements and requirements for a Community Risk Reduction Plan (CRRP) the purpose and application of which is described herein.

Cities or counties within the Bay Area seeking a proactive approach for reducing exposure to toxic air contaminants (TACs) and particulate matter less than 2.5 microns in diameter (PM2.5) should use this document as an introduction to preparing a Community Risk Reduction Plan (CRRP). Jurisdictions within areas identified by the BAAQMD's CARE program as being significantly affected by local sources of TAC and PM2.5 may be particularly interested in CRRP development; although, any jurisdiction in the BAAQMD may develop and use a CRRP. The BAAQMD has committed to assisting cities and counties in producing CRRPs and reviewing them prior to their approval or adoption by the local governments.

b. Purpose of This Document

In its final form this document will eventually become *Community Development Guidelines* that will facilitate the production of CRRPs by providing specific recommendation and mitigations that cities and counties can adopt as local ordinances and/or best practices. It is the intent of the BAAQMD that CRRPs be developed and approved by cities or counties with substantial support, guidance, and review from the BAAQMD and with a public participation and an environmental review process. This document:

- Sets forth recommendations and a general framework for a CRRP;
- Defines appropriate data sources and risk models on which to base a CRRP;
- Provides guidance for defining plan areas, setting reduction targets, including public involvement, and producing updates to the plan; and
- Explains the relationship of a CRRP to the CEQA process, specifically how the CEQA process for certain projects can potentially be streamlined by demonstrating consistency with a CRRP.

The Community Development Guidelines will provide a substantial part of the BAAQMD support in assisting cities and counties in developing CRRPs. It will include findings of community-specific risk assessments, as available, to guide local land-use decisions, suggest mitigations, and devise best practices for reducing local-scale exposures to toxic air contaminants and fine particulate matter. Cities and counties have the opportunity to develop their own CRRPs or incorporate the Community Development Guidelines as part of their General Plan or as local ordinance.

2. CRRP Framework

a. CRRP Goals

A CRRP is a multi-year plan with two main goals. First, a CRRP provides a planning tool to ensure that air quality and public health improve through the reduction of TACs and PM2.5 concentrations and exposures. Second, a CRRP provides a mechanism for streamlining environmental compliance under CEQA. Because project planning that is coordinated and consistent is often more effective and efficient than a project-by-project approach, the District considers the CRRP a more holistic method of facilitating air quality improvements than less coordinated approaches.

A CRRP will be designed to improve public health related to exposure to TACs and PM2.5 over time. It must include reduction targets identified by the local government preparing the CRRP and reviewed by the BAAQMD for the entire community covered by the plan. A CRRP will establish a target date by which the community seeks to meet the goal (e.g. 2020). A CRRP is similar in concept to a Greenhouse Gas Reduction Strategy (GGRS) which also sets a reduction target, a target year, and a trajectory for the community to reach the target. Once an approved CRRP is adopted by the local government, individual projects within the plan area that demonstrate clear conformity with a qualified CRRP would not be required to perform separate risk analysis or significance determination under CEQA.

A CRRP charts a course toward achieving risk and hazard thresholds identified as significant in the *CEQA Air Quality Guidelines* (BAAQMD 2010a). The CRRP accounts for the complexity of the sources in a community, adopts measures for the reduction of risks over time, and specifies the likely time required to achieve real improvements.

The BAAQMD intends to give latitude to CRRP preparing entities in selecting alternative or additional reduction targets that can be shown to be closely aligned with the risk and hazards thresholds in the BAAQMD CEQA Guidelines or that are more health protective.

A CRRP would assess existing and projected health risks associated with TACs and PM2.5 for the community as a whole. As such, projects that are fully consistent with the CRRP in terms of incorporation of all CRRP required measures and inclusion in the CRRP risk evaluation and projection, can be candidates for streamlining during development review and CEQA as they relate to TACs and PM2.5 risks.

b. Elements of a CRRP

A qualified CRRP must,

- Include a robust public participation process to facilitate community input from the affected community to help develop goals and strategies.
- Define a planning area (see discussion in Section 4).
- Identify sensitive receptor areas within the planning area. These areas (also discussed in Section 4) include

  - residential blocks or neighborhoods;
  - schools and school yards, parks and play grounds, daycare centers, nursing homes, and medical facilities; and
  - priority development areas, including future development projects of the above.
- Develop base- and target-year emissions inventories of TACs and PM2.5.
- Include BAAQMD–approved risk modeling of current and future risks for each identified sensitive receptor area. This modeling must be consistent with the project modeling outlined in the CEQA Air Quality Guidelines and detailed in a Modeling Guidance document (BAAQMD 2010b). Specifically, for each sensitive receptor area, sources within 1,000 ft must be identified. Individual and cumulative risks for each sensitive receptor area must be evaluated for the identified sources.
- Establish risk and exposure reduction goals for the community consistent with meeting the individual source and cumulative thresholds established in the BAAQMD CEQA Guidelines by the selected target date(s).
- Where necessary, identify additional reduction targets to meet target thresholds.
- Where necessary, identify feasible, quantifiable, and verifiable measures to reduce emissions and exposures for each sensitive receptor area.
- Include procedures for monitoring and updating the inventory, modeling, and reduction measures in coordination with BAAQMD staff.

c. Advantages of a CRRP

The intent of the CRRP is to provide a holistic risk reduction plan that promotes more effective and efficient risk reductions compared with a project-by-project approach. The advantages of the CRRP approach are that it can:

- Present a consistent treatment of risks for subsequent development;
- Reduce the processing burden of individual projects under CEQA by allowing projects to tier, either partially or totally, off a CRRP;
- Allow the advantages and disadvantages of individual projects to be judged in the context of the collective planning area's progress toward the goals set forth in a CRRP—in effect providing more flexibility;
- Account for expected benefits of emission reductions from regulatory action on the plan area; and
- Provide a framework for identifying and reducing other public health risks a community may experience, such as noise and indoor air pollutants.

By planning in advance, health risk information can be available to the public, city planning staff, and city decision-makers to inform land use choices well in advance of project proposals being advanced through the entitlement process. The community can identify feasible

measures that can be applied consistently across all new projects as necessary to control and/or reduce risks. The community can also identify the areas where action may be inadequate to reach target risk levels, and consider up front whether current land use planning is appropriately balancing public health protection with economic development.

One important goal of the CRRPs is to promote the reduction of community health risks. Another is to streamline the CEQA process for projects wherein risks can be managed within the risk and hazards thresholds, thus providing an incentive for development to advance where it is fully consistent with a CRRP (e.g. located in or contributing to risks in a "pre-screened zone"). Where projects are not consistent with a CRRP or do not implement the local reduction measures called for in a CRRP, the project review under CEQA will require project-level detailed evaluation of new health risks (e.g., outside pre-screened zones). With the new BAAQMD CEQA guidelines, the scrutiny of such projects will likely increase over past practice. By incentivizing development with relatively lower health risks and discouraging development with higher health risks, a CRRP will send the right signals to both private and public project proponents early in the project cycle and express the importance of risk reduction as a priority.

d. Where a CRRP May Be Useful

Listed here are communities that would likely benefit from a CRRP. This list is not meant to be comprehensive; other communities may also benefit from a CRRP.

