

Breathe Easy
Vehicle Scrappage Program
Report

To The
Clean Air Strategic Alliance Board
From The
Vehicle Emissions Team

**By consensus, the CASA board of directors approved this report
and the recommendations within at its March 20, 2003 meeting.**

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Executive Summary

Overview

- The Breathe Easy Program was a pilot project operated by a Scrappage Management Committee under the sponsorship of the Clean Air Strategic Alliance's (CASA) Vehicle Emissions Team (VET).
- In 1998, the CASA Board of Directors gave the CASA Vehicle Emissions Team approval to proceed with a pilot project to achieve the following objectives:
 - Reduce vehicle emissions by removing older high emitting vehicles from the road by offering cleaner transportation incentives to drivers who surrendered their vehicles to the Breathe Easy Program.
 - Educate the public on how older or poorly maintained vehicles contribute to air emissions and Green House Gas (GHG) emissions to a greater degree than newer vehicles and public transport.
 - Assess public acceptance/response to a permanent and expanded vehicle scrappage project.
- In addition to the objectives listed above the Breathe Easy Program was designed to capture logistical, operational and cost learnings about running such a program.

Contributors

- A total of 14 agencies, businesses and associations contributed to the Breathe Easy Program. Of these, 7 provided direct funding. All of the partners contributed a variety of in-kind services and resources to the program.

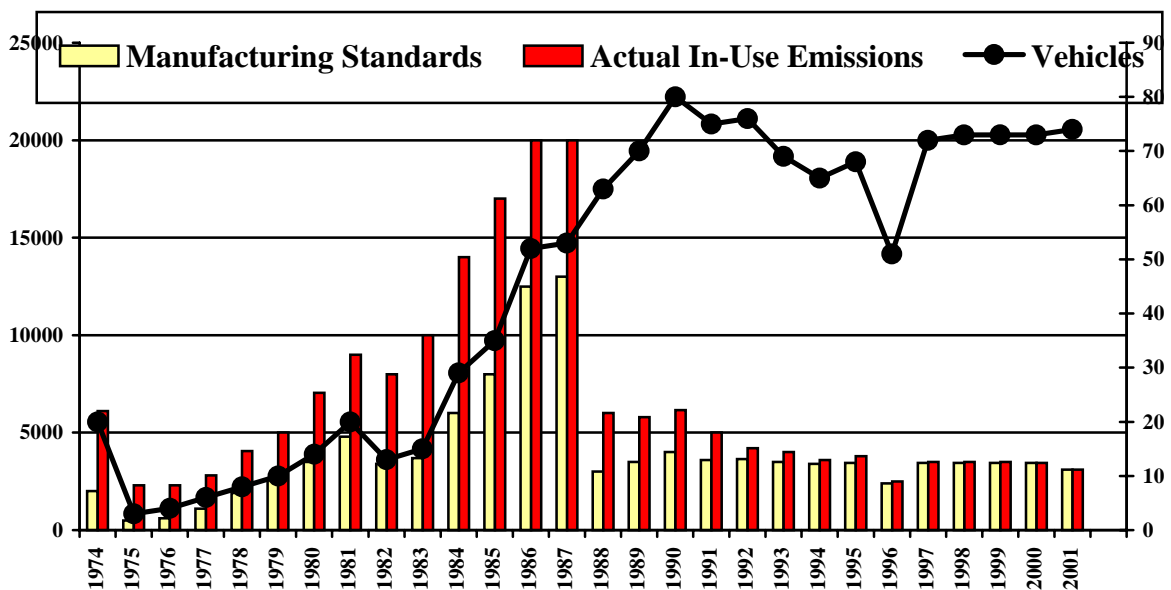
Operations

- The Breathe Easy program operated in Calgary between March 21 and November 30, 2002.
- During the application phase, 782 applications were received between March 21 and June 10, 2002. There were 712 approved applications. Breathe Easy distributed 351 transit passes and 185 vehicle credits, for a total of 536 incentives.
- There was a strong demand for transit passes. At the end of the program there was a waiting list of 25 people for transit passes.¹

- There was a strong demand for vehicle credits. Some applicants declined their approved applications, most often because they could not afford a 1994 or later vehicle. As a result, only 165 participants used a vehicle credit.
- A high profile promotional campaign with frequent communication spots was instrumental to the success of the pilot program.
- As a pilot project some additional administrative costs were incurred which could be avoided in a longer term on-going program.

Emissions

- The Breathe Easy program targeted pre-1988 vehicles due to significant changes in emissions controls which were introduced in 1988. Prior to 1988 vehicle emissions had been reduced by controlling crankcase emissions, and using an oxidizing catalyst with unleaded gasoline. In 1988 automotive manufacturers introduced new more effective emission control technologies into Canadian vehicles. After 1988 virtually all cars and light duty trucks came equipped with Exhaust Gas Recirculation (EGR) to reduce emissions of nitrogen oxides and “three way catalysts”. These systems generally include a "three-way" catalyst (which converts carbon monoxide and hydrocarbons to carbon dioxide and water, and also reduces nitrogen oxides to elemental nitrogen and oxygen), plus an on-board computer and oxygen sensor. As a result of these changes, vehicle emissions, with the exception of CO₂, were reduced by 50% to 80% from previous levels.



Emissions in tonnes/year

Vehicles in thousands

- The Breathe Easy Program technical evaluation, prepared by RWDI West Inc., (see Appendix F) found that, over a three-year period, the program reduced smog-forming compounds (Hydrocarbons (HC), Carbon Monoxide (CO) and Nitrogen Oxides (NO_x)) by 803 tonnes or 1.5 tonnes per vehicle, and that it reduced CO₂ by 2889 tonnes or 5.39 tonnes per vehicle. An analysis using criteria similar to the BC Scrap-it program's evaluation resulted in reductions of 819 tonnes of smog-forming compounds and 4,564 tonnes of CO₂.
- Breathe Easy vehicles were at the high end of polluting vehicles compared to vehicles tested in other programs. Of the Breathe Easy tested vehicles, 67% failed to meet Environment Canada's "idle emission limits for passenger vehicles and light duty trucks", compared with a 30% failure rate for vehicles tested in the BC Scrap-It program. (see Appendix F for details)
- The cost per tonne of CO₂ reduced was \$162, while the costs for smog-forming emissions was \$583. (see pages 36, 37 for details)
- The scrapped vehicles were checked for evidence of tampering with emissions control equipment. 21% of the vehicles showed evidence of tampering with emissions control equipment. (See the RWDI report in Appendix F)

Public Opinion

- The public preferred programs such as Breathe Easy to be jointly funded between the public and private sectors.
- Most of the public understood that they could affect emissions with driving and maintenance habits. Most of the public did not realize that newer vehicles contributed less to air pollution than older vehicles.

Conclusions

- Breathe Easy was enthusiastically accepted by Calgarians and accomplished a reduction in emissions by replacing 1987 and older vehicles with a cleaner form of transportation.
- Program Management was accomplished without major difficulty and below budget. All of the program's objectives were achieved.
- The public is likely to accept a longer-term vehicle scrappage program that covers a wider geographic area.
- Participants were satisfied with all aspects of the program operation.
- Sponsors and funders were pleased with the operation and results of the pilot program.

- Most of the Calgary pilot program sponsors have agreed “in principle” to participate in a future Calgary vehicle scrappage program.
- Some key Edmonton sponsors have also agreed “in principle” to participate in a future Edmonton vehicle scrappage program.
- Results of the pilot project suggest that a future on-going scrappage program should be successful.
- A new program should consider the learnings of this project in order to streamline operations.

Suggestions for future vehicle scrappage program design

Based on the experience gained from the Breathe Easy pilot vehicle scrappage program, the CASA VET recommends the CASA Board of Directors support an ongoing vehicle scrappage program. The detailed development of a future scrappage program would be the responsibility of a designated organization identified by partners and sponsors.

CASA VET offers the following proposal for consideration for a future scrappage program. The proposal is based on:

- maximizing program benefits
- consideration of potential available funding
- building on success of the pilot programs
- keeping operation and administration simple and low cost
- ensuring that the program is responsive to needs of participants, public and sponsors/partners.

