SAN FRANCISCO GENERAL PLAN

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SAN FRANCISCO PLANNING DEPARTMENT

Air Quality Element

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INTRODUCTION

In spite of population and employment growth over the past 30 years air quality in the San Francisco Bay Area has improved substantially. Improvements to air quality are largely due to cleaner burning automobile engines and fuels that emit fewer pollutants. Tighter regulatory controls imposed on industrial and related sources of air pollutants have also contributed to air quality improvements in the region.

Despite great improvements in air quality, the San Francisco Bay Area still sometimes experiences unacceptable levels of the air pollutants carbon monoxide, ozone and particulate matter. The region is in compliance with federal and State of California (State) standards for other major air pollutants.

San Francisco has not experienced exceedances of carbon monoxide or ozone standards in recent years. The Bay Area Air Quality Management District (BAAQMD or the Air District) recognizes the leadership of San Francisco in promoting clean air as reflected in terms of the city's population density and transportation system. However, San Francisco contributes to air quality problems in the Bay Area air basin. Due to low summer temperatures, ozone precursors in San Francisco do not result in ozone formation. Nevertheless, westerly winds transport ozone precursors and other pollutants to the northeast

and especially to th southeast regions of the Bay Area where air quality standards are sometimes exceeded. The San Francisco Bay Area air basin consists of nine counties. Exceedance of air quality standards in any county of the nine counties would result in violation of air quality standards in the air basin.

Since emission from automobile tailpipes is the major source of air pollution in the Bay Area, the considerable number of San Francisco visitors and commuters who drive to the city contribute to air pollution. It appears that, based on the projections of the Association of Bay Area Government (ABAG), employment in San Francisco will continue to increase at a faster rate than its residential population. New office development and other types of land uses will create new job opportunities that will attract employees from the region. This will result in more commute trips which could result in greater air pollution, especially if these trips are made by single occupant automobiles.

The nine counties of the Bay Area currently violate State air quality standards for ozone and State and federal air quality standards for particulate matter. Until recently the Bay Area exceeded federal air quality standards for carbon monoxide as well as ozone. The Bay Area has recently attained compliance status for ozone under the federal designation and has achieved compliance with State and federal air quality standards for carbon monoxide.

Exposure to air pollutants represents a health risk to everyone living in the Bay Area, particularly children, the elderly and people with respiratory problems. In addition to health problems, poor air quality can also pose a threat to the economic growth of the region, due to perceived degradation of the environment and potential government-imposed sanctions against non-attainment areas. Recent federal and State regulations have tied funding of new transportation projects to air quality improvements in the affected air districts. Failure to achieve these standards can result in the loss of funding for new transportation projects and programs.

Under the California Clean Air Act, cities and counties in the Bay Area are required to take all feasible control measures to improve air quality in the region. The development of the Air Quality Element of the General Plan is one of the steps taken by the City and County of San Francisco to improve air

quality and to achieve and maintain compliance with State and federal air quality standards in the Bay Area.

THE NEED FOR PLANNING FOR CLEAN AIR

The goal of clean air planning is to reduce the level of pollutants in the air, to protect and improve public health, welfare and quality of life of the citizens of San Francisco and the residents of the metropolitan region. Opportunities for economic growth in the area can also be enhanced through implementation of transportation, land use and other policies in harmony with clean air goals.

Air quality standards are designed to achieve the following:

- to protect the most sensitive members of the population from chronic and acute health effects, particularly the causation or aggravation of chronic cardiorespiratory diseases including bronchitis, emphysem, asthma and restrictive ventilatory disease;

- to protect the population at large from adverse though often transitory effects, including irritation of eyes and respiratory tract, headaches, chest pains and coughing, unpleasant odors, and impaired visibility; and

- to protect against damage to agricultural crops and landscape plants, and materials, such as building surfaces.

Excessive amounts of pollutants in the air can be the cause of serious health problems especially for children, seniors and people with heart and lung diseases. The most common health impacts of air pollutants are impaired respiratory function and cardiac stress. Savings in health care costs associated with air quality improvements are substantial.

