CITY OF FORT COLLINS
AIR QUALITY ACTION PLAN UPDATE
MARCH 1999 (revised March 20, 2001)

Air Quality Action Plan -- 2000-2003

This update provides . . .

An update of the Air Quality Action Plan.

A summary of the most current data pertaining to those pollutants of particular concern to Fort Collins, and where applicable, how these data have been affected by the Air Quality Action Plan.

A current status of the strategies adopted by Council in March of 1998.

Actions proposed for implementation from January 2000 through December 2003.

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INTRODUCTION

1. Air Quality Plan - Overview

The Air Quality Plan was adopted by City Council in March 1993. It provides the framework for the City's Air Quality Program. The Air Quality Plan includes two main components: The Air Quality Policy Plan (AQPP), a long-term policy document, and the Air Quality Action Plan (AQAP), which contains a set of strategies that are updated regularly. This document is an update of the AQAP.

In previous years, the AQAP was reviewed every two years. In 1998, staff and the Air Quality Advisory (AQAB) recommended that beginning in 2000, the AQAP follow a four year schedule. This new timetable provides for annual updates to Council and a mid-course correction in the second year to deal with urgent and/or emerging air quality issues. The new four year plan proposed here sets forth a set of strategies listed in order of priority and provides greater flexibility for thorough program development and implementation.

2. Air Quality Policy Plan - Goal

Continually improve Fort Collins' air quality as the city grows. This means that existing sources of air pollution must be reduced to more than offset new growth.

3. Air Quality Policy Plan - Objectives

? Reduce growth of vehicle miles of travel.
? Reduce per-mile tailpipe emissions of high priority pollutants.
? Reduce total emissions of high priority pollutants from commercial/industrial sources.
? Reduce area-wide wood smoke emissions.
? Reduce the number of non-certified wood stoves and conventional fireplaces.
? Increase the percentage of residences and workplaces taking action to reduce exposure to indoor air pollution.

4. Air Quality Policy Plan - Methods of Measuring Progress

In measuring progress, air quality indicators are used, not just ambient air quality data. Indicators are indirect measurements of air quality that focus on the parts of the problem within our control, whereas ambient data include issues outside our control, such as the effects of weather.

5. Air Quality Policy Plan - Methods of Achieving Goals

The Air Quality Plan focuses on sources and not pollutants. Action strategies aim at reducing all emissions from a source category (e.g., motor vehicles) rather than a specific pollutant (e.g., carbon monoxide).

The priority for each action is based upon the amount of pollution generated by the source. The current order of priority is #1 motor vehicles, #2 commerce and industry, and #3 homes (wood smoke and indoor air pollution).

The process for achieving air quality goals is based upon the following hierarchy of actions:
(1) actions the City must take, (2) actions the City takes voluntarily to reduce emissions from its own operations, (3) actions the City asks others to take (education and incentives), and (4) actions the City requires other to take (ordinances).

DOCUMENT LAYOUT

The updated Air Quality Action Plan has been formatted to provide a simple synopsis of actions taken from March 1996 through December 1999 and to propose actions for 2000-2003. Actions are listed in order of priority under each Objective and section heading. The following organizational structure should be noted:

1. Numbering - Each action item in the plan is assigned a number. This number helps the reader track past and future actions more easily. For example, Action Categories are numbered with two bold, underlined digits -- 0.1, 1.1, 2.1 and so forth. Specific Actions are numbered with three digits-- 0.1.1, 1.1.1, 2.1.1 and so forth.

2. New Actions for 2000-2003 - Occasionally, an action item will appear only in the right-hand column. These are new actions scheduled to begin in 2000 and were not part of the 1996-99 Plan.

3. Actions - The AQAP is divided into 10 objectives. Each objective addresses a specific source of pollution. The purpose of the AQAP is to take the 1993 Policy Plan and put it into action through a series of specific actions or strategies. The actions that will be implemented for each objective are listed according to which of the following categories it falls under:

- **Program and Policy Research and Development** – Before a strategy is taken to the public it undergoes a thorough review and evaluation including internal discussion, public outreach, research, regional and local collaboration, and program design and development.

- **Education and Outreach** – Once research and development are completed, pertinent information and/or policies are taken to the general public to raise awareness of the issues and of the need to change behavior as it relates to air pollution. Each education and outreach project is part of an overall air quality marketing program that includes a logo and theme — *CLEAN AIR, Because Breathing Isn't Optional.* Projects are packaged in a series of *"Breathing Lessons"* that explain simple things residents can do to improve the air they breathe. The education program is multi-faceted and includes web page sites, presentations, articles, TV and radio ads, traveling and stationary displays, special events, workshops, and a variety of literature.

- **Data Collection and Monitoring** – A very important component of the AQAP is evaluation. These evaluations take the form of resident surveys and monitoring of specific pollutants and other data. Information is used to determine which programs work and which do not, and helps staff manage or redirect resources and goals accordingly.

- **Regulation –** Regulation is considered the last course of action, to be used when the issue is urgent or when all other actions have been unsuccessful.

4. Time Frame – The updated AQAP is divided into two columns of actions. The left-hand column provides an update of the current 1996-1999 Plan. The right-hand column sets forth the proposed actions for 2000-2003.

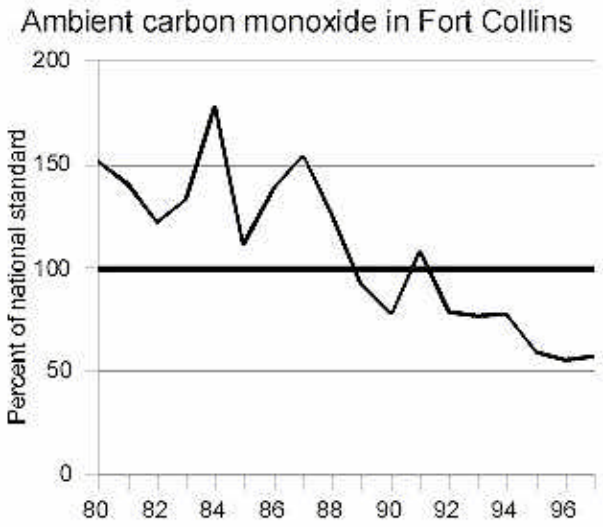
AMBIENT AIR QUALITY DATA

Data gathered at monitoring sites in Fort Collins are displayed on the following charts. (See individual pollutants for specific locations of each site.)

CARBON MONOXIDE (CO) is a colorless, odorless, tasteless gas that is produced when combustion is incomplete. CO restricts the amount of oxygen carried to the body through the blood. At high levels, CO causes headaches, nausea, and fatigue. Motor vehicles emissions are responsible for nearly 90% of CO in outside air, wood smoke contributes another 8% during winter months.

Carbon Monoxide is emitted mainly by motor vehicles. Emissions continue to decline nation-wide due primarily to new vehicle standards**.** CO concentrations in Fort Collins are currently below federal standards, but will rise if vehicle miles of travel are not controlled. Anything below the dark line meets federal air quality standards. Fort Collins has not exceeded the standard since 1991. The CO monitoring site is located at Laurel and Mason Streets.

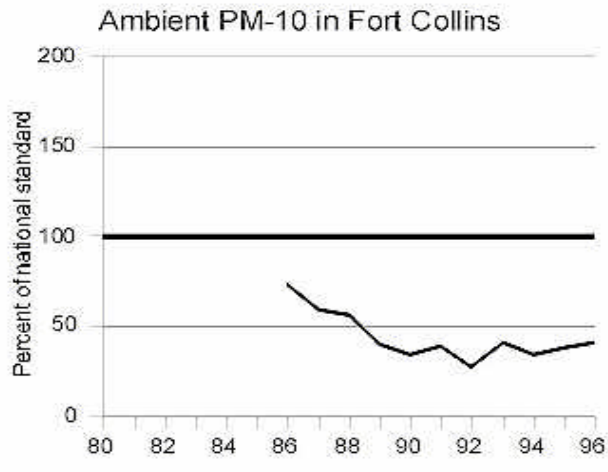
"Carbon monoxide concentrations in Fort Collins continue to remain stable."



PARTICULATE MATTER 10 MICRONS OR SMALLER (PM_{10}) are minute, breathable particles invisible to the human eye. These particles can be more deeply inhaled into the lungs where they aggravate existing respiratory conditions. Young children and people with allergies, asthma, heart disease, and other respiratory conditions are most at risk.

PM_{10} comes mainly from roads, fields, and construction sites. PM_{10} contributes to visibility impairment (the "brown cloud"). Anything below the dark line in the chart meets federal air quality standards. Fort Collins has not exceeded the standard since monitoring began in 1980. The PM_{10} site is located atop the Larimer County Courthouse.

