CPPI

USED OIL ACTION PLAN

A REPORT BY THE

TASK FORCE OF THE COMMITTEE OF THE BOARD

OF THE

CANADIAN PETROLEUM PRODUCTS INSTITUTE

FINAL REPORT
MARCH 20, 1990

CPPI REPORT

USED OIL ACTION PLAN

EXECUTIVE SUMMARY

The member companies of the Canadian Petroleum Products Institute (CPPI) recognize the urgent need to address the issue of used oil. In its statement of guiding principles released last October, CPPI acknowledged that the petroleum industry must play a strong role in ensuring that used oil is managed in an environmentally acceptable manner, in keeping with the principles of product stewardship and sustainable development.

The issue is complex and there are many stakeholders. The task force has recognized the contributions that must be made by all stakeholders to resolve the concerns. This recommended ACTION PLAN should merit the support of industry, government policy makers and the general public and should enable Canada to conserve a valuable resource, save energy, preserve the environment and protect the health and welfare of Canadians.

Of the approximate 1 billion litres of lubricating oils sold each year in Canada about half should be recoverable as used oil but 50% of this is currently unaccounted for. The task force has determined that half of this missing portion is generated by the do-it-yourself (DIY) and farm/rural market sectors. These groups present the greatest difficulty for collection of used oil and require significant new infrastructure to accomplish the task. The industrial and commercial sectors present the greatest opportunity for increased recovery through an expansion of the existing collection systems.

The task force has estimated that this program will achieve about 70% recovery of the collectable used oils from these DIY market sectors. Experience suggests that not all used oil generators will use the provided used oil return facilities. To solve the DIY used oil disposal problem entirely would require government action to prohibit such over-the-counter sales.

There are two critical aspects to used oil management; the first task is to collect the used oil; the second is to develop adequate recycling/reuse outlets to handle the collected volumes. This report addresses both issues, building upon the concepts proposed within the CCME Code of Practice for Used Oil Management in Canada.

The report recommends a collection program based upon the principle of "polluter pays." For the industrial/commercial sectors, which constitute 75% of total lube oil demand, the individual generator is responsible for the appropriate collection and disposal of his used oil. The petroleum industry's role is to facilitate and provide support on a supplier/customer relationship. For the DIY and farm/rural sectors the report recommends a public collection system, jointly funded by industry and government and a tax on retail over-the-counter sales to these sectors. The public collection system recommended is a combination of selected depots plus "Blue Box" curbside collection where appropriate, managed by provincial collection authorities.

The industry's share of the public collection system costs is estimated to be up to $15 million spread over a five year implementation period.

The task force accepts the CCME Code's recommended recycle/reuse practices which acknowledges rerefining is the preferred option. However, the report also recognizes that rerefining and re-processing facilities do not exist in many parts of Canada. It is necessary therefore to develop other environmentally acceptable recycle/reuse options to handle the collected used oils and to have available more than one outlet for each region.

The report recommends an independent consultant evaluation of all costs, benefits and environmental impacts of all proposed recycle/reuse options to assist the provincial authorities in establishing their approved list of current and future disposition options.

In addition to direct financial commitments the task force recommends that industry take a leadership position in a number of other associated program activities which are detailed in this report. Consequently, industry contribution in total is very significant, reflecting our shared responsibility with governments and the public in resolving this issue.

CPPI REPORT

USED OIL ACTION PLAN

INTRODUCTION

The standard of living in our society is interlinked with our use of machines, and wherever machinery is found used lubricating oil is generated. Because of its potential toxicity, used oil has become a focus of attention as public awareness and concern for the environment continues to grow. The issue of used oil management now ranks high on the agenda of public, private and government priorities.

Used oils, contrary to many other wastes in our society, do not "wear out." They do not lose their inherent value as lubricants or energy sources. This makes them ideal candidates for recycling or reuse. Used oils only become a problem when they are handled inappropriately, to the detriment of human health and the environment.

Earlier reports have attempted to quantify the magnitude of the used oil problem but data on actual disposition is limited and many assumptions have been made. The task force has chosen to use the data contained in the Monenco Consultants Limited 1988 Report, which formed the basis for the CCME Code of Practice for Used Oil Management in Canada, as a good representation of the Canadian situation. All studies are in general agreement that indiscriminate disposal of used oil is a serious environmental threat and that used oil must be better managed in the future.

The member companies of the Canadian Petroleum Products Institute (CPPI) recognize the urgent need to address the issue of used oil. In its statement of guiding principles released last October, the CPPI acknowledged that the petroleum industry must play a strong role in ensuring that used oil is managed in an environmentally acceptable manner. Accordingly, it announced the formation of a special task force to study the problems associated with used oil management and to formulate an action plan which would lead to a solution.

This report summarizes the task force's understanding of the problem as it exists today in Canada and offers recommendations which, if implemented, will progressively resolve the problems related to used oil mismanagement.

The CPPI Used Oil Task Force has reviewed much of the existing literature and previous reports on the subject of used oil management. It has consulted widely with federal and provincial government bodies, many industry representatives, and other interested third parties. The scope of the problem is such that no one association or group can hope to provide a solution by itself. The used oil problem is part of the larger waste management problem which, today, challenges our entire society.

This Used Oil Action Plan recognizes that governments, manufacturers, retailers, industrial users, do-it-yourself oil changers (DIY), collectors, recyclers and other reusers can and must play a part in implementing an efficient and effective return, collection and disposition program for used lubricating oils in Canada.

The CCME Code of Practice for Used Oil Management in Canada was found by the Task Force to be a valuable source of reference and many components from the Code have been incorporated into this **ACTION PLAN.**

This report addresses the following issues under separate headings: Used Oil Generators, Used Oil Collection, Recycle and Reuse Options, Public Awareness, Program Funding and Industry and Government Involvement. A more detailed discussion of these issues is contained in Appendix I. The report then describes the recommended **ACTION PLAN** to address these issues and the anticipated Implementation Schedule.

This report by the CPPI Task Force on the Used Oil Action Plan is submitted in the expectation that all parties; the petroleum industry, the lubricating oil users, the government regulators and the general public, can and will support the recommended **ACTION PLAN** so that the issues of used oil management will be resolved both now and for future generations of Canadians.

HOW BIG IS THE PROBLEM?

Used lubricating oil continues to be improperly discarded daily by many Canadians who service their own vehicles and by many businesses who are currently mismanaging their used oils. There are many reasons why this is so today: people may not appreciate the environmental and human health hazards that can result from the improper disposal of used oils; the current regulatory status of used oil does not oblige lubricating oil users to recycle their used oils; there are costs and inconveniences involved in returning used oils; the existing infrastructures for collecting

and reusing used oils are limited and today's economics provide little incentive for their expansion; and there is widespread concern among potential collectors and reusers that they are at risk of being held liable for other people's contaminated oils.

All these factors must be addressed within an effective **Used Oil Action Plan.** The ultimate objective of the **Used Oil Action Plan** is simple; to recover and make use of used lubricating oils in a manner consistent with protecting human health and the environment, and to conserve a valuable source of increasingly scarce energy and materials.

The achievement of this objective is not simple. It requires attention to all three "R's" of waste management, i.e. reduce, reuse and recycle. The petroleum products industry, the original equipment manufacturers and many of our large industrial lubricating oil consumers have made significant progress in <u>reducing</u> lubricating oil demands through such avenues as improved equipment design, longer life oils, improved quality control and efficiencies, microfiltration clean-up for in-house reuse, etc. In this **ACTION PLAN** the task force has focussed on the other two "R's" - reuse and recycle; even though it recognizes that a simpler solution to some of these problems - particularly to those described in this report relating to the do-it-yourself market sector - could be found if some lube oil market channels were reduced or eliminated.

Approximately 1 billion litres of lubricating oils are sold in Canada each year. About 50% of this volume is potentially recoverable as used oils, but today over half of this potentially recoverable used oil is either not recovered at all or is used in environmentally inappropriate ways. Considerably more could be collected and managed for optimum end uses if organized collection systems were in place.

Used lubricating oils are generated from two principle sources; automotive and industrial users. Although more remains to be done, a large part of the used oil generated and managed within the industrial sector is already either recycled internally or collected for subsequent reuse. On the other hand, according to 1988 data, do-it-yourself and rural lubricating oil sales, which are about 20% of total Canadian sales, are now largely being

inappropriately discarded. Data suggests that 50 to 70% of the used oil from these sales is potentially recoverable, but over 90% of this recoverable oil is not now accounted for.

With appropriate and consistent regulations on used oil management in place in all provinces, the Task Force believes that a substantial opportunity exists to collect virtually all used oils generated by the large industrial sector, and by small urban generators such as fast lubes, service stations, car dealers and small industries, through an expansion of the current collection infrastructure involving lubricant users, lubricant sellers and used oil collectors.

The urban and farm/rural do-it-yourself oil changers, on the other hand, pose a much greater challenge. Success in these sectors will require joint industry/government actions which are discussed in detail in this report.

Figure 1, on the following page, summarizes the recent used oil situation in Canada. While it uses 1986 data, the task force believes it is fairly representative of today's situation. It is recognized however that the use of used oil for road oiling has been reduced substantially in recent years and, hence, there may be some minor differences in actual dispositions today.

FIGURE 1

USED OIL ACTION PLAN REPORT

PRESENT USED OIL SITUATION IN CANADA

o APPROXIMATE USED OIL VOLUMES (1986)

(M LITRES)

	LUBE OIL SALES	EST. RECOVERABLE USED OIL
B.C.	92	40
Alberta	108	48
Saskatchewan	47	21
Manitoba	33	15
Ontario	489	215
Quebec	141	62
Atlantic Provinces	54	24
NWT/Yukon	3	1
TOTAL CANADA	967	425

o CURRENT DISPOSITION OF RECOVERABLE USED OIL

	%	
Rerefining	24	(100 ML)
Burning/Road Oil/Other Reuse	17	(75 ML)
Unknown	59	(250 ML)

o DIY AND FARM/RURAL SALES ARE KEY CONCERNS

- Make up about 20% of total sales (200 ML)
- Over 70% of this is recoverable (140 ML)
- Over 90% of recoverable is NOT returned (125 ML)

o NO "PUBLIC" SYSTEMS FOR DIY's

Source: Monenco 1988 Report.

USED OIL ACTION PLAN COMPONENTS

A comprehensive solution to the used lubricating oil problem lies in the following:

- Establishing enforceable regulations in each province governing the acceptable methods of used oil collection, return and disposition.

- Developing effective systems to collect, accumulate, and recycle or reuse all available used oil in an environmentally acceptable manner.

- Inducing those individuals and small businesses in the DIY, farm and remote area segments of the lube market to return their used oils to acceptable locations.

- Educating the public to bring about a change in consumer behavior in regard to used oil collection and disposition.

The Canadian Petroleum Products Institute has recognized the urgent need to address the issue of used oil, and it accepts the petroleum industry's role in ensuring that used oil is managed in an environmentally acceptable manner. Accordingly, CPPI has unanimously adopted the following guidelines:

- all who sell or dispense lubricating oil have a responsibility to provide proper facilities for receiving used oil for a collection system.

- Manufacturers and importers of lubricating oil have a responsibility to actively participate in the effective collection and authorized disposition of used oil.

- The Canadian oil industry, jointly with governments, share responsibility for public awareness and information regarding the importance of proper handling of used oil.

- The Canadian oil industry supports public policy to ensure that all users of lubricating oil return used oil to established collection systems.

Effective management of used oil is not complete, however, unless there are environmentally acceptable outlets for the disposition of used oils, which are both approved and readily available. Industry and governments both have a part to play in developing the availability of these acceptable reuse options.

USED OIL GENERATORS

A guiding principle of this report is that the potential polluter - the used oil generator - has the primary responsibility for the acceptable disposition of his used oil. The problem of used lubricating oil cannot be resolved without this consumer/ generator participation.

The task force has determined that these consumers can be grouped into four identifiable market sectors, each of which have unique characteristics in regard to the collection and return of the used oils they generate and unique implications upon the recommended **ACTION PLAN**.

These groups, which are described in more detail in Appendix I, can be summarized as follows:

Group 1 - do-it-yourself (DIY)
Group 2 - farm and rural
Group 3 - large industrial, both urban and remote
Group 4 - small urban generators (fast lubes, service stations, small industrial, etc.)

Groups 3 and 4 are being widely serviced today by existing collection systems and the individual businesses, by and large, accept that the costs associated with such collection is an integral part of doing business. Nevertheless there are still significant volumes of used oils generated by the Groups 3 and 4 sectors that are not now being returned. More attention is required to ensure it is all recovered.

For the majority of those in Groups 1 and 2, however, there is little or no infrastructure in place to serve them and, recognizing the vast number of individuals involved and the small volumes of oil generated by each of them, the concept of "polluter pays" is more difficult to apply. The task force has attempted to reflect this in the recommended **ACTION PLAN**.

Figure 2, on the next page, summarizes the used oil market sector profile and the task force's views on key issues surrounding the collection and return of used oils from these sectors.

FIGURE 2

USED OIL ACTION PLAN REPORT

MARKET SECTOR PROFILE

Market Sector	Location	Collection & Return	Control Responsibility	Risk of Contamination
D.I.Y. Market (Group 1) . Over-the-counter Sales	Urban (Minor Rural)	Convenience is key	Need government involvement	High
Farm/Rural (Group 2)	Rural	Difficult	Need government involvement	Medium to high
Large Industrial Generators (Group 3)	Rural	Easy	Generator	Low
Small Industrial Generators (Group 4)	Urban	Medium difficulty	Generator	Medium
Small Urban Generators & Auto after Market (Group 4) . Retail Serv. Stns. . Fast Lubes . Repair Shops . Auto Dealers . Truck Fleets	Urb./Rural Urban	Easy	Generator	Medium to low

COLLECTION AND TRANSPORTATION OF USED OILS

Collection is the first and most important step in an overall used oil management system. Effective collection and transport from point of generation to point of re-utilization is essential if used oil is to be handled in an environmentally acceptable manner.

