MAINE STEP-UP PROGRAM AGREEMENT

Leadership Track

Alan Auto

PURPOSE

The greatest challenge of the 21st century will be using earth's resources in sustainable ways to meet human needs. Through its own natural cycles, the earth provides clean water and air, fertile soils, and a myriad of plants and animals, all of which are essential to sustain life. We must find ways of producing products and providing services that model nature's cyclical design and sustain its productive capacities. In fact, where we can we must restore those capacities diminished by past misuse.

Environmental regulatory programs of the last 30 years have done much to clean and protect our waters, air and land. Now, new approaches to environmental protection are needed if continuous improvements are to be realized.

The Maine Department of Environmental Protection and Alan Auto have agreed to explore new ways of protecting the environment that go beyond regulatory compliance. Alan Auto commits to continuously improve its business practices to protect people and the environment. Alan Auto will publicly report on its progress to inspire other businesses to seek improvement in their own environmental performance.

The Maine Department of Environmental Protection commits to vigorously assist Alan Auto on its "climb up the mountain"—accepting the challenge—to find environmentally sustainable ways of doing business. The Goals Toward Sustainability set forth in Section 2. B. in this agreement are for the "Pathways" described in the "Climbing the Mountain" diagram found in the Department's A Guide for Your Business: Smart Production and the Maine Step-Up Program.

1. INTRODUCTION

Alan Auto is a full service Volvo repair shop in Portland, Maine, located at 195 St. John Street. The business provides sales, service, parts and bodywork for Volvo cars. The owner, Alan Prosser, has been in the auto repair business since 1968.

The repair shop is located on a lot of approximately 30,000 square feet and includes three buildings: a mechanical repair shop, a body shop and a storage building for service vehicles. Constructed in 1995, its design criteria were environmental compliance, ergonomics, energy-savings, and ease of maintenance. Alan Auto has already taken a variety of actions to create a healthy, safe and clean work environment. Air pollutants are significantly reduced by cleaning and re-circulating shop air. Air can also be removed from the workspace by fans, which pressurize and ventilate the building simultaneously. Carbon monoxide is monitored; an alarm sounds well before unhealthy levels are reached and employees are affected. Heating appliances are generally located outside of work-zones to lessen workers' contact with combustion effluent. Breathing protection devices are used by workers when they are involved in processes such as painting and sandblasting. Workers' comfort was considered when in-floor radiant heat was chosen to heat the repair shop. Comfortable, well-lit, below grade work space; specialized vehicle lifting equipment; and a four-day work week further help lower worker fatigue and make Alan Auto a pleasant place in which to work.

Alan Auto was recognized for its accomplishments in these areas by receiving the Governor's Award for Environmental Excellence in 1997. Since then, Alan Prosser of Alan Auto has served on the Maine Department of Environmental Protection's Smart Production Advisory Committee, the Pollution Prevention Program Advisory Committee, the Advisory Panel on Household Hazardous Waste, and the Advisory Group on Mercury-Added Automobile Components.

Alan Auto commits to work with the Maine Department of Environmental Protection to achieve sustainability goals for its business. Alan Auto requests guidance and assistance from the Department in pursuit of the goals and commitments set forth in this agreement.

Alan Auto understands that this agreement is entered into voluntarily and that all goals pursued under this agreement are beyond regulatory compliance requirements for laws administered by the Maine Department of Environmental Protection.

2. PERFORMANCE COMMITMENTS

A. Environmental Business Practices

- **Compliance Status** -- Alan Auto is currently in compliance with all applicable State of Maine environmental regulations: the parts cleaner is registered, and a licensed hazard waste hauler handles the approximately 20 gallons of

waste paint thinner generated each year, as well as fluorescent light bulbs and spent oil filters. Alan Auto has an Oil-Water Separator (OWS) connected to the floor drain system as mandated by Portland City ordinance. Alan Auto also has an Underwriters Laboratory approved boiler that burns waste oil to heat the buildings.

- **Workers and Community Pathway To Sustainability** -- Alan Auto has retained the same employees for many years, due, in part, to their continued good health because of working in a healthful work environment. As a result, they have become "disciples" for creating and maintaining a healthy work environment. The following sustainability concept is a synthesis of ideas from employees and management.

  Alan Prosser's premise is that current work practices in most automotive shops do not adequately protect workers from airborne contaminants found in their work environment. This can occur when a worker is engaged in a hazardous activity in one work area and may in fact be adequately protected; but workers in adjacent areas engaged in their own jobs may not be aware of the other worker's activities. This is the classic case for workplace accidents in the auto repair industry. An unfortunate example is: a welder is welding in one area and a technician is removing a gas tank in another area of the same space and suddenly an explosion occurs! Regrettably, this scenario is not uncommon in the automotive repair business.

  Another source of hazard is air contaminated by processes within the shop being either vented to the outside or moved and re-circulated inside the workspace. In the first case, contaminated air is passed from the work environment to the community. This also greatly stresses the building's heating system and company budget as large volumes of heated air are expelled from the building. In the second case, unprotected workers are impacted by contaminated air as it passes from the process area to the air movement unit possibly some distance away. Over time, ambient conditions deteriorate inside the workplace as particulates settle on surfaces or inside heating duct-work to the point where the interior of the building can become inherently contaminated and negatively impact all occupants. Once buildings become contaminated they become very resource intensive to rehabilitate.