A summary of the elements of the proposed future scrappage program follows:

Program Format

- On-going program operated in conjunction with the Kidney Car Program.
- Program operation limited by availability of incentives.
- Program would be operated for three years with program continuation assessed in year three

Program Location

- Operate program in Calgary/Edmonton with potential expansion to outlying areas and other cities at a later date.

Program Time

- Program should commence October 2003.

Program Sponsorship and Management

- Alberta Environment with Climate Change Central program manager/coordinator. One coordinator, operating out of one location, to operate programs for both cities.

Potential Program Partners

- Climate Change Central - program manager/coordinator
- Alberta Environment
- Alberta Motor Association
- Calgary Motor Dealers Association
- Calgary Pick Your Part
- City of Calgary - Transit
- City of Edmonton - Transit
- Edmonton Motor Dealers Association
- Environment Canada
- Kidney Foundation
- Others to be approached (i.e. bicycle retailers)

Program Design

- Criteria:
 - vehicles must be 1987 and older
 - registered continuously for previous 12 months
 - registered in Calgary or Edmonton
 - road worthy
- Incentives
 - 600 transit incentives - \$500 each
 - 300 vehicle credits - \$500 each
 - 100 bicycle credits, 50% purchase - \$500 each
 - Total: 1000 incentives per year per city

Program Operation

- Estimated total annual budget, including in-kind contributions, is \$1.20M.
- This would include \$1.0M for incentives and \$200K for program management coordination, program operation, communication/advertising/promotion, testing and surveys, office/materials/reporting and accounting.
- Evaluation activities.

- Communication and promotional campaigns in each city at least once per year (March/October).
- Focused public education and awareness program.
- Published annual report

Recommendations to the CASA Board of Directors

The Calgary Pilot Scrappage Program was an effective initiative to reduce smog and Green House Gas emissions, and enhance public education and awareness. It enjoyed strong public support, satisfied program participants and an ample supply of future candidate vehicles. The CASA Secretariat will report to the Board in September 2003 on the status of vehicle scrappage programs in Alberta. On this basis the CASA Vehicle Emissions Team asks that the CASA Board agree by consensus on the following:

1. The CASA VET recommends that the CASA Board of Directors acknowledge that the Scrappage Management Committee and Scrappage Steering Committee have successfully implemented the pilot project and completed their work.
2. The CASA VET recommends that the CASA Board of Directors accept the evaluation of the pilot project contained within this report.
3. The CASA VET recommends Alberta Environment and Climate Change Central complete an assessment by June 1, 2003 of the merits of a future vehicle scrappage program relative to other emission reductions measures.

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NOTE: Report Style

The report was designed to offer an overview of the project in sufficient detail to support the recommendations. The Appendices are separately maintained as a reference for future program planners and managers and interested persons from other provinces and are available from CASA. www.casahome.org (780) 427-9793

Appendix A – Members of the Scrappage Steering and Scrappage Management Committees

Appendix B – Workplans for the Scrappage Management Committee Teams

Appendix C – Calgary Scrappage Project Manual

Appendix D – Detailed Program Materials, including documentation processes for incentive distribution, Empty Excel files for record keeping, protocols for approvals, sample answers to typical calls, call responses to difficult calls, technical materials and the RFP for the Coordinator position

Appendix E – Communications Materials, including the press kits for events, media reports, brochure, and brochure and Poster restocking report.

Appendix F – Evaluation Materials, including the RWDI emissions testing report, testing data and Pass/Fail levels, Omnibus and participant survey reports.

Appendix G – Reference Materials, including the BC Scrap-It Evaluation and the ROVER Report

1. Introduction

In 1998, the Clean Air Strategic Alliance (CASA) Board of Directors gave the CASA Vehicle Emissions Team (VET) approval to proceed with a pilot vehicle scrappage program. The CASA VET researched the requirements for a Calgary pilot program and secured the necessary funding and in-kind contributions. The pilot project was called “Breathe Easy”.

Breathe Easy was an emissions reduction pilot program designed to test the suitability of a vehicle scrappage program in reducing vehicle emissions.

Earlier studies (Roadside Optical Vehicle Emissions Recorder (ROVER) Project Summary Report, March 1999) using Alberta data found that 8% of the vehicles were responsible for over 50% of the vehicle emissions. The ROVER program compiled over 40,000 test results from four Alberta cities. Data from other vehicle scrappage programs and vehicle inspections and maintenance programs indicated these high emitting vehicles were most often 1987 and older vehicles. Emissions from these vehicles are consistently higher due to their less efficient emission control systems. If the vehicles were poorly maintained, the emission levels would be particularly higher still.

The Breathe Easy project was modeled in part on the BC Scrap-It program, a similar program in British Columbia. The Report Evaluation of the Scrap-It Program, released in 1997, demonstrated the effectiveness of a scrappage program in the lower mainland of British Columbia. Similar programs in the United States have also been successful.

In 2001, the Scrappage Management Committee (SMC) was formed to operate the overall project. The SMC agreed to work within the “CASA process”, a multi-stakeholder, consensus-based model. The SMC contracted with a Project Coordinator to manage the project and implement day-to-day activities.

Cash Contributions to Breathe Easy:

- Environment Canada
- Climate Change Central/Alberta Environment
- Canadian Petroleum Products Institute (CPPI)
- Moving on Sustainable Transportation (MOST), Transport Canada
- Calgary Community Lottery Board
- Clean Air Strategic Alliance (CASA)

In-kind Contributions to Breathe Easy:

- Calgary Transit – Passes and Advertising
- Kidney Foundation’s Kidney Car Line – Operations and Advertising
- Calgary Pick Your Part – Operations
- Alberta Registry Agents Association – Registry Checks

- Clean Air Strategic Alliance (CASA) – Web-site and professional expertise and services
- Alberta Environment – Office Space and Professional Expertise
- Alberta Transportation – Professional Expertise
- Alberta Motor Association (AMA) – Advertising and Creative Expertise
- Participating members of the Calgary Motor Dealers Association (CMDA) – Incentives

In addition, members of the Scrappage Management Committee (SMC) and Scrappage Steering Committee (SSC) and the Vehicle Emissions Team contributed many hours of volunteer time and services to make the pilot scrappage program a success.

2. Overview of Scrappage Program

The Scrappage Management Committee convened in mid-2001 to initiate the program.

Breathe Easy accepted 1987 or earlier model year vehicles that were currently registered and had been registered and insured in Calgary for a minimum of 12 consecutive months in the current and previous registration years. Incentives were offered on a first come, first served basis. The program offered two different incentives:

- 300 incentives of \$500 each for the purchase or lease of a replacement vehicle of model year 1994 or later, plus a tax receipt for a \$50 donation. The incentives were offered to approved applicants who surrendered their approved roadworthy vehicles for scrappage.
- 300 sets of 12 monthly Calgary Transit passes (worth \$720) plus a tax receipt for a \$50 donation. The incentives were offered to approved applicants who surrendered their approved roadworthy vehicles for scrappage. Participants were asked to take transit passes for any 12 out of the following 16 months.

During the first 6 weeks following the program launch the transit pass option proved so popular that the program amassed a waiting list of over 100 applicants for passes. Calgary Transit responded by offering 50 additional sets of passes to Breathe Easy.

Breathe Easy received 782 applications between March 21 and June 10. Applications were closed on June 10 because there was a waiting list for both vehicle credit and transit pass incentives. 401 participants were approved for transit passes, or 101 more applicants than passes. As indicated above, Calgary Transit provided 50 more passes, so that the waiting list on June 10 was 51 approved applicants. 310 applicants were approved for vehicle credits.

3. Overview of the Organizational Structure

Beginning in 1997, the CASA Vehicle Emissions Team (VET) investigated opportunities for a vehicle scrappage program in Alberta. In 1998, the VET received CASA Board approval for a number of initiatives to reduce vehicle emissions, including pilot vehicle scrappage program.

