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## I. BACKGROUND

The City of Fort Collins is committed to the goal “...of continually improving air quality as the city grows.” In order to do this, City Council adopted the Air Quality Action Plan (AQAP), which establishes specific programs to achieve air pollution reduction. In order to access the effectiveness of air quality programs, the AQAP calls for periodic residential surveys to determine general public views on air quality programs and solutions. The *General Air Quality Survey*, which focuses primarily on outdoor air quality, was last conducted in 1997. Additional residential surveys look specifically at indoor air pollution, woodburning and radon.

The objectives of the General Air Quality Survey are to:

- (1) Determine public perception of outdoor air pollution problems.
- (2) Identify which air quality programs the public feels should be a priority for the city and which are most effective for continually improving air quality.
- (3) Gather data that will improve air quality campaigns and marketing efforts.
- (4) Assess public participation in activities that minimize air pollution

The General Air Quality Survey is funded through a Clean Air Colorado grant from the Colorado Department of Public Health and Environment.

## II. SURVEY SAMPLE

The General Air Quality Survey was conducted in early June 1999. 2,925 surveys were mailed to a random sample of Fort Collins residents by zipcode. Six-hundred seventy surveys (670), or 23%, were returned and analyzed. After analyzing the first 300 or so surveys, results changed only marginally. This phenomenon has been noted with all public surveys conducted by the city over the last several years.

In 1997, 1,500 surveys were mailed and 424 or 28% were analyzed. In 1997, residents were offered an opportunity to win one of several \$25 gift certificates from local grocery stores as an incentive to return the surveys. This incentive program was repeated with a subsequent indoor air quality survey. After assessing the response of incentives versus no incentives, it was determined that the small increase in survey response did not merit the extra staff time and money involved. The incentive program was not repeated in 1999.

### III. EXECUTIVE SUMMARY

As in 1997, 73% of respondents rated Fort Collins' air quality as *Good* or better, with 25% rating it *Fair* or worse. [CHART 1] In a subsequent question at the end of the survey when residents were asked to rate our air quality problem as *Extreme, Moderate, Slight, or Not at all*, 87% said it was *Moderate to Slight*.

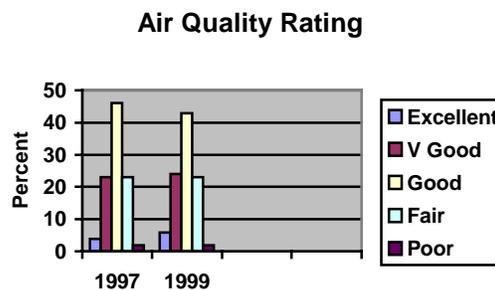


Chart 1

Looking to the future, 78% of respondents believe our air quality will be worse in five years and 18% say it will be the same. Only 4% believe our air quality will be better in five years than it is now. [Chart 12]

What will FC air quality be like five years from now?

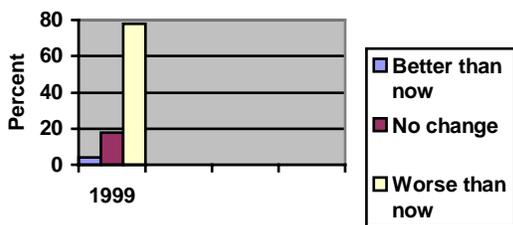


Chart 12

In 1999, respondents continued to point to *gasoline vehicles* as the Major source of air pollution in Fort Collins followed closely by *diesel vehicles* and *other sources*<sup>1</sup> (Denver and Greeley farm and cattle operations received the most attention). Transfort buses ranked number four. When asked what the biggest source of air pollution was, 91% said gasoline (69%) and diesel vehicles (22%).

Eleven percent (11%) of residents say air pollution does not affect them. Ten percent said the same in 1997. The greatest concern of respondents is that air pollution creates a brown cloud (68%) while 50% are concerned about obstruction of mountain views in general. In 1997, the biggest concern of respondents was obstruction of mountain views followed by air pollution making the air smell bad. As in 1997, a high percentage of residents are concerned about allergies and respiratory problems (45% and 49% respectively). The biggest change of opinion between the two surveys focused on damage to personal property (42%/1997 and only 16%/1999) and damage to the local economy (36%/1997 and only 13%/1999).

Seventy-four percent (74%) of respondents say they believe their own actions cause air pollution; in 1997 71% said the same. Eighty percent (80%) of respondents say they feel a strong personal obligation to help improve air quality; in 1997 83% said the same.

Residents continue to be concerned about truck traffic passing through Fort Collins and see it as a major source of air pollution (73%). The same percentage of respondents in 1997 and 1999 continue to support education programs as an effective way of getting residents to act responsibly.

<sup>1</sup> See ATTACHMENT 1 for more detail on *Other Sources* of air pollution in Fort Collins.

To address motor vehicle pollution, 97% of respondents say they would be most willing to help improve air quality by keeping their cars tuned up. Seventy-three percent (73%) say they would be willing to use their vehicles less, which is a 5% increase over 1997. To use their cars less, 35% say they would use the bus more and 53% say they would bike. However, potential bus users and bike riders also say they would be more likely to do this if Fort Collins improved its bus system and made more and safer bike lanes and routes.

When asked how often they actually used an alternative form of transportation, residents said they walked more than anything else (83%), followed by carpooling (70%) and biking (55%). Working at home came in a close fourth with 52% and the bus came in last with 30% saying they had used it over the past 12 months.

Respondents believe the best way for the City to address motor vehicle pollution is to improve traffic signal timing (96%) followed by better enforcement of anti-smoking (tailpipe exhaust) laws (90%) and emissions sticker laws (85%).

When parceling out responsibility for maintaining air quality in Fort Collins, respondents say business/industry is first (85%) and individual residents are second (84%). As for government responsibility, the federal government is least responsible (35%) while the City government is most responsible (79%). 1997 respondents said the same in all categories.

