THE OPERATIONAL, HUMAN RESOURCE AND FINANCIAL IMPLICATIONS

OF

THE PRIVATIZED HIGHWAY MAINTENANCE PROGRAM

OF THE

PROVINCE OF BRITISH COLUMBIA

A PRELIMINARY REPORT

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THE TERMS OF REFERENCE FOR THE PRELIMINARY REVIEW

In July 1993 a multi-disciplinary review team was appointed to perform a preliminary review of the Province's privatized highway maintenance program.

The review was intended to address the operational, human resource and financial implications of the privatization of road and bridge maintenance activities in British Columbia

The results of the review were intended to include recommendations about whether a public inquiry into the matter was required. Also, the review was intended to identify what other service delivery options should be considered for the future.

OVERVIEW OF THE ORIGINAL HIGHWAY MAINTENANCE PROGRAM

The original highway maintenance program of the Ministry of Transportation and Highways consisted of a de-centralized work force managed out of 37 District Highway Offices throughout the Province.

Ministry owned machinery, equipment, vehicles and supplies were used by the District road and bridge crews to perform the necessary maintenance services. The Ministry also operated machine maintenance facilities at each District, to maintain the vehicles and equipment.

In total, highway maintenance cost about $219 million in 1987/88, depending on the accounting approach taken, in the last year before privatization.

Prior to the privatization initiative, no significant issues had been raised to suggest that the original program was deficient or inordinately expensive.

THE MEANING OF PRIVATIZATION

The privatization initiative was implemented by creating 28 contract areas throughout the Province, in place of the original 37 Highways Districts. Substantially all of the responsibilities for maintenance work managed at the District level were then incorporated into separate contracts for each new contract area.

Individual contractors were retained through a tendering process and the original work force of the Ministry was dismantled and re-constituted as employees of the new contractors.

Substantially all of the Ministry's equipment was also transferred to the control or ownership of the contractors. Similarly, yards belonging to the British Columbia Buildings Corporation were leased directly to contractors.

THE RESULTS OF PRIVATIZATION TO DECEMBER 1993

To date, continuity of maintenance services has been achieved as the result of privatization. New results-oriented standards have been implemented and the Ministry has been down-sized dramatically by the removal of the highway maintenance work force at the District level.

THE OPERATIONAL IMPACT OF PRIVATIZATION

There is little consensus on the issue of whether the Province's highway infrastructure is being protected adequately under the privatized program or whether overall levels of mission critical services are being obtained in a manner which is reasonably comparable with the outcomes of the Ministry's original program.

Notwithstanding the new results oriented standards for highway maintenance, inconsistencies in administration, service delivery and priorities appear to be significant issues. There are important suggestions from the Ministry that some mission critical activities are not being performed to an appropriate standard while more visible work activities are being over emphasized.

Ministry officials agree that increased levels of highway 'rehabilitation' are definitely required, irrespective of the outcome of privatized highway maintenance.

Modifications to the new standards may be required to properly reflect priorities, eliminate unnecessary work, identify quantities of mission critical work required, enable proper contract administration procedures and permit greater flexibility.

Constraints built into the privatired maintenance contracts for employment and community development purposes work to prevent the contractors and the program from achieving cost savings. The removal of these constraints would likely have serious, undesirable consequences for sub-contractors and local communities. This conundrum must be addressed for the program to be considered sustainable.

Resolution of these issues is required at no net cost to the Province in relation to the original cost profile of the Ministry and the current fiscal requirements of the government

Stakeholders will have to co-operate and innovate to address these issues.

THE HUMAN RESOURCE IMPLICATIONS OF PRIVATIZATION

The current policy of guaranteeing employment offers to existing employee groups appears to limit contractors' abilities to manage their affairs in a way which contradicts the notion that free enterprise is a feature of the contracted highway maintenance program.

However, the review team considers this policy to be essential in maintaining the necessary standard of continuity and quality of service on the Province's highways.

Also, the review team considers this policy to be essential for maintenance workers, their families and their communities to have a reasonable standard of social and economic stability.

This conundrum must be addressed for the privatized program to be considered sustainable.

Beyond this, there is no evidence that proper training is being done to assure a future supply of skilled maintenance workers.

Also, Province wide bargaining might be requited to ensure a balanced bargaining structure.

Resolution of these issues is required at no net cost to the Province in relation to the original cost profile of the Ministry and the current fiscal requirements of the government.

Stakeholders will have to co-operate and innovate to address these issues.

THE FINANCIAL AND ECONOMIC IMPLICATIONS OF PRIVATIZATION

There are strong indications that the cost of the Ministry's privatized highway maintenance program has exceeded the cost profile of the Ministry's original program by significant amounts in every year since inception.

Although claims about cost savings resulting from the program have been made in the past, these claims stemmed from projections and estimates about the future and were not based on a detailed accounting for, or review of actual costs incurred.

The increased costs described above are not readily quantifiable in precise terms. However, it appears that increased costs averaging $15 million per year measured in 1988/89 constant dollars, or $ 19 million per year measured in 1992/93 constant dollars may have been incurred since inception. These increased costs could possibly have totaled more than $100 million to date, and may continue to accumulate unless changes are made.

Excess costs of this magnitude are not justifiable in relation to the results which were possible with the Ministry's original program. Indeed, if as much effort and financial resources had been invested in simply improving the Ministry's original program instead of 'privatizing' it in its current form, it is very likely that significantly different outcomes and costs would have been the result. The actual costs do not therefore appear to be consistent with due regard for efficiency, economy and effectiveness in the public sector.

Since the privatized program is based on fixed price contracts for three year terms, the program also appears to impair the government's overall abiity to exercise annual fiscal control over Ministry expenditures.

Insofar as the cost of highway maintenance contracts now approaches $1 billion for each successive three year term before considering the cost of necessary administrative infrastructure, the Ministry must now undertake whatever research, planning and financial analyses are required to properly establish an appropriate benchmark for highway maintenance costs in the future.

In so doing, the cost of achieving long-standing employment and community development objectives will also have to be addressed along with other current government priorities.

The Ministry must then take whatever steps are necessary to limit the full cost of the program to no more than the benchmark level, by employing whatever service delivery models are needed to conaol costs properly while achieving the overall set of objectives set for the program. At that time, undue reliance should not be placed on one service delivery model over another.

As well, the Ministry should establish a process of public accountability for these steps and the program as a whole, so that the public has valid assurances about the value for money achieved in the Province's highway maintenance program.

THE FINAL OUTLOOK OF THE REVIEW TEAM

A full public review of the Province's privatized highway maintenance program is not necessary because it seems clear that the program is not cost efficient in relation to the Ministry's original program. Further inquiry may be necessary to assess the operational suengths and weaknesses of the current program in specific areas and communities.

Privatization was a politically mandated program which would not have been implemented in its current form if adequate research, impartial analysis of alternatives and careful re-engineering of maintenance processes had been performed before the decision to privatize the program had been made.

Notwithstanding this, the review team does not support the option of simply reversing the privatization initiative by returning to the Ministry's original method of operation because this simple reaction would likely give rise to yet another round of excess expenditures. Also, continuation of the existing program is essential in the short term to maintain continuity of service and treat stakeholders fairly.

Before making any changes, the Province must first establish appropriate budgetary levels for highway maintenance by taking into account the full cost of service delivery and administration, the Province's original cost profile for the same, best practices in the industry today and an integrated approach to planning and obtaining the essential levels of both highway maintenance and rehabilitation.

Once the appropriate budgetary levels are set, changes and improvements to the privatized model must be implemented to contain the level of relevant costs within these budgetary levels while achieving the essential levels of service delivery.

The changes and improvements must not be based on simple philosophical arguments about the public or private sectors, but must be based instead on valid analyses and persuasive evidence that the changes will actually achieve real cost reductions in relation to the current expenditure profile of the Ministry.

Once these changes have been made, the effectiveness of the results should be evaluated, quantified and reported in a manner which is susceptible to independent verification.

In summary, a deliberate strategy of innovation, process improvement and cost reduction must be explored within the parameters of the existing program because verifiable cost reductions must be achieved to overcome the financial and other difficulties identified in this report

If these objectives cannot be achieved within the privatized model, then more extensive interventions will have to be undertaken to return the relative cost and operational stability of the Province's highway maintenance program to sustainable levels.

In these circumstances, the first set of interventions which should be taken would be the steps necessary to dramatically increase the Ministry's direct and immediate control over both the nature and extent of individual highway maintenance activities at the local level, and the costs being incurred. Then, the Ministry would have to move agressively to contain costs within the budgetary levels described above, while achieving the appropriate levels of service delivery.

In any option, monitoring and accountability for the cost and effectiveness of the Province's highway maintenance program will be essential on an ongoing basis to ensure that the trends described in this report are reversed and highway maintenance services are delivered in the Province with due regard for efficiency, economy and effectiveness.

INTRODUCTION

BACKGROUND

In November 1991, the then Minister of Transportation and Highways, the Honorable Art Charbonncau announced his intention to undertake. "a thorough review of the privatized road and bridge maintenance program to ensure that the taxpayers of British Columbia are getting good value for their dollars and that high standards of service are maintained."

In July 1993, a multi-disciplinary review group was struck by the Minister to conduct a preliminary review of the road and bridge maintenance program. The purpose of this first review was to provide the Minister with an independent perspective on the cost effectiveness of the program and to assist him in determining if a further expanded public review was necessary or if the government should proceed with renewal and re-tendering of the Phase 3 contracts.

THE REVIEW TEAM

The review team consisted of five individuals brought together to address various aspects of the review.

The Team Leader for the review was Mr. Peter Burton. Mr. Burton recently completed an assignment as Counsel to the 1993 Commission of Inquiry into the Public Service and the Public Sector.

Mr. Burton assumed responsibility for reviewing many of the human resource issues stemming from the privatization initiative.

To assist with the operational review, Mr. Robert G. Harvey was approached and agreed to participate. Mr. Harvey had spent much of his working career as an official in the Ministry of Transportation and Highways. Mr. Harvey had retired as the Deputy Minister of the Ministry well before the privatization of maintenance services began.

The firm of Ernst & Young was retained to conduct financial analyses of the privatization program. Ron Parks, a Forensic Accountant from the Vancouver office of Ernst &Young and Kelvin McCulloch, a Principal in the public sector audit and advisory services practice of the Victoria office undertook the management of responsibilities. Sarah White Harvey, a Senior Staff Accountant in the Victoria office of Ernst & Young also assisted.

The results of Ernst & Young's financial analyses are reported in the section of this report entitled The Financial and Economic Impact of Privatization'.

Finally, Robert Whitelaw was assigned to the engagement at the request of Peter Burton, to assist with some of the research requirements. Mr Whitelaw was employed by the Office of the Comptroller General of the Province of British Columbia and had assisted Mr. Burton with research assignmenu in connection with the Commission of Inquiry into the Public Service and the Public Sector.

TERMS OF REFERENCE

GENERAL OBJECTIVE OF THE REVIEW

INTRODUCTION

The general objective of the review was to analyze the operational, financial and human resource implications of privatization within a limited time frame using Ministry resources and with limited contact with contractors and others having a direct interest in road and bridge maintenance.

The Minister indicated a desire to discuss the results of the preliminary review with the stakeholders before deciding on a continuation of the status quo or on a further comprehensive review.

SPECIFIC REQUIREMENTS FOR ERNST & YOUNG

To assist with the general review objective set out above, specific terms of reference were established for the Ernst & Young team members, as follows;

1. The Contractor will provide financial analysis as part of a team conducting a preliminary review of the financial, technical maintenance, and human resource consequences of the decision in 1987/88 to contract with private companies for the provision of highways road and bridge maintenance services. This will include an evaluation of the costs associated with alternative service delivery models.

2. As a major part of this preliminary review team, the Contractor will perform a financial analysis of the following:

   (a) the cost of highway road and bridge maintenance services prior to 1988 compared to the provision of these services post-1988, including the costs associated with the privatization process;

   (b) the estimated cost of providing these services from 1994 and thereafter by a continuation of contracting compared to the estimated Cost of providing these services through a public agency such as the Ministry of Transportation and Highways; and

   (c) the cost benefits, if any, to be achieved through alteration of the current contract areas and through changes in the contracting methodology, including an extension in the terms of contracts.

3. The Contractor, as part of the team, will make recommendations to the Minister of Transportation and Highways respecting the continuation of the use of contracted road and bridge maintenance services, and, where appropriate, changes to the current method of contracting.

4. As part of this review, tbe Contractor will develop information that will assist the Minister in undertaking a public and stakeholder review of the provision of contracted road and bridge maintenance services.

Over the course of the engagement, the focus of the review team narrowed because there were early indications that the financial results of the program contradicted general expectations about cost savings to date. The review team therefore concentrated on estimating whether the privatization program had achieved any real cost savings relative to the Ministry's original program.

The review would not therefore report in detail on the estimated cost of providing the services in 1994 and future years, nor would the issue of altering contract areas or methodologies be considered in significant detail.

THE PHILOSOPHY OF THE REVIEW TEAM

The review was to be conducted in an unbiased and impartial manner.

The review team maintained one strict philosophy throughout the engagement. On behalf of the taxpayers and the citizens of the Province of British Columbia, the team would seek to evaluate the outcome of the privatization of road and bridge maintenance services without reference to any particular belief system or predisposition.

To do so, the review team rejected any particular philosophy about one sector of the economy being more capable of providing government services than another and set out to fairly analyze the outcomes of the 'privatized' maintenance program critically, using proper analytic methods, appropriate evidence and sound judgment

In conducting the review the team sought to consider proper standards of financial management, stewardship of public assets and public sector accountability.

The team had only one overriding concern, to form a fair and balanced set of opinions about the operational, human resource and financial implications of privatized road and bridge maintenance services, to be able to advise the Minister of Transportation and Highways on the matter of a public inquiry and the future of the program.

THE REVIEW PROCESS

The review was divided into three broad topics, operational issues, human resource issues and financial issues. Except in the financial area, the team had neither the resources nor the time to fully evaluate the positive and adverse aspects of privatization. In the operational and human resource areas, the team attempted to determine if there were any issues that appeared to be sufficiently compelling to direct the Minister to a particular conclusion.

In the financial area, the review team undertook a more detailed analysis of the consequences of privatization on government expenditures. The accountants from Ernst & Young evaluated the Ministry's original projections against the actual experience of government since privatization. This evaluation was conducted in the context of overall Ministry expenditure for maintenance and rehabilitadon and not only against contractor expenditure.

The review team had access to Ministry and government files relating to privatization. The team interviewed a number of Ministry employees at various levels of the Ministry hierarchy with respect to the issues that were raised.

The team met with representatives of the B.C. Roadbuilders Association on behalf of the contractors and with representatives of the B.C. Government Employees' Union, which represents employees in 24 of 28 contract areas.

LIMITATIONS OF THE REVIEW

In relation to the immense sii of the Province's highway maintenance program, both before and after privatization, the scope and depth of analysis planned for tbis preliminary review were very limited. Although every effort was made during the review to identify all the key considerations which needed to be addressed, and substantial progress was made, the extent of the resources actually needed to do so fully far exceeded the budgets of time and other resources available.

Some aspects of the review simply had to be de-emphasized in favour of others. Also, the quality of information and evidence brought to bear on particular issues did not always meet the review team's normal standards for research or analysis. These limitations were to be expected. This was. after all, a preliminary review from which recommendations about further inquiry were intended to be developed.

The review team deliberately narrowed its focus over the course of the review, to allocate more resources in certain areas. This was done on the basis that the most pervasive, relevant and significant issues had to be looked at more carefully.

The team determined very quickly that the most significant considerations to be addressed stemmed from the need to assess the financial and economic outcomes of privatization. Early in the review, some of the preliminary cost analyses performed by the team yielded unanticipated results which suggested that the overall cost for highway maintenance was actually much higher after privatization. Although the team had a mandate to address the operational and human resource outcomes as well, these considerations became secondary to the issue of reviewing the overall cost to the Province of highway maintenance after privatization.

Even though the team narrowed its focus to tbe financial outcomes of privatization, the research and analysis in this area was still limited in comparison with what would be appropriate for a full review. The Ministry of Transportation and Highways had not implemented an accounting or tracking *system* to enable direct comparisons of the annual cost of the newly privatized program and the Ministry's original program. The work required to perform such comparisons validly was therefore very difficult and not fully achievable within the limitations of a preliminary review.

Also, the Ministry had not undertaken any trend analyses or other internal studies to critically evaluate the actual cost of highway maintenance after privatization. Although a substantial amount of work had been done on estimating pre-privatization costs and projecting future savings, virtually no work had been done to critically analyze or explain in detail the actual cost outcomes at the Disnict office level, or at other levels in the Ministry, year by year. Therefore, the difficulties in making valid comparisons and avoiding 'apples vs. oranges' problems had not been addressed by the Ministry prior to the review and relevant information was not readily available to the team

Lacking these items, the preliminary review team attempted to obtain the appropriate information to make 'apples to apples' comparisons possible. This was time consuming and, to be fully successful, would have required a more intense effort on the part of the Ministry. As it was, Ministry officials co-operated fully in meeting the requests of the review team, These requests were limited to what would be consistent with a preliminary review, not an exhaustive inquiry. As a result, a degree of uncertainty necessarily remains with respect to the financial outcomes.

A third factor also confounded the comparative analysis of pre- and post- privatization highway maintenance costs. Simply put, the Ministry had undertaken a number of other major changes in the period of privatization and afterwards. Significant down-sizing had occurred in connection with the Ministry's ERIP, or early retirement program. More importantly, the Ministry had re-organized at the Headquarters and Regional levels, to shift resources to the six Regions in the province. This 'regionalization' was, in some sense, a natural extension of the privatization initiative, reflecting an overall snategic re-alignment of the Ministry as a de-centralized, consensus-oriented, client service driven organization. Unfortunately, the regionalization effort also made trend and comparative cost analyses at the Headquarters and Regional levels virtually impossible.

Changes also occurred in the period of privatization at the District level. In particular. the Districts' responsibilities for administering 'development approvals' increased, in part as the result of significant increases in development activity, and in part because of the de-centralization of decision-making inherent in the Ministry's overall program of regionalization. As a result, some cost increases did occur at the District level which were not attributable to privatization. These and other factors made direct comparisons much more difficult.

The extent to which the preliminary review team had to limit its inquiry or deal with intractable research problems was not so great that the observations and conclusions brought forward in tbis report should be considered unsupported or unbalanced in their perspective. Indeed, the review team is confident that the basic research, analysis, key observations and recommendations set out in this report can serve effectively as the basis for change and bona fide improvement in the administration of highway maintenance in the Province of British Columbia.

ACKNOWLEDGMENTS

The review team wishes to recognize the efforts of those who assisted with the review, including:

- Ministry officials, all of whom co-operated fully with the review team in meeting with the team, providing candid commentary, performing certain analyses, making documents available, and ensuring that no barriers were placed in the way of the review,
- members of the Road Builders Association of British Columbia who provided their comments and considerations to the review team:
- members of the British Columbia Government Employees' Union who contributed their comments on behalf of the highway maintenance work force.

In addition, the review team wishes to acknowledge the efforts of:

- all Ministry employees affected by the privatization initiative, and particularly those employees who transferred to the employment of private contractors and continued to ensure that the road and bridge maintenance requirements of the Province were met;
- the Ministry officials who, through extreme effort, irnplemented the privatization initiative, thereby defining new standards in highway maintenance in the Province, and
- the private. contractors who co-operated with the Ministry to create a new industry in the face of significant business risks and ongoing uncertainty about the future direction of the program.

THE OPERATIONAL IMPACT OF PRIVATIZATION

INTRODUCTION

The province of British Columbia's highway infrastructure exceeds $12 billion in value and consists of more than 42,000 kilomenes of roads and 2,600 bridges.

The standard to which the province's highway infrastructure is maintained has very significant consequences for British Columbia taxpayers and individual road users.

B.C. taxpayers are affected because the cost of highway maintenance is very substantial. Highway maintenance expenditures now exceed $300 million each year. Taxpayers should therefore have assurances that these expenditures reflect due regard for efficiency, economy and effectiveness.

Road users are affected directly because the cost of highway transportation to them varies with the quality of the province's highway infrastructure. Poor highways can cost B.C. road users millions of dollars in unnecessary wear and tear, parts, fuel and so on. Unsafe highways can result in higher costs to road users, measured in terms of accidents, injury and even death.

The individual items comprising the province's highway infrastructure, such as particular stretches of highway and specific bridges, have characteristic patterns of usefulness and characteristic life cycles. The usefulness of the items varies as the result of natural conditions including weather and other naturally occurring factors. The useful lives of the items can be shortened, maintained or extended depending on the nature, extent and timing of maintenance activities performed. As the result of these and other variables, the overall, combined cost of constructing and maintaining the province's highway infrastructure can be materially higher or lower over time, for the same level of transportation capacity.

Left unattended, the province's highway infrastructure will deteriorate rapidly, to the point where it is of no further use to road users. If this were to happen, extensive expenditures would be required to restore the infrastructure,

If the province's highway infrastructure was improperly maintained, it would deteriorate at a rate which would result in undue cost to keep it in operation.

With proper maintenance, the useful life of B.C.'s highway infrastructure can be extended optimally, such that an appropriate level of service quantity and quality is provided to B.C. road users at least cost.

Finding optimum levels of highway maintenance activities is an ongoing problem These levels are not inherently obvious or readily susceptible to codification or quantification.

An obvious example sterns from maintenance requirements created by annual snowfall. While the obvious maintenance solution to snowfall may be snow clearance, it is not always obvious how quickly snow clearance activities should be undertaken or to what degree they are actually required, given other factors such as weather, geography, road utilization and so on.

Moreover, one maintenance activity may not be the best or only solution to a particular maintenance requirement. In the case of snowfall, sanding and salting may be a more cost effective solution than snow clearance in certain circumstances, or they may be required in conjunction with snow clearance. in others.

To make matters more difficult, many highway maintenance activities are contradictory in that they serve to achieve one objective while working against another.

In the snow clearance example, sanding and salting may serve the immediate objective of dealing with snowfall, but may work against the objective of preserving the road surface as long as possible, insofar as the sand and salt might actually cause road surfaces to break down.

Given these complexities, highway maintenance has been characterized as both a science and an art. On the one hand, much is known of a systematic and formulated nature so that maintenance activities can be performed according to a set of guiding principles with reliable results.

On the other hand, the degree of variability, complexity and uncertainty inherent in the life cycles of individual highway maintenance infrastructure items makes the maintenance function sufficiently subtle and unpredictable that it must be approached as an art in which the appropriate design of the maintenance activities themselves becomes the object

OBJECTIVES OF THE REVIEW TEAM

In examining the operational implications of the Province's privatized highway maintenance program, the objectives of the review team were:

- to understand the operational outcomes which occurred as a result of privatization;
- based on this understanding, to identify whether there were any significant issues requiring remedial action;
- if possible to develop conclusions and recommendations to deal with the issues, and
- to consider the need for a public review and advise the Minister accordingly.

THE REVIEW APPROACH

The approach taken by the review team was to perform a preliminary review of readily available information about the operational impact of privatization. This included a review of existing documentation, materials prepared by the Ministry, interviews with Ministry officials and interviews with representatives of the Road Builders Association of B.C. and the British Columbia Government Employees' Union.

LIMITATIONS OF THE REVIEW

The review team did not have a mandate to perform a full program evaluation of the Province's privatized highway maintenance program. Instead, the team had very limited resources and could only conduct a preliminary review by reference to readily available information.

In many instances, credible information on operational outcomes was not available. Indeed, much of the information presented to the review team was 'anecdotal', in that it reflected the personal views of individuals and not the results of a technically valid research methodology.

Many operational considerations were not easily considered or fully addressed in the preliminary review. For example, it would not be possible to definitively assess the long term impact of the new privatized program in comparison with the Ministry's approach to highway maintenance, even though this was considered a very important issue.

As the result of these limitations, the review team was reluctant to draw firm conclusions about the overall impact of privatization. However, the review team did identify a number of concerns which are set out below.

A CONCEPTUAL FRAMEWORK FOR THE OPERATIONAL REVIEW

For purposes of tbis report the term 'highway maintenance' is used to describe both road and bridge maintenance activities.

In the case of road maintenance, these activities include highway pavement patching, highway surface treatment, pavement crack sealing, gravel surface grading, highway snow removal and so on. In the case of bridge maintenance, these activities include bridge deck maintenance, bridge joint maintenance, bridge bearing maintenance, steel structure maintenance and so on.

Maintenance activities in both areas included inspection procedures and decision making with respect to what maintenance activities should be performed.

Larger works which involve extensive reconstruction or improvement of existing roads and bridges are called 'capital betterments' or 'rehabilitation' work. Prior to privatization, these. activities were often performed under separate contracts by private contractors who supplied equipment, materials and expertise needed to complete the projects. These projects were funded separately from the maintenance activities described above. Management of these projects might involve staff at the District Office level or at the Regional Office level, depending upon the nature and extent of the work to be performed.

For the purpose of this review, the review team came to accept that sound management of the Province's highway in&structure required that highway maintenance' activities be fully co-ordinated with properly planned, appropriately timed 'betterments' or 'rehabilitation' projects. Indeed, these two levels of activity should be considered together, in determining how to maximize the useful life of the Province's highway infrastructure. A 1988 study prepared for the Ministry of Transportation and Highways by Lea Associates (see Appendix A) had advised that significantly higher expenditures on highway 'rehabilitation' were required immediately to avoid inordinately high costs of maintenance in the near future.

B.C.'S APPROACH TO HIGHWAY MAINTENANCE PRIOR TO PRIVATIZATION

Prior to privatization in 1988/89, the Province of British Columbia performed the majority of highway maintenance activities directly, using resources which were owned or controlled by the Ministry.

According to this method of operation, road and bridge crews under the direct control of District Highway Managers used machinery, equipment, vehicles and supplies which belonged to the Ministry to perform substantially all highway maintenance responsibilities in the 37 Highways Districts covering the Province at that time. A significant amount of work was contracted to private contractors at that time. However, the Province maintained direct control of highway maintenance activities, overall.

Maintenance crews were organized, funded, administered and accounted for at the District Highway Office level. They performed substantially all the activities necessary to keep the Province's roads and bridges operational on a day to day basis.

In addition to the maintenance activities mentioned above, 'capital betterment' projects were also undertaken by the Ministry to improve or extend the useful life of existing infrastructure items. The objective of these 'betterment' projects was to 'improve' the infrastructure such that future construction or maintenance costs which would otherwise have to be incurred would either be minimixed or avoided altogether.

'Capital betterments' (also known as 'minor betterments' projects) were also funded at the District Office level. They were usually performed under contract by third parties, not by mad and bridge crews responsible for 'maintenance' activities. These contracts were also known as 'dav labour' or 'equipment' contracts, depending on the particular requirements and resources involved.

Together, the Ministry's 'maintenance' and 'capital betterments' activities performed at the District Office level encompassed all the main activities required to maintain and improve the Province's existing road and bridge infrastructure on an ongoing basis.

A DESCRIPTION OF THE OPERATIONS BEFORE PRIVATIZATION

Prior to privatization, road and bridge maintenance was performed by road and bridge crews organized at 37 Districts. Over the course of each year, funds for highway maintenance were allocated to each District so that the crews were able to undertake routine maintenance processes such as ditching, patching, snow clearing and so on, as required.

The road and bridge crews were supported in each District with an extensive complement of machinery, equipment, trucks, a radio system, offices, yards, stockpiles of materiel and supplies, a fully staffed and equipped machinery maintenance facility, machinery and vehicle parts, outbuildings, gravel stockpiles and so on.

At the time of privatization, these physical assets were conservatively valued at $100 million, excluding all yards, offices, buildings and gravel stockpiles.

These assets were accumulated over several years, through separate, annual, Headquarters appropriations to replace old items and to add to the various inventories, as required.

The maintenance requirements varied at each District, depending on the nature and extent of highway infrastructure involved. Also, the day to day and seasonal requirements varied depending on the weather and other natural factors, The approach taken and the activities performed also varied from one area to another depending on the methods and approaches adopted by the local District Highways Manager and the individual road and bridge crews.

Overall, the individual activities comprising 'highway maintenance' were not uniform from area to area, due to the factors described above. There was an extensive and detailed set of policies and procedures governing 'highway maintenance' but these were defined in terms of 'processes', not 'results-oriented' standards.

Each year, the road and bridge crews in each area traveled extensively and inspected the roads and bridges to determine what maintenance work was required. There were no other routine inspections and no one monitored their work closely.

Given a particular quantity of highway infrastructure, the single most important factor in determining the nature and extent of maintenance work performed each year was the winter weather. Each Highways District regularly reserved up to 52% of its annual budget to deal with winter road and bridge conditions. In good years, very little of the winter allowance would be expended and the unexpended funds would be available for spring maintenance work. In bad years, all of the winter allowance would be utilized and more funding might be required to meet essential requirements through to the end of the fiscal year.

The second significant factor which affected the nature and extent of highway maintenance work performed in each area was the budget monitoring and maintenance activity of the Ministry and the Treasury Board. Each year, there was uncertainty at the District Highway Office level about whether appropriated funds would actually be available or whether the local maintenance budgets would be cut back in response to ministerial or Treasury Board directives. Budget reductions were a regular occurrence which usually affected local maintenance activities because many of the activities were regarded as discretionary, in the short term. This factor would often result in planned activities being canceled because appropriated funds were no longer available.

The postponements and cancellations described above may or may not have made sense from the perspective of the District Highway Managers and highways crews which were affected. Nevertheless, fiscal control often took precedence over highway maintenance, at the District Office level.

The third significant factor which affected highway maintenance activities each year was the direct or indirect influence of elected representatives. Often, a politician at the provincial level or elsewhere would exert influence to obtain various activities or works in a local area, such that the original plans for the area had to be revised to accommodate the transfer of funding to the desired project. This was a pervasive factor from time to time, in one area or another.

In summary, highway maintenance was conducted throughout the Province in the manner described above, with significant variations from area to area. This method of operation evolved over a number of years. It was stable and highly developed, with a very large inventory of specialized assets on hand at the time privatization was implemented.

After privatization, all of the public service positions of the road and bridge crews described above were eliminated. Contracts which were created to procure highway maintenance services from independent suppliers required that all the employees whose positions had been eliminated be offered employment by the contractors who succeeded in winning the contract competitions. Accordingly, most of the original government employees became contractor employees. In certain cases, the employees actually formed their own companies and were given a small price advantage in the contract competition. Ultimately, the entire road and bridge work force at the District Office level ceased to exist and about 90% of the employees went to work in contractor firms.

At the same time, inventories of machinery, equipment, parts, vehicles, materiel, supplies and machinery maintenance facilities were prepared by Ministry employees for the purpose of enabling a complete disposition of the items, through sale or lease, to the private contractors.

Contractors acquired many of the items through purchase agreements established at the time the overall contracts were let Larger items of machinery which the Province had re-financed under a sale leaseback agreement were in turn leased to con&actors with a right of first refusal to purchase them at a later date.

To further implement the privatization initiative, the Ministry turned over the offices. yards and other facilities used to deliver maintenance services to private contractors under individual lease agreements negotiated with British Columbia Buildings Corporation. Accordingly, control and use of these facilities transferred to the contractors in exchange for building and occupancy charges paid by the contractors to the Corporation.

B.C.'S APPROACH TO HIGHWAY MAINTENANCE AFTER PRIVATIZATION

On October 23.1987, the government announced its intention to privatize the provision of road and bridge maintenance services on British Columbia's provincial highways. In the subsequent 18 months, the Ministry of Transportation and Highways entered into three year service contracts with 20 firms. Originally, the total value of these contracts was $755,962,000 over three years.

With this initiative, the government retained overall responsibility for maintenance and rehabilitation of more than 42,000 kilometers of road and over 2,600 bridges on B.C.'s highways but transferred responsibility for carrying out the physical work to the private contractors.

Over the course of the privatization process, 2339 regular government employees left the public service and became employees of 20 private firms. Another 268 regular employees chose to remain as government employees and were eventually offered placement in other public service positions.

Moveable assets owned by the Province were sold or sublet to the private contractors and the entire infrasuucture of the Ministry of Transportation and Highways was reorganized. All aspects of Ministry operations were affected by privatization and by the concurrent initiative of the government to regionaliie its remaining operations.

In 1991 and 1992, the private contracts were offered for public tender in Phase 2 of the privatization process. Fifteen of the original firms and three new firms were successful bidders for contracts that varied in length from 2.13 years to 3.05 years. In all, 15 contracts changed hands.

The total value of Phase 2 conaacts was $741,064,158 over a shorter period than in Phase I. The government required new contractors to offer jobs to employees of the former contractors on the same terms and conditions under which they had previously been employed.

The annual cost of the Phase I contracts was $251,987,333.33. The annual cost of the Phase 2 contracts was $289,777,373, an increase of 14.99% on an average contract length of 2.49 years.

These Phase 2 contracts began to expire on March 7, 1994. Before deciding to tender the contracts for a third time, the government determined that it was essential to have an independent evaluation of the costs and benefits to the Province of this dramatic change in the way road and bridge maintenance services were provided.

THE OPERATIONAL OUTCOME

THE NEW STANDARDS

One of the key components of the privatized approach to highway maintenance was the new, results-oriented output standards for road maintenance. These standards were devised by the Ministry to ensure that contract language could be written which would direct road maintenance contractors to achieve certain road and bridge maintenance outcomes.

For example, standards were set which required contractors to keep roadside grass cut to a particular height. Also, snow clearance standards and response times were written to require conaactors to respond with snow clearing services in a specified time frame, to a particular standard.

In this way, all the highway maintenance outcomes required by the Ministry were codified. Based on the language, the Ministry could then administer the contracts, ascertain whether outcomes had been achieved and certify that payments to contractors were appropriate given the work performed.

From the outset of the review, the review team heard numerous representations about these standards. A frquent suggestion was that the standards were an improvement over the previous, process-oriented standards of the Ministry.

The Ministry's previous standards had been defined in terms of processes and procedures to be followed by road and bridge crews, rather than in terms of specific outcomes to be achieved. The Ministry had focused on training road and bridge crews in recognizing maintenance requirements and in knowing how to perform the applicable maintenance techniques. The Ministry had also focused on training the crews in the classic public sector concept of 'public service', to develop their judgment about what work to do and how to do it

The new standards for contractors focused on what outcomes had to be achieved, with little or no emphasis on how to achieve them. Moreover, the Ministry's training role came to an end with privatization.

For the review team, the application of new standards for road and bridge maintenance amounted to a significant change, even without considering the move to contracting for the services. Some of the significant issues which arose in connection with the new program standards are discussed below.