The scrappage program was organized under the auspices of the VET of the Clean Air Strategic Alliance (CASA). A Scrappage Steering Committee of funders was established to oversee the program management; a Scrappage Management Committee was formed to operate the project; and a Project Coordinator was contracted to implement the project.

The members of the Scrappage Steering Committee represented funding organizations and founding sponsors. The committee was chaired by Jack Thompson of the Calgary Motor Dealers Association and included:

Carol Burelle (Environment Canada)
Louise Durocher (Environment Canada)
Gerry Ertel (Shell Canada representing Canadian Petroleum Products Institute)
Alderman Bob Hawkesworth (City of Calgary)
Leah Lawrence (Climate Change Central)
Bill Levy (Canadian Petroleum Products Institute)
David MacDonald (Calgary Transit)
Melissa Peters (Transport Canada's "Moving on Sustainable Transportation")
Dean and Mike Sheppard (Calgary Pick Your Part)
Donna Tingley (Clean Air Strategic Alliance)
Joyce Van Deurzen (Kidney Foundation)

The Steering Committee met to approve significant items and to obtain updates on the program. The Steering Committee approved the Scrappage Program Manual, the name Breathe Easy and the budget, among other items.

The members of the Scrappage Management Committee represented bodies and agencies concerned with program operations. The committee was chaired by Gerry Ertel of Shell Canada, representing CPPI and included:

Larry Begoray (Alberta Environment)
Alan Brownlee (City of Edmonton)
Kerra Chomlak (Clean Air Strategic Alliance)
Keith Denman (Clean Air Strategic Alliance)
David MacDonald (Calgary Transit)
Lawrence Schmidt (Alberta Transportation)
Dean and Mike Sheppard (Calgary Pick Your Part)
Rob Shymanski (Alberta Transportation)
Jack Thompson (Calgary Motor Dealers' Association)
Joyce Van Deurzen (Kidney Foundation)

Dan VanKeeken (Alberta Motor Association)
Geoff Williams (Clean Air Strategic Alliance)

The Scrappage Management Committee was organized into six teams that took on various tasks. The teams included design and operations, budget and administration, vehicle emissions testing, surveys, communication and promotion, and reporting. As a result of the contributions from the member organizations, the Committee was able save over \$10,000 in consultant and creative fees alone, and obtained substantial amounts of advertising.

CASA maintained the budget and prepared a listing of both in-kind and cash contributions.

The Scrappage Management Committee contracted with a consultant (Lois Epp of Epp Consulting) to manage the program. The consultant hired an assistant to assist with calls, enter data, and send materials to participants. The consultant was a member of the reporting and communications teams and, in addition to other duties, performed the following tasks:

- Assisted the budget and emissions teams
- Prepared written materials for all of the teams
- Completed minutes of committee meetings
- Coordinated the teams
- Managed the program
- Handled telephone inquiries including difficult calls
- Maintained records as required

4. Scrappage Program Design

A Calgary Scrappage Project Manual was prepared, based on the BC Scrap-It Design Manual. The Calgary Scrappage Project plan differed from the BC plan in several respects. (note: The Calgary Scrappage Project manual is found in Appendix C)

a. Differences from the BC Model

- The Alberta program was based on different criteria than the BC program. While the BC Scrap-It accepted 1983 and older vehicles, Breathe Easy accepted 1987 and older vehicles. In addition, the BC program required that a vehicle fail “Air Care” to be eligible. The province of B.C. has a provincial “Air Care” program and a provincially-run automobile insurance company while in Calgary there is neither an inspection and maintenance program nor a single centralized automobile insurer.
- The Calgary program reduced the number of communications with participants. The Calgary program asked participants to handle only the application form and the authorization letter. The average Breathe Easy participant communicated with the Scrappage Project twice, once to send the application and once to use the authorization letter.
- Breathe Easy participants delivered their vehicles to only one scrappage depot, Calgary Pick Your Part. Calgary Pick Your Part and the Kidney Foundation are partners in the “Kidney Car” Program. The Kidney Foundation gave tax receipts to participants for their scrapped vehicles. Calgary Pick Your Part agreed to test surrendered vehicles as an in-kind donation to the program and ensured that their staff were trained to use the testing equipment.
- The Breathe Easy incentives for new car replacement vehicles were less generous than the incentives in BC. The BC program offered \$750 toward the purchase of a new vehicle, while Calgary offered \$500. In addition, BC transit passes were valued at over \$1000 while the Calgary transit passes were valued at \$720.
- The Calgary program utilized major gifts in time and goods donations from sponsoring organizations.
- Calgary Transit and the participating members of the Calgary Motor Dealers Association actively assisted participants in obtaining their incentives.

b. Steps in the Breathe Easy Program

From a participant's point of view the process was simple:

1. Apply to the program
2. Receive an authorization letter
3. Surrender their Vehicle
4. Claiming their incentive

Application

Application forms were available in the program brochure and on the web site. 72% of the applicants used the form found on the web site. Brochures were available on display racks in 54 participating motor dealer's sites, 16 Calgary Coop grocery stores, leisure centres and at vehicle impound lots. Applications were faxed or mailed, as the program required the applicant's signature, and included a copy of the vehicle's registration slip.

Review of the Application

Once an application was received Breathe Easy staff reviewed each application. If there were questions about the eligibility of an application staff called the applicant. In most cases these applications were withdrawn and their data was not entered. Eligible applications were then entered into the database and faxed to the Alberta Registry Agents Association (ARAA) for approval. Most applications were faxed to ARAA within 2 working days of receipt.

Staff at the ARAA accessed the Alberta Registries database to verify that the applications met the following criteria:

- A 1987 or older vehicle
- Registered in Calgary currently and for the past 12 consecutive months
- The vehicle was registered by the applicant

The ARAA faxed back a list of the applications indicating whether or not the application met each criterion. Where the application needed to be reviewed the ARAA usually replied to a request within a week.

Authorization Letter

Where applications qualified, Breathe Easy staff reviewed the original application and the ARAA's information and issued an authorization letter. Authorization letters were faxed or mailed to the approved applicants. Authorization letters for applications that were approved without concerns were typically sent within 2 weeks of the application date.

If applications were not approved, the applicant was telephoned to discuss the outstanding problems. Due to privacy concerns, the ARAA could not release specifics, so Breathe Easy staff would note where the application had run into problems and ask for comments. Most applicants were forthright and some applications were denied at this stage. In over 40 cases, the application was forwarded to the Association again with new information.

Vehicle Surrender

Applicants then took their authorization letter and drove the approved vehicle to Calgary Pick Your Part. Calgary Pick Your Part tested the vehicle to ensure that it was still roadworthy, accepted the vehicle, signed the second page of the authorization letter indicating that the vehicle had been surrendered, tested the vehicle's emissions, and faxed the letter and the emissions testing results for the vehicle to the Breathe Easy office. In addition, the Pick Your Part staff removed the Vehicle Identification Number from the vehicle and passed it on to the Registries office to ensure that the vehicle could not be re-registered, and disabled the engines to ensure that they would not be re-used.

Applicants usually delivered their vehicles when they were ready to use the incentive. Most transit applicants delivered their vehicles within one month of approval. Most vehicle credit applicants delivered their vehicles within three months. Extensions were offered to those who could not meet the initial two month deadline for surrendering their vehicle.

Claiming Incentives

Transit Passes

When a participant had chosen the transit pass option Breathe Easy staff authorized the transit passes and faxed the authorization to Calgary Transit's Customer Service Centre. The participant could then pick up their passes monthly from Calgary Transit's Customer Service Centre. Participants could choose 12 out of 16 months in which they could receive their transit passes.

Vehicle Credits

When the participant had chosen the vehicle credit they took the authorization letter signed by Calgary Pick Your Part to the dealer from whom they were buying a 1994 or later vehicle. The letter instructed applicants to make the best deal they could and then present the authorization letter to the dealer, who would apply the \$500 credit towards their purchase.

