

**DRAFT
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Section D

Land Use and Local Impact Measures

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**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**

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LUM 1 - Goods Movement

Brief Summary:

This control measure aims to reduce emissions and population exposure related to movement of freight in the Bay Area by means of incentives, enforcement, research, strategic partnerships, and outreach. Regional components of this measure will focus on reducing truck use by encouraging a shift to other modes of freight transport by supporting pilot projects and research, as well as working with partner agencies to promote land uses patterns and distribution systems (roadways, logistic systems) that result in less vehicle miles traveled. At the local level, this measure includes targeted enforcement of ARB diesel regulations, outreach to businesses and fleets operating in goods movement corridors to encourage turnover to cleaner engines, and installation of signage to indicate trucks routes and anti-idling regulations. This measure also calls for advocating for container fees to be imposed on goods transported through Bay Area ports to fund strategies to offset goods movement emissions.

Purpose:

The purpose of this measure is to 1) reduce human exposure to diesel emissions from goods movement in the near term and 2) develop and support long-range strategies and partnerships to reduce emissions from the movement of freight in the Bay Area.

Source Category/Travel Market Affected:

Heavy and medium duty diesel trucks, locomotives and rail, dockside emissions from ships.

Regulatory Context and Background:

The Bay Area is home to a robust and varied economy, including the nation's fourth largest Port and five refineries, and serves as a major gateway for Pacific Rim trade. I-880, I-101, and I-80 freeways are heavily used to transport goods and intersect major metropolitan areas of Western Contra Costa/Richmond, East San Francisco, parts of the South Bay and Alameda County/West and East Oakland. Sensitive receptors and vulnerable populations near these goods movement corridors have been identified through the District's Community Air Risk Evaluation Program as being disproportionately impacted by elevated concentrations of toxic air contaminants, when compared to other areas of the Bay Area. The District has an important role to play in addressing these goods movement corridors as part of fulfilling its mission to protect the public's health and the environment.

The delivery of raw materials and finished products to factories, distribution centers and stores represents a significant segment of the Bay Area's emissions inventory. An extensive State and federal regulatory program will reduce criteria and toxic emissions from these sources down to very low levels per engine over the next 5-10 years. Over the past few years, ARB has adopted regulations consistent with their Goods Movement Emissions Reduction Plan (GMERP) goal of reducing diesel emission by 85% by 2020. These regulations have addressed: on road drayage trucks, locomotives, harbor craft, ocean going vessels, and off-road equipment.

In addition, regional plans which address the Bay Area's goods movement infrastructure and air pollutant emissions include the Regional Transportation Plan 2035 (RTP), Goods Movement Initiative 2009, and the Port of Oakland's Maritime Air Quality Improvement Plan (MAQIP). Projects identified in these plans will soon be implemented to address numerous impacts associated with the projected increase in goods movement (See TCM B-4).

However, the rate and extent of the decline in goods movement related emissions in the Bay Area will be dictated by how quickly the region can turn over the heavy/medium duty diesel fleet with new technologies and low emission engines. This will in part depend on the Bay Area's growth in population, economic activity, and local development patterns.

Despite the recent economic slump, the volume of goods movement in the region is expected to increase rapidly in the next several decades. The Port of Oakland's Maritime Air Quality Improvement Plan projects a 100% increase in volume of trade by 2020 under its low growth scenario. Notwithstanding uncertainty around economic trends and localized effectiveness of impending state diesel regulations and local plans, this increase will have implications for regional air quality.

This measure is intended to complement ARB's diesel emission reduction regulations as well as Bay Area plans to ensure that the region develops a comprehensive strategy to reduce emissions from the goods movement sector, and protect and improve public health in communities that are disproportionately impacted by goods movement emissions.

Implementation Actions:

Regional Implementation Actions:

- Lead a Collaborative Regional Effort – Continue working with regional partner agencies and transportation stakeholders in a collaborative regional process to articulate and advance a regional strategy for goods movement in the Bay Area, with a focus on air quality, health, and climate protection. This will include activities already underway, such as the Air District's Green Ports Initiative and the Port of Oakland's Maritime Air Quality Improvement Plan (MAQIP).
- Identify Strategies for Mode Shift – Examine opportunities to shift freight transport from truck to rail and barge in order to reduce emissions and exposure associated with movement of freight in the Bay Area. The District will consider participating in projects where mode shift can be beneficial to local and regional air quality, such as the "marine highway," a project to move freight by barge and tugboat between the Port of Oakland and the Port of Stockton.
- Efficiencies in Distribution Systems (roadways, logistic systems) – Assess current freight distribution systems and routes for major transport modes, and make recommendations for increasing travel efficiencies to reduce emissions. Areas of evaluation may include truck movements on regional highways between seaports, airports and warehousing/distribution

centers, and operational and/or design improvements to facilitate more efficient goods movement.

- Best Practices for Goods Movement Land Uses – Warehousing and Distribution Centers. MTC’s *Goods Movement Initiatives 2009* highlights a need to preserve land within the Bay Area core for goods movement businesses such as warehousing and distribution in order to decrease trip lengths and emissions associated with goods movement distribution. This may have implications for areas identified as impacted communities by the Air District, because many of these communities are located along the Bay Area’s major trade corridors. In order to avoid or mitigate population exposure to emissions from goods movement, the District will work with regional partners to identify and disseminate best practices to promote good air quality, and public health and safety in neighborhoods where goods movement facilities are situated adjacent to residential land uses. Best practices may include site design, zoning, industry operating practices and technological innovations. Best practices will be evaluated based on their ability to promote public health while encouraging infill development, particularly in FOCUS Priority Development Areas. This work will complement efforts by the FOCUS program to address the role of employment centers in smart growth.
- Container Fees – The District will advocate for container fees to be imposed on goods passing through Bay Area ports to be used for environmental mitigation. Fees should be assessed to reflect the air quality impacts that result from goods movement activities, including PM, ozone precursors, air toxics and greenhouse gases. Funds will be used to improve air quality in areas most impacted by goods movement activities.
- Partnerships and Demonstration Projects – The District will work with regional partners and stakeholders to identify, evaluate, and implement innovative projects that reduce emissions and exposure associated with goods movement. Demonstration projects are intended to spark long-range changes in freight movement and technology use that will result in reduced vehicle miles traveled, emissions, and human exposure to harmful emissions. Such projects may include implementing cold-ironing (shorepower) infrastructure at Bay Area ports in advance of ARB regulations in order to eliminate ship idling while docked, utilizing liquefied natural gas (LNG) to provide shorepower, promoting the use of LNG to power drayage fleets, funding new switcher engines at Bay Area railyards, and continuing to work in partnerships such as the Green Ports initiative.