COMPARABILITY OF PRIVATIZED MAINTENANCE WITH THE MINISTRY'S PROGRAM

During the review, the review team was presented with a number of assertions about the comparability of the privatized program with the Minisuy's original road and bridge maintenance program. The key argument brought forward was that it was unreasonable to compare the cost of the new, privatized program with the Ministry's original program because the new standards caused significant program changes which made cost comparisons between the two programs invalid.

A variation of this argument was that in creating the new standards for highway maintenance., the Ministry actually raised the overall highway maintenance requirements in comparison with the original program, such that Contractors were faced with unreasonable or unrealistic demands in comparison with what the Ministry's original road and bridge crews faced. This argument was often presented in connection with discussions about the potentially higher cost of the privarized program.

A third issue was raised about the extent to which the new standards were actually being achieved.

A fourth issue concerned the extent to which the new standards were being applied consistently from one District to another.

Another issue arose concerning the appropriateness of the standards and the extent to which the standards promoted a proper recognition of priorities and an optimal allocation of resources.

Due to the preliminary nature of the review, the review team was unable to exhaustively review the issues described above. Indeed, it is unclear whether extensive empirical studies could ever provide irrefutable conclusions about some of the issues. Nevertheless, the review team developed a number of impressions about these issues based on discussions with Ministry and contractor representatives. These impressions are set out below. Some of them might reasonably be the subject of more detailed inquiry stemming from this review.

THE ISSUE OF COST COMPARABILITY

The review team rejected any notion that it was inappropriate to compare the cost of the Ministry's original highway maintenance program with the cost of the new, privatized program. Notwithstanding the differences in standards, approaches, outcomes, philosophies or anything else, the review team considered the comparison of cost to be essential and perfectly valid for the following reasons.

Fiist, notwithstanding the differences between the two programs, the review team realized that the public had a right to know whether more or less tax dollars were being spent for highway maintenance after privatization. This would then serve as the basis for explanations of why the differences would arise.

The privatized highway maintenance program was introduced to the public as a cost saving measure intended to achieve the same or similar level of highway maintenance at lower cost It was not presented as an enriched program, either in terms of results to be achieved, or in terms of tax dollars to be spent To the extent that the program changed, it would be desirable to be able to isolate the differences so that a clearer cost comparison could take place. Unfortunately, this was not possible in an empirical manner.

In any case, the review team considered the comparison essential, given the basic premise for the program at the outset. The results of the cost comparison are reported in a later section of this report.

THE QUESTION OF IMPROVED STANDARDS

The next question the review team considered was whether the new standards represented an improvement over the Ministry's original approach

In this instance, the review team was constrained in its ability to explore this issue because the Ministry's original approach was quite different from the privatized approach and an extensive analysis of the strengths and weaknesses of the two approaches was beyond the terms of reference of the review team.

Nevertheless, the team felt that a consensus of opinion amongst those interviewed was that the new standards were indeed an improvement. At the same time, the review team was not persuaded that this was altogether significant. The existence of improved standards did not in any way guarantee that highway maintenance was improved at the level of the road. It simply meant that the parties to the highway maintenance program might be starting with improved definitions of what was required.

THE COMPARABILITY OF REQUIRED OPERATIONAL OUTCOMES

Next the review team considered whether the new standards actually led to improved operational requirements in comparison with the original process oriented standards of the Ministry.

Again, the review team would not be able to resolve this issue through empirical study or analysis.

However, the team was willing to accept that by simply codifying the required highway maintenance results, the Ministry more than likely raised the overall standard insofar as the standards for results would no longer be as much a matter of interpretation. Once again however, the team was uncertain about how significant this improvement would really be because the critical issues would be how the standards were applied at the level of the road and how favorably the results compared with those of the Ministry's original program.

On this topic, there was no consensus amongst the parties interviewed by the review team. Representatives of the contractors stated categorically that more work was being done at the level of the road than ever before, due in part to the new standards, and in part to the corm-actors concerns for retaining their contracts and preserving the privatized program.

On the other hand, others asserted that, were it not for close monitoring and constant pressure by Ministry officials, far less work would be performed by contractors than was the case when the Ministry delivered the services directly.

Another assertion was that the more visible, cosmetic work such as mowing was being done more extensively than before, but the more demanding and less visible preventative maintenance work such as proper patching and culvert cleaning was being left to an extent that the highway infrastructure was at risk over the longer term.

The review team could not adjudicate these issues. With the resources available to the team, none of the above assertions could be supported or refuted by reference to proper empirical evidence.

In response to the competing assertions, the review team concluded that there was no consensus amongst the parties to the privatized program on the issue of whether preventative maintenance was being performed at an appropriate level. The review team was concerned with the degree of contradiction between the views of contractors and the views of Ministry employees charged with administering the new standards at the level of the road.

The review team concluded that these issues should be given detailed consideration in a separate and focused case study review of highway maintenance results achieved. This could involve either a historical analysis or a review of processes to determine how standards are set, measured, performance is monitored and deficiencies are corrected.

The review team also concluded that more work would likely be required on the part of the Ministry and some or all of the contractors to establish a team oriented approach to the management of the work, in place of the adversarial relationship which seemed to have developed in some areas.

CONSISTENCY IN OPERATIONAL OUTCOMES

Next, the review team considered the issue of consistency from one District to another. Both the contractor representatives and Ministry officials pointed out that there were significant inconsistencies between the way in which contractors approached their work and Ministry officials enforced the standards, from District to District and area to area. As a consequence, there were perceived inequities at the contractor level and variations in value for money at the Ministry level.

Again, the review team could only listen to these representations. There was no scope to conduct further research to resolve the issues.

In response to these concerns, the review team first noted that one of the disadvantages mentioned in connection with the Ministry's original program was the issue of inconsistency of performance from District to District Now, the review team was finding that such inconsistencies were a feature of the new program as well, nohvithstanding the existence of the new results oriented standards.

Indeed, strong and consistent representations from the various parties to the contracts identified real friction between some contractors and Ministry contract administrators on the meaning Of the standards in practice, the quantity of work actually required, and the unfairness inherent in administrative variations from one area to another. In particular the review team was very concerned with several specific representations described below.

First, some Ministry representatives very carefully described situations where, in Seeking to prepare reports of contractor non-compliance, they would actually overlook a host of minor deficiencies because they were too numerous to report and little would come of the reports in any case, given the overall ability of the Ministry to control contractors and the likelihood of achieving any meaningful outcome. Other Ministry officials Stated that they did not try to administer the contracts according to the letter of the standards any more because the amount of the work which would be required was actually unreasonable in relation to the amount of work the contractors were already doing.

On the other hand, contractors complained that a Ministry contract administrator with one particular perspective would give a contractor a very bad rating for results which would earn a satisfactory rating from another administrator with a different perspective in another area As a consequence, the process of contract administration and contractor performance appraisal was somewhat arbitrary and unfair in a manner which placed undesirable stresses on day to day working relationships, undermined the fairness and legitimacy of the tendering process and compromised the overall effectiveness of the program.

The review team accepted that a certain amount of friction should exist between contractors and Ministry administrators insofar as they are at arm's length from one another and come at the issues of standards interpretation and service delivery from separate perspectives. However, the review team also felt that the extent of differences described above was indicative of a gap in standards specification which left the parties to the contracts applying their own interpretations of the real requirements at the level of the road. Specifically, the team was concerned that required quantities of work were not adequately specified through the standards, such that disputes over necessary quantities could not be avoided. Moreover, the team was also concerned that the standards and contracts currently in use did not adequately guide the contractors to make proper decisions about priorities.

THE ISSUE OF SUB-CONTRACTING

Extensive subcontracting of various maintenance activities had been a feature of the Ministry's original highway maintenance program. Through sub-contracting, the Ministry supplemented its machinery and work force inventories, increased its discretionary ability to deploy resources and increased its discretionary ability to vary costs. Of equal importance, sub-contracting was used to achieve local employment and community development objectives.

When highway maintenance was privatized, the Ministry chose to continue the subcontracting component of the maintenance program to ensure that the original flexibility and employment objectives continued to be met To do so, the Ministry incorporated Specific terms into the new highway maintenance contracts which required contractors to enter into pre-deterrnined levels of subcontracting. To prevent abuses and ensure that the employment objectives were met, rules requiring ‘arm’s length’ contracting and ‘fair contracting’ practices were implemented.

The review team discussed the sub-contracting provisions of the maintenance contracts with Ministry officials, contractors and other stakeholders.

The team concluded that the sub-contracting provisions should be continued as long as the underlying employment and community development objectives of the Ministry continued to be required, unless other measures could be implemented at no net cost increase, to achieve the same ends.

The team also concluded that improvements were required to prevent abuses such as inappropriate non-sin-is length contracting and inappropriate shifting of contractors' obligations to sub-contractors.

Finally, the team concluded that notwithstanding the importance of the objectives served by the subcontracting requirements, these requirements probably restricted contractors' abilities to manage their affairs and contradicted the notion that private contractors could achieve efficiencies not otherwise possible in Ministry operations.

The team therefore recommends that the future of the privatized program be determined, in part, on the basis of whether the program can successfully address government program objectives such as local employment and community development to the desired degree, while maintaining or reducing the cost of highway maintenance in comparison with the Ministry's original cost profile.

THE ISSUE OF HIGHWAY INFRASTRUCTURE PROTECTION

From the outset of the review, the review team was advised by officials at all levels of the Ministry that the Province's highway infrastructure might not actually be protected to an appropriate degree, through an appropriate level of preventative maintenance work by contractors.

It was unclear to the review team whether this concern stemmed from a concern that contract standards did not address the right priorities, or a concern that contractors were simply not performing the right amount of preventative maintenance work otherwise required by the standards.

At one point during the review, the team examined an internal memorandum detailing what appeared to be a significant reduction in ditching work after privatization, notwithstanding contract standards which might require more ditching. 'Ibis reinforced the team's concern that preventative maintenance work might be suffering under the current system

The team went on to note that there are certain critical success' factors in highway maintenance from a macro perspective. In particular, preventative maintenance is critical to the preservation of the highway infrastructure. Such preservation has a major impact on the overall cost of highways to government and the taxpayers.

Therefore, the review team agreed that the Ministry must take stops to ensure that preventative maintenance is accomplished at the appropriate time and in the appropriate amounts, notwithstanding the current system of results oriented standards for contracted highway maintenance.

Unless the appropriate amount of preventative maintenance can be embedded in the privatized program and overall service delivery can be assured at no net cost increase to the Province compared with the original cost profile of the Ministry, the Ministry will have to undertake other approaches to achieve these ends, Preventative maintenance must be achieved and verified properly as a priority, above and beyond any particular preference for one service delivery mechanism over another, within the original cost profile of the Ministry and the current fiscal requirements of the Province of British Columbia.

SUMMARY

In operational terms, there have been both positive and negative outcomes from the privatization of highway maintenance.

The review team regards the establishment of the new results oriented standards for highway maintenance as a positive first step in the process of establishing a contract approach to highway maintenance. Indeed, positive outcomes were achieved as follows:

- the privatization initiative was successful in securing a level of highway maintenance service from private contractors which was probably similar to, but not the same as the level originally provided by Ministry employees;
- little interruption of highway maintenance services occurred in the aansition from the Ministry's original program to the privatized approach, and
- a completely new set of 'results oriented' maintenance standards was successfully developed and implemented in such a manner that consistency in maintenance outcomes from District to District may have been promoted.

On the other hand, the standards and administrative infrastructure governing contract highway maintenance require substantial improvement for the program to be considered stable and sustainable from an operational perspective. In particular, steps must be taken immediately to guarantee that essential preventative maintenance is achieved as a priority and all maintenance activities are performed in appropriate quantities.

Secondly, substantial improvements are required to establish a team approach between contractors and Ministry officials, so that inappropriate levels of friction, arbitrariness, inequity and mistrust which are compromising the future of the program are eliminated and a proper client service perspective consistent with the needs and expectations of the traveling public is adopted.

In the pursuit of the above objectives, the patties to the privatized highway maintenance program must reassess the contract terms and results oriented standards currently in use, with a view to identifying and implementing improvements and innovations, such that the needs of all parties are better served, to the ultimate benefit of the traveling public.

Other contentious operational issues which were raised as the result of the review were:

- the privatization initiative was a very high risk endeavor because no actual evidence had been gathered to support the notion that there was anything inherently wrong with the Ministry's original maintenance program and no valid research had been performed to support the notion that the privatized approach would actually be more efficient or effective;
- to the extent that the Ministry's original road and bridge crews had the capacitv to do other work besides maintenance' activities from time to time, the Ministry would lose this abiity after privatization. As a result, it is possible that additional costs may be incurred to deliver 'rehabilitation' and other 'non-maintenance' programs in

circumstances where the Ministry's original maintenance crews had been able to perform the work at no additional cost before privatization;

- in the course of privatizing the Province's maintenance program, the Ministry eliminated its management information system (the Maintenance Management System) which tracked the cost of individual maintenance activities. As a result, the Ministry lost the ability to estimate or monitor the actual cost of specific maintenance jobs for future management purposes, and

- as the result of privatization, the Ministry's extensive training program which assured that maintenance crews had the technical knowledge and expertise to identify and respond to maintenance requirements appropriately, was dismantled. At present an adequate training and apprenticeship program does not exist on a Province-wide basis and this deficiency is likely to impair the effectiveness of the Province's maintenance program in the future, particularly in the area of bridge maintenance.

The nature and extent of these issues should be examined in greater detail, with a view to assessing their overall significance and possible remedial actions.

Notwithstanding the need for the improvements set out above, all remedial actions must be accomplished without any net cost increase compared with the original cost profile of the Ministry and the current fiscal requirements of the Province.

Finally, the review team was left with an unresolved concern that the views of the traveling public as to the saengths and weaknesses of the maintenance services currently received in their areas had not been obtained in connection with any review performed to date.

THE NEED FOR A PUBLIC REVIEW

While many of the issues associated with assessing the Province's highway maintenance program are technical or financial, requiring rigorous research methodologies and extensive data to deal with properly, the review team continued to believe that the public should be consulted as well, to ensure that key observations and concerns of those who traveled the highways and ultimately paid for them were understood and fully addressed.

Therefore, the team suggests that an informal mechanism be implemented to obtain these views, such that members of the public have the opportunity to make their views and concerns known. This mechanism need not be constituted as a formal public review of the overall program.

THE HUMAN RESOURCE IMPLICATIONS OF PRIVATIZATION

INTRODUCTION

Perhaps the most fundamental and profound change which occurred in connection with privatization of the province's road and bridge maintenance program was the elimination of some 2,200 public service positions and the transfer of 90% of the incumbent employees into the hands of private sector employers.

As a result, substantially all the local knowledge, experience, technical skill and competency in highway maintenance service delivery was removed from the public service of the Province of British Columbia, permanently.

The elimination of the province's highway maintenance work force was dramatic and yet it was not altogether risky because the contractors who took over the road and bridge maintenance tasks were required, as a condition of their contracts, to offer employment to all the highway maintenance employees whose public service positions had been eliminated. The contractors would also be required to recognize the British Columbia Government Employees' Union as the bargaining agent for their new employees. In this way, the original public service employee group, with its accumulated training, knowledge and experience in local road conditions, equipment operation, techniques and requirements was transformed into the new work force in the employ of private sector conaactors.

Much of the operational success of the province's privatization initiative is attributable to the efforts of the original employees whose public service positions were eliminated. Through the mechanism of guaranteed employment offers, the continuity of highway maintenance services was assured despite the complete re-organization of the service delivery mechanism And in this way, the province's highway maintenance requirements continued to be met as new contractors were required to offer employment to the employees of previous contractors who failed to obtain contract renewals in their areas.

The rationale and reasonableness of these arrangements, together with a number of other issues became the subject of consideration for me preliminary review team

In summary, the key issues were:

- what are the human resource implications of the contracting arrangements underlying privatization, in relation to the province's permanent requirement for efficient, effective and economical highway maintenance services;
- should contractors continue to be required by the Ministry to offer employment to the employees of previous contractors;
- if contractors are required to offer employment to incumbent employee groups, what are the implications for the employees and the overall ability of the work force to meet the province's ongoing maintenance requirements over time.

BACKGROUND

Road and bridge maintenance is not like building or road construction. In construction, personnel, equipment and materials combine to create something that did not previously exist. Once the job is done, the workers move on to another task and do not return to the original project This is because the project has finite requirements and a clear and identifiable point of substantial completion.

In contrast, maintenance is a collection of tasks or activities which are performed repetitively on the same facilities to ensure that these facilities, in this case roads and bridges, are safe and economical over their useful lives, for the users and owners of the facilities.

In a meeting with the preliminary review team, representatives of the Road Builders' Association identified the skills, ability and dedication of the employees of the various contractors as the fundamental reason for the success of the privatized highways maintenance program in meeting the objectives of safe roads within the contract prices.

The great majority of the employees of contractors were government employees until the privatization initiative was undertaken in 1987/88.

Employee relations or human resource issues are an important secondary feature of the evaluation of options regarding road and bridge maintenance in British Columbia

To characterize the status of employees as secondary is not to diminish their importance. As the Road Builders noted, the employees are the key to the success of any road and bridge maintenance system. Regardless of the kind of organization that is undertaken, the same people are likely to provide the core maintenance services for some time to come.

It is the employees who have the knowledge of the roads and bridges throughout the Province and under any set of circumstances, the same group of workers is likely to be employed to undertake the functions necessary for road and bridge maintenance.

THE MANAGEMENT OF THE WORK FORCE IN ROUND 1 (1987-1991)

When privatization was announced on October 23.1987, the government took the position that all government employees affected by privatization should be offered employment with the new private employers and would have no rights against government after their positions were eliminated.

All direct employees were members of the public service hired under the Public Service Act The majority were members of the B.C. Government Employees' Union (BCGEU) but there was a large group of excluded managers who were a vital part of the structure of government-provided road and bridge maintenance.

At the time of the privatization announcement, the government's legal position regarding employee rights was incorrect Shortly after the announcement, the Industrial Relations Commission (IRC) issued a decision which made the government's position legally appropriate. That decision itself was overturned by the B.C. Supreme Court and the B.C. Court of Appeal.

By the time that the majority of privatizations occurred, an employee whose job disappeared as the result of a government decision to divest itself of the operation where the employee worked had a legal right to remain as a government employee or to go to work for the new employer.

This legal result was codified into the collective agreement between the BCGEU and the govemment in collective bargaining in 1988.

In October 1987, the government also took the position that the BCGEU would not be guaranteed legal status for continuation of union representation of privatized government employees. The government position was that., under the Industrial Relations Act, any determination of successor status would be between the new contractor employer and the BCGEU.

During the course of collective bargaining in 1988, the government agreed, without formally reversing its position on union successorship, to require each new contractor to recognize the BCGEU as bargaining agent for its new employees.

All Phase 1 contractors recognized the BCGEU as bargaining agent for their new employees, all of whom initially were former government employees. Employees started work for the new contractors on essentially the same terms and conditions as they had received as government employees, including a 5.5% wage increase that was effective for purposes of highways conuactors in September of 1988. (The first privatized contractor had commenced operations on September 1.1988 and negotiated a separate arrangement with the BCGEU).

Government also made an agreement with the BCGEU in 1988, to recognize that it had a continued obligation to its former employees for severance pay for their years as government employees and for banked sick leave entitlement of some employees. That contingent liability was never reflected in government's accounting of the costs and benefits of highways privatization.

In summary, government made the following arrangements in relation to employees in Phase 1 contracting:

- each employee whose job was privatized had a choice to remain a government employee or to become an employee of the new contractor
- the new contractors were required to offer jobs to all government employees, excluded and unionized, and to recognize the BCGEU as bargaining agent on behalf of its employees
- employees who chose to remain government employees were offered other jobs within government
- employees in four contract areas exercised their legal right to decertify the BCGEU following a recognition by the IRC that the employer was a successor employer
- these conditions were the same whether the contractor was an employee-owned company in whole or in part or a company without employees as equity participants.

Regardless of these results, there is agreement among the Ministry, conuactors and the BCGEU that the process of privatization was a very painful period for the majority of highways maintenance employees. The relatively secure working experience they had as government employees was threatened and disrupted. The experience caused a great deal of emotional anxiety for these employees and their families.

THE MANAGEMENT OF THE WORK FORCE IN ROUND 2

When the Phase 1 contracts were expiring, the government went to open tender for the second round of contracts. One of the decisions that it faced was whether or not to ensure the continued employment of the existing work force where contracts changed. The tendering occurred in 1990191.

In its Request For Proposal (RFP), the government stipulated that any new contractor would be required to offer employment to all regular, non-supervisory employees of the predecessor contractor.

The RFP did not require a new contractor to hire employees on the same terms and conditions as they had enjoyed under the predecessor contractor or to recognize a union bargaining agent or to honour any collective agreement that was in place between the predecessor contractor and any employee.

In mid-1991 however, government directed all new corm-actors to offer employment to employees of the predecessor contractor on the same terms and conditions as they had previously. This effectively led all new contractors to recognize any union that represented its new employees as the bargaining agent for those employees.

In summary, the Phase 2 results for employees were:

- regular non-supervisory employees were continued on the same terms and conditions as they had enjoyed under the predecessor contractor where a contractor changed in a contract area;
- the BCGEU continued its prior representation for employees in 24 contract areas;
- employees of one contractor who had decertified in 1989 chose representation by the Operating Engineers, Local 115 when a new contractor successfully took over and their employer changed;
- six excluded supervisory employees were not retained by the new contractor and the government was required to pay approximately $150,000 to honour its 1988 commitment to pay severance pay.

Employees were surprised at the number of contractors that changed and this increased their insecurity about employment continuity.

CURRENT STATUS

Employees in 3 contract areas are not represented by any union. Employees in 24 contract areas are represented by the BCGEU. Employees in one contract area are represented by the Operating Engineers.

Wages for employees in the 24 contract areas where the BCGEU is the bargaining agent are approximately 10% higher than government wage rates for the same types of work It is difficult to make an exact comparison because the BCGEU and individual contractors have negotiated significant changes in classification descriptions.

Benefits remain very similar to those of government employees. Contractor pension or RRSP contributions are probably lower than notional government Superannuation contributions.

Five years after privatization, the net result is that increases in average salaries and benefits in the private sector exceed comparative increases in government over the same period.

Contractors appear to have a different pattern of employee utilization than that of government in the period preceding privatization. It is not clear if this is because of efficiencies that contractors have achieved or whether it is a function of the different emphasis resulting from the use of homogenous standards.

Approximately one-half of contractor employees remain on the 35 hour average work week that is standard in government The remainder work either a 37.5 or a 40 hour average work week

IMPACT OF CHANGE OF CONTRACTOR UPON EMPLOYEES

Two significant questions emerge in regard to employees:

- should a new contractor be required to offer employment to employees of a former contractor, and
- should the government offer employees of contractors jobs with government in the event that government resumes direct operation of highway maintenance services.

THE REQUIREMENT TO OFFER EMPLOYMENT TO EMPLOYEES OF A PREVIOUS CONTRACTOR

The theory that was used to justify privatization (contracting) of road and bridge maintenance services was that contractors in a competitive market would achieve efficiencies that government could not achieve. This would result in lower costs for the same service. However, the requirement that a new contractor hire the employees of the former contractor is inconsistent with this theory.

If contracting continues to be the choice of government for the delivery of road and bridge maintenance services, should a Phase 3 or Phase 4 contractor be required to offer employment to its competitors' employees.

There are several consequences to a policy that would allow new contractors to take the contract free of the employment obligations of its predecessors:

- the new bidder can see the labour costs of its incumbent competitor and has a more favourable bidding position. The savings that it would purport to bring to government in its contract would be achieved through lower labour costs at the expense of the workers currently providing the service;
- the workers would not change in any event Regardless of any requirement, it was the position of the Roadbuilders that no contractor could deliver the service effectively without using the existing employees. To allow a contractor to change employees could compromise safety and service delivery;
- most road and bridge maintenance employees reside in smaller communities throughout B.C. Disruption in their employment every two to four years, real or potential, would have negative financial and social impacts upon those communities;
- government would absorb significant costs for any employees who were discontinued because of the commitments it made in 1988 at the time of privatization;
- the predecessor contractor would absorb costs for employee severance at a time when it was going out of the specific business for the contract area that it had been in before the contract changed,
- the Roadbuilders advised this preliminary review team that any new contractor should be required to offer employment to its predecessor's employees:
- it is reasonable to anticipate that workers and their unions would resist any adverse impact upon employment security. This would have disruptive effects upon communities where such adverse changes occurred and could threaten services;

- the premise for cost savings is that a new contractor can reduce labour costs because it is not encumbered with the employment obligations and costs of its predecessor and can reduce workers' wages and benefits. However, if the workers are not satisfied with these new terms, and assuming that they are non-union, they have a right to organize and bargain collectively. The results of this process can increase the labour costs Of the new contractor, disrupt services, or create other inefficiencies because of the potential for conflict.

  We wish to make it clear that reducing labour costs through a reduction of workers wages and benefits is a different matter than reducing labour costs through more effective management of human resources.

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, we are of the view that the policy established by the former government in Phase 1 and Phase 2 should be continued in any subsequent Phases. Any new contractor should be requited to offer employment to the employees of its predecessor contractor.

A more difficult aspect of that recommendation is whether this requirement for a new contractor to offer employment to employees of the former employer should continue to be limited to "regular. non-supervisory" employees of the predecessor.

This can be rephrased as a question of whether the taxpayers should continue to absorb any portion of the severance costs where a management employee of a predecessor contractor is not taken into employment by a replacement or new contractor. Alternatively, does it enhance or diminish competition between contractors if there are employment obligations in regard to management employees who otherwise would not be offered employment by the new employer.

We do not see any reason why the taxpayer should continue to absorb the cost of management's decision regarding excluded managers unless such an obligation is consistent with commitments made to individuals at the time of privatization.

However, we recognize that management employees of contractors who were transferred from government with Phase I privatization tend to be long service maintenance workers residing in smaller and non-metropolitan communities. Should they lose employment, they face difficult prospects for future employment.

Our recommendation below attempts to balance the competing interests of government, management employees and contractors.

We recommend that the policy established by the former government in Phase 1 and Phase 2 contracting be continued in any subsequent phases. Any new contractor should be required to offer employment to non-supervisory employees. From their discussions with us, it appears that the Roadbuilders agree with this recommendation.

Further, we recommend that government require new contractors to offer employment to supervisory employees if government continues to have a legal obligation for severance payments or has made commitments to former employees in 1987/88 independent of any legal obligations to make severance payments. Such a policy does not obligate the taxpayer to pay for someone who is not working at the choice of employer.

If government does not have any legal obligation, then it must determine if it has a moral obligation to these former employees. We make no comment or recommendation in such an event

DE-PRIVATIZATION AND THE TREATMENT OF FORMER GOVERNMENT EMPLOYEES

All of the reasons outlined above for requiring a new conuactor to offer employment to the employees of a predecessor contractor apply to government in the event that the decision is made to de-privatize.

In the event that government decides to resume direct provision of road and bridge maintenance services, government should offer employment to all former government employees who are employees of the contractors.

A more difficult issue arises in relation to employees of contractors who were never government employees. This matter would undoubtedly be the subject of discussion between the BCGEU and government The rights of contractor employees who were never government employees may stand against the rights of current government employees who were previously employed in road and bridge maintenance. We note this fact only and make no recommendation.

COLLECTIVE BARGAINING IN THE ROAD AND BRIDGE MAINTENANCE SECTOR

A number of difficult questions arise when one considers the topic of collective bargaining in the road and bridge maintenance sector.

SAME TERMS AND CONDITIONS WHERE A CONTRACTOR CHANGES

In the initial privatization, government rquired the new contractors to hire former government employees and to recognize the BCGEU. The latter requirement made the transition to privatization easier but practically speaking, only replicated the eventual legal result of successorship under the existing labour laws.

In Phase 2, the same government required a new contractor to hire the employees of its predecessor contractor on the same terms and conditions. This effectively rquired the contractor to accept the collective agreement in place between its predecessor and the BCGEU, for 24 contract areas.

The legal question that arises is whether the collective bargaining rights and obligations of a successful conuactor would be inherited from its competitor and predecessor conuactor. The labor relations implication of a transfer of a business from one employer to another where the employees are unionized is currently regulated by s. 35 of the Labour Relations Code and was previously regulated by s. 53 of the Industrial Relations Act and before it, the Labour Code. For the purpose of this discussion, there would not appear to be any significant difference between s. 35 of the current Code and s. 53 of either of the previous statutes.

The labour relations obligations, and hence the general employment obligations, of new contractors are far less clear than the obligations of the original contractors in 1988.

If a contract area is a "business" which the government has contracted, it is unlikely that a subsequent contractor who got the contract through a competitive bidding system against the preceding contractor is a successor to that very competitor. The preceding contractor has not "sold" the business.

The Roadbuilders, in their oral submissions to this preliminary review team, agreed that a new contractor should be rquired to offer employment to employees of the former contractor. They did not believe that this requirement should extend to terms and conditions of employment.

There appear to be several reasons why the government imposed these employment obligations upon contractors in phase 2 notwithstanding the legal ambiguity of successorship of collective bargaining rights and obligations.

The government recognized that the employees were a vital feature to the ability of the contractors to meet the demands under its contract. The importance of the ability of the contractors to fulfill the government's need for safe traveling conditions would be compromised without the employees.

Economic stability was also a factor. Road and bridge maintenance employment is concentrated in non-metropolitan communities. If a new contractor attempted to make significant changes in terms and conditions, there would be more possibilities of industrial unrest with negative impact on the communities where the incumbent employees resided and on the delivery of services.

In addition, a new contractor who attempted to revise labour costs downward to accommodate its successful bid price, would face substantial opposition from employees and their union(s). This resistance could threaten a new contractor's ability to meet its contractual service requirements and undermine the financial viability of its bid price.

It is almost inevitable that a new contractor who attempted to revise wages downwards would find that its employees were soon unionized and ready to fight to protect their standard of living.

This continuation of employment and of consequent union representation does not compromise the freedom of employees. Employees have a right under the Labour Relations Code to be non-union or to change unions.

Continuation of employment and union recognition for unionized employees will have no impact upon the current wages, benefits, hours of work and pension arrangements of current contractor employees. These terms of employment are, however, subject to amendment through normal collective bargaining and other employment changes.

Therefor. it is our recommendation that any new Request For proposal in subsequent contracting phases stipulate that a successful bidder must offer employment to employees on the same terms and conditions as utilized by its predecessor.

Under the current arrangement, collective agreements expire from time to time. TO add the possibility of further conflict resulting when new contractors seek to negotiate first agreements with organized labour would create more potential disharmony and would not be in the public interest.

COLLECTIVE BARGAINING GENERALLY

The effect of privatization was to create the same random and fragmented structure of collective bargaining for the private sector that typifies the public sector and that was commented upon by the Commission of Inquiry into the Public Service and Public Sector.

The contractors complain, through the Roadbuilders, that this places them in an untenable situation.

The former government required contractors to hire the employees of its competitor, the former contractor, and effectively to recognize a trade union as collective bargaining agent on behalf of those employees. This was done for sound reasons of social and public policy and we have recommended that this policy be continued by future governments if this method of delivering services is continued.

At the same time, government requires contractors to perform up to standards in the event of a labour dispute, whether or not there has been a change of contractors. Contract expiry dates with government are variable and the reality of B.C.'s weather conditions increase the vulnerability of any contractor during many months of the year. The contractor would have difficulty availing itself of the essential service provisions of the Labour Relations Code. This combination places the contractors in a very weak bargaining situation and may be one explanation for why private sector contractor total compensation rates appear to exceed those of government.

Government could contract with another contractor to provide the service affected by the labour dispute or require adjacent contractors to provide essential services. That would place the striking or locked out union and the contractor on a more balanced footing. We do not recommend this course of action however.

We recommend that government require contractors and all of the unions representing highways maintenance workers to enter into a two tiered bargaining arrangement for wages and conditions. Classifications, wages and benefits would be established on a provincial basis. Hours of work and other local conditions could be negotiated at a local level.

This system should be developed through consultation with affected unions and the Roadbuilders Association. Participation as a signatory to the collective agreement would be required by any new conaactor.

This system would transform the competitive process. Contractors would compete on the basis of their management efficiency and equipment and labour utilization, not cheaper labour rates. It would also reduce the potential for labour disruption.

However, the unions and the contractors should also be required to agree to essential service designations as part of the agreement, in exchange for recognition and standardization of bargaining results.

If the parties do not agree to the essential service aspect of this agreement, the government's ability to ensure core safety services would be compromised.

The existing non-union contractors would remain non-union. Should their employees become certified however, the employer would be required contractually by government to become a signatory to the standard agreement Likewise, if employees of an employer decertified, they would be released from the standard agreement

THE HUMAN RESOURCE IMPLICATIONS OF RETURNING THE RESPONSIBILITY FOR HIGHWAY MAINTENANCE SERVICE DELIVERY TO GOVERNMENT

If the decision is taken to return road and bridge maintenance services to government, a number of problems would arise.

Contractor employees have wage rates and hours of work that are at significant variance from those in government. Although the wage rates of contractor employees are generally higher, government has a great deal of experience integrating employees into public service employment and it is not an insurmountable task.

However, the integration of such a large group of employees could represent a significant cost, but not as the result of adding new employees at higher rates. The government is already paying these rates. On the other hand, it is likely that the existing government work force would demand comparable rates and this would produce a dual cost push on government wages. First, it would push general government wages to a higher level than those negotiated by the BCGEU in its

Master agreement with government Second, as most highways maintenance workers are male, it would also increase the wage disparity and increase pay equity costs to government.

It would be necessary for government to evaluate the actual costs of reintegration, including the features noted here, before any decision to de-privatize could be undertaken.

There are other features of de-privatization that would be difficult. These include seniority entitlements, pension attribution and hours of work variances. Again these are not insurmountable issues, but they do require serious evaluation before any de-privatization is undertaken.

All of these features taken together may make de-privatization prohibitive. They support our overall conclusion that government must return the cost of road and bridge maintenance to where it would have been but for privatization, but must look at all of the alternative mechanisms available to do so.

THE FINANCIAL AND ECONOMIC IMPACT OF PRIVATIZATION

INTRODUCTION

According to all accounts, the original rationale for the privatization of the Province's road and bridge maintenance services was entirely financial, with the intention being to produce material cost savings through private contracting instead of government service delivery.

In a very short period of time, the Ministry of Transportation and Highways' maintenance infrastructure was almost completely dismantled and a new productive capacity to meet the road and bridge maintenance requirements of the Province was assembled in the hands of private contractors.