Dealers then faxed the Dealer Claim Form, Authorization letter, and Bill of Sale to the Breathe Easy office. Breathe Easy staff reviewed the dealer claims and sent approved claims to CASA. At CASA the claims were reviewed again and cheques issued to the dealers.

c. Other Program Aspects

Breathe Easy staff entered the participant's data into an Excel database which was used for monitoring and recording each step of the program. Use of the database decreased subsequent data entry requirements for operations and also provided program data. CASA maintained a database of transit passes and cheques distributed. (See Appendix D) The documentation processes for incentive distribution were completed during initial phases of the program and are available in Appendix D

The program was designed to include several evaluation devices. These included the vehicle testing at Calgary Pick Your Part, a participant survey and two omnibus surveys. These can be found in Appendices E and F.

5. Evaluation of the Scrappage Program Implementation

a. Overview

The Breathe Easy program's operation was designed to be simple and straightforward while providing the checks and balances necessary to ensure that the program's objectives and criteria were met. The Breathe Easy program was implemented according to the program design, with a few minor changes made to handle telecommunications difficulties that arose.

b. Eligibility Criteria

The eligibility criteria worked well. The testing results show that the vehicles scrapped were highly polluting vehicles. This is confirmed in the emissions testing report completed by RWDI, an outside consultant employed to evaluate the technical data. (See Appendix F)

Two criteria caused some frustration among prospective applicants:

- Some people from near-by communities resented the fact that they were not eligible since they drive to work in Calgary or to the nearest C-Train station every day.
- Some callers noted that the criteria that the vehicle be registered for the previous 12 months was unfair to poorer people, some of whom do not register their vehicles in the winter due to the high cost of winter driving.

c. Level of Incentives

The level of incentives was adequate to obtain applications.

Some people who had originally applied for vehicle credits asked for transit passes instead when they realized that the value of the 12 months of transit passes was rising to \$720. As the cost differential between vehicle credits and transit passes was not anticipated the participant survey did not ask about this issue. The relative value of different incentives should be considered in a future program.

d. Potential for Fraud

The approval process was designed to avoid fraud. There is no evidence that fraud was a problem during the project. There was one instance of transit passes received in this program being sold through the "Bargain Finder", but this is not illegal as transit passes can be sold at or below the value that Calgary Transit charges.

e. Tax Issues

A question arose during the program about whether the GST should be paid on the incentives, and by whom. Although the Breathe Easy program received professional advice that indicated this would not be necessary, it is important that future scrappage programs exercise due diligence about the tax issues involved.

f. Public Access to Breathe Easy

The publicity for Breathe Easy generated many telephone inquiries. Between the launch on March 21st and the close of applications on June 10th Breathe Easy recorded 2595 calls seeking information. Between March 21st and September 4th, Breathe Easy received 3136 calls. These calls were recorded in an Excel database. Most telephone calls concerned details of the application process or general inquiries. In many cases callers had heard a news story that did not provide sufficient detail.

The web site was a key means of accessing information about Breathe Easy. During 2002 the Breathe Easy web site received 5,811 visits, 3864 of which were during the period between March and June. Of the applications received, 72% were received on an application form downloaded from the web site.

g. Positive Operational Attributes

There were a number of positive attributes to Breathe Easy, the most outstanding of which are described below:

- Cooperation between the sponsors and their commitment to the program was excellent. In addition to their ongoing cooperation with the coordinator, sponsors provided assistance and goods in-kind without which the program could not have operated. In particular, the work of the Alberta Motor Association, Calgary Transit, Alberta Registry Agents Association, Calgary Pick Your Part, and the participating members of the Calgary Motor Dealers Association were invaluable.
- The communications plan for the project worked well in providing information to the public. The advertising, promotions, and publicity produced significant numbers of applications to Breathe Easy.
- The program plan worked well and was implemented without major adjustments.
- The web site was very helpful. Applicants could print the application form and check information on the web site.
- In the participant questionnaire applicants overwhelmingly reported that they had received their incentives and were pleased with the program.

h. Operational Considerations for Future Programs

There are a number of learnings from the Breathe Easy program that should be considered in future scrappage programs.

- The pace of the approval for applications could be improved by approving applications based on faxed or photocopied vehicle registration slips received with the application. Breathe Easy took an average of ten days to approve applications which had no problems. It is recommended that future programs approve applications based on faxed or photocopied vehicle registration slips that cover the past 12 months. If an applicant does not have their registrations for the full 12 months, then the program could use a registry check as a back-up method of verification.
- A future program should continue to insist upon the applicant's signature on the application form. The legal formality of the process helps to discourage fraudulent applications.
- A future program should insist on access to an independent verification source such as vehicle registration documents to ensure that the person to whom the vehicle is registered is the person who surrenders the vehicle.
- E-mail access to business managers and sales managers in vehicle dealerships would assist in resolving problems and providing updated information. A future program should have an e-mail and direct telephone number list for business managers. The dealer's association should be able to provide this.
- The Breathe Easy program requires an organized manager who can
 - Delegate to an assistant
 - graciously handle questions from various members of the public
 - liaise with diverse groups of professionals and business people
 - be flexible as the needs of the program change
 - complete communications tasks as part of a team.
- A program the size of the pilot project does not require a year-round full-time manager. It is recommended that the program use a consultant or part-time manager who can delegate and oversee less expensive staff. A larger program or one covering more communities would need more staff.
- Breathe Easy staff require access to a person with the technical knowledge needed to answer unusual questions and vet materials for press events.

The public expected the program to use up to date telecommunications equipment including call display, call waiting and call forwarding. The call display from program phones should display the program name.

- Communication materials should state in point form the steps in the program and who is responsible for each step. A point-form statement would have decreased calls significantly, since many callers' reason for calling was to ask about the steps in the program.
- There are substantial opportunities to streamline the program as existing technology becomes more widely dispersed and as new technology develops. For example, accepting applications by e-mail, with an electronic signature, may be possible in future programs.
- At least one person should be available and able to answer difficult calls and media calls. Quick and competent call management in Breathe Easy greatly reduced the work that such calls can generate.
- Concern was expressed from an organization of antique car owners about the removal of "spare parts" from the market. The Breathe Easy program required that engines and powertrain be disabled but allowed other parts to be sold. This policy might be revisited in future programs. Some further discussion with antique car owners can be anticipated.
- The short time-lines for the Breathe Easy program proved difficult for a number of the people who had received vehicle credits, and the deadlines were extended for both the participants and the motor dealers. Future programs should anticipate this and build in sufficient time to deal with the long time frames required to purchase and finance new vehicles.
- The staff at Calgary Pick Your Part disabled the engines of scrapped vehicles by draining the oil and running the engines until they seized. Some members of the public took exception to this method and alternatives should be explored.
- With the cooperation of transit companies it may be more effective to mail out transit passes rather than have participants pick them up at a centralized location.
- There were only 8 calls or e-mails indicating strong disapproval of the Breathe Easy program. Some of these calls were from people who were using outdated information - specifically, they did not realize that post-1987 vehicles were significantly less polluting than older vehicles. Several callers expressed strong feelings about SUVs, sometimes for reasons unconnected to air emissions.

6. Scrappage Program Results

a. Incentives

The following table shows the numbers of incentives provided.

Breathe Easy Data

	<u>Credits</u>	<u>Transit</u>	<u>Total</u>
• Scrapped Vehicles	185	351	536
• Waiting List	----	10	10
• Vehicles Disposed While on List	----	15	15
• Rejected and Withdrawn Applications	48	73	121
• <u>Approved and Not Scrapped</u>	<u>90</u>	<u>10</u>	<u>100</u>
• Applications Received	323	459	782

Due to higher than anticipated demand, Calgary Transit provided 50 additional sets of transit passes which raised the total provided to 350. (see note below re: extra pass listed)

A total of 90 applicants who had been approved for vehicle credits did not turn in their vehicles. The coordinator called each approved participant and most initially assured her that they would turn in their vehicles. A contributing factor in these “no-shows” was the age of the vehicles. Of the 90 vehicles that were not turned in to Breathe Easy, at least 27 (30%) of the approved vehicles stopped running while the owners were saving money for the newer vehicle. (Most of these vehicles were donated to the Kidney Foundation’s Kidney Car Program that includes free towing.)