  Under this agreement, Alan Auto proposes to pursue an alternative solution to this problem. The solution will address the problem of all building occupants, the building itself, and the community. The solution is based on the concept of "point source capture" (PSC). The PSC concept, as it says, captures the contaminated air at the generation point. From here the effluent is transported to a central cleaning unit, and after having been cleaned, is moved back into the work environment or moved outside the building. Alan Auto has experimented with a prototype system that has proven to be popular with workers because of its effectiveness at removing welding fumes.

However, much work still needs to be done to bring all the technologies together in one package to accomplish the goal of protecting buildings, occupants, and the community from airborne pollution. Additional resource input will enable work to continue on another prototype system designed to capture contaminated air, treat it to enable it to be re-circulated in the shop while protecting workers and conserving energy or vent it to the outside in a condition that protects the nearby community from contaminants.

B. Goals Toward Sustainability

- **Energy Pathway To Sustainability** -- Heating two buildings is a substantial cost for the business, typically in excess of $7000 a year. The repair shop is heated by in-floor radiant hot water heat fired by a natural gas boiler. It also has a back-up ceiling-mounted hot water heater fired by waste oil. The body shop is heated exclusively by a ceiling-mounted, waste oil-fired hot water heater.

  Alan Auto will explore ways to meet the space heating requirements of the buildings in the most economical and environmentally benign manner possible. The sustainability goal will be to reduce the use of virgin fossil fuel by 10%, normalized for heating season degree-days, over the three-year term of this agreement. The baseline year will be the 2000-2001 heating season. To achieve this goal, Alan Auto will explore ways to make the current heating system more efficient, examine the potential use of alternative fuels such as waste cooking oil, and evaluate other heating system alternatives including solar heating options.

  Rarely do businesses burning waste oil generate enough on site to satisfy their heating needs so in almost all cases they must rely on outside sources. USEPA regulations prohibit businesses burning waste oil from collecting waste oil from other businesses because of concerns about potential contamination of the oil by other substances; however, those same regulations allow businesses burning their own waste oil to collect waste oil from so called do-it-yourselfers. Because the repair shop currently generates about one third of the amount of waste oil needed to heat the facility waste oil is solicited from the public using posters circulated to retailers. Accepting waste oil from do-it-yourself “mechanics” provides them an environmentally safe means of disposing of waste oil, and in some instances may mean that the oil is not disposed of in an environmentally detrimental manner. Approximately 90% of all waste oil in the United States is used as a fuel for industrial purposes or for space heating.

  Alan Auto views waste oil as a resource to be used in the business to reduce expenses associated with the purchase of other fuels such as No. 2 heating oil or natural gas. A further benefit of burning waste oil at its point of generation is eliminating the “cradle to grave” contractual liability which all

businesses must accept when hiring a contractor to transport their waste oil. By responsibly burning its own waste oil and soliciting enough from the public to keep its system in operation, Alan Auto is doing its part to lessen the possibility of catastrophic spills and irresponsible “dumping”. If waste oil were not burned to provide space heating, Alan Auto would have to pay a recycling business to collect and transport it.

Another potential oil source is waste cooking oil generated at nearby restaurants. Burning oil from plants or animals does not add to the global warming problem because these sources regenerate naturally and actually absorb carbon in the process.

A major challenge in burning waste oil occurs when the oil is heated prior to going to the burner to make it less viscous so that it flows through the burner jet more easily. The heating process causes coking, which is the formation of particulates that can clog the burner jet. This has necessitated frequent burner maintenance, resulting in down time for the waste oil heating system. Alan Auto will explore ways to overcome this problem, and, if successful, share the results with other businesses heating with waste oil.

Alan Auto will also explore ways to save electrical energy, including evaluating the feasibility of using more energy saving fluorescent lighting than that which is currently used.

- **Inputs, Raw Materials Pathway To Sustainability** – If successful, improving Alan Auto’s waste oil burning technology and using non-fossil oil will considerably reduce the business’s raw material needs for natural gas. If feasible, employing solar energy to provide some of the heat for the facilities will similarly reduce the need for natural gas.

- **Air Emissions Pathway To Sustainability** -- Air force-vented from buildings is contaminated to some extent. That is the reason it is being discharged. It is not necessarily toxic or a regulated emission; but it always has some negative impact on the environment and community.

  Alan Auto is not required to have an air emissions discharge license from the Maine DEP; however, indoor air quality is a serious concern for worker health and safety. Alan Auto has developed an overhead vacuum piping system with flexible tubing that workers can use to capture emissions in the vicinity of activities that generate dust, welding fumes and other emissions. This system is in need of improvement to more effectively achieve its intended purpose because "dirty" air is still emitted from processes inside the shop. Successfully controlling air emissions at their source of generation will protect worker's health, as well as members of the adjacent community, and reduce annual heating costs.