"PM_{10} *concentrations in Fort Collins remain near 50% of the Federal standard."*

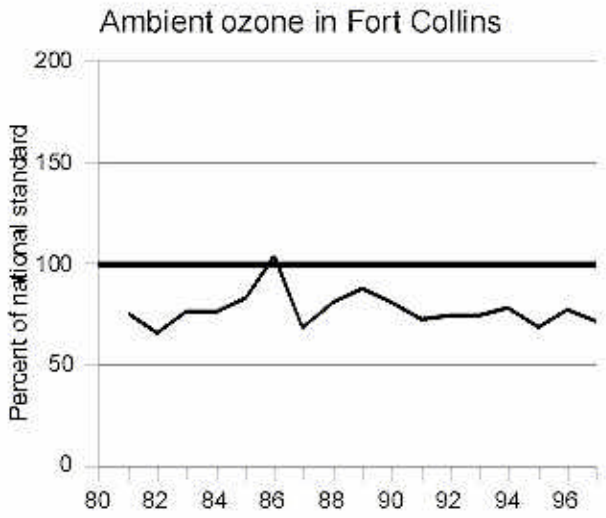


AMBIENT AIR QUALITY DATA

OZONE (O_3) results when nitrogen oxides and hydrocarbons "cook" under sunlight. At high concentrations, ozone can irritate the linings of the eyes, nose and lungs, damage plants, and eat away at buildings, statues, and monuments.

Ozone is formed from nitrogen oxides and hydrocarbons emitted mainly by motor vehicles. Ozone is most problematic during warm spring and summer months. The chart reflects the old, one-hour standard. The new standard requires eight-hour averaging of ozone concentrations. Preliminary analysis of Fort Collins' ozone data from the past two years, using the new eight-hour averaging, show that we are closer to the allowable threshold of the new standard, but violations are not anticipated. Ozone concentrations in Fort Collins remain below the federal air quality standard. Fort Collins has not exceeded the Federal Ozone standard since 1986. The ozone monitor is located at Laurel and Mason Streets.

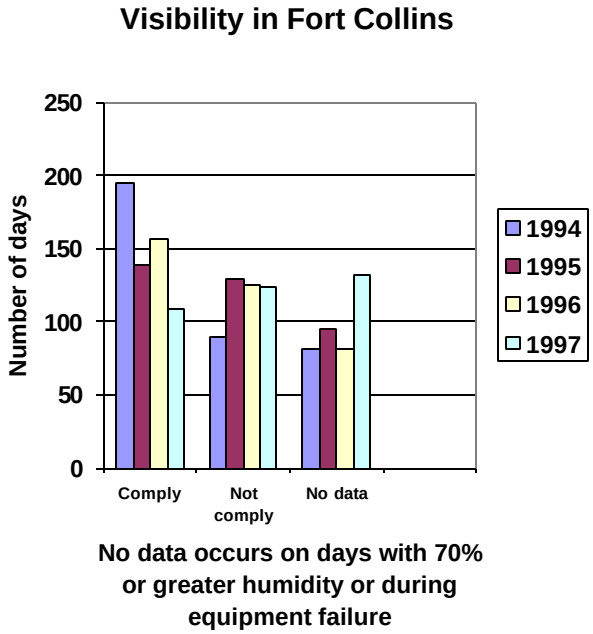
"O_3 concentrations in Fort Collins remain 20% below the one-hour Federal air quality standard."



VISIBILITY monitoring tells us how the air "looks." Currently, there is no health standard tied to visibility. Poor visibility affects what we see and how far we see. It can also have economic and quality of life impacts.

VISIBILITY has been monitored in Fort Collins since fall of 1993. Optical readings of local air quality are compared to the Colorado visibility standard. Fort Collins violates the state standard one out of three days per year. Most visibility impairment is caused by particles 2.5 microns or smaller ($PM_{2.5}$). $PM_{2.5}$ monitoring is scheduled to begin in Fort Collins in 1999. Preliminary analysis of the recent North Front Range Air Quality Study indicates that sources of $PM_{2.5}$ in Fort Collins include secondary aerosols (38%), dust and debris (19%), gasoline exhaust (18%), diesel exhaust (11%), meat cooking and woodburning (8%), power plant emissions (2%), and "other" (4%). Visibility data are gathered atop the Holiday Inn on West Prospect Avenue.

"Visibility impairment in Fort Collins may be getting worse."



AIR QUALITY POLICY PLAN

The Air Quality Policy Plan (AQPP) underwent its first review in 1997-98. As a result of that review, the following policy implementation gaps and emerging policy issues were identified. Actions are proposed to provide a method for addressing each specific issue.

Program and Policy Research and Development

ACTIONS --1996-1999	ACTIONS -- 2000-2003
0.1 Policy Implementation Gaps 0.1.1 The review of the AQPP identified certain policies that have not been implemented. Staff proposes filling these implementation gaps as part of the 2000-03 Action Plan. 0.1.2 As part of the Clean Air Colorado Contract with the Colorado Department of Public Health and Environment (CDPHE) for 1999, staff will research hidden subsidies for motor vehicles.	**0.1 Policy Implementation Gaps** 0.1.1 Create a development review policy to demonstrate long-term, area-wide emissions decrease and conformance with the National Ambient Air Quality Standard. [1] 0.1.2 Prepare a white paper on the use of price mechanisms and work with other local governments on applying free market price mechanisms to reduce vehicle travel. [2] 0.1.3 Develop a new procedure for requiring affirmative findings so that transportation and land use plans conform to the AQPP. [3] 0.1.4 Develop a process to provide increased access to air quality information that is of interest to the public. [4]
0.2 Emerging Issues 0.2.1 The AQPP calls for measuring air quality progress according to area-wide emission levels. This policy has been questioned because it appears to allow localized increases in pollution (hot spots) while area-wide emissions are going down.	**0.2 Emerging Issues** 0.2.1 A white paper will be prepared to address whether the City should adopt a new policy on localized concentrations of air pollution. The paper will also review neighborhood protection from hot spots created by new development, propose protective measures if needed, and address questions about localized carbon monoxide levels.

[1] AQPP Policy 1.6—The City's primary approach to improving motor vehicle-related air pollution is to reduce total area-wide motor vehicle emissions over the long term. Any action that increases short-term or localized emissions, such as installing pedestrian-activated traffic signals, can be justified only if it is demonstrated that long-term or area-wide emissions are decreased by the action, and if localized concentrations do not rise to a level that violates National Ambient Air Quality Standards.

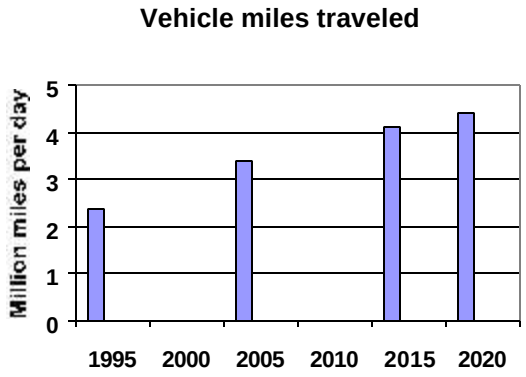
[2] AQPP Policy 1.10—The City will use price mechanisms of the free market to help shift citizen and business choices toward actions that reduce air pollution, including removing the hidden cost subsidies to motor vehicle users, employing economic incentives and disincentives, and other market approaches.

[3] AQPP Policy 1.14: — The City will adopt no transportation or land use plan or program unless there is an affirmative finding that the plan or program has given consideration to the objectives and policies of the AQPP (1993).

[4] AQPP Policy 1.25—Policies will be developed to direct the City to assist residents in gaining access to information regarding emissions of air pollution from sources that are of concern to them.

OBJECTIVE #1 – REDUCE GROWTH RATE OF VEHICLE MILES OF TRAVEL (VMT)

CURRENT CONDITIONS



Vehicle miles of travel are estimated to grow at 2.6% per year through 2020. This estimate assumes that higher density, mixed-use developments will be built in Fort Collins that reduce the need for vehicle travel. It also assumes that the City and north front range region will meet goals to reduce the number of single-occupant vehicles and increase the use of alternatives such as walking, cycling, ridesharing, transit, and telecommuting.

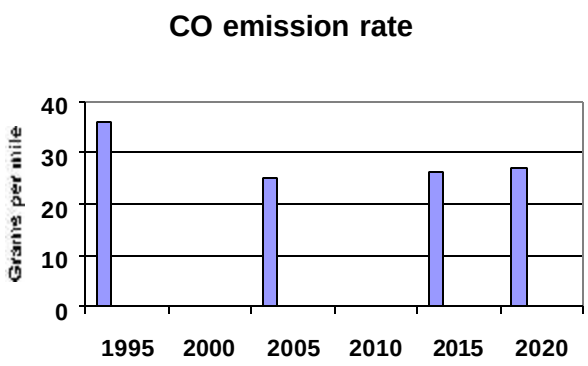
PROGRAM AND POLICY RESEARCH AND DEVELOPMENT

ACTIONS -- 1996-1999	ACTIONS -- 2000-2003
1.1 Transportation and Land Use Plans 1.1.1 Since 1996, City Plan and the Master Transportation Plan have been completed, and a Transportation Demand Management Program (TDM) has been established. The TDM program follows actions to reduce traffic that are directed by City Plan and the Master Transportation Plan. These plans and programs are designed to meet the VMT growth reduction goal set forth in the Air Quality Policy Plan (AQPP). Their implementation is primarily the responsibility of the Transportation and Planning and Zoning departments. Each plan and program has an established timetable for review and evaluation followed by appropriate updates and revisions.	**1.1 Transportation and Land Use Plans** 1.1.1 Beginning with this update, Objective #1 will be removed from the regular, four year review of the AQAP and placed on a separate track that is better coordinated with individual reviews, updates, and evaluations for the transportation and land use plans. Staff and the AQAB have established a protocol for continued involvement in these plans and programs. This protocol will ensure that transportation and land use plans align with air quality goals. 1.1.2 Episodic Controls Program. Consider an education/awareness program to identify local high pollution periods and increase TDM outreach/ incentives during these periods.