Of the 300 approved applications for a vehicle credit only 165 resulted in credits claimed. Several factors contributed to the lower uptake of vehicle credits than transit passes:

- Due to the limited number of credits available, and a desire not to miss out on the program, some applicants applied prior to researching the cost of post 1994 vehicles.
- Some applicants believed that they could save money over time for a newer vehicle and did not realize that there were time limits to the incentives.
- A few applicants experienced personal changes after application and could not then purchase a vehicle during the time allotted.
- Some applicants found a buyer for their vehicle who offered to purchase the vehicle for a price greater than the value of the incentive.

Several callers pointed out that pilot programs are particularly difficult for less affluent people, who may have difficulty quickly taking advantage of opportunities such as this. Since 64% of the replacement vehicles were new, the vehicle credits are primarily useful for the more financially solvent. The proportion of replacement vehicles that are new may fall if an ongoing program is established.

Over the course of the program 35 applicants changed their initial request for vehicle credits into a request for transit passes. The coordinator accommodated these requests as long as transit pass incentives were available. By the time the program closed on June 10, 712 applications had been approved including 401 (56%) transit passes and 310 (44%) vehicle credits. (One person approved for transit passes left the province and was unable to use the passes. Her incentive was provided to an approved application from the waiting list.) An additional 15 approved applicants on the transit waiting list disposed of their vehicles while they were on the list and before an incentive was offered to them.

A future program could consider adding additional incentives such as an incentive for bicycle purchase. This would require the cooperation of bicycle retailers, and would make the program similar to the program in British Columbia. Breathe Easy did not test the bicycle incentive.

b. Emissions Testing Results

Vehicles surrendered to Breathe Easy were tested using a five-gas analyzer that was loaned to the program by Environment Canada. The program plan called for dynamometer testing, but since a suitable dynamometer was not available in Calgary dynamometer testing was not completed. A visual check was done to determine roadworthiness and look for signs of tampering with exhaust control devices. Staff at Calgary Pick Your Part was trained to conduct the testing, which represents a major in-kind donation to the Breathe Easy program.

Of the 536 scrapped vehicles, testing results are available for 454. Some vehicles were not tested due to a short-term malfunction of the analyzer, and some testing forms were rejected as one or more measures were missing or at least one measure was outside of possible ranges. A few vehicles were surrendered after the testing had been completed.

An outside consultant, RWDI, conducted an evaluation of the technical data, including data on replacement vehicles and vehicle testing data. (This report is in Appendix F) RWDI recommended that the Breathe Easy evaluation use different criteria than those used for the evaluation (1997) of the BC program. In particular, the BC program’s evaluation assumed that the transit pass users replaced all of their vehicular travel with transit, while the Breathe Easy evaluation assumed that only travel to work was replaced by transit. This change in criteria resulted in a reduction in expected emission reductions for those vehicles that were scrapped for transit passes. The same revised criteria will be recommended by RWDI for adoption by the BC Scrap-It program in 2003.

	Number of Incentives	Air Contaminant Emissions (tonnes)				CO ₂ Emissions (tonnes)
		HC	CO	NOx	PM	

Annual offsets from transit pass selectors	351	19.9	143.1	13.6	-0.1	763
Annual offsets from replacement car selectors	185	10.5	73.4	7.4	-	200
Total annual emissions reductions	536	30.4	216.5	21.0	-0.1	963
Total emissions reductions over 3 years	536	91.1	649.4	63.0	-0.4	2,889

The preliminary CASA VET estimates of emission reductions, based on 600 scrapped vehicles, were 1000 tonnes of smog-related compounds, or 1.67 tonnes per vehicle scrapped. The preliminary estimate for CO₂ (a green house gas) was 5000 tonnes, or 8.33 tonnes per vehicle. These estimates used the 1997 emission reduction factors.

Because dynamometer testing was not available, the testing results were based on 2 speed idle tests only.

The Breathe Easy technical evaluation, using the new criteria recommended by RWDI, found that the program reduced smog-related compounds (Hydrocarbons (HC) and Carbon Monoxide (CO) and oxides of nitrogen (NO_x)) by 804 tonnes or 1.5 tonnes per vehicle. The program reduced CO₂ by 2889 tonnes or 5.39 tonnes per vehicle.

c. Condition of Scrapped Vehicles

The vehicles scrapped in the Breathe Easy Program were amongst the higher polluting vehicles on the road. Of the Breathe Easy tested vehicles, 67% failed to meet Environment Canada's "idle emission limits for passenger vehicles and light duty trucks". This compares with a failure rate of 30% in BC, despite the fact that Calgary's vehicles were on average 2.1 years newer than British Columbia's scrapped vehicles. The mean age (model year) of the Calgary project's vehicles was 1983.5, while that of the BC program was 1981.4.

d. Participant Surveys

Breathe Easy obtained information about the participant's interactions with Breathe Easy through data gathered during the program and also from a participant survey. The survey instrument was prepared and approved by the Scrappage Communications Committee. In order to assure "arm's length" results, Calgary Transit took the lead in preparing the first draft, presenting the proposed questionnaire to the Committee, and analyzing the results. A contracted researcher completed the data gathering, data entry and produced results for each question. The researcher contacted 198 out of 423 respondents in early August. (The full questionnaire and additional data charts and graphs are available in Appendix F.)

It had been planned to conduct an initial survey with participants after they had scrapped their vehicles and once again after they received an incentive. It had been anticipated that this data could be used to fine-tune the program during its operation. As applications were closed seven weeks after the launch the participant survey was not used in program management but will provide valuable input for future programs. Its findings include the following:

- 1) The survey found that the most commonly cited methods of learning about the Breathe Easy program were word of mouth (26%), advertisements and articles in the Calgary Herald (19%), or advertisements on Calgary Transit buses (9%).
- 2) Breathe Easy statistics showed that by June 17th (the first measuring period after the close of applications) the index page of the web site had received 4512 hits. The survey found that approximately two thirds (69%) of respondents indicated that they had accessed the Breathe Easy web site.
- 3) The survey showed that two out of five (38%) respondents indicated that accessed the Breathe Easy hot line. Since the hotline was unavailable for most of the 3 days following the launch, it is positive that so many respondents were able to access the hotline.
- 4) The survey showed that approximately three out of five (61%) respondents indicated that they had spoken with a Breathe Easy representative directly. Most of these respondents wanted to speak to a representative. Only 3.5 % spoke to a person when they would have preferred to hear a message.
- 5) Web-site statistics show that by June 17th there were 1548 hits on the application page. (After this date the application form was removed from the web-site as the program was no longer accepting applications) The survey showed that the most common methods by which respondents obtained an application form were through the Breathe Easy web site (52%), via fax (17%), or through the mail (14%). Breathe Easy statistics show that 27% of the applications received were from brochures and 73% came from the web site.
- 6) Most respondents recalled sending their application form by fax, mail, or e-mail. Breathe Easy statistics showed that 3% dropped off applications, 84% faxed applications, and 13 % mailed them. E-mailed applications were not accepted because the program required a signature.
- 7) Nearly all (99%) respondents stated the application form was easy to understand and fill out.
- 8) Respondents recalled waiting an average of 10 days to receive their authorization letter. The vast majority (97%) of survey respondents indicated they understood the authorization letter.
- 9) Nearly one third (31%) of survey respondents received the \$500 vehicle credit incentive and 77% of these respondents believed that of dealers were aware of the Breathe Easy program. The vast majority (95%) of these respondents recalled that they received their incentive easily and 96% perceived the sales person to be cooperative.

10) Most (92%) vehicle credit participants perceived they received the full \$500 benefit over and above their negotiated price for the new/newer vehicle they purchased.

11) Approximately two thirds (69%) of respondents received the 12 monthly Transit passes. Most of these respondents (85%) believed that Customer Service Centre agents were aware of the Breathe Easy program.

12) The majority (91%) of transit pass respondents indicated they received their incentive easily and perceived the Customer Service Centre agent to be cooperative.

In summary, an overwhelming majority of survey respondents were satisfied with all aspects of the program. The web site, hotline, and coordinator were major assets to the participants and the coordinator and should be utilized in future programs.