The ease of recovery of used oil is related to the sector that generated it. The large industrial sector and the urban small industry sector can be handled quite effectively through an expansion of existing networks of private collectors. Appropriate education and legislation enforcing proper generator disposal of used oil will add to the effective rate of collection in these sectors, as well as encourage further private collection. Concerns around liability for contaminated oils as well as hazardous materials handling are more easily addressed in these sectors as the number of generators are relatively small compared to the other two sectors. Also, generators in these sectors are, in general, capable and knowledgeable in the handling of potentially hazardous materials.

The do-it-yourself (DIY) and farm/rural sectors are not so easily addressed. There are currently no coordinated collection systems in place for these two sectors because the generators in these groups are both large in number and, in the case of the farm and rural, remote in location. Issues of both costs and liabilities have tended to exclude these sectors from existing collection systems.

Earlier programs to encourage the return of DIY used oils to private collection facilities such as those in full-serve service stations and fast lube facilities have generally been unsuccessful. The individual businessmen who use these facilities to recover the used oils generated in the course of their own business activities are increasingly reluctant to make them available to the general public because they must now pay to have the used oil picked up and taken away and because they fear that some individuals will give them contaminated oils, exposing them to handling risks and liabilities for disposal of these wastes.

Recent experience with the "Blue Box" program in parts of Canada suggest that extending this curb side service to include used oils will be successful. Advocates believe that there is less risk of foreign chemical contamination through curb side oil collection than there is in a depot type operation. Public

awareness and support of "Blue Box" programs are very high and only minor changes to existing systems may be required to accommodate used oils.

To successfully recover the used oils generated by these Groups 1 and 2 do-it-yourself oil changers we must address convenience, liability, and hazardous waste concerns. While enforcing legislation is required, as it is for Groups 3 and 4, government involvement must go further. Effective participation will require a government/industry partnership in public education and collection, together with an acceptance by government for the responsibility to dispose of contaminated used oils collected from these sectors.

This government/industry partnership is best operated through provincial implementation and management committees. These committees would address such issues as regulation requirements, funding requirements, identification of collectors and disposal outlets. A full description of these proposed committees can be found on Pages 23 to 29 of this report.

As in any waste collection program, its success will depend upon the willingness of the individual generators to use the facilities provided. The task force has estimated that, at best, this program will achieve about 70% recovery of the collectable used oils from these market sectors. To solve the DIY used oil disposal problem entirely would probably require government action to prohibit over-the-counter sales.

RECYCLING, REUSE AND DISPOSAL OPTIONS FOR USED OILS

There are two critical aspects of used oil management; the first is to capture the used oils being generated, the second is to ensure there are environmentally acceptable markets for the recovered oils, either in their "used" condition or in recycled form.

Today, in Canada, used oils are being recycled, reused and disposed of in a variety of ways, some more environmentally acceptable than others. The most desirable alternatives either conserve the lubricating or petroleum properties of the oil or utilize its heating value; in all instances reducing the consumption of virgin oils.

For definition purposes, this report uses those in the CCME Code of Practice for Used Oil Management in Canada. "Recycling" includes alternatives which conserve the lubricating properties

of the used oil either through rerefining or reprocessing, while "Reuse" includes alternatives which utilize the heating value of used oil through approved methods of combustion. Disposal and destruction of used oil through incineration is not considered an acceptable disposition except in cases of contamination. The task force recognizes that these definitions vary somewhat from the commonly used protocol of the 3 Rs but we have chosen to follow the CCME Code definitions in this report.

The task force recognizes that today governments and the public generally support the view that rerefining is the preferred option for the reuse of used oil. The CCME Code of Practice for Used Oil Management in Canada reflects this view. It states:

> "Used oils collected must be directed to appropriate recyclers or users if environmental and resource conservation benefits are to be maximized. Recommended practices in order of preference are:
>
> - rerefining and reprocessing
> - burning in cement kilns
> - burning in industrial and utility boilers equipped with flue gas pollution control equipment
> - burning in boilers not equipped with flue gas pollution control equipment when used oil fuels meet specific standards for maximum (allowable) contaminant levels and minimum heating values."

The task force accepts the Code's recommendations. However, it also recognizes that rerefining and reprocessing facilities do not exist in many parts of Canada and even where they do exist today they do not have the capacity to utilize the additional volumes of used oil that must be recovered. Furthermore, it is probably not wise to count upon a single facility as the only acceptable outlet for used oils in a region - should that facility cease operation for any reason the region would be without an acceptable fallback position. Hence, the task force recommends that more than one acceptable recycle/reuse outlet be developed for each region and that this must be done in tandem with the proposed collection program needed to capture additional used oils in that region so that the recovered oils will indeed have outlets.

Any of the approved recycle/reuse options must, of course, be environmentally acceptable in accordance with the CCME Code of Practice. Further, they should reflect the principles of sustained development by either recovering the used lubricating oils as rerefined or reprocessed oils or by capturing their heating value as a fuel, in all instances thereby reducing the consumption of crude oils or natural gas equivalent and thus

CPPI players in this business who must also be persuaded or compelled to participate in the recommended programs.

Much of the expected additional used oil that this program will recover is, at least under today's business conditions, non-economic. Hence, this Report recommends that governments consider a funding mechanism, most probably via a special levy or tax on all over-the-counter package sales of lube oils, to fund the public sector recovery networks. This is generally consistent with the basic premise proposed by this CPPI Report that, to the extent possible, the used oil generator must be responsible for its proper management.

A consistent approach across Canada to the designation of used oils as a special waste is necessary in order to implement proper handling and documentation procedures. Again, this is a responsibility of governments.

The report recommends that a variety of acceptable recycling/reuse cutlets are essential to ensure that the collected used oil does, indeed, have proper markets. While governments may want to ensure continued access to supplies to the established rerefiners and reprocessors in Canada they will also need to encourage other environmentally acceptable options. This report recommends that governments establish an approved list of such options with the provisions to review and update the list from time to time as circumstances dictate.

Finally, the report recommends the creation of a number of government/industry bodies to steer and implement the programs on a national, provincial and local basis. In addition, the concept of a Collection Authority to provide ongoing operational management of the program is proposed. Governments must be prepared to play a major role along with industry in these areas.

Figure 3 on the following page provides a summary of Industry and Government contributions to this **ACTION PLAN.**

preserving valuable natural resources.

Acceptability may change over time as either new options come to light or further studies reveal that some currently acceptable options may not be as satisfactory as earlier thought to be. Hence, there must be flexibility to allow periodic review and revision to the acceptable option "list." The task force believes that the "Collection Authority" recommended elsewhere in this report is the appropriate body to approve and license the "acceptable reusers" in their region.

For those areas of Canada currently serviced by used oil re-refiners and reprocessors the task force recommends that appropriate assurances of feedstock availability be provided to those facilities. This may best be achieved through the provincial "Collection Authorities" as an integral part of their approval and licensing responsibilities.

JOINTLY FUNDED INDUSTRY/GOVERNMENT RECYCLE/REUSE OPTION STUDY IS RECOMMENDED

The various recycle/reuse options entail varying capital and operating costs. Inevitably economics, environmental and energy issues will influence the availability of these currently acceptable options and the development and implementation of new ones. The task force recommends that a jointly funded industry/government study, involving all appropriate stakeholders, to fully evaluate the cost, benefits and environmental impacts of all the acceptable options identified in the CCME Code of Practice, is necessary to help the Collection Authorities in developing their approved reuse lists. The study should be under direct government control to ensure impartiality. CPPI member companies will participate in such a study, using a qualified independent consultant to thoroughly assess all aspects of the issue. This study should be carried out as soon as possible and the task force has recommended an early start in its proposed Implementation Schedule on Page 34.

The task force recommends that the evaluation criteria to compare "acceptable" recycle/reuse options should include the following:

- Is it environmentally acceptable?
- Does it meet sustainable development objectives?
- Is it cost-effective?
- Is it readily available?
- Is it publicly acceptable?

Appendix IV is a simplified preliminary assessment of some of the options under consideration. The consultant study, of course, would provide detailed evaluations to support their final conclusions.

The task force strongly recommends that those options which are found inappropriate to the protection of human health and our environment be discouraged or, indeed, prohibited.

PUBLIC AWARENESS

Consumer education and awareness is key to the success of all recycling programs. This is especially true for used oil because of its potentially hazardous nature. CEPA, WHMIS and TDG legislation has improved overall product stewardship by industry. Many lubricant users now understand the importance of proper used oil handling and have become sensitive to health and environmental issues. Unfortunately, no effective communications have as yet been directed towards the do-it-yourself consumer. The challenge is to create a "recycling mentality" in a consumer group which has not previously been sensitized to environmental and health concerns in respect to used oils.

An advertising campaign aimed primarily at do-it-yourself consumers is needed to inform them of the potential health hazards of used oils and why it should be collected and returned, as well as where they may find convenient collection facilities. Pamphlets for distribution at over-the-counter sales outlets and via other means to reach the general public would be useful as would appropriate product labelling. The Recycling Council of Ontario has also found an Information Hotline to be an effective way of advising the public.

Misinformed public perception has been found to be a significant deterrent to legitimate used oil recycling and reuse options. This has implications both on customer resistance to rerefined used oils and on local community "NIMBY" reactions to proposed used oil processing/reuse facilities in their neighborhood. The public education program must address these issues as well.

The Task Force supports the proposed program outlined in the CCME Code of Practice for Used Oil Management in Canada. CPPI will work with governments and other interested parties to develop a comprehensive program, using a broad variety of mechanisms, to get the message out to individual Canadians so that each one will

care enough to ensure their own small volumes are properly recovered and returned.

This issue is discussed in more detail in Appendix I.

PROGRAM FUNDING

A comprehensive, Canada-wide program to collect, handle, recycle and reuse used oils will require both capital funds to establish the collection facilities and operating funds to manage the program. This report cannot propose an **ACTION PLAN** without also addressing the funding for the plan.

The overriding principle for any funding program aimed at improving the environment is that ultimately the end-user of a product will pay for its proper disposal. If the end-user is a business, then disposal becomes another cost of doing business and the marketplace will ultimately reflect the cost. If the marketplace prevails then only those costs of the most efficient businesses will get passed on. If the end-user is millions of individuals, then it becomes much more difficult to assess costs and develop a practical mechanism to charge appropriately. However, the overriding concept of "polluter pays" must still apply.

In a practical sense, it is usually necessary to ensure the appropriate facilities and systems are in place to provide viable disposal or reuse outlets for the used or unwanted product. This usually requires that businesses and/or governments pre-invest in these facilities or systems. The intent should always be, however, to recoup these costs from the ultimate end-users of the product in question over an appropriate period of time.

The task force recommends that two different approaches be used for the different market sectors. Both approaches are based upon the concept of "polluter pays," but we have attempted to reflect the difficulty of dealing directly with the multitude of small generators in the DIY and farm/rural sectors.

For Groups 3 and 4 generators the proper handling of used oil will continue to be a business cost. Government legislation and enforcement will be necessary to ensure compliance but no direct government funding will be required in those sectors. Groups 3 and 4 generators will pay the collection and disposition costs for their used oils and will be held liable for the cost of disposal should they contaminate any of their oils.

Groups 1 and 2 generators require convenient collection facilities as well as legislation to obtain their full cooperation in the proper disposal of their used oils. The task force believes that industry/government funding is necessary to provide this "convenient" collection system. The funding mechanism should reflect the "polluter pays" principle. The task force believes that for Groups 1 and 2 the following approach addresses this concern. It is based upon the very successful funding formula now in place in the "Blue Box" programs across Canada.

(a) Capital Funding Formula

Industry will provide 1/3 of the capital requirements for the collection system for Groups 1 and 2 with the provincial and municipal governments also providing 1/3 each. However, CPPI does not represent everyone who sells into these groups. Government must "level the playing field" by requiring all who sell into these two groups to contribute to the industry funded portion. Individual company contributions should be based on their share of sales into these market sectors. All those who sell into these sectors is defined for practical purposes as all those who own and sell a branded product into these groups.

(b) Operating Cost Funding Formula

Governments (provincial and municipal) provide the ongoing operating costs for the proposed collection systems. Reflecting the principle that the generators of used oil should bear the cost of the program, the task force suggests that a special levy/tax be placed on all finished lubricant sales to end users. However, in recognition that the majority of the capital and operating costs apply to the Groups 1 and 2 generators, the task force recommends that the levy/tax be higher on containers of 5 litres or less (the primary packages used by those sectors) - perhaps as much as 50 cents/litre - while the remaining sales, in pails, kegs, drums or bulk, be assessed a relatively small levy/tax - about 1 cent/litre - to cover the associated administrative and program overlap costs for those sectors. Governments may choose to consider a tax relief mechanism for those sectors using packaged lube oils who collect and return their used oils outside of the public collection system.

The task force has estimated that in total the special levy/tax will need to recover up to $30 million per year to fund the proposed program.

INDUSTRY INVOLVEMENT

The CPPI has recognized the petroleum industry's responsibilities to ensure the management of used oil in an environmentally acceptable manner. The task force believes that this industry leadership will be demonstrated through acceptance and implementation of our proposed **ACTION PLAN**. In particular, the industry will show leadership by action in the following areas:

- The used oil generators in Groups 3 and 4, aided by their lubricant suppliers, will take responsibility for the collection and handling of their used oils. These sectors generate about 75% of the total collectable used oils.

- Program leadership in Groups 1 and 2 through involvement in strategy and implementation committees.

- Shared capital costs for public collection systems to serve Groups 1 and 2.

- Active public awareness programs and support to ensure success of the public collection systems.

- Active support and participation in the evaluation and development of environmentally acceptable recycling/reuse options for the collected used oils.

In short, the industry working through individual customer/supplier relationships will ensure the proper collection and disposal of used oil for Groups 3 and 4. These groups provide the majority of the volume of collectable used oil . Also, the industry, working in full partnership with government, will facilitate the proper collection and disposal of used oil for Groups 1 and 2 through committee leadership and public collection financial support.