In choosing the Best ways to improve air quality, residents focused on improved traffic light timing and traffic flow (17%), followed by stricter emissions laws, better enforcement, and increased taxes to support specific programs (16%). Respondents also support promotion and availability of alternative forms of transportation (14%), with specific emphasis on a more user friendly bus system (13%).

Ninety-seven percent (97%) of respondents, both 1997 and 1999, said they owned gasoline-powered motor vehicles. In 1997, 17% said they owned three or more; in 1999, only 11% said the same. It is important to note that in 1997, 33% owned one car and 46% owned two. In 1999, 43% say they own one car and 42% said they own two.

Most respondents say they drive 21-50 miles each week to work, while at least 16% drive 100 or more miles. The usual distance for errands or traveling to recreation sites and facilities for most respondents was 1-10 miles a week.

Over the past twelve months residents say they have received most of their air quality information from the City utility bill insert (57%) followed by the local newspaper (49%). In 1997, those roles were reversed, with 64% getting their information from the local newspaper and 58% getting their information from the City utility bill insert. The least effective methods of information dissemination are the *Internet* (2%), *Presentations* (2%), and *City Line* (3%).

As a way to determine the effectiveness of the City's air quality information program, respondents in 1999 were asked if they recalled seeing or hearing about a specific list of programs and events. In response, residents said they were most familiar with the emissions sticker program (55%), followed next by radon testing (49%) and carbon monoxide in homes (38%). The least familiar program was engine block heater installation (9%).

## GENERAL AIR QUALITY SURVEY—JUNE 1999

### REPORT

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Most residents mow their lawns with gasoline-powered mowers and most do it three to four times a month. The average mowing time is under thirty minutes followed next by 45 minutes to one hour.

Although this survey looks primarily at outdoor air pollution, the City also has an extensive indoor air quality program. This year two questions were asked pertaining to indoor air pollution. In response, most residents said they did not feel that indoor air pollution was a concern in their homes (61%), while 13% said they were not sure. When asked if they thought indoor air pollution was a bigger concern than outdoor air pollution, 71% said no while 16% said they didn't know.

Demographically, more females responded in 1999 than males (54% to 46%). In 1997, the demographics were just the opposite with more males than females (53% to 47%). Sixteen percent (16%) of 1999 respondents were 65 years of age or older, with the largest response from the 40-49 age group both years (27% and 24%). The biggest increase over 1997 was in the 22-29 age group (8%/1997 and 14%/1999).

Most households had two inhabitants with one fifth having only one. The majority of respondents in both survey years had no children under 18 years of age (67% and 72% respectively.) An average of 14% said they had one child under 18 and an average of 13% said they had two or more.

Most respondents continue to work outside the home and nearly one quarter is retired. Student responses rose from 4% in 1997 to 9% in 1999, which may also account for the increase in responses from the 22-29 age group and a slight increase in the 18-21 age group.

Most 1999 respondents say they have lived in Fort Collins 11-20 years. In 1997 most respondents said they had lived here 20 years or more. The greatest increase in responses was from those living here two years or less (5% in 1997 to 14% in 1999).

**IV. DETAILED REPORT**

i. As in 1997, 73% of Fort Collins residents rate our current air quality as good or better (very good and excellent) with only a slight shift in percentages between *Excellent*, *Very Good* and *Good*. [Table 1; Chart 1] This opinion continues to be consistent with current air quality monitoring data, which show that we are meeting federal health standards for carbon monoxide, ozone, and particulates.

**Section 1, Q. #1--Overall, how would you rate air quality in Fort Collins?**

TABLE 1--OVERALL AIR QUALITY RATING

Rating	1997	1999
	Yes (%)	Yes (%)
Excellent	4	6
Very good	23	24
Good	46	43
Fair	23	23
Poor	2	2

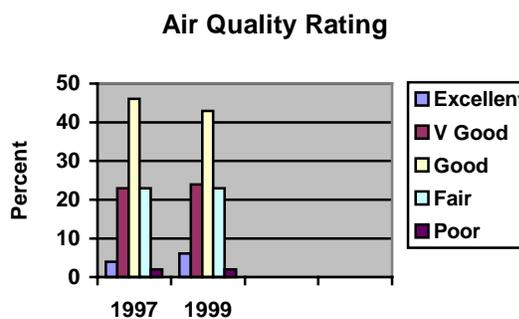


Chart 1

ii. In 1999, respondents still consider gasoline-powered vehicles to be the *Major* source of air pollution in Fort Collins (FC) followed by diesel vehicles, Other Sources (Denver and Greeley-area farm and cattle operations received the most attention)<sup>2</sup>, Transfort buses, street dust, off-road construction equipment, and sources outside Fort Collins. [TABLE 2]

**Section 1, Q. #2--Air pollution can be caused by a variety of sources. Please indicate if you believe the following are a *Major*, *Moderate*, or *Minor* source or if you feel they do not contribute at all.**

TABLE 2--SOURCES OF AIR POLLUTION IN FORT COLLINS

Sources of Air Pollution in FC	Major		Moderate		Minor		Doesn't contribute	
	1997	1999	1997	1999	1997	1999	1997	1999
	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)
Gasoline vehicles	57	65	32	26	9	9	<1	<1
Diesel vehicles	56	50	33	35	9	12	<1	<1
Transfort buses	20	25	37	36	37	36	2	1
Industry in Fort Collins	8	11	39	37	43	39	4	5
Woodburning stoves/fireplaces	17	12	32	32	40	45	6	6
Street dust	16	17	32	38	44	37	5	5
Yard equipment—lawn mowers, etc.	4	7	22	26	55	54	13	12
Off road construction equipment	NA <sup>3</sup>	15	NA	45	NA	32	NA	3
Sources outside Fort Collins	11	14	33	30	27	30	6	4
Other	32	32	15	22	17	11	4	2

<sup>2</sup> See ATTACHMENT 1 for more detail on *Other Sources* of air pollution in Fort Collins

<sup>3</sup> Not asked in 1997. Added in 1999.

iii. In 1999, residents were also asked to select from the list in TABLE 2 what they considered to be the *Biggest Source* of air pollution in Fort Collins. TABLE 3 shows that respondents chose gasoline vehicles three-to-one over every other source of air pollution. Diesel vehicles came in second, followed by Other Sources (Denver metro area pollution and Greeley farm and cattle operations received the most attention, Transfort buses, off-road construction equipment, sources outside Fort Collins, street dust, industry, yard equipment, and woodburning units,.