The keys to the high level of participant satisfaction were:

- Satisfaction with responses from program staff
- Use of technology such as access to the application form on the web site and the use of fax for applications
- Satisfaction with the level of the incentives offered.

The high level of satisfaction should be maintained or improved by

- Reducing the time required for approvals
- Improving access to the program using updated communications technology
- Decreasing the pressure on applicants to apply quickly for a time-limited program.

7. Communications

The communications plan was designed to promote both the program and related public education messages pertaining to programs goals.

The communications plan was based on initial publicity resulting from the launch on March 21st, followed by a mix of paid and free advertising and promotions. The public education goals were enhanced by a news event on June 4th that focused on vehicle testing and announced the closure of the application phase. (The media coverage listings are available in Appendix E)

The public education messages were:

- Vehicles are a major source of smog related and green house gas emissions in urban areas
- The extent to which older, poorly maintained vehicles contribute to air emissions and GHG emissions in Calgary as opposed to newer, well maintained vehicles
- Ways in which the public can lessen vehicle emissions

In addition to the public education goals the program was also assessing the public's response to a permanent and expanded vehicle scrappage program.

a. The Launch

The communications team decided to hold all information until the launch in order that media were presented with "new news". The launch was held at Calgary Pick Your Part so that the speakers could crush a vehicle as a photo opportunity. The launch speakers represented Calgary Motor Dealers Association, the Canadian Petroleum Products Institute, CASA, the Kidney Foundation, the Alberta Motor Association, Calgary Transit, Climate Change Central, and Environment Canada.

The launch was attended by significant numbers of local media because Calgary Transit utilized its significant contacts in the news media, and the mayor was scheduled to speak. The Calgary Herald, the Calgary Sun, three TV stations, and several radio stations covered the event. The ability of the Chair of the Management Committee to handle the media's questions well contributed substantially to their success.

Three of the Communications Team members buy significant amounts of advertising. Their presence on the team may have helped ensure the cooperation that Breathe Easy received from broadcast and print outlets. These partners were the Calgary Motor Dealers Association, the Kidney Foundation, and the Alberta Motor Association.

The launch publicity generated 311 calls within three days over a weekend. Callers were anxious to apply, since the publicity had emphasized the limited number of incentives and the fact that this was a pilot program.

b. Advertising

CASA coordinated the production of communications tools with the partnering agencies. The Breathe Easy program benefited from a significant amount of in-kind donations, particularly in the area of advertising. The Alberta Motor Association (AMA) developed the logo and covered much of the printing costs. Calgary Transit provided advertising space on Calgary Transit vehicles as an in-kind contribution.

In addition to these in-kind donations, Breathe Easy purchased \$37,500 worth of advertising, including daily newspapers (under a stakeholder's volume discount contract), radio ads, the production of transit ads, and distributing and maintaining brochure displays.

Although only 27% of applicants applied using the brochure, the brochures and posters helped to publicize the program and provided access for those without internet access. Many participants obtained information from the posters in the library and brochures at participating members of the Calgary Motor Dealers Association. In addition to the 54 participating motor dealers and 16 Calgary Coop grocery stores, there were 15 sites in Calgary where brochures were available including leisure centres, impound lots, and Calgary Transit outlets.

The Calgary Herald ran two separate stories with ads from the motor dealers on and around Earth Day. The costs paid by the dealers for these ads are not included in the program totals. The AMA magazine Westworld and the magazine City Vision ran several articles on Breathe Easy.

c. The Testing Event

The communications team planned an event to mark the closure of applications and to promote the public education messages. The event was held at the Southern Alberta Institute of Technology. The Calgary Motor Dealers association is a "Partner in Education" with SAIT. Due to the efforts of members of the team the Mayor, the Provincial Minister of the Environment and the President of the Southern Alberta Institute of Technology (SAIT) spoke. Breathe Easy received considerable publicity as a result of this event.

The vehicle-testing event was the focus of the publicity gained and the closure of applications was not mentioned in any major media coverage. Vehicles tested included a 1986 SAAB, a Toyota Prius, and a 2002 Ford F150 among other vehicles. The media were captivated by the demonstration that newer vehicles emit fewer smog related pollutants and highlighted the testing photo opportunity in their reports.

d. Measurement

The communications team used two omnibus surveys to measure response to the advertising and to learn about the attitudes of the public toward funding options for a future vehicle scrappage program. The first survey was conducted in February, before the launch, and the second in June, after the June 4th press event. Details of the survey are available in Appendix F.

Amongst the learning from the survey were the following:

- Calgarians feel good about the city's current air quality
- Calgarians are well informed about air quality in a general sense, but that they are less informed about the specifics of automobile emissions and the age of the vehicles on the road.
- Calgarians are aware of the air quality benefits of transit usage
- Calgarians are supportive of programs such as Breathe Easy. This support is higher for a program funded jointly by government, corporations, and non-profit agencies.
- In June 2002, 30% of Calgarians indicated that they were aware of the Breathe Easy program.

e. Summary of Communications Learnings

The communications aspects of the Breathe Easy pilot program demonstrated some aspects of interest to the design of future programs.

- Well prepared media events were key in attracting sufficient attention in order that public education goals can be achieved.
- Breathe Easy built on an established core of understanding about environmental concerns. There were high levels of understanding that individual actions can effect emissions, and Breathe Easy strengthened those public understandings.
- Where skilled staff were available, in-kind donations from contributing agencies helped greatly in developing communication materials and managing news events at substantial cost savings.
- The multi-stakeholder nature of the Breathe Easy program contributed to communications success, partly because the combined buying power of the agencies on the Communications Team strengthened requests for media coverage.
- The public prefers multi-stakeholder programs such as Breathe Easy to programs solely sponsored by government bodies. Future programs should consider the public's respect for jointly-funded programs.

- It is important for future scrappage programs to designate one or more spokespersons for the program. It is important to obtain assistance from someone with contacts in the news media to lend credibility to the promotional events.
- The program launch at the scrappage site provided good photo opportunities, and the testing of media vehicles and others allowed firsthand comparison of newer and older vehicles.

8. Program Costs

Breathe Easy costs were expected to total \$216,000 in cash and an estimated \$300,000 in in-kind contributions, including all expenses and incentives. The actual costs totaled \$169,000 in cash and \$300,000 in kind. The cost per vehicle scrapped is estimated at \$875, including an average incentive cost per vehicle of \$560.

The \$169,000 in cash was spent on the following list of items:

- 45,000 on operations, including the coordinator and assistant
- 6,000 on reporting, surveys, and technical consulting
- 40,000 on communications, including design and printing for brochure, ads and bus ads and press events
- 8,000 on professional fees
- 55,000 on vehicle credits
- 5,000 for other items, including gas analyzer retrofit and report printing

The \$300,000 in in-kind donation included:

- Staff time made available to the Steering Committee, Management Committee, and Subcommittee Teams from all members of the Steering and Management Committees
- 350 sets of transit passes (a \$210,000 value), a media specialist, transit ad placement, incentive pick-up and call receipt from Calgary Transit
- 165 partial vehicle credits (a \$27,225 value) and participant management from participating members of the Calgary Motor Dealers Association (The \$500 cost was shared between Breathe Easy (\$335) and the dealers (\$165))
- Vehicle testing, vehicle receipt, participant management and program launch site and expenses from Calgary Pick Your Part
- Media specialists, media monitoring and media management from Alberta Motor Association
- Donation receipts and data entry from the Kidney Foundation
- Vehicle registry checks from the Alberta Association of Registry Agents
- Management committee chair from Canadian Petroleum Products Institute
- Loan of gas analyzer and data entry from Environment Canada
- Loan of office with office equipment from Environment Alberta

- Budget management, financial administration and web site design from the Clean Air Strategic Alliance

Administrative costs per incentive for an on-going program could be reduced compared to the pilot project. The level of testing and record keeping could be reduced. In addition, some process improvements such as changing the application verification process could result in reduced expenditures. Communication expenses could also be reduced, as the logo is developed and more targeted promotion could be done. It should be noted that the copyright for the name “Breathe Easy” is owned by the education branch of the Alberta Lung Association and their approval may be required if it is used in a subsequent program.