OBJECTIVE #2 – REDUCE PER-MILE MOTOR VEHICLE EMISSIONS

CURRENT CONDITIONS

The **per-mile motor vehicle emissions*** rate has been declining as new, cleaner cars replace older ones. If the United States Environmental Protection Agency (US EPA) tightens new car standards further, then emissions will drop further. These estimates assume that the State will continue its vehicle inspections and oxygenated fuels programs. The emission rate is predicted to rise in future years as congestion reduces the average speed of traffic from 23 mph in 1995, to 16 mph in 2020.



* Per-mile motor vehicle emissions refers to any air pollution caused by the operation of a motor vehicle and includes exhaust pipe emissions and road dust kicked up by automobile tires. Per-mile motor vehicle emissions are estimated in grams per mile using a US EPA computer model (Mobile5a), which reflects the ages and types of vehicle in Colorado.

PROGRAM AND POLICY RESEARCH AND DEVELOPMENT

ACTIONS -- 1996-1999	ACTIONS -- 2000-2003
2.1 Inspection and Maintenance (I/M)	**2.1 Inspection and Maintenance (I/M)**
Non-testing Strategies	**Non-testing Strategies**
2.1.1 A citizen committee was convened in 1997 to recommend early action strategies the City could take to reduce per-mile emissions. These were implemented in 1997 and 1998. Some are detailed in the column at right. A report on non-testing strategies will be prepared at the end of 1999 (following two years of implementation) and recommendations for future implementation will be made.	2.1.1 1999 recommendations that are likely to be implemented include CarCare maintenance days (events that include free vehicle inspections to promote better maintenance), a Smoking Vehicle Hotline, TechNights for mechanic training in emissions system repairs, lawn mower trade-outs to lower-polluting models, and engine block heater promotions. All programs will be monitored for effectiveness.
Improved I/M Strategies	**Improved I/M Strategies**
2.1.2 Fort Collins is a member of the North Front Range Transportation and Air Quality Planning Council's (NFRT&AQPC) Regional I/M committee, which provides a valuable information clearinghouse. The City also participated in the state's Carbon Monoxide (CO) Roundtable, which ended in May 1998. The Roundtable group discussed CO reduction strategies (I/M and Oxyfuels) and the impact community actions could have on them.	2.1.2 Develop recommendations for a future I/M program that best supports the AQPP goal of continual air quality improvement. Continue to participate in the NFRT&AQPC Regional I/M Committee. Although the I/M program sunset date was removed by SB-182, the future of I/M is uncertain. Because the current Basic I/M is estimated to reduce CO by 12% for Fort Collins, it is important to develop an effective I/M program for the future.

ACTIONS -- 1996-1999	ACTIONS -- 2000-2003
	2.1.3 Explore a high-emitting vehicle program, which may involve finding ways to subsidize repair of high-emitters. Political and technical issues will have to be addressed. The Non-testing Committee highly recommended this concept. 2.1.4 Encourage the Regional I/M Committee to consider addressing emissions from farm and collector license plate vehicles.
2.2 Smoking Vehicles	**2.2 Smoking Vehicles** 2.2.1 Work with the Department of Health and the Department of Revenue to require owners of smoking vehicles to report for a free emissions test. 2.2.2 Continue to explore options to increase staff expertise that enables better enforcement of smoking vehicle laws.
2.3 Reduce Percent of Cold Start Vehicles	**2.3 Reduce Percent of Cold Start Vehicles** 2.3.1 Cold start occurs when the engine has been turned off for more than one hour, which causes CO and hydrocarbon emissions to nearly double that of warm engine restarts. Staff will work with City transportation and land use departments to develop strategies, such as trip linking (combining of trips), to reduce the number of short trips and/or the fraction of vehicles operating in the cold start mode.
2.4 Diesel Vehicles 2.4.1 Staff has become involved in the NE Truck Route Project as part of its effort to participate in the City's Transportation Department studies.	**2.4 Diesel Vehicles** 2.4.1 Staff will continue to participate in Transportation Department studies that have the potential to reduce truck emissions in Fort Collins. 2.4.2. Where technically and economically feasible, implement municipal purchasing/ contracting guidelines that give preference to providers who use low-emission equipment, including construction and lawn maintenance equipment. Explore incentives to increase use of clean equipment in all municipal contracts.
2.5 Alternative Fuel Vehicles (AFV) 2.5.1 The City's goal to add 25 AFV to its fleet each year has not been met. This is due to lack of approved conversion kits and suitable new vehicles to meet fleet operations specifications,	**2.5 Ultra Low/Low Emission Vehicles (ULEV/LEV)** 2.5.1 Continue with the program proposed in 1998 by staff and the AQAB.

ACTIONS -- 1996-1999	ACTIONS -- 2000-2003
and because gasoline powered vehicles are now nearly as clean as most AFV. The City's AFV program was reviewed in 1998 by staff and the AQAB, and a program was recommended for the City to purchase cleanest passenger and light duty trucks that meet ultra low emissions standards (ULEV) or better. It was recommended that the City explore alternative fuels for diesel fleet operations, focusing first on the City's full sized buses.	2.5.2 Municipal Fleet Services explore alternatives to diesel-powered buses. 2.5.3 Evaluate basis for creating a City policy to become a Hydrogen-Ready City. 2.5.4 Municipal Fuel Use Reduction Program. Develop a Municipal Fuel Use Reduction Program that considers vehicle idling, cold-starts, and clean vehicle purchasing criteria. Include in updated Administrative Policies Document.
2.6 Fine-Tune Signal Timing 2.6.1 A benchmark study, to be completed in 1999, will recommend the best practices applicable to Fort Collins' signal timing. Early in the study, the City received funds to retime signals. An optimization plan was developed in the fall of 1998.	**2.6 Fine-Tune Signal Timing** 2.6.1 No further action is anticipated on this item.
2.7 Street Sanding and Sweeping 2.7.1 The City's Street Department is considered a leader in street sanding and sweeping techniques and keeps abreast of Best Management Practices. The ¼ cent sales tax approved by voters in 1997 for transportation maintenance provides funds for street sweeping enhancements.	**2.7 Street Sanding and Sweeping** 2.7.1 Continue to use Best Management Practices to reduce particulate emissions from street sanding. The North Front Range Air Quality Study indicated that dust and debris are 19% of the $PM_{2.5}$. Strategies to reduce dust are important. 2.7.2 Explore the cost to calculate the percentage of street sand applied and the amount recovered through street sweeping. The data will help assess the effectiveness of the street sweeping program.
2.7.3 A proposed project to work with Larimer County to reduce dust in the urban growth area was not completed during 1996-1999.	2.7.3 Implement a joint Larimer County/City of Fort Collins program to reduce urban growth area dust, including sweeping paved roads and paving or controlling dust from unpaved roads.

EDUCATION AND OUTREACH

ACTIONS--1996-1999	ACTIONS--2000-2003
2.8 Emissions Test Law 2.8.1 An ad-hoc committee of state, county, university, and local government staffs met during 1998 to develop a program to address emissions sticker non-compliance in Weld and Larimer Counties. Based upon their recommendations, information on the Emissions Test Law was distributed to businesses/schools and at public places during 1998 and will continue in 1999. The law requires businesses & post-secondary institutions to inform their employees/students about the Emissions Test Law.	**2.8 Emissions Test Law** 2.8.1 Education will be the primary focus of increasing compliance to the Emissions Test Law. The program will include working with the City's Human Resources Department to include emissions sticker information in new employee packets, annually remind City employees about the emissions test requirement, and encourage other local employers to institute emissions compliance programs.
2.8.2 In collaboration with CSU Parking Services, special efforts were made to increase compliance on the CSU campus. The campaign included information at student orientation and in student packets, newspaper articles, and issuance of warning tickets. This program raised compliance from 75% to 87%. In the fall of 1997, the City turned the program over to CSU's Parking Services Office.	2.8.2 Work within the City government and simultaneously with other local employers such as CSU to establish programs that require proof of a passing valid emissions test before issuing parking permits. Because of the high student turnover at CSU, it is especially important to maintain a supportive relationship with CSU Parking Services to ensure a successful on-going education program.
2.8.3 In 1998, the Colorado Legislature approved a Clean Screen program to supplement I/M in the AIR program. The program will identify clean vehicles through remote sensing	2.8.3 Use remote sensing as an educational tool to inform drivers when their cars are <u>not</u> clean.
2.9 Smoking Vehicles 2.9.1 The State Health Department maintains a smoking vehicle hotline. In 1997, a smoking vehicle hotline was added to Fort Collins' *City Line*. During 1998-99, efforts will continue to inform drivers about the law and encourage reporting of smoking vehicles. Owners whose vehicles are reported receive a notification from the state that their vehicle was observed smoking and encourages them to have the car repaired.	**2.9 Smoking Vehicles** 2.9.1 Efforts will be made to expand knowledge and use of the smoking vehicle hotline. Educational materials will emphasize that any smoking vehicle, light or heavy, violates anti-smoking laws and has a significant impact on air quality.