Through these initiatives the CPPI member companies will fulfill all the obligations envisaged in the four basic guidelines approved and published by CPPI. This **ACTION PLAN** will ensure that proper facilities are made available for receiving used oil

for collection and that the CPPI member companies actively participate in the effective collection and authorized disposition of the used oils. They will also play a significant role, along with governments, in making the public aware of the need for and the means of proper used oil management in Canada and they will actively support public policy to ensure all users of lubricating oils meet their responsibilities for proper handling and return of their used oils. However, as this report has pointed out, many of the players in the lubricating oil business are not CPPI members. It is essential that all other lube oil importers, distributors and retailers selling their own branded lubricants also play their part in making this used oil management ACTION PLAN successful. If this cannot be achieved through industry example and persuasion then government initiatives to level the playing field will be necessary.

GOVERNMENT INVOLVEMENT

The issue of used oil management in Canada, particularly in the sector of over-the-counter sales to do-it-yourself oil changers and their subsequent handling of their used oils, is complex and requires active involvement of all parties involved including governments. The need for government involvement in a variety of activities is addressed in other sections of this report and is described in detail in Appendix I. In addition they are summarized below.

Briefly, we see a significant need for government legislation, regulations and enforcement to support the proposed CPPI initiatives to ensure that all parties who generate used oils manage them in an acceptable manner.

Further, we see a need for a joint industry/government public awareness program to educate people on the benefits of proper used oil management and the impacts of improper actions.

To ensure success in the collection of used oils from the public sectors government assurances are required that the independent businessmen who will service the collection and transportation of these used oils will not be held liable for any contaminated oils they may inadvertently pick up in the system.

While CPPI has indicated in this Report its readiness to take broad actions to help overcome the used oil problems that exist today governments must recognize that there are many other non-

CPPI players in this business who must also be persuaded or compelled to participate in the recommended programs.

Much of the expected additional used oil that this program will recover is, at least under today's business conditions, non-economic. Hence, this Report recommends that governments consider a funding mechanism, most probably via a special levy or tax on all over-the-counter package sales of lube oils, to fund the public sector recovery networks. This is generally consistent with the basic premise proposed by this CPPI Report that, to the extent possible, the used oil generator must be responsible for its proper management.

A consistent approach across Canada to the designation of used oils as a special waste is necessary in order to implement proper handling and documentation procedures. Again, this is a responsibility of governments.

The report recommends that a variety of acceptable recycling/reuse cutlets are essential to ensure that the collected used oil does, indeed, have proper markets. While governments may want to ensure continued access to supplies to the established rerefiners and reprocessors in Canada they will also need to encourage other environmentally acceptable options. This report recommends that governments establish an approved list of such options with the provisions to review and update the list from time to time as circumstances dictate.

Finally, the report recommends the creation of a number of government/industry bodies to steer and implement the programs on a national, provincial and local basis. In addition, the concept of a Collection Authority to provide ongoing operational management of the program is proposed. Governments must be prepared to play a major role along with industry in these areas.

Figure 3 on the following page provides a summary of Industry and Government contributions to this **ACTION PLAN.**

FIGURE 3

CONTRIBUTIONS TO USED OIL ACTION PLAN

INDUSTRY	GOVERNMENTS
o Used Oil Task Force and recommended ACTION PLAN	o Legislation/enforcement/audit
o Collection & handling of 75% of all used oils (Groups 3 & 4)	
o National Used Oil Coordinator	
o Participation in program management - National Steering Committee - Each Provincial Used Oil Management Committee - Support Provincial collection authorities	o Participation in program management - National Steering Committee - Provincial Used Oil Management Committee - Collection authorities
o Public Awareness Program	o Public Awareness Program
o Support for Rerefining and other acceptable Reuse Options	o Procurement Policies
o Program funding - Shared capital costs	o Program funding - Shared capital costs - Operating funds for program (via levy/tax)
o Joint evaluation study of recycle/reuse options	o Joint evaluation study of recycle/reuse options
o Actions on packaging and labelling to promote proper used oil management	
o Development of approved re-refined base oil specifications to encourage broader acceptance.	
o Support for increased used oil recovery and supply to approved reuse outlets.	

TASK FORCE RECOMMENDATIONS - USED OIL ACTION PLAN

The Canadian Petroleum Products Institute recognizes the urgent need for effective action to address the issue of used lubricating oils in Canada and it has indicated its readiness to assume a strong leadership role on behalf of the Canadian petroleum industry to do its part in overcoming the mismanagement of used oils that persists today. Accordingly, the Task Force advocates and recommends the following **ACTION PLAN.** This report first discusses the concepts of the proposed action plan and then provides a list of specific recommendations. Recognizing that the recommended **PLAN** entails both capital and operating costs, the task force has estimated the magnitude of these costs and suggested a likely scenario for their provision and expenditure. Finally, an implementation schedule for the complete roll-out of the proposed **PLAN** is provided.

General Principles Reflected in the Action Plan

In preparing these recommendations the Task Force has incorporated the following general principles.

(a) The petroleum products industry will demonstrate clear leadership on this issue. The four basic CPPI guidelines referred to in this report have documented CPPI member company commitments to ensuring that used oil is managed in an environmentally acceptable manner. The **ACTION PLAN** will meet these guidelines expectations.

(b) CPPI will provide leadership in the provision of facilities and systems to encourage the recovery of used oils now being improperly discarded. Industry's specific roles and responsibilities will vary for the different market sectors involved. While used oils from Groups 3 and 4 generators are, largely, more easily controlled and returnable without direct government involvement the DIY/Rural/Remote generators represent the most difficult sources to collect and will need joint government/industry programs.

(c) A voluntary program will not be effective. Clear legislation/regulation/enforcement is necessary to encourage environmentally responsible used oil management by all parties.

(d) There is need for national direction to ensure consistency of regulations and strategies, even though the **ACTION PLAN** must be implemented provincially. CPPI will provide national leadership for the petroleum products industry and the Regional Petroleum Associations will play a key role with regional and local governments in the implementation process.

(e) A public awareness/education program is needed to support this joint government/industry **ACTION PLAN.**

(f) The potential costs for this **ACTION PLAN** can be large, particularly if measured against the litres of recovered used oil. While protection of human health and our environment justifies such costs it is, nevertheless, incumbent on the parties to seek the most cost-effective solution. Where feasible used oil collection should, therefore, be coat-tailed onto other waste management activities.

Description of ACTION PLAN

There are two fundamental requirements that must be met by this Used Oil **ACTION PLAN**: more used oil must be collected and more acceptable recycle/reuse capabilities must be available for this recovered oil. These issues have been discussed at length in the body of this report and in Appendix I.

(a) Recycling/Reuse Options

The current approved recycling/reuse options existing today do not have the capacity to handle the potential extra used oil collected in all regions and some reuse/disposal options now being employed are not environmentally acceptable and should be discouraged or prohibited. This **ACTION PLAN** must ensure that acceptable outlets for used oil are available for all regions in Canada.

The task force recognizes that governments have established recycling, reuse and disposal priorities in the CCME Code of Practice for Used Oil Management in Canada. This ranking of rerefining/reprocessing as the preferred option is generally supported by the public. However, rerefining capacity in Canada is limited, both by volume and by location. Many regions in Canada have no access to rerefiners. Even those regions with rerefiners could not now dispose of all collectable used oils. Furthermore, it is wise to have more than one recycle/reuse outlet available in each region. Consequently, the task force recommends that a list of approved reuse options be developed for each region and government and industry participate in encouraging appropriate companies to develop these outlets.

Each province has the authority to establish its own prioritized ranking of acceptable reuse options that fit with the realities of that province's situation. The task force recommends that this be done. If they deem it necessary to influence the feedstock supplies to their preferred option, the provinces have this ability through their licensing and approvals procedures. Indeed, business will need to be confident that used oil will be available to them before they commit resources to install reuse facilities.

The task force recommends that a jointly funded industry/government evaluation study by an independent consultant to assess the relative merits and impacts of all potentially acceptable reuse options would assist governments in establishing their priority options for each region and may encourage industry to invest in the approved options.

(b) Collection Program

While the task force encourages government legislation and regulations requiring generators to dispose of their used oil in environmentally acceptable ways it believes that, as far as possible, industry should accept the challenge of achieving this without direct government involvement. This is possible for the 75% of all collectable used oils produced by the Groups 3 and 4 generators. This ACTION PLAN

calls for all suppliers of lubricants to assist their own customers in these large industrial and urban and small industry sectors (Groups 3 and 4) in the collection and proper disposal of their used oils. This assistance may take the form of taking back the used oil themselves, making arrangements for contract collection from the generator, assisting the generator in making such contract collection arrangements, and arranging for or assisting in the proper disposition of the used oils. The responsibility for disposal of contaminated used oils from Groups 3 and 4 rests with the generator of the contaminated oil. The only government involvement required, other than the enactment of the appropriate regulations, is the auditing/monitoring process necessary to satisfy them that the regulations are being followed.

The task force proposes that a publicly accessible collection network be established to service the individual used oil generators in Groups 1 and 2 and that this is a joint responsibility of government and industry. The most cost-effective approach to this is a combination of selected public used oil depots plus an extended "Blue Box" program, in those areas where it is applicable. It will, of course, be necessary to carefully assess and monitor the availability and effectiveness of the proposed curbside return of used oils and to maintain the flexibility to provide additional selected return depots instead if it appears that a community is unlikely to be serviced by the "Blue Box" approach. Because this is a public system, making it impossible to pinpoint the source of contaminants, the task force believes that governments, representing the public-at-large, must assume the responsibility for disposal of any contaminated oils.

(c) **Program Management**

The task force supports the "Collection Authority" concept described in the CCME Code of Practice for Used Oil Management in Canada. Some modifications are required to reflect the differing roles for the four market sectors and to accommodate the "Blue Box" programs presently in place in many communities. The task force recommends that each province designate a Collection Authority with management responsibility for this program.

First, of course, it is necessary to develop specific policies, strategies and tactics to put this ACTION PLAN in place. The task force recommends that a National Used Oil Steering Committee be constituted, probably with government representation through the CCME Waste Committee or their designates, and with strong industry representation, to develop this broad program.

Implementation, however, must take place at the provincial or regional level. The task force proposes that Provincial Implementation Committees be formed to define and initiate specific implementation actions within their region. Again, this Committee requires participation of government, industry and public interest representatives. These committees would exist only long enough to ensure the specific implementation plans are achieved.

Once these actions have been implemented and the specific programs defined then the Collection Authority in that region will manage the programs on an ongoing basis. The Collection Authority would be a government body, as designated by the provincial government, in many cases bodies that already exist, with the authority to: approve, license and regulate used oil collectors and transporters; approve, license and regulate reuse options; distribute operating funds and subsidies as required; monitor/audit for compliance; arrange for and pay for disposal of contaminated used oils inadvertently collected by the public collection network.

There will be a need in each province for a Provincial Used Oil Management Committee, representing industry, whose role is to collect and distribute the industry capital funding for the proposed public collection facilities. This Committee would be similar to the OMMRI structure for the Ontario "Blue Box" program.

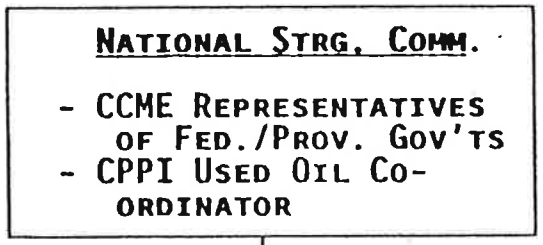
These committees are described in the attached Figures 4, 5, 6 and 7 on the following pages.

(d) **Action Plan Components by Major Categories**

Figure 8, on page 29, summarizes the major components of this ACTION PLAN and indicates how their application differs across the major market sectors of used oil generators.

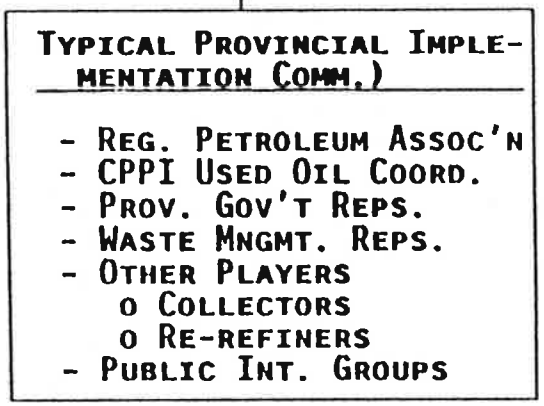
FIGURE 4

USED OIL ACTION PLAN REPORT - PROPOSED COMMITTEES



PURPOSE

- o BROAD NATIONAL STRATEGIES/PROGRAMS
- o SHARE IDEAS/EXPERIENCE
- o CROSS-POLLINATE
- o NATIONAL PUBLIC AWARENESS PLAN



SIMILAR FOR EACH PROVINCE

PURPOSE

- o IMPLEMENTATION OF SPECIFIC PROVINCIAL PLANS
- o REPRESENT ALL "STAKEHOLDERS"
- o EVALUATE EFFECTIVENESS/MODIFY AS REQUIRED
- o ENCOURAGE FULL PARTICIPATION BY ALL PLAYERS
- o HELP INDIVIDUAL COMPANIES WITH SPECIFIC ACTION TO SUPPORT PLAN
- o ENSURE BROAD PUBLIC AWARENESS/SUPPORT
- o SUPPORT PROVINCIAL COLLECTION AUTHORITY