Certain air pollutants also contribute to depletion of the beneficial stratospheric ozone layer in the upper atmosphere. Some air pollutants cause acid rain and global warming. Man-made materials can also be damaged by air pollutants. Metal deterioration, paint erosion, damage to surfaces such as glass, concrete, brick and tile can occur with high levels of pollutants in the air.

The majority of air pollutants in the Bay Area are generated on congested roadways from vehicle emissions (referred to as mobile sources of air pollution). Industry and other sources of non-mobile (stationary) pollutants contribute relatively less to most of the air quality problems in the Bay Area. Stationary sources of air pollution have generally been regulated by the BAAQMD in the past and new restrictions have been imposed under recent laws. In order to achieve further air quality improvements, cities, counties and regional agencies especially need to focus their efforts on the reduction of pollutant emissions from mobile sources. Reducing the number of automobiles on roadways and vehicle miles traveled will result in air quality improvements as well as less congestion on the roadways and other benefits.

Poor air quality can be a serious threat to the economic growth of San Francisco and the region. State and federal legislation has tied funding of transportation projects to air quality improvements and congestion reduction. The Environmental Protection Agency's (EPA) penalties on non-attainment areas or air districts that exceed federal air quality standards and moratoria on new industrial and highway facilities that generate air pollution can threaten the economic growth of the region. Poor air quality can limit the growth of industries and can make cities less desirable to live and work in.

Improved air quality has indirect benefits in terms of energy conservation. Reduction in vehicles mile traveled will result in reduced fuel consumption. Electric cars and trolleys do not generate tailpipe pollution and even natural gas used in the Bay Area to generate electricity for electric automobiles would create much less pollution than the gasoline burned in internal combustion engines.

Land use planning and transportation planning and policies have direct implications on air quality in a region. High density developments served by a transportation infrastructure that encourages the use of public transit and discourages the use of single occupant vehicles will contribute less to air quality problems compared to dispersed developments that are highly dependent on private automobiles.

Transportation policies that encourage the use of transit and other alternative means of transportation such as bicycling and walking and discourage the use

of private automobiles improve air quality.

In summary, implementation of land use and transportation policies can improve air quality which, in turn, results in health benefits and facilitates economic growth. Increased visibility because of clarity of the air is an additional benefit. Air quality improvements will result in energy conservation and preservation of building and other materials affected by air pollutants. Thus, improvement in air quality benefits our environment, health,living standards, and the economy.

THE PLAN

The Plan for air quality improvement is composed of six sections, each of which focuses on different aspects of air quality improvement efforts. The plan sections are (1) adherence to air quality standards, (2) improvements related to mobile sources, (3) land use planning, (4) public awareness, (5) reduction of dust, and (6) energy conservation.

Each of these sections consists of an objective and policies regarding air quality improvements related to emission reduction, linkages to other policy areas such as transportation, and to public education.

A separate document contains implementation actions. Implementation actions cite examples regarding how each policy can be implemented to achieve the objective under which it is described.

OBJECTIVES AND POLICIES

Goal

Give high priority to air quality improvement in San Francisco to protect its population from adverse health and other impacts of air pollutants.

OBJECTIVE 1

ADHERE TO STATE AND FEDERAL AIR QUALITY STANDARDS AND REGIONAL PROGRAMS.

POLICY 1.1
Cooperate with regional agencies to promote air quality improvement in San Francisco which, in turn, will contribute to air quality improvements at the regional level.

Air pollutants tend to sprawl throughout the region and do not recognize municipal boundaries. Although San Francisco has not violated air quality standards in recent years, westerly winds carry the pollutants generated in the city to the eastern and southern areas of the region. Air quality improvement in the Bay Area requires the cooperation of all of the cities and counties in the air basin. Any improvement in the air quality in the city contributes to air quality improvements at the regional level. San Francisco should cooperate with regional agencies to implement all feasible programs developed to improve air quality at the regional level.

POLICY 1.2
Adhere to State and Federal air quality standards in the future through sustained efforts and continued budgetary resources.

Seasonal and daily meteorological conditions affect the formation of some pollutants in the ambient air. For example, the formation of ozone only occurs during warmer temperatures in the presence of ozone precursors and sunlight. Since weather conditions vary greatly in the Bay Area from one year to another, assuming the same level of air pollutants in the air, air quality standards can be achieved in one year, yet can be violated in a subsequent year.