ACTIONS--1996-1999	ACTIONS--2000-2003
2.10 Reduce Percent of Cold Start Emissions 2.10.1 In the fall of 1998, an engine block heater rebate program was implemented. Use of engine block heaters can significantly reduce cold start emissions.	**2.10 Reduce Percent of Cold Start Emissions** 2.10.1 Continue the program if funding is available. Staff will work with other City departments to reduce unnecessary trips related to City sponsored programs.
2.11 Alternative Fuel Vehicles (AFV) 2.11.1 Since May 1996, the City of Fort Collins has been part of a national *Clean Cities* effort to increase the use of AFV. The program is primarily educational and focuses on public and private fleets. During 1997, a Clean Fuels Corridor was created that includes Colorado Springs, metro-Denver, Boulder, Weld County, Larimer County, and Rocky Mountain National Park. In 1998, the corridor partnership netted grants totaling $100,000 to fund a coordinator position and education and outreach projects. Fort Collins coordinates the Northern Coalition. During 1999 the Northern Coalition will explore funding to hire a new coordinator.	**2.11 Ultra Low/Low Emission Vehicles (ULEV/LEV)** 2.11.1 Continue outreach efforts, through Clean Cities and other avenues, to encourage citizens and businesses to purchase clean-burning vehicles, including clean AFVs. The City Clean Air Team will stay involved with Clean Cities, assisting as a stakeholder, but will no longer be a corridor co-coordinator, due to the reclassification of Rocky Mountain/Weld/Larimer Clean Cities as a 501C3.
	2.12 Sport Utility Vehicles (SUV), Light Duty Trucks (LDT), and Vans 2.12.1 Encourage the purchase of lower- emitting vehicles & more fuel efficient SUV, LDT, and vans.

DATA COLLECTION AND MONITORING

ACTIONS--1996-1999	ACTIONS--2000-2003
2.13 Emissions Test Law 2.13.1 A survey of the region was conducted in 1998 to determine emissions test compliance among employers and universities. The survey showed a 24% non-compliance rate in Fort Collins. In 1999, another survey will be conducted using new state guidelines. The survey will also evaluate the effectiveness of education efforts.	**2.13 Emissions Test Law** 2.13.1 A periodic emissions sticker survey will be conducted every four years using state standards to evaluate compliance. Staff will explore the possibility of preparing a profile of those who are in non-compliance with the law and those with collector's tags.
2.13.2 Surveys have been conducted at CSU the beginning of each semester, and following issuance of warning tickets. Follow-up surveys have indicated that warning tickets are a good way to increase compliance.	2.13.2 Encourage CSU to continue surveys.

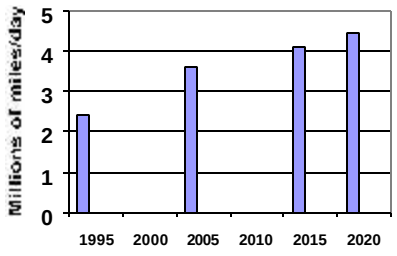
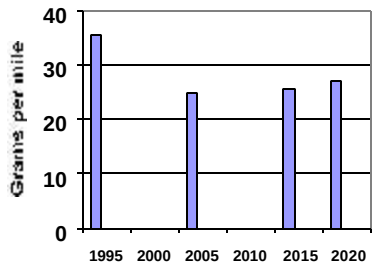
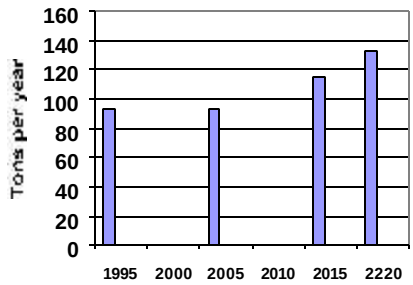
REGULATION

ACTIONS—1996-1999	ACTIONS—2000-2003
2.14 Emissions Test Law 2.14.1 Currently, enforcement of the Emissions Test Law and other vehicle-related air pollution laws is sporadic and usually occurs secondarily during a more serious offense, such as speeding or running a red light.	**2.14 Emissions Test Law** 2.14.1 The City will continue to explore options for a City Code Enforcement Officer to enforce vehicle-related air pollution laws such as the Emissions Test Law, the Smoking Vehicle Law, and the Diesel Opacity Law.
2.15 Diesel Vehicles 2.15.1 No recommendations were made on how to better enforce vehicle-related diesel air pollution laws during 1996-99. A small, concentrated study of idling diesel trucks indicated no significant problem from this potential source of pollution. The study did not look at diesel vehicles moving in and through Fort Collins.	**2.15 Diesel Vehicles** 2.15.1 Support proposed changes to the State's diesel inspection program that will result in decreased diesel emissions. 2.15.2 The North Front Range Air Quality Study shows that diesels cause 11% of Fort Collins' $PM_{2.5}$ (very small particle pollution). Staff recommends development and implementation of methods to better enforce vehicle-related air pollution laws relating to diesel vehicles. Prepare an ordinance for adoption of State diesel emissions standards into local law, thereby strengthening justification for local enforcement and for implementing supportive programs.

OBJECTIVE #3 – PREVENT TOTAL MOTOR VEHICLE EMISSIONS FROM INCREASING AFTER YEAR 2000

CURRENT CONDITIONS

Total daily motor vehicle emissions are estimated by multiplying daily vehicle miles of travel (VMT) by per-mile emissions. The charts below, based on data from the 2020 Regional Transportation Plan, show per-mile and total emissions of carbon monoxide (CO) in Fort Collins, the pollutant for which Fort Collins is currently in non-attainment of National Ambient Air Quality Standards. Other pollutants from motor vehicles include hydrocarbons, nitrogen oxides, particulate matter, and air toxics.

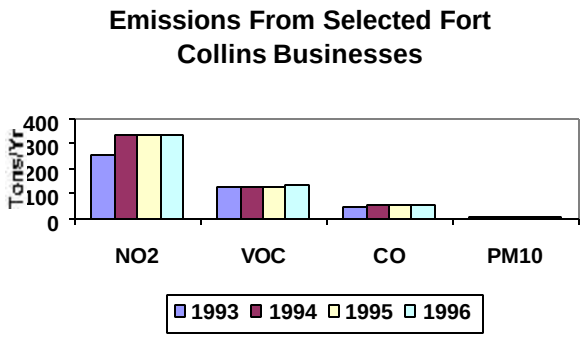
Vehicle miles traveled	Vehicle emission rate	Total CO emissions
		
Graph 1—Vehicle miles of travel are estimated to grow at about 2.6% per year through 2020. This estimate assumes that higher-density, mixed-use development will reduce the need for vehicle travel. It also assumes that the City and North Front Range region will meet their goals to reduce the number of single-occupant vehicles and increase the use of alternatives such as walking, cycling, transit, ridesharing, and telecommuting.	The per-vehicle emissions rate has been declining as new, clean cars replace older ones. If US EPA tightens new car standards further, these numbers will improve. These estimates assume that the State will continue its vehicle inspections and oxygenated fuels programs. The emission rate rises in later years as congestion reduces the average speed of traffic from 23 mph in 1995 to 16 mph in 2020.	Because VMT growth is out-pacing improvements in the vehicle emission rate, total CO emissions will pass through a low point, then begin to rise after year 2000. Objective #3 will not be met despite the assumed success of planned efforts to reduce the VMT growth rate.

ACTIONS - 1996-1999	ACTIONS – 2000-2003
3.1 Motor Vehicle Emissions 3.1.1 Motor vehicle emissions reduction is achieved through Objectives #1 and #2.	**3.1 Motor Vehicle Emissions** 3.1.1 Continue.

OBJECTIVE #4 – REDUCE TOTAL EMISSIONS FROM COMMERCE AND INDUSTRY

CURRENT CONDITIONS

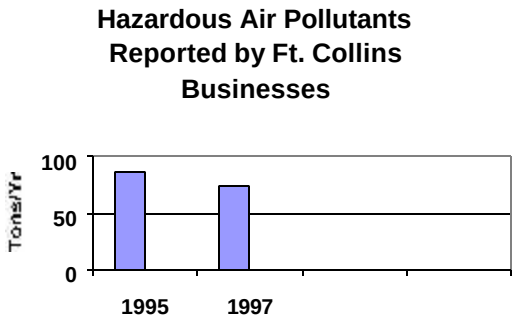
Commercial and Industrial Emissions



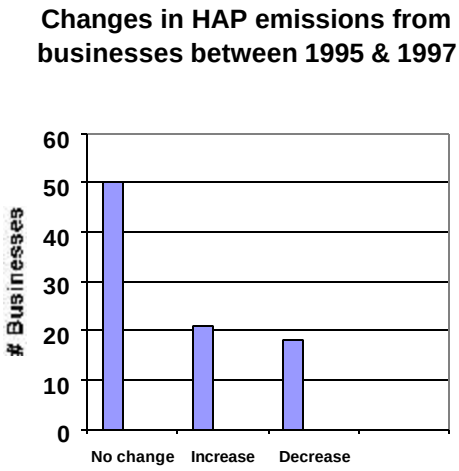
Commercial and industrial emissions are compiled in tons per day using data from US EPA's Aerometric Information Retrieval System (AIRS). The chart shows emissions of high priority pollutants in tons per year. Businesses selected are: Colorado State University, Anheuser-Busch, Hewlett-Packard, Poudre Valley Hospital, Fort Collins City Wastewater Dept., and Symbios Logic.