- A community that desires to better understand existing health risks within the community in order to prioritize actions to improve air quality.
- A community that is planning for future infill development that would potentially introduce receptors to significant risks and hazards from nearby pollution sources. Such a community may wish to examine how to promote infill development without increasing public health risks. Such a community may also wish to examine the potential impact of state regulations and local action to control health risks in the short and long run.
- A community that is considering future land use plans to expand roadways and other TAC and PM2.5 sources (such as warehousing) and desires to inform land use planning to avoid cumulatively significant risks through site selection and site controls.
- A community with existing health risks greater than BAAQMD CEQA risk thresholds that is planning for new roadway, commercial, or industrial sources of TAC emissions within 1,000 ft of existing or future receptors, and that desires to comprehensively evaluate existing and future community health risks.

e. Where a CRRP May Not Be Useful

Although the establishment of a CRRP is possible for any area, certain areas (such as those listed here) are not expected to benefit from a CRRP planning effort.

- Remote areas with existing health risks less than the BAAQMD cumulative risk thresholds with no future planning to introduce new receptors within proximity to significant risks or to introduce new TAC sources within proximity to sensitive receptors.

- Residential areas located substantially far (more than 1,000 ft in most cases) from any substantial TAC or PM2.5 sources, including major roadways.
- Industrial or commercial areas that contain no existing or planned sensitive receptors nearby (within 1,000 ft in most cases) of any sensitive receptor.

f. CRRP versus Project-by-Project Analysis

A CRRP is intended to be a comprehensive plan that would be accepted in lieu of an individual project analysis of local risks and hazards. As such, a CRRP must provide the same type of analysis, to provide "pre-screening" of local risks and hazards for planned development areas. CRRPs should demonstrate how BAAQMD's individual and cumulative thresholds will be met for all areas within a CRRP planning area that intend to use a CRRP for tiering under CEQA. That is the CRRP should define "pre-screened zones" where risks have been identified and mitigated. Targets developed as part of a CRRP will be based on the best available data and standard dispersion models, as recommended for project level analysis by the BAAQMD. The goal of a CRRP is for risk and ambient concentration levels within the plan area to decrease below the individual and cumulative thresholds identified by the BAAQMD by a target date. However, the reduction targets and interim milestones set in a CRRP could be expressed with a variety of metrics, depending on the specific areas of concern for a community.

A CRRP seeks to inform local planning by making a comprehensive evaluation of TACs within a community, identifying the risks to that community, identifying the benefits of state vehicle and fuel regulations over time, and identifying feasible local measures that can contribute to lowering the risk in the community beyond that which would be achieved solely through state action. As such, a CRRP seeks to promote air quality that is health protective within the community.

Because air quality conditions in affected communities result in part from land use and transportation decisions made over many years, the BAAQMD believes comprehensive, community-wide strategies will achieve the greatest reductions in emissions of and exposure to TACs and PM2.5. BAAQMD is committed to completing TAC/PM2.5 emissions inventory work and the generalized risk assessment for the CRRP planning areas. This work will assist local communities to understand their existing health risks better and to support those communities that desire to complete a CRRP.

The BAAQMD's mission is to promote public health and welfare by seeking to reduce exposure to criteria and toxic air contaminants. A CRRP is one tool a community could use to seek better public health outcomes than those resulting from the current project-by-project approach. The BAAQMD believes that advance consideration of current and future health risks and identification of feasible means of controlling and/or reducing those risks will result in improved health outcomes for Bay Area residents.

The BAAQMD is committed to supporting communities that decide to pursue a CRRP by providing the technical data necessary to complete the emissions inventory and risk assessment required for the effort. The BAAQMD is also available to provide technical advice to communities preparing a CRRP.

The BAAQMD supports local land use planning that promotes infill, mixed-use, walking, cycling, and transit-oriented development. However, the BAAQMD believes that compact or infill development should be designed to avoid significant air quality risks to existing or future residents. The BAAQMD supports planning efforts such as the CRRP approach because these efforts allow a community to examine the current and future public health consequences of land use decisions throughout the planning process, not just at the time of permit approval.

g. Relation to State and Federal Regulations

For many communities, the primary source of risk from TACs and an important source of PM2.5 is diesel truck traffic on highways and large arterial roadways. The ARB has adopted aggressive regulations related to DPM. The ARB's comprehensive strategy, known as the Diesel Risk Reduction Plan, includes regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and is anticipated to reduce diesel PM emissions and the associated health risk by about 75 percent in 2010 and 85 percent in 2020 (ARB 2000). The emissions forecast will need to account for the impact of these regulations on the plan area and for reasonably foreseeable projects within the plan area.

A CRRP and the emissions estimates used to support it will be developed to be consistent with state and federal regulations. While state action concerning vehicle and fuels will contribute substantially to the reduction of health risks from DPM and other TACs, the CRRP may identify areas that need additional reductions. Through a CRRP, local governments and the District can develop feasible local measures to can reduce risks either sooner or beyond that which can be achieved via the state actions in pursuit of local health risk goals.

Further, a CRRP can give critical guidance to local land use planners about what can realistically be achieved over time. Given that land use decisions are made locally, only the local government can affect land use policies that address airborne health risks—risks that cannot be brought down to acceptable levels solely through state action. Local land use policies can potentially result in avoiding the introduction of new receptors near existing sources or new sources near existing sensitive receptors.

A fundamental purpose of the CRRP is, in combination with the state Diesel Risk Reduction Strategy, to reduce current health risk levels and to avoid exposure of new receptors to significant health risks. Targets developed as part of a CRRP will be based on the best available data and standard dispersion models. A CRRP seeks to inform local planning by making a comprehensive evaluation of TAC/PM2.5 within a targeted community, identifying the risks to that community, identifying the benefits of state vehicle and fuel regulations over time, and identifying feasible local measures that can contribute to lowering the risk in the community beyond that which would be achieved solely through state action.

h. CRRP Relation to the CARE Program

A CRRP is designed to be especially effective in areas that already are severely affected by TACs and PM2.5, such as impacted communities identified through the CARE program. The BAAQMD initiated the CARE program in 2004 to evaluate and reduce health risks associated with

exposures to outdoor TACs/PM2.5 from point sources, area sources, and mobile sources. Through the CARE program, the BAAQMD has identified TAC/PM2.5 sources and areas severely affected by TACs, primarily diesel particulate matter (DPM). Additionally, the CARE program develops and implements a variety of mitigation measures with a special focus on these most severely affected communities. The BAAQMD encourages CARE communities to develop CRRPs, but does not require a CRRP. Likewise, non-CARE communities are not precluded from developing a CRRP and are encouraged to prepare CRRPs where substantial areas exceed the BAAQMD's cumulative risk thresholds.

The CARE program Task Force—with staff appointed members representing governmental agencies, including city and region planners; businesses; health professionals; and community groups—helps to advise the BAAQMD in developing CRRP guidelines. The Task Force also provides feedback to the BAAQMD in the development and review of individual CRRPs.

3. CRRP Development and Approval

a. City/County Role

The BAAQMD is still considering input on the CRRP development and approval process but currently favors the approach that

- **Cities and counties take a lead on developing CRRPs**
- **CRRPs are approved by cities or counties.**

This approach is consistent with the fact that cities and counties have land use authority that the CRRPs must address.

b. Air District Role

The BAAQMD will provide strong support to jurisdictions preparing CRRPs, including

- Technical support. The BAAQMD has committed to providing air emissions, dispersion modeling, and relevant risk assessments. Cities and counties are not expected to develop these technical inputs, but can do so if resources allow. If local governments decide to develop these inputs independently, they and BAAQMD should coordinate closely to ensure general compatibility of methods.
- Community Development Guidelines. Beyond the purely technical analysis, the BAAQMD will synthesize the community-specific modeling and risk assessments to generate local land-use guidance, recommend set backs, tailor mitigation measures, and devise best practices for reducing local-scale exposures to toxic air contaminants and fine particulate matter. The guidelines will be directly applicable to and usable by local governments for producing CRRPs and can also be adopted as local ordinances or incorporated in the city's General Plan.