Although San Francisco has not violated air quality standards in recent years, it contributes to the regional air quality problems. Maintaining and adhering to air quality standards will require ongoing efforts by all cities and counties in the Bay Area. The City of San Francisco should continue to undertake all necessary measures to assure adherence to air quality standards.

POLICY 1.3
Support and encourage implementation of stationary control measures

established by the State.

Stationary sources refer to industrial or commercial activities that emit air pollutants into the atmosphere through fixed vents or stacks. The Air District is the State agency responsible for implementation of stationary control measures in the Bay Area. To encourage and ensure implementation of stationary sources control measures there needs to be better coordination between the City and State agencies to make sure that development of new stationary sources of pollution are reviewed and permitted for air quality impacts evaluation by the Air District.

OBJECTIVE 2
REDUCE MOBILE SOURCES OF AIR POLLUTION THROUGH IMPLEMENTATION OF THE TRANSPORTATION ELEMENT OF THE GENERAL PLAN

Mobile sources refer to motor vehicles that create air pollution when moving or operating.

The focus of the objectives and policies of the Transportation Element of the General Plan, updated in July of 1995, is to accommodate the transportation needs of the city by:

- reducing congestion on roadways;
- giving priority to public transit, as mandated by the "Transit First" policy;
- encouraging the use of modes of travel other than single occupant vehicles such as transit, carpooling, walking, and bicycling;
- managing the supply of parking in the downtown area.
- promoting coordination between land use and transportation to improve air quality; and

The objectives and policies of the Transportation Element listed below have direct implications on the Air Quality Element. These policies strive to reduce

automobile trips and traffic congestion in the city and thereby improve air quality in the city and the region.

Congestion Management

Transportation Element

OBJECTIVE 10 - Policies 10.1-10.4 >

The objectives and policies under the Congestion Management Section of the Transportation Element focus on developing and employing methods of measuring the performance of the city's transportation system that respond to its multi-modal nature rather than conventional methods that focus on vehicle movements only.

These policies improve the performance of the existing transportation system and encourage the use of non-automobile modes of travel. By encouraging travel mode shifts from single occupant vehicles to transit and other modes, the number of vehicle trips in the city will be reduced and air quality improvement goals will be achieved.

Smoother flowing traffic generates less pollution than stop and go congestion. However, road and signalization improvements should be analyzed to assure that they do not induce increased traffic.

Transit First Policies

Transportation Element

OBJECTIVE 11 - Policies 11.1-11.4 >

The "Transit First" policies of the Transportation Element are aimed at improving overall mobility for all residents and visitors of the city by promoting the use of public transportation and by improving local and regional transit systems. These policies are intended to reduce the use of private automobiles within the city and the regional transportation system and will result in emission reduction and thereby improve air quality.

Transportation Demand Management

Transportation Element

OBJECTIVE 12- Policies 12.1-12.8 >

OBJECTIVE 13- Policies 13.1-13.3 >

The objectives and policies of this section of the Transportation Element are designed to meet the transportation needs of the city for work and non-work trips by facilitating and encouraging the use of transit and other alternatives modes of transportation such as bicycling and walking. These policies will contribute to air quality improvements by reducing pollution emissions from mobile sources.

Transportation System Management

Transportation Element

OBJECTIVE 14- Policies 14.1-14.7 >

The policies of this section of the Transportation Element are structured to optimize and improve the efficiency of the use of existing transportation facilities. These policies will result in better operation of the transportation system and will reduce congestion which in turn will improve air quality.

Improved traffic operations generally encourage more people to drive. Caution should be used to minimize generation of additional motor vehicle traffic, which sometimes is the undesirable outcome of transportation improvement programs.