Local Implementation Actions:

- Collaborative enforcement - The Air District is developing a diesel enforcement program whereby inspectors may enforce ARB’s diesel air toxics control measures (ATCMs) specifically targeting impacted areas identified by the CARE program along two major Bay Area trade corridors. Initial enforcement activity will be focused on diesel truck idling and drayage trucks and will expand to include other ATCMs as they become applicable, including cargo handling equipment, truck refrigeration unit (TRU) enforcement, Gen Set

enforcement, and off-road construction equipment. The District will also encourage local jurisdictions to enforce ARB’s anti- idling regulation.

- Systematic outreach and incentives program for independent and fleet truck operators – The District will continue and enhance outreach efforts to independent and fleet truck operators regarding available funds for installing retrofit devices on and/or replacing their trucks. The Air District will continue to operate a trailer at the Port of Oakland to inform truck drivers about ARB’s applicable anti-idling ATCMs, emission reducing technologies and fuels, and targeted incentives program in efforts to reduce emissions from the Port and along the I-880 corridor.
- Signage and truck routes – Air District staff will facilitate discussions with county planning departments, county public health departments, and local businesses and industries to assist in the planning process to identify suitable truck routes in and around impacted communities. Signage will then be placed to discourage idling and promote truck movements along non-residential arterial roads to reduce human exposure.
- Centralizing truck services and overnight parking – Support the Port of Oakland and Alameda County Congestion Management Agency (ACCMA) efforts to move essential truck services from within the impacted communities on to or near Port property or away from residential areas. In a recent survey conducted by the ACCMA, most truck driver access residential areas to repair their truck, to access the public scales, to obtain food or fuel, or to park until their next delivery. By having these services available at a centralized location away from residents, trucks will reduce vehicle miles traveled to these services and also drive less in residential communities thereby reducing emissions and exposure to residents.

Emissions Reductions:

<u>Pollutants (tons per day)</u>	<u>2012</u>	<u>2020</u>
ROG	0.01	0.36
NO _x	1.71	6.00
PM _{2.5}	0.22	0.48
PM ₁₀	0.02	0.20
SO ₂	0.00	0.02
CO ₂	2511	4116
CO ₂ -e	2561	4198

In addition to the pollutants shown above, this measure will reduce emissions of the following pollutants by less than 0.01 tons per day: NH₃ (ammonia), benzene, 1,3 butadiene, formaldehyde, and acetaldehyde.

Emissions Reduction Methodology:

This measure encompasses a range of potential actions by various regional agencies to address emissions from goods movement. The specific combination of strategies and actions that will be implemented has not yet been determined, so the potential emission reductions for this

measure cannot be predicted with any degree of confidence as of yet. For purposes of estimating potential emission reductions we have analyzed the reductions that might be achieved by 2020 if the region successfully implements programs that address mode shift, distribution system efficiencies, container fees, and enhanced regulation enforcement.

For example, if implemented by 2020 we estimated that:

- Shifting from trucking to cleaner goods movement modes could lead to a 25% decrease in pollution from estimates for 2020 based on projected goods movement by truck.
- Increased distribution system efficiencies could lead to a 2% decrease in pollution.
- A container fee program could raise funds for clean technology grants, resulting in additional pollution reductions similar to those associated with current BAAQMD grant programs.
- A combined regulation enforcement effort between CARB and the District could increase truck regulation compliance and decrease pollution.

Exposure Reduction:

The District and California Air Resources Board (CARB) studies show that 80% of the risk from toxic air contaminants in the Bay Area comes from diesel particulate emissions. This measure addresses this air quality problem by reducing emissions from vehicles and equipment used in goods movement. This measure directly addresses air quality in impacted communities.

Emission Reduction Trade-offs:

Adding diesel retrofit devices to diesel engines may result in a decrease in fuel efficiency, thereby increasing emissions of carbon dioxide. For example, CARB and the EPA estimate that a heavy-heavy duty (HHD) diesel truck with a retrofit device added would experience a decrease in fuel efficiency of 3.5% on average. By Air District staff computations, for a HHD truck traveling 30,000 miles per year, this decrease is estimated to result in an additional 4,382 pounds per year of carbon dioxide.

Cost:

Phase 1: \$14.5 million/year

Phase 2: \$14.5 million/year

Co-benefits:

- Energy/fuel cost savings from more efficient and reliable engines.
- Economic benefits from faster, more efficient goods movement.

Monitoring Mechanisms:

Regional Initiative Outcomes and Benchmarks:

- Progress in continued regional collaborative process focused on goods movement and clean air: stakeholders convened, meetings, outcomes.
- Evaluation of efforts and results to promote shifts in freight transport mode, and infrastructure needed to support mode shift.

- Analysis of air quality exposure impacts associated with current highway truck routes along trade corridors compared to alternative routes.
- Survey of existing best practices in areas where goods movement impacts residential communities to reduce health risks (as well as noise and safety impacts).
- Legislation for container fees for Bay Area ports.
- Annual report on emissions reduction resulting from innovative technologies and projects implemented through partnerships and demonstration projects.
- Summarize and highlight project successes and promote further adoption in the freight movement industry.

Local Initiative Outcomes and Benchmarks:

- Record of violations issued by District staff under collaborative enforcement agreement with ARB.
- Status reports on collaborative enforcement.
- Annual report listing applications for retrofit replacement submitted, funds awarded, and projects implemented.
- Report on needs assessment for signage and number of signs installed.
- Report from community planning process for San Jose, East Oakland, and San Leandro truck routes.