Hazardous Air Pollutants from Fort Collins Businesses

Hazardous air pollutants (HAP) from Fort Collins businesses include chemicals like formaldehyde, benzene, hydrochloric acid, and hydrogen fluoride, which increase the chance of serious health problems such as cancer and neurological diseases. Businesses that emit HAP include electrical shops, wood product shops, dry cleaners, gas stations, and print shops.



Change in Hazardous Air Pollutants at Specific Businesses



The chart depicts the number of businesses that showed a change in HAP emissions between 1995 and 1997. Decreases in HAP were caused by improvements in operating procedures (resulting in emissions falling below reporting thresholds) and business closings. Increases in HAP were caused by increased production at existing businesses and the inclusion of new businesses in the HAP inventory.

PROGRAM AND POLICY RESEARCH AND DEVELOPMENT

ACTIONS – 1996-1999	ACTIONS – 2000-2003
4.1 New Sources of Industrial/Commercial Emissions 4.1.1 The City has taken an active role in the State permit process by: (1) helping register local industrial and commercial sources with the State Health Department; (2) tracking state regulatory provisions; and, (3) commenting on new source permit applications. 4.1.2 A New Source Review (NSR) paper was completed in the fall of 1998. It includes a menu of NSR options that focus primarily on pollution prevention (P2). The paper concluded that NSR does not warrant new regulations. P2 still makes sense for new industrial and commercial sources.	**4.1 New Sources of Industrial/Commercial Emissions** 4.1.1 Implement a pollution prevention program for new industrial sources as outlined in the New Source Review paper. The program will be voluntary for most sources and mandatory for large sources and those seeking Industrial Development Review Bonds or development fee waivers. 4.1.2 No further action is anticipated on the issue paper. 4.1.3 Industrial Energy Sources. Evaluate an incentive program to minimize fuel oil consumption by existing industrial sources during natural gas curtailment.

EDUCATION AND OUTREACH

ACTIONS – 1996-1999	ACTIONS – 2000-2003
4.2 Pollution Prevention (P2) 4.2.1 P2, the environmental control technique of first choice, is stated policy at the city, state, and federal levels. The City's current P2 program is voluntary and targets community wide practices that reduce pollution, waste, and energy use at the source. For several years the City provided Larimer County with supplemental funding for a shared P2 coordinator who focused on the wood finishing, automotive, and hospitality sectors. Since 1998, the City has a dedicated quarter time P2 position. The City is a member of the US EPA's Waste Wi$e program, with a commitment to implement a waste reduction program. In 1998, the City: (1) sponsored a charette to enhance networking and P2 partnerships along the Front Range; (2) hired a consultant to study P2 options for new industries; (3) updated its green purchasing practices, which call for the purchase of recycled products; and, (4) designed a program to encourage P2 among start-up and expansion businesses. The 1999 air quality education program will target P2 as its main message.	**4.2 Pollution Prevention (P2)** 4.2.1 Staff will explore ways to better utilize P2 in education and outreach and to make P2 the first line of attack when dealing with air pollution prevention. Whenever possible, staff will coordinate P2 efforts with other departments and agencies and examine resources both inside and outside Fort Collins. Staff will regularly measure the progress of the P2 program. 4.2.2 P2 will be expanded to address pollution prevention in homes, taking into consideration Larimer County's residential P2 program -- *HomeAsyst.*

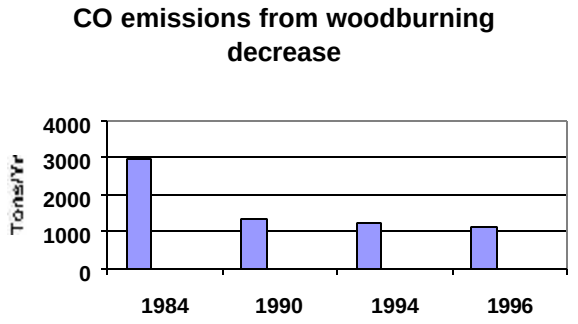
REGULATION

ACTIONS – 1996-1999	ACTIONS – 2000-2003
4.3 Fugitive Dust Law 4.3.1 Fugitive dust from land development activity is subject to three separate regulations: (1) the City's Nuisance Code pertaining to dirt tracked onto streets and enforced by the Engineering Department; (2) the City's Water Erosion Control Guidelines enforced by the Stormwater Utility; and, (3) the State's Fugitive Dust Control Regulations enforced by Larimer County Health Department. All efforts at fugitive dust control are coordinated through these offices. The City assists in enforcement of state laws by notifying land development applicants about the required fugitive dust controls and by putting them in touch with County staff for follow-up. Coordination with Larimer County over the past two years has improved enforcement of these laws.	**4.3 Fugitive Dust Law** 4.3.1 Continue efforts to improve enforcement of the Fugitive Dust Law in conjunction with Larimer County staff and City field enforcement personnel. While fugitive dust control methods are well known, successful implementation requires that contractors carry out a fugitive dust control plan, with monitoring by City and County enforcement staff. Coordinated enforcement is imperative.
4.3.2 In 1999, Larimer County will consider amending its land use code to require certain applicants to submit fugitive dust control plans. This would shift fugitive dust issues to the planning stage rather than rely on the grading contractor to complete this task under a tight timeline.	4.3.2 Amend the land use code to require fugitive dust control plans similar to requirements established for Larimer County land use permits.

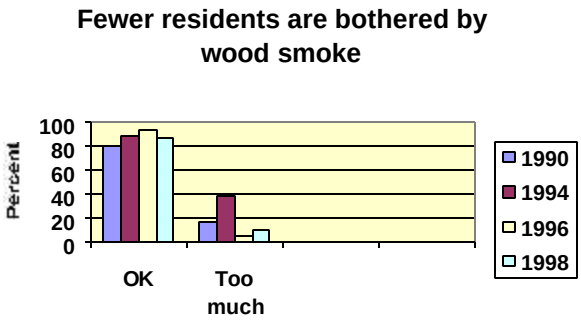
OBJECTIVES #5 AND #6—REDUCE AREA-WIDE WOOD SMOKE EMISSIONS AND THE NUMBER OF NON-CERTIFIED WOOD STOVES AND CONVENTIONAL FIREPLACES

CO Emissions from Woodburning

The chart shows a decline in carbon monoxide (CO) emissions from woodburning. The decline is due to conversion of woodburning fireplaces to gas, dismantling or upgrading of older, dirty-burning wood stoves to new, certified models, and an overall decline in use of units. CO emissions decreased 62% between 1984 and 1996 based on surveys of area residents.



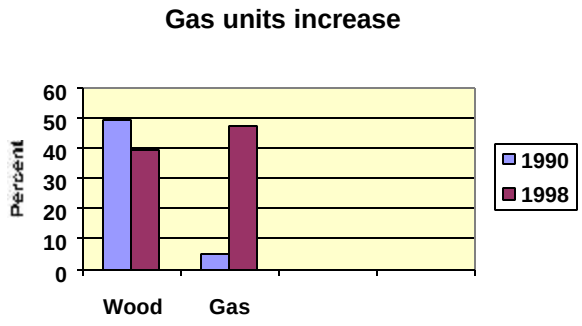
Residents Bothered by Wood Smoke in Their Neighborhoods



Since 1992, the number of Fort Collins residents who are bothered by wood smoke has declined from 18% to between 4% and 8%, with 92% of residents surveyed in 1998 saying that wood smoke in their neighborhoods is about right or not noticeable.

Use of Woodburning Units in Fort Collins

The City's wood device upgrade/removal loan program (ZILCH), Wood Smoke Response Line, and overall education program may be credited with having a major effect on the decrease in woodburning emissions. Since the overall program began in 1990, there has been a steady decline in the number of woodburning fireplaces and older, non-certified wood stoves, and a steady increase in gas units.



EDUCATION AND OUTREACH

ACTIONS – 1996-1999	ACTIONS – 2000-2003
5/6.1 Overall Education Program 5/6.1.1 Through literature, news releases, articles, and special campaigns with fireplace and wood stove retailers, the City continues to encourage residents to convert conventional woodburning fireplaces to gas and older wood stoves to gas or certified woodburning units. Residents are encouraged NOT to burn if they do not have to, and when they do, to burn only clean, dry wood in a good, hot fire.	**5/6.1 Overall Education Program** 5/6.1.1 Continue the education program. Stress P2 in a "Don't burn if you don't have to campaign". 5/6.1.2 A short-term ad-hoc committee will examine the need for bilingual literature Approximately 7% of Fort Collins residents are Hispanic. Since our goal is to reach all residents, it makes sense that we identify the needs of this part of our community. 5/6.1.3 Implement the recommendations of the committee. 5/6.1.4 Increase Citizen Access to Fire/Smoke Information. ordinate with county and federal land managers to provide timely info via the Web on status of prescribed and wildfires. 5/6.1.5 Chimineas and Recreational Burning. Monitor trends in recreational wood burning and chiminea use; conduct outreach as appropriate.
5/6.2 ZILCH Loan Fund 5/6.2.1 In 1997, the ZILCH loan program refocused to target only wood stoves and wood stove inserts because they are used more frequently and for longer periods of time than fireplaces. 98% of all wood smoke complaints are caused by old and/or improper use of wood stoves. Since the ZILCH loan program began in 1990, nearly 300 fireplaces and wood stoves have either been removed or replaced with clean-burning models. 5/6.2.2 In February 1999, ZILCH was restructured to include radon mitigation (see Page 24, **ZILCH**, action item 7.5.1). ~~5/6.2.3~~ Additional funding for the ZILCH loan program was requested in 1997, but was denied. The revolving loan fund has a budget of $90,000.	**5/6.2 ZILCH Loan Fund** 5/6.2.1 Continue the ZILCH loan program for wood stove and wood stove insert removal and/or upgrades through spring 2001. Then, reevaluate allocation of funds for another air quality program. 5/6.2.2 See Page 24, **ZILCH**, action item 7.5.1. 5/6/2.3 No new action.