O INDIVIDUAL COMPANIES PARTICIPATE WITHIN OVERALL PROGRAM AS APPROPRIATE TO ACTION PLAN GROUPS 3 AND 4 FOCUS

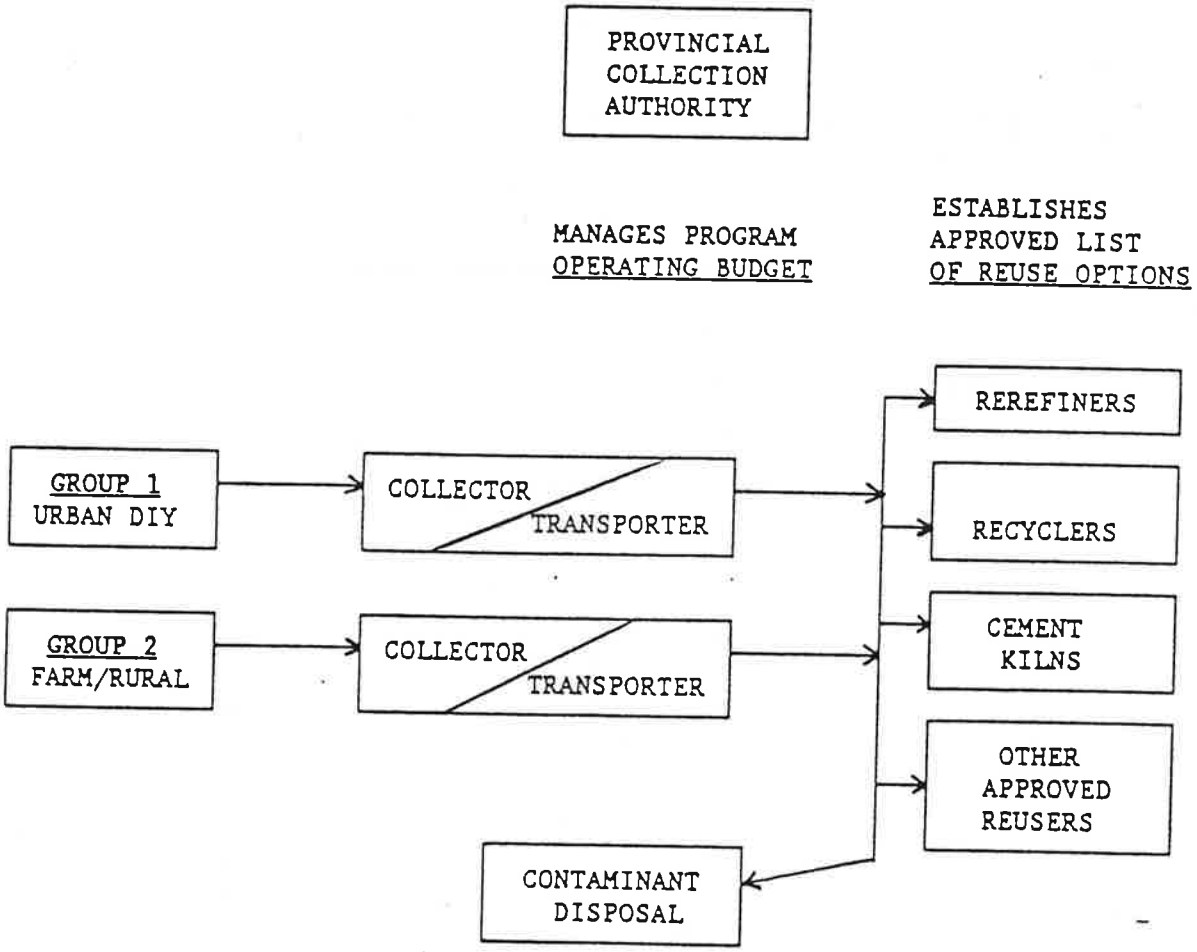
O COLLECTION AUTHORITY PROACTIVE ROLE RE GROUPS 1 AND 2.

FIGURE 5

USED OIL ACTION PLAN REPORT

PROVINCIAL COLLECTION AUTHORITY IS KEY TO MANAGEMENT PROCESS

PRO-ACTIVE ROLE FOR GROUPS 1 AND 2



COLLECTION AUTHORITY

- APPROVES/LICENSES COLLECTORS/TRANSPORTERS
- APPROVES/LICENSES RECYCLERS/REUSERS
- SETS COLLECTION/TRANSPORT RULES AND MONITORS FOR COMPLIANCE
- PAYS SUBSIDY TO COLLECTOR/TRANSPORTER FOR COSTS
  - CONFIRMED VIA MANIFESTS
- PAYS CONTAMINANT DISPOSAL COSTS
  - VERIFIED NEED VIA QUALITY TESTS/MANIFESTS

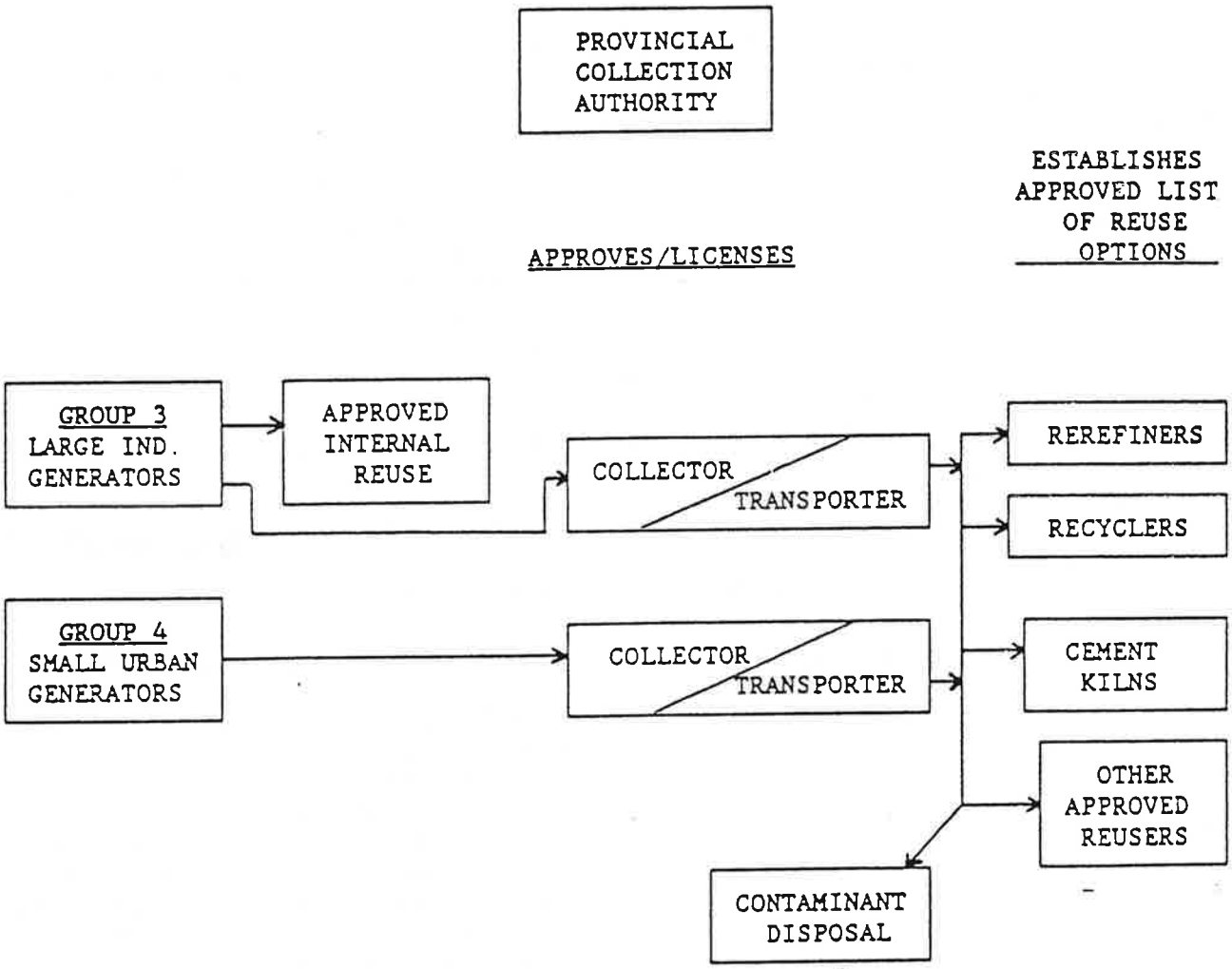
COLLECTOR/TRANSPORTER

- PROVIDES REQUIRED DOCUMENTATION TO COLLECTION AUTHORITY
- MAKES SUPPLY DEALS WITH APPROVED REUSERS

FIGURE 6

USED OIL ACTION PLAN REPORT

PROVINCIAL COLLECTION AUTHORITY HAS LESS DIRECT INVOLVEMENT IN GROUPS 3 AND 4



COLLECTION AUTHORITY

- APPROVES/LICENSES COLLECTORS/TRANSPORTERS
- APPROVES INTERNAL RE-USE OPTIONS
- APPROVES/LICENSES RECYCLERS/REUSERS
- SETS COLLECTION/TRANSPORT RULES AND MONITORS FOR COMPLIANCE

COLLECTION/TRANSPORTER

- MAKES PICK-UP DEALS WITH GENERATORS
- MAKES SUPPLY DEALS WITH REUSERS
- PAYS FOR/BACK-CHARGES GENERATOR FOR CONTAMINANT DISPOSAL
- PROVIDES REQUIRED DOCUMENTATION TO COLLECTION AUTHORITY

FIGURE 7

PARTICIPANTS AND ROLES OF PROPOSED COMMITTEES

GROUP	PARTICIPANTS	ROLE
National Steering Committee	CPPI CCME	- WHMIS, TDG, Fed. Legislation - National policy recommendations - Monitor progress - Set targets - Consistency in public awareness - Code of practice - Research funding
Provincial Implementation Committee	CPPI Used Oil Coord. Petroleum Assoc'n Rep. Prov. Gov't Other Industry Interest Groups	- Guidelines for: - Funding (levy, tax, collecting) - Operations - Organizn of 'collection auth.' - Identify reuse options - Goals/targets - Regulation requirements - Hazardous vs non-hazardous - Funding/level playing field - Review and evaluate existing operating & mgmt process/pgms - Public awareness programs - Tech. standards for collect'n facil.
Prov. Used Oil Mgmt Committee	Prov. Assoc'ns Government	- Cap. $ allocation - Municipal project approvals
Collection Authority	Prov. Gov't Munic. Gov't	- Distribution of oper. funds - Approval of collectors/haulers - Approves/licenses/regulate - Approval of reuse options - Approves/licenses/regulate - Auditing/compliance monitoring - Pays for contaminant disposal - Arranges, regulates

FIGURE 8 - ACTION PLAN COMPONENTS BY MAJOR CATEGORIES

Components of Plan	Group 1 DIY and Small Industrial Truckers	Group 2 Farm, Rural and Remote Generators	Group 3 Large Industrial Generators	Group 4 Urban Generators Small Industries
Government Involvement	Partnership Legislation Regulation Large Levy (on sales)	Partnership Legislation Regulation Large Levy (on sales)	Legislation Regulation Small Levy (on sales)	Legislation Regulation Small Levy (on sales)
Used Oil Accumulation and Storage	Return Depots Curb-side collection Shared costs 3rd party collect Public accountable	Return Depots Shared costs 3rd party collect Generator/Public accountable	Generator/Supplier to handle as part of their business operations	Generators to handle as part of their business operations
Transportation	Most economic method Subsidization Contract collector	Most economic method Subsidization Contract collector	Generator/Supplier to make arrangements with contract collector	Generators to make own arrangements with collector/transporter
Re-use Options	All approved options Prov. Prioritization	All approved options Prov. Prioritization	All approved options Prov. Prioritization	All approved options Prov. Prioritization
Public Awareness	Key requirement Gov't/industry programs	Key requirement Gov't/industry programs	Government regulations Business to business	Government regulations Business to business
Seller Obligation	Partnership with gov't and public	Partnership with gov't and generator	Business to Business	Business to business
Generator Obligation	Enforced legislation	Enforced legislation	Enforced legislation	Enforced legislation
Program Costs - Public System - Generator	High Via Levy	High Via Levy	Low Pays total cost	Low Pays total cost
Priority Attention	Major focus - DIY sector is primary problem	Second highest priority	Expand present program	Expand present program

Specific ACTION PLAN Recommendations

1. CPPI member companies commit to carry out their individual business activities in keeping with the four basic guidelines for the management of used lubricating oils that have been endorsed and adopted by CPPI. Further, CPPI member companies will ensure that these guidelines are widely communicated and will encourage all other parties who have a role in the used oil issue to adopt and apply the same guidelines.

2. CPPI welcomes the CCME Code of Practice for Used Oil Management in Canada and CPPI member companies will incorporate the appropriate components of this Code of Practice in their own business activities and encourage the same in others.

3. CPPI endorses the development and implementation of a public awareness program, through the joint participation of CPPI member companies and governments, to encourage environmentally acceptable recovery, collection and reuse options by all Canadians in respect to their used oils.

4. CPPI member companies will provide appropriate labelling on their lubricating oil containers to encourage consumers to return their used oils. CPPI recommends that governments require such labelling by all lube oil vendors. CPPI proposes that a consistent message be developed in co-operation with other interested parties.

5. All 4 and 5 litre containers should be manufactured with "child-proof" caps and that only such containers should be recommended for use by individuals to collect and return their used oils to either public return depots or for curbside pick-up.

6. CPPI recommends that the appropriate designations of used oils should be established consistent with the objectives of protecting the environment, protecting human health and encouraging increased recovery and reuse of used oils. In this regard onerous regulations that encourage indiscriminate dumping rather than collection and return should be avoided whenever possible. The designation of used oils as special waste should be considered with this in mind and so designated where it is clearly justified.

7. CPPI recommends that Governments in consultation with industry clearly identify in their policy statements and regula-

tions which reuse options are acceptable for used oils together with any special conditions pertaining to specific options. Other unacceptable reuse options should be so designated and the necessary legislation enacted and enforced to prohibit such uses.

8. CPPI recommends that for those areas currently serviced by used oil rerefiners and reprocessors the Collection Authority, through its approval and licensing responsibilities, provide appropriate assurances of feedstock availability to those facilities.