- Financial support. A small amount of funding has been dedicated to help cities prepare CRRPs, with priority given to areas that have been identified as being impacted areas through the CARE program. The BAAQMD is investigating and applying for State and federal grant programs as potential additional funding sources.
- Review and comments. The BAAQMD will review and comment on all CRRPs.

c. Public Outreach

The development of a CRRP will require a robust public participation process to facilitate input from the entire identified community on the CRRP's goals and strategies. The BAAQMD recommends that the city or county developing the CRRP take a lead role in designing and implemented a public participation and review process. The nature and amount of public involvement is at the discretion of the jurisdiction preparing a CRRP.

The BAAQMD strongly recommends for the lead jurisdiction to prepare a public involvement plan and a multi-stakeholder review process as part of the CRRP development. A public involvement plan may include steps to identify stakeholders, facilitate opportunities for input, and offer a public review process. Likely stakeholders in the CRRP development process include the following: community members; local environmental advocacy groups; public health officials; business organizations; local businesses interests; local agency staff from special districts—schools, parks, and transportation districts—and representatives from identified significant stationary sources. To provide meaningful and effective public outreach, the lead jurisdiction should be familiar with unique conditions in the CRRP community such as, language translation barriers, existing public health concerns, and information accessibility options (such as, internet connections, and library access.

The public involvement plan for a CRRP should identify opportunities for public input and review, such as: hosting public meetings and workshops, providing website tools, and presenting at existing standing meetings. A lead jurisdiction may also consider establishing a multi-stakeholder working group to ensure a high level of public participation throughout the CRRP development process. The BAAQMD will attend public outreach meetings and will present information on the CRRPs and the technical inputs as requested.

The CARE Task Force, as discussed above, provides input and feedback to the BAAQMD that will be considered in developing inputs for and in reviewing CRRPs.

d. Environmental Review

One motivation for cities and counties to produce a CRRP is that it may allow CEQA streamlining. The BAAQMD believes that this is appropriate since it may reward a more effective and efficient planning process and, at the same time, send the right signals to project proponents to ensure that these projects are consistent with the community's air quality improvement priorities. A CRRP would not provide regulatory relief for projects that are inconsistent with community efforts to improve air quality.

It seems likely that CEQA compliance will be necessary for CRRP adoption in order to allow for future streamlining of analysis of TAC/PM2.5 health risks for project fully consistent with a CRRP.

4. Defining the Planning Area, Sensitive Receptor Areas, and Area of Influence

a. The Planning Area

The planning area is defined as the physical area within which the local government preparing the CRRP is interested in evaluating long-term health risks and allowing for a programmatic evaluation. The planning area may correspond to a city's boundaries, in which case the city for could use the CRRP for tiering CEQA review of any development project consistent with the CRRP. The planning area could also be sub-areas within a city, a county, or sub-areas of a county. It may also be that two or more cities wish to jointly develop a CRRP, in which case, the planning area could span jurisdictional boundaries.

b. Sensitive Receptor Areas

Sensitive receptors are defined by BAAQMD's *CEQA Air Quality Guidelines* as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas. Table 1 lists locations designated in the California Air Pollution Control Officers Association's (CAPCOA's) *Health Risk Assessment for Land Use Projects* guidance (CAPCOA 2009) where sensitive receptors are typically found. Table 1 serves as a minimum recommendation for receptors to be considered in a CRRP.

Within the planning area, *sensitive receptor areas* are defined as areas that include residential neighborhoods, schools and school yards, parks and play grounds, daycare centers, nursing homes and medical facilities, and priority development areas, including future development projects of the above. The sensitive receptor areas will form the basic units for which local risks and hazards are assessed. The actual areas selected may correspond to city parcels, city blocks, census tracts, block groups[1], specific plan areas, or neighborhoods.

Table 1. Typical locations where sensitive receptors may be located that will need to be considered in a CRRP analysis.

Sensitive Receptors
• Residential Communities
• Schools
• Schoolyards

[1] As defined by the U.S. Census 2000 or later.

- Parks
- Playgrounds
- Daycare Centers
- Nursing Homes
- Hospitals

Source: CAPCOA 2009: *Health Risk Assessments for Land Use Projects—CAPCOA Guidance Document.* July 2009.

c. The Area of Influence

The area of influence is defined as the area containing TAC or PM2.5 sources that should be evaluated in relation to each sensitive receptor area. It is expected that the area of influence will be defined as within 1,000 ft (or other as appropriate) of the perimeter of the planning area. The distance of 1,000 ft is provided as a guideline only. Discretion is given to a local government and the BAAQMD in determining the most appropriate boundary. See Figure 1 for an example of the interrelation between the planning area, sensitive receptor area, and area of influence, and sources to consider for a CRRP analysis.

Line sources (e.g. roadways and railroad tracks) will likely not be wholly contained within either the sensitive receptor area or the area of influence. When calculating risk within the planning area with dispersion models it is recommended that a line source be modeled within the area of influence and a significant distance upstream and downstream of the area of influence to ensure that the health risk from the line source is not under-represented. The details of evaluating risks from such sources are discussed in the BAAQMD's *Modeling Guidance* (BAAQMD 2010b).

d. Selecting the Planning Area

Certain disadvantages may be associated with a planning area that is either too large or too small. The magnitude of health benefits gained from a small planning area may be limited, while a large planning area may become logistically difficult to manage. Latitude is given to a local government to define the planning area by several means in addition to geography and jurisdiction. For example, a community may opt to focus a CRRP on a single community of concern. Alternatively, a community could define a CRRP geographically around a single dominating source (e.g. a port or rail yard). However, as described below, once a planning sensitive receptor area is defined, all sources within the area of influence must be included in order to comprehensively evaluate TAC and PM2.5 risk against BAAQMD cumulative thresholds. The BAAQMD will strongly recommend that local governments include existing neighborhoods, as well as priority development areas, in the planning area.