Issues/Impediments:

- Staffing and resources.
- Determining emissions reductions from cooperative enforcement of ARB's regulations.
- Developing regional buy-in for a regional task force for goods movement.

Sources:

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2. Southern California Association of Governments, Analysis of Goods Movement Emission Reduction Strategies, Task 1 Final Report, January 2008 <http://www.scag.ca.gov/goodsmove/>
3. Southern California Association of Governments, Reports : Project 99-130 Goods Movement Truck and Rail Study <http://www.scag.ca.gov/goodsmove/truckrail.htm>
4. MTC's Transportation 2035 Plan, http://www.mtc.ca.gov/planning/2035_plan/
5. MTC's Goods Movement Initiatives 2009 Update, http://www.mtc.ca.gov/planning/2035_plan/Supplementary/T2035_Goods_movement_update.pdf
6. Goods Movement Plan ARB, <http://www.arb.ca.gov/gmp/docs/gmap-1-11-07.pdf>
7. CARE Report on TAC, http://www.baaqmd.gov/CARE/documents/care_p1_findings_recommendations_v2.pdf
8. ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>

9. New Regulation to Significantly Reduce Emissions From Existing On-Road Diesel Vehicles, <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>
10. Mobile Cargo Handling Equipment at Ports and Intermodal Rail, <http://www.arb.ca.gov/ports/cargo/cargo.htm>
11. ARB's PERP Regulation, <http://www.arb.ca.gov/portable/perpact/perpactarchive.htm>
12. ARB's Harborcraft Regulation, <http://www.arb.ca.gov/ports/marinevess/harborcraft.htm>
13. ARB's Drayage Truck Regulation, <http://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm>
14. ARB's TRU Regulation, <http://www.arb.ca.gov/diesel/tru/documents/faq121708.pdf>
15. Ocean Going Vessels Regulation, <http://www.arb.ca.gov/ports/marinevess/marinevess.htm>
16. Railyard MOU, <http://www.arb.ca.gov/railyard/railyard.htm>
17. Smartway Transport Partnership, <http://epa.gov/smartway/>
18. Cooperative Enforcement Document, February 17, 2009 California Air Resources Board

LUM 2 - Indirect Source Review

Brief Summary:

The Air District will develop an indirect source review (ISR) rule to reduce construction and operating emissions associated with new or modified land uses in the Bay Area. Indirect sources are development projects that generate or attract motor vehicle trips and area source emissions. The rule may also address other sources of emissions, such as fireplaces, home heating and cooling and landscape maintenance equipment. Air pollutant emissions from these sources can adversely affect local and regional air quality. The District will consider the legal issues, political acceptability, local government acceptability, enforceability, staffing or other resources needed when defining the scope of the ISR.

Purpose:

The purpose of the Indirect Source Rule is to reduce emissions associated with new or modified land use development to attain health based ambient air quality standards. The rule may also achieve co-benefits by reducing emissions of greenhouse gas. The measure is intended to address increases in air pollutant emissions from economic and population growth in the region by encouraging new or modified development projects to be designed, sited and constructed so as to reduce motor vehicle and area source emissions.

Source Category/Travel Market Affected:

On-road and off-road mobile emission sources are the main source categories targeted by this measure. However, space heating, landscape maintenance and wood burning emission source categories could also be included.

Regulatory Context and Background:

The California Clean Air Act (CCAA) explicitly grants air districts authority to adopt and implement regulations to reduce or mitigate emissions from indirect and area wide sources of air pollution and that air districts can require the use of measures which reduce the number or length of vehicle trips (Health and Safety Code §40716(a)(1)). Based on CCAA enabling legislation, it is the intent of the Legislature “that districts shall endeavor to achieve and maintain state ambient air quality standards...by the earliest practicable date. In developing attainment plans and regulations to achieve this objective, districts shall consider the full spectrum of emissions sources and focus particular attention on reducing the emissions from transportation and area wide emission sources (H&SC §40910).” The CCAA also states that this ISR authority does not limit or supercede local land use authority of cities and counties. Other relevant ISR sections in the CCAA include: 40717(g), 40918(a)(4), and 42311(g).

The federal Clean Air Act authorizes states to include ISR programs in their state implementation plan under the federal Clean Air Act ((Section 110(a)(5)(42 USC 7410)).

Varying degrees and forms of ISR rules have been implemented in air districts throughout California, including Colusa County, Great Basin Unified, Imperial County, Mendocino County,

Placer County, Sacramento, San Joaquin, and Shasta County. Some of these rules are strictly cost recovery mechanisms for air districts to recoup the costs associated with CEQA review while others encourage new development to implement on-site emission reduction strategies or require applicants to pay an off-site mitigation fee.

In 2005, the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) adopted Rule 9510 as an ISR rule. The rule applies to residential, commercial, industrial, office and recreational development projects above a certain size (e.g., 50 residential units or 2,000 square feet of commercial space). Development projects must reduce their construction and operational emissions to be below two tons per year of NO_x and PM₁₀ through onsite mitigation or pay an off-site mitigation fees. The fee formula is structured to encourage on-site mitigation measures. SJVUAPCD uses the fees to fund off-site mitigation projects that reduce NO_x and PM₁₀ emissions. To date, the air district has mostly funded off-site projects that include retrofitting or replacing engines in on road and off road vehicles and agriculture equipment.

Imperial County APCD adopted Rule 310, Operational Development Fee, in 2007. It assesses a per square foot fee on all new commercial development and a per unit fee on residential development above 4 units at the point of application for a building permit. Project proponents have the option to either provide on and off site mitigation, pay the mitigation fee, or do a combination of both. Fees collected are used to fund mitigation projects that reduce ozone precursors and PM₁₀.

Sacramento Metropolitan Air Quality Management District and South Coast Air Quality Management District are each currently developing ISR rules for their jurisdictions. The two air districts committed to adopting an ISR rule as part of their state implementation plan to reduce ozone precursors.

The Air District identified the potential for an ISR rule as a further study measure in the *Bay Area 2005 Ozone Strategy*. Further Study Measure 18: Indirect Source Mitigation Program (FS-18) states that the Air District will evaluate ways to reduce emissions from new and existing land uses. Air District staff has determined that due to EPA's adoption of new health based national ambient air quality standards, the successful implementation of the San Joaquin APCD's ISR and Imperial County APCD's ISR, an Indirect Source Review Rule should be brought to the Air District's Board of Directors for consideration.