**Section 1, Q. #3--***What do you consider to be the biggest source of air pollution in Fort Collins?*  
[1999 data only.]

TABLE 3 --BIGGEST SOURCE OF AIR POLLUTION IN FORT COLLINS

Sources of Air Pollution	1999
	Yes (%)
Gasoline vehicles	69
Diesel vehicles	22
Transfort buses	5
Industry in Fort Collins	3
Woodburning stoves/fireplaces	1
Street dust	3
Yard equipment	1
Off road construction equipment	4
Sources outside Fort Collins	4
Other	7

iv. Next, residents where asked how air pollution adversely affects them. [TABLE 4]

In 1997, respondents identified obstruction of mountain views as the number one effect of air pollution (69%), but in 1999, the Brown Cloud took first place (68%), followed by obscured mountain views, allergies and respiratory problems, makes the air smell bad, burning/itchy eyes/nose, and long-term respiratory problems.

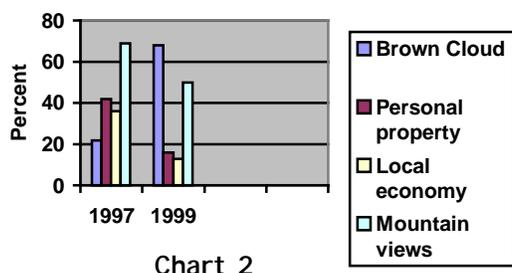
**Section 1, Q. # 4--***In what ways do you think air pollution adversely affects you? Check all that apply.*

TABLE 4--AFFECTS OF AIR POLLUTION

Affect of Air Pollution	1997	1999
	Yes (%)	Yes (%)
Does not affect me	10	11
Triggers allergies/respiratory problems	45	49
Causes long-term respiratory problems	28	33
Causes burning/itchy eyes, nose	41	39
Damages personal property	42	16
Creates a brown cloud	22	68
Obscures mountain views	69	50
Makes the air smell bad	46	45
Hurts local economy	36	13
Other	4	4
Uncertain of exact effects, but believe there are some	14	20

In looking more closely at effects of air pollution on individual residents, it appears that opinions have changed considerably since 1997 regarding four particular categories. [Chart 2]

**AFFECTS: Most changed since 1997**



In 1997, 42% of respondents believed air pollution adversely affected their personal property, but in 1999, only 16% felt the same. In 1997, only 22% of respondents were concerned about the Brown Cloud, whereas in 1999, 68% say it adversely affects them. Obstruction of mountain views fell to second place in 1999 with 50% of respondents saying air pollution adversely affected their views of the mountains. In 1997, 69% said the same. Finally, in 1997, 35% felt air pollution adversely affected the local economy, today

only 13% feel the same. The greater emphasis on the Brown Cloud may be due to a special air quality campaign to educate residents on the causes and potential impacts of the Brown Cloud, including newspaper articles, a travelling display, and a Brown Cloud Photo contest in January 1998. The significant drop in concern about air pollution's effect on the local economy may be attributed to the fact that nothing seems to curtail the burgeoning growth of Fort Collins and also the fact that 73% of Fort Collins residents feel our air quality is good or better. The 26% drop in concern about air pollution affecting personal property is less easily explained, as is the 19% drop in concern about obstruction of mountain views, since this is also tied to the Brown Cloud, which is the biggest aggravation.

Residents still say allergies and respiratory problems are aggravated by air pollution (49%) and 45% still believe it makes the air smell bad.

- v. Next residents were asked to respond to a series of statements pertaining to air pollution causes and methods of control. TABLE 5 outlines the responses to each statement:

**Section 1, Q #5**—Please indicate how strongly you agree or disagree with each of the following.

TABLE 5--STATEMENTS PERTAINING TO AIR POLLUTION SITUATIONS, CAUSES & SOLUTIONS

Statements	Strongly Agree 97-----99		Somewhat Agree 97-----99		Somewhat Disagree 97-----99		Strongly Disagree 97-----99		Don't Know 97-----99	
	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)	Yes (%)
FC has a problem with visible air pollution	24	25	57	50	12	15	6	9	1	2
Automobile emissions are adequately controlled in FC	16	13	37	38	31	30	12	15	4	5
Emissions from trucks passing through FC are a major source of air pollution	33	31	41	42	12	15	4	4	10	7
Emissions from my vehicle contribute to air pollution	21	25	46	46	18	13	12	15	3	2
I feel as strong personal obligation to help improve the air quality in FC	34	30	49	50	12	11	2	5	3	4
It is the City's responsibility to control air pollution	21	23	54	50	17	18	6	7	2	2
The City should do more to control wood smoke from stoves and fireplaces	18	16	35	30	27	29	13	16	8	9
Air pollution in Fort Collins is bad enough to cause human health problems	15	19	45	39	21	21	11	12	8	8
. . . is bad enough to hurt the environment	21	25	46	42	17	17	9	11	7	6
Air pollution in FC makes the air smell bad	11	14	31	34	35	30	17	16	6	6
I feel my own actions can cause air pollution	22	23	49	51	17	13	8	10	4	3
Air pollution in the city should be controlled by increased government regulations	12	14	32	36	28	25	20	21	7	5
Air quality education programs are an effective way of getting residents to act responsibly	23	24	51	49	18	17	4	7	4	3
I am satisfied with the air quality information the City provides me	11	11	46	42	27	23	7	10	9	15