Parking Management and Citywide Parking

Transportation Element

OBJECTIVE 7 - Policies 7.1-7.3 >
OBJECTIVE 16 - Policies 16.1-16.6 >
OBJECTIVE 17 - Policies 17.1 and 17.2 >
OBJECTIVE 30 - Policies 30.1-30.7 >
OBJECTIVE 31 - Policies 31.1-31.3 >
OBJECTIVE 32 - Policies 32.1-32.5 >
OBJECTIVE 33 - Policies 33.1 and 33.2 >
OBJECTIVE 34 - Policies 34.1-34.5 >
OBJECTIVE 35 - Policies 35.1 and 35.2 >

The policies listed under this section of the Transportation Element are aimed at discouraging automobiles in the city by limiting the amount of new long-term parking in the downtown area, by pricing strategies, and other measures to discourage commuter parking. Parking strategies can be a very powerful tool

for limiting automobile use in the city which results in fewer pollutant emissions in the air.

Mass Transit

Transportation Element

OBJECTIVE 20 - Policies 20.1-20.12 >

OBJECTIVE 21 - Policies 21.1-21.11 >

OBJECTIVE 22 - Policies 22.1-22.3 >

The objectives and policies of the Mass Transit section of the Transportation Element give priority to improving transit, aim at developing transit as the primary mode of access to centers of employment and activities, and encourage the development of privately operated transit systems that would complement the existing systems. An extensive and more efficient local and regional transit system will encourage a shift of travel mode from private automobiles to public transit which in turn will contribute to air quality improvements in the city and the region.

Pedestrian

Transportation Element

OBJECTIVE 23 - Policies 23.1-23.9 >

OBJECTIVE 24 - Policies 24.1-24.4 >

OBJECTIVE 25 - Policies 25.1-25.6 >

OBJECTIVE 26 - Policies 26.1-26.4 >

The objectives and policies of this section of the Transportation Element are aimed at facilitating pedestrian movements throughout the city by providing an inviting environment and an extensive walking network. Theses policies will encourage pedestrian activities and will reduce the number of private automobiles as the result of mode shift from automobiles to walking. Reductions in the number of on-road vehicles will improve air quality.

Bicycles

Transportation Element

OBJECTIVE 9 - Policies 9.1 and 9.2 >

OBJECTIVE 27 - Policies 27.1-27.10 >

OBJECTIVE 28 - Policies 28.1-28.4 >

OBJECTIVE 29 - Policies 29.1-29.4 >

The objectives and policies of the bicycle section of the Transportation Element promote the use of bicycles by providing safe, convenient, and pleasant environments for bicycle riders in the city. These policies will encourage travel mode shifts from private automobiles to bicycles and would result in fewer automobiles on the roadways and thereby will improve air quality.

Urban Goods Movement

Transportation Element

OBJECTIVE 36 - Policy 36.3 >

OBJECTIVE 37 - Policies 37.2-37.4 >

OBJECTIVE 38 - Policies 38.1 and 38.2 >

OBJECTIVE 39 - Policies 39.1-39.3 >

OBJECTIVE 40 - Policies 40.1-40.9 >

The objectives and policies of the Urban Goods Movement of the Transportation Element are aimed at facilitating the movement and delivery of freight throughout the city. These policies will result in improvement of traffic flow and therefore will improve air quality.

Additional Related Objectives and Policies from the Recreation and Open Space Element

OBJECTIVE 1 - Policy 3 >

OBJECTIVE 2 - Policies 4 and 8 >

These objective and policies aim at improving public transit service to parks and creating bike and hiking trails, discouraging the use of automobiles in and around public open spaces and developing a citywide trail system that would tie city parks and public open spaces. Implementation of these policies would result in fewer automobile trips in the city, and improved transit, pedestrian and bicycle access and thereby improve air quality in San Francisco.

Additional Related Objectives and Policies from the Environmental Protection Element

OBJECTIVE 4 - Policies 1 and 4 >

These policies call for compliance with air quality standards of the BAAQMD

through monitoring sources of air pollution.

OBJECTIVE 3
DECREASE THE AIR QUALITY IMPACTS OF DEVELOPMENT BY COORDINATION OF LAND USE AND TRANSPORTATION DECISIONS.

POLICY 3.1
Take advantage of the high density development in San Francisco to improve the transit infrastructure and also encourage high density and compact development where an extensive transportation infrastructure exists.