Implementation Actions:

- The District could adopt a rule that sets air quality performance standards for new and modified development.
- Fees could be assessed for projects that exceed thresholds.
- Standards and fees would be structured to provide incentives for projects located and designed to minimize emissions.
- To initiate the ISR rulemaking process, the Air District has convened a broad-based stakeholder workgroup comprised of representatives from local governments, the building

industry, developers, realtors, other business representatives, and environmental/community members.

- District staff will consult with the stakeholder group regarding the scope, structure, and applicability of the ISR rule, and the basis for any fees associated with the rule.
- Details regarding administration of the rule will be determined via the rule-making process.

Emission Reduction:

<u>Pollutants (tons per day)</u>	<u>2012</u>	<u>2020</u>
ROG	0.30	0.30
NO _x	0.24	0.24
PM _{2.5}	0.11	0.11
PM ₁₀	0.47	0.47
Diesel PM	0.18	0.18
Benzene	0.01	0.01
Formaldehyde	0.01	0.01
CO ₂	333.43	333.43
CO ₂ -e	340.00	340.00

In addition to the pollutants shown above, this measure will reduce emissions of the following pollutants by less than 0.01 tons per day: SO₂ (sulfur dioxide), benzene, 1,3 butadiene, and acetaldehyde.

Emission Reductions Methodology:

The emissions reduction methodology for this measure is based on methodology developed and reported by the San Joaquin Valley APCD (SJVAPCD) Indirect Source Review (ISR) program. The SJVAPCD methodology requires the payment of mitigation fees for projects that will result in 2 tons NO_x or 2 tons of PM emissions a year or more. This District, based on our CEQA database, estimated for years 2010 through 2020 the number of projects that may be subject to the ISR program. The emission reductions above estimate the results if 15% of emissions from new construction are mitigated through off-site mitigations.

Exposure Reduction:

This measure will reduce region-wide population exposure to air pollutants based on the estimated reduction in emissions.

Emission Reduction Trade-offs:

None identified.

Cost:

Phase 1: \$1.4 million/year

Phase 2: \$1.4 million/year

These costs represent only those associated with the payment of off-site mitigation fees, not the costs developers may incur implementing on-site measure to reduce their project's emissions.

Co-benefits:

- Improved project design and planning.
- Public health benefits from reduced emissions, improved pedestrian access, and use of green building elements.
- Reduced GHG emissions from motor vehicles, building energy use, and other sources.

Monitoring Mechanisms:

Air District staff will work with the stakeholder group and the public through workshops to identify the most efficient mechanism to monitor implementation of the ISR.

Issues/Impediments:

The ISR needs to be developed to encourage less auto dependent development, to reduce regional VMT and not create an administrative burden on local land use planning. The ISR will need to take into consideration the implementation of measures for AB32 and SB375.

Sources:

1. 2005 Ozone Strategy, Volume II, Appendix E, Further Study Measure 18
2. Memo to Mobile Source Committee, September 11, 2007: *2005 Ozone Strategy Further Study Measure 18: Indirect Source Mitigation Program*
3. SCAQMD ISR: <http://www.aqmd.gov/rules/proposed/2301/index.html>
4. SJVAPCD ISR Web site <http://www.valleyair.org/ISR/ISRHome.htm>
5. SMAQMD 2009 Ozone Plan, page 7-21, IS-1 IS-2
<http://www.arb.ca.gov/planning/sip/planarea/sacsip/sacplanozone2009.pdf>
6. Larry Robinson, Joe Carl, SMAQMD, personal communication
7. Imperial Valley Rule 310 Operational Development Fee -
<http://www.co.imperial.ca.us/ag/Departments/Air%20Pollution/Forms%20&%20Documents/Rule%20310%20Mitigation%20Project%20Report%20Package.pdf>
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8. 2008 Annual Report on the District's Indirect Source Review Program, SJVUAPCD
http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2008/June/Item%2013/GVB%20Agenda%20Item%2013.pdf
9. Socioeconomic analysis SJVUAPCD
http://www.valleyair.org/ISR/Documents/RULE_9510_AppendixF.pdf
10. Survey of ISRs from SCAQMD
http://www.aqmd.gov/rules/proposed/2301/pr2301_is_program_matrix_20090224.pdf

LUM 3 - Updated CEQA Guidelines and Enhanced CEQA Review

Brief Summary:

The District will develop and issue updated California Environmental Quality Act (CEQA) guidelines to provide guidance on evaluating air quality impacts of development projects and local plans, determining whether an impact is significant, and mitigating significant air quality impacts related to new or modified projects. The updated guidelines will provide revised thresholds of significance for criteria pollutants and toxic air contaminants, and newly-adopted thresholds for greenhouse gas emissions. In addition to issuing revised CEQA guidelines, the District will also strengthen its existing CEQA review program, as resources permit, by increasing the number of CEQA documents that the District reviews and by quantifying estimated reductions in emissions of criteria pollutants, air toxics, and greenhouse gases from the District's CEQA program.

Purpose:

The purpose of this measure is to reduce emissions associated with new development in order for the region to attain state and national ambient air quality standards, reduce local impacts, reduce greenhouse gases, and improve health outcomes in the region.

Source Category/Travel Market Affected:

This measure would affect new development in the Bay Area subject to the environmental review process as defined by the California Environmental Quality Act.

Regulatory Context and Background:

The California Environmental Quality Act (CEQA) was adopted in 1970 and intended to inform policy-makers and the public about potential environmental effects of a project; identify ways to reduce adverse impacts; offer alternatives to the project; and enhance public participation in the planning process. The District participates in the CEQA review process in several capacities. The District provides guidance to Lead Agencies, consultants, and other parties regarding air quality analyses of project and plans conducted pursuant to CEQA. The District acts as a Lead Agency when it has the primary authority to implement or approve a project, such as a District Clean Air Plan or Rule. The District acts as a Responsible Agency when it has discretionary authority over a project, but does not have the primary decision-making authority of a Lead Agency. In this capacity, the District consults with the Lead Agency regarding potential impacts and may recommend project alternatives or mitigation measures to lessen any potentially significant air quality impacts. As a Commenting Agency, the District reviews environmental documents prepared for development proposals and plans in the Bay Area and provides comments to Lead Agencies regarding the adequacy of the air quality analysis and mitigation measures.