Of the 14 questions outlined in TABLE 5, most residents (80%) continue to agree they have a “strong personal obligation to help improve air quality in Fort Collins.” In 1997, 83% said the same. The four highest ranking categories of agreement in 1997 and 1999 were: *Fort Collins has a visible air pollution problem* (81% and 75%)<sup>4</sup>, *I feel my own actions can cause air pollution* (71% and 74%), *emissions from trucks passing through Fort Collins are a major source of air pollution* (74% and 73%), and *it is the City's responsibility to control air pollution* (75% and 73%).

<sup>4</sup> 1997 and 1999 data respectively.

Fifty-three percent (53%) of residents are satisfied with the air quality information the City provides and 73% believe air quality education programs are an effective way of getting residents to act responsibly—in 1997, 74% said the same about education.

Residents continue to disagree with four particular statements: *air pollution makes the air smell bad* (52% and 46%); *air pollution in the city should be controlled by increased government regulations* (48% and 46%); *automobile emissions are adequately controlled in Fort Collins* (43% and 45%); and *the City should do more to control wood smoke from stoves and fireplaces* (40% and 45%).

vi. The questions in TABLE 6 look at what residents would be willing to do, and in turn, what they think the City should do to help improve air quality.

**Section 1, Q. #5**—Please indicate how strongly you agree or disagree with each of the following.

TABLE 6--STATEMENTS PERTAINING TO IMPROVING AIR QUALITY

Statements	Strongly Agree 97-----99		Somewhat Agree 97-----99		Somewhat Disagree 97-----99		Strongly Disagree 97-----99		Don't Know 97-----99	
	Yes (%)		Yes (%)		Yes (%)		Yes (%)		Yes (%)	
<b><i>To help improve air quality would be willing to:</i></b>										
Use my own vehicle less	27	30	41	43	15	12	13	14	3	1
Keep my vehicle tuned up	76	77	22	20	1	1	<1	1	<1	<1
Take the bus more	10	12	19	23	34	28	28	31	8	6
Ride a bicycle for errands and work	21	26	22	27	16	16	34	27	6	3
Contribute \$1 when registering my vehicle to subsidize repair of high-polluting vehicles	24	25	22	20	14	13	38	38	3	4
<b><i>To help improve air quality, City air quality programs should:</i></b>										
Develop economic incentives for repair of high polluting vehicles	32	36	37	40	16	10	9	11	6	4
Improve traffic light timing to reduce vehicle idling time at lights	76	73	20	21	2	2	<1	2	2	2
Encourage drivers to turn off their vehicles when waiting in a line (e.g., at a drive thru)	36	30	28	32	23	19	8	13	5	7
Improve convenience of bus service	NA <sup>5</sup>	48	NA	32	NA	7	NA	8	NA	6
Increase enforcement of anti-smoking (exhaust) regulations for both diesel and gas vehicles	59	65	30	25	6	5	4	4	2	2
Increase enforcement of emissions sticker laws	58	58	28	27	7	6	5	6	2	3
Promote the use of alternative fuel vehicles	39	40	39	36	10	11	4	5	9	7
Keep bike lanes clean and safe	NA	67	NA	24	NA	4	NA	2	NA	2
Require non-certified wood stoves to be removed or replaced when homes are sold	33	35	26	27	19	16	15	18	7	5

<sup>5</sup> Not asked in 1997. Added in 1999.

In response to the question concerning what individual residents would be willing to *do to help improve air quality* [TABLE 6], 97% of respondents say, first and foremost, they would keep their cars tuned up. Secondly, they would be willing to use their cars less (73%). To achieve this goal, 35% would be willing to take the bus and 53% would bike. In 1997, 98% voted for tuneups, 68% said they would be willing to use their cars less to improve air quality, and 29% said they would use the bus and 43% said they would bike. Respondents also made it clear in their Comments<sup>6</sup> in 1999 that they would be more willing to bike or bus if bus service was more convenient and more frequent and if the City had better/more and safer bike lanes and trails. [TABLE 6]

Individual actions to improve air quality

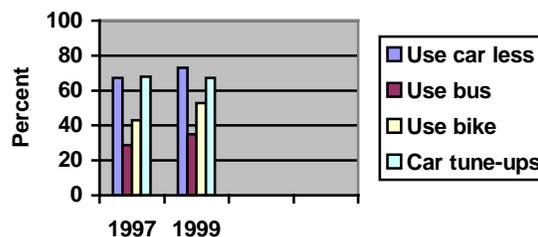


Chart 3

As in 1997, residents generally support City efforts to improve air quality, with those agreeing with current programs ranging from 59% to 96% and those disagreeing ranging from 2% to 34%.

Top 3 actions City should take to improve air quality

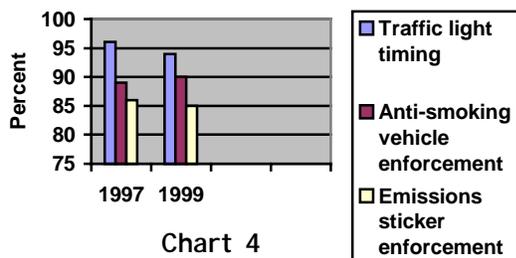


Chart 4

In response to the questions regarding *what actions the City should take to improve air quality*, 1997 and 1999 respondents agreed that improved traffic signal timing should remain at the top of the list (96% and 94% respectively) [Chart 4]. Traffic signal timing was followed by increased enforcement of anti-smoking (exhaust) regulations, better enforcement of emissions sticker laws, promotion of alternative fuels, development of incentives for high-polluting vehicles, anti-idling, and removal or replacement of woodburning devices when homes are sold.