The transition from the use of a Ministry productive capacity to the use of a private sector capacity occurred when the Ministry transferred substantially all of the Province's highway maintenance resources to the ownership or control of private contractors.

In this way, contractors acquired some of the resources to provide for the Province's highway maintenance requirements and the Province obtained recoveries in the form of cash payments for those resources which were sold or leased.

To effect the transition and achieve appropriate standards of stewardship over public money and resources, Ministry officials took steps to ensure that the transfer of highway maintenance resources into the hands of private contractors did not result in a loss to the Province or an inappropriate conferral of benefits in favour of contractors or others.

Ministry officials also took steps to ensure that the normal financial cost of the Ministry's productive capacity to perform highway maintenance services was identified and not exceeded in acquiring the same services through private contracting.

In short, the Ministry tried to ensure that it did not have to spend any more money to obtain the same level of highway maintenance services as it had been able to provide before privatization. It also tried to ensure that it received fair compensation from the sale or disposition of government assets.

For the review team, the events described above raised fundamental issues about the financial and economic implications of privatization. Indeed, the review team felt that by the very nature of the privatization scheme, it would be very difficult to ensure that costs did not actually increase. For example, the rquirements imposed on contractors such as having to offer employment to all the original work force of the Ministry, and later, the incumbent contractors, at established rates of remuneration, would severely constrain contractors' normal abilities to control input costs and obtain efficiencies.

Moreover, the use of fixed price contracts involving twelve monthly payments not strictly tied to services delivered in quantified amounts would mean that any efficiencies achieved by contractors would automatically and immediately accrue to the benefit of the contractors, but not necessarily flow to the Province in later tendering processes. Therefore the review team was concerned to examine the financial results of the privatization as closely as possible, given available resources.

The issues which were identified are described below.

ISSUES STEMMING FROM RELIANCE ON THE PRIVATE SECTOR

After privatization of the province's highway maintenance services, the province became almost completely dependent on the private sector for the necessary capacity to perform highway maintenance Services.

Insofar as this approach to highway maintenance was taken in order to obtain efficiencies and reduce costs, the review team determined that the following issues needed to be addressed:

- first, would private contractors be able to maintain and develop an adequate productive capacity to perform highway maintenance services, such that the province would be able to obtain the necessary level of services over the long run;
- second, would the market for highway maintenance contracts operate freely and openly, such that contract prices for the services would be determined competitively, market efficiencies and associated market flexibility would be obtained and contracts would be awarded to the best contractors at least cost to the Province; and
- third, would the full cost of privatized highway maintenance services be less than the cost of the Ministry's original program, such that the transition to a privatized approach would be cost justified over the long run.

ISSUES STEMMING FROM DISPOSAL OF THE MINISTRY'S PRODUCTIVE CAPACITY

To implement privatization of the province's highway maintenance services, the Ministry of Transportation and Highways dismantled its productive capacity to perform maintenance work by disposing of almost all of the necessary resources including an entire work force, machinery, equipment, vehicles, supplies, parts, tools, buildings, yards and so on.

These resources were variously transferred to the ownership or control of private contractors who would assume responsibility for maintenance services according to contractual terms and conditions.

Insofar as public sector resources were disposed of, the review team determined that the following issues needed to be addressed:

- first, did the Ministry dispose of the correct resources, and only those resources which were required to create a productive capacity for highway maintenance services in the private sector,
- second, did the Ministry receive fair value for all the resources which were transferred through sale, lease or otherwise, to private contractors;
- third, did the disposal of the Ministry's capacity to perform highway maintenance services have other financial or economic implications for Ministry operations such as highway rehabilitation or construction, and if so, were these effects properly considered in the financial plan for the privatization initiative and the projections of overall costs and benefits; and
- fourth, did the disposal of the Ministry's capacity to perform highway maintenance services have other financial or economic implications, such that the economy of the Province was affected in ways which should have been taken into account in the evaluation of privatization.

With these issues in mind, the review team **proceeded** to review the financial outcome of privatization to obtain an answer to the most important overall question of whether cost savings had actually been achieved.

To address the issue of whether the full cost of highway maintenance services obtained from private contractors was the same or less than the full cost of the same services if the Ministry had continued to perform them, the review team took the following steps:

- a trend analysis of the cost of operations at the District office level of the Ministry was performed;
- issues of cost comparability from year to year were addressed;
- the Ministry's financial plans for privatization were examined;
- the trend analysis described above was expanded to serve as a comparative analysis of the cost of highway maintenance services before and after privatization, and
- based on the quantitative outcome of these steps, preliminary conclusions were drawn about the relative cost of the privatized program.

The results of these steps are described below.

REVIEW OF THE FINANCIAL OUTCOME OF PRIVATIZATION

INTRODUCTION

Before privatization, substantially all of the maintenance work performed on the Province's roads and bridges was organized and resourced at the District office level of the Ministry of Transportation and Highways. Most of the cost of the Province's road and bridge maintenance work was incurred and accounted for at this level of the Ministry. Each District office had its **own** set of accounts for recording the cost of maintenance work The cost of salaries, wages, materials and supplies consumed in the process of performing the necessary services was recorded directly in these accounts.

Although the costs of machinery, equipment and vehicle purchases were incurred at the Headquarters level, these costs were re-allocated to the District offices using a standard costing system known as the Maintenance Management System With this system, the standard cost of machinery, equipment and vehicles was recorded on a job by job basis in the District office accounts. These charges covered the operating and capital cost of the machinery and equipment, such that all recorded costs were reflected in the accounts of the Districts.

THE PRELI[redacted]REND ANALYSIS OF DISTRICT OFFICE COSTS

The review team performed a preliminary trend analysis of District office costs in order to determine what changes in cost levels had occurred year by year, before and after privatization, and to obtain a preliminary understanding of the cost outcome of privatization at this, the most directly affected level of the Ministry.

Notwithstanding the difficulties involved in comparing the cost of highway maintenance after privatization, in years when organizational and accounting changes had occurred (as discussed below), the team held the view that no better evidence about the cost of privatization could be obtained than by looking at historic cost information recorded in the District offices' accounts.

SUMMARY OF DISTRICT RESPONSIBILITY CENTRE COSTS

(Unaudited)

	1986	1987	1988	1989	1990	1991	1992	1993
Unallocated Employee Costs	0	0	0	2,503,817	0	0	0	0
Road Maintenance - District	159,394,481	167,871,170	174,940,487	111,855,417	29,892,232	35,272,772	46,328,127	45,146,912
Road Maintenance - Contractors	0	0	0	109,167,155	254,721,286	250,711,190	265,275,009	285,378,871
Bridge Maintenance	7,604,581	8,593,993	9,460,335	5,646,223	0	0	0	0
Ferry maintenance	21,193,518	9,654,801	9,678,558	0	10,507,650	12,434,934	12,785,310	13,271,496
Machine Maintenance	44,583,593	44,974,518	44,046,706	22,061,840	0	0	0	0
Intra-Ministry Credit	(48,808,199)	(52,815,563)	(53,152,281)		0	0	0	0
Flood Damage					0	0	99,542	0
Secondary Highway Maintenance	0	0	0	0	0	0	0	0
Administration	0	0	0	199,259	0	0	0	1,600
Total Highway Maintenance	183,967,974	178,278,919	184,973,805	251,433,711	295,121,168	298,418,896	324,487,988	343,798,879
Adjusted Highway Maintenance	162.774456	168,624,118	175,295,247	248,929,894	284.613518	285.983962	311,702,678	330,527,383
Day Labour - Roads	65,693,088	46,130,784	35,344,023	43,184,573	66,470,784	42,420,224	52,799,109	31.681~86
Day Labour - Bridge	5,253,062	5,028,134	6.176.218	5,145,744	11,862,557	9,466,325	7,311,479	15,852,248
Ferry	497,943		101,000	866,884	547,461	664.481	107,413	172.445
Safety Projects				114,045		1,064,981	1,829,779	1,905,799
Fencing						952,727	1,275,238	835.94 1
Guardrail and median installation						736,090	1,065,815	2,056,065

If significant cost comparability problems existed, the team would make every effort to overcome them in a proper manner. If this was not possible, the team would state the outstanding problems and estimate the impact of the issues on the overall analysis.

THE RESULTS OF THE PRELIMINARY TREND ANALYSIS

The table on the facing page shows the financial results of operations of all the District offices in the Province, in consolidated form, from 1986 to 1993.

The line items set out in the table correspond (with minor changes for consistency) with specific line items in the Ministry's accounts, except for the 'Adjusted Highway Maintenance' line item. This line item was created by the review team to represent the cost of road and bridge maintenance, plus District office administrative overhead. It is exactly the same as the Ministry's 'Total Highway Maintenance' line item except the cost of 'Ferry maintenance' has been removed.

The 'Adjusted Highway Maintenance' line item represents a combination of several significant changes described below.

First, the financial effects of the privatization initiative which began in 1989 are reflected in the amounts, along with other changes. The Miitry changed its accounting system in 1989 to accumulate a number of highway maintenance costs in the District office accounts. These costs had always been incurred but had not been recorded there before.

For example, British Columbia Buildings Corporation charges for District office premises which had been recorded at the headquarters level before, were recorded at the District office level after privatization. Also, employee benefits costs for District employees were reallocated to the District accounts after privatization.

Similarly, some activities which had not been considered maintenance' in previous years were included in the new maintenance contracts for the first time. The cost of these activities also contributed to the increases in recorded cost of 'Adjusted Highway Maintenance' after privatization, but should not be considered real increases insofar as the activities were beiig performed and the costs were beiig recorded elsewhere, before.

Given the accounting changes described above, the review team could not draw conclusions about whether privatization had actually cost the Province more or less, based on a simple analysis of the trend in 'Adjusted Highway Maintenance' costs shown in this table. Before any conclusions could be made, the changes described above would have to be factored out, to more closely isolate the real cost effects of privatization separately. Then, a more detailed analysis would be required to address the issue of whether these cost effects represented real cost increases attributable to privatization.

THE FINANCIAL PLAN FOR PRIVATIZATION

To help explain the increases in 'Adjusted Highway Maintenance' costs described above, the review team turned its attention to the original financial planning which the Ministry had undertaken to implement privatization in 1988 and 1989.

After the public announcement that the Province's highway maintenance services were to be privatized, Ministry officials began the financial planning process to ensure that highway maintenance services were obtained at the same or lower cost than before, and assets belonging to the Province were disposed of at fair market value.

It is important to emphasize that the decision to privatize the. Province's highway maintenance services was made before any real financial planning for the project had been performed. Ministry officials had to undertake the financial Planning afterwards and produce financial plans which were intended to make privatization a success.

The review team examined the financial planning work carried out by Ministry officials and independent consultants to obtain a more thorough understanding of the costs described above. The. profile which emerged is set out below.

By July, 1988, the Ministry of Transportation and Highways had received and evaluated the first round of bids from all the contractors seeking to provide highway maintenance services in the 28 new contract areas covering the Province. Indeed, one contract had already been signed. By this time, Ministry officials were therefore well informed of how much the new 'privatized' services would cost for the first three year contract period.

At the same time, Ministry officials had started to determine approximately how much the Ministry had spent to provide the same services in the 1988 fiscal year. The Ministry's first preliminary estimate showed that the province had spent approximately $208 million at the District office level, without considering the cost of any other related activities at the Regional or Headquarters levels of the Ministry (see Appendix B).

In contrast, a preliminary analysis dated July, 1988 showed that most of the contractor bids exceeded what the Ministry was estimating it had spent in each contract area, even after factoring in Disnict and Ministry overhead costs, and inflation for three years (see Appendix C).

This was a matter of serious concern to Ministry officials. Although the privatization initiative was supposed to produce cost savings, the Ministry's preliminary analyses suggested otherwise. At that time, Ministry officials expressed concern that contracts not be signed until appropriate cost levels were assured.

The Ministry then turned to outside consultants and commissioned an independent study to identify and quantify all the cost components of the highway maintenance services to be privatized.

Fist, an independent firm of consultants was retained and a report was prepared which set out a number of cost components not previously considered by Ministry officials. By August, 1988, the consultant advised that the Ministry had understated its annual cost of road and bridge maintenance prior to privatization, by $24 million (see Appendix D).

Ministry officials then conferred with Treasury Board Staff on the technical merits of some of the consultants work, particularly certain interest cost components addressed in the report (see Appendix D). Ultimately, the consultants' arguments were accepted. However. additional assurance about the validity of the arguments and the accuracy of the amounts was also sought by the Ministry in the form of an audit by a firm of external auditors.

The Ministry then retained the services of an independent firm of chartered accountants to perform an audit of the 1988 cost of highway maintenance services to be privatized.

In the audit, all the issues raised in the Previous round of consulting, in which the additional $24 million in highway maintenance expenditures had been identified, were addressed again, this time in the context of an external audit which resulted in the expression of an opinion as to the validity of the costing methodology and the fairness of the amounts disclosed.

The auditors produced a report in which the amount of $229 million was identified as the 1988 cost of maintenance related expenditures' to be privatized (see Appendix E). This amount exceeded the

Ministry's preliminary estimate of $208 million by approximately the same amount as the previous consultant had reported. More importantly, the total also approximated the amount required (before inflation) to justify accepting the first round of bids from private contractors.

On this basis, together with projections about cost recoveries (see Appendix F), the Ministry gained confidence that the new contracts for highway maintenance services could be signed and the cost of highway maintenance services under the privatized approach would be the same or less, over time, than if the Ministry continued to provide the services.

Efforts to verify whether privatization had actually produced cost savings, by reference to the books and records of the Province, were never made until this review, however. Even though the Ministry required a substantial increase in its 1989/90 budget to deal with the cost of privatization (see Appendix G), the 1989 annual report would advise...'% the last 12 months, Ministry staff...achieved cost savings and benefits of more than $100 million over the next three years." (in connection with the newly privatized road and bridge maintenance services.)

For the review team, the profile described above was very significant First, it was clear that the financial planning for privatization had taken place after the decision to implement the program had been made, such that there would be a need to obtain financial estimates and projections which would support the original decision.

Second, it was clear that a tremendous amount of effort went into ensuring that there was financial justification for entering into the new highway maintenance contracts at the prices which had emerged from the tendering process. These prices had exceeded the Ministry's original projections.

Given these circumstances, the review team could not overlook the possibility that the need to rationalize contract prices in relation to Ministry costs had overshadowed the need for conservative fmancial projections and plans.

Third, it was clear that the financial outcome of privatization had never actually been analyzed and, up until the announcement of the Minister's decision to review the program, there had been little impetus within the Ministry to undertake such analyses.

Fourth, it was clear that the matter of analyzing the financial outcome of privatization would be very difficult because there had been many changes since privatization and little had been done to ensure that such analyses could actually be performed properly.

With these considerations in mind, the review team turned its attention to the studies and projections from 1988 and 1989, to assess the accuracy of some of the projections in light of what actually happened. As well, the review team revisited some of the original technical arguments, to consider whether other views might be appropriate given the passage of time and the actual events which occurred since privatization.

THE PEAT MARWICK STUDY OF HIGHWAY MAINTENANCE COSTS

The first round of consulting described above was performed by Peat Marwick Stevenson and Kellogg (see T. Ridley Bestwick documents in Appendix D).

In that study , two key components were added to the Ministry's original estimates of what it spent in 1988 for highway maintenance activities to be privatized.

First, the consultants pointed out that the estimates should be increased to account for certain 'capital betterments' costs which would be included as part of the contractors' responsibilities, in future.

Second, the consultants advised that 'holding costs' (or 'opportunity costs') in the amount of approximately $12 million should also be included in the Ministry's estimate of what it cost to deliver the services in 1988.

The review team did not have any difficulty accepting the 'capital betterments' component of the consultants' work. The amount would change slightly by the time the Ministry completed its final estimation.

However, the review team had some difficulty understanding the concept of 'holding costs' or 'opportunity costs'. More will be said about this in the sections below which deal with audited costs in the 'benchmark study'.

As discussed above, the Ministry reviewed the concepts brought forward by the consultant from Peat Marwick and consulted with officials in the Treasury Board Staff to confii the validity of the concepts. (see G. Hogg memorandum attached as Appendix D.)

The Ministry then went on to engage the services of external auditors to examine and express an opinion on the overall estimate of the Ministry's 1988 costs, including the new components set out by the Peat Mar-wick consultant

THE COOPERS AND LYBRAND BENCHMARK STUDY OF 'MAINTENANCE RELATED EXPENDITURES'

Backmound

For the review team, the next step in the process of evaluating changes in the cost of 'Adjusted Highway Maintenance' at the District level was to review the audited report on the 1988 cost of highway maintenance (before privatization) which had been prepared by Coopers & Lybrand at the request of the Ministry of Transportation and Highways.

This study (actually two related reports) is set out in Appendix E to this report)

It was this audit which established the amount of $229 million (before inflation) as the annual cost of the Ministry's highway maintenance services.

Working with Ministry officials, the auditors had analyzed the maintenance related expenditures' of the Ministry in the last year before privatization, and determined the highway maintenance costs to be privatized. The auditors expressed an unqualified opinion on the methodology and the cost amounts set out in the report Their opinion was dated January 8, 1989.

Effectively, the Coopers & Lybrand study was an attempt to set a 'benchmark' for the cost of highway maintenance services before privatization. However, the firm had made it clear that the audited result for the year in question was not necessarily representative of any other year.

The Ministry then used this 'benchmark' to serve as a price ceiling for the cash cost of the new, privatized highway maintenance program. In theory, if the Ministry spent no more on contractors than it spent according to the 'benchmark', it could not possibly incur more cost for maintenance services as the result of privatization, on the assumption that all other conditions remained the same.

The Benchmark

	1987/88
	$
District Costs	
Road and Bridge Maintenance	
Direct cost of road/bridge maintenance	163.730599
Administration	4,816,187
Yard overhead - all	1.604,562
	172,151,348
Capital Maintenance	
Stabilization	3.836.162
seal Coat	3.247306
	7,084,068
Total - District RC's	179,235,416
Employee bens. @ 19.% (Headquarters Account)	14,341,331
B.C.B.C. Charges (Headquarters Account)	
Occupancy Charges	13,284,102
Utilities	8,060,192
	21344.294
Miscellaneous (Headquarters Accounts)	
Damage to infrastructure	824,803
Telecommunications	720,000
Driver training, safety	685,802
Litigation settlements	366,061
Postal Branch Charges	134.841
Information systems	280,000
Office supplies	280,000
	3,291,507
Imputed financing costs	
Equipment	6,826,050
Materials	4,028,904
	10.854334
Total Highway Maintenance Costs To Be Privatized	229,067,502

The analysis underlying the study set out all the components of the Ministry's original program which were to be privatized and identified how much each component cost in the 1987/88 fiscal year, the last year before privatization.

The analysis encompassed the 'Adjusted Highway Maintenance' costs discussed earlier in this report, plus all the other components which had been accounted for elsewhere in the Ministry and the government. The study also included the holding cost, or opportunity cost amounts suggested by the previous consultant from Peat Marwick. In the Coopers & Lybrand reports, these amounts were called 'financing costs'.

Insofar as certain of the amounts in the study could be reconciled directly with the amounts in the 'Adjusted Highway Maintenance' line items discussed earlier, the study actually provided me review team with the basis for a much more complete evaluation of the trends described earlier. This would later become the key to determining whether privatization had cost the government more or less than before.

An analysis of the costs included in the benchmark study of 1987/88 is shown in the table on the facing page.

This schedule shows individual benchmark amounts analyzed according to the level of the Ministry where the original costs were incurred. The schedule was prepared by the review team using the information contained in the original benchmark reports in Appendix E. The breakdown is explained below.

Benchmark Costs at the District Level

At the District level, the total of the individual amounts for 'Direct costs of road/bridge maintenance', plus 'Administration' and 'Yard overhead - all' amounted to $172.15 million, an amount which was slightly lower than the actual 'Adjusted Highway Maintenance' costs of $175.30 million in 1987/88.

The reason for the variation was that some of the District office administration costs which were included in the 'Adjusted Highway Maintenance' line item were expected to continue after privatization. These amounts were not therefore included in the benchmark as amounts to be privatized.

In addition to the amounts described above, costs to be privatized at the District level included $3.84 million for 'stabilization and $3.25 million for 'seal coat' activities. These were the 'capital betterment' costs referred to in the Peat Marwick report. They were based on estimated unit costs for these activities and actual quantities required in the maintenance contracts.

These activities had not been considered part of road maintenance' in previous years and had not been accounted for as part of 'Adjusted Highway Maintenance' costs prior to privatization. They would constitute part of the explanation for the increased cost of 'Adjusted Highway Maintenance' in the years after privatization.

Benchmark Costs at the Headquarters Level

Two large cost amounts, 'Employee Benefits' and 'British Columbia Buildings Corporation' (BCBC) charges, relating to highway maintenance requirements at the District level were recorded at headquarters, not the Districts, before privatization. As well, a number of other smaller cost amounts relating to various headquarters overhead costs to be privatized were also recorded in this manner.

The benchmark included these costs. They amounted to $21.34 million in 'BCBC charges', $14.34 million in 'employee benefits' costs as well as approximately $3.3 million in miscellaneous costs.

All of these costs were to be eliminated when the Ministry's privatized program was implemented. Since these amounts would be built into contractor payments after privatization, they would contribute to the higher level of 'Adjusted Highway Maintenance' costs at the District level but they would not represent any actual cost increases because they should have been incurred elsewhere in the Ministry, before privatization.

Imputed Financing Costs

The last amount included in the coopers & Lybrand benchmark study was the 'financing costs' amount referred to above. This amount was intended to reflect the cost of capital which the Ministry incurred in connection with the purchase of machinery, equipment, vehicles, parts and other enduring assets held in inventory.

More will be said about this later.

Overview of the Implications of the Benchmark Study

The benchmark analysis identified a total of $229.07 million in 1987/88 'maintenance related expenditures' to be privatized.

This amount exceeded tbe 1988 level of 'Adjusted Highway Maintenance' costs recorded in the District office accounts, by $53.77 million. It also exceeded the Ministry's preliminary analysis of the cost of highway maintenance to be privatized, by $21 million, an amount which was consistent with the previous consultant's report.

All of tbe amounts set out in the 'benchmark study' were to have been actual costs to government, before privatization. All of the amounts were assumed to have been eliminated by privatization. Equivalent amounts would in fact be paid to contractors on the assumption that the benchmark amounts would either cease to be incurred by the Ministry after privatization, or would be incurred by contractors.

A RE-EXAMINATION OF THE BENCHMARK STUDY

The review team determined that it was necessary tore-examine the benchmark study in connection with the review of the financial implications of privatization, for three fundamental reasons.

Fist, the team needed an in-depth understanding of the rationale underlying the amounts Set out in the study,. to be able to make proper comparisons with the cost of highway maintenance after privatization.

Second, since several of the material amounts in the study were based on specific assumptions about the future after 1988, the team determined that it would be appropriate to review the amounts in relation to what had actually happened. If any of the assumptions had not been correct, the cost amounts might also be incorrect such that the financial outcome of privatization would vary from Ministry projections.

Third, the review team was aware that the benchmark study had been prepared after the Ministry had received the first round of contract bids and found that the total of the bids substantially exceeded the Ministry's preliminary estimate. of how much could be spent Under these circumstances, the review team wanted to obtain assurance that the higher amounts set out in the benchmark study reflected duly conservative estimates of cost.

1987/88 Benchmark - Sensitivity Analysis

District Costs	1987/88 Audited	Most Conservative 1993 Estimate	Most Conservative Estimated Dissavings	Least Conservative 1993 Estimate	Least Conservative Estimated Dissavings	Most Likely 1993 Estimate	Most Likely Estimated Dissavings
	$	$		$		$	
Road and Bridge Maintenance							
Direct costs - foreman areas	165,730,599	162,153,799	3,576,800	164,730,599	-1,000,000	163,153,799	2,576,800
Administration	4,816,187	2,891,512	1,924,675	2,891,512	1,924,675	2,891,512	1,924,675
Yard overhead - all	1,604,562	1,604,562	0	1,604,562	0	1,604,562	0
	172,151,348	166,649,873	5,501,475	171,226,673	924,675	167,649,873	4,501,475
Capital Maintenance							
Stabilization	3,836,162	3,836,162	0	3,836,162	0	3,836,162	0
Seal Coat	3,247,906	3,247,906		3,247,906	0	3,247,906	0
	7,084,068	7,084,068		7,084,068		7,084,068	0
Total District Costs	179,235,416	173,733,941	5,501,475	178,310,741	924,675	174,733,941	4,501,475
He[redacted]							
B.C.B.C. Charges							
Occupancy Charges	13,284,102	12,885,579	398,523	12,885,579	398,523	12,885,579	398,523
Utilities	8,060,192	7,818,386	241,806	7,818,386	241,806	7,818,386	241,806
	21,344,294	20,703,965	640,329	20,703,965	640,329	20,703,965	640,329
Other Headquarters Costs							
Postal Branch Charges	134,841	134,841	0	134,841	0	134,841	0
Litigation settlements	366,061	366,061	0	366,061	0	366,061	0
Damage to infrastructure	824,803	324,803	500,000	324,803	500,000	324,803	500,000
Telecommunications	720,000	540,000	180,000	540,000	180,000	540,000	180,000
Employee bens. @ 19.%	14,341,331	14,341,331	0	14,341,331	0	14,341,331	0
Information systems	200,000	280,000	0	280,000	0	280,000	0
Office supplies	280,000	280,000	0	280,000	0	280,000	0
Driver training, safety	485,802	514,351	171,451	514,351	171,451	514,351	171,451
	17,632,838	16,781,387	851,451	16,781,387	851,451	16,781,387	851,451

The review of the benchmark was not intended as a criticism of the original study. Rather, it was intended to be an update, taking into account actual events since the study was performed.

Overview of the Analysis

The essential feature of the benchmark study was that the amounts set out in it were intended to represent two things at the same rime. First, each amount should have represented a real cost which was actually incurred in connection with the Ministry's highway maintenance program before privatization. Second, each cost shown was supposed to have been avoided after privatization.

Using this approach, the cost of the new, privatized program was to have been pegged, with additional increments for annual inflation and service. adjustments, so that the Ministry could control the cost of the program and not exceed what the original program would have cost, had it continued.

The underlying assumption was that conditions and level of service would continue unchanged, in relation to the circumstances in place before privatization.

In order for the Ministry to achieve its objective of equalizing program costs at the outset of the privatized program, it was essential for the Ministry to actually stop incurring the original program costs set out in the benchmark. Indeed, since there was virtually no cushion between the amounts pegged in the benchmark study and the total cost of the first round of contracts, the original estimates contained in the benchmark would have to be followed very closely for the privatized program to be delivered at the same cost as the Ministry's original program.

For this reason, the review team undertook a comparison of the projections and assumptions which served as the basis for the benchmark study, in view of what the team could discover about what had actually happened.

If the changes assumed in the benchmark study actually occurred, the review team would have had some basis for considering that the privatixed program actually achieved the Ministry's overall cost management objective.

On the other hand, if the changes did not actually occur, or if something else happened which had not been taken into account in the original planning, it would be important for the review team to examine the financial implications of these outcomes and estimate what effect they had on the cost management objective of privatization.

The considerations which the review team addressed in this manner are discussed below. The estimated financial implications of these considerations are also discussed below, and are set out in the sensitivity analysis shown on the facing page.

The Sensitivity Analysis

The column on the far left of the sensitivity analysis on the facing page shows the amounts included in the original benchmark study audited by Coopers & Lybrand.

The two columns under the heading 'Most Conservative' address the review team's most conservative, or lowest estimate of cost which should have been included, given the review team's understanding of what actually happened after privatization. The column headed '1993 Estimate' lists the amount of the review team's cost estimate in 1987/88 dollars. The column headed 'Estimated Dissavings' lists the review team's preliminary estimate of the financial impact of the variance from the cost savings originally projected by the Ministry using the original benchmark amounts.

put another way, the 'Dissavings' amounts reflect the estimated amounts of expenditure which should have been avoided due to privatization, but may not have been because the actual operational outcomes differed from the plans and assumptions used at the time the *study was* performed.

The columns under the heading 'Least Conservative' represent the highest cost estimates which the review team would accept, given actual operational outcomes..

The final heading, 'Most Likely', identifies the 'Estimates' and 'Estimated Dissavings' amounts which the review team considers most appropriate, given the information received during the review.

The Issue of 'Normal Cost'for Highway Maintenance

Before turning to the results of the sensitivity analysis, several additional concepts need to be considered. Fist, it should be realized that the benchmark study was intended to reflect the 1988 cost of maintenance related expenditures to ***be*** privatized and the total amount would be used as the benchmark for how much to pay contractors in the future.

Ideally, any amount used in this manner should have been determined on the basis that it was fairly representative of highway maintenance costs in a representative year, that is, the cost should have been 'normal' for a 'normal year'. The Coopers notes clearly stated that the 1987/88 numbers were not necessarily representative of any other year. Accordingly, in going forward it would have been necessary to consider operational changes and the degree to which events actually occurred.

With respect to this issue, the review team heard contradictory claims during the review. One assertion was that the costs were actually lower than normal in 1987/88 because the Ministry was deferring equipment purchases that year. Another view was that the costs were actually higher than normal because the equipment was being over-maintained in the last year to ensure the items would be in excellent condition to transfer to the contractors.

The Ministry's annual report identified varying weather and road conditions from district to district in 1988, such that it was not possible to assess whether the year had been representative of likely conditions and cost levels in the future.

The review team was reluctant to accept any particular representations about this issue during the review. The representations described above were used to construct some of the estimates in the sensitivity analysis, to present the possible effects of potential variations.

Results of the Review Team's Analysis

The Direct Costs - Foreman Areas

This component of the benchmark was intended to reflect the direct costs of road and bridge crews, including machinery costs, which would be eliminated through privatization.

These costs were taken directly from the Ministry's accounts of road and bridge crew activities and would be expected to be relatively accurate, assuming the crews and all equipment ceased to be used by the Ministry after privatization.

However, the review team determined that equipment costs recorded at this level were the result of a standard costing system which routinely allocated the purchase cost of equipment to the Districts. Therefore, the review team inquired to determine whether cost variances due to over or under allocations might be reflected in the 1988 amounts.

The team found that the headquarters equipment account showed a credit balance of $3.221 million at the end of 1988, indicating that equipment costs had been over-allocated to various cost centres in this amount Approximately 80% of this amount, or $2.58 million would have been recorded in the 'Direct costs-foreman areas' amount used in the benchmark study.

The review team discussed this issue at length with Ministry officials and concluded that an adjustment should be made to the costs recorded for 1988, to correct the over-allocation. Ministry officials were unsure about this issue. With the passage of time and changes in personnel, Ministry officials could not be certain that the team's interpretation was correct. However, Ministry officials accepted that the approach taken by the review team was reasonable in relation to the evidence that an over allocation had occurred.

In constructing the sensitivity analysis table shown earlier, the review team agreed that an adjustment for the over-allocation described above should be included, plus an arbitrary amount of $1 million dollars to reflect the possible over-maintaining of equipment discussed during the review. This produced a potential overstatement of benchmark costs of $3.58 million.

In the least conservative scenario, the review team estimated that a similar, arbitrary $1 million amount might reasonably reflect the cost of equipment purchases which were deferred, and would otherwise be included in the benchmark

The least conservative amount did not include the adjustment for the $2.58 million potential error described above, on the basis that there was some possibility that the review team had overlooked something or the Ministry might find new information, such that no adjustment was actually required.

Taking all these considerations together, the review team estimated that in all likelihood, this cost component was overstated by the estimated amount which the standard costing system had over-allocated to the Districts in 1988, that is, $2.58 million. Therefore, the review team concluded that a more accurate estimate of direct costs for road and bridge crew activities would have been $163,153,799 for 1988.

The Administration Component

This component of the benchmark was intended to reflect how much the cost of administration at the District office level would be reduced when the road and bridge crews employed by the Province transferred to the employ of private contractors.

At the time, the Ministry estimated that the cost of administration relating to highway maintenance crews at the Disuict office level would be reduced by 50%. Also, the cost of nine sub-offices was to have been reduced by 75% when the number of Districts was reduced from 37 to 28. The administrative costs in the original benchmark reflected these assumptions.

To assess the actual outcomes, the review team inquired of Ministry officials to determine whether the staff reductions described above had actually occurred. Ministry officials advised that some of the planned reductions had occurred, but not to the extent of the privatization plan.

The review team inquired as to why the reductions might have fallen short of the original plans and was advised that the original plans may have been too ambitious given the real *requirements at the* District Office level.

To further address this issue, the review team assembled lists of staff complements for four District offices from the 1988 year and compared them with current staff complements. The Ministry Performed additional research and analysis for the review team, to show which administrative positions were at issue, which positions had been eliminated and which had not.

The Positions which were eliminated were primarily accounts payable and payroll clerical functions no longer required after the road and bridge crews left the employ of the Ministry.

In each District, the reductions in staff complements did not meet the planned reductions of 50%.

The review team estimated that administrative staff reductions had occurred in the order of 30% of the administrative staff complement originally involved with highway maintenance.

The 30% reduction was therefore reflected in all the review team's sensitivity analysis estimates.

The Yard Overhead Component

The yard overhead component of the benchmark reflected 100% of the cost of the 'stock keeping' function performed by yard employees prior to privatization.

During the review, the review team was advised that all of the positions involved in this function had indeed been eliminated as the result of privatization. No adjustments were made in any of the review team's estimates of the benchmark amount.

The Stabilization and Sea! Coat Cost Components

The stabilization and seal coat cost components of the benchmark study were also estimates insofar as the unit costs for these activities had been estimated by the Ministry, for benchmark purposes.

The review team was unable to assess whether these costs reflected actual cost outcomes at any time, although it was clear that the amounts of work required from private contractors were established in the terms of their contracts.

Therefor, the review team did not consider it appropriate to adjust any of the estimates of what the costs should have been.

The British Columbia Buildings Corporation (BCBC) Cost Component.

The review team examined working papers supporting the BCBC cost. It consisted of amounts the Ministry had paid to BCBC before privatization, for properties held for road and bridge maintenance purposes, which were leased to pnvate contractors after privatization.

Several issues were identified as the result of this review. First, approximately 3% of the property costs were found to be for properties which did not actually transfer to private contractors. The discrepancies occurred primarily with some facilities at District office premises.

Therefore, the review team reduced this cost component by 3% in its estimates of what the cost amounts should have been for BCBC occupancy and utilities charges.

The more important issue arising out of the review of BCBC! charges stemmed from the fact that the rates which private contractors were charged for occupancy of the properties were up to 70% lower than the rates charged to the Ministry before privatization.