High density development and a good transit system are the keys to successful urban planning. Development serviced by an efficient transit system allows for growth without increasing dependency on automobiles. The city already has a very dense downtown area and dense residential areas served by various transit modes. Dense development of downtown would have not been so successful if the development relied on automobiles. Currently the percentage of transit ridership in the city is very high. During the peak hours the city's transit system is operating close to current capacity.

To encourage increased transit ridership and to accommodate future growth, the city needs to improve its current transit system in terms of frequency of service and area coverage. Also, new infill development should be promoted around existing or proposed transit lines to reduce reliance on automobiles.

POLICY 3.2
Encourage mixed land use development near transit lines and provide retail and other types of service oriented uses within walking distance to minimize automobile dependent development.

Mixed land uses and pedestrian-friendly developments minimize automobile use. New designs should encourage sustainable communities where retail and other service oriented uses are within walking distance of residential areas and workplaces. These communities should also be close to transit lines to reduce vehicle work trips.

Additional Related Objective and Policies of the Commerce and Industry Element

OBJECTIVE 6 - Policies 5 and 9 >

The policies under this section of the Commerce and Industry Element focus on allowing new commercial development in conjunction with new residential development and considering transportation capacity and regulating land uses to minimize transportation impacts. The negative traffic impacts of new development will be minimized if housing is provided in conjunction with commercial development where there is capacity for transit.

POLICY 3.3
Continue existing city policies that require housing development in conjunction with office development and expand this requirement to other types of commercial developments.

Providing housing in conjunction with new employment centers encourages living near work sites and therefore reduces auto commute trips to the city. In the past decade as the result of the housing requirement for new office development, many residential units have been built in the city. This requirement should be expanded to be applicable to other types of commercial development to respond to the housing needs of new developments within the city's boundaries.

POLICY 3.4
Continue past efforts and existing policies to promote new residential development in and close to the downtown area and other centers of employment, to reduce the number of auto commute trips to the city and to improve the housing/job balance within the city.

During the past two decades the city has encouraged housing near the financial district and as the result of this policy a substantial number of residential units have been built near the downtown area. Also, in the Neighborhood Commercial Districts provision of housing is encouraged. In these districts the maximum building envelope could be filled with residential development only.

The policies that provide housing near work sites should be maintained and expanded. To the extent possible, these policies should apply to all potential development sites for all types of uses that are likely to attract workers from outside the city. Incentives should be given to housing development in all aspects of the review and development process to encourage provision of housing in San Francisco.

POLICY 3.5
Continue existing growth management policies in the city and give consideration to the overall air quality impacts of new development including its impact on the local and regional transportation system in the permit review process. Ensure that growth will not outpace improvements to transit or the circulation system.

During the seventies and early eighties extensive new development occurred in the downtown area that impacted the transportation system of the city and the region. Following that period various policies were established to control and manage growth. To ensure manageable growth in terms of the transportation impacts of new development, planning for growth and meeting the transportation needs of new development should be closely linked. The City needs to continue to implement and expand its current growth control and management policies so that new development will not impede the city's transportation and transit systems.

POLICY 3.6
Link land use decision making policies to the availability of transit and consider the impacts of these policies on the local and regional transportation system.

Land use decisions made in the city have direct implications on the transit and transportation system of the city and the region. Intensive development of the downtown area in the past two decades has considerably impacted the circulation and transit system of the city as well as the region. Land use designations and zoning should be tied directly to existing or proposed transit systems at the city and the regional level. Where compact development patterns are located, land use policies should encourage pedestrian and bicycle oriented sustainable communities

POLICY 3.7
Exercise air quality modeling in building design for sensitive land uses such as residential developments that are located near the sources of pollution such as freeways and industries.

Project review and approval in the City should consider air quality implications. Certain land uses such as some types of industrial uses and freeways generally emit air pollutants that could be hazardous to human health, particularlythat of sensitive receptors such as children, elderly and people with respiratory diseases. When reviewing new housing projects or other land uses to be used by sensitive receptors, location of industrial sites or other sources of air pollution should be considered in the design of the building to orient the air intake of the building away from the sources of pollution. Conversely, future industrial and other air polluting development should consider the existence of sensitive receptors in the vicinity.