- vii. When queried *about how responsibility should be distributed between government and the private sector*, respondents answered in the following manner:

<sup>6</sup> See ATTACHMENT 3.

**Section 1, Q. #6**—How much responsibility should each of the following have in maintaining air quality in Fort Collins?

TABLE 7--Who's Responsible for Maintaining Air Quality?

Who's Responsible	Major		Minor		None	
	1997-----1999		1997-----1999		1997-----1999	
	Yes (%)		Yes (%)		Yes (%)	
City government	74	79	24	19	2	2
County government	53	58	42	39	6	3
State government	43	50	45	43	12	7
Federal government	26	35	45	41	29	23
Business/Industry	80	85	17	14	3	1
Fort Collins residents	78	84	21	15	2	1

In 1997, respondents felt they had the greatest responsibility for air quality in Fort Collins; in 1999, respondents said they, along with business and industry, have the greatest responsibility for assuring the quality of our air. City government has the next greatest responsibility followed by county, state and federal government. As in 1997, it appears residents believe air quality issues are best handled at the local level.

viii. When asked what one suggestion the respondents would make about the BEST way to reduce air pollution in Fort Collins, they had a variety of responses.<sup>7</sup> However, several items stood out:

**Section 1, Q. #7**—What one suggestion would you make about the best way to reduce air pollution in Fort Collins?

BEST ways to improve air quality

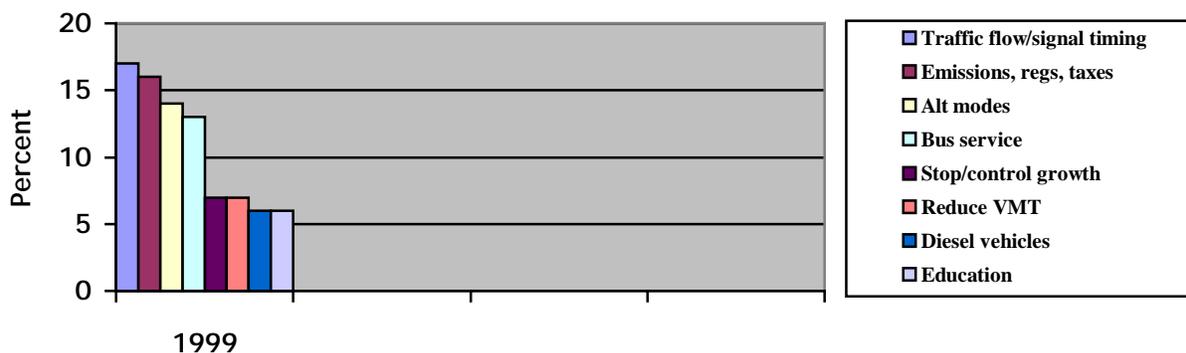


Chart 5

<sup>7</sup> See *Attachment 2* for complete detail.

There were a total of 595 responses to **Section 1, Question #7<sup>8</sup>**, however, it is important to note that some respondents chose more than one **BEST** way to improve air quality and that several did not respond at all.

Of those who responded, 86% chose the eight items in **Chart 5** as the best ways to *reduce air pollution in Fort Collins*. The need for improved traffic flow and signal timing topped the list with 17% of respondents telling the City that it was time to address street size and design and time to improve the current traffic signal system to discourage extended idling and to encourage smoother traffic flow. Next residents said they wanted to see stricter emissions laws and better enforcement of current emissions laws and additional taxes if needed to support air quality programs (16%). Fourteen percent (14%) support development of alternatives to the single occupant vehicle with special emphasis on light rail along the Front Range and safer and better bike and pedestrian routes and lanes. Thirteen percent (13%) of respondents want a better bus system with more runs, better access, more stops, and late night and weekend services. Seven percent (7%) of respondents feel we simply need to reduce vehicle miles of travel overall and 7% believe we should stop growth or at least control it. Six percent (6%) say that diesel trucks continue to be a problem and emphasized the need for stricter diesel truck laws and a decrease in the numbers of diesel trucks passing through the city. Six percent (6%) also support education programs that will help residents understand the causes and solutions to air pollution while encouraging personal responsibility.

Many residents also chose to conclude their survey with specific comments.<sup>9</sup> Their comments further support the items in **Chart 5**.

- ix. Because motor vehicles are the single, largest source of air pollution in Fort Collins and because alternative transportation is one of the main ways to reduce auto pollution, residents were asked *how often they used a mode of transportation other than their single occupant car, truck or van over the last twelve months*.

**Section Two, Q. #1**—*There are many things each of us can do to help clean the air. Please indicate how frequently you have done each of the following during the past 12 months?*

TABLE 8--USE OF ALTERNATIVE MODES OF TRAVEL

Mode	Never		Rarely		Occasionally		Frequently		Always	
	1997-----1999 Yes (%)									
Carpool	33	27	22	24	27	28	15	18	3	2
Bike	42	41	17	18	24	20	14	17	2	4
Bus	76	69	11	17	9	8	3	5	1	1
Walk	24	14	16	19	33	37	24	27	3	2
Work at home	41	36	8	13	18	18	22	21	12	13

<sup>8</sup> See **ATTACHMENT 2** for more detail on *Best* way to reduce air pollution in Fort Collins.

<sup>9</sup> See **ATTACHMENT 3** for more detail.