Essentially, the. rates were negotiated down to the lower levels in the first round of contract negotiations. Even though the contract prices had been rationalized using the Ministry's original, higher rates. contractors paid much less. Indeed, the discrepancy between what BCBC received from contractors and what had *been* received before privatization was so significant that BCBC demanded and received compensation for the foregone *revenue.*

Ultimately, the province paid BCBC a settlement of $12.5 million to compensate the corporation for foregone income to the corporation for the next 10 years, resulting from privatization.

Formal documents referring to this issue are attached in Appendix H to this report.

This issue will be discussed in greater detail, in later sections of this report

The Miscellaneous Cost Components

A number of other miscellaneous cost components were included in the benchmark study.

The largest item was the amount for employee benefits. Supporting documentation for this item was examined by the review team. No adjustment to the benchmark amount was rquired.

Minor adjustments were required for three of the smaller cost components. First, the cost of repairs to the highway infrastructure was found to be overstated because contractors were able to obtain amendments to their contracts which took away this responsibility if the individuals responsible for the damage could be found and they were insured by the Insurance Corporation of British Columbia. The review team estimated that this benchmark amount was therefore overstated by $500,000.

Next, the Telecommunications cost component was modified in the analysis because the original cost estimate for benchmark purposes was based on the projection that a substantial portion of the telephone system at the District office level would be eliminated when the offices were down-sized. Insofar as the offices remained the same, or grew in size with the addition of the new Area Managers, the review team estimated that this cost component was overstated by $100,000.

Finally, the benchmark estimate for driver training and safety program costs to be eliminated after privatization was also adjusted because, although the driver training positions had been eliminated after privatization, the safety officer positions had not. This benchmark cost was therefore reduced by $171,451 to reflect the ongoing costs of the Ministry's safety program after privatization.

The Imputed Financing Cost Component

The final component in the benchmark study was an amount called 'imputed financing costs'. This benchmark component was one of the most important insofar as it would be used by the Ministry to justify increases in the Ministry's annual cash cost for highway maintenance in the amount of approximately $ 11 million dollars, adjusted for inflation, in every year after privatization.

As far as the review team was able to determine, the imputed financing cost component of the benchmark study was intended to reflect the 'opportunity cost' incurred by the province in purchasing and holding a base stock of machinery, equipment, vehicles, supplies and small tools required in the Ministry's original highway maintenance program

The theory was that a 'cost Of Capital' was incurred as the. result of holding the Ministry's base stock of machinery and equipment and, insofar as no base stock was required after privatization, no 'cost of capital' was incurred and equivalent amounts could be paid to contractors at no net cost increase to the Ministry or government.

The review team fully accepted that the capital cost of machinery and equipment gave rise to an opportunity cost to government. This opportunity cost could be termed 'cost of capital' and could reasonably be calculated in the manner set out in the benchmark study. But for the review team, the fundamental question was whether additional cash costs should have been paid out by the Ministry after privatization, in respect of non-cash, imputed financing costs incurred before.

To address this issue, the review team first observed that after privatization, contractors would be paid the equivalent of what the Ministry had spent before, plus an increment for inflation, before considering the imputed financing costs described above. The review team also understood that the Ministry's actual cash costs before privatization had included the cost of all necessary equipment purchases, maintenance and replacement of fleet items.

The review team then considered that the privatization program had enabled the Ministry to convert its base stock of maintenance machinery, equipment and so on into cash, through the sale or lease Of many of the items. This cash could in turn be used to pay down the indebtedness of government, fund new programs, earn interest or fund the privatized highway maintenance program at higher levels of expenditure than before.

The latter option was chosen by the Ministry and higher levels of expenditure were funded to meet the combined contract prices of all the contractors.

With respect to the question of whether the privatized program cost more, the review team could therefor draw two conclusions. First, the cash cost of the privatized program most certainly exceeded the cash cost of the Ministry's original program in every year since inception. before considering the economic effect of recoveries. Second, funding some of the additional cash cost of highway maintenance after privatization may have been justifiable from an economic standpoint, to the extent that cash recoveries from the disposal of the Ministry's base stock were actually obtained and economic benefits from the recoveries were realized.

Next, the review team faced the task of trying to assess how much should be included in the updated benchmark for this component Indeed, if $100 million had been recovered from the disposition of Ministry equipment in the first year of privatization, then in economic terms, an amount such as $11 million, calculated by reference to this amount and the government's borrowing rate could reasonably have been incurred in additional cash costs after privatization and the Ministry and the province would have been no worse off. However, if the province obtained less than $100 million in recoveries, then a lesser amount should have been spent to ensure that the province was no worse off.

To address this issue further, the review team noted that proceeds to the Privatization Benefits Fund would only amount to $84.7 million dollars, accumulated over the five year period ended March 31, 1993. The team conferred with officials involved in the administration of the fund and estimated that up to $2 million would be received in 1994, bringing the total to about $86.7 million.

These amounts were very substantially less than the theoretical $100 million amount which was set out in the benchmark from the outset of privatization. For the review team, this therefore suggested that some of the increased cash costs were not offset by the economic benefits of recoveries.

The complexity of this issue and the degree of difficulty inherent in accurately quantifying the actual recoveries exceeded the review team's resources in the context of a preliminary review. To resolve the issue on a preliminary basis, the team estimated that the recoveries over the period might have yielded about two thirds of the economic benefits required to fund the increased cash Costs of the privatized program.

The review team also estimated that the appropriate amount might vary by 10 % either way, since it was unclear to what extent recoveries outside the Privatization Benefits Fund had occurred. It was also unclear to what extent equipment which contractors had used under lease agreements had been returned to the Ministry and to what *extent* the value of the equipment had been impaired. As an additional consideration, the review team noted that the higher cash costs of the new program would continue to increase with inflation while the economic benefits from recoveries would not likely keep pace with the resulting higher costs.

In summary, the review team agreed that up to 87.38 million dollars in economic benefits from the proceeds of equipment could conceivably have been available on an average annual basis to offset the increased cash costs of the new privatized program. This was reflected in the review team's best estimate in the sensitivity analysis. The other two estimates were prepared using the 10% variance described above.

Summary Comments Concerning the Benchmark Analysis and the Financial Impact of Privatization

In summary, the review team determined that the benchmark study of 1988 costs of maintenance related expenditures' presented an estimate of the cost of activities to be privatized which was higher than what could be eliminated once the program was fully implemented. The review team estimated that the most likely amount of the difference between the original estimate and the actual costs was $9.47 million.

The sensitivity analysis of the benchmark costs set out above therefore provided the review team with a basis for estimating that the financial impact of privatization was, for program costs accounted for in the benchmark that the overall cost of highway maintenance increased over pre-privatization levels by as much as the $9.47 million in 1988 dollars described above, for each year after the initiative was implemented.

Given this estimate,, the review team would have to perform the additional analyses described below, before drawing any conclusions about the overall impact of the program.

OTHER ONGOING COSTS INCURRED TO IMPLEMENT PRIVATIZATION

In the process of implementing the privatization initiative, the Ministry of Transportation and Highways made a substantial number of additional changes to the way it administered highway maintenance,. beyond the ones described above. In this section, these changes are addressed and the financial implications are discussed.

Before proceeding with the discussion, it is important to realize that none of the changes discussed below were factored into the Ministry's benchmark study of highway maintenance costs. It is unclear that these changes were fully evident at the time.

In any case, the review team inquired about them and, on the basis of the information obtained, estimated the financial implications of the changes.

The Cost of the Area Manager System

In previous Sections of this report, the review team pointed out that in implementing the privatization initiative, the Ministry of Transportation and Highways planned to down-size the administrative staff component at the Disuict office level by 50%. As noted previously, a portion of these staff reductions did actually occur.

On the other hand, the Ministry then found it necessary to add new Area Manager positions to the District office staff complements, specifically so that the new, private contracts for highway maintenance services could be administered properly. Varying numbers of new Area Manager positions were reported to the review team. Overall, a fair estimate of the number of new positions would be 150, including trainees.

These new positions caused the staff complements at the District office level to increase well beyond pre-privatization levels, more than offsetting both the actual reductions in administrative staff levels, and the originally projected reductions.

The salaries for Area Managers were estimated to exceed $7 million each year. In addition, employee benefits were estimated at approximately $2 million. Other costs arising in connection with the new staff complement totaled approximately $3.5 million annually, such that Ministry officials estimated that, in total, the new Area Manager system cost the Province as much as $12.5 million a year.

In reviewing the issue of new Area Manager positions, Ministry officials agreed that these positions had been created solely for the purpose of implementing the new, privatized program. The cost of these new positions had never been incurred before privatization. For greater certainty, these costs were not addressed in the benchmark study described above, nor would one expect them to have been insofar as they had never been incurred in connection with the Ministry's original program.

The review team also noted that these costs had not apparently been taken into account in any of the public disclosures about projected cost savings. If these costs had been factored into the original cost saving projections attributed to privatization, they would have completely offset the 'direct savings' component projected in the first and subsequent round of contracts.

To give a balanced perspective to the issue of the new Area Manager positions, the review team considered whether some portion of these costs might have been incurred in the Ministry's original program, if it had continued. It is conceivable that positions resembling the new Area Manager positions might have been created in the Ministry's original program, if the Ministry determined that a quality control program like the one implemented in the privatized program was needed. In this case, new costs would have been incurred such that it would be unfair to suggest that the Area Manager costs under consideration in the review pertained strictly to privatization.

Notwithstanding the reasonableness of this argument, the review team found no evidence to support the suggestion that the Mitt-y's original program had to be administered in this manner, or that new positions were essential in the Ministry's program. Indeed, the review team was very confident that the new Area Manager positions were absolutely essential to the administration Of the contracts under the privatized program. The only real issue that the team was aware of was the existence of some level of inconsistency between the way in which Area Managers performed their duties. All of the evidence heard by the team suggested that these positions had to be created for the Ministry to administer the maintenance contracts properly and the team therefore concluded that all of the costs should be accounted for as the direct result of essential requirements in the new, privatized program

A significant anomaly was noted in connection with the costs associated with the new Area Manager system.

Area Managers use their own personal vehicle-s to travel throughout the Province and attend to contract administration dudes in their contract areas. The Managers are reimbursed for their travel at $0.34 per kilometer.

Some Area Mangers are paid tens of thousands of dollars each year, above and beyond their normal salaries and benefits, for the use of their own personal vehicles on government business.

The review team questioned whether this practice was cost effective or whether it would be more appropriate and effective to use government vehicles for this purpose. Alternatively, the mileage rate could be scaled so that after a certain threshold level of claims, the rate would be reduced to ensure that total amounts claimed are reasonable.

The Shortfall in British Colwnbia Buildings Corporation (BCBC) Revenues

Earlier in this report, the problem of the shortfall in BCBC revenues due to lower building and occupancy costs for private contractors was set out In *that text,* a one time settlement was described, wherein the Province paid BCBC $12.5 million for the foregone income it would experience after private contractors were allowed materially lower rates for real properties than had been the case when the Ministry delivered highway maintenance services directly.

The financial implications of this issue are ongoing. First, the one time settlement was intended to cover the first ten year period of privatization, with no solution put forward to deal with later years. Presumably, the contract tendering process will never result in higher rates for government properties in future years. Therefore, BCBC's shortfall could become an issue again in the future.

Secondly, the excess cost incurred as the result of the $12.5 million should be reflected in some manner in the Ministry's analysis of cost of the privatized program. To deal with this issue properly, the additional annual cost should have been taken into account. If 11% was the interest rate used, the *one* time payment would have been the equivalent of approximately $2 million in additional costs in each year of the ten year period.

A second problem was noted by the review team During the review, the team was advised that in recent years, the Ministry had begun to lease portions of certain yards back from the contractors because the facilities were required by the Ministry to deliver its overall set of programs.

This issue might be investigated further, in follow-up activities to this study.

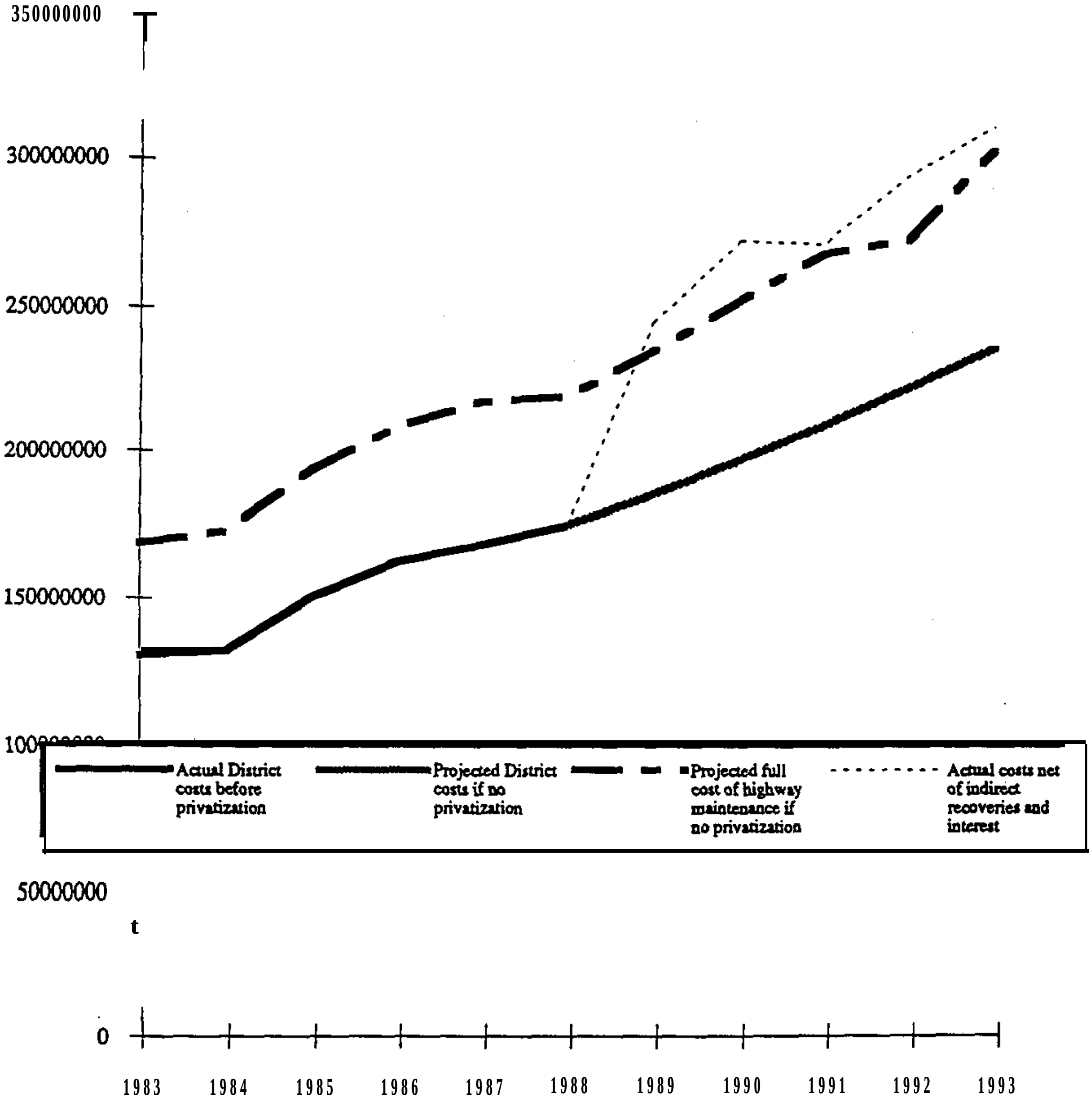
The Cost of Machinery and Equipment Maintenance

Another area where the privatization initiative had an effect was in the machinery and equipment maintenance area.

Before privatization, the Ministry had operated its own shops for servicing and maintaining vehicles and quipment All of these facilities were transferred to the custody of private contractors with privatization, such that the productive capacity of the Ministry to maintain its own vehicles and quipment was eliminated.

Afterwards, the Ministry had to turn to outside suppliers for the necessary maintenance services on vehicles and quipment remaining in inventory.

Comparative Analysis of Highway Maintenance Costs Before and After Privatization (Net of Indirect Recoveries and Interest)



The review team heard representations that the Ministry's cost of machinery maintenance services increased as the result of this change.

The review team was Unable to verify this assertion or quantify the actual effects. However, the review team was persuaded that cost increases had occurred.

Summary Comments Concerning Other Ongoing Costs

It should be realized that the changes and ongoing costs described above were, in the opinion of the review team, the direct result of the privatization initiative, as originally designed and implemented.

The review team could not find where any of these costs had been addressed in the Ministry's original estimates of the overall cost of privatization. Neither could the team see where these costs had been factored into any of the cost savings projections made public at the time the program first began.

Therefore, the review team concluded that these costs had to be accounted for in determining whether the privatized highway maintenance program cost more or less than the Ministry's original program.

In the final analysis, the review team concluded that the combined results of the sensitivity analysis of the benchmark, together with the other cost factors described above, had exceeded the projected cost of the Ministry's original program by approximately $15 million annually, in 1987/88 dollars, determined as follows.

Approximately $9.47 million per year was identified in the benchmark sensitivity analysis. Also, additional costs were incurred in the amounts of $12.5 million per year for the Area Manager system. As well, the shortfall in B.C. Buildings Corporation revenue which required a one time settlement amounting to the equivalent of $2 million per year had to be taken into account. These amounts were then offset by an estimate of $9 million for new tax revenues and other indirect benefits identified by the Ministry as resulting from privatization, on an annual basis.

In 1992/93 dollars, this would mean that excess costs in the order of $19 million may have been incurred in that fiscal year. The review team acknowledged that these estimates should be the subject of much more accurate estimation procedures. Nevertheless, the team concluded that excess cost were being incurred each year as the result of privatization, in this order of magnitude.

COMPARATIVE ANALYSIS OF THE COST OF HIGHWAY MAINTENANCE BEFORE AND AFTER PRIVATIZATION

INTRODUCTION

In the sections which follow, a comparative analysis of the cost of highway maintenance before and after privatization is developed. The purpose of this analysis is to further illustrate whether the privatized highway maintenance program of the Province cost more or less than the original program administered by the Ministry of Transportation and Highways.

A graph illustrating the analysis described below is set out on the facing page. The method used to construct the graph is described below.

Clearly, the analysis should be regarded as limited in precision and accuracy. It is based on estimates and projections which cannot be made precisely, or verified readily.

Nevertheless, the review team *made every effort* to ensure that the information reflected in the analyses was sufficiently complete, technically correct and reasonable in all aspects. However this was a Preliminary review and much of the material was based upon discussion with Ministry officials and limited analysis of data

It is also essential to realize that the review team had limited time and resources for performing the research. Also, Ministry accounting records had not been set up to produce the specific financial information directly. Therefore, the analyses which follow should be treated as estimates. Further work might reasonably be performed to refine the overall analyses set out below.

THE PROJECTED COST OF THE MINISTRY'S ORIGINAL PROGRAM

In an earlier section of this report, the cost of 'Adjusted Highway Maintenance' was described. This was the direct cost of road and bridge maintenance services at the District office level of the Ministry, before privatization.

The amounts used in this earlier analysis were taken directly from the accounts of the Ministry, net of 'Ferry maintenance' costs. They included all the direct costs incurred in the performance of road and bridge maintenance in the Province, except for employee benefits costs, building occupancy charges, certain 'rehabilitation' costs and some headquarters overhead costs.

To project the cost of the Ministry's program after 1988, the review team used the historical trend from a six year period immediately before privatization. Over the period 1983 to 1988, the annual cash cost of highway maintenance and administration at the District office level had increased from $130.2 million to $175.3 million. The annual expenditure increases ranged from a low of 1.23 % in 1984 to a high of 14.15% in 1985. In the last two years before privatization, the annual increases were 3.59 % and 3.96%. The average annual increase over the entire period from 1983 to 1988 was 6.23% .

To construct the projection of District costs under the assumption that privatization never occurred, the average annual increase of 6.23% described above was applied to the expenditure level in 1988, the last year before privatization, and each year thereafter, to create projected annual costs of the Ministry's original program at the District level year by year, to 1993.

Although the inflation rate (4.42%) was actually lower than 6.23% in this period, the 6.23% rate was used because it reflected historic costs. As such the review team assumed that the rate also reflected reasonable rates for infrastructure increases, increases in development approval activities at the District office level and other accounting changes for which actual amounts were not readily available during the review.

The cost curve described above was then 'normalized' to reflect the full cost of highway maintenance, against which the actual cost of highway maintenance after privatization could be compared.

The 'normalized' curve was required to reflect the District office costs and all the other Ministry costs which would be accounted for at the District office level after privatization. These amounts were taken from the review team's sensitivity analysis of the original benchmark study set out in earlier sections of this report. Essentially, all the cost components of the benchmark which the review team considered appropriate given actual outcomes since 1988 were simply added to the District level costs described above. These amounts totaled $51,945,068, representing the necessary employee benefits, BCBC charges, 'rehabilitation' and other miscellaneous costs set out in the review team's updated estimate of the original 1988 benchmark.

For subsequent years, the same $52 million amount was inflated by 6.23% each year and added to the projected District office costs for those years. In previous years, it was deflated by the same factor and added to the actual costs in those years.

In this way, a second cost curve was constructed to represent the review team's estimate of what the privatized program might reasonably have cost, had it continued.

THE ACTUAL COSTS

In the next part of the analysis, the review team added a third component to the graphic analysis of the comparative cost of highway maintenance services before and after privatization.

This component reflected the actual cost of highway maintenance plus office administration at the District office level after privatization, from 1989 to 1993.

This cost curve is shown superimposed on top of the two cost curves described previously.

The graph now shows that, even after giving consideration to the effect of recoveries and other relevant offsetting factors described below, the gross cost of the new, privatized program exceeded the review team's projections of costs which would have been incurred had the Ministry's original program continued.

In the original financial planning for the privatixed highway maintenance program, estimates of 'indirect benefits' were prepared which advised that certain amounts paid to contractors would be recovered in the form of School Taxes, Motor Vehicle License Fees, Social Services Tax, Corporation Income Tax and other miscellaneous 'benefits'.

These amounts were projected to be incremental, net increases in overall recoveries, compared with amounts received in the past in connection with the Ministry's original program. These items were accounted for as 'indirect benefits' in the Ministry's original cost savings projections

The graph described previously shows the net cost of the new, privatixed program from 1988 onward, after factoring in the Ministry's original projection of recoveries described above.

The graph was prepared using the amounts set out in the original public statements about indirect benefits. The amount projected for the 1992 year was doubled, because the original amount was estimated for a part year only. This doubled amount was then inflated by 6.23% for all subsequent years.

The graph shows that, even after taking into account the projected 'indirect benefits' of privatization using the Ministry's original projections, the cost of the program still exceeded the review team's estimate of how much the new program should have cost, compared with the Ministry's original program.

While considering the effect of the projected recoveries, the review also noted that no real evidence was available to verify that net, incremental recoveries had actually occurred in the amounts estimated by the Ministry.

The review team felt that it would be virtually impossible to compare the overall recoveries with the amounts which occurred in connection with the Ministry's original program, to determine the amount of any net indirect benefits which had actually been realized. The team was also led to understand that some of the estimates were very thinly supported, particularly the estimate of cost savings from reduced pay-roll processing activities in the Ministry of Finance.

Lacking better information, the review team included these 'indirect benefit' amounts in its comparative analysis of the cost of privatization, to retain the integrity of the previous model. The review team was not confident that these benefits had actually occurred in the amounts originally estimated.

SUMMARY AND CONCLUSIONS

In summary, the review team's research into the cost of the Ministry's original program and the cost of the privatized Program has Yielded the conclusion that the privatized program has cost more than would have been the case had the Ministry's original program continued, unchanged.

The reasons for this are summarized below.

First, the. review team's research into the original financial plans for privatization showed that certain components of these plans did not actually occur in the manner originally projected, such that costs which were to have been avoided such as a portion of the cost of administration at the District office level, were not actually avoided.

Other costs which were not 'dealt with in the original plans and which had not been factored into the projections of cost savings from privatization, such as the cost of Area Managers, occurred in very significant amounts.

Also, projected economic benefits such as the results of disposition of the Ministry's base stock, did not occur to the extent projected and otherwise required to offset increased cash costs of the new program.

Taking these factors together, the review team concluded that District level costs must have exceeded levels which would have occurred had the Ministry's original program continued.

Second, by reviewing the actual costs incurred at the District office level before and after privatization, the review team could clearly identify increases in gross costs which did not appear to be fully justified by reference to accounting changes, new recoveries or other factors which occurred after privatization. After factoring in all the relevant recoveries and ao estimate of the economic benefit resulting from sale of the Ministry's base stock of machinery and equipment, significant increases which appeared to be unexplained still remained. These amounts, shown graphically in the previous section, served to corroborate the review team's earlier estimate that the program could not have achieved the cost savings projected.

On these bases, the review team concluded that the cost of highway maintenance under the privatized program has increased since 1988, over and above what the Ministry's original program would have cost if it had continued unchanged, even after factoring in all known material recoveries.

Notwithstanding the conclusion set out above, the review team recommends that further detailed analyses be conducted to corroborate and refine these findings. The review team's analyses were performed at the macro level, on a preliminary basis. Additional, detailed research should be undertaken in greater detail and to the extent required, to confirm beyond a reasonable doubt, that costs have in fact increased beyond appropriate levels.

At that time, work should also be performed to identify an appropriate medium term cost profile for highway maintenance, for the future. This profile should serve as the basis for an ongoing program of cost management, such that highway maintenance costs are contained within an appropriate level given the Ministry's overall set of responsibilities and the relative levels of achievement the Ministry was capable of before privatization.

THE ISSUE OF BUDGETARY CONTROL

Another issue arose out of the Province's privatization of highway maintenance services, stemming specifically from the use of multi-year, fixed price contracts. By setting fixed prices for highway maintenance in contracts spanning more than one budget year, the Ministry would find that the cost of highway maintenance had become a tied cost, at least within single terms of contractors, and realistically, as long as such fixed price contracts were employed.

This fixing of the cost Of highway maintenance represented a significant change from when the Ministry had delivered the services directly. At that time, the Ministry had some ability to control or limit the cost of highway maintenance within a relevant range, depending on the budget maintenance requirements of the government as a whole.

In practical terms, budget cuts were frquent features of the annual fiscal cycle and the Minister had been able to respond by cutting discretionary projects in highway maintenance, before privatization.

With the advent of privatization, the entire cost of highway maintenance was converted to a constant, fixed cost over the three year terms of contractors and the discretionary ability to control costs annually was thereby eliminated.

This outcome may have produced a number of effects. First, it is fair to say that funding for highway maintenance is now protected from annual budget cutting so that highway maintenance plans and activities are no longer affected when restraint measures are implemented. This can be viewed as a positive outcome, to the extent that these plans and activities need to be preserved.

On the other hand, when the Ministry is required to respond to periodic restraint measures, it must do so by changing other plans and activities which, in total, amount to a smaller fundiig base to work with than was available to the Ministry before privatization. As a result, the Ministry may have to cut deeper into those other plans and activities since little can be accomplished with the funds committed to fixed price maintenance contracts. This has the effect of holding the maintenance work at a higher funding priority, even though the work itself may not qualify in comparison with some of the other rquirements of the Ministry.

For the review team, this issue took on serious proportions. Road and bridge 'rehabilitation' work is an essential part of the Ministry's overall responsibilities. This work was essential in the long term preservation of the highway infrastructure and apparently has a profound effect on the long term cost of the infrastructure.

In contrast, the review team noted that funding for 'rehabilitation work was not protected from budgetary resuaint measures the way highway maintenance funding was as the result of multi-year, fixed price contracts. As well, it appeared that the amount of 'rehabilitation' work being performed in the Province might have shrunk in comparison with previous periods. The review team wondered whether this was due, in any part, to fixed price contracting of highway maintenance work and the apparent increased cost of highway maintenance within a relatively static ministry budget

The concern that rehabilitation work was not being performed in adequate amounts and the related concern about fixing the cost of highway maintenance in fixed price, multi-year contracts were considered significant enough by the review team and a number of Ministry officials, that the review team concluded these issues should be looked at more closely in any follow-up work to this preliminary review.

THE ISSUE OF STEWARDSHIP OVER MINISTRY ASSETS

The plan for privatization of the province's highway maintenance services called for a transfer of substantially all of the province's highway maintenance machinery, equipment, vehicles, small tools, parts and supplies to the ownership or control of private contractors, under sale or lease agreements.

Many of the items were sold or leased in the first round of contracting. The lease arrangements contained rights of first refusal which permitted contractors to purchase the equipment at predetermined prices.

Working papers examined by the review team indicated that the value of the items to be transferred amounted to more than $100 million. Inventories of the items had been prepared by the Ministry. The items were also valued by the Ministry, by reference to historic cost information and a formula which adjusted historic cost values to 'depreciated book values'.

The original disposal plan called for depositing the proceeds of the sales and leases to the 'privatization benefits' fund. The proceeds were to be accounted for as 'revenues' in the fund. The Projected revenues had been used by the Ministry to project whether 'savings' had resulted from the privatization initiative.

For the review team, the disposition of the province's highway maintenance machinery, equipment, and other physical assets gave rise to a number of specific issues, as follows:

- first, were the accounting records of items to be transferred complete and accurate in comparison with the number and nature of physical items actually transferred through sale or lease;
- second, was fair value received for the physical assets which were transferred;
- third, were 'savings' actually realized in the amounts predicted;
- fourth, were 'privatization benefits' actually realized in the amounts predicted;
- fifth, what were the most significant financial and economic implications resulting from the disposition of the province's highway maintenance machinery, equipment, etc.

In order for the review team to answer these questions accurately and confidently, extensive accounting information and analyses would have been required. In particular, audited inventories of items to be transferred would have been needed, as well as extensive appraisals to support the values assigned to the items. Detailed records of proceeds of dispositions would have been needed to determine whether gains or losses on sales and leases had occurred. Summaries of these transactions would have been needed to determine whether, in overall terms, the province had gamed or lost from the dispositions.

Much of the information described above was either not available in the form required, or not available at all, during the review. Most importantly, the vehicles, machinery and equipment to be sold or leased to private contractors had not been appraised, in advance, by reference to fair market values. Although the Ministry had retained the services of a consultant to determine whether equipment had been valued fairly (see Appendix I), the review team was not altogether assured by the conclusions of the consultants insofar as the work did not include a comparison of Ministry valuation amounts with actual market values. Moreover, the number of assets reviewed by the consultants was not statistically significant and the consultants went on to advise "...the sample results may not be reflective of the entire equipment population" (see Appendix I . Conclusions),

In view of these findings, the review team was unable to draw firm conclusions about several of the issues described above. The review team noted that, insofar as audited inventories of equipment were never prepared and fair market values for the equipment were never determined by reference to actual sales values, it might never be possible to determine whether fair value had actually been received by the Province for the Ministry's highway maintenance assets. Certainly, such an analysis was beyond the scope of the review team, working in the context of a preliminary review.

The review team considered this matter carefully insofar as the estimated value of inventory to be disposed of was very substantial, in the order of $100 million The teem also considered that when assets are disposed of, it is essential to have strong internal controls to ensure that fair value is received and it was unclear during the review whether controls were adquate for this purpose. Similarly, it was unclear that in all material respects, fair value was actually received for the assets.

At the same time. the review team could not overlook the fact that much time had passed since the inventories had been prepared and the items had variously been transferred to, and in some cases, to and from contractors. The review team therefore had to consider what practical recommendations to make, to follow-up this issue.

In the final analysis, the review team agreed that a minimal amount of follow-up work should be done on a case study basis at the District office level, to document at least in qualitative terms how examples of the Ministry's base stock of machinery, equipment and so on were handled through the privatization process. Also, it would be useful for the Ministry to attempt an overall accounting for the proceeds since inception of the privatized program, to better assess the economic benefits resulting from the dispositions. This information might reasonably be useful in the process of setting a new cost profile for the future.

By undertaking these follow-up procedures, a greater level of public accountability concerning the disposition and stewardship of the Ministry's original base stock could be achieved .

As well, the review team thought that comprehensive information about the extent of assets still on hand in Ministry yards should be assembled and maintained at all times, to assist with safeguarding the assets and enabling informed consideration of what options might be available for the future. Consideration should also be given to having significant assets appraised.

Beyond this, the review team did not think that further efforts to address the issues described above would produce anything of value to the Ministry or the public, even though the review team had heard anecdotal evidence about some potential problems or lost value in the past.

THE OVERALL PERSPECTIVE

CONCLUSIONS AND RECOMMENDATIONS

At the outset of this preliminary review, the review team was given the task of analyzing the operational, financial and human resources outcomes of the privatized highway maintenance program of the Province of British Columbia.

As well, the team was charged with the responsibility of making recommendations concerning the need for a public review. Also, the team was requested to explore the costs and benefits of other options for highway maintenance service delivery.

These objectives were to be accomplished on a 'preliminary review' basis.

Having conducted the preliminary analyses and presented the individual observations, conclusions and recommendations concerning the privatixed program in prior sections of this report, the review team now provides an overview set of conclusions and recommendations taking into account the entire set of findings at once.

Fist, the review team came to regard the Province's 'privatization' of highway maintenance as just one approach to the privatization of road and bridge maintenance, and not the only approach. This matter should be given serious consideration because there may be other forms of private sector service delivery that would produce better benefits that are worthy of consideration.

The current privatized approach is essentially a mirror image of the Ministry of Transportation and Highways' original program in which one discrete work force per Highways Disuict has responsibility for all the maintenance functions throughout the District at all times during the year.

Accordingly, this work force must acquire and maintain the knowledge, experience and technical ability to perform all maintenance activities using all the relevant equipment, inventory, materiel and yard facilities, as well as the management ability to allocate these resources properly throughout the year.

This was the basic method of operation of the Ministry. The Ministry was able to operate this way successfully because it employed a stable work force and had the ability to develop the necessary expertise, knowledge, base stock of assets, and supervisory systems over many years.

Responsibility for this same approach was transferred to private sector contractors under short term contracts. Results oriented standards and monitoring mechanisms then had to be developed to ensure the contractors complied with the terms of their contracts and achieved desired objectives. Other systems had to be developed to ensure contractors managed properly.

These new systems gave rise to new costs not previously incurred under the Ministry's original approach. As well, the contractors were largely forced to adopt many of the same resources and methods as the Ministry had employed previously, thereby constraining their ability to control costs and obtain real efficiencies.

Even after six years of the privatixed program, the Ministry still requires new contractors to offer employment to the incumbent work forces in each area. Indeed, contractors still appeared to rely to a significant degree on the incumbent work forces in each area to have the necessary know how to perform all the seasonal and technical requirements for those areas.