POLICY 3.8
Promote the development of non-polluting industries and insist on compliance with established industrial emission control regulations by existing industries.

Currently all air polluting industries are subject to permit requirements by the BAAQMD. However, the City should actively encourage the development and expansion of industries which do not add to the air pollution problem. The City should assist the Air District in enforcing compliance for the existing industries in the city that do not comply or in the past have violated industrial emission control regulations.

POLICY 3.9
Encourage and require planting of trees in conjunction with new development to enhance pedestrian environment and select species of trees that optimize achievement of air quality goals.

Planting trees on sidewalks and open areas enhances the pedestrian environment and thus promotes walking. Some trees generate more pollutants and ozone precursors than other trees.

POLICY 3.10
Continue and expand existing efforts to monitor odors that are a public nuisance and are generated by fast food outlets, restaurants, coffee rosteries and other food production establishments.

Restaurant are not currently regulated under the BAAQMD. However, the BAAQMD has procedures set up to respond to complaints from the restaurants and other eating establishments that generate odors. These types of complaints are filed under the nuisance violations and the Air District's inspectors are generally send to the site for bservations and testing.

Additional Applicable Objectives and Policies of the Transportation Element

OBJECTIVE 2 - Policies 2.1, 2.2, 2.4, 2.5 and 2.6 >

The policies under Objective 2 of the Transportation Element promote using the transportation system as the means for guiding development in the city. The policies aim at using transit and other transportation improvements in the city and the region as the catalyst for desirable development. Designing transit oriented communities would not have the negative air quality impacts of new automobile oriented developments.

Additional Applicable Objectives and Policies of the Residence Element

Supply of New Housing

OBJECTIVE 1 - Policies 1, 3, 4, 5, 7 and 8 >

OBJECTIVE 2 - Policies 2 and 3 >

OBJECTIVE 3 - Policies 1, 2, 3, 6 and 7 >

The objectives and policies of this section of the Residential Element are aimed at retaining existing housing units, providing new housing to meet the housing demand created by employment growth, and increasing the supply of housing in San Francisco. Provision of new housing, particularly near employment centers reduce commute trips and improve air quality.

Neighborhood Environment

OBJECTIVE 12 - Policies 1 and 2 >

The objective and policies of the Residential Element of the General Plan propose provision of adequate public improvements and appropriate neighborhood serving commercial activities in residential areas. By providing an improved neighborhood environment in combination with neighborhood oriented services within walking distance, pedestrian activities as a substitute for vehicle travel are encouraged and as a result fewer trips are made by automobiles and therefore air quality is improved.

OBJECTIVE 4
IMPROVE AIR QUALITY BY INCREASING PUBLIC AWARENESS REGARDING THE NEGATIVE HEALTH EFFECTS OF POLLUANTS GENERATED BY STATIONARY AND MOBILE SOURCES.

POLICY 4.1
Increase awareness and educate the public about negative health effects of pollution caused by mobile sources.

Through dissemination of information and educational programs, the City should increase public awareness about the mobile sources of air pollutants and their negative health effects. These programs should educate the public about how to reduce air pollutant emissions from automobile exhaust by trip linking (going to several destinations in a single trip), using public transit, walking and bicycling as alternatives to the single-occupant vehicle.

POLICY 4.2
Educate the public about air polluting household consumer products and activities that generate air pollution. Increase public awareness about the environmental costs of using these products and activities.

Some household consumer products such hair sprays and aerosol products produce air pollutants that can deplete the stratospheric ozone layer. These products are not regulated by the State. Public awareness through educational programs about the negative environmental impacts, the true cost in terms air quality impacts and disposal charges will help diminish the use of these products.

During hot summer days air quality standards, especially ozone standards, are

likely to be exceeded in the Bay Area. The Air District issues warning about these days called "Spare the Air Day", which encourage people to curtail air polluting activities. Educating the public to observe these days and postpone activities such as using gas power lawn mowers or barbecuing will diminish the emission of pollutants during these days.

POLICY 4.3
Minimize exposure of San Francisco's population, especially children and the elderly, to air pollutants.

Children and elderly people are the population groups who are most susceptible and sensitive to air pollution in the ambient air. Through educational programs public awareness needs to be increased to particularly protect children and elderly people from exposure to air pollutants.