As in 1997, the bus is still the least attractive mode of choice, with 76% in 1997 and 69% in 1999 saying they never use bus. However, it is worthwhile to note that the number of people actually using the bus is a 7% increase over 1997. The mode used most in place of the single occupant vehicle seems to be foot power, with 73% in 1997 and 83% in 1999 saying they walk. Carpooling came in second, with 64% in 1997 and 70% in 1999 saying they carpooled. Bikers came in third with 55% in both years saying they biked. Working at home came in last, with 48% in 1997 and 52% in 1999 staying at home instead of driving. [TABLE 8]

1999 alternative mode use

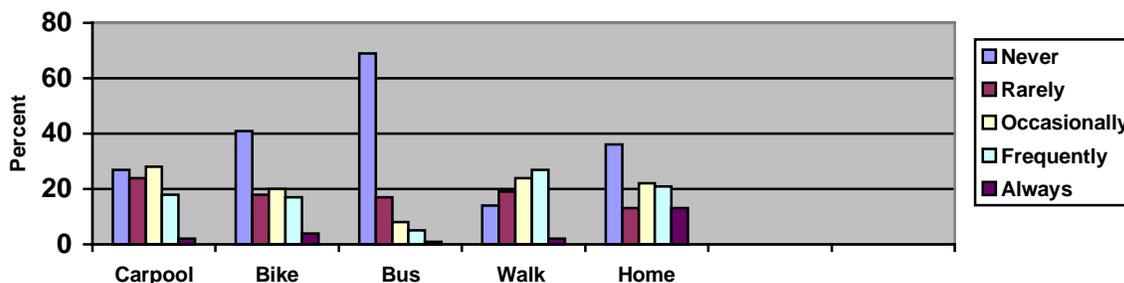


Chart 6

Overall, all the modes, except biking, experienced an increase in use between 1997 and 1999, with walking showing the greatest increase (10%) followed by the bus (7%), carpooling (6%), and working at home (5%). The biggest increase in individual categories were: *Rarely* use—the bus (6%), *Occasionally* use—biking and walking (4%), *Frequently* was—working at home (4%), and *Always* use—biking (2%).

- x. Residents were also asked specifics about the number of different types of vehicles they own [TABLE 9], whether they keep them tuned up [CHART 7], and how many miles they drive them each week [TABLE 10].

**Section 3, Q #1—How many of each of the following types of vehicles do you own/lease?**

TABLE 9--VEHICLE OWNERSHIP

Type of Vehicle	None		One		Two		Three+	
	1997	1999	1997	1999	1997	1999	1997	1999
Gasoline car/truck	3	3	33	43	46	42	17	11
Diesel car/truck	97	97	3	3	0	<1	0	0
Alternative fuel vehicle	100	99	<1	<1	0	0	0	0
Recreational vehicle	100	94	0	5	0	<1	0	<1
Motorcycle/moped	92	94	6	5	1	1	<1	<1
Bicycle	36	38	21	22	21	19	22	21
Other	95	97	3	3	1	<1	<1	<1

TABLES 9 and 10 confirm that Fort Collins residents continue to rely heavily upon their gasoline-powered automobiles with 97% owning one or more and an average of 11% owning three or more. In 1997, 17% said they owned three or more.

Bicycles continue to be the second most prolific vehicle other than the gasoline-powered car, with 22% owning at least one, 19% owning two, and 21% owning three or more. In 1997, those percentages were 21%, 21% and 22% respectively.

**Section 3, Q. #2**—*I keep my vehicle tuned up Regularly or Only if running poorly.*

**Vehicle maintenance**

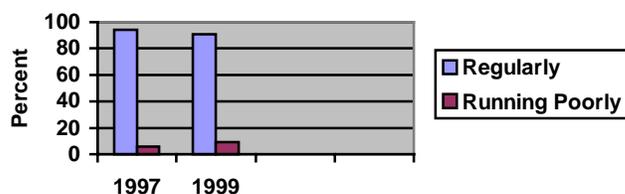


Chart 7

Chart 7 shows a slight change in vehicle maintenance with three percent (3%) fewer residents saying they tune their cars up regularly opting to do it only when the vehicle is running poorly.

**Section 3, Q. #3**—*About how many miles do you drive each week for the following activities?*

TABLE 10--MILES DRIVEN PER WEEK

Activity	Zero Miles		1-10 Miles		11-20 Miles		21-50 Miles		51-75 Miles		76-100 Miles		100+ Miles	
	97	99	97	99	97	99	97	99	97	99	97	99	97	99
Work	28	30	13	10	9	10	20	21	8	7	3	7	18	16
Running errands	7	4	30	26	24	21	28	36	4	3	5	7	2	3
Visiting recreation facilities/sites	43	41	27	21	11	13	12	17	2	2	4	5	1	1
Other	75	78	7	6	5	4	6	8	2	1	3	2	2	2

TABLE 10 looks at the number of miles driven each week for work, errands and recreation. For work and errands in 1999, the largest percentage of respondents said they drove 21-50 miles each week. Sixteen percent also said they drove 100 miles a week to work. In 1997, weekly distance for errands was 1-10 miles while usual work mileage agreed with 1999—21-50 miles. Forty-one percent (41%) of respondents say they don't travel to recreational facilities or sites regularly, but those who do, usually travel 1-10 miles each week. In 1997, 43% said the same.

Also of note, 30% in 1997 and in 28% 1999 said they traveled zero miles to work each week. This group may coincide with *students, retired* and *homemakers* of which most did not indicate they were also employed. This group comprised 33% in 1997 and 34% in 1999.

- xi. Since education is a large part of the City’s air quality program, residents were also asked how they received information about air quality issues.

**Section 2, Q. #2**—Do you recall getting information about air quality issues in Fort Collins from any of the following sources during the past 12 months? Check all that apply.