Although there were some suggestions during the review that employment guarantee requirements could be relaxed in the future, there was no consensus that this could be changed without causing undesirable disruptions in smaller communities and unacceptable losses of intellectual capital, particularly with respect to bridge maintenance and other highly technical maintenance activities.

Indeed, there was more consensus around the notion of Province wide bargaining for the contractors' work forces, even amongst some contractors, such that while better management of labour inputs might be achieved, a level of homogeneity in the human resource component of the program would also emerge.

This would increase the resemblance of the privatized program to the Ministry's original program in which there was Province wide bargaining, while further contradicting the notion that the contractors are actually competing in fair and open markets for the labour component of their costs.

In addition, the contractors continue to use some of the same yards and gravel stockpiles belonging to the Province. They must conform to the results, quality and management standards of the Ministry. They must also maintain prescribed levels of subcontracting. One is left wondering what exactly the contractors can do besides make equipment lease decisions and set staff schedules.

Given these considerations, the review team could not subscribe to the notion that a full 'privatization' had actually occurred wherein market forces were the primary determinant of cost and competition to succeed was the primary motivation for meeting client requirements. Instead, the team came to regard the program as a somewhat uncomfortable collaboration between successful contract bidders and the Ministry, such that highway maintenance objectives were being achieved in a highly controlled and rigid manner.

As such, the team felt uneasy with the existing model.

Turning now to the financial issues, the review team concluded that the taxpayers of the Province of British Columbia are entitled to a cost efficient and effective highway maintenance program without being subjected to political arguments about whether one sector of the economy is more capable of delivering the services than another.

In reality, the cost of delivering highway maintenance services is a matter of fact, notwithstanding what approach is taken. It is these facts which should be presented to the public, not philosophical arguments which set the public sector off against private interests.

To be cost efficient and effective, any program must have effective management controls to ensure that requirements are clearly identified and met within appropriate budgetary constraints.

To serve taxpayers properly, the program must also be closely integrated with the Province's highway planning, construction and rehabilitation programs to obtain the greatest possible value for taxpayers' dollars.

Management of the activities in the program must be flexible enough to meet changing requirements due to natural factors such as weather. Management of the activities must also feature procedures and controls which respond appropriately to changing economic factors and varying budgetary constraints.

In the final analysis, the highway maintenance program of the Province must always achieve certain outcomes which assure safe, uninterrupted highway transportation services to the public. These outcomes are non-negotiable and permanent requirements which the taxpayers are due insofar as their obligation to pay tax has been legislated on a permanent and non-negotiable basis.

There are clear indications that the Province has incurred excess costs in comparison with the cost profile of the predecessor program of the Ministry of Transportation and Highways. Cost increases may have amounted to $15 to $20 million annually. Total cost increases since inception of the program might be as high as $100 million, to date.

The reason these excess costs have occurred is simple. The privatized program was implemented in such a manner that in all likelihood, it would cost at least as much as the Ministry's original program, from the outset. Unfortunately, a pilot project was not implemented to test the efficiency and effectiveness of the privatized model. Had this been done, a different approach to privatization might have been implemented. Indeed, Ministry officials estimated that only about sixty per cent of the Province's highway maintenance work would have been contracted and the Province would have maintained a substantial and strategic role in the service delivery function, had this option been considered at the time.

In contrast, the decision to privatize highway maintenance services was made before a valid analysis of the financial implications had been performed. Once the decision to privatiae the program was made, all the Minim-y's financial analyses were necessarily performed in the context of a need to rationalize the privatization decision.

Of the cost increases estimated in this report, more than half of the amounts were incurred directly by the Ministry to administer contract maintenance work at the District level. Much of the success of the privatized program has depended in some measure on these administrative activities and related costs. These costs did not appear to have been accounted for in any of the projections of cost savings released to the public.

The balance of excess costs incurred are the result of ongoing circumstances which were not supposed to give rise to ongoing costs after privatization, but did so in fact.

In summary, the review team concluded that there is strong evidence to indicate that the privatized highway maintenance program of British Columbia has cost substantially more than the predecessor program and a cost reduction Program should be explored forthwith.

How TO PROCEED

In earlier sections of this report, the review team provided numerous individual recommendations for follow-up work and necessary improvements to the Province's existing highway maintenance program. These recommendations will not be repeated here.

Instead, the review team will offer its comments on the pervasive question of whether the Province should end the privatization initiative and take back its responsibility for direct delivery of the services.

In short, the review team does not recommend any such wholesale changes to the current method of highway maintenance service delivery, at this time. Notwithstanding the team's concerns about projected costs, any wholesale changes could have more counter productive consequences compared with the status quo, unless appropriate levels of research, analysis, planning and re-engineering are first undertaken.

Next, the team advises that further reference to intractable issues such as the notion of public sector versus private sector efficiency will not serve in any way to advance the current highway maintenance service delivery case. Indeed, the review team regrets that this appeared to have been the main impetus for the wholesale changes which occurred in 1989.

cost savings in any context as large as the Province's highway maintenance program cannot be assured without prior case study analysis, pilot runs, testing of preliminary results, re-engineering, research and development, and independent verification by skilled and qualified program analysts. Simple philosophical views should not be the main basis on which such measures are taken.

Next, the review team recommends that the contractors be incorporated into the process of designing and implementing remedial action for this program. Contractors should be consulted with respect to all perceived problems and proposed changes, in advance, to maximize the benefit of their knowledge and experience and minimize the risks inherent in any remedial actions contemplated by the province.

In the final analysis, contractors should not have to bear undue costs of wholesale or remedial changes affecting this program, insofar as they already face substantial business risks on the reasonable assumption that the program will continue in its current form.

Having said this, a gradual process of assessment, measurement, improvement, innovation and Process m-engineering must be undertaken, in the opinion of the review team, to drive towards a pre-defined, time constrained goal of cost containment and service improvement, so that the cost of highway maintenance is returned to appropriate levels within an appropriately balanced portfolio of highway infrastructure expenditures.

Only in the event that this goal cannot be achieved, or that a critical combination of the problems described in this report cannot be resolved, should radical measures such as a complete reversal of the privatization initiative be contemplated.

At the same time, the review team agreed that the Ministry should always be in a state of readiness to step in and deliver highway maintenance services directly, in areas where the service delivery mechanism has failed.

Indeed the review team speculated that there might be important advantages for the Province as a whole if the Ministry undertook to deliver or directly control highway maintenance services in one or two suategic areas.

In this way, the Ministry could maintain its knowledge about input costs in relation to outputs, technologies, human resource issues and so on, to serve as the basis for administering the overall program as delivered by private contractors.

Next, the review team recommends that specific steps be taken to ensure that financial accounting information pertaining specifically to the full cost of the highway maintenance program be maintained to a higher standard than was evident in years gone by, so that the full cost of the service delivery mechanism can be monitored more closely at the District, Regional and Headquarters levels, separately from other aspects of the Ministry's operations.

Accurate financial information will be essential for the purpose of supporting management decisions directed towards the achievement of the goals described above.

Finally, the review team advises that the issue of highway maintenance service delivery mechanisms appears to be taking a higher profile, in both funding and policy terms, than highway construction and rehabilitation. This situation contradicts the review team's understanding of the real priorities. This situation should be corrected, possibly through changes in funding and programming, such that proper emphasis is placed on the right goals, objectives and funding levels, in the right combination on behalf of the public.

This then raises the final question of whether a public review is required. As indicated earlier, the review team regarded the public's concerns about service delivery in local areas to be an essential matter of inquiry which was not addressed in this preliminary review. Also, the team continues to be concerned about some of the human resource issues described earlier, and particularly the problem of maintaining a constant work force in the face of periodic corm-actor changes.

Some limited public inquiry might reasonably be undertaken to obtain critical information on these issues. However, the review team did not consider this adequate justification for a full public review.

Instead, the overall concerns identified in this report serve to underscore the need for concerted and co-operative efforts by Ministry management and maintenance contractors, to overcome the unsustainable costs and operational problems inherent in the contracted highway maintenance program of the Province of British Columbia

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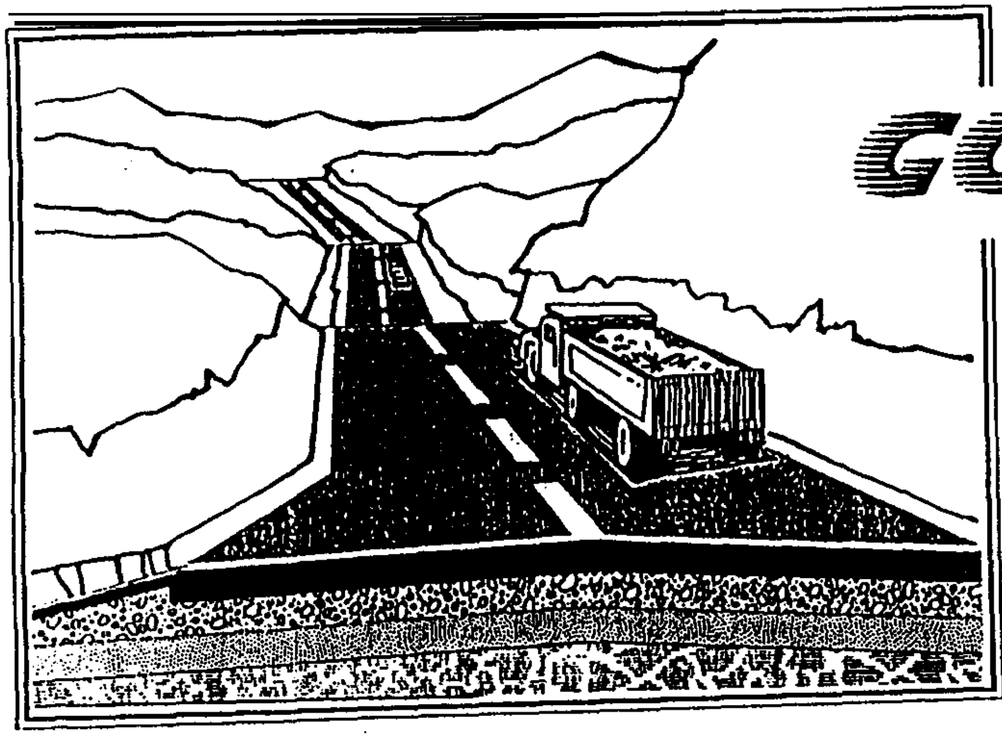
FREEDOM TO MOVE

Ministry of Transportation
and Highways
Honorable Rita Johnston, Minister
Giving You the Freedom to Move



GOOD ROADS COST LESS

The Rehabilitation of Roads and Bridges

Lea Associates

APROVINCEOFOPPORTUNITY

British Columbia-a giant on the Pacific Rim. Nearly one million square kilomctres of rugged, mountainous terrain, a wilderness of majestic green laced with mighty rivers, blue lakes and countless inlets and islands.

British Columbia-bigger than the states of Washington, Oregon and California combined,

A province of unlimited opportunity.

Home for three million people.

The transportation network of British Columbia is a complex infrastructure of rail, transit, marine and highway systems.

Since the days of the fur traders, British Columbia has relied heavily on its transportation systems to develop and prosper.

Highways are the lifelines between our communities.

There are 45,000 kilometres of provincial roads and highways, of which 21,000 are paved, and 2,500 bridges.

PRIVATIZATION OF HIGHWAYS AND BRIDGES MAINTENANCE

DETERMINATION OF COST

EXECUTIVE SUMMARY

Outlined below is a revised estimate of Highways and Bridges maintenance costs.

- Increase of $80,019,000 over previously established amount ($707,331,148) to new three-year Bottom Line of $787,350,148.

· Employee benefits.	$ 2,755,000	11,287,000
· Additional work.		
- Stabilization	5,082,000	
- Seal coat	3,450,000	
• Holding costs.		12,838,000
Class A equipment	5,580,000	
Class B equipment	2,205,000	
Inventory	4,121,000	
Payroll	932.000	
Annual increase	$24,125,000	
three year inflated increase	$80,019,000	

- Bottom Line is conservative estimate.
  - Includes tangible costs.
  - Excludes "soft" costs.
  - No additional changes to overheads
  - Estimated proceeds from equipment and asset disposal of $45,000,000 ignored (privatization pool).
- Reviewed and agreed new figures with MOTH and Treasury Board staff.
- Seven bids are under Bottom Line.

North Vancouver (#4)	89%
Salmon Arm/Vernon (#13)	97%
Penticton/Kelowna (#8)	86%
Nelson/Creston/New Denver (#10)	94%
Grand Forks/Rosland (#9)	98%
Terrace (#26)	94%
Courtney (#3)	95%

Eleven bids are within 10% of Bottom Line.

APPENDIX A

"GOOD ROADS COST LESS"

(see attached)

BUT...

British Columbia's highways arc aging. They arc in critical need of rehabilitation.

Engineering specialists place the value, and therefore the replacement cost of the provincial highways system at $12 billion.

45,000 kilometres of roads and highways and 2,500 bridges constitute a $12 billion investment by British Columbians.

The economic and social value of this investment? Immeasurable!

There is an opportunity to protect and guarantee the life of this investment.

In a word:

Rehabilitation

REHABILITATION-AWORDOFEXPLANATION

There are three major budget categories for highways and bridges:

1. CAPITAL: This provides for new construction of roads, highways and bridges.

2. MAINTENANCE: This provides for the day to day repairing and the general upkeep of roads and bridges.

3. REHABILITATION: When roads, highways and bridges deteriorate, rehabilitation restores them to their former efficiency and prolongs the life of the investment. Rehabilitation includes the strengthening and treatment of secondary roads. This is necessary to improve the carrying capacity of the roads to handle heavy vehicles and higher loads, and to meet the increasing demand of recreation users, tourists and the growing number of rural residents.

THE ARGUMENT FOR GOOD ROADS

Ninety per cent of all personal travel in Canada is by road. Our roads and highways are critical communication channels for daily commuters. Roads provide for the transportation of manufactured and raw goods.

Roads handle our buses, fire trucks, police cars, ambulances and general service vehicles.

Roads provide land access and act as a spur or catalyst for economic development.

Secondary roads are critical for recreation, tourism and regional development.

When roads and highways start to age and deteriorate, the users pay with:

- Greater wear and tear on motor vehicles;
- Longer travel times to get to work or a destination;
- Increased time for the delivery of commercial goods, therefore products become more expensive.
- Longer travel times result in additional waste of gasoline or motor fuels;
- Increased response times for ambulances, police and fire trucks;
- Declining road safety.
- When roads are allowed to deteriorate beyond a critical point in their life, agency costs to restore them skyrocket.

In essence:

Poor roads mean higher costs for everyone.

BRITISHCOLUMBIAISNOTALONE

Engineering specialists agree that most modern roads and highways start to deteriorate about the 16 year mark, and if they are not restored through a highways rehabilitation program, deterioration accelerates as the years go by.

This is an international problem. Many well established countries and most of the new, emerging nations of the post-war era, built modem roads and highways in the 1950s, and the 1960s.

Very few countries have embarked on extensive road rehabilitation programs. When existing roads are allowed to deteriorate everyone suffers. Many roads and highways around the world are literally falling apart. New York's public roads and highways have reached such a state that it will require billions of dollars merely to render the system safe.

Canada's roads and highways are the backbone of this country's transportation infrastructure. However, many Canadian roads and highways are in dire need of rehabilitation.

The Canadian Automobile Association zeroed in on the growing crisis when it recently published a special "Public Policy" document entitled: "Canada's Roads-A $100 Billion Investment At Risk." It said:

> **"Less and less money is being spent to maintain existing, heavily used roads and to construct badly needed highways. This grave situation deeply concerns the 2.7 million member** Canadian Automobile **Association!'**

It should be noted that 515,000 or almost 20% of CAA members are British Columbians.

POORROADSMEANHIGHERUSERCOSTS

International studies have shown that if smoother running surfaces can be provided by regular rehabilitation, there is a direct benefit to road users through savings in fuel consumption, reduction in tire wear and replacement of parts. This reduces vehicle operating costs for everyone, and these savings can be substantial.

However, rough roads can be expensive Extensive research conducted by the World Bank shows that road surface roughness has a direct effect on vehicle openting costs. It says poor roads, allowed to continue deteriorating, increase operating costs by six per cent each and every year.

Road roughness can also cause increased cargo damage, the costs of which are passed to the consumer. This adds a burden to BC producers competing on a regional, national or international level. In effect, BC's road system competes with the US road system when business competes for export markets.

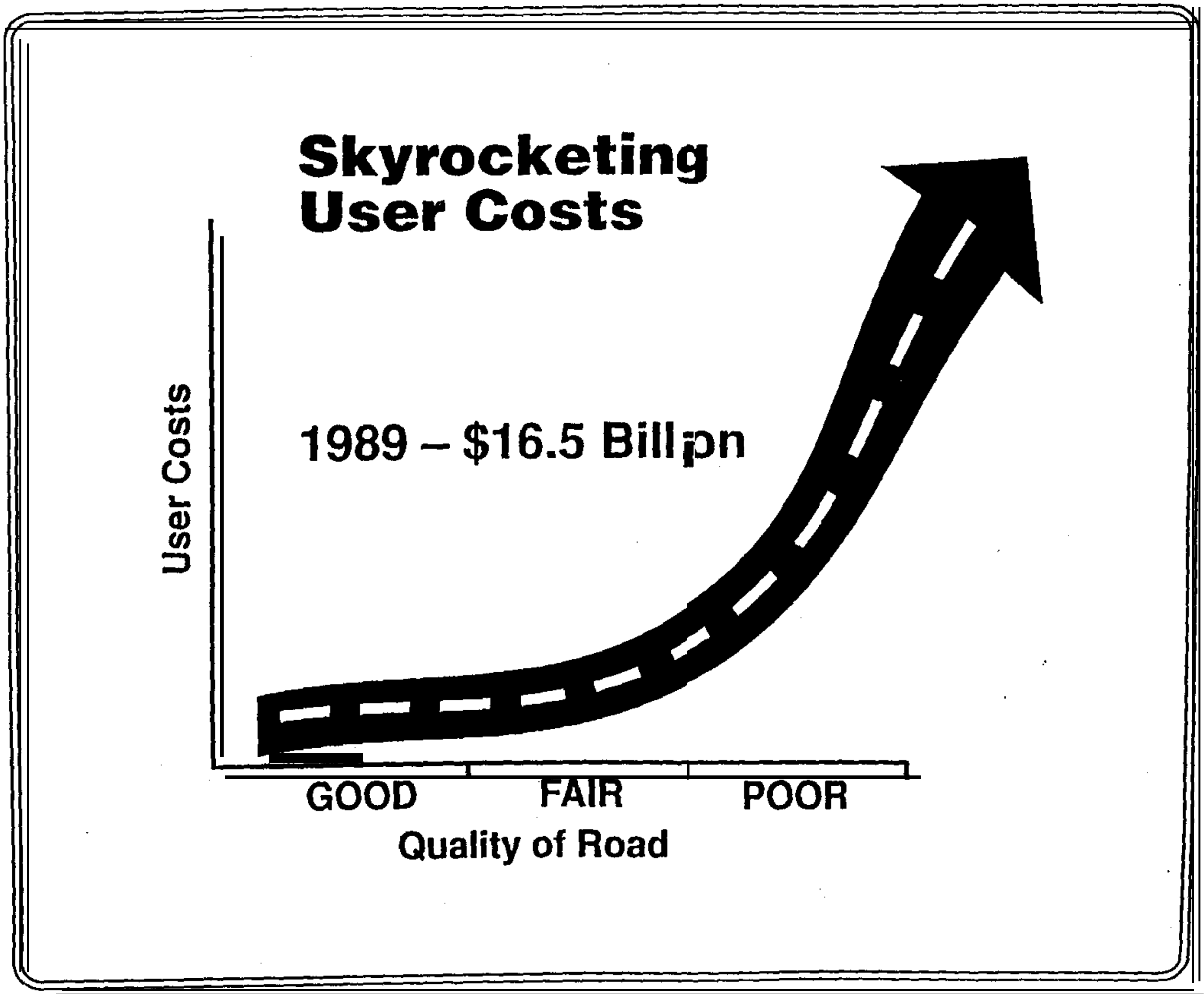
The Indian and Brazilian governments along with the World Bank have conducted extensive studies showing the direct correlation between vehicle operating costs and highway maintenance. Vehicle operating costs depend on road conditions, which in turn depend on the amount of highway maintenance.

A study in Costa Rica showed vehicle operating costs for a small car on a "fair" road were increased by six per cent more than on a "good" road, and were increased by 14 to 26% on a "poor" road. Other examples of vehicle opcnting cost increases on "poor" roads were: Bus-9 to 16% increase; Light diesel truck-24 to 38% increase; Heavy truck-29 to 46% increase; and an Articulated truck-27 to 44% increase.

Another study by The Road Information Prognm (TRIP) showed U.S. highways and bridges are wearing out faster than they can be repaired. For instance, Colorado highways and bridges'are typical of this dilemma and 58% of that state's roads need resurfacing or repair. "As a result," said the study, "Colorado motorists waste an estimated $234 million a year-or $101 per driver-in wasted fuel, excessive tire wear and extra vehicle repairs."

The International Message:

Poor roads mean higher costs for everyone!


Skyrocketing
User Costs
1989 – $16.5 Billion
User Costs
GOOD
FAIR
POOR
Quality of Road

POORROADSMAYPOSESAFETYHAZARDS

Poor roads can cause accidents. Of the total social costs incurred by highway users, road accidents and bodily injuries represent the highest impact. Many countries and organizations have attempted to quantify these costs, but no uniform method of evaluation exists.

This is because it's generally impossible to place a value on human life, the loss of life's amenities, plus the physical and mental suffering.

What can bc measured are property damage, hospital costs and medical benefits, loss of output, legal costs, incidentals, along with government "fixed costs" such as road safety research and promotion programs, policing and road accident data collection.

Conclusion:

Good roads are safe roads.

TIMELYREHABILITATIONSAVESMONEY

An asphalt road will generally last for 16 years before it starts to fail.

Once deterioration sets in, the condition accelerates quickly, and the costs of remedial action accelerate at an alarming-rate. At the same time, the increased roughness of the roads results in considerable increased cost to vehicle operators.

For instance, surveys state Ontario drivers each pay over $100 annually in additional car maintenance due to the poor condition of Ontario roads.

The rate of deterioration is relative to the highway's exposure to the environment, plus increased vehicle use and increased axle loads. Over the past few years, traffic in British Columbia has become much heavier than expected, and axle loads have often exceeded the design capacity of the pavements.

The number of registered vehicles in British Columbia has grown by 1.1 million over the past five years to 3.9 million-an increase of 39%.

For two thirds of the design life of a highway-about 12 years, and with routine maintenance, the highway's surface normally remains in "good to fair" condition. At about 16 years it will deteriorate into a "poor" condition.

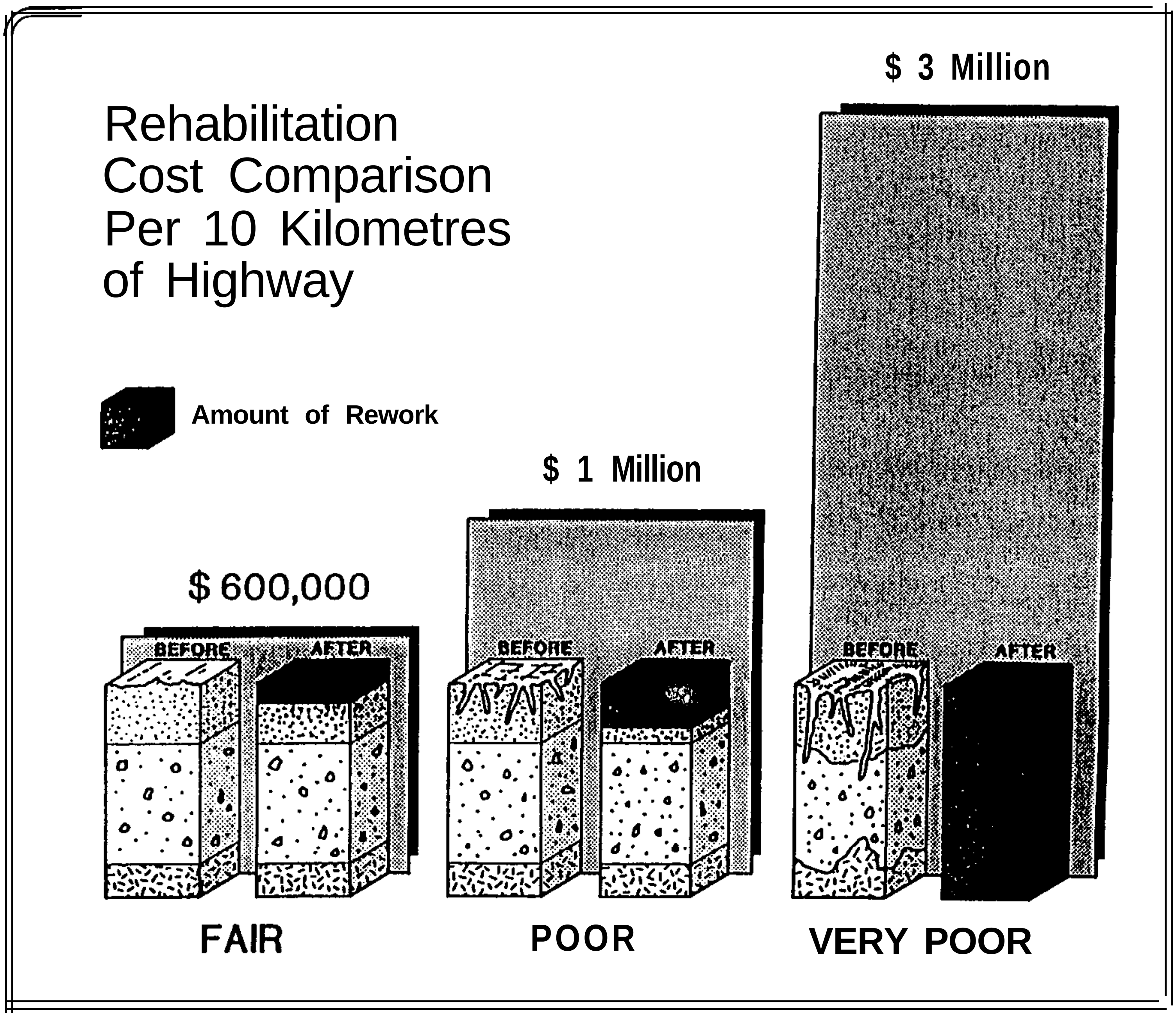
If the surface is allowed to deteriorate to that "poor" condition, restoration costs to the Ministry will be $1 million per 10 kilometres.

If allowed to deteriorate further, reconstruction is required, costing the Ministry $3 million per 10 kilometres. In addition, the routine maintenance costs on the deteriorating road increase rapidly with time.

If action had been taken while the road was in "fair" condition, restoration costs would have been $600,000 per 10 kilomctrcs.

The important conclusion:

Good roads cost less-if they are rehabilitated in time.


Rehabilitation
Cost Comparison
Per 10 Kilometres
of Highway
Amount of Rework
$ 600,000
$ 1 Million
$ 3 Million
BEFORE
AFTER
BEFORE
AFTER
BEFORE
AFTER
FAIR
POOR
VERY POOR

HOWOLDAREOURHIGHWAYS?

A 6,000 kilometre sampling or a third of the total paved roads and highways in the province showed that the average age of surfaces in 1981 was 12.8 years. By 1988 the average age had increased to 14.5 years. But "average age" does not give the complete figure. Older highway sections, for instance, those over 16 years, change rapidly from a "fair" to a "poor" condition.

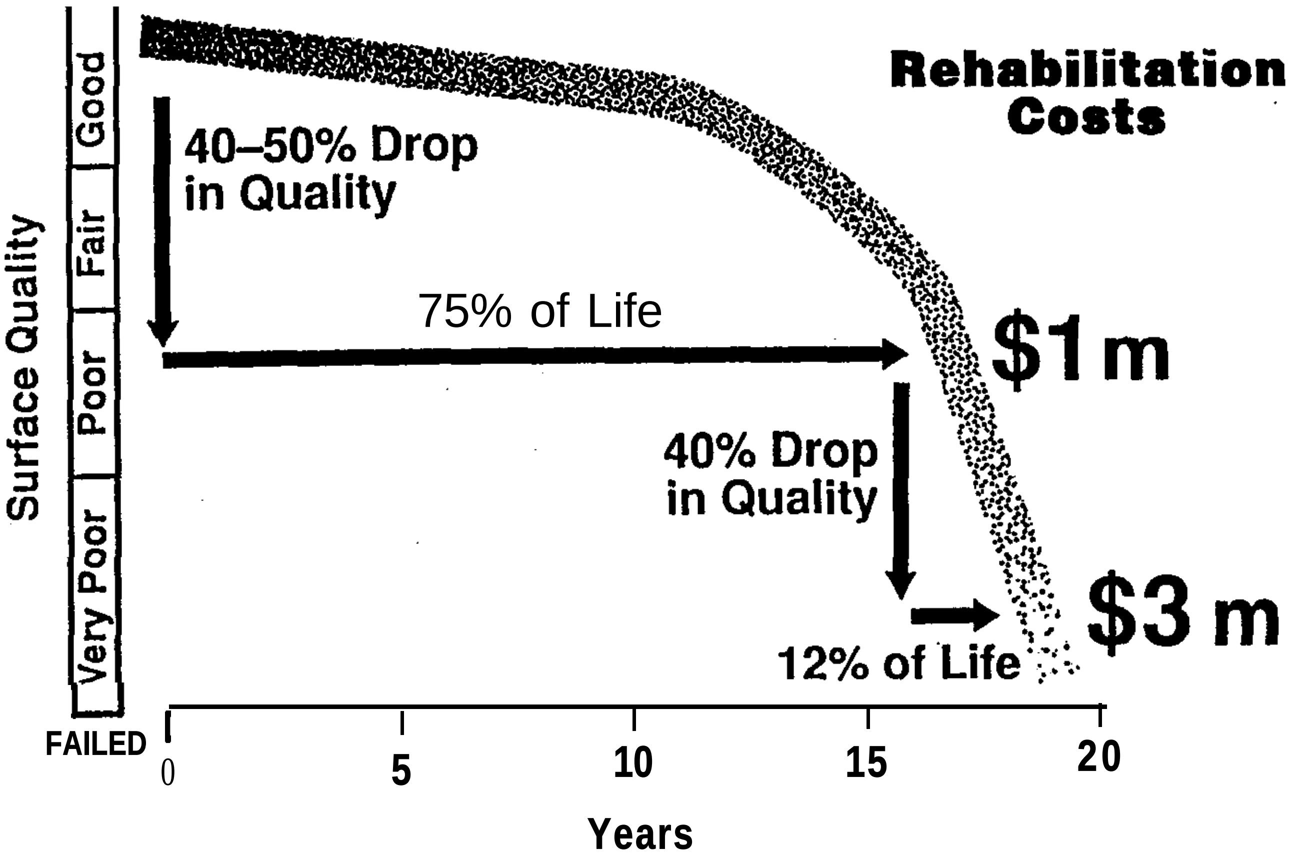
A recent study has shown:

> **There is a need to repave about 1,000 kilometres of highway every year over the foreseeable future, if we are to reduce the** amount of our "poor" highways.

Repairing 750 kilometres a year would only maintain the existing conditions. Anything less than 750 kilometres and the pavements will get progressively older, and the costs for government and road-users alike will get progressively higher.

Repairing 1,000 kilometres a year will progressively reduce the amount of older roads, giving them a renewed lifespan. The Ministry's added cost to raise the length from 750 kilometres to 1,000 kilometres would be about $25 million, while the saving to road users in reduced vehicle operating costs would be $165 million. That results in a net saving to British Columbians of $140 million per year. That's an investment that makes sense.

Typical Pavement Life Cycle



FREEDOMTOMOVEONSECONDARYROADS

British Columbia has about 24,000 kilometres of gravel and earth roads, many of them a heritage from our pioneering resource and forest industries.

With the expanding public demand for tourism and recreational access, these secondary roads are becoming an increasingly valuable public asset. They provide the freedom to move from the urban areas. Tourism and regional development follow.

But the public demands safe and dust-free roads. If neglected, gravel and earth roads deteriorate faster than sealed roads. Timely rehabilitation and upgrading will preserve this asset and open the way to future growth.

As more of British Columbia is discovered by visitors and tourists alike, increasing demands are made to the Ministry of Transportation and Highways to upgrade these secondary roads: widening, surface seals, all-weather access, better bridges, strengthening for increasing volumes of commercial traffic, realignment for safety and more efficient speeds.

The upgrading and strengthening of British Columbia's secondary roads is a significant opportunity to invest in the future of tourism, recreation and regional development.

It's an established fact:

Good roads promote growth.

HOWOLDAREOURBRIDGES?

British Columbia has 2,620 bridge structures. Some 1,500 of our bridges are either made of wood or are over 40 years old. Of these, 600 should be replaced in the next 10 years.

In 1987, there were 113 bridges posted with load limits. These represent a significant restriction to the economic movement of goods within the Province.

Rehabilitation and replacement, together with modification and strengthening of load-restricted bridges will cost approximately 5640 million over 10 years.

In addition, there are bridges on B.C.'s primary highway systems which were built before modern earthquake-resistant design specifications were in place. These structures require retrofitting to ensure that critical emergency services have the freedom to move following a major natural disaster. A 10 year program of updating to modern earthquake standards is estimated to cost $110 million.

The total required for a 10 year program of Bridge Rehabilitation is $750 million or $75 million a year for the next 10 years.

ANOPPORTUNITYTOENHANCEOURINVESTMENT

While many countries around the world are attempting to cope with the problems brought about by deteriorating roads and the critical need for rehabilitation, British Columbia has the opportunity to avoid this problem and enhance our $12 billion investment.

The opportunities are substantial. An immediate action program to rehabilitate and revitalize our roads will:

- Reduce the costs of rebuilding;
- Assist **road users by lowering costs of gasoline, tire wear and vehicle costs;**
- **Improve traffic flows;**
- **Improve road safety;**
- **Lower the costs of doing business;**
- **Provide incentives for economic growth and mobility;**
- **Gain public support:**
- **Satisfy public demand for improvements to the secondary road system:**
- **Improve the image of the Provincial Government;**
- **Guarantee the "Freedom to Move!'**

British Columbia is very fortunate that we have time to act, and the opportunity of proceeding in a cost-effective way. As guardians of a $12 billion investment, we arc at the crossroads with an opportunity to head off the growing crisis of deteriorating roads and bridges.