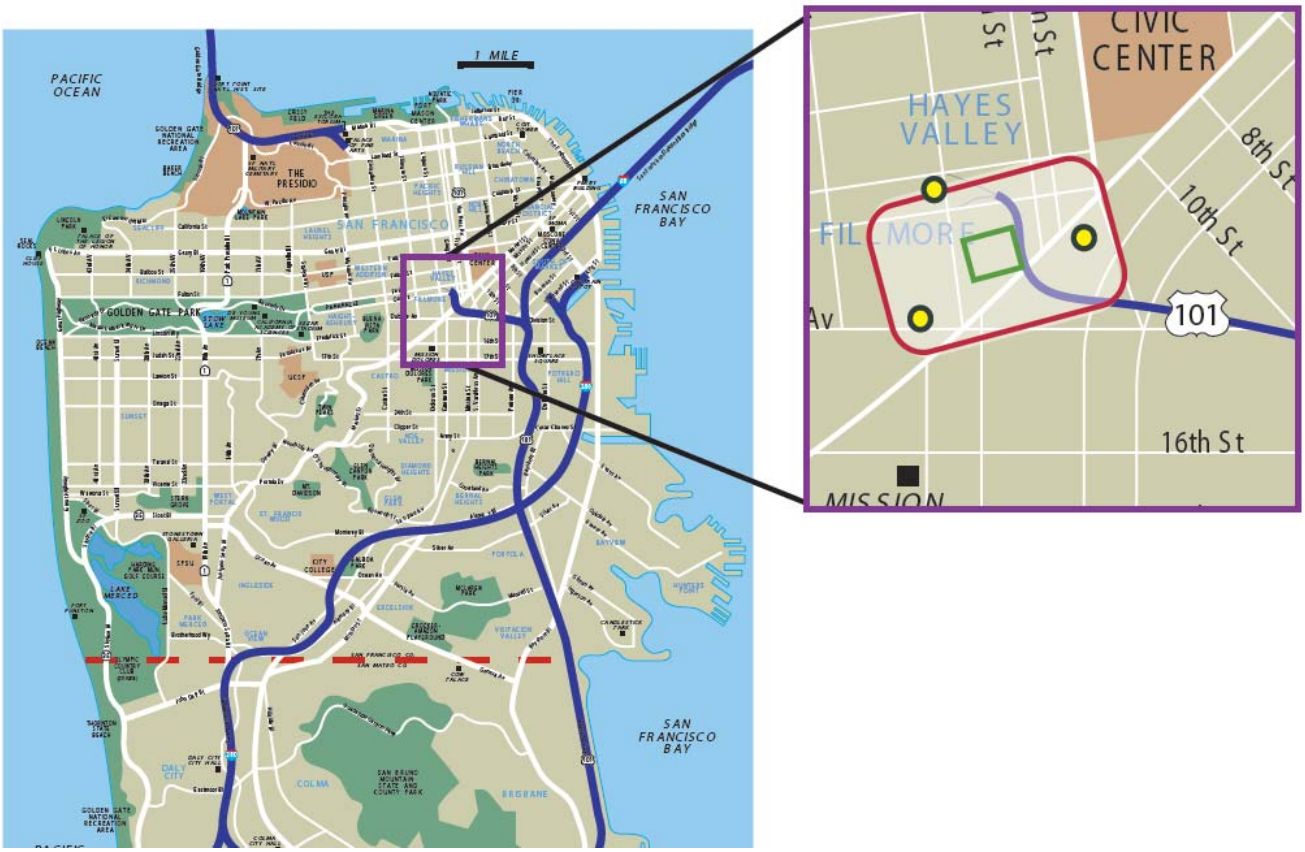

Figure 1. A hypothetical example of CRRP plan area, sensitive receptor area, and area of influence. The plan area may correspond to a city's boundaries (in this example the City and County of San Francisco; left image, red dashed line and coastline); the sensitive receptor area may correspond to a city parcel (right inset, green rectangle); the area of influence (right inset, red rectangle) is 1,000 ft from the sensitive receptor area. Stationary sources (right, small yellow circles) and roadways are shown in and adjacent to the area of influence. Many such sensitive receptor areas need to be considered in developing a CRRP for a large city.

e. Selecting Sensitive Receptor Areas

Selecting the sensitive receptor areas as the basis for risk and hazards analyses implies that the analyses will be receptor oriented. A receptor-oriented analysis identifies a group of receptors (sensitive populations) or an area with receptors and examines risks to these receptors from a multiple sources. This is in contrast to a more typical a source-oriented approach which focuses on a source or group of sources and examines its effect on multiple receptors. A heath risk assessment of a new source (for example during a permitting process) is an example of a source-oriented risk analysis. See Figure 2 for schematic illustrations of receptor-oriented versus source-oriented approaches. The advantage of examining risks using a receptor-oriented is that impacts of multiple sources can be examined, facilitating more of a cumulative analysis of risk.

Setting boundaries of the sensitive receptor areas is at the discretion of the local government preparing a CRRP. Each community will have unique characteristics and specific TAC and PM2.5 concerns. To maximize effectiveness of a CRRP, the BAAQMD will work with CRRP preparers to identify key issues and aptly define appropriate boundaries.

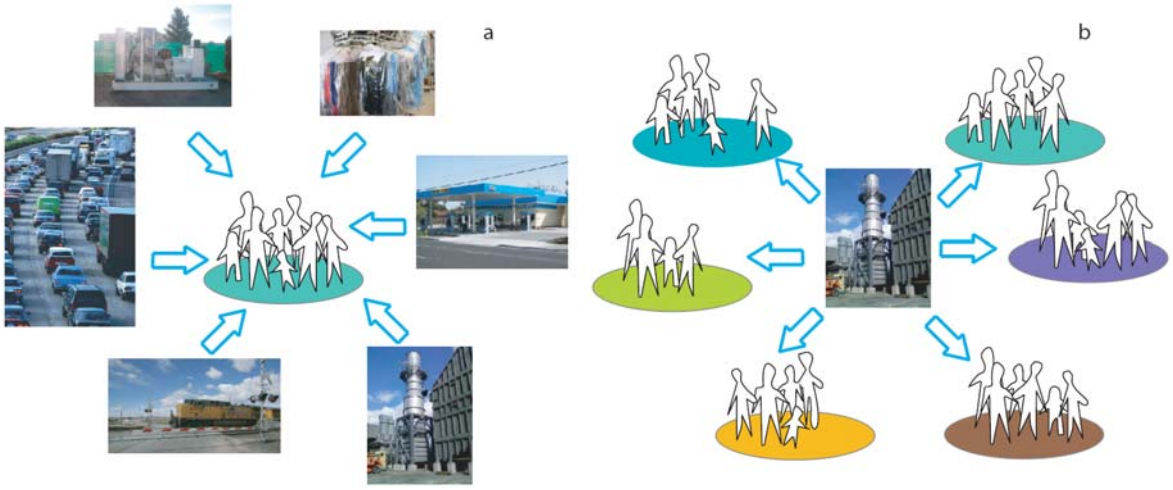

Figure 2. A schematic illustration of a receptor-oriented (a) versus a source-oriented (b) approach.

f. Coordination among Communities

The BAAQMD encourages communities within a jurisdiction or across jurisdictional boundaries, if similar exposure concerns exist, to develop a joint plan or a plan that is complementary and highly cooperative. Secondly, neighboring communities that develop two unique CRRPs may choose to enter into a memorandum of understanding (MOU) for projects along the border of both areas. The BAAQMD will work with CRRP preparing entities to identify opportunities for cooperation and to structure cooperative CRRPs.

5. Estimating TACs and PM2.5 Emissions within the Planning Area

a. Estimating Emissions: Base Years and Target Years

The BAAQMD will prepare the TAC and PM2.5 emissions inventory needed to develop a CRRP; or the BAAQMD will advise and assist a local government that chooses to prepare such an emissions inventory. A CRRP emissions inventory identifies all major TAC and PM2.5 sources, and their emission rates, affecting the sensitive receptor areas within the plan area. The inventory identifies emissions sources in the plan area and estimates the magnitudes of the sources for TAC and PM2.5 pollutants. For example, the inventory might include emissions from

state highways, local mobile sources and large point and area sources such as refineries, power plants, gas stations, or rail yards. The inventory is reported in units of mass/day.

The emissions base year is the starting point for examining TACs and PM2.5 effects on receptors. The base year should be selected to be representative of recent, or near-term, "typical" conditions.

- **The BAAQMD is suggesting 2012 as a base year for the emissions inventory.**

Year 2012 is consistent with the time frame needed to produce and start applying the CRRPs.

The emissions target year is an estimate of what the inventory of all major emissions sources will be in a future year, when CRRPs are scheduled to achieve the goals and reduction target established. The emissions target year inventory identifies emissions sources that will affect the plan area in the future estimates the magnitudes of the sources in the future year. Emissions in the target year include the same source categories as the base year inventory and must use the same plan area boundary as the base year inventory.