9. CPPI recommends that more than one used oil recycle/reuse outlet be developed for each region so that all used oils collected can be deployed into environmentally acceptable outlets. Each province should establish its own prioritized ranking of these acceptable reuse options, as they see fit.

10. CPPI will participate in a joint industry/government evaluation study by an independent consultant to assess the relative merits and impacts of all potentially acceptable reuse options to assist governments in establishing the prioritized ranking of options in their region.

11. CPPI supports the efforts of rerefiners to develop acceptable rerefined base oil specifications to encourage broader market acceptance.

12. CPPI recommends that governments implement legislation and accompanying regulations requiring generators of used oil to dispose of their used oil in environmentally acceptable ways.

13. CPPI recommends that responsibility for the proper management of used oils generated by the Groups 3 and 4 market sectors rests with the generators of the used oils and that suppliers of lubricants to these market sectors assist their own customers, as required, in the collection and proper disposal of their used oils and any contaminated oils. Direct government participation is not required.

14. CPPI recommends that the collection and disposal of used oils from do-it-yourself oil changers and individuals, as described within the Groups 1 and 2 market sectors, is the joint responsibility of government and industry. A public collection network of selected return depots and curbside

"Blue Box" pick-up is recommended as the most effective approach.

15. The industry (as defined in Appendix I, Page 57) will fund its proportionate share of the public collection system based upon the established "Blue Box" funding formula in which 1/3 of the capital costs (which the task force has estimated may total up to $40 million) are borne by each of industry/ province/municipality, and the operating costs are a responsibility of government/municipality. CPPI proposes that industry's contribution be capped at a maximum of $15 million, to be provided over the expected five-year roll-out schedule.

16. CPPI recommends that government consider generating the operating funds for this public collection program on the principle of "polluter pays." A simple but approximate means for this is described under the discussion on program funding on page 16. While all lubricant sales should bear their fair share of the program, the proposed levy /tax on the smaller lube oil packages sold primarily to the Groups 1 and 2 sectors should be significantly higher - perhaps up to 50 cents/litre - while those sold to the Groups 3 and 4, primarily in pails, kegs, drums or bulk should be relatively low - about 1 cent/litre - to cover the associated administration and program overlap costs for those sectors. Groups 3 and 4 will, of course, continue to pay all their direct collection and disposal costs as an integral business cost.

17. CPPI recommends the establishment of a National Steering Committee for Used Oil Management, with appropriate representation from governments and CPPI to encourage consistent programs across Canada, share ideas and experience and develop broad national initiatives and strategies.

18. CPPI further recommends the establishment of Provincial Used Oil Action Plan Implementation Committees with appropriate representation from the provincial government, the provincial petroleum products association, CPPI, and other interested parties. These are the "stakeholders" in the specific implementation programs deemed most appropriate for each region.

19. CPPI recommends these Committees be formed and their initial meetings be held as soon as possible after Plan approval. CPPI are prepared to initiate these meetings in April/May 1990.

20. CPPI will appoint a USED OIL ACTION PLAN Coordinator to serve on these Committees, or to chair the Committees if so desired by the other parties, to provide leadership and advice in the development and implementation of the ACTION PLAN policies, programs and activities.

21. CPPI recommends the formation of a "Collection Authority" in each province, administered by the provincial government, (as described in the CCME Code of Practice for Used Oil Management Program). The role of the Collection Authority should encompass functions associated with used oils currently provided by various departments within the Ministry of Environment, together with the additional role of administering the finances associated with the collection and transportation of used oils associated with Groups 1 and 2. These duties are described in the report on Pages 24 to 29.

ACTION PLAN IMPLEMENTATION SCHEDULE

As the report acknowledges, the issues of proper used oil management in Canada are complex, with many diverse stakeholders and a number of critical **ACTION PLAN** components. Although it is essential that industry, government and other interested parties provide early indications of support and encouragement for these **ACTION PLAN** recommendations it must be clearly understood by all that the problems cannot be solved overnight. The development of the expanded collection networks, the additional acceptable recycle/reuse options, the public awareness programs, and the program management policies and programs will all take time. The task force has estimated an elapsed time of five years for the total roll-out of the full **ACTION PLAN** across Canada, although it expects that significant results will be apparent in a much shorter time frame.

In general terms, the Implementation Schedule is estimated to be as indicated below:

- o March 20, 1990 - CPPI Board approval of Task Force Report.
- o April 1990 - CPPI appoints Used Oil Coordinator.
- o April/May, 1990 - Review of REPORT with CCME Waste Committee, provincial deputy ministers of environment in each province and other interested parties.
  - Formation of: National Steering Committee for Used Oil Management and Provincial Used Oil Action Plan Implementation Committees.
  - National Steering Committee hires consultant for evaluation study of acceptable reuse options.
- o May/June, 1990 - Initial meetings of these Committees held.
- o September 1990 - Collection Authority designated for each province/region.

- o November 1990 - Basic programs developed by each of the Provincial Implementation Committees for:
  - Public collection systems
  - Public awareness program
  - Implementation commenced.
- o December 1990 - Report by consultant on joint industry/ government evaluation study of acceptable reuse options.
- o Year end 1990 - Necessary regulations for used oil management in place in all provinces/regions.
- 15% of the Public Collection network in place across Canada and acceptable outlets for these recovered used oils available.
- o January 1991 - Prioritized reuse option lists developed by each Collection Authority and a program prepared to support the development of these reuse options in each province/ region.
- o Year end 1991 - 40% of the Public Collection network in place across Canada and acceptable outlets for these additional recovered used oils available.
- o Year end 1992 - 65% of the Public Collection network in place across Canada and acceptable outlets for these additional recovered used oils available.
- o Year end 1993 - 85% of the Public Collection network in place across Canada and acceptable outlets for these additional recovered used oils available.
- o Year end 1994 - Complete roll-out of all **ACTION PLAN** recommendations.

CPPI REPORT

USED OIL ACTION PLAN

APPENDICES

APPENDIX 1

BACKGROUND DISCUSSION - USED OIL ISSUES

The following pages in this Appendix contain background information gathered by the CPPI Used Oil Action Plan Task Force through their review of earlier reports, their discussions with many representatives of governments, industry, environmental protection groups, waste management experts, private citizens and CPPI members companies. Where pertinent, the experience in other countries has also been noted.

The issues of used oil management are complex, with many diverse stakeholders and opinions, giving rise to a variety of possible industry and government actions. These actions invariably incur costs and each action has its own limitations and degree of success. The most difficult and the most costly are those activities that seek to deal with the do-it-yourself oil changer. While the task force recognizes that the simplest and most effective solution to the do-it-yourself used oil problem would be the elimination of this market sector it has concluded that such action is outside the scope of this report. Consequently, the task force has focussed on finding the most effective Action Plan to deal with the used oil issues as they exist today in Canada.

DEFINITIONS

Before discussing in detail the issues surrounding the generation and management of used oils in Canada, we need to first define what is meant by "used oils" in this report. The task force has adopted the definition of used oil contained in the CCME Code of Practice for Used Oil Management in Canada.

Used oil is an oil from industrial and non-industrial sources which has been acquired for lubricating or other purposes and has become unsuitable for its original purpose due to the presence of impurities or the loss of original properties. Used oil does not include oils derived from animal or vegetable fats nor does it include crude oil or fuel oils spilled onto land or water, nor wastes from petroleum refining operations.

The generation of used oil does not directly relate to the volume of lubricating oil sales and it varies significantly among dif-

ferent oils used for different purposes. The major categories of oils are motor vehicle crankcase oils, motor vehicle hydraulic oils, general purpose industrial oils, industrial engine oils, metal working fluids such as cutting oils, and industrial process oils. Each of these categories result in differing used oil quantities generated, varying from zero to almost 100 percent recovery of the virgin oil employed.

Used oil primarily contains hydrocarbons; however it may also contain large amounts of additives introduced by the manufacturer to provide the special properties required in the marketplace. It will also contain physical and chemical impurities as a result of contamination and chemical reactions occurring during its use. Contamination of used oil may also occur from mixing with other oily fluids or liquid wastes. Consequently, used oil must be handled with care; not only are the additives and contaminants a potential health risk if handled inappropriately but both they and the oil itself can seriously damage our environment if improperly discarded.

USED OIL GENERATORS

The problem of used lubricating oil cannot be resolved without consumer participation. In Canada these consumers can be grouped within four major categories each of which have unique implications for the Action Plan components.

The first group consists of the DIY's and the small industrial truckers; those who change their own motor oils. One of the arduous chores of doing your own oil changes is getting rid of the used oil in an environmentally acceptable manner. There are many who may not find it a chore because they merely dump it down the sewer or in their garbage cans for municipal pick-up. Most of these people do not realize that used motor oil can be toxic and can be harmful to the environment. The DIY used oil source deserves special attention because it is the area where the least percentage of potentially recoverable oil is currently collected. It has been estimated that over 90% of total DIY used oil is not now returned, due largely to the lack of public awareness and convenient public collection systems for the DIY market.

The second group is the farm, rural and remote area generators. Because these generators are broadly scattered and difficult to access by efficient collection systems they are not well serviced

today. As you move farther away from the major population centers in Canada, the available collection service becomes less regular, less efficient and more costly. Even where some collection services exist in the more remote areas, the recovered oil is unlikely to end up in environmentally acceptable reuse options. For instance, in 1987 in Ontario from 15-20 million litres of used oils, known to contain a variety of contaminants, were still being scattered on gravel roads by rural municipalities. In 1988 Ontario banned the use of used oil as a dust suppressant and much of these volumes are now being redeployed to other end uses.

The third group constitutes the large industrial users in both urban and remote locations. In large part these used oil generators are presently collecting their used oils and disposing of them in a variety of ways, some more environmentally acceptable than others. Some, because of the large volumes of used oil generated, are able to accumulate and utilize existing collection services. Others, having high internal energy demands, are able to burn their used oils as a substitute for other fuel sources in their boilers or industrial furnaces. Some of these facilities meet provincial guidelines and avoid the emission of hazardous substances from the combustion of these used oils.

The fourth group is the wide variety of urban generators. These include service stations, repair shops, fast lube outlets, and many small urban industries. In most parts of Canada these urban generators have facilities to accumulate their used oils and have access to existing collection systems which will pick up and transport their used oils to a variety of reuse or disposal options.

The majority of the DIY's and small industries and truckers are found, of course, in the urban communities. Most of these communities, however, have little or no infrastructure available to these small volume generators for the convenient return of their used oil.

COLLECTION AND TRANSPORTATION OF USED OILS

(i) Collection Is Key to Successful Used Oil Management

It is generally accepted that collection is the first and most important step, and often the weakest link in the overall system of used oil management. The effective collection and transport of used oils from the point of generation to recycling or end-use locations is essential if the oils are to be utilized or disposed of in an environmentally acceptable manner. Appropriate procedures and facilities must be developed and broadly implemented if used oils are to be handled and collected in a manner facilitating recycling and reuse.

Today, in Canada, there are a number of major regional used oil collectors. These are most active in B.C., Alberta, Ontario and Quebec. These collection services are primarily focused on urban and industrial sectors. The larger collection services are operated by or in conjunction with existing rerefiners who see that control over collection of used oils is necessary to ensure adequate supply and lowest costs to their rerefining operations. In general, the fate of the used oil relates to the sector which generated it. While Groups 3 and 4 referred to earlier are currently serviced quite effectively in the urban areas, collection systems for the DIY sector and the farm and rural areas are generally inadequate.

(ii) Existing Collection Systems Are Limited

There are indications today in both Canada and the United States, that the existing collection systems are starting to unravel due to both the escalating costs of used oil collection and transportation and the increasing concern regarding liability issues. In many instances, whether or not used oil is collected depends upon whether collectors are willing to pay to remove the used oils or on regulatory requirements directing generators of used oil to demonstrate that the oil they produce has been disposed of in an acceptable manner. In recent years when collectors have found it necessary to stop paying generators for their used oils and charge them instead, many generators reportedly found "imaginative" zero cost disposal options.

(iii) The Do-It-Yourself Sector Poses Unique Collection Challenges

Much of the oil that consumers buy comes from the mass merchandising channel such as the discount stores or auto supply stores, but few of those places take used oil back. Such over-the-counter sales to do-it-yourselfers is unquestionably a major problem area, and there is no doubt that indiscriminate disposal is occurring. Past attempts to encourage proper return by these consumers were of two types: (a) curb side pick-ups and (b) programs to encourage return to collection depots, usually service stations. These programs were generally local in nature and have not been very successful, perhaps because of inadequate publicity and low public and private support.

An Alberta Environment survey on used lubricating oil recovery in 1982 found that even in areas where service station operators were having difficulties disposing of their used lube oils many were, nevertheless, in favor of participating in a provincial recycling program. Complaints were voiced, however, about the problem of mass merchandisers selling lube oil at lower prices than service stations without providing any facilities for used oil return. Although many stations indicated they would be willing to accept used oil from the public if they were assured of regular free collection many other service station operators were not willing to make their facilities available to the public due to concerns about extra traffic in their shop, housekeeping, oil contamination, and irregular collection services.

Concerns have also been expressed about taking back used oils they did not originally sell and assuming the costs for the collecting and transportation of these oils.

(iv) Liability for Contaminated Used Oil is a Concern

More recently a further major concern has surfaced, as the result of which more and more service stations will not voluntarily accept used oil from the general public - they fear that consumers will give them contaminated oils that would put hazardous waste into their collection containers leaving them liable for the handling and disposition of these unknown chemical contaminants.

Further, individual station operators fear potential health risks from handling jugs of unmarked oil left on their doorsteps over night.