Rehabilitation is an inevitable fact of life, yet the longer we wait, the greater the cost, for government, for business, and for the people of British Columbia. As trustees of our roads, highways and bridges, it's our **task** to ensure continued economic growth and mobility, while getting the most for our transportation dollar.

IT MAKES SENSE: GOOD ROADS COST LESS

THE PROPOSAL

The Ministry of Transportation and Highways, recognizing the economic importance of British Columbia's highways and bridges, and further, the economic wisdom of prompt and timely rehabilitation of the highways system, requests additional funds be made available to the Rehabilitation Budget.

The 1989 budget is $150.6 million.

To properly rehabilitate our highway system requires the following expenditures now and for the next 10 years.

Primary Roads: 1,000 kilometres @ $100,000 per kilometre	$100 million
Bridges:	$ 75 million
Secondary Roads:	$ 75 million
TOTAL:	$250 million

APPENDIX B

ROAD AND BRIDGE MAINTENANCE COSTS FOR 1987/88

(see attached)

TAl 1

SAMPLE VALUES

	Number of Units	Original Price $	Current Estimated Replacement Value $	Present Value $	Discount $	Discount %	Sales Value $	CCL Estimated Value $	Difference $	Difference As a % of Sales Value %
Total values	80	3,591,122	6,941,000	2,215,263	31,814	1.44	2,183,449	2,179,500	3,949	.18
Items sold	23	567,773	1,531,000	212,710	31,614	14.96	160,896	337,000	(156,104)	(86.29)
Leased items	57	3,003,349	5,410,000	2,002,553			2,002,553	1,842,500	160,053	7.99
1981 models and older	51	2,372,694	5,099,000	951,094	29,692	3.1	921,202	1,351,000	(429,798)	(46.66)
1982 Models and newer	23	1,218,428	1,842,000	1,264,169	1,922	0.2	1,262,247	628,500	433,747	34.31
Over valuatlone	28	1,414,741	2,199,000	1,353,736	1,922	0.14	1,351,814	904,750	447,064	33.07
Under valuations	52	2,176,381	4,742,000	661,527	29,892	3.47	631,635	1,274,750	(443,115)	(53.28)
Contract Area 6	18	533,531	1,026,000	499,263	5,817	1.17	493,446	362,250	111,196	22.53
Contract Area 10	35	1,493,567	2,971,000	741,529	12,352	1.67	729,177	906,250	(177,073)	(24.26)
Contract Area 17	27	1,564,024	2,944,000	974.472	13,645	1.4	960,826	691,000	69,826	1.27

Although there ate a number of individual variances between our Estimate of Value and the Ministry's valuation, the net effect of the Ministry's sales Value/Present Value calculations compared to our Estimates of Value is an overvaluation of $3,949 in aggregate (less than 0.24 on Sales/Present Values) for the sample of $2,183,449. While we believe our selection of items is representative of the equipment population, the number of assets reviewed is not statistically significant and therefore the sample results may not be reflective of the entire equipment population.

References

First Offer	February 1989
Supply Post	March 1989
Truck & Trailer	March 1989
Machinery Trader	April 21, 1989
Rock and Dirt	April 1989
The Last Bid	February 1989
The Last Bid	June 1988
The Last Bid	April 1988
Data Quest Equipment Value Guide	

HIGHWAY MAINTENANCE

SUMMARY OF 28 CONTRACT AREAS:

Area #	Contract Area	Estimated Direct & Indirect Costs in 1987/88	
4	North Vancouver	$6,877,323	See Schedule 1 For Detailed Costs
5	Gibsons	2,312,626	
6	New Westminster	11,673,643	
7	Chilliwack	10,541,169	
15	Kamloops	7,468,367	
13	Salmon Arm / Vernon	10,257,269	
8	Penticton / Kelowna	10,251,492	
14	Merritt	7,878,049	
16	100 Mile / Lillooet	9,018,570	
10	Nelson / Creston / New Denver	10,988,970	
9	Grand Forks / Rossland	7,339,770	
11	Cranbrook / Fernie	7,982,823	
[illegible]	Revelstoke / Golden	6,555,361	
	Prince George	9,599,399	
18	Quesnel	6,953,153	
21	Dawson Creek	9,822,954	
	Fort St. John	8,186,466	
	Vanderhoof	5,033,306	
20	McBride	4,419,292	
17	Williams Lake	7,860,123	
27	Prince Rupert	2,091,077	
26	Terrace	3,267,741	
28	Dease Lake	6,197,871	
25	Smithers	7,840,764	
24	Burns Lake	4,221,868	
2	Nanaimo / Port Alberni	6,826,688	
1	Saanich	9,098,175	
3	Courtenay	7,870,555	
	TOTAL CONTRACT AREAS:	$208,434,864	See Notes 1 and 2 Below

Costs Not Allocated To Contract Areas:

1) HQ / Regional Bridge Maintenance	$3,745,610	See Schedule 2 For Details
2) HQ / Regional Road Maintenance	33,793,952	See Schedule 3 For Details
3) DO Technical & Avalanche	26,547,738	Not Part Of the "Business Opportunity" Package
4) Ferry Maintenance & Operation	11,306,414	Not Part Of the "Business Opportunity" Package
5) Machinery Maintenance Credits	(3,221,023)	See Note 3
SUB-TOTAL:	$72,172,691	
TOTAL:	$280,607,555	
1987/88 Actual Expenditures Total Maintenance	$280,395,328	
Difference =	$212,227	
Percentage =	0.08%	

NOTE 1:

In addition to the above costs, a contractor will need to consider the following costs which are NOT included in the "allocated" costs.

- Regional & Headquarters Costs
- Central Agency Costs - Legal, Provincial Treasury, OCG
- Cost Of Borrowing To Contractor
- Insurance Costs
- Postal Costs
- Queen's Printer Costs
- Allowance For Risk & Profit

NOTE 2:

In addition to the bids from contractors, the ministry will need to consider the cost of 145 Contract Managers which is estimated to be $7 million.

NOTE 3:

This amount is the actual fiscal 1987 year-end balance remaining in the Machinery Maintenance account. In theory, the account should end up with a zero balance at year end, however, efficiency savings and reduced expenditures in the final quarter of 1987/88 created lower than expected costs. The rental charges were not reduced accordingly and therefore a credit balance remained at year-end.

06-Jul-8?

Schedule 1

1987/88 HIGHWAY MAINTENANCE COSTS
ALOCATED BY CONTRACT AREAS

CONTRACT AREA	LABOUR COST	OVERHEAD LABOUR	MATERIAL	OVERHEAD MATERIAL	EQUIPMENT	OVERHEAD EQUIPMENT	HIRED EQUIPMENT	OVERHEAD HIRED	Base Occip ~~EMPLOYEE BENEFITS~~	Utilities ~~BASE OCCUPANCY~~	Employee Benefits ~~UTILITIES~~	SYSTEM DAMAGE	TOTAL
REGION #1													
NORTH VANCOUVER(#4)	2,445,888	101,688	1,065,965	16,329	1,201,245	9,424	707,117	0	451,267	333,764	484,039	60,597	6,877,323
GIBSONS(#5)	691,049	52,562	424,880	3,018	496,298	816	220,177	0	151,141	110,682	141,286	20,718	2,312,626
NEW WESTMINSTER(#6)	3,430,260	166,299	2,045,415	112,635	1,531,855	11,158	1,203,650	72	1,573,243	784,270	683,346	131,439	11,673,643
CHILLIWACK(#7)	2,855,555	125,436	2,201,794	97,833	2,447,992	3,740	774,952	2,251	870,912	490,183	566,388	109,133	10,541,169
REGION #2													
KAMLOOPS(#15)	2,039,261	132,298	1,371,494	24,757	1,682,017	24,530	487,512	140	807,980	425,185	412,596	60,597	7,468,367
SALMON ARM/VERNON(#13)	2,781,234	144,991	2,419,803	42,313	2,197,800	16,304	825,032	0	752,843	460,319	555,983	60,597	10,257,269
PENTICTON/KELOWNA(#8)	3,196,206	123,331	2,087,580	44,592	2,426,146	16,934	886,219	0	422,122	335,469	630,712	82,181	10,251,492
MERRITT(#14)	2,021,427	86,533	1,499,411	29,715	1,938,543	5,451	836,762	0	687,969	341,111	400,512	30,614	7,878,049
100 MILE/LILLOOET(#16)	2,364,343	126,976	1,874,523	53,467	2,108,429	13,328	1,337,237	0	316,287	300,427	473,351	50,204	9,018,570
REGION #3													
NELSON/CRESTON/NEW DENVER(#10)	3,304,443	214,185	2,463,667	25,492	2,502,732	13,654	530,960	0	738,998	476,095	668,539	50,204	10,988,970
GRAND FORKS/ROSSLAND(#9)	2,161,698	133,872	1,805,513	24,492	1,660,907	12,406	447,897	0	372,165	239,151	436,158	45,511	7,339,770
CRANBROOK/FERNIE(#11)	2,363,138	158,309	1,823,001	19,880	1,741,628	13,468	592,153	0	435,158	290,878	479,075	66,136	7,982,823
REVELSTOKE/GOLDEN(#12)	2,110,782	104,818	1,119,173	18,967	1,455,327	6,669	397,496	0	436,616	426,344	420,964	59,203	6,555,361
REGION #4													
PRINCE GEORGE(#19)	2,315,545	101,907	2,220,045	37,272	2,362,234	12,366	813,316	0	793,853	435,568	459,316	47,977	9,599,399
QUESNEL(#18)	2,221,338	91,785	1,112,521	15,865	2,168,256	5,222	416,297	0	207,849	237,475	439,493	37,051	6,953,153
DAWSON CREEK(#21)	2,515,703	124,183	1,447,434	55,556	2,026,036	7,585	2,455,043	0	399,571	253,454	501,578	36,811	9,822,954
FORT ST.JOHN(#22)	2,183,590	83,469	1,220,527	13,722	1,857,850	6,559	1,766,917	0	293,249	267,224	430,741	62,617	8,186,466
VANDERHOOF(#23)	1,258,618	70,919	865,999	25,401	1,359,509	3,410	869,570	0	156,823	146,148	252,612	24,297	5,033,306
MCBRIDE(#20)	1,187,339	71,384	1,035,060	2,729	1,057,893	8,028	216,586	0	376,087	193,477	239,157	31,552	4,419,292
WILLIAMS LAKE(#17)	1,905,243	81,275	1,346,722	4,658	1,706,000	1,806	1,424,917	0	495,912	293,035	377,438	20,117	7,860,123
REGION #5													
PRINCE RUPERT(#27)	496,258	25,340	491,796	9,504	330,269	2,117	184,088	0	233,609	197,064	99,104	21,929	2,091,077
TERRACE(#26)	810,046	62,873	885,604	36,173	583,703	10,706	322,237	0	166,609	187,078	165,855	36,857	3,267,741
DEASE LAKE(#28)	1,344,178	86,974	1,202,573	82,706	990,385	4,477	826,989	0	567,701	765,957	271,919	54,012	6,197,871
SMITHERS(#25)	1,838,264	126,404	1,901,907	22,878	1,651,170	13,010	1,008,974	0	466,381	493,173	373,297	45,316	7,840,764
BURNS LAKE(#24)	1,045,677	53,601	1,054,861	19,740	1,037,209	5,649	318,017	0	281,354	171,624	208,863	25,263	4,221,868
REGION #6													
NANAIMO(#2)	1,870,166	116,224	1,925,968	79,068	1,182,383	5,403	736,784	0	306,239	181,221	377,414	43,817	6,826,688
SOUTH ISLAND(#1)	2,351,663	145,697	2,178,309	84,327	1,574,906	5,101	1,031,575	0	733,449	474,833	474,498	43,817	9,098,175
COURTENAY(#3)	1,938,630	122,446	2,140,942	153,966	1,411,152	1,547	866,407	0	413,252	404,370	391,605	26,236	7,870,555
TOTAL	57,047,542	3,035,780	43,331,487	1,152,054	44,689,824	240,869	22,504,931	2,463	13,913,647	9,715,579	11,415,831	1,384,803	208,434,862

04-Jul-88

C OLUMNS HEADING:

LABOUR	DIRECT MAINTENANCE LABOUR COST
OVERHEAD LABOUR	LABOUR OF 100% STOCKKEEPING PLUS 50% ADMINISTRATION
MATERIAL	DIRECT MAINTENANCE MATERIAL COST
OVERHEAD MATERIAL	MATERIAL OF 100% STOCKKEEPING PLUS 50% ADMINISTRATION
EQUIPMENT	DIRECT MAINTENANCE EQUIPMENT COST
OVERHEAD EQUIPMENT	MINISTRY EQUIPMENT OF 100% STOCKKEEPING PLUS 50% ADMINISTRATION
HIRED EQUIPMENT	DIRECT MAINTENANCE HIRED EQUIPMENT COST
OVERHEAD HIRED	HIRED EQUIPMENT OF 100% STOCKKEEPING PLUS 50% ADMINISTRATION
BASE OCCUPANCY	BCBC RENT CHANGES
UTILITIES	BCBC UTILITIES CHARGES
EMPLOYEE BENEFIT	19% OF LABOUR AND OVERHEAD LABOUR
SYSTEM+DAMAGE	$10,000 PER DISTRICT FOR COMPUTER CHARGES PLUS DAMAGE TO GOVERNMENT PROPERTIES
TOTAL	TOTAL

SCHEDULE 2

The following headquarters and regional office bridge maintenance costs in 1987/88 were not allocated to the 28 contract areas:

Director Maintenance Services	- For Bridge Maintenance, Clearing, Painting, Bridge Damage and Bailey Bridging	$766,615
Director Financial Services	- Employee Benefits For HQ Staff	250,367
Regional Directors	- As per the Regional Office Balance Sheets	2,728,628
	Total	$3,745,610

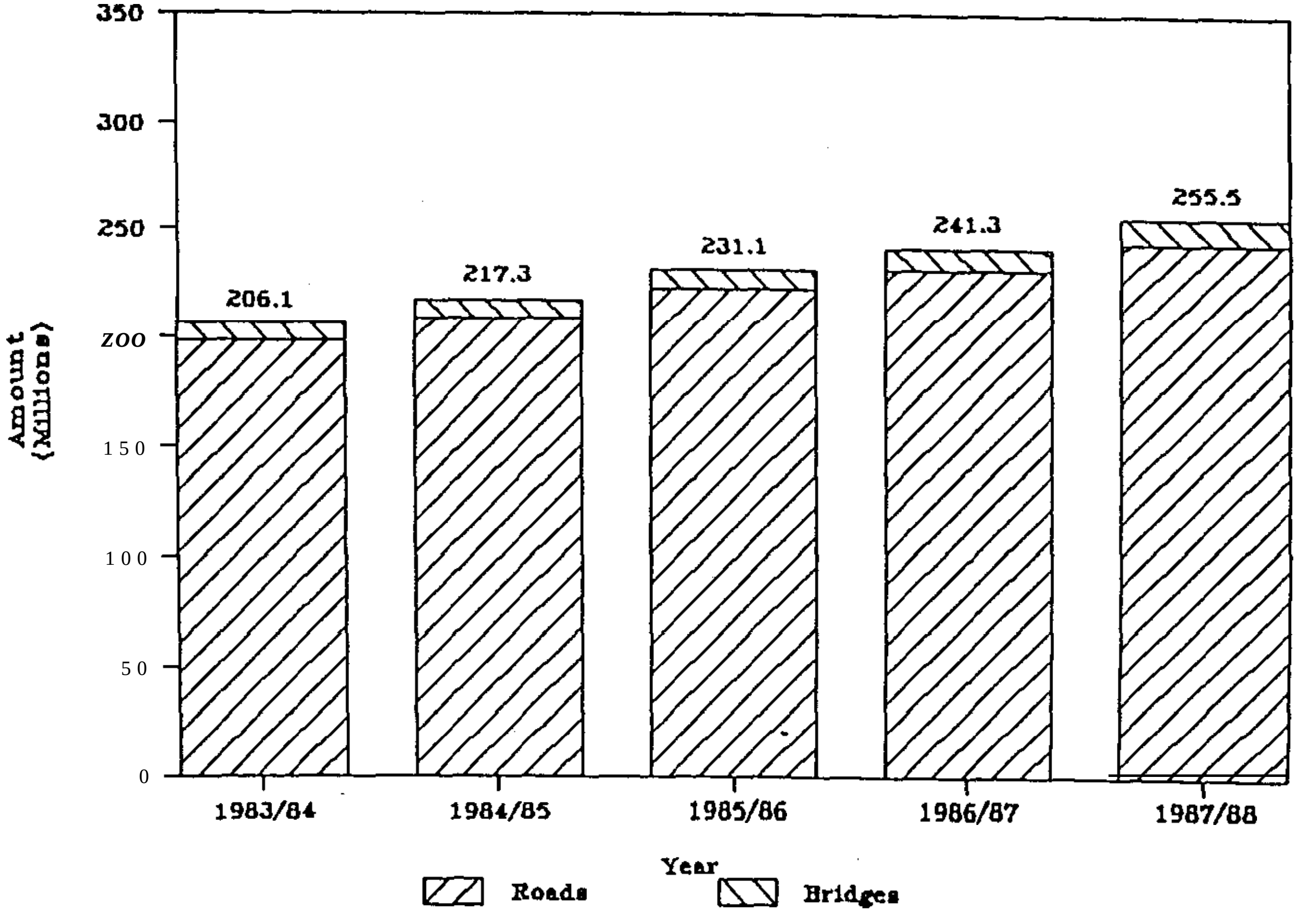
SCHEDULE 3

The following headquarters and regional office road maintenance costs in 1987/88 were not allocated to the 28 contract areas:

Director Maintenance Services	- Forest Service Access Rd. Mtce. Pruchas Of Mats, Supplies & Utilities		$3,392,353
Traffic Section	- Street Lighting, Traffic Signals, Administration		3,669,686
Senior Avalanche Coordinator	- Avalanche Control		363,666
Director Equipment Services	- Intra-Ministry Rental Credit		(226,133)
Director Financial Services	- Employee Benefits, Legal Expenses, Taxes, Sundry Projects		7,616,133
Director Building Services	- Base Occupancy, Tenant Improvement Charges		1,957,891
D[illegible]tor Information Systems	- Data/Word Processing Supplies, Administration		3,576,492
[illegible] c Information Office			191
TOTAL HEADQUARTER COSTS			$20,350,279
	Region 1 (Burnaby)	2,726,771	
	Region 2 (Kamloops)	2,851,163	
	Region 3 (Nelson)	2,068,823	
	Region 4 (Pr. George)	2,320,057	
	Region 5 (Terrace)	1,528,184	
	Region 6 (Nanaimo)	1,948,675	
Regional Costs	- As per the Regional Office Balance Sheets		$13,443,673
TOTAL ROAD MAINTENANCE COSTS - HEADQUARTERS & REGIONS			$33,793,952

5 YEAR EXPENDITURE ANALYSIS

ROAD & BRIDGE MAINTENANCE *



- Note: These figures include direct costs of H.Q. and field operations. Indirect and overhead costs have been excluded.

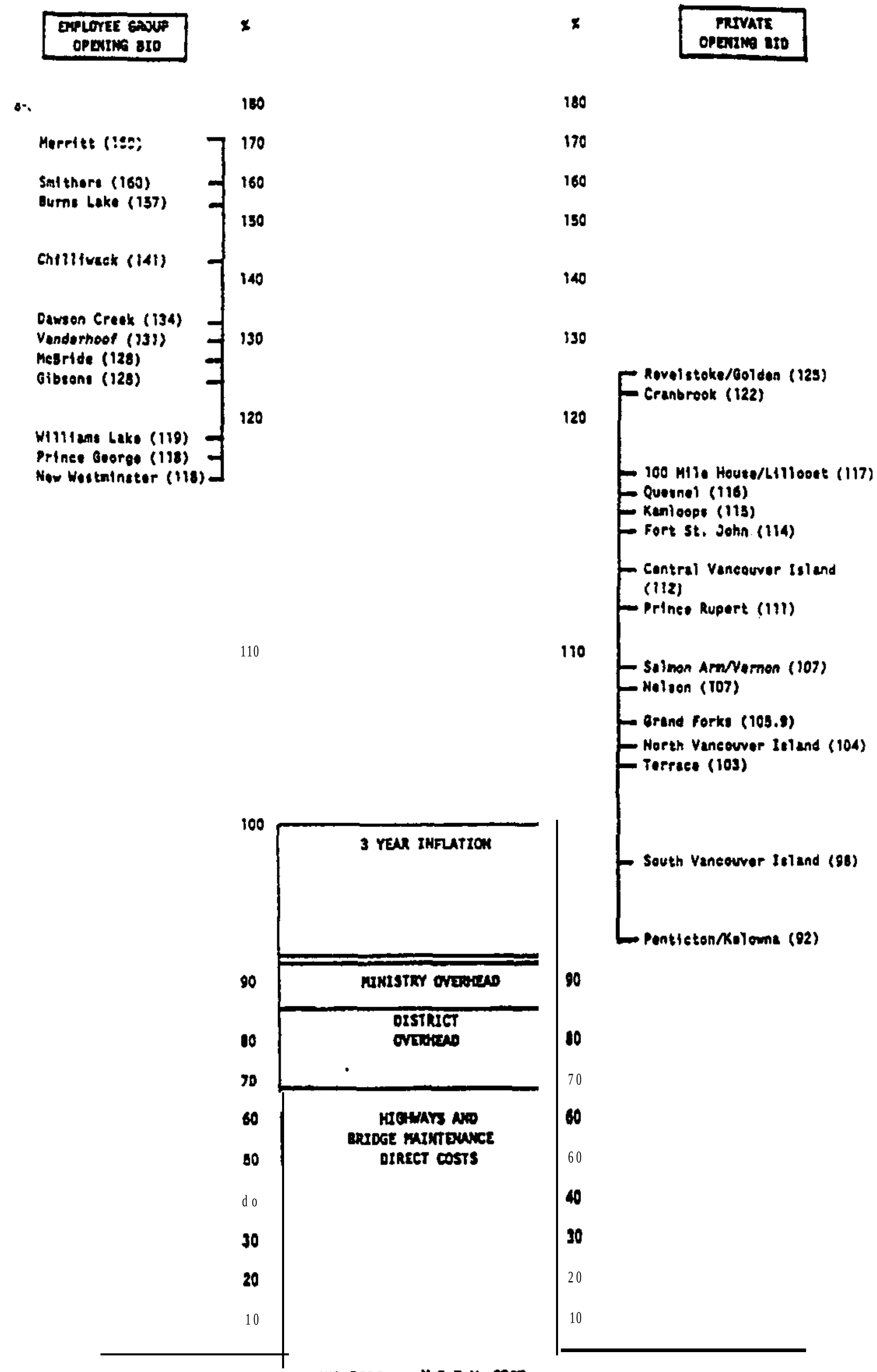
Source of Information: 1983/84, 1984/85, 1985/86 - Annual Reports
1986/87, 1987/88 - Trans. & Hwys. General Ledger System Reports.

	BRIDGES-SUMMARY						*ROA. .UMMARY*			
	1983/84	1984/85	1985/86	198../.7	.987/88		1983/84	1984/85	1985/86	1986/87	1987/88
HIGHWAY DISTRICT	OPERATIONS & HEADQUARTERS	OPERATIONS & HEADQUARTERS	OPERATIONS &HEADQUARTERS	OPERATIONS & HEADQUARTERS	OPERATIONS & HEADQUARTERS	-	OPERATIONS & HEADQUARTERS	OPERATIONS & HEADQUARTERS	OPERATIONS & HEADQUARTERS	OPERATIONS & HEADQUARTERS	OPERATIONS & HEADQUARTERS
****************											
NORTH VANCOUVER	$307,431.40	$299,167.64	$280,743.64	$382,702.39	$511,051.95	-	$5,333,859.44	$5,615,943.81	$5,559,223.98	$5,454,432.99	$5,933,483.5[illegible]
GIBSONS	$74,417.55	$164,152.01	$91,290.32	$76,379.75	$111,567.36	-	$3,104,805.38	$3,185,633.15	$3,280,519.87	$3,160,442.46	$3,396,523.10
PATROL	$14,173.40	$26,052.29	$29,359.81	$32,663.60	$47,057.31	-	$2,131,083.17	$1,888,047.35	$2,120,391.94	$2,126,481.75	$2,253,042.67
NEW WESTMINSTER	$533,759.90	$540,052.29	$733,482.15	$852,445.60	$1,195,427.86	-	$7,501,411.73	$7,799,065.15	$7,834,646.58	$9,274,220.63	$10,265,049.12
CHILLIWACK	$278,954.40	$332,343.04	$305,284.68	$482,514.75	$663,200.78	-	$7,433,828.02	$8,513,513.52	$8,897,500.47	$9,226,828.90	$10,322,208.93
DOCK	$14,173.40	$26,052.29	$29,359.81	$32,663.60	$47,057.31	-	$683,120.51	$764,474.80	$1,408,460.03	$1,380,226.44	$1,754,723.31
ELECTRICAL MAINTENANCE	$14,173.40	$26,052.29	$29,359.81	$32,663.60	$47,057.31	-	$3,278,747.02	$3,567,972.18	$3,615,893.95	$3,531,288.12	$3,496,840.93
CENTRELINE MARKING	$14,173.40	$26,052.29	$29,359.81	$32,663.60	$47,057.31	-	$6,018,891.95	$6,023,966.51	$6,664,908.52	$7,549,763.62	$7,881,484.04
KAMLOOPS	$165,836.38	$203,586.80	$273,392.23	$227,370.92	$275,283.89	-	$5,881,672.90	$6,142,747.42	$6,636,783.34	$6,771,836.59	$7,475,856.5[illegible]
SALMON ARM	$275,151.76	$289,791.18	$322,391.81	$319,456.41	$287,089.68	-	$5,343,148.11	$5,491,438.53	$5,675,209.05	$5,896,907.82	$6,094,873.95
VERNON	$186,922.43	$231,826.41	$156,744.92	$165,409.68	$167,586.82	-	$4,960,197.65	$4,933,131.16	$5,223,181.12	$5,213,026.59	$5,636,415.27
PENTICTON	$222,106.32	$198,969.82	$175,783.45	$243,911.18	$322,900.62	-	$5,273,468.36	$5,392,475.57	$5,653,730.31	$6,298,605.63	$6,742,661.87
MERRITT	$174,261.46	$122,646.79	$178,631.80	$157,718.19	$304,227.40	-	$4,657,450.28	$4,432,598.21	$4,869,938.00	$7,661,986.82	$9,112,974.03
LILLOOET	$204,129.84	$184,209.74	$205,913.45	$225,214.47	$353,527.23	-	$4,473,092.16	$4,483,703.14	$4,784,639.05	$5,092,844.81	$5,186,572.64
100 MILE HOUSE	$125,863.45	$124,852.77	$149,717.38	$148,100.42	$183,232.99	-	$5,146,953.26	$5,170,740.48	$5,853,266.93	$5,692,891.98	$5,673,397.87
KELOWNA	$145,575.15	$172,416.28	$180,880.56	$207,637.86	$356,407.89	-	$4,200,723.66	$4,751,884.69	$4,893,518.24	$5,112,830.55	$5,294,798.22
NELSON	$179,835.94	$213,532.52	$252,123.24	$235,838.94	$294,027.92	-	$4,113,915.83	$4,469,323.79	$4,651,233.39	$4,556,864.56	$4,761,702.67
ROSSLAND	$77,890.39	$112,935.99	$111,702.57	$127,719.60	$158,494.50	-	$3,943,083.86	$4,114,382.75	$4,406,780.19	$4,376,247.86	$4,638,423.2[illegible]
GRAND FORKS	$149,638.07	$161,052.29	$157,244.08	$150,546.58	$182,212.77	-	$3,809,174.86	$3,984,370.60	$4,313,571.48	$4,278,031.51	$4,592,934.77
NEW DENVER	$149,087.97	$131,316.67	$167,532.90	$202,999.55	$176,867.20	-	$3,914,575.34	$4,331,432.32	$4,407,650.33	$4,520,326.39	$4,832,953.4[illegible]
CRANBROOK	$102,605.61	$132,962.92	$164,276.96	$267,507.22	$209,445.53	-	$3,869,380.67	$4,005,497.76	$4,249,145.59	$4,212,822.59	$4,566,138.70
FERNIE	$88,033.11	$136,513.43	$120,921.70	$114,348.39	$129,102.74	-	$3,181,075.89	$3,716,217.29	$3,726,437.72	$3,864,200.60	$3,869,261.56
GOLDEN	$214,577.51	$228,703.26	$196,124.09	$216,723.63	$275,982.26	-	$4,234,269.64	$4,269,676.75	$4,273,030.36	$4,758,602.56	$4,610,538.2[illegible]
REVELSTOKE	$185,561.13	$171,651.97	$162,205.53	$167,344.34	$202,737.51	-	$4,352,281.04	$4,262,230.39	$4,591,140.52	$4,983,990.56	$4,976,210.3[illegible]
CRESTON	$79,509.71	$103,824.38	$128,273.64	$131,482.66	$159,224.70	-	$3,545,343.52	$4,051,488.60	$4,135,392.45	$4,019,093.90	$4,196,214.1[illegible]
PRINCE GEORGE	$424,250.99	$433,551.23	$420,235.13	$742,339.95	$469,363.48	-	$7,552,673.31	$8,149,138.77	$8,753,207.06	$8,475,185.05	$9,555,392.[illegible]
QUESNEL	$157,947.52	$216,751.08	$236,665.40	$241,435.48	$271,151.09	-	$6,254,773.79	$6,850,106.51	$7,497,768.84	$7,568,604.16	$7,499,717.11
DAWSON CREEK	$277,546.65	$223,131.47	$307,979.09	$300,147.31	$344,880.18	-	$7,070,126.85	$8,114,504.01	$8,826,296.56	$9,011,171.92	$9,213,098.[illegible]
FORT ST. JOHN	$289,520.20	$298,327.16	$346,766.69	$415,299.24	$362,055.41	-	$6,620,900.12	$6,780,399.17	$7,898,194.02	$7,978,291.27	$8,370,903.11
VANDERHOOF	$235,422.91	$223,598.95	$227,171.02	$318,888.97	$314,364.29	-	$4,682,672.72	$4,722,482.18	$5,269,771.18	$5,551,154.91	$5,892,283.4[illegible]
MCBRIDE	$155,858.70	$145,421.96	$177,718.28	$163,401.61	$174,853.13	-	$4,221,671.50	$4,529,074.15	$4,808,572.09	$4,742,082.48	$4,958,283.[illegible]
WILLIAMS LAKE	$364,904.60	$365,273.75	$371,105.62	$314,176.13	$449,817.62	-	$6,252,626.42	$6,947,762.97	$7,221,827.40	$7,568,865.99	$8,101,572.[illegible]
PRINCE RUPERT	$244,648.43	$457,052.29	$248,404.39	$251,452.21	$182,245.68	-	$4,501,086.01	$4,225,248.64	$5,149,316.48	$5,703,777.26	$5,757,744.[illegible]
TERRACE	$147,824.01	$160,052.29	$190,273.05	$213,036.35	$258,593.59	-	$3,687,937.23	$4,209,024.02	$3,862,225.95	$4,062,591.55	$4,233,643.[illegible]
BURNS LAKE	$142,973.18	$203,211.20	$128,664.02	$181,835.70	$168,387.50	-	$4,887,520.25	$5,088,064.67	$5,718,488.13	$6,015,186.44	$5,592,566.[illegible]
SMITHERS	$168,665.32	$175,658.09	$196,596.80	$266,576.88	$232,647.93	-	$4,669,620.07	$4,759,007.19	$5,441,635.22	$6,164,161.55	$5,756,865.[illegible]
[illegible] LAKE	$120,843.99	$133,220.96	$152,419.31	$158,046.47	$160,189.24	-	$4,307,093.69	$4,460,850.87	$4,691,886.50	$4,986,493.38	$5,236,920.6[illegible]
NANAIMO	$192,731.28	$210,038.72	$213,155.29	$206,264.12	$245,837.37	-	$5,381,993.70	$6,001,724.03	$6,384,542.55	$6,370,424.27	$6,685,85[illegible]
SAANICH	$297,219.61	$254,744.89	$330,105.81	$245,313.16	$328,872.09	-	$6,102,024.39	$6,225,585.90	$6,344,535.31	$5,756,444.66	$5,987,931.40
PORT ALBERNI	$265,126.57	$222,890.31	$214,539.59	$212,390.92	$264,996.53	-	$4,520,835.18	$4,965,573.02	$5,015,746.57	$4,835,058.66	$5,255,635.2[illegible]
COURTENAY	$345,756.41	$364,695.51	$352,003.40	$442,286.99	$451,498.31	-	$6,742,017.70	$7,042,590.87	$7,477,295.17	$7,586,739.45	$8,202,044.3[illegible]
TOTALS.......	$7,809,153.85	$8,448,419.42	$8,807,954.14	$9,932,218.42	$11,389,702.30	-	$199,244,204.19	$208,874,202.95	[illegible]	[illegible]	[illegible]

APPENDIX C

PRELIMINARY ANALYSIS OF CONTRACTOR BIDS

(see attached)



• OPENING BIDS vs. M.O.T.H. COST

C067R - 52
July 25/88
RW/sc

APPENDIX D

BESTWICK ANALYSIS OF ROAD AND BRIDGE MAINTENANCE COSTS

(see attached)

Province of British Columbia

Ministry of Transportation and Highways
OFFICE OF THE DEPUTY MINISTER

MEMORANDUM

To: Mr. Philip G. Halkett
Secretary, Treasury Board
Ministry of Finance and
Corporate Relations
Room 109. 617 Government Street
Victoria, B.C. V8V 1X4

August 10, 1988

STRICTLY CONFIDENTIAL

RE: Road and Bridge Maintenance Costs.

As you are aware, the Government is actively negotiating with a number of firms relative to the privatization of road and bridge maintenance. One contract has been signed, for Contract Area #1, and a number of contracts are in the final stages of negotiation.

To ensure that the comparison of the bids received from the proponents were directly comparable to the cost of road and bridge maintenance, an outside accounting firm was brought in to do an evaluation and verification of all costs.

The accounting firm brought in, namely, Stevenson Kellogg Ernst and Whinney, has determined that the Ministry understated the annual cost of road and bridge maintenance by $24,125,000.

Of this $24,125,000, $12,838,000 relate to “soft costs" which are not costs attributable to road and bridge maintenance directly but are the cost of carrying equipment and inventory. To be fair to the proponents for the contracts, they determined that the Government purchases inventory and equipment and warehouses it. and that inventory has a value in inventory costs or interest, and should be considered as a true cost of doing road and bridge maintenance. Accordingly, they have revised our figures for the road and bridge maintenance upward to reflect this amount. This amount I must reiterate, Is not paid by Government but is considered as a cost to Government for comparison purposes only.