ACTIONS – 1996-1999	ACTIONS – 2000-2003
5/6.3 Wood Smoke Response Line 5/6.3.1 The Wood Smoke Response Line is an ongoing service provided to Fort Collins' residents who are bothered by wood smoke in their neighborhoods. From 1996-1998, 23 residents reported wood smoke problems. When a complaint is received, all residents in the area of the problem unit(s) receive information about proper woodburning, the ZILCH loan program and City wood smoke laws. In some cases, Larimer County is called to do a smoke opacity reading to determine if the woodburner is in violation of the City's 40% opacity limit. Surveys report that less than a quarter of Fort Collins' residents are aware of the Wood Smoke Response Line.	**5/6.3 Wood Smoke Response Line** 5/6.3.1 Aggressively publicize the Wood Smoke Response Line. Re-evaluate the response line procedure and restructure if necessary. While wood smoke contributes to area-wide emissions, it is often most problematic neighbor-to-neighbor. The response line has been an effective way to deal with this specific aspect of woodburning pollution.

DATA COLLECTION AND MONITORING

ACTIONS – 1996-1999	ACTIONS – 2000-2003
5/6.4 Wood Smoke Survey 5/6.4.1 A wood smoke survey was conducted in 1996 and 1998. The survey in 1996 was a phone survey and the survey in 1998 was a mail survey. There appeared to be no significant difference in the data from the phone versus the mail survey. In 1996, 4% of residents said they were bothered by wood smoke and in 1998, 8% said the same. This data will be re-evaluated again following the 2000 survey. In 1998, a survey technician was hired to reformat the survey document.	**5/6.4 Wood Smoke Survey** 5/6.4.1 Following professional evaluation of the City's four air quality surveys, the Wood Smoke Survey and the General Air Quality Survey have been combined into one "Outdoor Air Quality Survey" which will be conducted biennially, starting in 2001. 5/6.4.2 Since wood smoke pollution is continuing to decline, a committee will be formed following the 2000 survey to decide whether the biennial wood survey should be expanded to a four-year time frame.

REGULATION

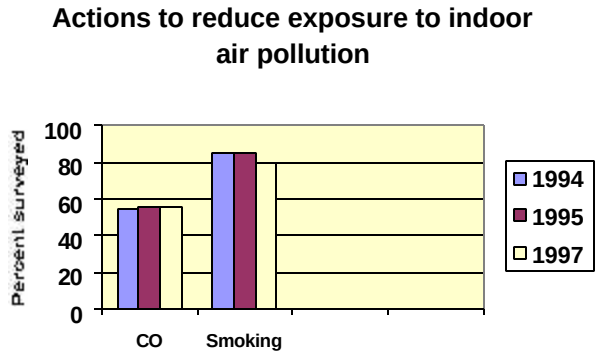
ACTIONS – 1996-1999	ACTIONS – 2000-2003
5/6.5 Cottonwood Burning Ban 5/6.5.1 The cottonwood burning ban was deleted from the Air Pollution Nuisance Law in 1996. The ban had been instituted because cottonwood has a potential to generate strong odors and smoke when burned. It has been determined that the type of burning unit and the manner in which it is used is the real cause of woodburning problems. Focus has shifted to educating wood unit owners about proper woodburning techniques.	**5/6.5 Cottonwood Burning Ban** 5/6.5.1 No further action.
5/6.6 Woodburning Cook Stoves 5/6.6.1 The Solid Fuel Burning Appliances Law was reviewed and upgraded in 1997 to clarify regulations pertaining to installation of commercial woodburning cook stoves. The law now states that commercial woodburning cook stoves must meet the strictest wood stove standards and if standards are not met, only a few sticks of wood can be added to the cooking process as a method of flavoring food in commercial establishments.	**5/6.6 Woodburning Cook Stoves** 5/6.6.1 No further action is anticipated.
5/6.7 Point of Sale Ordinance 5/6.7.1 An ordinance to require the upgrade or dismantling of wood stoves and fireplaces at point-of-sale (POS) was reviewed by an ad-hoc committee of the AQAB, other City boards, and the general public during 1996-1997. Additional review of the current, voluntary wood smoke reduction program that shows a continual decline in wood smoke pollution led to a recommendation that no ordinance be drafted at this time. The recommendation is in line with the AQPP, which supports the use of laws only when all voluntary methods have failed. The POS ordinances were reviewed again in 1998 in conjunction with this update and the above recommendation was again confirmed.	**5/6.7 Point of Sale Ordinance** 5/6.7.1 These ordinances should be reviewed again in 2002-03 in conjunction with the next four-year update of the AQAP. 5/6.8 Evaluate City programs designed to reduce residential wood smoke emissions and recommend improvements, if needed.

OJECTIVE #7 – INCREASE ACTIONS BY RESIDENCES AND WORKPLACES TO REDUCE EXPOSURE TO INDOOR AIR POLLUTION

The Indoor Air Quality (IAQ) program began in 1994. It is an education and outreach program that focuses mainly on households while providing information and referrals to businesses. In 1997, an IAQ Issue Paper was completed. It recommends an IAQ program that complements rather than duplicates the efforts of others. Since the program began, radon has been the main focus followed by carbon monoxide, and tobacco smoke. The IAQ program is coordinated at the federal, state, county, and local levels and strives to use the resources of each.

CURRENT CONDITIONS

IAQ Actions to Reduce Indoor Air Pollution



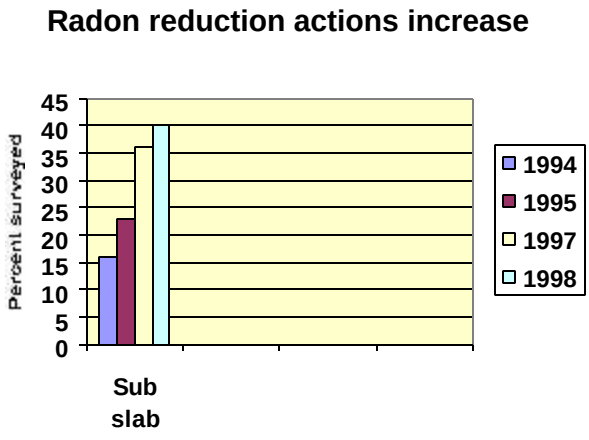
The chart shows actions taken by residents to reduce exposure to carbon monoxide and tobacco smoke, two areas of special focus since the IAQ program began in 1994. Data are from general indoor air quality surveys.

Carbon monoxide (CO) actions refer to residents who have their fuel-burning appliances checked annually.

Smoking actions refer to residents who do not allow smoking in their homes.

Actions to Reduce Radon in Homes

Since 1994, more actions have been taken to reduce high radon levels. Radon is an area of special focus within the IAQ program. Three of four Fort Collins' homes tested show radon levels of 4 picocuries or above, the level at which US EPA recommends action. The most effective way to reduce radon is to install a sub-slab radon mitigation system which draws radon gas from beneath the home and exhausts it to the outside air. The 1998 data are from the November 1998 Radon Survey. Previous year's data are from the General IAQ Survey.



PROGRAM AND POLICY RESEARCH AND DEVELOPMENT

ACTIONS – 1996-1999	ACTIONS – 2000-2003
7.1 IAQ Issue Paper 7.1.1 An IAQ Issue Paper was researched, written, reviewed, and approved in 1997. It established a role for the City that complements rather than duplicates the efforts of others. The paper reviewed IAQ issues, programs, and initiatives at federal, state, county and local levels. Several recommendations of the IAQ Issue Paper were implemented during 1998, and will continue in 1999. The recommendations include an update of the smoking in public places' law, continuance of radon testing and mitigation, identifying IAQ issues in rental property, and greater awareness of carbon monoxide in homes. The IAQ Issue Paper was reviewed during the current update of the AQAP.	**7.1 IAQ Issue Paper** 7.1.1 Review the IAQ Issue Paper in 2002-03 in conjunction with the four year update of the AQAP and identify the top three or four IAQ issues for 2004-2007 as well as the appropriate levels of staff involvement.
7.2 Point Source IAQ Problems	**7.2 Point Source IAQ Problems** 7.2.1 On occasion, residents and/or businesses report air quality conflicts that often pertain to emissions from dry cleaners, auto body shops, and print shops. Because there is no formal protocol for dealing with these complaints, staff will meet with Poudre Fire Authority, City Building and Zoning, Larimer County, and the State Health Department to develop a standard method for use by all agencies. 7.2.2 Staff will review the current Air Pollution Nuisance Law to see if there are better ways to address complaints.
7.3 IAQ in Rental Property 7.3.1 IAQ in rental property was identified by staff and the AQAB as an area of concern because renters are often unaware of IAQ hazards in the home or apartment they are renting. During 1999, a Rental Committee will be formed to determine what protection exists for renters, where gaps exist, and who should be responsible for addressing the issues.	**7.3 IAQ in Rental Property** 7.3.1 Implement recommendations of the Rental Committee.