- **The BAAQMD is suggesting 2020 as a target year.**

Most elements of the ARB's Diesel Risk Reduction Plan (ARB 2000) will be implemented or underway by 2020. Some longer-term planning changes may extend beyond 2020 to achieve their full benefits, such as the effects of land-use rezoning; but many significant changes will be in effect by that date.

The BAAQMD has not finalized the list of TACs and PM2.5 source categories that should be included in a CRRP analysis. Table 2 presents a tentative list of TACs that may be considered in a CRRP analysis along with each TAC's cancer and non-cancer risk factors based on Office of Environmental Health Hazard Assessment (OEHHA) guidance.

b. Data Sources for Estimating Emissions

To support upcoming CEQA evaluations and the development of CRRPs, the BAAQMD is developing a detailed, local-scale inventory for base and target years of TAC and PM2.5 emissions within the BAAQMD. A CRRP preparer may use the BAAQMD inventory for both the base and target years. Using the methods or the actual emissions estimates developed by the BAAQMD will promote consistency among CRRPs. The BAAQMD will work with the preparer to provide emissions estimates relevant to the CRRP's area of influence. In addition, the BAAQMD is reviewing and improving modeling parameters for many significant emissions sources; these parameters are critical inputs for air dispersion modeling.

c. Elements of the Emissions Inventory

The BAAQMD, working with a consultant, has developed a work plan for generating the detailed emissions inventories needed for the CRRPs. The plan calls for reviewing and improving emissions estimates and modeling parameters in the following areas:

- On-road mobile source emissions in the Bay Area and in communities identified as impacted through the CARE program. The work plan calls for developing emission

estimates for cars and trucks on major roadways and highways in the Bay Area using the most recent traffic count data available from Caltrans and other sources. Within communities identified as impacted through the CARE program, emissions estimates will also be generated for selected non-state roadways.

- Emissions from stationary diesel engines. The work plan calls for ranking diesel generators by risk-weighted TAC emissions and PM2.5 emissions. For generators ranked among the top 1,000 in the Bay Area, particular attention will be given to review operations, emissions, and stack parameters required for dispersion modeling purposes.
- Emissions from gasoline dispensing facilities (GDFs) in the Bay Area. For GDFs ranked among the top 1,000 in the Bay Area, pump dispenser dimensions, number of pumps, and vent stack parameters will be reviewed using information from permits and site visits.
- Emissions from dry cleaners that use perchloroethylene (PERC) in the Bay Area. ARB and BAAQMD dry cleaning regulations will phase out the use of PERC dry cleaning machines by 2023, or sooner. In the interim, emissions for remaining PERC dry cleaners and dimensions will be reviewed.
- Compiling a list of significant sources of TAC and PM2.5 in the Bay Area. The top 100 permitted stationary sources of TACs and top 100 stationary sources of PM2.5, excluding diesel generators, GDFs, and dry cleaners will be identified; emissions and stack parameters will be reviewed.
- Quantifying non-permitted significant sources in communities identified as impacted through the CARE program. The work plan calls for developing a methodology or set of criteria that can be used to identify non-permitted sources with significant emission levels, focus on identifying facilities that generate significant emissions from on-road and off-road mobile sources (e.g., distribution centers, rail yards, bus terminals, etc.)
- Developing a methodology for evaluating multiple-year construction impacts in the Bay Area. The work plan calls for developing a methodology for analyzing and estimating emissions from multi-year (greater than two years) construction projects. The methodology will include a definition of applicable projects (e.g., project type, duration and size, and time horizon for future projects), types of equipment that should be included in the analysis, methods for assessing emissions over each phase of construction, and appropriate screening tools
- In addition to the above, the BAAQMD will make use of, as available and needed for CRRPs, the following sources of information:
- DPM emissions estimates from the Port of Oakland health risk assessment for year 2005 (ARB 2008).
- SF Bay Area seaports emissions inventory for year 2005 (Moffat & Nichol and ENVIRON 2010). Reports for each port and associated emissions estimates will be publically released once all members of the Seaports Project Steering Committee present the results to their Boards.
- BAAQMD in-house development of activity and emissions along Bay Area railroad lines.

Table 2. Cancer and non-cancer risk factors for selected TACs.

TAC Name	Non-Cancer		Cancer	
	Acute Inhalation (µg/m3)	Chronic Inhalation (µg/m3)	Inhalation Unit Risk (µg/m3)-1	Inhalation Cancer Potency Factor (mg/kg-d)-1
DPM	–	5.00E+00	3.00E-04	1.1oE+00
PM2.5	–	–	–	–
Elemental metals*	*	*	*	*
acetaldehyde	4.70E+02	1.40E+02	2.70E-06	1.00E-02
acrolein	2.50E+00	3.50E-01	–	–
benzaldehyde	–	–	–	–
benzene	1.30E+03	6.00E+01	2.90E-05	1.00E-01
ethanol	–	–	–	–
ethylbenzene	–	2.00E+03	2.50E-06	8.70E-03
ethylene	–		-	-
ethylene dibromide (1,2-dibromoethane)	–	8.00E-01	7.10E-05	2.50E-01
ethylene dichloride (1,2-dichloroethane)	–	4.00E+02	2.10E-05	7.20E-02
ethylene glycol	–	4.00E+02	–	–
ethylene oxide (1,2-epoxyethane)	–	3.00E+01	8.80E-05	3.10E-01
ethylene thiourea	–	–	1.30E-05	4.50E-02
ethylene glycol butyl ether	1.40E+04	–	–	–
ethylene glycol ethyl ether	3.70E+02	7.00E+01	–	–
ethylene glycol ethyl ether acetate	1.40E+02	3.00E+02	–	–
ethylene glycol methyl ether	9.30E+01	6.00E+01	–	–
ethylene glycol methyl ether acetate		9.00E+01	–	–
formaldehyde	5.50E+01	9.00E+00	6.00E-06	2.10E-02
methyl ethyl ketone (mek) (2-butanone)	1.30E+04	–	–	–
methylcyclopentane		–	–	–
m-xylene	2.20E+04	7.00E+02	–	–
n-hexane	–	7.00E+03	–	–
o-xylene	2.20E+04	7.00E+02	–	–
propylene	–	3.00E+03	–	–
propylene glycol monomethyl ether	–	7.00E+03	–	–
propylene oxide	3.10E+03	3.00E+01	3.70E-06	1.30E-02
toluene	3.70E+04	–	–	–

*Risk factors for selected elemental metals to be added.

Source: Office of Environmental Health Hazard Assessment 2003, 2008, 2009.

6. Dispersion/Risk Modeling

a. Modeling Approach

The BAAQMD is still soliciting input on the approach to be applied for dispersion and risk modeling to support CRRP development. However, BAAQMD's is proposing an approach that is directly comparable to the CEQA thresholds for air risks and hazards. In essence, this approach applies the CEQA methodology to planned and existing sensitive receptor areas in the planning area. This provides pre-screening and evaluation for potential development areas. For example, this method could provide prescreening for the PDAs in the planning area. Where thresholds are not met, mitigations would need to be identified to meet the thresholds at a future target year. The proposed modeling approach would

- Identify all sensitive receptor areas in the CRRP planning area or a representative subset of receptor areas in the planning area;
- For each sensitive receptor area, identify all sources within the associated area of influence (generally 1,000 ft radius around the sensitive receptor area). The sensitive receptor areas include existing and planned sensitive receptors;
- Apply modeling using the base year emissions inventory to estimate the base year risks and hazards to from the sources in the area of influence to the receptors in each sensitive receptor area;
- Compare the base year risks and hazards for each sensitive receptor area to the individual and cumulative CEQA risk and hazards thresholds.
- Where the base year risks and hazards exceed the thresholds for the base year, apply modeling using the target year emissions inventory to estimate risks in the target year.
- If target year risks and hazard exceed the CEQA thresholds, identify mitigations.

b. Modeling Methodology for Estimating Local Risks and Hazards

The BAAQMD has provided guidance on acceptable methods and modeling techniques for emissions estimated and risk modeling in *Recommended Methods for Screening and Modeling Local Risks and Hazards* (BAAQMD 2010b). An additional source of information is the CAPCOA guidance document titled *Health Risk Assessment for Proposed Land Use Projects* (CAPCOA 2009).