TABLE 11--SOURCES OF AIR QUALITY INFORMATION

Source of information	Yes	
	1997 (%)	1999 (%)
TV	22	20
Radio	27	15
Local newspaper	64	49
Denver newspaper	16	11
Internet	5	2
Utility bill insert	58	57
Environmental group	19	10
Environmental newsletter	16	10
City Line	6	3
Displays	NA <sup>10</sup>	7
Presentations	NA	2
Fliers/brochures	NA	12
Your friends	30	8
Your children	13	4
Your job	15	7
Other	7	3

Whereas, in 1997 the *local newspaper* was the main source of information about air quality issues (64%) followed by the *utility bill insert* (58%), in 1999, the roles were reversed, with 57% saying they got their information from the utility bill insert and 49% said the local newspaper. The next major information source was TV, followed by radio, fliers/brochures, the Denver newspaper, environmental groups, and the environmental newsletter. In 1999, a *fliers/brochures* category was added, and while not the most significant information source, fliers and brochures did make it into the hands of at least 12% of residents over the last year, undoubtedly through many of the programs and events listed in TABLE 12.

The least effective sources of information dissemination appear to be the *internet* with *City Line* running a close second. The sizable decrease in the *friends* and *job* categories is difficult to explain. However, the 9% drop in the *children* category may be simply due to a decrease in classroom presentations.

<sup>10</sup> Not asked in 1997. Added in 1999.

xii. The next set of questions focused on specific air quality programs and campaigns.

**Section 2, Q. #3**—*In order to address air quality issues, the City focuses on a variety of specific programs and events. Which of the following do you recall seeing or hearing about and/or participating in? Check all that apply.*

TABLE 12 -- RECOGNITION OF PROGRAMS AND EVENTS

Programs and Events	Yes 1999 (%)
“Clean Air” Logo	19
Lawn mower tradeouts	14
CarCare car maintenance	19
Radon testing	49
Alternatives to household hazardous products	22
Engine block heater installation	9
Emissions sticker compliance	55
Carbon monoxide in homes	38
“Stop at the Click”	18
Other	2

The series of questions in TABLE 12 were not asked in 1997, but were added in 1999 as a way to assess the reach and impact of various programs and events. It appears that the *emissions sticker compliance program* ranks number one (55%) in terms of recognizable programs/events, with *radon testing* next (49%), followed by *carbon monoxide in homes*, *alternatives to household products*, the “*Clean Air*” logo, *CarCare car maintenance*, and “*Stop at the Click*.” The least recognizable programs/events were *lawn mower tradeouts* and *engine block heater installation*.

Each of the programs listed in TABLE 12 reflects a specific education and information campaign one to three or more months in duration. Each is also part of the City’s air quality marketing program which provides simple solutions to air pollution. The Air Quality Marketing program has been in place since the fall of 1997.

xiii. One air quality program of particular significance has been the lawn mower tradeout program initiated in 1998 to encourage residents to replace their gasoline-powered mowers with electric or push mowers. Lawn mowers contribute a sizable amount of pollution during the spring and summer months and until recently, were not required to meet any EPA emissions standards.

Types of lawn mowers used

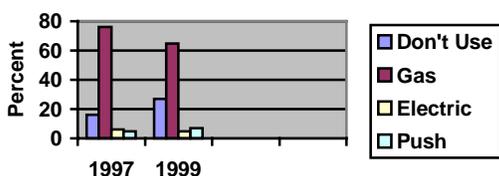


Chart 8

**Section 3, Q. #4**—*Which of the following types of lawn mowers do you use? Check all that apply.*

[Chart 8]

In 1997, 16% of respondents said they did not use a lawn mower. In 1999 that number jumped to

27%. Unfortunately, this question did not allow those who have their lawns mowed (for whatever reason) to respond. Undoubtedly, some probably chose to identify the type of mower used even if they didn't do the mowing themselves and some didn't. This discrepancy in "non-use" may be reflected most in the drop in the number of gasoline-powered mowers from 76% in 1997 to 65% in 1999. However, it should be noted that the question was worded the same way both years. There was also a 4% increase in the number of push mowers.

**Section 3, Q. #5**—*If you mow, how often do you mow each month?*



Chart 9

Most respondents say they mow three to four times each month (64%), while 14% say they mow twice a month, and 14% say they mow as much as five or more times a month. One percent (1%) says they mow less than once a month and 3% say they mow just once a month. [Chart 9]

**Section 3, Q. #6**—*About how long does it take to mow your lawn each time?*

TABLE 13--DURATION OF MOWING (EACH TIME)

Time	Yes 1999 (%)
Zero – 30 minutes	35
30 to 45 minutes	19
45 minutes – 1 hour	26
1 to 1 ½ hours	5
1 ½ hours to 2 hours	6
2 to 2 ½ hours	4
2 ½ hours to 3 hours	3
3 hours or more	<1

The majority of respondents say it takes 30 minutes or less to mow their lawn (35%). Twenty-six percent (26%) say it takes 45 minutes to 1 hour and 19% say it takes 30 to 45 minutes. Three percent (3%) spend 2 ½ to 3 hours mowing and less <1% say they spend more than 3 hours mowing.

xiv. In 1999, four additional questions were added to the survey. The first two dealt with indoor air pollution and the last two dealt with Fort Collins air quality now and five years from now.