Implementation Actions:

Key implementation actions include the following:

- Update CEQA guidelines; provide revised thresholds of significance and mitigation measures, including new thresholds that address particulate matter and greenhouse gases
- Conduct outreach to local jurisdictions, consultants, developers, and community members to introduce updated CEQA guidelines and environmental review process and provide technical assistance to lead agencies.
- As described in LUM 4, the District will encourage local jurisdictions to develop Community Risk Reduction Plans to reduce public exposure to air toxics and PM, and provide technical assistance in developing these plans.
- Expand CEQA commenting by the Air District:
 - Review CEQA documents prepared for Bay Area projects, evaluate their consistency with the District’s Guidelines, and recommend mitigation measures as appropriate.
 - Estimate the emission reductions achieved based on the implementation of mitigation measures recommended by the District.
 - Provide on District’s CEQA website a log of CEQA comment letters accessible to the public.
- Develop and implement a monitoring plan for the District’s CEQA review program:
 - Develop a database of projects that have been commented on and track implementation of mitigation measures.
 - Conduct regular reviews to evaluate CEQA program performance in achieving its goals and to recommend potential improvements to the program.
 - Review Mitigation Monitoring and Reporting Plans of CEQA documents prepared in the Bay Area.

Emission Reduction:

Pollutants (tons per day)	2012	2020
ROG		0.44
NO _x		0.35
PM _{2.5}		0.16
PM ₁₀		0.67
Diesel PM		0.26
Benzene		0.01
1,3 Butadiene		0.01
Formaldehyde		0.01
CO ₂		438.50
CO ₂ -e		447.00

No emission reductions are estimated for 2012. In addition to the pollutants shown above for year 2020, this measure will reduce emissions of the following pollutants by less than 0.01 tons per day: Ammonia (NH₃) and acetaldehyde.

Emissions Reductions Methodology:

The emissions reduction methodology for this measure is based on the District’s CEQA database and new development projections for years 2010 through 2020. We estimated the unmitigated emissions for the new land use projects expected over this time period that would be subject to

CEQA. We then assumed that the enhanced CEQA program would result in approximately 20% of the total unmitigated emissions from new land development would be reduced through the implementation of feasible mitigation measures on projects that would not have otherwise mitigated their project's emissions.

Exposure Reduction:

This measure will reduce region-wide population exposure to air pollutants based on the estimated reduction in emissions.

Emission Reduction Trade-offs:

None identified.

Cost:

Lead agencies currently prepare air quality analyses in CEQA documents. Air District staff does, and will continue to, provide technical assistance. This measure is not expected to significantly increase or decrease these review costs. However, this analysis does not consider the costs developers may incur preparing environmental analyses or implementing mitigation measures to reduce their project's emissions.

Co-benefits:

This control measure will result in long term adoption of cleaner, greener building practices in the Bay Area, as municipalities, developers, and their consultants adopt green building practices, build closer to transit nodes and job centers, and incorporate travel demand management into their projects and plans.

Monitoring Mechanisms:

Annual performance reviews of program.

Issues/Impediments:

The updated guidelines will include revised and adopted thresholds for criteria pollutants, toxic air contaminants, and greenhouse gas emissions associated with new or modified projects. It is anticipated that new or revised thresholds of significance will be more stringent than current thresholds which may be of concern to certain stakeholders, while supported by others.

Sources:

1. Draft CEQA Thresholds Options Paper
2. Survey of CEQA Thresholds

LUM 4 - Land Use Guidance

Brief Summary:

Local land use decisions have direct impacts on air quality and population exposure to air pollutants. This measure summarizes programs and resources that the Air District will make available to local agencies to help them develop goals, policies and implementation measures that will benefit air quality and reduce motor vehicle travel and emissions. With its regional partners, the Air District is committed to assisting local governments to include smart growth principles and climate protection elements in their general plans to reduce criteria pollutants and greenhouse gas emissions.

Purpose:

The purpose of this measure is to provide resources to local governments that support local land use patterns to reduce mobile source emissions and human exposure to airborne toxic contaminants and reduce emissions related to energy use and waste disposal.

Source Category:

Emissions related to land use patterns and vehicle miles traveled: heavy, medium, and light duty vehicles. Emissions related to energy use and waste disposal.

Regulatory Context and Background:

Local land use strategies and decisions will play a key role in determining whether the Bay Area can achieve our air quality and climate protection goals as our population and economy continue to grow. Because general plans prescribe land use patterns that shape growth in cities and counties for 20 years or more, they represent the most effective mechanisms to reduce vehicle miles traveled, vehicle emissions, and population exposure to toxic air contaminants.

California's Office of Planning and Research recommends for local governments to update their general plans every ten years. Approximately ten Bay Area local governments are currently in the process of updating their general plans. The majority of these local governments are integrating smart growth principles and climate protection strategies into their update.

Within the Bay Area, there are approximately 50 cities that have not updated their general plan since 2000. Therefore, within the next several years, nearly half of the Bay Area's 110 local governments can be expected to update their general plan. This presents an opportunity for Bay Area local governments to incorporate into their general plans smart growth and climate protection policies that will reduce emissions from motor vehicle travel over the long-term, while also reducing population exposure to toxic emissions.

Implementation Actions:

Link with District Functions: The Air District is implementing a number of programs and projects that can help to inform general plan updates.