7. Developing a Goal and/or Reduction Target

Setting goals for reducing emissions and exposures is a critical element of a CRRP. The BAAQMD is still seeking input on options for what constitutes a minimum CRRP reduction target. However, as

discussed in the previous section, BAAQMD is currently considering using the CEQA thresholds for individual and cumulative air risks and hazards as a reduction target.

Following this approach, success is achieved if for each sensitive receptor area no single source in the associated area of significance contributes

- An excess cancer risk greater than 10 in one million,
- a non-cancer (chronic or acute) hazard index greater than 1.0, or
- an incremental increase of greater than 0.3 micrograms per cubic meter (μg/m3) annual average PM2.5.

And all sources in the areas of significance of each sensitive receptor area do not contribute

- An excess cancer risk greater than 100 in one million,
- a non-cancer (chronic or acute) hazard index greater than 10.0, or
- an incremental increase of greater than 0.8 micrograms per cubic meter (μg/m3) annual average PM2.5

CRRP preparing entities will have discretion in setting the plan's target year and thus the timeframe by which progress should be made. The BAAQMD is also seeking input on target years and the progress toward reaching targets over time, but is considering 2020 as at least an initial target year.

The date for achieving the reduction target or CRRP goal should be tied to the community's purposes in completing the plan. Given that it may require a number of years for the exposure levels in many communities to reach an acceptable level, setting realistic, near-term targets ensures immediate progress in bettering public health in the Plan Area.

The relationship of a CRRP to the CEQA process for individual projects is discussed further in a subsequent section.

8. Strategies to Reduce Exposures to Air Toxics and Fine Particulate Matter

a. Exposure Reduction Measures

CRRPs should include measures to reduce emissions from existing and new sources and reduce exposure of existing and future receptors. It is anticipated that each jurisdiction preparing a CRRP will develop a unique list of measures that best addresses the TAC and PM2.5 concerns in the area that are consistent or complimentary to other local efforts to curtail airborne health risk.

A sample list of measures that a community could select from is included in Table 3. Table 3 is not intended to be comprehensive, but should be considered representative of the types of measures the BAAQMD deems appropriate and as a starting point in CRRP reduction measure development. The BAAQMD is available to assist a local government in selecting or developing reduction measures. Measures that reduce risk and/or emissions can target either sources (new or existing) or receptors (new and existing). Additionally, sources can be either stationary or mobile. Within these two main

source categories, Table 3 identifies measures as either a strengthening of an existing regulation or practice or the introduction or requirement of a new practice. For each PM2.5/TAC reduction measure, Table 3 also lists the jurisdiction that would likely be responsible for designing and implementing the measure. In some cases, the measure may be beyond the jurisdiction of either local government or the BAAQMD, for example on- and off-road mobile sources. In such cases, the measures call for incentivized reductions, voluntary reductions, or reductions achieved through negotiations with businesses and State or federal regulators.

Table 3. Potential PM2.5/TAC Reduction Measures

Sector	Description	Responsible Jurisdiction
LAND USE/LOCATION	Increase density including supporting high-density residential	Local Government
	Increase transit accessibility	Local Government
	Support office/mixed use density near transit	Local Government
	Integrate affordable and below market rate housing	Local Government
	Orient project away from auto- corridor	Local Government
	Orient project toward transit, bikeway or pedestrian corridor	Local Government
	Locate project near bike path/bike lane	Local Government
	Enhance pedestrian network	Local Government
	Minimize barriers to pedestrian	Local Government
DISTANCE SETBACKS	Establish minimum setbacks for new housing and other sensitive land uses from freeways and arterial corridors	Local Government
	Avoid siting new sensitive land uses near a distribution center, other large indirect sources	Local Government
	Establish minimum setbacks from identified stationary sources	Local Government
PHYSICAL BUFFERS	Install tiered vegetative and tree planting near source	Local Government
	Set physical buffers around receptors, i.e., parking lots, vegetation, sound walls	Local Government
BUILDING CODE AND DESIGN	Install and maintain air filtration systems such as passive electrostatic filtering systems with low air velocities in new development near sources.	Local Government
	Install and maintain indoor air quality monitoring units in building.	Local Government
	Locate HVAC intakes away from emission sources	Local Government
	Prohibit fireplaces	Local Government

Sector	Description	Responsible Jurisdiction
	Prohibit use of gasoline-powered leaf blowers and lawn mowers	**Local Government**
	Implement clean street sweepers for PM	**Local Government**
ALTERNATIVE FUEL & TRUCK RETROFIT	**Identify areas with significant truck emissions near receptors and explore options for incentives and measures through the Air District and operators to accelerate reductions in advance of regulations, such as:** · **Install diesel particulate filters on diesel engines** · **Install diesel oxidation catalysts on diesel engines** · **Accelerate replacement of older trucks** · **Replace/retrofit old buses** · **Install auxiliary power units** · **Negotiate with fleet operators to use cleaner vehicles in expanding fleet** · **Consider alternative fuels, such as compressed natural gas, hybrid, etc.** · **Install electrical hookups at truck loading docks**	**Local Government, BAAQMD**
	Coordinate with BAAQMD to target grant opportunities to identified truck sources	**Local Government, BAAQMD**
GOODS MOVEMENT/PORTS	**Identify areas with significant emissions from goods movement near receptors and explore options for incentives and measures with the Air District to reduce emissions, such as:** · **Accelerate and/or exceed measures in the Statewide Goods Movement Emission Reduction Plan (Port of Oakland)** · **Install electrical hookups at loading docks** · **Consider alternative modes of goods movement, such as cleaner rail vs. highway**	**Local Government, Ports, BAAQMD**
	Avoid siting new sensitive land uses immediately downwind of ports in the most heavily impacted zones and establish setbacks for new development near ports	**Local Government**
TRUCK OPERATIONS	**Implement off-hour delivery program**	**Local Government**
	Implement truck parking restrictions	**Local Government**
	Identify and enforce no-idle zones	**Local Government**
	Enforce state laws for idling with trucks and auxiliary units	**Local Government**
	Restrict and/or reroute truck traffic	**Local Government**
	Configure on-site construction parking to minimize traffic interference and ensure	**Local Government**