(v) **Earlier Programs Have Had Mixed Success**

In 1987 Pollution Probe initiated the "Oil Drop Program" in Metro Toronto; an innovative test program for used motor oil recycling involving well over 100 service stations in the greater Toronto area. This program was a follow-up to the earlier Environment Canada project which recovered 60-80,000 litres from DIY's in a six-month test program. To participate, the DIY's simply drained their used oil into clean, sealable containers and returned it to a designated oil drop depot where the attendant assumed the responsibility for putting it into his holding tank and returning it to the recycler. The program had limited success, probably because of low funding, minimal publicity, lukewarm support from service station operators and limited interest from the local public. The program costs were very high for the relatively small amount of used oil recovered, netting out to about $2.00 per litre of used oil or over twice the original purchase cost of the new oil. The program did not receive a second year of funding and was discontinued in September 1988. The Recycling Council of Ontario has proposed a renewal of the program in response to growing interest from rerefiners, oil companies, retailers, government and environmental groups but it has not, as yet, commenced.

In parts of North America curbside collection of use oil is seen as a way to avoid the surprise liability of the unknown chemical. Advocates state there is less risk of foreign chemical contamination through curbside oil collection than there is in a depot type operation. Although the February 1988 OPA report on used oil is not optimistic about the success of either curbside collection or return-to-oil depot programs, they concluded that no other solution was evident and thus they recommended that industry support these programs. More recent experience with the "Blue Box" program in parts of Ontario indicate that expanding this curbside service to include used oils is very successful. Public awareness and support is high, around 80% participation, and only minor changes to the existing "Blue Box" facilities would be necessary to accom-

modate used oils. In the United States, too, support for curbside collection of used oils is rapidly expanding.

(vi) **Expanded Collection Systems Are Needed**

A February 1988 report by Monenco Consultants concluded that large scale collection systems to service rural areas, which are not as well served by collectors today because of the large cost of transportation, will require some form of collective development by oil suppliers, users and governments. They proposed a "Collection Authority" to administer the collection system from the individual sources of used oil through the return, collection, transportation and end use components. The Collection Authority would also ensure that environmentally acceptable handling and recycling procedures are utilized.

(vii) **Classification of Used Oil Impacts the Collection Practices**

Used oils are subject to more rigorously controlled handling and transportation practices than virgin oils because of their contaminants. Currently there is considerable debate about designating used oils as a hazardous waste. The American Petroleum Institute opposes such a designation, in the belief that most used oils are recyclable and the costs and liabilities associated with a hazardous waste designation would discourage the collection and recycling of these oils. Mohawk, who have had extensive experience in handling used oils in British Columbia under their special waste regulations, have reported that it is not an onerous issue and, indeed, the manifesting requirements can be helpful since they do not restrict collection and return but they do allow for checks upon abusers and sources of contaminants.

(viii) **Used Oil Recovery Will Vary With The Collection System Employed**

The mixed success of earlier programs has convinced the task force that the amount of used oil recovered will vary with the collection network employed. The more convenient the used oil return system, the higher the percentage of used oil recovery.

Although very subjective, the task force has estimated that selected public depots to service local communities, because of their relatively low convenience factor, will probably only recover between 30 to 40% of the available DIY used oils. This recovery rate could probably be increased to 40 to 50% by increasing the number of return depots; for instance, by installing them at every service station, fast lube outlet, retail lube oil sales outlet, car dealer, etc. However, this small increase in recovery rate entails a very large increase in investment and operating costs for the facilities, a cost not justified by the relatively small incremental recovery.

The task force believes that the successful "Blue Box" program, if expanded to include curbside pick-up of used oils, will recover at least 70% of the collectable DIY used oils at a much lower unit cost. Of course, not all communities are or will be served by a "Blue Box" program. Therefore the next best option, selected public return depots, must be used as the basic means of collecting DIY used oils, but with the flexibility to coattail on the "Blue Box" programs wherever they are rolled out.

RECYCLING, REUSE AND DISPOSAL OPTIONS FOR USED OILS

(i) Appropriate Outlets for Collected Used Oils Are Essential

There are two critical aspects of recycling: the first task is to capture the so-called waste and establish a secure supply; the second is to develop the markets for the recovered waste in either its original form or in recycled form. Today, in Canada, used oils are being recycled, reused, and disposed of in a variety of ways, some more environmentally acceptable than others. The most desirable alternatives either conserve the lubricating or petroleum properties of the oil or utilize its heating value; in all instances reducing the consumption of crude oils or other energy sources.

(ii) Definitions

For definition purposes, this report uses those contained in the CCME Code of Practice for Used Oil Management in Canada. "Recycling" includes alternatives which conserve the lubricating properties of the used oil while "Reuse" includes alternatives which utilize the heating value of used oil through approved methods of combustion. Disposal and destruction of used oil through incineration is not considered an acceptable disposition of used oil except in cases of contamination.

(iii) Some Current Uses for Used Oils Are Unacceptable

Used oils are being rerefined, reprocessed, burned as fuel, used as cutting stocks and extenders in the manufac-ture of asphalts, used for road oiling and dust suppres-sant, used as weed killers and livestock oils and other miscellaneous purposes, disposed by incineration, land-filling and landfarming and indiscriminately dumped into sewers, backyards, alleys, small pits, fields and drainage ways. Many of these options are, of course, unacceptable in terms of both their potential impact upon human health and upon our environment.

This ACTION PLAN recognizes the need to discourage and, indeed, prohibit some of these reuse and disposal options. Disposal of used oils by landfarming, sewer discharge and indiscriminate dumping should be prohibited as these options do not provide adequate control of environmental risk. Similarly, landfilling of used oil should be discouraged and restricted to only specially designed facilities under authorized hazardous waste landfill conditions. Most landfill operations today do not incorporate the features necessary to contain used oil contaminants.

In 1988, a study for the Ontario Ministry of Environment noted that the increased sensibility of society to environmental matters has raised questions about the acceptability of using waste oils as a road oiler or dust suppressant or as a fuel in many of the small space heaters in use today which lack appropriate environmental protection devices. Indeed, although used oil has been applied to gravel roads in Canada as a dust suppressant for many

years, its popularity is rapidly declining because of more restrictive environmental regulations and many provincial highways departments no longer use waste oils and discourage private contractors from doing so. This task force supports government initiatives to end the application of used motor oils as a dust suppressant on gravel roads.

(iv) ReRefining/Reprocessing Is An Excellent Outlet for Used Oils

The task force recognizes that governments and the general public have established a recycle/reuse priority which ranks rerefining/reprocessing as the preferred option. The CCME Code of Practice reflects this prioritization. The capacity of the existing facilities and their limited regional availability, coupled with the relatively high cost of these processes compared to other environmentally acceptable alternatives, may restrict their ultimate utilization across Canada.

Reprocessing and rerefining of used lubricating oils involves removing the contaminants in the used oils so that they are suitable for reuse either as reprocessed oils in industrial applications or rerefined lubricating oils which generally have fully restored the original usefulness of the oil. These options are desirable alternatives for the reutilization of used oils because they not only reduce the consumption of virgin oil products but they also conserve its lubricating value.

Rerefining of lubricants has seen major advancements in processing technology to today's sophisticated hydrotreating methods employed by the major rerefiners. These rerefiners play a principal role in collecting and recycling used oils in Canada and they produce good quality rerefined lubricating oil base stocks.

There are some limitations to the acceptance of rerefined lubricating oils in today's market. When it has been introduced into the consumer market in competition with virgin oils it has met some consumer resistance. Original equipment manufacturers have not approved rerefined oil for factory fill due to limited U.S. experience even though they generally agree that consumer use of such oils is not

a problem as long as the rerefined lube oil meets approved specifications. Most car manufacturers say that they encourage the use of properly qualified rerefined products as a means of conserving a vital resource. They warn that the use of any products, virgin or rerefined, not properly qualified could result in engine damage.

For the rerefined lubricants market to continue to grow in North America consumers need assurance that the use of properly qualified oils containing rerefined base stock is acceptable and that their new car/ truck warranties will be honored. This task force recommends that the original equipment manufacturers test more oils containing rerefined lubricants with a view to more broadly accepting them for use in their vehicles. The Federal Government's Environmental Choice Program, which recognizes rerefined oil as one of the first three commodities to be assigned the environmental choice logo, should help in overcoming past consumer resistance.

There are also commercial limitations to the use of rerefined base stocks that must be recognized. Some special quality lubricating oils with unique additive packages for applications will probably not be able to blend rerefined base stocks; the logistics of transporting rerefined base stocks from their source of production to the blending facilities of a lubricating oil manufacturer may make their use economically prohibitive; and there remains a significant resistance on the part of many consumers to use what they perceive to be inferior quality products in their vehicles.

Rerefining operations are not free from environmental impact risks either. By-product waste handling from rerefining generates significant environmental concerns. The dispositions of acid sludges, spent clays, process waste waters and other miscellaneous contaminants all require sophisticated treatment and/or special waste disposal.

(v) Refineries Provide Another Reprocessing Option for Used Oils

Although not specifically dealt with in the CCME Code of Practice, used oils may be reprocessed in oil refineries after appropriate removal of contaminants. This allows the recovery of the petroleum value of the used oils in various

refinery products including transportation fuels, asphalts and base oils, thus reducing consumption of crude oils. Further study of facility changes and investment is needed to develop and implement this option.

(vi) **Cement Kilns Present a Unique Opportunity for Used Oil as Fuel**

A unique application for the acceptable use of used oils as a fuel is in the cement industry. Used oil can be burned in cement kilns without any of the negative air quality impacts normally associated with burning used oil in smaller sized heaters. The energy value of these used oils can be recovered as fuel in cement kilns and the environmental and human health concerns can be satisfied by the required modifications for burning in the cement plant. These include special laboratory tests on the used oils to ensure compliance with specifications, construction of special used oil receiving, storage, blending and handling equipment and modification of the cement kiln's fuel injection system.

The Canadian Portland Cement Association estimates that all of the one million tons of organic industrial waste generated in Canada could be used to supplement the fossil fuels now consumed in their industry. Spent solvents and used lubricating oil can be burned in cement kilns for two reasons. First, the energy intensive cement production process has a built in economic incentive to substitute less expensive fuels whenever possible. Second, cement kiln temperatures exceed 2000 ^{o}C, a temperature sufficient to destroy the waste products completely.

The Canadian cement industry consists of eight companies which operate 20 plants with at least one installation in every province except New Brunswick and P.E.I.. Most of the cement plants have made the capital investment necessary to achieve fuel flexibility and select energy sources according to cost. The fact that cement plants are concentrated close to the industrial centers in Canada means that kiln capacity is well matched with waste oil generation. If, in 1987, the Canadian cement industry had replaced 47% of its conventional fuels with combustible hazardous wastes it could have disposed of 100% of the combustible hazardous wastes generated in Canada.

Energy recovery from used lubricating oils as fuel for cement kilns should be considered as an integral component of Canada's used oil reuse strategy. Three factors govern the selection of the wastes acceptable to cement kilns; the requirements of the environmental permit, assurance of employee and public safety, and assurance of uniform kiln operation and product quality. Waste derived fuels would not, of course, be burned during kiln start-up or upset. The benefits of burning such used oils in this manner include the replacement of equivalent imported or virgin fuels, the conservation of non-renewable resources by substituting used oils for new, the reduction in manufacturing costs through recovery of the energy value in the lower cost waste oils, the enhancement of the competitiveness of the Canadian cement industry, the reduction in capital expenditures required to site new disposal centres (it costs approximately 2 M$ to adapt a cement plant to burn such used oils whereas building equivalent incinerator capacity would cost about five times this amount), and a reduction in used oil transportation costs.

(vii) **Other Environmentally Acceptable Options Exist Which Use the Energy Value in the Used Oil**

The CCME Code of Practice for Used Oil Management in Canada has recognized that used oils can be safely burned in some of the larger industrial and utility boilers which are able to meet provincial environmental regulations. Such installations incorporate high combustion temperature, excellent combustion efficiency, approved pollution control equipment and procedures to ensure consistent fuel quality by weeding out highly contaminated oil sources. The burning of used oils in such facilities is supported if they pose neither environmental nor human health risks while recovering completely the energy value in the used oil and saving the equivalent volumes or virgin fuel oils or natural gas.

(viii) **More than One Outlet/Option is Needed in Each Region**

Earlier PACE studies recommended that its member companies support programs aimed at promoting recycling and reuse. However, they concluded that no one method represented the ultimate used lubricating oil solution. This task force agrees with that conclusion, recognizing that different re-

gions across Canada may have unique existing infrastructures that would give preference to different options.

PUBLIC AWARENESS

As with all recycling programs there needs to be more public awareness and education on the benefits of recycling used oils and the environmental implications of improper reuse or disposal. The CCME Code of Practice for Used Oil Management in Canada outlines the major components of such a Public Awareness campaign and recognizes the need to primarily direct it towards the "do-it-yourself" oil changers who must become better informed on acceptable disposal practices. The challenge is to create a "recycling mentality" that will encourage people to really care enough to act themselves on their own small volumes.

Some hold the view that the public will only react if you hit them in the pocketbook by either making it less attractive to do-it-yourself and indiscriminately dispose of the used oil or more attractive to bring it back. The September 1989 report on the Ontario "Blue Box" Program points out however that adoption of recycling behavior within the Program area was almost universal and concern with environmental deterioration has translated into self-directed behavior. Users appear to want information and encouragement to expand their activities. The public is now looking to government sources to come forward with more recycling options, more information on what the individual can do and more feedback on how successful their efforts have been to date.

Encouraging the public to collect and return used lubricating oils, however, cannot be successful unless there are first appropriate collection facilities conveniently located for their use. In the U.S. a number of states are developing used oil recycling programs with a strong educational component as well as a strategy that includes incentives for increasing the number of collection sites. Today, in Canada, there are relatively few facilities available to the DIY consumer. An integral component of this **ACTION PLAN** must, therefore, be the provision of properly controlled, publicly accessible, collection mechanisms for individuals to return their used oils. These should be clearly identified and advertised as Public Collection facilities.

An advertising campaign is deemed necessary to tell people about health risks associated with the handling of used oil and why their used lube oils should be collected and returned as well as where convenient collection facilities are located. Advice must also be provided on the proper collection and delivery procedures to be used by the individual do-it-yourselfer, including the recommended use of containers with child-proof caps to preclude inadvertent spills, etc.. Pamphlets for distribution at over-the-counter sales outlets and via other means to reach the general public could be useful as a form of information on proper disposal of used lube oils. The Recycling Council of Ontario have also found an Information Hotline to be an effective way of advising the public.