- **CEQA Guidelines:** The Air District is currently updating its CEQA Guidelines to assist lead agencies in analyzing air quality impacts. The update contains numerous mitigation measures and general plan policies to implement smart growth principles, minimize construction emissions, and reduce population exposure. The updated CEQA Guidelines are scheduled for release in 2010.
- **CARE Program:** The Community Air Risk Evaluation (CARE) program, initiated in 2004, evaluates and reduces health risks associated with exposures to toxic air contaminants (TACs) in the Bay Area. The program's main objectives are to: identify health risks from exposure to TACS, assess population exposures; identify TAC sources and impacted communities; and develop and implement mitigation measures.
- **Clean Air Communities Initiative (CACI):** This initiative is a multifaceted approach to address health concerns in communities disproportionately impacted with poor air quality and to minimize the effects of land use decisions on cumulative air impacts. CACI will bring to bear regulations, incentives, enforcement, public education, and technical studies to improve air quality.
- **The District will work with cities and counties to develop Community Risk Reduction Plans (CRRPs)** to reduce population exposure to air toxics and PM, particularly in impacted communities identified through the CARE program. The District will provide technical assistance in preparing these plans. The CRRPs should provide comprehensive plans for defined areas, including public engagement processes, emission inventories, numerical goals or targets, risk modeling, emission reduction measures, and monitoring mechanisms.
- **Indirect Source Review Rule:** The Air District is in the early phases of developing an Indirect Source Review (ISR) regulation to reduce air pollutant emissions from new or modified development. It is anticipated that the ISR will provide incentives to design and locate new and modified development to minimize associated emissions.
- **Climate Protection Grants:** The District's climate protection grant program provided funding to local governments developing climate action plans or integrating climate protection strategies into general plans.
- **Provide Best Practice Guidance:** The Air District has, and will continue, to provide general plan guidance and best practices resources to local governments. In addition, where appropriate the Air District encourages local jurisdictions to consult with the "Air Quality and Land Use Handbook: A Community Health Perspective," published by the California Air Resources Board (ARB)
- **Best Practices Web Portal:** In partnership with the Institute for Local Government, the Air District has developed a web portal highlighting best practices for local governments to use for their own climate action plans and general plans. The portal enables local governments to search for a wide variety of best practices and upload information on their own success stories. This tool is available at <http://www.ca-ilg.org/SFBayClimate>.

- CAPCOA Resource Documents: CAPCOA (California Air Pollution Control Officers Association) published two separate documents useful to local governments updating their general plans: 1) “Model Policies for Greenhouse Gases in General Plans (May 2009),” a resource for local governments to incorporate general plan policies to reduce greenhouse gas emissions; 2) “CEQA & Climate Change (January 2008),” a resource for evaluating and addressing greenhouse gas emission in CEQA review. CAPCOA is currently preparing a greenhouse gas mitigation strategy and quantification resource document.
- Regional Agency Collaboration: The Air District’s regional agency partners provide a number of resources to help local governments implement smart growth principles. Resource tools include MTC’s parking toolkit, Transportation for Livable Communities (TLC) capital grants; and the multi-agency FOCUS program that directs incentives, including funds for land use planning and capital infrastructure, to Priority Development Areas (PDAs), which are locally-identified infill development opportunity areas near transit.

Expand Assistance to Local Governments: To further enhance its support to local governments, the Air District may implement some or all of the following actions.

- Present Workshops: The Air District will consider conducting a number of workshops to assist local governments in addressing air quality and climate change in their general plan updates.
- Identify Innovative Funding Mechanisms: Lack of financial resources is a major constraint on the ability of local jurisdictions to conduct comprehensive long-range planning. Therefore, the Air District will collaborate with its regional partners to identify innovative funding mechanisms to help jurisdictions address air quality and climate change in their general plans.
- Tailor Best Practices to Local Needs: Guidance for general plans must recognize that our communities are diverse and that no single policy prescription would be appropriate in all cases. Communities that lack transit infrastructure have different challenges than cities with strong transit and/or the potential for transit-oriented development. The Air District will consider developing tools catered to a variety of community types to reform their development patterns and reduce emissions.
- Track Local Government Progress: The Air District will consider monitoring and tracking progress of general plan updates and climate action plans. Monitoring mechanisms may include: tracking the number of climate action plans and emission reduction targets integrated in general plans; and assisting local governments in developing biennial GHG emission inventories to encourage them to track local progress.

Emission Reductions:

<u>Pollutants (tons per day)</u>	<u>2012</u>	<u>2020</u>
ROG	0.08	0.09
NO _x	0.08	0.10
PM _{2.5}	0.01	0.02
PM ₁₀	0.01	0.03
CO ₂	136.27	346.58
CO ₂ -e	139.00	353.51

In addition to the pollutants shown above, this measure will reduce emissions of the following pollutants by less than 0.01 tons per day: Diesel PM, sulfur dioxide (SO₂), ammonia (NH₃), benzene, 1,3 butadiene, formaldehyde and acetaldehyde.

Emissions Reductions Methodology:

The emissions reduction methodology is based on methodology in ABAG's report *Projections 2009: What If?* The District estimated that if all General Plan updates in the Bay Area over the next five years emphasized compact development, there would be a 1% reduction in light-duty vehicle miles traveled (VMT) due to changes in land use patterns and increased use of transit. This decline in VMT translates into reductions in emissions, as documented in the table above.

Exposure Reduction:

This measure will provide guidance to local jurisdictions in assessing health impacts associated with new development and in implementing mitigations to reduce human exposure to harmful air contaminants due to land use projects that generate toxic emissions and land use projects that are impacted from existing toxic sources.

Emission Reduction Trade-offs:

None identified.

Cost:

Costs would vary. Available resources would be determined through the District's budget process.

Co-benefits:

This measure will 1) foster collaboration with local governments, resulting in more wide spread and effective implementation of this and other District programs, and 2) provide public health benefits, since focused development is more conducive to walking and bicycling.

Monitoring Mechanisms:

Program success will be monitored using:

- Database tracking Bay Area general plan updates including air quality / climate friendly policies and/or elements and emissions reductions quantified in environmental review process, number of climate action plans and emission reduction targets integrated in general plans.

- Tracking local government participation in and satisfaction with land use and air quality web or workshop resources offered by the District.
- Monitoring of ISR and CEQA programs as stated in LUM 2 and LUM 3.

Issues/Impediments:

Resources for long range planning.