Sector	Description	Responsible Jurisdiction
	emergency vehicle access	
	Design project to reduce the number of diesel vehicles congregating at any one location	Local Government
NEIGHBORHOOD/SITE ENHANCEMENTS	Support street grid designs	Local Government
	Enhance the pedestrian network	Local Government
	Implement a neighborhood electric vehicles (NEV) network including infrastructure for parking, accessibility, and charging stations	Local Government
	Support car share programs in existing parking lots and for new developments	Local Government
	Participate and encourage Safe Routes to School programs	Local Government
TRAFFIC FLOW	Implement traffic calming to reduce speeds such as, roundabouts, speed bumps, stop signs, etc.	Local Government
	Provide traffic flow improvements for areas impacted by the project	Local Government
	Route existing or projected traffic away from receptor areas	Local Government
	Improve road infrastructure system management - signal synchronizations - improve traffic flows - speed limits reflecting roadway capacities	Local Government
BICYCLE NETWORK	Provide bike lanes	Local Government
	Provide bike parking	Local Government
	Require that new development provide end of trip facilities such as showers, lockers, bike racks when appropriate	Local Government
PARKING POLICY/PRICING	Implement parking pricing for on-street parking	Local Government
	Implement parking pricing for off-street parking	Local Government
	Unbundle parking from property costs	Local Government
	Require parking cash out options	Local Government
	Eliminate minimum parking requirements	Local Government
	Allow for parking reduction beyond code	Local Government
	Design pedestrian pathways through parking	Local Government
	Implement preferential parking permit program for carpoolers, etc.	Local Government
TRANSIT SYSTEM IMPROVEMENTS	Expand transit network	Local Government, Transit Districts
	Provide bus shelters for new and planned transit service	Local Government, Transit Districts
	Enhance transit service frequency and speed	Local Government, Transit Districts
	~~Implement Bus Rapid Transit~~	Local Government,

Sector	Description	Responsible Jurisdiction
		Transit Districts
	Implement subsidized or discounted transit program	**Local Government, Transit Districts**
	Improve alternative fuel transportation options such as biodiesel, light rail, etc.	**Local Government, Transit Districts**
COMMUTE TRIP REDUCTION PROGRAMS	**Encourage developments/employers to implement commute trip reduction program including:** · **Provide employees parking "cash out" options** · **Provide workplace parking pricing** · **Support alternative work schedules and telecommuting** · **Conduct marketing and outreach for commute trip reduction** · **Provide employer-sponsored vanpool/shuttle** · **Provide ride-sharing programs**	**Local Government**
	Adopt transit fare subsidy policy (such as San Francisco's transit subsidy ordinance)	**Local Government**
	Provide shuttle system from transit stations to business centers	**Local Government**
MITIGATION FEE PROGRAM	**Implement a mitigation fee program to fund:** · **Accelerating retirement of older vehicles and purchasing cleaner vehicles** · **Purchasing low-emission buses/vehicles/heavy duty trucks/light duty trucks** · **Retrofit heavy duty vehicles/engines**	**Local Government**
MARINE SOURCES	**For areas identified to have significant impacts from marine sources, explore options for incentives and/or additional emissions reduction measures or operational changes to reduce exposures**	**BAAQMD, Industry, EPA, ARB**
LOCOMOTIVES	**For areas identified to have significant impacts from rail emissions, explore options for incentives and/or additional emissions reduction measures or operational changes to reduce exposures**	**BAAQMD, Industry, EPA, ARB**
	Avoid siting new sensitive land uses near a major service or maintenance rail yard	**Local Government**
	Support and advocate for electrifying commuter rail lines	**Local Government, BAAQMD**
CONSTRUCTION EXHAUST REDUCTION	**For areas identified to have significant impacts from construction emissions, explore options for incentives and/or additional emissions**	**BAAQMD, Industry, ARB**

Sector	Description	Responsible Jurisdiction
	reduction measures or operational changes to reduce exposures	
	Adopt a Green Construction Ordinance such as San Francisco's ordinance which requires off-road construction equipment to meet US EPA Tier 2 standards or BACT	**Local Government**
	Adopt conditions of approval for construction projects near receptors and/or with significant emissions to implement reduction strategies such as: · **Installing PM filters on generators** · **Contractors to use equipment that meets CARB's most recent certification for off-road diesel engines or BACT** · **Electrify construction equipment** · **Provide grid or renewable electricity in place of generators** · **Phase construction activities** · **Minimize idling limits to two minutes and provide clear signage explaining so limits** · **Demonstrate fleet average of 45% reduction in PM compared to ARB's fleet average** · **Utilize alternative fuels and engine technologies that reduce emissions** · **Ensure that construction equipment is maintained and tuned**	**Local Government**
	Reroute construction site traffic to avoid sensitive receptors	**Local Government**
	Provide an offsite mitigation program	**Local Government**
	Set setbacks/buffers between the project fence line and the population center	**Local Government**
FUGITIVE DUST EMISSIONS	**Adopt conditions of approval for construction projects near receptors and/or with significant emissions to implement fugitive dust emission reductions such as those listed below**	**Local Government**
	Install sandbags or other erosion control measures to prevent silt from entering roadways	**Local Government, Developers**
	Maintain on-site truck loading zones	**Local Government, Developers**
	Install wind breaks	**Local Government, Developers**
	Street and shoulder paving and runoff and erosion control in project areas	**Local Government, Developers**
	Apply water every 4 hours to the area within 100 ft of a structure being demolished, to reduce vehicle trackout.	**Local Government, Developers**

Sector	Description	Responsible Jurisdiction
	Apply layer of wood chips, mulch, or gravel to site accesses 100 ft from paved road	Local Government, Developers
	Install a gravel apron, 25 ft long by road width, to reduce mud/dirt trackout from unpaved truck exit routes.	Local Government, Developers
	Apply water to disturbed soils after demolition is completed or at the end of each day of cleanup.	Local Government, Developers
	Prohibit demolition activities when wind speeds exceed 25 mph.	Local Government, Developers
	Apply water every 3 hours to disturbed areas within a construction site.	Local Government, Developers
	Require minimum soil moisture of 12% for earthmoving by use of a moveable sprinkler system or a water truck. Moisture content can be verified by lab sample or moisture probe.	Local Government, Developers
	Limit on-site vehicle speeds (on unpaved roads) to 15 mph by radar enforcement.	Local Government, Developers
	Replace ground cover in disturbed areas as quickly as possible.	Local Government, Developers
	All trucks hauling dirt, sand, soil, or other loose materials are to be tarped with a fabric cover and maintain a freeboard height of 12 inches.	Local Government, Developers
	Implement street sweeping program with PM10 efficient vacuum units (14-day frequency)	Local Government, Developers
	Install pipe-grid trackout-control device to reduce mud/dirt trackout from unpaved truck exit routes.	Local Government, Developers
	Limit maximum speed on unpaved roads to 25 miles per hour.	Local Government, Developers
	Pave unpaved roads and unpaved parking areas.	Local Government, Developers
	Implement watering twice a day for industrial unpaved road.	Local Government, Developers
	Provide construction of 3-sided enclosures with 50% porosity around storage pile	Local Government, Developers
	Water the storage pile or apply cover when wind events are declared.	Local Government, Developers
	Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.	Local Government, Developers
	Plant vegetative ground cover in disturbed areas as soon as possible.	Local Government, Developers
	Provide continuous water spray at conveyor transfer point	Local Government, Developers

Sector	Description	Responsible Jurisdiction
SETBACKS/BUFFERS FOR STATIONARY SOURCES	**Minimum setbacks of sensitive receptors from petroleum refineries, chrome platers gas stations, and other stationary sources**	**Local Government**
	Separate new stationary sources from sensitive receptor areas	**Local Government**
REGULATIONS FOR STATIONARY SOURCES	**For areas identified to have significant impacts from stationary sources, explore specific options for new or amended regulations for implicated source categories**	**BAAQMD**

In selecting or developing measures for a CRRP, the local government will need to determine if the measures are sufficient to meet the reduction target. Both qualitative and quantitative reduction measures should be considered when evaluating an individual projects consistency with a CRRP.

b. Responsibility for Implementation

Much like measures aimed at reducing greenhouse gases within a Greenhouse Gas Reduction Plan, the responsibility of implementing measures to reduce emissions of and risk related to TACs and PM2.5 falls on several parties. First, the state, primarily through the ARB, has the authority to regulate vehicles and equipment statewide. Measures, or suites of measures such as the Diesel Risk Reduction Plan, while implemented statewide, result in significant local reductions. Second, the local government has authority over zoning, permitting, standards for new development, and the institution of local-level programs to reduce emissions or risk. Third, the proponent of a project within the Area of Influence can incorporate design features into a project that reduce emissions from a new source, or include as mitigation actions that address an existing source within the Area of Influence, or select a site for a project that minimizes risk to existing receptors in the Plan Area.