Public opposition can also act as a deterrent to the use of these used lubricating oils - particularly if they are given a high profile by being designated as hazardous wastes - in existing, environmentally acceptable reuse facilities, and in the siting of such new facilities as may be necessary. For instance, the Canadian Portland Cement Association states that public opposition is resisting the burning of high profile hazardous wastes in their cement plants despite the fact that test programs have clearly demonstrated the ability of the cement kiln operation to destroy the hazardous substances. Here again a public awareness and education program is necessary to persuade communities against this "not-in-my-backyard" reaction.

The CCME Code suggests that the education campaign also address the environmental and resource conservation benefits of used oil recycling and assuage general public fears that rerefined lube oil products are inferior to virgin lube oils. A major step forward in this regard would be the acceptance and use by Original Equipment Manufacturers of rerefined lube oils meeting all the required performance specifications as factory-fill.

INDUSTRY INVOLVEMENT

The CPPI recognizes that it must play a significant role in implementing and carrying out a program to manage used oil in an environmentally acceptable manner. The guidelines issued by the CPPI as recorded in this report have been adopted by all CPPI member companies and will be communicated to all employees and concerned parties.

The CPPI will take on a leadership role in the establishment and operation of the national program and in the implementation of the specific provincial programs. This will be done through the appointment of a full-time Used Oil Coordinator who will work for the CPPI and represent the CPPI and its members on the National and Provincial Committees. The Provincial Petroleum Associations will also be called upon to assist in Provincial Implementation.

Public awareness campaigns will be supported through point of sale information, labelling, and information distribution through company communication vehicles (e.g. credit card mailings, etc.).

CPPI members and many other private companies are currently involved in the collection and disposition of used oils. Where appropriate, this involvement will be extended to form the foundation for the expanded collection and disposition of used oil. It is important to recognize that a large quantity of used oil is currently being handled in an acceptable fashion and that the Used Oil Action Plan is designed to expand existing programs as well as to introduce new ones. The CPPI and its member companies will contribute significantly to the programs once the collection and disposition rules have been established through appropriate legislation.

GOVERNMENT INVOLVEMENT

(i) Governments Have a Significant Role to Play

The Canadian Petroleum Products Institute has recognized the petroleum industry responsibilities to ensure that used oil is managed in an environmentally acceptable manner, and they have unanimously adopted four guiding principles listed earlier in this report, which address those responsibilities. It is clear, however, that industry, by itself, cannot resolve the used oil problem. The scope of the solution is one which involves all parties who today make up our Canadian society. Government regulatory strategies are essential to support and enforce comprehensive used oil management practices.

(ii) Legislation and Enforcement is Essential

Increased recovery of used lubricating oils will only occur if there is effective enforcement of regulations prohibiting on-site disposal of used oils without a waste management systems approval or discharge of used oils to sewers, municipal landfills or other indiscriminate dumping. Many of the consumers who change their own oil today may not even know that they are doing something inappropriate or illegal when they dump their used oil or put it in the garbage to be taken to a landfill where it will leak into the soil. This task force supports legislative actions to encourage the return and collection of DIY oils and to protect human health and the environment from improper handling of such oils.

Governments cannot enforce new or existing regulations for the return and collection of used oils unless there is an effective infrastructure in place to accommodate this. Governments must therefore initiate actions that will encourage increased return and collection. Such actions could embrace a broad range of initiatives.

(iii) Governments Must Participate in Public Awareness Program

First, a public education program, probably requiring both government and industry participation, is necessary to encourage and/or compel small volume generators to return their used oil rather than indiscriminately disposing of it, and to understand the need to ensure that contaminants such as paints and solvents are not mixed with crankcase oil prior to its return. The mixing of hazardous waste components into used lubricating oils makes it no longer recyclable and must be prohibited.

(iv) Liability Protection is Needed for Public Collection Network

The most significant reason given by service station operators for refusing to make their used oil collection facilities available to the general public is their concern for their liability should their used oils become contaminated. A typical comment from station owners is "How are we going to handle the increasing liability of PCB's and other toxic

chemicals that might get into our tank?" In their earlier study, the Ontario Petroleum Association recognized this critical issue and suggested that governments must make allowance for alternate disposal methods and reduce the risk of liability as a result of such contamination for participants in a return and collection program. The American Petroleum Institute raises a similar concern for the used oil collector who provides a public service and may unknowingly receive contaminated used oil. Small business outlets such as service stations are not in a position to function as a regulator over the DIY who may have mixed his used oil with other hazardous waste. If service station operators or other businesses are expected to provide this public service then legislation must clearly provide that if a collector accepts tainted used oil in good faith that then makes such oil non-recyclable, the collector will not become subject to hazardous waste penalties and costs. Without such protection this collection option will not work. Indeed, it is rapidly diminishing in the U.S. because of this concern.

(v) All Players Must be Compelled to Participate

Ontario's Minister of Environment has stated that even with a cooperative voluntary program, legislative action will be needed to level the playing field and ensure fairness in the voluntary effort. To protect the majority of voluntary participants assistive legislation is required to ensure everyone participates. The minister subscribes to the "take back policy" - if you produce it, after it is used you must as an industry be responsible for taking it back or bringing it back into a useful resource recycling stream.

Recently the state of Massachusetts took steps to enforce a 1974 law which provides that all sellers of motor oil must have receptacles conveniently available for customers to dispose of their used motor oil. Although the law was on the books for 15 years, little was done about it and only the service stations, garages, etc., have had their own collection facilities. It is now being enforced in the broad field of mass merchandisers who normally sell three times the amount of new lube oils that service stations retail annually. If a retailer does not have receptacles available and properly maintained violators can be fined from $100-2500 a day for infractions. They have not as yet

addressed the issue of the individual oil purchaser. His participation in the return program is still voluntary and if he cannot be bothered returning his used motor oil, although the legislation requires that he must arrange for its legal disposition elsewhere, there is no teeth to enforce this. Recent information suggests that many outlets are choosing to stop over-the-counter lube oil sales rather than incur the costs and liabilities of providing the collection facilities.

(vi) **Program Subsidies are Needed to Encourage Non-economic Collections**

A number of parties have suggested that a "deposit program" be considered as a way to encourage the return of used oil. All over-the-counter sales of lube oils would include a significant deposit (perhaps 50 cents/litre) which would be refunded when the customer returned his used oil in appropriate, sealed containers. The task force does not encourage this approach because of the following considerations:

- Because of its partial consumption during use only a portion of the lube oil purchased by the customer is available for return.

- The deposit must be high enough to provide adequate incentive for return, but this will also provide an incentive for some individuals to abuse the system by diluting or contaminating the used oils to increase their returned volumes and hence deposit recovery. This will be difficult to police.

- Too many options can affect the integrity of the waste management programs currently in place. It is important for the consumer to receive a clear and consistent message.

At the current level of crude oil pricing, and indeed at the projected level throughout at least the next decade, there is little economic incentive for the collection and return of used lubricating oils. For instance, rerefiners today require their used oil feedstocks to arrive at their plant at close to zero cost in order to compete with virgin lube oil manufacturers. There is, therefore, no inherent economics to pay for the cost of collection and transporta-

tion. Collectors have found it necessary to cover their costs by charging the used oil generators for the services of picking up their used oil and transporting it to the appropriate places for reuse. The longer the distance for transportation, the higher the charge.

This lack of economic incentive has had two significant impacts upon current programs to encourage greater recovery of used oils. First, a number of generators, to save costs, have stopped collecting and returning their used oils and have found, presumably, other zero cost options for disposing of it, probably in less environmentally acceptable ways. Second, service station operators and others with their own used oil collection facilities have stopped accepting returned oil from the general public. They are prepared, as good citizens, to pay for the pick-up and removal of their own used oils generated in the course of their own business activities, but they are not prepared to pay for the cost of disposing of others' used oils.

Some form of subsidy appears needed to encourage the collection of more used oils. Ideally, the preferred system of subsidy would target the markets not now served by the used oil collection industry and would reflect the cost/distance relationship for transporting the oil to the reuse location. Some countries have already taken steps to address this issue through a special sales tax on all across-the-counter lube oil sales.

(vii) A Consistent, Nationwide Special Waste Designation is Proposed

There is a further area of government involvement, the classification and designation of used oils in relationship to the regulations for handling, transportation, storage, processing and disposal of hazardous industrial wastes. Used oil handling and disposal is controlled in Canada through provincial regulations and guidelines. Today these regulations and guidelines vary from province to province. Used oils contain a wide variety of contaminants, both organic and inorganic, some of which are persistent and some of which are carcinogens. Because of these concerns it is reasonable for governments to investigate the impacts, both environmental and economic, of implementing more stringent controls on the management of used oils. If used oils are to be designated as a special waste, as is

the case in a number of jurisdictions, then this should be applied consistently across the country and provisions made to protect the used oil collector who, in accommodating the public return program, may unknowingly receive contaminated used oil.

(viii) **Government Approval for a Variety of Reuse Options is Recommended**

Another issue requiring government direction is the identification of approved reuse options for used oils. This task force would encourage the preparation of a list of government approved uses and a similar list of those reuse or disposal options that are clearly not acceptable. This will provide the basis for any subsequent legislation or regulations supporting or prohibiting future used oil applications. A master list of licensed collectors/transporters would also be useful for directing used oil generators towards legitimate service companies.

PROGRAM FUNDING

(i) **The "Polluter Pays" Concept is Recommended**

The overriding philosophy for any funding program aimed at improving the environment is that ultimately the end-user of a product must pay for its proper disposition after the product has reached the end of its useful life. In a practical sense, if the end user is a business, then the costs of proper disposal of any product used by that business must be borne by that business. In practice, it will typically get resolved in the competitive marketplace between suppliers and customers; and done in an entirely acceptable manner as long as the competitive playing field is level via government regulatory measures - as is usually the case with most environmental related issues.

(ii) **The "Blue Box" Program is a Good Model for Government/ Industry Cost Sharing**

The "Blue Box" collection program that is being established across the country, primarily in urban areas, is an excellent example of a joint industry/government initiative to resolve a very broad complex environmental issue - speci-

fically the reduction of sold waste landfill and the recycling of a number of end-use consumer products/ packages. The Task Force felt there was a very strong parallel between the "Blue Box" program and the issue of used oil collection and reuse from the DIY and Farm/Rural lubricant use segments.

In that program, the capital infrastructure costs are shared among the industry supplying the "new" product and the provincial and municipal governments acting in their respective capacities on behalf of the local citizens. The ongoing operating costs of the collection and disposal program are borne entirely by the municipal government being the most direct representative of the "end-users" in a small definable geographic area. The Task Force felt this was an excellent parallel to the Used Oil collection and disposal issue for the DIY and Farm/Rural segments of the lube market.

(iii) Estimated Capital Cost of the Program

Based on the program described earlier, the total capital costs are estimated to be about 40 M$, spread over a five-year implementation period. The 1/3 industry share therefore would be about 15 M$ or roughly 3 M$/yr for five years. Given the nature of the capital investment, this might well be viewed as an ongoing capital requirement for new plus replacement equipment. Capital equipment would include such things as the selected depot collection tanks and related facilities, minor modifications to "Blue Box" trucks to hold jugs of used oil, etc. With sales of about 200 ML/yr of lubricants into these segments, this represent about 1.5 cpl. Companies would also be expected to use whatever means appropriate to help advertise and promote this "public" used oil return/collection and disposal system.

The term "industry" could have a range of meanings, going from a narrow definition of "all who manufacture/blend/ package finished lubricants" to a much wider definition of "all who retail finished lubricants." The Task Force felt that the narrow definition placed too great a burden on the manufacturers alone whereas the wider definition would be impractical to get all players to buy in and contribute their share. The Task Force therefore recommends that "industry" be defined as all those companies who sell their

own branded lubricant product - regardless of who actually manufactured it or which retail channels/stores it was eventually sold through. Each industry participant would be expected to contribute a proportionate share of the total funding based in theory on his share of his branded product sales in the DIY and Farm/Rural segments.

In practice, because it is not usually possible to define specific end-user destinations for many finished lubricant products, the Task Force felt that sales of 5 litre and smaller packages of branded product sold domestically would be a reasonable compromise to form the basis for determining each companies' prorata share of the total industry commitment. All companies could supply their sales figures to an independent outside firm, say one of the major accounting firms, to guarantee confidentiality of the information.

Industry firms would include not only the major oil company members of the CPPI, but also all other players with branded product in this market.

Although the details need to be worked out later, the Task Force expects that industry funding commitments would be made for each province and the prorata share for each company would be determined for each province. Funding commitments for each company would likely be determined annually based on the previous years sales.

It is hoped that all industry players - both members and non-members of the CPPI - will voluntarily support and contribute their share to this program. However, it is recognized that some regulatory encouragement may be required to ensure a level playing field.

(iv) **Estimated Operating Costs for the Program**

The total program operating costs for both "Blue Box" and selected depots combined are estimated to be:

- Handling/Collection	$ 5 M/Year
- Transportation	$10 M/Year
- Contaminated Oil Disposal	$ 3 M/Year
- Public Awareness	$ 7 M/Year
- Administration	$ 5 M/Year
	$30 M/Year

As with "Blue Box," the full operating costs of this program for Groups 1 and 2 should be borne by the provincial/municipal governments. Given the overall concept of "polluter pays," we strongly recommend that the governments fund these operating costs via a levy on all sales of finished lubricants as discussed earlier in the body of this report.

APPENDIX II

PUBLIC COLLECTION SYSTEM - ANALYSIS OF ALTERNATIVES

(i) A Cost-effective Public Return Network is Required for Groups 1 and 2

The do-it-yourself oil changer (Group 1) is the largest used oil generator market sector not now being properly serviced. Governments and waste management experts recognize this as a high profile issue - it is the major source of used oils dumped into Canada's sewer systems and landfills. "Convenience" is critical to capture the DIY used oils. Public education is urgently required so that individuals can both understand the importance of proper used oil management and be made aware of where and how their used oils should be returned. In addition, the farm, rural, remote market sector (Group 2) poses similar problems and environmental threats. They, too, require convenient locations for return of their used oils. In both instances government involvement is essential.