OBJECTIVE 5
MINIMIZE PARTICULATE MATTER EMISSIONS FROM ROAD AND CONSTRUCTION SITES.

POLICY 5.1
Continue policies to minimize particulate matter emissions during road and building construction and demolition.

Spraying sites with water or other dust inhibitors during demolition, grading, and new construction is recommended by the BAAQMD. The San Francisco Building Code also requires reduction in the amount of airborne dust from building materials during the demolition process. For excavation and construction projects spraying conditions are normally components of conditions of approval prior to issuance of building permits. Also, much of the building industry observes practices to spray sites regardless of Code or other regulation requirements. The City needs to maintain and continue to implement its current policies regulating spraying of sites for all activities that generate particulate matter emission in the ambient air. Other controls that reduce dust dispersion in the air are:

- covering dirt piles,
- paving of roads, driveways, parking areas and lots,

- limiting of dusty work on windy days, and
- screening of demolition and construction sites.

POLICY 5.2
Encourage the use of building and other construction materials and methods which generate minimum amounts of particulate matter during construction as well as demolition.

Some building materials generate more particulate matter during the construction process. To improve air quality, the City should discourage the use of construction and building material that generate excessive amounts of particulate matter in the air especially during windy days.

OBJECTIVE 6
LINK THE POSITIVE EFFECTS OF ENERGY CONSERVATION AND WASTE MANAGEMENT TO EMISSION REDUCTIONS.

POLICY 6.1
Encourage emission reduction through energy conservation to improve air quality.

Any form of energy consumption ranging from using electricity to operating an automobile uses energy which, in the process of generation or consumption, usually creates some air pollutin. Encouraging conservation of energy facilitates improvements in air quality.

POLICY 6.2
Encourage recycling to reduce emissions from manufacturing of new materials in San Francisco and the region.

Recycling reduces the use of new materials that during their production process use energy therefore increasing overall air pollution. Currently under the City's solid waste management program a considerable amount of solid waste is being recycled. About half of the solid waste generated in the city is planned to be recycled by the year 2000.

Through the Solid Waste Management Program, the City oversees the

activities of the garbage collection companies, hazardous waste management and recycling programs. This program provides assistance and educational programs on recycling to businesses and other entities. This program also encourages reduction in the disposal of hazardous waste and provides educational programs to the public on these issues.

POLICY 6.3
Encourage energy conservation through retrofitting of existing facilities.

Existing older commercial and residential facilities in the city do not comply with recent energy conservation standards. These facilities waste a considerable amount of energy that produce air pollution in the process. Generation of any kind of energy used in these facilities produces air pollution. Existing facilities should be encouraged to retrofit to minimize the use of energy. Energy conservation in these facilities will result into air quality improvements.

POLICY 6.4
Retain and upgrade the current network of trolley buses and, where feasible, replace diesel buses with buses powered by electricity or retrofit these buses to create less pollutants.

Diesel fuel in older motor vehicles creates a considerable amount of air pollution including fine particulate matter (PMT10) and therefore contributes to air quality problems in the Bay Area. Diesel buses should be replaced by electric buses or other low or zero emission power sources where feasible, or they should be retrofitted to create less pollutants.

POLICY 6.5
Require energy efficient, low polluting fireplace inserts, and wood stoves in all new residential development.

Additional Related Objectives and Policies from the Environmental Protection Element

OBJECTIVE 12 - Policies 1-4 >
OBJECTIVE 13 - Policies 1-6 >
OBJECTIVE 14 - Policies 1-5 >

OBJECTIVE 15 - Policies 1-6 >
OBJECTIVE 16 - Policies 1-3 >
OBJECTIVE 17 - Policies 1-3 >
OBJECTIVE 18 - Policies 1-3 >

The objectives and policies of the Environmental Protection Element of the General Plan listed above aim at conserving energy through increasing energy efficiency of public and private activities within the city. These objectives and policies are designed to enhance energy efficiency of housing in San Francisco, to promote effective energy management of commercial and industrial facilities, to increase energy efficiency of transportation, and to promote the use of renewable energy sources.

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