**Section 3, Q. #7**—*Is indoor air pollution a concern in your home?*

**Section 3, Q. #8**—*Do you consider indoor air pollution a bigger concern than outdoor air?*

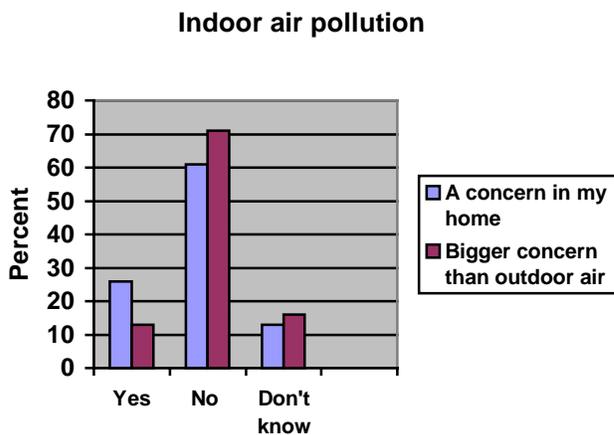


Chart 10

Most respondents say they do not feel that indoor air pollution (IAP) is a concern in their homes (61%). However, it is worthwhile to note that 13% are not sure. Seventy-one percent (71%) do not consider IAP a bigger threat than outdoor air pollution while 16% are simply not sure how IAP stacks up to outdoor air pollution.

Since we spend 90% percent of our time indoors and since indoor air is often more polluted than outdoor air, it is important that we continue to inform residents about the potential impacts of IAP in the home, at work, and in the vehicles we ride in.

**Section 3, Q. #9**—*To what extent do you feel there is an outdoor air quality problem in Fort Collins?*

The data in Chart 11 more than agree with the very first question on the survey which asks residents how they *would rate air quality in Fort Collins*. Both in 1997 and 1999, 73% rated our air as good or better. In this chart, 87% say our air pollution problem is moderate to slight. Only 5% say it's extreme and 8% say we have nothing to worry about at all.

**Does FC have an air quality problem?**

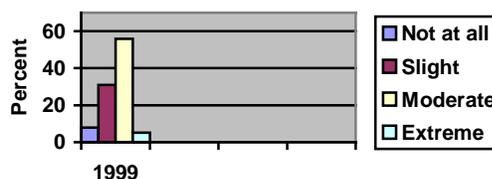


Chart 11

**What will FC air quality be like five years from now?**

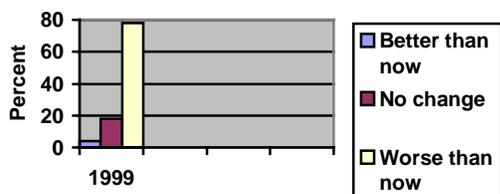


Chart 12

**Section 3, Q. #10**—*What do you think Fort Collins air quality will be like in five years?*

Most respondents believe Fort Collins' air quality will be worse in five years (78%), while 18%

believe it will remain the same. Only 4% believe air quality will be better in five years than it is now. This data support the supposition that as the number of cars increase in Fort Collins emissions reductions due to technological advances will bottom out and air pollution will increase, particularly carbon monoxide, ozone and visibility degradation.

xv. The remaining questions deal with demographics or *Who* responded to the survey.

TABLE 14--SEX OF RESPONDENTS

Sex	1997 Yes (%)	1999 Yes (%)
Female	47	54
Male	53	46

The sex of respondents did a turnabout between 1997 and 1999. There were more male respondents in 1997 (53%) and more female respondents in 1999 (54%).

TABLE 15--AGE OF RESPONDENTS

Age categories	1997 Yes (%)	1999 Yes (%)
Under 18	<1	0
18-21	<1	2
22-29	8	14
30-39	16	19
40-49	27	24
50-59	17	16
60-65	12	8
65+	19	16

As in 1997, we had a sizable response from residents 65 and older (19% in 1997 and 16% in 1999). The largest response group each year remained the 40-49 age group (27% in 1997 and 24% in 1999). The biggest increase in response was in the 22-29 age group. The smallest response groups were *under 18* and *18 to 21* years of age.

TABLE 16--NUMBER OF PEOPLE IN HOUSEHOLD OF RESPONDENTS

Number in Household	1997 Yes (%)	1999 Yes (%)
One	20	20
Two	41	45
More than 2	39	36

The households of most respondents had at least two inhabitants both in 1997 and 1999 (41% and 45%), with 1/5 of all households having only one inhabitant.

TABLE 17--PEOPLE IN HOUSEHOLD UNDER THE AGE OF 18

Number in Household 18 yrs/age	1997 Yes (%)	1999 Yes (%)
Zero	67	72
One	15	12
Two	14	11
More than 2	4	5

Most households, both in 1997 and 1999, had no children 18 years of age or younger (67% and 72% respectively). In 1999, 12% had at least one child 18 or younger and 17% had two or more. In 1997, those numbers were 15% and 18% respectively.

TABLE 18--EMPLOYMENT STATUS

Employment situation	1997 Yes (%)	1999 Yes (%)
Employed outside home	57	53
Home business	10	10
Student	4	9
Homemaker	5	4
Retired	24	21
Other	1	3

Most respondents (1997 and 1999) said they worked *outside the home* (57% and 53% respectively) with the next highest group *retired* individuals (24% and 21% respectively). 1999 also saw a 5% increase in student respondents from 4% in 1997 to 9% in 1999.

TABLE 19--YEARS LIVED IN FORT COLLINS

Years	1997 Yes (%)	1999 Yes (%)
Zero to 2 years	5	14
3-5 years	12	19
6-10 years	16	17
11-20 years	27	20
Over 20 years	39	29

1999 showed an increase in the number of residents who have lived in Fort Collins five years or less, with 9% more saying they've lived here two years or less and 7% more saying they've lived here 3-5 years. This increase translated into a decrease in responses among the *11-20 year's* category (7% less than in 1997) and those with residency *over 20-years* (10% less than in 1997).

TABLE 20--ZIP CODE

Zip Code	1997 Yes (%)	1999 Yes (%)
80521	26	20
80524	18	16
80525	29	29
80526	25	32
80528	NA	3

NA—not asked in 1997. Added in 1999.

Zip code distribution shifted in 1999 in each group except 80525, which remained at 29% each year. The 80521 zip code decreased by 6% while 80524 increased by 2% and 80526 by 7%. The 80528 zip code was added in 1999 and showed a 3% response.