If a future program were to scrap the same number of vehicles, the cost per vehicle should be in the \$645 range including an average incentive cost per vehicle of \$500. Assuming the same number of incentives, and the same level of in-kind provision of incentives, costs for an on-going program could be estimated at \$133,000, divided as follows:

- 45,000 on operations, including the coordinator and assistant
- 4,000 on reporting and technical consulting
- 20,000 on communications, including design and printing for brochure, ads and bus ads and press events
- 4,000 on professional fees
- 55,000 on vehicle credits
- 5,000 for other items, including report printing

In-kind donations of time should also fall substantially as an on-going program would require fewer meetings, little or no vehicle or survey testing, considerably less work to establish press events, and less reporting.

9. Cost of Emissions Reductions

One of the objectives of the vehicle scrappage pilot program was to assess the cost-effectiveness of such programs in reducing vehicle emissions. One of the key measures of this is the cost per tonne of various emissions reduced, which can be compared with the cost per tonne of other emission reduction measures.

The program's cost per tonne of reduced pollutants can be calculated by dividing the program cost by the total reductions of pollutants. As noted in the previous section, it is anticipated that the program costs for an ongoing scrappage program would be lower than the pilot and therefore the costs per tonne of reduced pollution would be lower for an on-going program than the cost per tonne for the Breathe Easy program.

The Breathe Easy technical evaluation, using the criteria recommended by RWDI, found that the program reduced smog forming compounds (HC, CO and NO_x) by 804 tonnes or 1.5 tonnes per vehicle. The program reduced CO₂ by 2889 tonnes or 5.39 tonnes per vehicle.

For the Breathe Easy program the cost per tonne of reduced smog forming pollutants was \$583 (\$469,000/804 tonnes). The cost per tonne of GHG was \$162 (\$469,000/2889 tonnes). The cost per tonne of total reduction in pollutants was \$127 per tonne (\$469,000/3693 tonnes). Note that in the case of both smog related emissions and GHG emissions, the entire cost of the program is applied to the reduction of only that type of emissions. It is not possible to allocate costs to a specific type of emissions reduction.

An on-going project could be expected to produce costs per tonne in the \$114 range.

The BC Scrap-It Program did an assessment of emission reduction cost effectiveness in 1997. Their assessment of (HC + NO_x + CO₂) emissions reductions costs was \$2,177/tonne compared to the Breathe Easy program emission reductions cost of \$1900/tonne for (HC + NO_x + CO₂). The improved cost effectiveness of the Breathe Easy program is largely due to the lower cost of incentives offered. Similarly the emissions reductions cost of (HC + NO_x) was \$3796/tonne in the BC Scrap-It Program versus \$3,045/tonne for the Breathe Easy program.

In assessing the cost effectiveness of an emission reduction measure the program is usually gauged against other emissions reduction measures. As an example the (HC + NO_x) cost effectiveness of the BC Inspection and Maintenance program (Air Care) was calculated to be \$3200 - \$4300/tonne. An industrial boiler upgrade has a (NO_x) cost effectiveness of \$900+/tonne. (per BC Scrap-It Program)

Although there is no official policy, the BC Scrap-It assessment report noted that "regulators generally consider that any measure costing less than \$5000 to \$10,000/tonne for NO_x and/or HC is cost effective". By this measure, the Breathe Easy program would be considered cost effective on the basis of smog emission reductions alone.

The BC Scrap-It Program determined that CO₂ emission reductions (GHG) had an effective cost of \$128/tonne. The Breathe Easy program had a CO₂ emissions reductions cost of \$162/tonne. The Breathe Easy program was less cost effective for GHG emissions reductions than the BC program largely due to the methodology used to calculate GHG emission reductions, which lowered the number of kilometers of driving which the transit passes were assumed to reduce. Most sources today consider that cost effective GHG emission reduction would be in the range of \$10 to \$50/tonne of CO₂ reduced. The Breathe Easy program would not be considered cost effective if it were evaluated solely on the basis of GHG emission reductions.

In addition to the dollar costs per tonne, a variety of additional benefits have been achieved from the project, including the following:

- Pollution reduction is a public priority and has a positive impact on population health, particularly children's health and those with respiratory illnesses. The Breathe Easy program has reduced overall pollution levels in Calgary.
- Vehicle emissions are one of the few sources of visible pollution in Calgary, and the Breathe Easy program empowers Calgarians to participate in achieving emission reductions.
- Newer vehicles are safer and more reliable than older vehicles and this program may result in increased safety by moving to newer vehicles or transit.
- Breathe Easy provided an opportunity for public education about vehicle emissions, about the contribution that older vehicles make to emissions, and about the success of past and future efforts to reduce emissions by upgrading vehicle emission standards.
- The experience in BC has been that about 70% of the people who accepted transit passes continued to use transit and purchase passes after the incentives had run out.

The measure of cost effectiveness is influenced by many factors including the region's current and forecast air quality, compliance with air quality standards, and policies such as continuous improvement or keeping clean areas clean. Although it is not possible to make a definitive statement on the cost effectiveness of the Breathe Easy Program, a strong case can be made that this is a cost effective program based on the cumulative benefits associated with it.

(The BC Scrap-It report "Evaluation of the Scrap-It Pilot Program (Final Report) was prepared by Innovatech Energy Systems Ltd. in August 1997)

10. Breathe Easy Program Conclusions

1. Breathe Easy was enthusiastically accepted by Calgarians and accomplished a reduction in emissions through replacing 1987 and older vehicles.
2. Management of the project was accomplished without major difficulty and below budget.
3. Calgarians would be more strongly in favour of such a program if it is operated jointly between the public and private sectors.
4. A new program could streamline operations by using learnings from the Breathe Easy pilot project. A new program could include the use of faxed vehicle registrations to evaluate applications, reduced distribution of the brochures, and less vehicle testing.
5. Calgarians understood that vehicles pollute and that driving habits affect pollution. Many Calgarians did not understand that newer vehicles were less polluting and that there are many older vehicles on Calgary's streets.
6. The vehicles scrapped through the Breathe Easy program produced more emissions than most vehicles.
7. Participants were able to access services, were able to understand the materials, felt that Breathe Easy incentives had been obtained, and believed that the staff they dealt with understood the program.
8. Overall, there was a high level of satisfaction with the Breathe Easy Program from participants.
9. The public would accept a Breathe Easy Program that was expanded both geographically and as a more permanent program. Calgarians' support for Breathe Easy rose over the first 3 months. Calgarian's support for vehicle scrappage improved during the time that Breathe Easy was in operation.
10. Breathe Easy staff should have access to a technically trained person should an unusual question arise.
11. The web site and hotline were important to the Breathe Easy program. These items reduced frustration from applicants and reduced the time required to deliver the program. Access to an application form on the web site was key to accessibility.

11. CASA VET Assessment

The objectives of the pilot project were:

1. Reduce vehicle emissions in Calgary by removing high emitting vehicles from the road.
2. Educate the public on how older or poorly maintained vehicles contribute to Greenhouse Gas and other air emissions.
3. Assess public acceptance / response to a permanent and expanded vehicle scrappage program.

In light of these objectives and the learnings from the pilot project, the VET has concluded as follows:

1. The Breathe Easy program reduced vehicle emissions in Calgary. Based on an assumed three year life of scrapped vehicles, the emissions reduced include:
 - Carbon dioxide by 2889 tonnes
 - Hydrocarbons by 91.1 tonnes
 - Carbon monoxide by 649.4 tonnes
 - Nitrogen Oxide by 63 tonnes
2. The demonstrated smog and GHG emission reductions positively impact the health of Calgarians as well as improving air quality. This is particularly important given the high growth rate of Calgary. Greenhouse gas emission reductions contribute to provincial and national emission targets.
3. The Breathe Easy Pilot Program received a positive and enthusiastic response from the public. It was determined through the omnibus survey that over 70% of Calgarians would support a future Breathe Easy program. (Survey results are available in Appendix F)
4. There was strong participant response to the pilot program with 782 applicants received and 739 applications approved during the ten weeks the program accepted applications. This very strong demand suggests an even more ambitious program is feasible.
5. The number of eligible 1987 and older vehicles in registered Calgary and Edmonton is expected to remain between 50,000 and 100,000 vehicles over the next few years. This suggests demand for the program should be sustained.