9. Monitoring and Updating

a. Need Monitoring and Updates

A CRRP is a goal-based plan. It defines a path to overall reduced health risk exposure in the Plan Area by a target date. Because the task of risk reduction is significant for many communities, the target date may be far into the future, e.g. 2020. The BAAQMD's primary goal is to reduce health risk to residents in the region. A CRRP must periodically demonstrate that it is achieving real health results equivalent to those achieved through individual project analysis. The ability of a community to reduce risk is inextricably related to efforts at the state level. A CRRP should reflect the most current projections of the effectiveness of these regulations.

b. Updating Frequency

A CRRP should be updated whenever the BAAQMD updates its district-wide TAC and PM2.5 emissions inventory and/or whenever a significant change in the underlying assumptions or baseline conditions of a CRRP have changed. For example, if some fraction of the Plan Area is rezoned, a CRRP update would be appropriate. Because a CRRP relies on district-wide TAC and PM2.5 inventory data compiled by the BAAQMD, an individual CRRP can be updated at a maximum frequency in sync with BAAQMD inventory updates. However, if a community has the resources to update more frequently, it is certainly encouraged to do so. The BAAQMD anticipates updates to the district inventory at 5-year intervals. A CRRP can also be updated when new reduction measures may be more effective than those in the existing CRRP and which the preparing jurisdiction desires to formally adopt into a CRRP.

c. Revising CRRP Reduction Targets

Communities may want to pursue additional analysis or revise a CRRP if the underlying assumptions and analysis of the original CRRP are no longer valid or applicable. Because significant reductions in DPM exposure are expected in the coming years due to state regulations, a community's ability to reach a target will be inextricably tied to the success of these programs. These issues will be taken into account through milestone years and updates as discussed above. The BAAQMD is currently considering options available for a community that is failing to meet the goals of a CRRP. At a minimum, CEQA analysis will not be able to adopt streamlining using a CRRP that is not meeting its reduction goals—this issue is discussed in greater detail in the following section.

d. Requirements for a CRRP Update

At a minimum, a CRRP update should incorporate the BAAQMD's latest inventory data for TAC and PM2.5 sources, model runs using this data, and the latest projections of effects of state and local measures. Any update must meet the BAAQMD's minimum CRPP goal as well as the specific targets included in a CRRP. This means that additional or different measures may need to be added if and when new sources or receptors are contemplated than were included in the last version of a CRRP. The BAAQMD expects that the update process will be less labor intensive than plan development and that a large portion of the analysis performed at CRRP development, can be leveraged for the update.

e. Gauging a Community's Progress

A community's progress can be gauged, in part, by comparing emissions within the area of influence for a sensitive receptor area in the base year and to the emissions in the target year once adjusted for all measures implemented. Comparison to the baseline emissions will identify whether emissions are being reduced over time.

Dispersion modeling with base and target year emissions will also reveal whether progress is being made. Modeled risk and PM2.5 for sensitive receptor areas can be periodically compared to the CEQA air quality thresholds

Local-scale measurements are another way to gauge progress. However, it is expensive to conduct local-scale monitoring with enough spatial coverage and over a long enough time span to establish trends. The BAAQMD will not require a community to establish an extensive monitoring network within the Plan Area, but of course will not preclude communities from doing so if resources permit. The BAAQMD has committed to making measurements in several CARE communities with its mobile sampling van during 2010, but cannot yet commit to follow-up sampling at later times.

10. CEQA and a CRRP

a. Analysis Requirements for Projects Consistent with a CRRP

Using the CEQA air quality thresholds as the reduction target for CRRPs greatly simplifies the requirements for showing consistency of a new development project with the CRRP. For development projects that bring new receptors to a city or county—for example a new residential housing development—if the project is within a sensitive receptor area that meets the CEQA thresholds by the target date, that project would not result in a significant impact to the environment, as defined under CEQA, from TAC or local sources of fine particulate matter. In essence, the CRRP would provide pre-screening and up-front mitigations for future projects, while at the same time identifying risk and hazard zones and their sources.

For development projects that introduce new sources into a community, those sources will need to be accounted for in the CRRP to qualify for streamlining. Sources not considered in the CRRP would require separate environmental analysis and would not qualify for streamlining. In general, stationary sources will remain subject to all BAAQMD permit requirements regardless of whether a CRRP is prepared or not.

It is possible that, in some areas, a CRRP, including all mitigation measures, may not be able to reduce local risks and hazards to the CRRP reduction targets. This may occur for existing or planned sensitive receptor areas. BAAQMD is seeking input on how (under what conditions), or whether, to recommend streamlining in such cases.

b. CEQA Compliance for CRRP

The BAAQMD believes that CEQA compliance will be necessary for CRRP adoption in order to allow for future streamlining of analysis of TAC/PM2.5 health risks for project fully consistent with a CRRP. A CRRP will include the discretionary adoption by the local municipality of certain standards and measures that could have secondary impacts on the environment. Thus a CRRP is a project under CEQA. However, it may be possible that a CRRP could be adopted using a Categorical Exemption or an IS/MND depending on the measures included in a CRRP and the secondary effects identified by the lead agency in its evaluation.

Resources

Bay Area Air Quality Management District. 1999. CEQA Guidelines—Assessing the Air Quality Impacts of Projects and Plans. Planning and Research Division of the BAAQMD. Available at < http://hank.baaqmd.gov/pln/ceqa/index.htm>.

———. 2007. Permit Modeling Guidance. June.

———. 2009a. Draft CEQA Air Quality Guidelines. Planning and Research Division of the Bay Area Air Quality Management District. Available at < http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx>.

———. 2009b. Revised Draft Options and Justification Report, California Environmental Quality Act Threshold of Significance. October.

———. 2010a. *California Environmental Quality Act Air Quality Guidelines*. June.

———. 2010b. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May.

California Air Pollution Control Officer's Association. 2009. *Health Risk Assessment for Proposed Land Use Projects.* July.

California Air Resources Board. 1998. Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, available at <http://www.arb.ca.gov/regact/diesltac/diesltac.htm>. Accessed: January 25, 2010.

———. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October. Available: <http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf>. Accessed: January 25, 2010.

———. 2009. Health Effects of Exhaust Particulate Matter, available at <http://www.arb.ca.gov/research/diesel/diesel-health.htm>. Last Revised: April 19, 2009. Accessed: January 25, 2010.

California Environmental Protection Agency and California Air Resources Board. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

Office of Environmental Health Hazard Assessment. 2003. Air Toxics Hot Spots Program Risk Assessment Guidelines. August.

———. 2009. Technical Support Document for Cancer Potency Factors: Methodologies for derivation, listing of available values and adjustments to allow for early life stage exposures. May.

Southern California Environmental Health Sciences Center. 2005. Air Pollution and Children's Health. Last Revised: 2005. Available: <http://hydra.usc.edu/scehsc/coep/coep_atlaschap.asp>. Accessed: January 25, 2010.

U.S. Environmental Protection Agency. 2009. Diesel Particulate Matter. Last Revised: June 24, 2009. Available: <http://www.epa.gov/NE/eco/airtox/diesel.html>. Accessed: January 25, 2010.