ACTIONS – 1996-1999	ACTIONS – 2000-2003
7.4 Radon Kit Sales 7.4.1 Over 12,000 radon kits have been sold to Fort Collins' residents since the Radon Program began in the fall of 1995, with at least two kits sold to each household. The radon kits were sold through the Natural Resources Department until the fall of 1998, when two permanent, year-round locations were established — the City Building and Zoning Department and the Senior Center. Both short-term and long-term kits are sold.	**7.4 Radon Kit Sales** 7.4.1 The kit sales program will continue at the two locations and will be re-evaluated in 2002-03 as part of the four year update of the AQAP. Free kits will be provided to low-income residents upon request.
7.5 ZILCH Radon Mitigation Loan Program 7.5.1 A zero interest loan program began in February 1999 that provides radon mitigation loans of up to $1,500 to low-income residents.	**7.5 ZILCH Radon Mitigation Loan Program** 7.5.1 The ZILCH loan program will continue and will be evaluated annually for effectiveness. Pending the outcome of the evaluations, a request may be made to Council for additional funding. Prepare necessary paperwork for Council to drop the low income guidelines as soon as possible.
7.6 IAQ Partnerships 7.6.1 Staff works closely with US EPA and state and county health departments to respond to IAQ problems in homes and businesses. The City continues to support increased funding at the state level for IAQ programming.	**7.6 IAQ Partnerships** 7.6.1 The City will continue these activities. Especially, seek a closer relationship with Poudre Health Services District and Larimer County on IAQ public outreach, including evaluating the need for and conducting workshops. Include school building management in discussions. Have PHSD and Larimer County review AQAP updates.
7.7 Workshops	**7.7 Workshops** 7.7.1 Assess the value of holding IAQ workshops for high-risk groups such as young children and those with allergies, asthma, and other respiratory conditions. If warranted, work with the American Lung Association, Larimer County, and local physicians when designing the workshops. 7.7.2 Evaluate the merit of air toxics workshops dealing with indoor air pollution and outdoor air pollution. The workshops should provide residents with low cost, do-it-yourself ways to improve the air they breathe. Evaluate the merit of IAQ workshops targeting building managers in schools. Determine what precautions already exist and identify areas of improvement. Coordinate any recommended program with Poudre School District.

EDUCATION AND OUTREACH

ACTIONS – 1996-1999	ACTIONS – 2000-2003
7.8 Ongoing Education Program 7.8.1 The IAQ program includes articles, presentations, displays, the Internet, and a variety of literature and workshops that provide assistance to residences and businesses.	**7.8 Ongoing Education Program** 7.8.1 Continue the program and follow the guidance of the IAQ issue paper.
7.8.2 The current IAQ program focuses primarily on residences. Workplace issues are usually referred to the appropriate federal, state, or county agency. Exceptions to this policy are local issues pertaining to smoking and radon in workplaces.	7.8.2 Continue the program and follow the guidance of the IAQ issue paper.
7.9 Radon Workshops 7.9.1 Since 1996, 11 radon workshops have been held. The workshops have provided 700 realtors, builders, and residents with information about radon risk, testing and mitigation.	**7.9 Radon Workshops** 7.9.1 Continue the workshops.
7.9.2 A project to develop an IAQ resource list that would provide an annotated list of IAQ resource for business and residences was not completed.	7.9.2 Complete the IAQ resource list project with the assistance of a CSU graduate student.

DATA COLLECTION AND MONITORING

ACTIONS – 1996-1999	ACTIONS – 2000-2003
7.10 IAQ Survey 7.10.1 An IAQ survey was conducted in 1997, and a survey technician was hired to re-format the instrument. Another IAQ survey will be conducted in 1999. The IAQ survey assesses residents' knowledge of general IAQ issues and whether they are taking actions to reduce exposure to indoor air pollutants as a result of the IAQ education and outreach program. A statistician will be hired to review and evaluate the current instrument prior to the 1999 survey.	**7.10 IAQ Survey** 7.10.1 Following professional evaluation of the City's four air quality surveys, the Indoor Air Quality and Radon Surveys have been combined into one "IAQ Survey" which will be conducted biennially, starting in 2000.
7.11 Radon Survey 7.11.1 A radon survey was conducted in the fall of 1998, in an effort to determine the effectiveness of the radon program, and to determine compliance with the radon information law.	**7.11 Radon Survey** 7.11.1 Following professional evaluation of the City's four air quality surveys, the Indoor Air Quality and Radon Surveys have been combined into one "IAQ Survey" which will be conducted biennially starting in 2000.

REGULATION

ACTIONS – 1996-1999	ACTIONS – 2000-2003
7.12 Radon Information Law 7.12.1 A radon committee was formed in 1996 to develop a plan for dealing with radon in Fort Collins. Three of four homes tested have high radon levels (4 pico curies per liter of air or greater). The committee suggested the City target radon testing and mitigation at point-of-sale and promote a broader effort to increase the number of Fort Collins homes tested for radon. While wanting to maintain the voluntary aspect of the radon program, but realizing that Fort Collins was in a high radon area, City Council passed a radon information law in March 1997. The law requires the dissemination of radon information to all homebuyers at point-of-sale. It does NOT require testing or mitigation. Implementation of the law has included letters and postcards to all realtors and builders in the region, articles in newspapers and trade newsletters, and builder and realtor workshops. Radon information for dissemination at point-of-sale is available at several locations in the area.	**7.12 Radon Information Law** 7.12.1 No changes are anticipated in the law.
7.13 Mitigation Building Standards 7.13.1 In order to ensure quality control during the installation of radon mitigation systems in new construction, a radon building standard was developed by the City, Larimer County, and local builders. It became part of City Code in June 1998. To further ensure implementation of the standard, the City has created a radon inspection program for all radon systems in new construction.	**7.13 Mitigation Building Standards** 7.13.1 No changes are anticipated in the building standard for new construction. The radon inspection program will be re-evaluated during regular updates of the City Building Code.
7.13.2 No work will be completed on a radon standard in existing homes during the 1996-1999 plan. Instead, efforts have focused on new construction.	7.13.2 Complete a radon mitigation standard for existing homes in conjunction with the next scheduled update of the City Building Code. Set up an inspection program modeled after the one used for new construction.
7.14 Smoking Ordinance 7.14.1 Staff and the AQAB will begin the review and update of the City's smoking in public places law.	**7.14 Smoking Ordinance** 7.14.1 Continue and complete.

ACTIONS – 1996-1999	ACTIONS – 2000-2003
7.15 Point of Sale Testing and Mitigation 7.15.1 The Radon Committee and the AQAB researched two possible radon ordinances: (1) requiring radon testing at point-of-sale; and, (2) requiring mandatory installation of radon systems in new construction. Neither received approval from Council in order to give the education program an opportunity to get off the ground. Reevaluation of the two radon ordinances mentioned above will be completed in 1999. There is some support for considering the ordinance requiring installation of radon systems in new constructions. Radon systems installed during construction can be hidden within the envelope of the home and often do not need fans, as is not the case in existing homes. Builders are encouraged to voluntarily install radon systems in new homes.	**7.15 Point of Sale Testing and Mitigation** 7.15.1 Based on the outcome of the reevaluation of the two radon ordinances in 2001, the programs will be assessed for effectiveness and possible revisions by June 2002.
7.16 Carbon Monoxide in Homes	**7.16 Carbon Monoxide in Homes** 7.16.1 Identify the most appropriate way to expand the use of carbon monoxide detectors in homes. (mandatory in Building Code; voluntary in Green Building program, promote through education, etc.) **7.17 Green Building Program.** Explore adoption of a Green Building Program during the regular review of the Municipal Building Code.

OBJECTIVE #8 – INTERGOVERNMENTAL PARTNERSHIPS

While Objectives #1 through #7 deal with specific sources of outdoor and indoor pollution, Objectives #8 through #10 focus on two complementary actions: (1) partnerships and laws to better achieve air quality goals and (2) special data collection and monitoring, which measure progress and provide guidance for redirection and resetting of goals and strategies.

PROGRAM AND POLICY RESEARCH AND DEVELOPMENT

ACTIONS – 1996-1999	ACTIONS – 2000-2003
8.1 State Implementation Plan 8.1.1 Although Fort Collins is designated non-attainment with respect to the federal carbon monoxide (CO) standard, the City has not violated the Federal air quality standard since 1991, and is eligible to apply for attainment status. Redesignation requirements and impacts were thoroughly analyzed by City staff and the AQAB. The review led staff and the board to recommend against redesignation at this time. However, the State legislature has authorized the State Health Department to proceed with redesignating non-attainment areas into attainment as soon as they become eligible. Staff is working with the State Air Quality Control Commission and the State Health Department's Air Pollution Control Division on redesignation to US EPA to ensure that City concerns are addressed. Completion of this project may occur in late 1999, but could continue into 2000-01. Disadvantages of redesignation include: (1) it would require a 10-year plan, which is redundant with local plans; (2) it does not result in further emission reductions, but may cause relaxation of existing efforts; (3) it can jeopardize certain federal transportation dollars; and, (4) it carries a threat to cut off all federal transportation funds if emission goals are not met. 8.1.2 The City participates in any state study to re-evaluate whether certain state regulation scan be rescinded to meet federal requirements.	**8.1 State Implementation Plan** 8.1.1 Complete the redesignation process if not finalized in 1999. 8.1.2 This strategy will continue.