Sources:

1. Governor's Office of Planning and Research, California Planners' Book of Lists, <http://opr.ca.gov/index.php?a=planning/publications.html#pubs-C>
2. CEQA Guidelines and Greenhouse Gases, <http://opr.ca.gov/index.php?a=ceqa/index.html>
3. California Air Pollution Control Officers (CAPCOA) CEQA and Climate Change White Paper, <http://www.capcoa.org/CEQA/CAPCOA%20White%20Paper.pdf>
4. CAPCOA Model Policies for Greenhouse Gases in General Plans (May 2009), <http://www.capcoa.org/modelpolicies/CAPCOA%20Model%20Policies%20for%20Greenhouse%20Gases%20in%20General%20Plans%20-%20June%202009.pdf>
5. Air Quality and Land Use Handbook: A Community Health Perspective, (April 2005), <http://www.arb.ca.gov/ch/handbook.pdf>
6. ABAG 2009 Projections: What If? <http://www.abag.ca.gov/rss/pdfs/whatif.pdf>

LUM 5 – Reduce Health Risk in Impacted Communities

Brief Summary:

This measure describes a set of complementary actions and programs that comprise key elements of the Air District’s strategy to reduce emissions and population exposure in impacted communities as identified by the Air District’s Community Air Risk Evaluation (CARE) Program. Key elements of this measure include:

- The District will establish a system to track cumulative health risks associated with emissions from stationary, mobile, and area sources in order to help monitor progress in reducing population exposure in impacted communities.
- The District will revise rules to tighten requirements in order to reduce emissions of air toxics and particulate matter from existing sources via its Air Toxics “Hot Spots” Program and from new sources via its New Source Review rules. See SSM 16, 17, and 18 for additional description of these rule revisions.

Purpose:

The purpose of this measure is to address the cumulative air quality impacts of emissions from stationary, mobile, and area sources in impacted communities.

Source Category/Travel Market Affected:

Stationary sources subject to the District’s permitting regulations, as well as mobile sources and area sources.

Regulatory Context and Background:

Applicable air quality requirements related to controlling stationary sources include rules and regulations adopted by the District, the California Air Resources Board, and the U.S. Environmental Protection Agency. In California, air districts have the primary responsibility for controlling air pollution from non-vehicular stationary sources of air pollution. The Air District regulates stationary sources through rulemaking for specific source categories, through its permitting process and New Source Review process for new and modified sources, and by administering the Air Toxics “Hot Spots” Program for existing sources.

New Source Review (NSR) requires that new/modified sources utilize the Best Available Control Technology to minimize air pollution impacts. The existing District NSR rules are Regulation 2, Rule 2: New Source Review, and Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants. Additional Air District NSR requirements include emission offsets, air quality impact analysis for criteria air pollutants and their precursors, and health risk screening analysis for toxic air contaminants (TACs).

The Air Toxics “Hot Spots” (ATHS) program is a state program implemented by California air districts. Assembly Bill 2588, the Air Toxics “Hot Spots” Information and Assessment Act, was enacted by the State legislature in 1987. AB 2588 requires facilities throughout California to

provide information to the public about emissions of TACs, and the impact that those emissions may have on public health. The Act was amended in 1992 by SB 1731, which provided air districts with the authority to require facilities with significant risks to implement a site-specific risk reduction audit and plan. Each air district has the authority to establish health risk thresholds for public notification and risk reduction requirements.

Regulation 2, Rule 5 and the AHS program in many cases require the preparation of a site-specific Health Risk Screening Analysis (HRSA), which is an assessment that describes the possible adverse health effects which may result from public exposure to routine and predictable emissions of TACs. All permit applications for new and modified sources are screened for emissions of TACs. Where the predicted health risks from a proposed project exceed specified threshold levels, the new/modified source(s) must use the Best Available Control Technology to minimize TAC emissions (TBACT). The TBACT and Project Risk standards in Regulation 2, Rule 5, are uniformly applied throughout the District's jurisdiction.

Procedures used for completing HRSA's are based on guidelines adopted by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA) for use in the Air Toxics Hot Spots Program. Procedures for assessing health risks are intended to protect sensitive individuals such as children, and individuals with pre-existing health conditions. The Children's Environmental Health Protection Act (Senate Bill 25) established specific requirements for OEHHA to determine whether existing health risk assessment procedures are adequate to protect infants and children from the harmful effects of air pollution. OEHHA has already acted under SB 25 to revise certain procedures for assessing non-cancer health risks to provide a greater margin of safety for children, and revisions to cancer risk assessment procedures are expected to be proposed in late 2009, with final action anticipated in 2010.

Implementation Actions:

While recognizing that stationary sources regulated by the Air District are only a portion of the sources that contribute to differential population exposure and risk levels, this measure describes the District's strategy for reducing emissions and exposure from stationary sources in impacted communities. Specific components of this measure are described below.

- The District will track the maximum cumulative health risks associated with new and modified permitted stationary source projects over time. The results will be reported on the District website as follows: (a) list of projects including project location and emission rates, (b) location and magnitude of maximum incremental project health risks, and (c) location and magnitude of maximum cumulative health risks for all projects from the date the requirement is established.
- District staff will propose amendments to Regulation 2, Rule 2: New Source Review to address PM_{2.5}, as described in Stationary Source Measure 16, and Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants, as described in Stationary Source Measure 17.
- The District will consider revising the District's Air Toxics "Hot Spots" Program for existing facilities to incorporate more stringent risk reduction requirements than are provided in

existing District policy. See description of Stationary Source Measure 18. As discussed above, OEHHA is considering revising cancer risk assessment procedures to provide a greater margin of safety for protecting children. Based on discussions with OEHHA staff, it is possible that these revisions could increase calculated residential cancer risks by a factor of three or more relative to existing risk assessment procedures. Due to the potential significance of these revisions in risk assessment methodologies, the District believes that it is prudent to develop potential revisions to the District's Hot Spots program concurrent with the OEHHA guideline revisions. OEHHA does not expect that these risk assessment guideline revisions will be finalized for some time, perhaps late in 2010.