C. Measurement Methods

- **Workers & Community Pathway To Sustainability** -- The PSC concept came from an employee who for years refused to wear supplied air-filtering equipment in the paint spray booth. Over time, workers consistently exposed to a company philosophy of caring about people and the environment will become disciples of that same philosophy. Alan Auto's employees know, from prior experiences while working at other shops, what it is like to breathe unclean air. Employees are also informed by the business's policies and by trade magazines (to which Alan Auto subscribes and which they read) about health and environmental issues. As a result, they have suggested ways to improve the air they breathe. Working with the Maine DEP, Alan Auto will also explore ways to quantify the improvement of indoor air quality.

- **Energy Pathway To Sustainability** -- The result of the energy initiative will be measured as the difference between virgin fossil fuel usage (based on heating season degree-days) before and after the project. The goal is a 10% reduction in the use of virgin fossil fuel over the three-year agreement. The reduction in the amount of virgin fossil fuel used will be measured and tracked. If more energy efficient lighting can be installed, then Alan Auto will report on the electricity savings using 2001 as a base year.

- **Inputs, Raw Materials** – The reduction in the amount of virgin fossil fuel used will be measured and tracked.

- **Air Emissions Pathway To Sustainability** -- Air emissions from the workspace will be difficult to measure. Current best practices dictate exhausting dirty air away from neighbors, so it is unlikely they are currently aware of emissions. If PSC is fully and effectively implemented and if air-cleaning equipment is put in place then particulates may be measurable. Also, it may be possible to measure the effectiveness of PSC by calculating the savings in fuel use as air is captured/cleaned/and re-circulated rather than exhausted.

  Regarding air emissions from the heating system boilers, an emissions factor will be used to convert the amount of virgin fossil fuel saved to tons of CO_2 emissions reduced.

D. Public Involvement

The public sector that displays a strong interest in the environmental achievements of Alan Auto is its customer base. Frequently, the subject comes up in discussions. Spontaneous mini-tours happen and provide opportunities to showplace the facility and brainstorm new ideas and works-in-progress like PSC. This will be an important forum for reporting Alan Auto's progress toward its Step-Up goals. Its benefits are great personal satisfaction, constant and varied feedback, and the realization for the

customer that he or she is contributing to a greater effort than merely getting the car repaired. This is a broad-based, ad hoc “committee”. Alan Auto will also seek to inform and get feedback from the community on the business’s sustainability efforts.

E. Mentoring

Alan Prosser, owner of Alan Auto, has been asked to serve on committees concerned with environmental issues such as the Maine Department of Environmental Protection Smart Production Advisory Committee and the department's Advisory Group on Mercury-Added Automobile Components. Alan Prosser will continue to speak out in these and other forums he is asked to participate in on his progress toward his sustainability goals for Alan Auto.

In conjunction with the Maine DEP, Alan Auto will produce a “clean shop handbook” to assist other automotive shops in attaining compliance and going beyond compliance by employing simple, common sense practices.

F. Relationship

The Department of Environmental Protection's Step-Up Coordinator for Alan Auto will check in with Alan Prosser at least once a month to discuss progress toward Alan Auto's sustainability goals under this agreement. The Step-Up coordinator will also explore sources of funding to support applied research to resolve technical issues related to the potential commercialization of the PSC concept and/or ways to improve the reliability and efficiency of the heating system and reduce its virgin fossil fuel CO_2 emissions.

Maine DEP will make staff available to BIW for technical and regulatory assistance. This assistance will be provided consistent with existing State law and agency policy. Maine DEP expects to forego civil penalties for certain types of first-time violations discovered in the process of providing assistance or disclosed as a result of compliance audits performed by BIW when BIW corrects the non-compliant condition within the shortest practicable time period, and in all cases within 90-days of discovery. Violations excluded from this provision are those listed in Maine DEP’s Small Business Compliance Incentives Policy, Section III (as amended February 14, 1996) and its Supplemental Environmental Projects Policy, Section V (as amended June 15 2000). Regular or necessary compliance inspections performed as part of day-to-day business at Maine DEP are not subject to these provisions.

G. Recognition

DEP will recognize Alan Auto’s participation in the Step-Up Program by including specific information on the *Smart Production/Step-Up Web Page* maintained by the State, and in press releases from time-to-time to keep the general public informed of Alan Auto’s status in the Step-Up Program. Alan Auto will also receive a Governor’s Award for Environmental Excellence without the need for application when any *Goal*

Toward Sustainability detailed in this agreement is achieved.

3. REPORTING

Alan Auto will report at least biannually on progress toward its sustainability goals under this agreement. The report shall be in the form of a written communication to Alan Auto's Step-Up Program Coordinator.

4. TERMINATION

Either party to this Agreement may terminate the participation of Alan Auto in the Step-Up Program with 30-days notice to the other party.

WITNESS here today, July 22, 2002, that the undersigned parties enter into this agreement.

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Angus S. King, Jr., Governor State of Maine	Alan Prosser, Owner & Manager, Alan Auto