The task force has assessed various options for providing convenient return facilities for these market sectors. All are costly, some more than others, with varying probabilities of success.

(a) Provision of public return facilities at all full-serve stations, car agencies, fast lube outlets and retail outlets for lube oils.

- The task force has estimated that a minimum of 20,000 such depots must be provided across Canada at an average cost of $5-10 thousand per depot, representing a total capital investment of between $100-200 million.

- The ongoing operating costs of these depots is estimated at a minimum of $500/site/year for a total cost of over $10 million/year.

- The estimated recovery of collectable used oils from the Groups 1 and 2 sectors through this option is estimated at between 40 to 50%, giving a probable recovery of about 65 million litres per year.

(b) Provision of Selected Public Depots to Serve Local Communities

- To save capital investment the task force evaluated the alternative of providing selected depots in all communities, within reasonable distance of the individual generator who would still find it reasonably convenient to return his used oil.

- The task force has estimated that at least 3-4000 of such depots would be required in Canada. These would be of larger capacity than in alternate (a) but separated more widely throughout the country.

- The task force has estimated the cost of these larger depots to average $10 thousand per depot, giving a total capital investment of about $40 million.

- The ongoing operating cost of these larger facilities is established to be a minimum of $10,000 per site per year, for a total cost of $3-4 million per year.

- Because of the reduced convenience of these depots the task force has estimated the recovery of the collectable used oils at between 30 to 40%, giving a probable recovery of about 50 million litres per year.

(c) The "Blue Box" System Appears Most Suitable in Major Urban Areas

- The recent success of the "Blue Box" programs in those communities where it is established suggests that an extension of the system to include curbside pick-up of used oils will be effective.

- The task force has estimated that over the next five years the "Blue Box" program will be rolled out through most of the major urban areas of Canada, providing curbside access to about 75% of the total Group 1 generators. The expected roll-out program is outlined in Table 1 of this Appendix.

- The task force has estimated the investment costs associated with coattailing used oil collection onto the basic "Blue Box" programs will total about $20 million, spread over the next five-year period.

- There will also be significant ongoing operating costs for the program to cover the handling and collection, the transportation, potential contaminated oil disposal, public awareness programs and administration. The task force has estimated this to be between 40 to 50 cents per litre of used oil recovered.

- Because of the better curbside convenience the task force estimates that recovery of the collectable used oils will be between 70-80%, giving a probable recovery, by the end of year five, of about 40 million litres per year.

- To improve the safety and general "housekeeping" of this return medium the task force proposes that all lube oil vendors market their 4 and 5 litre containers with "child-proof" caps and that the public education program clearly advised the public to use only such containers for the return of their used oils.

(ii) A Combined Network of Selected Public Depots, for those Areas not Serviced by "Blue Box," Plus "Blue Box" in the Major Urban Areas is Recommended as the Most Cost-Effective Option to Serve the Whole Country

- In addition to the requirements outlined in (c) above the task force has estimated that at least 2000 selected public depots will be required. At an average capital cost of $10,000/site this requires a total investment of about $20 million.

- The ongoing operating costs for these depots is estimated to total a minimum of $2 million/year.

- The estimated recovery at these depots, because of the reduced convenience is estimated to be between 30-40%, giving a total recovery of used oil at these depots of about 30 million litres per year.

- When combined with the urban "Blue Box" program the total capital costs are estimated to be about $40 million, spread out over a five-year implementation period.

- The total program operating costs - for both "Blue Box" and selected depots combined are estimated to be:

o handling/collection	5 M$/year
o transportation	10 M$/year
o contaminated oil disposal	3 M$/year
o public awareness	7 M$/year
o administration	5 M$/year
	30 M$/year

- As explained earlier in the report, the task force suggests that the funding formula that has been successfully developed for the "Blue Box" program be adapted to this program.

Capital

- Industry's 1/3 share = $10-15 million spread over five years, or about $2-3 million per year on average.

- Provincial and municipal governments will each provide similar capital funds.

- Assuming that total lube oil sales to Groups 1 and 2 equals about 200 million litres per year this represents a one-time cost to industry of about 1⅓ ¢/litre on their annual sales, and to governments a total one time cost equivalent to about 3 ¢/litre on these annual sales.

Operating Costs

- Should the government choose to find these costs via a special levy/tax on these over-the-counter sales (similar in concept to the Ontario tire sales tax) this would require about 15 ¢/litre. Of course governments may choose to modify the tax

base to more closely approximate the true Groups 1 and 2 users and the per litre levy/tax could range up to 50 ¢/litre to cover both capital and operating needs. Governments may also choose to consider a tax relief mechanism for those sectors using packaged lubes who collect and return their used oils outside of the public collection system.

- It will be necessary, in this preferred option, to closely monitor the progress of the expanding "Blue Box" programs across Canada and the success of extending them to include curbside pick-up of used oils. A fallback position lies in the increased use of the selected public depot network. The total capital and operating costs for this option will remain much the same although the percentage of recoverable oil will be less.

- While access to these selected public depots is intended for the individual used oil generators in Groups 1 and 2 who otherwise have no feasible means to return their used oils and who, ultimately pay for this program by the special levy/tax on the over-the-counter purchases of their lube oil packages, it may also be deemed appropriate to make the facilities available to small industries in Groups 3 and 4 whose total used oil volumes are too small to justify installing their own collection facilities.

APPENDIX II

TABLE 1

USED OIL ACTION PLAN REPORT

BLUE BOX PROGRAM

- Current Status - In Place or Planned in 1990
  - Metro Toronto/Other Ontario Communities (1.8 Million Households)
  - Montreal Urban Community
  - Quebec City
  - Victoriaville
  - Fredericton
  - Edmonton
  - Victoria Region
  - Halifax/Dartmouth
  - Vancouver
- Expect Roll-Out

- Five Regional Projects in N.B.	1991
- Winnipeg	1991
- Saskatoon	1991
- Regina	1991
- Calgary	1991
- Most Ontario Municipalities	1992

- By End of '94 Expect Blue Box to service 4.5 Million Households

SOURCE: OMMRI Consultant (1990)

APPENDIX 11

TABLE 2

SUMMARY OF EXPECTED PROGRAM RECOVERY OF USED OIL

	M Litres
Total Estimated Potential Recovery:	
- From Groups 1 and 2	140
- From Groups 3 and 4	285
	425
Approximate Recovery Today:	
- From Groups 1 and 2	25
- From Groups 3 and 4	150
	175
This ACTION PLAN Should Increase Recovery to:	
- From Groups 1 and 2 (70%)	95
- From Groups 3 and 4 (90%)	255
	350

APPENDIX III

CURRENT SITUATION - REGIONAL USED OIL REUSE OPTIONS

Using the list of "acceptable reuse options" contained in the CCME Code of Practices for Used Oil Management in Canada, the task force has attempted to assess the situation regarding their current availability on a regional basis. The focus is whether the reuse option physically exists or not; it does not address whether current regulations or facility modifications permit the use of used oil in these existing outlets at the present time. In many instances, it will require new or modified regulations to permit their use or to encourage owners to make the necessary modifications to adapt their facilities for used oil.

(a) Atlantic Canada:

(i) Newfoundland

- With a potential recovery of only about 2 M litres per year of used oils it will be difficult to justify significant local investments to utilize used oils.

- The following potential outlets exist today:

  - o Come-by-Chance Refinery
  - o Cement Kiln
  - o Major industrial burners - pulp and paper
    - power plants.

(ii) PEI/NS/NB

- A potential annual recovery of about 22 M litres should be sufficient to support the development of local used oil reuse options.

- Indeed, in recent years there was consideration given to a potential rerefining plant in the region. This seems to have been shelved at present.

- The following potential outlets do exist today:

  o Oil Refineries:

    Irving Oil - St. John, N.B.
    Esso - Dartmouth, N.S.
    McColl-Frontenac - Dartmouth, N.S.

  o Cement Kiln - N.S.
  o Major Industrial Burners - Power Plants
    - Pulp and Paper Plants

(b) Quebec:

- A potential annual recovery of about 62 M litres should sufficient to support the development of local used oil reuse options. Only a portion of this is being recovered today and virtually all of that is being transported out of Quebec for reuse/rerefining elsewhere; e.g. Ontario.

- The following potential outlets do exist in Quebec today:

  o Oil Refineries - Petro-Canada - Montreal East
    - Shell - Montreal East
    - Ultramar - Quebec City

  o Cement Kilns

  o Major Industrial burners.

- A proposed Municipal Waste Combustion Plant to generate both steam and power is under consideration in Montreal East. Such a facility would be very suitable for employing used oil as one of its fuel sources.

(c) Ontario:

- Today, Ontario has a significant used oil rerefining capability in the Breslube and Oil Canada facilities. About 60% of the present feedstock to the Breslube plant is imported from the U.S. and Quebec. However, even if all the existing rerefining capacity was devoted to Ontario used oil, the total recoverable annual volume of about 215 M litres is greater than these plants could absorb.

- The following potential outlets - in addition to the re-refiners mentioned above - exist today:

  - o Oil Refiners - Sarnia: Esso
    Sunoco
    Shell

    - Nanticoke: Esso
    - Toronto area: Petro-Canada

  - o Cement Kilns

  - o Large Industrial Burners:
    - Power Plants
    - Pulp and Paper Plants
    - Steel Plants
    - Other

(d) Prairie Provinces:

(i) Manitoba

- A potential annual recovery of about 15 M litres of used oils should be sufficient to support the development of local reuse options.

- Today the most likely outlet would appear to be the cement kiln in Winnipeg.

- Other large industrial burner outlets exist and should be explored as potential used oil consumers.

(ii) Saskatchewan:

- A potential annual recovery of about 21 M litres of used oils should be sufficient to support the development of local reuse options.

- The following potential outlets exist today:

  - o Oil Refineries - Regina

  - o Asphalt Plants - Moosejaw

  - o Cement Kiln - Regina

  - o Large Industrial Burners:
    - Power Plants
    - Other

(iii) Alberta:

- A potential annual recovery of about 48 M litres should support the development of more local reuse options.

- Today, several reprocessors operate facilities for for used oils: e.g. Turbo - Edmonton
  Hub - Calgary

- Other potential outlets also exist today:

  o Oil Refineries: - Edmonton - Esso
  - Petro-Canada
  - Shell

  - Bowden - Parkland
  - Balzac - Turbo

  o Cement Kilns - Edmonton
  - Exshaw

  o Large Industrial Burners - Power Plants
  - Other

  o Asphalt Refinery - Lloydminster

- In recent years there has been some consideration given to new rerefining facilities although this currently seems to have been shelved.

(e) <u>British Columbia</u>

- A potential annual recovery of about 40 M litres exists. Much of this is presently being recovered and processed at Mohawk's rerefining facilities in N. Vancouver. We understand that plant may have debottleneck potential to handle the majority of the recoverable used oil.

- Other potential outlets also exist today:

  o Oil Refineries: Vancouver area:

  - Esso - IOCO
  - Petro-Canada - Port Moody
  - Shell - N. Burnaby
  - Chevron - N. Burnaby

  Prince George - Husky
  Taylor - Petro-Canada

  o Cement Kilns - Lower Mainland
  - Kamloops

o Large Industrial Burners - Pulp and Paper Plants
- Others

(f) NWT/Yukon

- With a potential annual recovery of only about 1 M litres it will be difficult to justify significant local investments in used oil reuse facilities. It appears more appropriate to pursue local outlets in small commercial and industrial fuel markets, encouraging improved pollution protection investments as appropriate and/or perhaps developing a used oil/new fuel oil blending operation that will provide an environmentally acceptable fuel to these facilities.

FURTHER WORK IS REQUIRED TO MAKE THESE REUSE OPTIONS AVAILABLE

The task force recognizes that further work is necessary to encourage the development of these identified, potential options so that they can be made available to utilize the additional volumes of recovered used oils. The task force recommends that this be made one of the priority responsibilities of the Provincial Implementation Committees. It will require a concerted, joint effort of government and industry to put it in place but it is essential to the success of this Used Oil Action Plan. The CPPI member companies and the Provincial Petroleum Associations are prepared to work with governments and industries to encourage the development of these reuse options.

APPENDIX IV

PRELIMINARY EVALUATION OF SOME POSSIBLE REUSE OPTIONS

	REREFINING	REPROCESSING	CEMENT KILNS AND HEATING FUELS	INCINERATION	DUMPING
Is it environmentally acceptable?	- Yes - Requires environmental treatment of plant by-products	- Yes - Acid sludge by-products may be disposal issue	- Yes - If proper flue gas pollution devices are used	- Yes - In approved waste incineration facilities	- No
Does it meet sustainable development objectives?	- Yes - Retains lube properties - Replaces virgin oils	- Yes - Retains lube properties - Replaces virgin oils	- Yes - Recovers heating value - Replaces virgin sources	- No - Simply burns to eliminate	- No
Is it cost-effective?	- Can be but needs relatively high capital investment and high operating costs	- Can be but involves significant capital and operating costs	- Yes - Needs modest capital - Relatively minor operating costs	- No - Very costly operation	- Zero cost to used oil generator
Is it readily available?	- Only in a few locations in Canada - Major capital commitments and long lead times involved in expanding into rest of Canada	- Only in a few locations - Limited scope for expanding into other areas	- Potential exists across Canada - Relatively short times to implement depending on government approvals	- Only in few locations in Canada	- Widely practiced today
Is it publicly acceptable?	- Widely supported but there is still considerable consumer resistance to purchase rerefined lube oils	- Generally accepted by public, governments and industries	- Risk of NIMBY reaction - Perceived as "incineration" in some quarters	- In government approved waste incineration facilities	- No