*

The amount of $11,287,000 relates to costs borne by the Ministry but not shown as a cost of "maintenance". This was a cost absorbed by "capital maintenance" but will now be performed by the contractor. Therefore, for comparison purposes, it should be added to regular maintenance.

OK TO RELEASE
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.....12

Mr. Philip G. Halkett
Secretary, Treasury Board
Ministry of Finance and Corporate Relations
RE: Road and Bridae Maintenance Costs.

In view of the fact that this **$12,838,000** is not provided for in the Ministry of Transportation and Highways estimates and considering that when the estimates are published for **1989/90,** the estimates will reflect what is in the Ministry estimate for **1988/89** compared against the new estimates for **1989/90,** there will be an increase if the contract bids are accepted at a price based on what the accountants deemed to be the **actual** cost to Government.

This information provided by the accounting firm was reviewed by Mr. Michael Grist, Treasury Board Staff Analyst, and he concurs with and supports their assumptions.

My Deputy Minister has indicated that he is not prepared to enter into any contracts that are compared against a figure which is not accurate and, therefore, I have been requested to receive your concurrence that these additional amounts should be considered as a true cost of doing business and will be reflected as a footnote in the estimates for **1989/90** to enable the estimates process to have a true comparison of the actual costs.

I have attached for your information, information received by. me from Mr. T. Ridley **Bestwick** of Stevenson Kellogg Ernst and Whlnney, where he substantiates his findings.

If you concur with this assumption and are prepared to make the disclosure in the estimates for **1989/90,** then I will recommend to my Deputy Minister that he recommend to the Minister, that further contracts be signed.

There is some urgency to this approval by you, as I am told by the Implementation Committee that there are a couple of contracts that are hanging at this moment on the fact that the figure used for comparison will be higher and, therefore, the bid price would be acceptable.

I will be in Vancouver on Thursday and Friday, but Mr. Norm Mogenson of your office is available for comment as well as Mr. T. **Ridley** Bestwick.

Your immediate concurrence to this assumption is requested.

Gordon S. Hogg,
Assistant **Deputy** Minister,
Administrative Services.

GSH:nlh
Encl.

Road and Bridge Maintenance Costs

Ministrv of Transoortation and Hiahwavs

Preoared bv T. Ridlev Bestwick

August 10, 1988

Outlined below is an explanation of the components that make up the cost estimate of highways and bridge maintenance.

1. Direct costs (labour, material, equipment, hired equipment, base occupancy and utilities).

   -- Direct maintenance costs as reported.

   -- B.C.B.C. rent charges.

   -- B.C.B.C. operating and utilities charges.

2. District overhead (labour, material, hired, equipment system and damage, and employee benefits).

   -- Overhead labour is 100 percent of District stockkeeping plus 50 percent of labour administration as reported.

   -- Overhead material is 100 percent of District stockkeeping plus 50 percent of material administration as reported.

   -- Overhead equipment is 100 percent of District stockkeeping plus 50 percent of equipment administration as reported.

   -- Overhead hired is 100 percent of District stockkeeping plus 50 percent of overhead hired administration as reported.

   -- System and damage is $10.000 per contract area covering District computer charges and residence in damage allowance on uninsured highway maintenance assets at District level as reported.

   -- Employee benefits 19.3 percent of labour and overhead labour per "1988/89 Estimates".

3. Additional costs (stabilization and seal coat).

   -- Activities Included in the proposal call either previously funded through minor betterment/capital maintenance budget or not performed.

4. Additional costs (Ministry overhead).

   -- Unallocated Ministry of Transportation and Highways costs borne by Headquarters on behalf of Districts expected to be carried by future contractors.

   -- Includes telecommunications, postage, systems, insurance claims. legal costs, workers compensation liabilities, etc.

Road and Bridqe Maintenance Costs

Ministrv of Transportation and Hiqhwavs

Preoared bv T. Ridlev Bestwick

August 10. 1988

5. Holding costs (opportunity costs).

a. Class A Equipment

-- Heavy road maintenance equipment to be leased to the future contractors.

-- Lease rate includes interest recovery on capital investment at 11 percent per annum plus principal recovery representing normal depreciation charge.

-- Holding cost represents cost to Government on investment in Class A equipment (excluding depreciation) calculated as follows:

Class A		Interest		Government Holding Cost	
$50.715.647	X	11 Percent	=	$5,579,821	Per Annum

(This interest will be recovered from each contract area in regular monthly payments and will be offset against monthly lump sum contract payments to the contractor).

-- Depreciation (principal) payments left untouched.

-- A tangible cost (saving) to both the Ministry of Transportation and Highways and the Government.

-- Henceforth, the Government will not be replacing the Class A heavy equipment fleet involving a capital investment/ expenditure each year.

b. Class B

-- Class B includes light mobile equipment being sold to the future contractors.

-- Ministry of Transportation and Highways/Government no longer required to finance the Class B asset valued at approximately $20,044,000.

-- Hold cost represents the cost to Government of investment in Class B equipment (excluding depreciation) calculated as follows:

Class B		Interest		Government Holding Cost	
$20,044,000	X	11 Percent	=	$2,204,809	Per Annum

b. Class B (continued)

-- Future contractors will bear this cost.

-- Henceforth, the Government will not be required to finance this asset pool.

C. Inventory

-- Includes maintenance materials (i.e. culverts, catch basins, salt/sand mix etc.), small tools, equipment parts and light vehicles) being sold to the future contractors and general public.

-- Ministry of Transportation and Highways/Government no longer required to hold these inventories valued at approximately $37,465,000.

-- Holding costs represent annual cost to Government of investment in inventories calculated as follows:

Inventories		Interest		Government Holding Cost
$37,465,000	X	11 Percent	=	$4,121,252

-- Future contractors will bear this cost.

-- Henceforth, the Government will not be required to fund this asset base.

d. Payroll

-- Represents the interest saving on the six week lag between the existing bimonthly pa: y periods and the two month payment date schedule under the fixed price contract.

-- Calculated as follows:

Labour + Labour Overhead (Estimate)		Pay Lag 8 Weeks - 2 Weeks		Interest Saving		
$73,425,392	X	$\frac{6}{52}$	X	11 Percent	=	$931,938

-- Tangible benefit to Government through deferral of wage equivalent payments.

Road and Bridqe Maintenance Costs

Ministrv of Ttansoortation and Hiqhwavs

Preoared bv T. Ridlev Bestwick

August 10, 1988

NOTE:

Under normal Government accounting practise, the costs associated above in 5(a), 5(b), 5(c) and 5(d), would not be reflected in the Ministry of Transportation and Highways budget.

Nevertheless, these costs are tanaible real costs incurred by the Government above Ministry of Transportation and Highways.

These costs are a part of the total cost to the Government of providing highway and bridge maintenance services which will be reduced/eliminated through contracting out this function.

6. Inflation

-- Inflation is assumed at 4.1 percent per annum.

-- Figure of 6.15 percent in year one represents the period March 31, 1988 (basis for historical cost comparison) to October 1, 1989 - the assumed first anniversary date of the contracts. Hence $\frac{18}{12}$ X 4.10 = 6.15 inflation over the first 18 months.

PRIVATIZATION OF HIGHWAYS AND BRIDGES MAINTENANCE
1987/88 HIGHWAY MAINTENANCE COSTS (UNAUDITED)
ALLOCATED BY CONTRACT AREAS

CONTRACT AREA	DIRECT COSTS: LABOUR	MATERIAL	EQUIPMENT	HIRED EQUIPMENT	BASE OCCUPANCY	UTILITIES
REGION #1						
NORTH VANCOUVER(#4)	$2,849,567	$1,065,965	$797,566	$707,117	$451,267	$333,784
GIBSONS(#5)	857,858	424,880	329,489	220,177	151,141	110,682
NEW WESTMINSTER(#6)	4,266,997	2,045,415	715,119	1,203,650	1,573,243	786,270
CHILLIWACK(#7)	3,552,468	2,201,794	1,751,079	774,952	870,912	490,183
REGION #2						
KAMLOOPS(#15)	2,596,542	1,371,494	1,126,736	487,512	807,980	425,185
SALMON ARM/VERNON(#13)	3,031,205	2,419,803	1,547,829	825,082	752,843	460,319
PENTICTON/KELOWNA(#8)	3,825,485	2,087,500	1,796,887	806,219	422,122	335,469
MERRITT(#14)	2,455,792	1,499,411	1,504,178	836,762	687,969	341,111
100 MILE/LILLOOET(#16)	2,908,334	1,874,523	1,564,430	1,337,237	316,287	300,427
REGION #3						
NELSON/CRESTON/NEW DENVER(#10)	4,282,574	2,463,667	1,524,601	530,960	738,998	476,895
GRAND FORKS/ROSSLAND(#9)	2,733,299	1,805,513	1,089,366	447,897	372,165	239,151
CRANBROOK/FERNIE(#11)	2,860,553	1,823,081	1,244,213	592,153	435,158	290,878
REVELSTOKE/GOLDEN(#12)	2,734,509	1,118,173	831,600	397,496	436,616	426,344
REGION #4						
PRINCE GEORGE(#19)	3,904,695	2,220,045	1,673,984	813,326	793,853	435,568
QUESNEL(#18)	2,607,818	1,112,521	1,742,481	415,297	287,849	232,475
DAWSON CREEK(#21)	3,032,789	1,447,434	1,580,950	2,455,043	399,571	253,154
FORT ST.JOHN(#22)	2,600,448	1,220,527	1,440,996	1,765,907	233,269	267,221
VANDERHOOF(#23)	1,502,068	865,999	1,116,859	863,570	156,823	116,148
MCBRIDE(#20)	1,470,577	1,035,060	784,655	216,586	316,087	192,477
WILLIAMS LAKE(#17)	2,324,065	1,546,722	1,287,178	1,429,987	498,912	293,035
REGION #5						
PRINCE RUPERT(#27)	657,826	491,796	169,100	184,088	233,609	197,064
TERRACE(#26)	1,081,525	885,604	299,224	322,237	866,609	187,078
DEASE LAKE(#28)	1,623,107	1,282,573	701,376	826,909	567,701	765,957
SMITHERS(#25)	2,381,864	1,801,907	1,107,570	1,008,974	466,381	493,173
BURNS LAKE(#24)	1,381,915	1,054,861	790,972	318,017	281,364	171,624
REGION #6						
NANAIMO(#2)	2,379,850	1,925,968	672,698	736,784	308,239	181,221
SOUTH ISLAND(#1)	2,658,436	2,178,309	1,280,133	1,031,375	733,449	474,833
COURTENAY(#3)	2,265,775	2,140,912	1,084,108	866,407	413,252	404,370
TOTAL	$78,389,612	$43,331,487	$31,367,804	$22,504,931	$13,313,649	$9,715,579

CONTRACT AREA	DISTRICT OVERHEAD: LABOUR	MATERIAL	EQUIPMENT	HIRED Equip.	SYSTEM +DAMAGE	EMPLOYEE BENEFITS	SUBTOTAL
REGION #1							
NORTH VANCOUVER(#4)	$101,688	$16,329	$9,424	$0	$60,597	$569,592	$6,962,876
GIBSONS(#5)	52,562	3,010	816	0	20,718	175,711	2,347,051
NEW WESTMINSTER(#6)	166,239	112,635	11,150	72	131,439	855,626	11,865,323
CHILLIWACK(#7)	125,136	92,833	3,740	2,251	109,133	709,835	10,084,616
REGION #2							
KAMLOOPS(#15)	132,298	24,757	24,520	140	60,597	526,666	7,582,437
SALMON ARM/VERNON(#13)	144,991	42,313	16,304	0	60,597	690,206	10,391,492
PENTICTON/KELOWNA(#8)	123,321	44,592	16,924	0	82,181	782,121	10,382,901
MERRITT(#14)	86,533	29,715	5,151	0	38,614	498,669	7,961,205
100 MILE/LILLOOET(#16)	126,976	53,467	13,321	0	50,204	595,815	9,131,035
REGION #3							
NELSON/CRESTON/NEW DENVER(#10)	224,185	25,492	13,654	0	50,204	867,873	11,188,305
GRAND FORKS/ROSSLAND(#9)	133,872	24,492	12,406	0	45,511	553,264	7,456,975
CRANBROOK/FERNIE(#11)	158,309	19,880	13,468	0	66,136	582,600	8.086,388
REVELSTOKE/GOLDEN(#12)	104,018	18,967	6,669	0	59,203	547,990	6,682,387
REGION #4							
PRINCE GEORGE(#19)	101,987	37,272	12,366	0	47,977	599,574	9 739,557
QUESNEL(#18)	91,785	15,865	5,222	0	37,051	520,607	7,042,287
DAWSON CREEK(#21)	124,103	55,556	7,595	0	36,811	609,296	9,930,672
FORT ST.JOHN(#22)	83,469	13,722	6,559	0	62,617	517,995	8.273,720
VANDERHOOF(#23)	70,919	25,401	3,410	0	21,297	303,586	5,088,780
MCBRIDE(#20)	71,384	2,729	8,028	0	31,552	297,598	4 477,733
WILLIAMS LAKE(#17)	81,275	4,658	1,806	0	28,117	464,231	7,946,316
REGION #5							
PRINCE RUPERT(#27)	25,310	9,504	2,117	0	21,929	131,766	2 123,688
TERRACE(#26)	62,873	36,173	10,706	0	26,857	223,378	3,325,264
DEASE LAKE(#28)	86,974	82,706	4,177	0	54,012	331,991	5,257,943
SMITHERS(#25)	126,404	22,870	13,010	0	45,316	604,096	7,951,572
BURNS LAKE(#24)	53,601	19,740	5,849	0	25,263	277,055	4,290,861
REGION #6							
NANAIMO(#2)	116,224	79,068	5,403	0	42,817	481,742	6,931,816
SOUTH ISLAND(#1)	145,697	84,227	5,101	0	42,817	541,198	9,164,874
COURTENAY(#3)	122,448	153,966	1,547	0	26,236	460,927	7,939,878
TOTAL	$3,035,780	$1,152,054	$240,869	$2,463	$1,384,883	$14,171,101	$211,210,131

PRIVATIZATION OF HIGHWAYS AND BRIDGES MAINTENANCE
1987/88 HIGHWAY MAINTENANCE COSTS (UNAUDITED)
ALLOCATED BY CONTRACT AREAS

CONTRACT AREA	SUBTOTAL	ADDITIONAL COSTS: STABILIZATION	ADDITIONAL COSTS: SEAL COAT	ADDITIONAL COSTS: MINISTRY OVERHEAD	HOLDING COST: CLASS A EQUIPMENT (Leased)	HOLDING COST: CLASS B EQUIPMENT (Sold)	HOLDING COST: INVENTORY	HOLDING COST: PAYROLL	UNINFLATED TOTAL	6.15% INFLATED YEAR 1 TOTAL	4.2% INFLATED YEAR 2 TOTAL	4.2% INFLATED YEAR 3 TOTAL	BOTTOM LINE	LATEST B D	LATEST BID / BOTTOM LINE
REGION #1															
NORTH VANCOUVER(#4)	$6,962,176	$22,680	$90,300	$158,210	$121,333	$86,139	$135,864	$37,458	$7,623,229	$8,092,058	$8,423,832	$8,769,209	$25,215,099	$22,563,100	89.23%
GIBSONS(#5)	2,347,051	5,040	181,200	53,340	69,164	29,195	45,797	11,555	2,662,642	2,826,395	2,942,277	3,062,910	8,831,582	10,100,000 E	114.36%
NEW WESTMINSTER(#6)	11,865,923	0	275,220	269,667	95,081	232,372	231,535	56,259	13,026,556	13,827,700	14,394,536	14,984,336	43,207,152	45,380,000 E	105.53%
CHILLIWACK(#7)	10,884,616	131,040	3,080	242,821	136,816	125,660	208,184	46,681	11,779,190	12,503,619	13,016,267	13,549,934	39,069,820	49,068,390 E	125.59%
REGION #2															
KAMLOOPS(#15)	7,582,437	289,800	202,840	172,320	202,149	73,271	147,953	34,635	8,705,705	9,241,106	9,619,991	10,014,411	28,875,508	29,213,285	101.19%
SALMON ARM/VERNON(#13)	10,391,192	398,160	0	236,159	191,926	66,090	262,765	46,390	11,631,980	12,347,246	12,853,588	13,384,585	38,581,519	37,500,400	97.20%
PENTICTON/KELOWNA(#8)	10,382,901	171,360	0	235,964	239,604	102,041	202,597	50,120	11,384,586	12,084,738	12,580,292	13,096,001	37,760,952	32,300,500	85.5
MERRITT(#14)	7,968,205	98,280	231,733	181,087	367,470	55,395	155,480	32,268	9,089,917	9,648,947	10,066,554	10,456,381	30,149,883	37,700,000 E	122.36%
100 MILE/LILLOOET(#16)	9,133,935	476,280	0	207,514	267,487	57,839	178,170	30,525	10,356,350	10,993,796	11,444,542	11,913,768	34,352,106	36,129,000	105.17%
REGION #3															
NELSON/CRESTON/NEW DENVER(#10)	11,188,305	88,200	288,200	254,267	306,992	146,890	218,313	57,874	12,548,241	13,319,958	13,866,076	14,434,585	41,620,620	39,189,529	94.16%
GRAND FORKS/ROSSLAND(#9)	7,456,975	90,720	160,820	169,469	239,805	95,850	145,505	36,391	8,395,535	8,911,861	9,277,247	9,657,614	27,846,722	27,524,357	98.84%
CRANBROOK/FERNIE(#11)	8,086,300	70,560	68,732	183,773	195,766	136,632	157,786	38,316	8,915,956	9,464,287	9,852,323	10,256,268	29,572,878	29,904,941	101.12%
REVELSTOKE/GOLDEN(#12)	6,682,387	98,280	203,627	151,865	188,957	92,553	130,391	36,038	7,583,897	8,050,306	8,380,369	8,723,964	25,154,639	28,039,100	111.47%
REGION #4															
PRINCE GEORGE(#19)	9,739,657	115,920	239,067	221,345	256,353	84,126	190,816	39,420	10,885,944	11,555,429	12,029,202	12,522,399	36,107,030	39,451,000 E	109.81%
QUESNEL(#18)	7,042,267	199,080	197,633	160,644	239,049	42,222	137,483	24,763	8,052,971	8,548,229	8,898,706	9,263,552	26,710,487	27,300,000	102.96%
DAWSON CREEK(#21)	9,930,672	441,000	216,920	225,686	222,042	55,408	193,773	40,069	11,325,570	12,022,093	12,514,998	13,028,113	37,565,204	40,142,760 E	106.86%
FORT ST. JOHN(#22)	8,213,720	478,800	123,200	188,030	222,972	59,002	161,441	31,065	9,548,230	10,128,016	10,543,264	10,975,538	31,646,818	31,900,000	100.80%
VANDERHOOF(#23)	5,084,288	292,329	93,133	135,546	163,052	37,199	99,207	19,965	5,905,303	6,268,400	6,525,487	6,793,032	19,586,999	22,600,000 E	115.39%
MCBRIDE(#20)	4,477,733	25,200	142,267	101,762	128,318	40,368	87,372	19,571	5,023,211	5,332,138	5,550,756	5,778,337	16,661,231	19,550,000 E	117.34%
WILLIAMS LAKE(#17)	7,946,916	342,720	0	180,603	214,463	59,824	155,065	30,529	8,930,120	9,479,322	9,867,974	10,272,561	29,619,857	30,600,000 E	103.31%
REGION #5															
PRINCE RUPERT(#27)	2,123,688	10,080	26,400	48,263	51,918	36,715	41,439	8,662	2,347,166	2,491,517	2,593,669	2,700,009	7,785,195	7,973,193	102.4?%
TERRACE(#26)	3,325,264	2,520	103,400	75,571	66,363	31,544	68,884	14,690	3,684,237	3,910,817	4,071,161	4,238,078	12,220,056	11,505,000	94.15%
DEASE LAKE(#28)	6,257,903	430,920	135,667	142,219	178,716	59,460	122,109	21,833	7,340,866	7,800,822	8,120,655	8,453,602	24,375,080	E	0.00%
SMITHERS(#25)	7,951,572	365,400	103,400	180,709	205,110	62,604	155,156	31,836	9,055,786	9,612,717	10,006,839	10,417,119	30,036,675	42,966,000 E	143.05%
BURNS LAKE(#24)	4,290,061	246,960	0	97,497	131,318	45,252	82,710	18,229	4,912,917	5,215,061	5,428,879	5,651,463	16,295,402	22,600,000 E	138.69%
REGION #6															
NANAIMO(#2)	6,931,016	67,200	70,400	157,516	208,231	110,523	135,242	31,681	7,711,850	8,186,137	8,521,760	8,871,161	25,579,066	26,216,281	102.49%
SOUTH ISLAND(#1)	9,164,874	78,960	94,600	208,283	191,792	103,882	178,830	35,591	10,056,811	10,675,305	11,112,993	11,568,625	33,356,923	29,900,000	89.64%
COURTENAY(#3)	7,939,878	44,520	271,333	180,443	177,225	96,032	154,927	36,312	8,898,672	9,439,570	9,826,592	10,229,483	29,495,645	27,886,133	94.54%
TOTAL	$211,210,131	$6,082,000	$3,449,813	$4,800,000	$5,579,821	$2,204,309	$4,121,252	$931,938	$237,378,963	$251,977,769	$262,308,858	$273,063,521	$787,350,148	$800,137,900	

—10% Markup

07-Aug-88

PRIVATIZATION OF HIGHWAYS AND BRIDGES MAINTENANCE
1987/88 HIGHWAY MNTENANCE COSTS (UNAUDITED)
ALLOCATED BY CONTRACT AREAS

ASSUMPTIONS
AND EXPLANATIONS

DIRECT COSTS:	
LABOUR	DIRECT MAINTENANCE LABOUR COST
MATERIAL	DIRECT MAINTENANCE MATERIAL COST
EQUIPMENT	DIRECT MAINTENANCE EQUIPMENT COST
HIRED EQUIPMENT	DIRECT MAINTENANCE HIRED EQUIPMENT COST
BASE OCCUPANCY	BCBC RENT CHANGES
UTILITIES	BCBC UTILITIES CHARGES
DISTRICT OVERHEAD:	
OVERHEAD LABOUR	LABOUR OF 100% STOCKKEEPING PLUS 50% ADMINISTRATION
OVERHEAD "ATERIAL	MATERIAL OF 100% STOCKKEEPING PLUS 50% ADMINISTRATION
OVERHEAD EQUIPMENT	MINISTRY EQUIPMENT OF 1008 STOCKKEEPING PLUS 508 ADMINISTRATION
OVERHEAD HIRED	HIRED EQUIPMENT OF 100% STOCKKEEPING PLUS 50% ADMINISTRATION
SYSTEM+DAMAGE	510,000 PER DISTRICT FOR COMPUTER CHARGES PLUS DAMAGE TO GOVERNMENT PROPERTY
EMPLOYEE BENEFITS	19.34 OF LABOUR AND OVERHEAD LABOUR
ADDITIONAL COSTS:	
STABILIZATION	ADDITIONAL STABILIZATION AT $3500 PER KLM LESS 28% REDUCTION IN OTHER ACTIVITIES
SEAL COAT	ADDITIONAL SW COAT WORK AT 52.20 PER SQUARE METER
MINISTRY OVERHEAD	MINISTRY REDUCTIONS (POSTAL,TELECOM,SYSTEMS,INSURANCE CLAIMS,PENSION & BENEFITS)
OPPORTUNITY COST:	
CLASS A EQUIPMENT	CLASS A EQUIPMENT INVESTMENT COST AT 11% PA
CLASS B EQUIPMENT	CLASS B EQUIPMENT I - COST AT 11% PA
INVENTORY	INVENTORY (MATERIALS,TOOLS,PARTS AND LIGHT VEHICLES) INVESTMENT COST AT 11% PA
PAYROLL	PAYROLL DEFERRAL OP 6 WEEKS INTEREST SAVING AT 11% PER ANNUM
INPLATION	INFLATION COMPOUNDED AT 4.1% PER ANNUM (YEAR 1 AT 1.5 TIMES 4.141

APPENDIX E

COOPERS & LYBRAND REPORT - JANUARY 8, 1989

(see attached)

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Coopers
& Lybrand

chartered accountants

a member firm of
Coopers & Lybrand (International)

TO Mr. Vince Collins
Deputy Minister
of Transportation and Highways
Province of British Columbia

AUDITORS' REPORT

We have examined the summary schedule of road and bridge maintenance costs, totalling $229,067,502, as defined in the accompanying note 1, and the methodology used in preparation of the schedule, as described in note 2, for the fiscal year ended March 31, 1988, as prepared by the Ministry of Transportation and Highways. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, this schedule and methodology present fairly the road and bridge maintenance costs, as defined, for the fiscal year ended March 31, 1988, in accordance with the accompanying notes to the schedule.

Coopers & Lybrand

Vancouver, B.C.
January 8, 1989

CHARTERED ACCOUNTANTS

MINISTRY OF TRANSPORTATION AND HIGHWAYS
PROVINCE OF BRITISH COLUMBIA

SUMMARY SCHEDULE OF ROAD AND BRIDGE
MAINTENANCE COSTS, as defined in note 1, FOR PRIVATIZATION
FOR THE FISCAL YEAR ENDED MARCH 31, 1988

	$
DIRECT COSTS (note 3)	187,074,893
DISTRICT OVERHEAD (note 4)	22,146,883
ADDITIONAL COSTS (not.? 5)	8,990,772
FINANCING COSTS (note 6)	10,854,954
	229.067.502

MINISTRY OF TRANSPORTATION AND HIGHWAYS
PROVINCE OF BRITISH COLUMBIA

SUMMARY SCHEDULE OF ROAD AND BRIDGE
MAINTENANCE COSTS, as defined in note 1, FOR PRIVATIZATION
FOR THE FISCAL YEAR ENDED MARCH 31, 1988

1. NATURE OF THE SCHEDULE

For the purposes of this schedule, the costs included in these notes are the costs described in the Briefing Notes for Tendering Firms, as amended.

The summary schedule comprises costs, as defined below, related to operations which have been or are in the process of being privatized. The maintenance costs that will continue to be incurred by the Ministry after privatization are excluded. Costs included comprise the following:

a. actual maintenance costs expended:

b. depreciation of equipment;

c. price-level adjustment for equipment;

d. imputed financing cost to reflect the cost of capital for equipment and inventories: and

e. other imputed amounts relevant to road and bridge maintenance, not all of which resulted in dollar outlays by the Ministry during the fiscal year ended March 31, 1988 (the base year).

Because of conditions that cannot be anticipated, primarily weather-related, these maintenance costs may not necessarily be representative of costs incurred in another year.

2. BASIS OF ACCOUNTING AND METHODOLOGY

a. Accrual Basis

The accrual basis of accounting was used in preparing the schedule.

b. Inventories of Materials

Inventories of stockpiled materials are accounted for: on a moving average cost method using actual costs.

2. BASIS OF ACCOUNTING AND METHODOLOGY (continued)

c. Equipment Costs

Equipment costs include:

i. actual costs expended in operating:

ii. depreciation Of capitalized equipment, which is provided on historical cost, net of salvage value, using the straight-line method and the following useful lives:

	Number of years
Automobiles	5
Sand equipment, trucks and truck attachments	7-10
Earthmoving equipment, forklifts, cranes, and asphalt equipment	10-13
Trailers, screens, crushers and compressors	15

Purchases of equipment in excess of 5500 are capitalized: and

iii. a price-level adjustment, which is Ministry practice to provide funding for the replacement of the cost of the equipment, determined by multiplying the individual equipment depreciation amount by the increase in the Vancouver Consumer Price Index from the asset acquisition date to 1988.

d. Occupancy and Utilities

All charges for rent, operations and maintenance services are from British Columbia Buildings Corporation in accordance with its market pricing policy as described in the 1987-88 Accommodation Manual.

e. District Administration Overhead

The spreadsheet includes 50 percent of actual labour, materials, equipment and leased equipment of district administration overhead based on the assumption that the remaining 50 percent will continue to be incurred by the Ministry and, accordingly. this portion is excluded.

2. BASIS OF ACCOUNTING AND METHODOLOGY (continued)

f. District Yard Overhead

One hundred percent of actual labour, materials, equipment and leased equipment of district yard overhead is included.

g. Office Supplies, Information Systems and Damage to Government Property

These are amounts incurred by the Ministry to purchase office supplies, maintain the information system and repair damage to government property. Office supplies and information system costs were each estimated at $10,000 per provincial district.

h. Employee Benefits

The cost of employee benefits for actual direct, district stockpiling and administrative overhead labour is based on a 19.3 percent of budgeted labour cost charge by Treasury Board for the account of the Superannuation and Pension funds.

i. Imputed Financing Cost

Included in the schedule of costs is an 11 percent annual financing charge to reflect the cost of capital for:

i. equipment, based on an estimated current realizable value aggregating $62,055,000; and

ii. inventories of materials, based on an estimated current realizable value aggregating $36,626,400.

j. Other Imputed Costs

Amounts relevant to road and bridge maintenance, not all of which resulted in dollar outlays by the Ministry during the base year, include:

i. stabilization, based on $3,000 per kilometre of road less $840 per kilometre of road to take into account cost reductions in other cost classifications as a result of stabilization;

ii. seal coat, based on an all-inclusive $1.60 per square metre of road;

2. BASIS OF ACCOUNTING AND METHODOLOGY (continued)

j. Other Imputed Costs (continued)

iii. Ministry overhead consisting of telecommunications charges, postal service costs and insurance claims: and

iv. driver training and safety costs incurred by the Ministry to provide training courses for road and bridge maintenance employees.

3. DIRECT COSTS

Direct costs comprise the following:

	$
Labour, materials, equipment (including depreciation of $15,124,304 and price-level adjustment of $8,738,340) and leased equipment	165,730,599
Rent	13,284,102
Operations and maintenance services	8,060,192
	187,074,893

4. DISTRICT OVERHEAD

District overhead costs comprise the following:

	$
District administration overhead (note 2(e))	4,816,187
District yard overhead (note 2(f))	1,604,562
Office supplies, information systems and damage to government property (note 2(g))	1,384,803
Employee benefits for all actual direct, district stockpiling and administrative overhead labour (note 2(h))	14,341,331
	22,146,883

5. **ADDITIONAL COSTS**

Additional Costs comprise the following:

	$
Stabilization (note Z(j)(i))	3,836,162
Seal coat (note 2(j)(ii))	3,247,906
Ministry overhead (note 2(j)(iii))	1,220,902
Driver training and safety (note 2(j)(iv))	685,802
	8,990,772

6. **FINANCING COSTS**

Financing costs comprise the following:

	$
For equipment (note 2 (i)(i))	6,826,050
For inventories (note 2(i)(ii))	4,028,904
	10,854,954

7. **RELATED PARTY TRANSACTIONS**

a. Insurance costs are not included except for certain equipment which is insured through the Insurance Corporation of British Columbia,

b. Certain equipment included in determining the financing costs (notes 2(i)(i) and 6) is equipment which was sold in the base year and is being leased back from the third party purchaser. The base year lease payments for this equipment aggregating approximately $1,100,800 are the responsibility of the Ministry of Finance on behalf of the Ministry of Transportation and Highways.

c. The Costs include applicable social service tax and fuel tax remitted to the Ministry of Finance.

d. Certain of the "other imputed amounts- include dollar outlays of the Provincial Government that are external to the Ministry of Transportation and Highways (note l(e)).

e. The other related party transactions are described elsewhere in these notes.

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REPORT #2

Coopers & Lybrand | chartered accountants | a member firm of Coopers & Lybrand (International)

TO Mr. Vince Collins
Deputy Minister
of Transportation and Highways
Province of British Columbia

AUDITORS' REPORT

We have examined the summary spreadsheet schedule of road and bridge maintenance costs, totalling $229,067,502, as defined in the accompanying note 1, and the methodology used in preparation of the schedule, as described in note 2, for the fiscal year ended March 31, 1988, as prepared by the Ministry of Transportation and Highways. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, this schedule and methodology present fairly the road and bridge maintenance costs, as defined, for the fiscal year ended March 31, 1988, and the cost apportionment to each contract area, in accordance with the accompanying notes to the schedule.

Coopers & Lybrand

Vancouver, B.C.
January 8, 1989

CHARTERED ACCOUNTANTS

MINISTRY OF TRANS. ιTATIL AND HIGHWAYS
PROVINCE OF BRITISH COLUMBIA

SUMMARY SPREADSHEET SCHEDULE OF ROAD AND BRIDGE
MAINTENANCE COSTS, as defined in note 1, FOR PRIVATIZATION
FOR THE FISCAL YEAR ENDED MARCH 31, 1988

Contract number	Contract area	Direct COB ts (Note 3) $	District overhead (Note 4) $	Additional costs (Note 5) $	Financing costs (Note 6) $	Total $
1	Bouth Island	7,783,599	912,987	741,478	415,527	9,853,591
2	Nanaimo/Port Alberni	6,530,785	781,505	264,041	400,168	7,976,499
3	Courtenay	7,210,706	793,426	417,635	343,156	8,764,923
4	North Vancouver	5,805,562	865,020	78,611	327,868	7,077,061
5	Gibson8	2,006,113	278,468	24,767	165,766	2,475,114
6	New Westminster	9,904,690	1,448,118	100,951	565,046	12,019,605
1	Chilliwack	9,699,012	1,139,320	259,308	600,618	11,698,258
8	Penticton-Kelowna	9,117,811	1,109,661	509,550	452,896	11,189,918
9	Grand Forks-Rossland	6,591,294	821,137	199,450	466,039	8,077,920
10	Nelson-Creston-New Denver	9,968,793	1,288,377	323,732	591,086	12,171,988
11	Cranbrook-Fernie	7,087,710	945,819	268,333	539,100	8,840,962
12	Revelstoke-Golden	5,811,773	749,688	191,286	399,230	7,151,977
13	Vernon-Salmon Arm	9,345,542	1,015,474	777,309	523,856	11,662,261
14	Merritt	7,249,507	844,036	172,987	428,456	8,694,986
15	Kamloops	6,928,778	901,174	558,369	495,603	8,883,924
16	100 Mile House-Lillooet	8,293,655	928,038	733,502	500,307	10,455,502
17	Williams Lake	7,016,316	612,566	544,069	388,169	8,561,120
18	Quesnel	6,245,963	702,719	234,300	363,051	7,546,033
19	Prince George	9,272,175	934,566	221,093	482,385	10,910,219
20	McBride	3,971,932	445,378	313,950	258,861	4,990,121
21	Dawson Creak	8,408,673	817,703	446,304	354,769	10,027,449
22	Fort St. John	7,053,757	745,723	482,293	353,865	8,635,638
23	Vanderhoof	4,644,064	455,339	312,859	239,330	5,651,592
24	Burns Lake	3,848,515	413,343	61,407	233,823	4,557,088
25	Smithers	6,970,679	877,650	208,602	344,810	8,401,741
26	Terrace	2,933,314	439,806	76,218	159,765	3,609,103
27	Prince Rupert	1,851,780	290,131	42,643	155,553	2,340,107
28	Dease Lake	5,522,395	589,711	425,645	305,051	6,842,802
		187,074,893	22,146,883	8,990,772	10,854,954	229,067,502

MINISTRY OF TRANSPORTATION AND HIGHWAYS
PROVINCE OF BRITISH COLUMBIA

SUMMARY SPREADSHEET SCHEDULE OF ROAD AND BRIDGE MAINTENANCE COSTS, as defined in note 1, FOR PRIVATIZATION FOR THE FISCAL YEAR ENDED MARCH 31, 1988

1. NATURE OF THE SCHEDULE

For the purposes of this schedule, the costs included in these notes are the costs described in the Briefing Notes for Tendering Firms, as amended.