- District staff will continue developing and implementing source-category-specific rules to reduce emissions and risk in impacted communities. An example is SSM1: Metal-Melting Facilities, a control measure contained in this draft control strategy which will further control emissions from foundries and metal forging facilities. District staff will assess other source types and facilities throughout the region as candidates for source-category-specific rules.
- As described in LUM 4, the District will encourage local jurisdictions to develop Community Risk Reduction Plans to reduce public exposure to air toxics and PM, and provide technical assistance in developing these plans.

Emissions Reductions:

Emission reductions are not directly attributed to this measure. The cumulative impacts tracking system described above will not provide any direct emission reductions. The emission reductions for rules described above will be calculated for each of those rules. See the applicable stationary source measure descriptions for emission reduction estimates.

Emissions Reductions Methodology:

BAAQMD is unable to estimate the emission reductions from measure LUM 5.

Exposure Reduction:

This measure has been specifically developed with the objective of reducing population exposure to emissions of air toxics and PM from stationary, mobile, and area sources of emissions.

Emission Reduction Trade-offs:

No trade-offs are anticipated for this measure.

Cost:

- Monetary costs to industry to install BACT to achieve reduced emissions and risk levels.
- Monetary costs to District to develop regulations, track cumulative risk levels in impacted communities, inform and educate the regulated community and to enforce.

Co-benefits:

- Since many TACs are also reactive organic gases (ROG), any localized reductions in TACs will provide co-benefits by helping to reduce ambient ozone levels. Also, reductions in emissions of diesel PM will help to reduce ambient levels of PM_{2.5} and PM₁₀.

Monitoring Mechanisms:

- Ongoing monitoring in impacted communities to measure changes in air quality, pollutant concentrations, and exposure.
- Cumulative toxics emissions risk-tracking requirement with results posted on District website.

Issues/ Impediments:

- The District will need to allocate resources to track changes in emissions of TACs in impacted communities.

Sources:

1. July 6, Memo to Stationary Source Committee from Brian Bateman, Update on CARE Program and Associated Regulatory Initiatives.
2. Draft Concept Paper, *More Stringent Permitting Requirements for Proposed New/modified Stationary Sources of Air Pollution Located in Impacted Communities or in Proximity to Sensitive Receptors*. February 23, 2009.
3. Bateman, April Presentation given to the CARE Task Force.

LUM 6 - Enhanced Air Quality Monitoring

Brief Summary:

The Air District will evaluate and enhance its capabilities, as resources permit, to monitor air quality on a region-wide basis, as well as on a localized basis in the impacted communities identified under the District's Community Air Risk Evaluation (CARE) program.

Purpose:

The purpose of this measure is to provide the Air District with sufficient ambient air quality monitoring data needed to inform 1) its efforts to improve air quality in impacted communities and 2) its air quality planning and modeling programs.

Source Category/Travel Market Affected:

Not applicable.

Regulatory Context and Background:

The Air District's Air Monitoring Program operates a network of 28 air monitoring stations, consistent with state and federal air monitoring requirements, designed to 1) provide the data required to determine the Bay Area's attainment status for both National and State ambient air quality standards; 2) provide air quality data to the public in a timely manner; and 3) support air pollution research and modeling studies. Additionally, a network of air toxic monitors collects data to ensure permit conditions are met at stationary sources and for State and National regulatory programs. The *BAAQMD 2008 Air Monitoring Network Plan* describes recent and planned changes and improvements to the District's air monitoring network.

In recent years the Air District has undertaken initiatives, such as the Community Air Risk Evaluation (CARE) program and the Clean Air Communities Initiative, to analyze pollution exposure at a more localized level and identify communities that are disproportionately impacted by air pollution. In many cases, these communities correspond to areas identified as priority development areas (PDAs) under FOCUS—the region's development and conservation strategy. The FOCUS strategy encourages infill development in PDAs to promote smart growth and reduce sprawl. The data and information generated from these new initiatives allows the District to implement more targeted policies and programs to reduce emissions and exposures in these communities.

The Air District has developed limited enhanced monitoring capabilities of key pollutants to gather more complete data to better assess local air quality conditions based upon the resources available. As an example, the Air District recently located a portable monitoring trailer in West Berkeley and Benicia to measure local air quality, and launched a mobile air monitoring van to assist in developing local pollutant concentrations across the West Oakland community to help identify local sources. Such efforts generally require a minimum of one year of data collection to effectively characterize an area's air quality. These efforts are resource

intensive, requiring expensive instrumentation, specialized operators, coordination among many Air District staff, and long site-development and set-up times.

Implementation Actions:

Depending on available resources, specific components of expanded monitoring would include:

- Ensure representative air quality data is being collected in the impacted communities identified under the CARE program. This effort would require review of the existing monitoring network with respect to the impacted communities to ensure that appropriate long term air quality data is being collected.
- Enhance monitoring of local air quality by collecting more information about pollutant concentrations and exposure at localized levels. This effort would be focused around microenvironments that may have significant local emission sources that could be assessed through the use of temporary monitors.
- Partner with County Health Departments to identify areas of poor air quality and collaborate with the community on ways to potentially measure and reduce exposure and emissions from local and regional sources.
- Perform on-going diagnostic analysis of the monitoring network, surveying the utility and effectiveness of monitoring locations and pollutants monitored while ensuring that the existing network continues to meet all federal and state requirements. This could help to verify air quality modeling inputs and predicted concentrations, which in turn would provide a more comprehensive and representative air quality profile of the Bay Area.

Emission Reductions:

Control measure does not directly reduce emission but supports emissions reduction programs.

Emission Reduction Methodology:

Not applicable.

Exposure Reduction:

Control measure does not directly reduce exposure but supports exposure reduction efforts.

Emission Reduction Trade-offs:

None.

Cost:

Costs would vary depending on the extent of enhanced monitoring implemented. Available resources would be determined through the District's budget process.

Co-benefits:

Not applicable.

Monitoring Mechanisms:

Track enhancements to local and regional air monitoring capabilities.

Issues/ Impediments:

Enhanced air quality modeling will require additional resources, including purchase of new instrumentation, equipment maintenance, and additional staff with technical expertise in atmospheric chemistry, and background and familiarity with monitoring equipment.

Sources:

1. BAAQMD 2008 Air Monitoring Network Plan