6. The operation of the pilot program was efficient and responsive to the needs of the participants. (See the results of the participant survey in Appendix F) The program was kept simple and administration costs were minimized. The pilot program identified a number of areas of improvement that would make a future program even more effective – please see “Suggestions for future program design on pages 37 to 40”
7. Participants were overwhelmingly satisfied with the program. This included the web site access to applications, hot line and fax communications, application approval and receipt of incentives. Participants believed they received good value for their incentives.
8. Media interest (print, TV and radio) in the program was strong. (See the Media listings in Appendix E) This provided opportunities to promote the program and to achieve objectives associated with public education and awareness.
9. In addition to the benefits associated with emission reductions, there are other benefits associated with the scrappage program that should be recognized. (Please see the section on Cost of Emissions reductions for some of these “intangibles”)
10. It is anticipated that new scrappage programs will be initiated in a number of regions of Canada. Alberta has taken a leadership role in the area and can continue in that fashion by undertaking a future scrappage program.
11. Sponsors and funders were pleased with the operation and results of the pilot program.
12. Most of the Calgary pilot program sponsors have agreed “in principle” to participate in a future Calgary vehicle scrappage program.
13. Some key Edmonton sponsors have also agreed “in principle” to participate in a future Edmonton vehicle scrappage program.

12. Suggestions for Future Program Design

Based on the Breathe Easy Pilot Project, the CASA Vehicle Emissions Team would like to make some suggestions relating to the future design of an ongoing scrappage program. (Additional logistical learnings are found throughout this report.)

Program Format

In considering the format of a possible future program, the VET considered the amount of work that was involved in the start-up and wrap-up of the Breathe Easy program, the number of potential vehicle credits that were not claimed due to the time limits imposed by the program, and budgetary limitations that would require a capping of the program's incentives. Based on this, the VET recommends that:

1. The program run year round on an ongoing basis.
2. The program should be limited by incentives available on an annual basis.
3. The program commitment period should be for three years. The continuation of the program beyond three years should be assessed in the third year of the program.

Program Location

The Scrappage Management Committee considered extending the program to other cities such as Red Deer, Lethbridge and Fort McMurray. These cities have active transit systems and could make incentives available. These programs would be smaller in scale, with fewer eligible vehicles. These smaller urban centres could be considered for further future expansion of the program.

Similarly, the communities surrounding Edmonton and Calgary could be considered at some future time - their inclusion would significantly increase the complexity of the program. For reasons of simplicity and logistics and available vehicles to be scrapped, the VET recommends that:

4. The ongoing program includes the cities of Calgary and Edmonton.

Program Timing

5. The Breathe Easy program in Calgary has generated some momentum that could be capitalized on if a new program would begin as soon as possible. An October 2003

launch would be an aggressive timetable but could be achieved if a decision was made quickly to proceed.

Program Operation and Leadership

The Breathe Easy Program enjoyed strong in-kind support from many of the program's sponsors and partners. It is expected that this in-kind contribution will continue but it is unlikely to continue at the same level. For example, CASA provided significant assistance in the area of program administration and contributed to the funding related to report writing. It is not anticipated that CASA will be an active partner in an ongoing program.

The CASA VET has approached most of the sponsors, funders and partners of the Calgary pilot program and the expected key funders of the Edmonton program. Positive responses for a future program were received from the great majority of these organizations. (This process is still underway as of the writing of this report) As such, we suggest the following:

6. One full-time coordinator, with clerical assistance when needed, could operate a program for both Calgary and Edmonton out of one location.
7. Climate Change Central has expressed interest in the role of program management and coordination. This should be pursued when a decision on a future program has been made.
8. A multi-stakeholder managing body that includes participating associations, companies and agencies should be formed to oversee the operation of the program.
9. Other organizations should be considered for funding of a future program. This could include new corporate sponsors, insurance companies, community funds and others.
10. The association of the scrappage program with the Kidney Foundation's "Kidney Car" Program has been mutually beneficial to both programs. The Kidney Foundation operates a Kidney Car Program in Edmonton and therefore an association of the two programs could continue in both cities under a future program plan. It should be noted that the Alberta Lung Association also has a vehicle donation program which is designed to remove older highly polluting vehicles from the roads.

Program Design - Criteria

Given the strong demand for the Breathe Easy program in Calgary consideration was given to making the criteria more stringent to ensure the most highly polluting vehicles were targeted. One option would be to only scrap vehicles that traveled a certain minimum distance annually. This would be difficult to administer and verify.

The VET also considered only approving those vehicles that failed a two speed idle test. This would help target the higher emitting vehicles but this also would make the operation more complex.

One aspect that should be given additional consideration is to establish some more specific guidelines to gauge if a vehicle should be considered "roadworthy".

11. It is recommended that the criteria for a future program essentially remain unchanged.

Program Design – Incentives

The high level of demand for both transit and vehicle credits indicated that the level of incentives was sufficient, and the pool of qualified vehicles will remain large for the next several years. Given this, the VET recommends that:

12. The target of 1000 incentives per year, per city, with a strong focus on the transit option, is an ambitious but achievable target. A suggested breakdown of these could be as follows: 600 transit incentives \$500 each, 300 vehicle credits (\$500 each), 100 bicycle credits (50% of purchase - \$500 each).
13. Transit passes were in strong demand but participants appreciate having the variety of incentives to choose from. Inclusion of a bicycle credit, in addition to the vehicle credit, will broaden the options even further.
14. Given the strong response to the pilot program a future program could consider equalizing the incentives at \$500. As of the writing of this report 12 months of transit passes in Calgary have increased in value to \$780. The incentives could be equalized by reducing the incentive from 12 months of transit passes to 8 months (\$520 value), giving books of tickets with a face value equivalent to the vehicle credit, or issuing a special transit pass for a number of months.

Program Operation

The success of the Breathe Easy program was due in large part to the work of the partnering organizations. They enabled smoother administration, better communications, and well received incentives. Promotion is essential to sustain a high level of public interest and promote public awareness. The expertise available through the transit operations, motor dealers and the AMA should be utilized to the extent possible.

15. It is estimated the annual program budget would be approximately \$1.2M. Of this amount \$1.0M would be directed to incentives and the remainder would go to program operation and promotion. It is estimated the annual cash requirements (in addition to in-kind incentives) would be approximately \$400,000. All of the above figures are for a combined Edmonton/Calgary program. There maybe additional cash requirements associated with transit incentives in a future program.
16. In order to maintain public and media interest there should be at least one promotional event each year in each city.
17. The pilot program undertook a number of measurement activities. This included vehicle testing and public/participant surveys. During an ongoing program it may be possible to reduce the level of measurement activity.
18. It is recommended that the ongoing program generate an annual report so that the public and partners are kept informed of the program status.

13. Recommendations to the CASA Board of Directors

The Calgary Pilot Scrappage Program was an effective initiative to reduce smog and Green House Gas emissions, and enhance public education and awareness. It enjoyed strong public support, satisfied program participants and an ample supply of future candidate vehicles. The CASA Secretariat will report to the Board in September 2003 on the status of vehicle scrappage programs in Alberta. On this basis the CASA Vehicle Emissions Team asks that the CASA Board agree by consensus on the following:

1. The CASA VET recommends that the CASA Board of Directors acknowledge that the Scrappage Management Committee and Scrappage Steering Committee have successfully implemented the pilot project and completed their work.
2. The CASA VET recommends that the CASA Board of Directors accept the evaluation of the pilot project contained within this report.
3. The CASA VET recommends Alberta Environment and Climate Change Central complete an assessment by June 1, 2003 of the merits of a future vehicle scrappage program relative to other emission reductions measures.