ACTIONS – 1996-1999	ACTIONS – 2000-2003
8.2 Cities for Climate Protection 8.2.1 In 1997, the City joined an international effort to reduce greenhouse gas emissions from energy use and solid waste. City Council adopted a resolution stating that the intent of the program was to conduct an energy audit, set a greenhouse reduction target, and develop an action plan to meet that target. The energy audit and Local Action Plan will be brought to Council for consideration in 1999.	**8.2 Cities for Climate Protection** 8.2.1 Implement the Local Action Plan.
8.3 Intergovernmental Partners 8.3.1 Liaisons with city, county, state, and federal agencies are carried out on a project-by-project basis. Example projects include pollution prevention, alternative fuels, the emissions compliance test, new source review, and inspection and maintenance. Liaison efforts at the local level have included meetings of the Air Toxics Partnership and Local Environmental Government Staff. These meetings were not fruitful and have been abandoned in favor of ad-hoc networking on a project-by-project basis.	**8.3 Intergovernmental Partners** 8.3.1 The City will continue intergovernmental government liaisons on an ad-hoc basis. Where possible, the City will establish informal contacts with other agencies at a higher level than the project level to coordinate overall plans.
8.4 Benchmark Study 8.4.1 During 1997, the City began work with the AQAB to identify first class air pollution control programs and, where applicable, apply their techniques to Fort Collins. The survey portion of the study was completed in July 1997, and indicated a citizen concern with excessive vehicle idling at traffic lights. A benchmark survey of community traffic signalization was sent to 80 cities across the country in 1998. An effort to identify best practices and develop recommendations will be completed in 1999. 8.4.2 In 1999, the potential for future benchmarking will be evaluated.	**8.4 Benchmark Study** 8.4.1 No further action is recommended on this project. 8.4.2 Follow the 1999 recommendations for future benchmarking projects.

OBJECTIVE #9 – DATA COLLECTION AND MONITORING

PROGRAM AND POLICY RESEARCH AND DEVELOPMENT

ACTIONS – 1996-1999	ACTIONS – 2000-2003
9.1 Air Quality Action Plan Update	**9.1 Air Quality Action Plan Update**
	9.1.1 An annual summary report of AQAP activities will be presented to City staff, the AQAB and Council each year. A mid-course review and redirection will occur in 2001 to address urgent and emergent issues that may require minor amendments to the Plan.
9.1.2 The AQAP was reviewed and updated in 1998-99. The new plan will operate on a four year time frame extending from 2000-2003.	9.1.2 The entire Air Quality Plan, including the original findings, goals, objectives, and policies, will be reviewed in 2002-2003. At that time, the AQPP will be ten years old. The review will include a complete update of the AQAP, including a review of monitored data and air quality indicators, a review of 2000-2003 implementation strategies, and proposed future actions for 2004-2007. City departments charged with primary responsibility for carrying AQAP strategies will be directly involved in the review and update process.
9.2 Air Quality Monitoring Plan (AQMP)	**9.2 Air Quality Monitoring Plan (AQMP)**
9.2.1 The AQMP will be updated in 1999. The plan reviews monitoring needs and opportunities and sets priorities for the coming four-year period.	9.2.1 A major review of AQMP will occur every four years in conjunction with the regular update of the AQAP. In addition, the AQMP will be updated every two years in coordination with the mid-course correction of the AQAP.
9.2.2 The majority of the recommendations of the 1995 AQMP have been implemented, with the exception of integration of visual and optical data, evaluation of the CO and PM_{10} monitoring sites, and evaluation of pollutant concentrations in river valleys.	9.2.2 The AQMP will continue to be implemented, as directed in 1999.
9.3 Visibility Data Analysis	**9.3 Visibility Data Analysis**
9.3.1 Analysis of visibility information continues. Compliance with the State Visibility Standard has been updated annually with available data. Integration of existing visual and optical data was briefly discussed in 1999 in the update to the AQMP. A thorough evaluation of existing data will be recommended by the AQMP for 1999.	9.3.1 Available visibility information will be analyzed to determine whether AQAP actions adequately address the issue of visibility reduction. Information sources include reports of the North Front Range Air Quality Study (NFRAQS), Fort Collins' data collected, but not yet analyzed, during NFRAQS, Fort Collins' routine transmissometer and nephelometer data

ACTIONS – 1996-1999	ACTIONS – 2000-2003
	(visibility monitoring system), Fort Collins' routine photographic and time-lapse video data, and reports of applicable CSU research projects. The information will be developed into a form that can be used to evaluate and prioritize current AQAP actions with respect to the impact on visibility reduction.

EDUCATION AND OUTREACH

ACTIONS - 1996-1999	ACTIONS – 2000-2003
9.4 Improve Delivery of Data 9.4.1 In an effort to bring data to the public, a variety of strategies have been used. Pictures and graphs depicting visible air pollution are used in brochures and displays and data trends are simplified to increase awareness of air pollution causes and changes over time and to encourage behavior change. Where possible, the City publicizes actions it takes on its own to reduce air pollution. Carbon monoxide, ozone, and visibility readings are also displayed on the daily weather page of the *Coloradoan* newspaper.	**9.4 Improve Delivery of Data** 9.4.1 This program will continue. Efforts will be made to create a real-time video display depicting the current weather pattern and visibility over Fort Collins. This page will become the main Air Quality Home Page. It may contain local weather conditions and a PSI index. Residents will be encouraged to make this their home page. 9.4.2 Slides of visible air pollution will be used to raise awareness and gain citizen support of measures to improve visibility. A visual preference survey will be incorporated in the education program.

DATA COLLECTION AND MONITORING

ACTIONS - 1996-1999	ACTIONS – 2000-2003
9.5 State Monitoring Network 9.5.1 National Ambient Air Quality Standard (NAAQS) carbon monoxide monitoring was conducted by the state at the Laurel and Mason Streets site on the CSU campus.	**9.5 State Monitoring Network** 9.5.1 Monitoring will continue at the Laurel and Mason Streets site. If recommended by the AQMP, an evaluation will be conducted to determine whether this site represents worst case conditions.
9.5.2 NAAQS ozone monitoring was conducted by the state at the Laurel and Mason Streets site on the CSU campus.	9.5.2 Ozone monitoring will continue at Laurel and Mason Streets.
9.5.3 NAAQS PM_{10} monitoring was conducted by the state at the Larimer County Courthouse roof site.	9.5.3 The official PM_{10} monitoring site was moved to CSU Facilities roof in 1999. PM_{10} monitoring will continue at the Courthouse for a limited time. Work with the State to reevalaute the current monitor's location based on valid sampling criteria to ensure the new location fits into regional and state monitoring plans.
9.5.4 The NFRAQS provided a local analysis of $PM_{2.5}$ concentrations and sources in Fort Collins. NAAQS $PM_{2.5}$ (particles 2.5 microns or smaller) monitoring will be initiated by the state at the CSU Facilities roof site in 1999.	9.5.4 $PM_{2.5}$ monitoring will continue at the CSU Facilities Building roof site. **9.6 Visibility Monitoring**

ACTIONS - 1996-1999	ACTIONS – 2000-2003
9.6 Visibility Monitoring 9.6.1 Visibility (optical) monitoring with a transmissometer (measures total extinction including scattering and absorption of light) and nephelometer (measures scattering of light by particles) was conducted. Photo slides and time lapse video were also generated to provide a visible snapshot of air pollution. **9.7 Air Quality Awareness** 9.7.1 A general air quality awareness survey was conducted in 1997. The survey looked at attitudes and perceptions of outdoor air pollution, what citizens were doing and what they would be willing to do to reduce air pollution, and how they received information about air pollution. A second survey will be conducted in 1999. The main purpose of the survey is to help staff reassess and refocus the outreach and education program. The survey is also useful in planning future action strategies.	9.6.1 Visibility monitoring will continue. Slides and time lapse video will continue based upon the recommendations of the AQMP. **9.7 Air Quality Awareness** 9.7.1 A general air quality awareness survey will be conducted in 2001 and 2003.

OBJECTIVE #10 – LEGISLATION

ACTIONS - 1996-1999	ACTIONS – 2000-2003
10.1 Tracking Legislation 10.1.1 Staff responds to legislative actions where appropriate. For example, the City commented on Senate Bill 98-182 regarding the Inspection and Maintenance Clean Screen program and commented to US EPA on proposed revisions to the National Ambient Air Quality Standards for particulate matter and ozone.	**10.1 Tracking Legislation** 10.1.1 The City will continue to respond to legislative actions, especially new bills that may reduce authority for local inspection and maintenance efforts. 10.1.2 Where appropriate, the City will review and comment on Federal legislation and regulations, particularly new vehicle standards, fuel standards, and sulfur dioxide and nitrogen oxide controls for visibility improvement. The City will interact with state and national organizations such as the State and National League of Cities, the Colorado Municipal League, and the Association of Local Air Pollution Control Officials.