The summary schedule comprises costs, as defined below, related to operations which have been or are in the process of being privatized. The maintenance costs that will continue to be incurred by the Ministry after privatization are excluded. Costs included comprise the following:

a. actual maintenance costs expended:

b. depreciation of equipment;

c. price-level adjustment for equipment:

d. imputed financing cost to reflect the cost of capital for equipment and inventories: and

e. other imputed amounts relevant to road and bridge maintenance, not all of which resulted in dollar outlays by the Ministry during the fiscal year ended March 31, 1988 (the base year).

Because of conditions that cannot be anticipated, primarily weather-related, these maintenance costs may not necessarily be representative of costs incurred in another year.

2. BASIS OF ACCOUNTING AND METHODOLOGY

a. Accrual Basis

The accrual basis of accounting was used in preparing the schedule.

b. Inventories of Materials

Inventories of stockpiled materials are accounted for on a moving average cost method using actual costs.

2. **BASIS OF ACCOUNTING AND METHODOLOGY** (continued)

c. Equipment costs

Equipment costs include:

i. actual costs expended in operating;

ii. depreciation of capitalized equipment, which is provided on historical cost, net of salvage value, using the straight-line method and the following useful lives:

	Number of years
Automobiles	5
Sand equipment, trucks and truck attachments	7-10
Earthmoving equipment, forklifts, cranes, and asphalt equipment	10-13
Trailers, screens, crushers and compressors	15

Purchases of equipment in excess of $500 are capitalized; and

iii. a price-level adjustment, which is Ministry practice to provide funding for the replacement of the cost of the equipment, determined by multiplying the individual equipment depreciation amount by the increase in the Vancouver Consumer Price Index from the asset acquisition date to 1988.

d. Occupancy and Utilities

All charges for rent, operations and maintenance services are from British Columbia Buildings Corporation in accordance with its market pricing policy as described in the 1987-88 Accommodation Manual.

e. District Administration Overhead

The spreadsheet includes 50 percent of actual labour, materials, equipment and leased equipment of district administration overhead based on the assumption that the remaining 50 percent will continue to be incurred by the Ministry and, accordingly, this portion is excluded. Allocations to areas are actual, except for equipment costs of district administrative overhead which was allocated based on the ratio of direct labour cost by foreman area.

2. **BASIS OF ACCOUNTING AND METHODOLOGY** (continued)

f. District Yard Overhead

One hundred percent of actual labour, materials, equipment and leased equipment of district yard overhead is included.

g. Office Supplies, Information Systems and Damage to Government Property

These are amounts incurred by the Ministry to purchase office supplies, maintain the information system and repair damage to government property. Office supplies and information system costs were each estimated at $10,000 per provincial district and then allocated to areas on a simple average basis. Repair damage to government property was allocated to areas directly.

h. Employee Benefits

The cost of employee benefits for actual direct, district stockpiling and administrative overhead labour is based on a 19.3 percent of budgeted labour cost charge by Treasury Board for the account of the Superannuation and Pension funds.

i. Imputed Financing Cost

Included in the schedule of costs is an 11 percent annual financing charge to reflect the cost of capital for:

1. equipment, based on an estimated current realizable value aggregating $62,055,000, allocated on the ratio of direct costs by contract area; and

ii. inventories of materials, based on an estimated current realizable value aggregating $36,626,400, allocated on the ratio of direct costs by contract area.

j. Other Imputed Costs

Amounts relevant to road and bridge maintenance, not all of which resulted in dollar outlays by the Ministry during the base year, include:

i. stabilization, based on $3,000 per kilometre of road less $840 per kilometre of road to take into account cost reductions in other cost classifications as a result of stabilization;

ii. seal coat, based on an all-inclusive $1.60 per square metre of mad:

2. **BASIS OF ACCOUNTING AND METHODOLOGY** (continued)

j. other Imputed Costs (continued)

iii. Ministry overhead consisting of telecommunications charges, postal service costs and insurance claims, allocated oh the ratio of direct costs by contract area; and

iv. driver training and safety costs incurred by the Ministry to provide training courses for road and bridge maintenance employees, allocated on the ratio of direct costs by contract area.

3. DIRECT COSTS

Direct costs comprise the following:

	S
Labour, materials, equipment (including depreciation of $15,124,304 and price-level adjustment of $8,738,340) and leased equipment	165,730,599
Rent	13,284,102
Operations and maintenance services	8,060,192
	187.074.893

4. DISTRICT OVERHEAD

District overhead costs comprise the following:

	S
District administration overhead (note 2(e))	4,816,187
District yard overhead (note 2(f))	1,604,562
Office supplies, information systems and damage to government property (note 2(g))	1,384,803
Employee benefits for all actual direct, district stockpiling and administrative overhead labour (note 2(h))	14,341,331
	22,146,883

APPENDIX F

COOPERS & LYBRAND REPORT - FEBRUARY 8, 1989

(see attached)

5. **ADDITIONAL COSTS**

Additional costs comprise the following:

	$
Stabilization (note 2(j)(i))	3,836,162
Seal coat (note 2(j)(ii))	3,247,906
Ministry Overhead (note 2(j)(iii))	1,220,902
Driver training and safety (note 2(j)(iv))	685,802
	8,990,772

6 . **FINANCING COSTS**

Financing costs comprise the following:

	$
For equipment (note 2 (i)(i))	6,826,050
For inventories (note 2(i)(ii))	4,028,904
	10,854,954

7. **RELATED PARTY TRANSACTIONS**

a. Insurance costs are not included except for certain equipment which is insured through the Insurance Corporation of British Columbia.

b. Certain equipment included in determining the financing costs (notes Z(i)(i) and 6) is equipment which was sold in the base year and is being leased back from the third party purchaser. The base year lease payments for this equipment aggregating approximately $1,100,800 are the responsibility of the Ministry of Finance on behalf of the Ministry of Transportation and Highways.

c. The Costs include applicable social service tax and fuel tar remitted to the Ministry of Finance.

d. Certain of the 'other imputed amounts" include dollar Outlays of the Provincial Government that are external to the Ministry of Transportation and Highways (note l(e)).

e. The other related party transactions are described elsewhere in these notes.

3

REPORT #3

Coopers & Lybrand | chartered accountants | a member firm of Coopers & Lybrand (International)

February 3, 1989

Mr. Vince Collins,
Deputy Minister
of Transportation and Highways
Province of British Columbia,
940 Blanshard Street,
Victoria, B. C.
V8W 3E6

Dear Mr. Collins:

By agreement dated November 14, 1988 and further referenced in the Briefing Notes for Tendering Firms, as amended, we have undertaken to report upon the impact that privatization of road and bridge maintenance will have on Provincial revenues.

Our auditors' report, dated January 8, 1989, on the examination of the Summary Schedule of Road and Bridge Maintenance Costs, as defined, for the fiscal year ended March 31, 1988, has been provided separately. Costs referred to in this report as 'Benchmark Costs" are the costs reflected in the Summary Spreadsheet Schedule of Costs.

Our report on the impact on Provincial revenues is summarized below and is presented in detail in three appendices as follows:

1. cost savings resulting from direct revenues from contractors that offset Government expenditures, "cost offsets" (Appendix A);

ii. additional savings which may accrue to other agencies and ministries of Government, "impact on other agencies and ministries" (Appendix B); and

iii. new sources or additional amounts of revenue arising from the privatization of road and bridge maintenance, "new sources of revenue" (Appendix C).

For purposes of the report we have assumed that the privatization of all 28 contract areas is completed and the agreements were effected simultaneously.

"One-time" revenues and costs such as proceeds from the sale of equipment to the contractors and the cost of the privatization process itself are not addressed in this report, nor is the impact on employees and space that the organizational restructuring of the Ministry will have. Further, the time value of money is not considered.

A summary of the impact that privatization of road and bridge maintenance will have on Provincial revenues is as follows:

• Net incremental revenue in excess of associated Government costs	S0.1 million
. Impact on other agencies and ministries	a Potential net reduction of 16 to 17.5 full-time employee equivalents
• New sources of annual revenue	55.2 million

In the preparation of this report we have obtained information from a number of individuals within the Ministry, from other agencies and ministries of Government (Appendix D) and from other organizations. Although we have not verified this information, based on our review, nothing has come to our attention that causes us to believe that the information is not appropriate, in all material respects.

Yours very truly,

Coopers & Lybrand

COOPERS & LYBRAND

APPENDIX A

FINANCIAL IMPACT OF PRIVATIZATION

COST OFFSETS

This section documents findings on cost offsets. There are five such categories: equipment leases; radio system leases, gravel revenues: property rent and employee benefits.

a. EQUIPMENT LEASES

Contractors make lease payments to the Ministry of Transportation and Highways (the Ministry) for certain equipment (e.g., graders, loaders). The Ministry leases its own equipment to the contractor, as well as sublets equipment it leases from a third party.

- **Pre-privatization**

As well as equipment operating costs, Benchmark Costs include a price-level adjustment and en imputed financing cost for equipment. The price-level adjustment is Ministry practice to provide funding for the replacement of the cost of the equipment. The imputed financing cost is to reflect the cost of capital for equipment (holding cost). For Ministry-owned equipment, the financing cost is imputed at 11 percent per annum, and for equipment leased by the Ministry, the financing cost is equal to the interest component of the lease payments.

- **Privatization**

Contractors are charged a monthly rate for equipment leased from the Ministry. The lease amount is calculated to cover the original cost of the equipment, a capital coat recovery amount, and a holding coat. The contractor is responsible for all operating costs.

The lease revenue received by the Ministry from the contractors has a direct offset on the cost side because the Government of British Columbia (the Government) will continue to bear the cost of ownership. Accordingly, base revenues and associated costs offset each other and the net impact is zero.

b. RADIO SYSTEM LEASE

Contractors make lease payments to the Ministry for radio systems, which include individual radios and base stations. All of the equipment is owned by the Ministry.

- Pre-privatization

Benchmark Costs include radio charges which cover the original cost of the equipment, all operating costs, and an imputed holding cost. As for maintenance operations equipment, the imputed holding cost is 11 percent per annum.

- Privatization

Contractors are charged a monthly lease for the radio system which covers the original cost of the equipment and all normal maintenance costs. However, the lease amount does not recover any financing or holding costs.

Assuming an annual financing cost of 11 percent, and given the Ministry's approximation for the realizable value of radio equipment, the extent of the cost offset shortfall has been calculated at $440,000 per year.

c. GRAVEL REVENUE

Under privatization, contractors are required to pay the Ministry for gravel obtained from Ministry gravel pits situated throughout the Province.

- Pre-privatization

Benchmark costs include usage charges for crushed gravel, which cover the Ministry's costs of processing and stockpiling. The average charge for gravel processed and stockpiled by the Ministry was an approximate $5 per cubic metre. "Pit run" (i.e., unprocessed gravel) did not have a charge. Benchmark Costs do not include the Ministry's costs for acquiring, developing, and/or rehabilitating gravel pits, or the costs of leasing certain pits.

- Privatization

The gravel prices established for the contractors are calculated to recover pit acquisition, development, rehabilitation, and leasing costs, as well as processing and stockpiling costs. Prices for processed and stockpiled gravel have been set approximately 10 percent higher than the pre-privatization charges to recover these costs. Furthermore, "pit run" now has a price of $1 per cubic metre, also to recover these costs.

The Ministry will continue to incur the costs of pit acquisition, development, rehabilitation, and leasing after privatization. However, given that these costs are excluded from Benchmark Costs, the portion of the gravel revenues relating to pit acquisition, development, rehabilitation, and leasing should be treated as net new revenues with no offsetting costs.

Based on Ministry approximations for gravel usage for maintenance purposes and for the incremental gravel charge for recouping the above noted costs, this incremental revenue is estimated at $2.7 million.

d. PROPERTY RENT

The contractors make payments to British Columbia Buildings Corporation for highway yard facilities they use.

- **Pre-privatization**

  Benchmark Costs include BCBC base occupancy and utility charges for highway yard facilities. These charges cover all property-related expenses Such as rent, taxes, utilities, operating, and maintenance expenses, as well as a BCBC administrative fee. The rent is based on a formula set out by BCBC to all its tenants.

- Privatization

  BCBC charges the contractors rent and an asset maintenance charge. The contractors are responsible for all other property-related expenses. After adjusting the rent amount under privatization to account for the occupancy costs now paid directly by the tenants, the rent amount being charged to the private contractors is still less than the amount previously charged to the Ministry (apparently because of contractor resistance to paying a "replacement-cost-driven' rent).

The lover revenues BCBC now receives under privatization from the contractors (for the same facilities) compared with the rental amounts contained in the Benchmark Costs, result in a shortfall in cost offsets. BCBC estimates the shortfall is $2 million per year for the estimated 152 highway yards to be used by the Contractors.

e. **EMPLOYEE BENEFITS**

While the payment of employee benefits does not involve a revenue flow to the Government, this cost category must be addressed in the context of the cost offset framework because of an anomaly in the way ministries are charged for employee benefit costs.

- Pte-privatization

  At the beginning of each fiscal year, the Superannuation Commission charges the Ministry for employee benefit costs bated on budgeted salaries. If budgeted salaries are not achieved at year end, no adjustment of the superannuation charge is made. In fiscal 1987/88, actual salary costs for the Ministry came in under budget, but the Ministry still incurred employee benefit costs at the originally budgeted level.

. Privatization

Contractor employee benefit costs will be paid only on the basis of actual labour costs.

Benchmark Costs include the full amount of the originally budgeted employee benefit costs. From a Ministry cost point of view, inclusion of these costs in the Benchmark Costs is justified because the Ministry actually paid this amount. However, in that actual labour costs for the year were below budget, the Ministry in effect *overpaid* benefits to the Superannuation Commission by approximately $170,000. Accordingly, this overpayment amount has a negative impact on cost offsets.

f. SUMMARY OF COST OFFSETS

To summarize the area of cost offsets, one of the items identified and reported upon represents a cost-saving under privatization (gravel revenue), and three represent cost add-ons (radio system lease, property rent, and employee benefits). The fifth item considered has revenues which offset direct costs on the Government side (equipment lease), so for this item the net dollar impact is zero. A summary of the analysis of there five items is provided in Table 1.

TABLE 1

SUMMARY OF COST OFFSETS

(Millions of dollars)

(Rounded to the nearest 0.1 million]

	Incremental revenue in excess of associated costs	Associated costs in excess of incremental revenue	No impact	Annual net impact
Equipment lease			0	0
Radio system lease		(0.4)		(0.4)
Gravel revenue	2.7			2.7
Property rent		(2.0)		(2.0)
Employee benefits	—	(0.2)		(0.2)
TOTAL	2.7	(2.6)	Nil	0.1

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March 31, 1989

Mr. M.V. Collins
Deputy Minister
Ministry of Transportation and Highways
940 Blanshard Street
Victoria, B.C.
vaw 3E6

Dear Mr. Collins:

Enclosed is our report on the reasonableness and fairness of the methods utilized by the Ministry, to value the mobile/rolling stock assets sold or leased to contractors, as part of the privatization of the road and bridge maintenance operations. We have reviewed our findings and conclusions with Mr. J.L. Thornton.

The terms of reference for this review are as outlined in the Contract and under "Phase I" of our March 9, 1989 letter to Mr. G. Hogg. In summary, we have evaluated the following:

- the factors taken into consideration in determining values;
- the methods used in determining values;
- how these methods were arrived at: and
- how the methods used were modified for changing conditions.

During our review, we drew upon our understanding of the asset valuation methods we gained during our previous assignment with the Ministry. Further interviews were conducted with Mr. J.L. Thornton and reviews of supporting documentation were made.

We do not deal with the sales values of individual items of equipment or with equipment lease rates as this falls outside the scope of the Phase I assignment.

In our opinion, the methods utilized by the Ministry to value, as at March 1988, the mobile/rolling stock assets sold or leased to contractors, while not absolutely accurate are reasonable and fair. In general the methods used in determining equipment values, appear to have resulted in an overstatement of value for the never equipment, and depending on the type of equipment, equipment manufacturer, and equipment condition, resulted in an undervaluation of some of the older items.

Should you wish to discuss this report or require any further information please let us know.

Yours very truly,

COOPERS & LYBRAND

Coopers + Lybrand

J.P.Fairchild/A.R. Drinkwater/P.Lotz

JPF/ARD/PL:cy

cc: Mr. G.S. Hogg
Assistant Deputy Minister
Administrative Services

Mr. F.G. Hepburn, C.A.
Executive Director, Internal Audit Division
Ministry of Finance and Corporate Relations

APPENDIX B

FINANCIAL IMPACT OF PRIVATIZATION

IMPACTS ON OTHER AGENCIES AND MINISTRIES

With regard to the impact on other agencies and ministries, we are not able to conclude that privatization will automatically lead to surplus employees in all cases. For example, batch computerized processing requires essentially the same amount of work regardless of the number of employee transactions being processed. In another example, savings within an agency may be in the form of small "chunks" of time across many employees rather than the "freeing-up" of specific identifiable employees. In the extreme, however, if all Government services were privatized, there would no longer be a need for support services other than a group to administer contracts. The challenge therefore is to determine the threshold point where privatization is extensive enough to effect savings.

The Ministry estimates that privatization of highway maintenance will shift approximately 2,600 jobs out of Government and into the private sector, representing approximately 8 percent of the total Provincial Government payroll. This is a significant reduction and is within the realm of the threshold point where real savings in support services (both employee payroll costs and associated overhead costs) should be possible in some or all of the areas noted. Some support services are provided to the Ministry by other Government agencies. Thus, if the Ministry's total operation is downsized through the privatization of maintenance, it is reasonable to assume that the Ministry's requirement for these centralized support services could decline.

An assessment was made of the potential impact of privatization of the highways maintenance function on the major agencies providing support to the Ministry's maintenance operations: Office of the Comptroller General; Government Personnel Services Division; Purchasing Commission; Superannuation Commission; and Government Agents Branch. These agencies account for the majority of resources committed to centralized ● ctioitier performed in support of the Ministry's maintenance operations. While additional support activities dispersed throughout the Government are difficult to identify and measure, they would, in total, likely account for Only a minor portion of the total resource commitment provided through centralized service agencies. Potential cost savings in support services provided from within the Ministry itself were not addressed as part of this study.

Recognizing the labour intensiveness of support services, potential impacts were assessed in terms of the commitment of Full Time Equivalent (FTE) employment to the activity in question. FTEs were estimated by one of two approaches depending on the activity. If the activity involves high-volume, repetitive document processing, estimates were developed for both the number of documents processed per year and the processing time per document. These estimates were combined to arrive at a total hours requirement per year, which was then converted to FTEs.

If, on the other hand, the activity involves providing a range of common services generally made available to all ministries within the Government (e.g., personnel services) a different approach was used. In this case, the FTE estimate was set as a pro-rata share of the total FTEs involved in providing the service Government-wide. Based on total Government employment of approximately 31,000 FTEs and the estimated 2,600 employees being privatized, the share allocated to support highways maintenance was set at a.4 percent.

Estimates of FTE employment in the agencies most affected that can be linked to the maintenance activity being privatized are provided in the paragraphs below.

. Payroll Forms

The Office of the Comptroller General (OCG) processes four types of forms to calculate employee payrolls. Twenty-one FTEs arc involved in providing this activity Government-wide. Based on the 2,600 employees targeted for privatization (i.e., a pro-rata allocation), the resource commitment to processing the payroll for the jobs being privatized appears to be ● p&xiaately 2 FTEs. This FTE estimate is also supported by using the Ministry's estimates of a reduction of 58,100 payroll forms as a result of highways maintenance privatization and by using their estimate of the average processing time per form.

- Supplier Payments

Payments to outside suppliers involved in maintenance operations are made through two agencies: the CCG and the Government Agents Branch. The Government Agents issue cheques to local suppliers of small purchases (i.e., up to $500). Their involvement ensures local suppliers are paid promptly. Even when the Government Agent issues the cheque, documentation is forwarded to the OCG for verification. Hence, eliminating the need for Government Agents to issue cheques to local suppliers has an impact on both agencies (the OCG and Government Agents).

The OCG has 19 FTEs involved in processing cheque vouchers and issuing cheques. The Ministry estimates a total reduction of 125,000 supplier invoices. Assuming a seduction of 42,000 cheques (i.e., an average of one cheque for every three invoices) and based on the OCG's estimate of the average processing time for cheques/documentation, this reduction in invoices represents a resource commitment of between 0.5 and 1 FTE at the OCG.

Based on data received from the Government Agents Branch, the Branch processes an average of 350 cheques per agency per year for the highway maintenance operation, with an average processing time of nine minutes per cheque. Under privatization, the Government Agents will no longer be involved in paying suppliers. The estimated impact is 1.5 to 2 FTEs. Therefore, the total impact for supplier payments appears to be between 2 and 3 FTEs.

- **Personnel Services**

The Government Personnel Services Division (GPSD) provides labour relations services which include handling grievances, contract negotiations, etc. Based on a five-gear history, GPSD processes an average of 40 grievances per year for maintenance operations, which translates into an estimated resource commitment of 0.5 FTEs to handle grievances (based on GPSD's estimate of average processing time per grievance). Except for the handling of grievances, privatization will likely have a minimal impact on other labour relations activities.

The GPSD also provides a range of more general personnel services including policy development, job postings, development of staff manuals, and advisory services. There are 70 FTEs involved in this activity. Based on a pro-rata allocation, the resource commitment that cm be linked to the 2,600 employees being privatized is 6 FTEs.

The total impact for personnel services, therefore, appears to be approximately 6.5 FTEs.

- Purchasing

The Purchasing Commission provides a bundle of services including processing requisitions, negotiating standing offers and contracts, and advisory services. There are 38 FTEs involved in this activity. Based on a pro-rata allocation, 3 FTEs can be linked to the Ministry's maintenance activity.

- Benefit Programs

The Superannuation Commission administers benefit programs and pension plans. The Commission has a staff of 9 FTEs for administering the basic benefit programs provided by the Government on an ongoing basis. Additional staff of approximately 25 FTEs administer the Public Service Pension Plan in which the Ministry maintenance employees participate. Hence, there is a staffing of 34 FTEs to provide the basic services for the Ministry employees, among others.

Based on the 2,600 employees targeted for privatization, the resource commitment to administering benefit programs and pension plans for the jobs being privatized is 3 FTEs. According to the terms and conditions of the privatization process, the privatized employees will still be able to apply for banked sick time benefits, pension benefits, and long-term service awards for some time after the specific date of privatization, Thus, notionally, the Commission must retain some staffing for handling these types of applications in the future. The Staffing required for this, however, is anticipated to be small: likely less than 0.5 FTEs per year. overall, therefore, the net potential impact of privatization on the Commission could be between 2.5 and 3 FTEs.

In total, therefore, 16 to 17.5 FTEs were identified as representing the resource commitment within five groups that can be linked to supporting the maintenance activity being privatized. Table 2 provides a summary of these resource commitments in terms of FTEs. Using an average annual salary per FTE of $21,800 (i.e., Clerk 3 salary before benefits), this FTE total can be converted into total direct salary costs in the range Of $360,000 per year. In addition to direct Salary costs, each FTE attracts a range of other costs, including employee benefits, rent for their office space, computer time, paper costs and other overhead items. Hence, total potential savings of FTE positions eliminated can translate into savings well in excess of the direct salary costs alone.

TABLE 2

IMPACT ON OTHER MINISTRIES AND AGENCIES

Item	Agency	FTE Commitment
Payroll forms	OCG	2
Supplier payments	OCG/Government Agents	2 to 3
Personnel services	GPSD	6.5
Purchasing	Purchasing Commission	3
Benefit programs	Superannuation Commission	2.5 to 3
TOTAL POTENTIAL REDUCTION		**16 to 17.5**

APPENDIX C

FINANCIAL IMPACT OF PRIVATIZATION

NEW SOURCES OF REVENUE

This section documents findings on revenues received from the contractors which do not have any direct costs to Government associated vith it.

A. SOCIAL SERVICE TAX

Contractors pay Social Service Tax (often referred to as Provincial Sales Tax) on certain goods and services they purchase. This tax is collected by the Government.

- Pre-privatization

The Ministry is treated the same as a private sector company to determine Social Service Tax payable. That is, the Ministry pays the tax on all purchases where the tax is applicable.

- Privatization

Privatization does not trigger any new Social Service Tax revenues, with two exceptions. Under privatization, the Ministry is leasing certain maintenance equipment and radio systems to the private contractors. Also, contractors will purchase gravel (pit run and crushed gravel) provided through Ministry gravel pits. The lease payments and gravel purchases trigger Social Service Tax. This is tar revenue that would not have been paid to the Government had highway maintenance activity not been privatized.

The Ministry has estimated the magnitude of tax revenue applicable to the equipment and radio leases on the basis of thore leases already negotiated, and estimates for the lease amounts For three contracts yet to be negotiated. Using a 6 percent tax rate, the estimated new Social Service Tax triggered by the leuee is $920,000 per year. As for the

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estimated tax revenue from gravel sales, it is assumed the annual quantity Of gravel purchased from the Ministry equals the quantity used by the Ministry for maintenance Operations in fiscal 1987/88. Based on the Ministry's approximations for gravel usage in fiscal 1987/88 and for gravel prices, applying the 6% tax rate yields an estimated new Social Service Tax from gravel sales of $625,000 per year. In total, therefore, privatization results in approximately $1.5 million of new Social Service Taxes.

b. CORPORATE INCOME TAX

Contractors for the 28 contract areas will pay income taxes on any taxable income earned as a result of these contracts, to both the Provincial and Federal Governments.

- Pre-privatization

  The Government does not pay income tax.

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  The contractors engaged for the 28 Contract areas will be treated like other private sector businesses for the purposes of calculating and collecting corporate income taxes.

New income tax from the prime contractors has been estimated based on the following assumptions:

- the original contract sire does not change over. the course Of the contract term;
- contractor profit margin is 2 percent of gross revenues before tax, which represents average profitability of similar types Of contractors in the Province prior to the recession of the mid-eighties;

- all contractors qualify for the Canadian Controlled Private Corporation rate of 21 percent on the first $200,000 of taxable income:

- the tax rate applied to taxable income in excess of $200,000 is 42 percent; and

- no other factors affect taxes payable (e.g., loss carryforwards, other income).

On the basis Of the projected contractor revenues provided by the Ministry, application of these assumptions translates into a projection of $1.1 million per year in total income taxes. Of this amount, $475,000 is Provincial income tax.

C. PROPERTY TAX

The contractors will pay property taxes to local governments throughout the Province.

- Pre-privatization

  Property rents included in the Benchmark Costs include recovery of Grants in Lieu of Tar paid by BCBC for the 172 highway yard facilities used by the Ministry. However, Grants in Lieu of Tax paid by BCBC cover only a portion of the property taxes otherwise payable on such facilities, effectively excluding the value of school taxes. BCBC does not provide grants for facilities in unorganized areas.

- Privatization

  Private contractors will pay the property tax liability directly to the local Government authority, and will also pay school taxes to the province (including on property they are leasing from BCBC). BCBC will discontinue providing Grants in Lieu of Tax on these yards.

Government will receive more property tax as a result of privatization, essentially equivalent to the school tax component. BCBC has estimated the new revenue based on the following assumptions:

- the contractors "se 152 of the 172 highways yards:
- the assessment base consists of the market value of the land and BCBC's depreciated replacement value for improvements; and
- the average tax rate for all purposes is 3 percent of assessed value.

The new revenue is estimated by BCBC to be $2.3 million per year.

d. MOTOR VEHICLE LICENCE FEES

The contractors will pay motor vehicle licence fees to the Province's Motor Vehicle Department.

- Pre-privatization

  Vehicles used by the Ministry in maintenance operations are exempt from licence fees.

- **Privatization**

  Private contractors must pay licence fees on all "on-road" vehicles in their fleets, regardless of whether the vehicles are leased or purchased from the Ministry.

Licence fees paid by the contractors on vehicles leased or purchased from the Ministry represent new revenue to the Government. The Ministry used the following assumptions to estimate new licensing fees:

- the vehicle fleet provided by the Ministry to the contractors represents the total fleet used by the contractors;

vehicles fall **into** five categories for the purpose? of **calculating** licence fees:

Vehicle type	Average fee
Multi-axle trucks	$450
Loaders	5150
Graders	$342
Light vehicles	s 80
Heavy vehicles	5% of fees payable for multi-axle trucks, loaders and graders.

(The licence fee assumption **for** heavy Vehicles, that is, **5%** of fees payable for the other vehicles, is "softer" than the assumptions for the other vehicles.)

On the basis of these **assumptions,** the Ministry estimates **new** licence fees to be 5530,000 per year.

e. FUEL TAX

Contractors pay fuel taxes to the Province.

- Pre-privatization

Provincial government ministries and agencies are treated the same as the private sector regarding payment **of** fuel taxes. That is, they pay the normal tax wherever applicable.

- Privatization

Contractors will also Pay fuel tares wherever applicable.

Hence, privatization **does** not trigger any new fuel tax **revenues.**

f. INSURANCE CORPORATION OF BRITISH COLUMBIA

The contractors will **pay** vehicle **insurance premiums** to the **Insurance** Corporation of British Columbia **(ICBC).**

- Pre-privatization

  The equipment charges in the Benchmark Costs include ICBC premiums incurred for licensed vehicles. The Ministry receives a premium discount of 60 percent from full rates.

- Privatization

  The private contractors are eligible for a 45 percent discount rate for an initial two-year period, which is 15 basis points less than the discount received by the Ministry.

  ICBC is also introducing a new discount of up to an additional 12.5 percentage points based on performance, The new discount program (i.e., the 12.5 percent) is being phased in gradually, starting in 1989 with large fleet owners only (i.e., more than 500 vehicles). At best, only one of the contractors may have a fleet large enough to qualify for participation in this program during the initial stages.

ICBC will collect additional premium revenue under privatization as a result of the lesser discount for the private contractors. It is reasonable to assume that the contractors' accident record will be similar to the Ministry's historical record and that ICBC's claim costs will, therefore, be similar as well. Based on Ministry estimates for ICBC premiums for the maintenance function, the incremental premiums are estimated at $330,000 par year (assumes none of the contractors qualify for the extra 12.5 percentage points discount).

g. **WORKERS' COMPENSATION BOARD**

The contractors will pay insurance premiums to the Workers' Compensation Board (WCB).

- Pre-privatization

The Government incurs WCB costs based on actual claims paid by the WCB on behalf of the Government. The Superannuation Commission acts as the Government's clearing house in this regard. It makes payments to the WCB and charges each ministry a pro-rata share of budgeted claims at the beginning Of each fiscal year. These charges *are built* into the cost of the **employee** benefit packages, which are included in the Ministry's Benchmark Costs.

- **Privatization**

Contractors pay normal premiums to WCB based on rates **for** their industry and their own accident experience.

Over time, contractor insurance premiums paid to WCB *are representative* of **actual** claim costs incurred by WCB on behalf of all of the insureds. Hence, WCB premiums paid by the Government (as reflected in the Ministry's Benchmark Costs) are comparable to premiums **paid** by the contractors. At *the same* **time,** there is no reason to assume that accident experience under privatization will **be any better or worse** then it was pre-privatization, accordingly the net impact is zero.

h. **INSURANCE PREMIUMS** TAX

Insurance companies pay a tax of 3% on **insurance premiums** written in British Columbia (the rate rises to 48 **for fire** coverage **premiums).**

- **Pre-privatization**

The **maintenance** activity **is self-insured** with the **exception of** vehicle **insurance (purchased** through **ICBC)** end **BCBC** property **insurance** (purchased *through private* **insurers).** *Hence,* **premium taxes are** paid only for vehicle end **BCBC** property **insurance.**

. privatization

The Ministry requires contractors to obtain comprehensive liability insurance, a performance bond, a material and labour bond, vehicle insurance and insurance on other types of equipment. BCBC will continue to purchase insurance for property leased to the contractors.

Hence, privatization triggers additional insurance premium taxes (i.e., taxes payable on premiums paid for comprehensive liability insurance, performance bonds, material and labour bonds, and equipment insurance). New premium taxes have been estimated using the following assumptions:

- required comprehensive liability insurance is $10 million per contract area;
- required bonding is 50 percent of contract value up to a maximum of $3 million per contract area: and
- insurance coverage for equipment is $2 million per area.

Using these assumptions, an independent insurance agent was contacted to estimate average total premiums per area. The agent estimated these costs at 575,000, hence applying a blend of the 3% base tax and the 4% fire premium tax yields estimated new insurance premium taxes of $65,800 for all areas.

i. SUMMARY OF NEW SOURCES OF REVENUE

A summary of the analysis on new sources of revenue is provided in Table 3. Two of the items do not trigger any new revenue (i.e., fuel tax and WCB).

TABLE 3

SUMMARY OF NEW SOURCES OF REVENUE

(Millions of dollars)

(Rounded to the nearest 0.1 million)

	Annual Revenue
social service tax	1.5
Corporate income tax	0.5
Property tax	2.3
Vehicle licence fee	0.5
Fuel tax	0
ICBC	0.3
WCB	0
Insurance premiums tax	0.1
TOTAL	5.2

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APPENDIX D

FINANCIAL IMPACT OF PRIVATIZATION

INFORMATION SOURCES

MINISTRY OF TRANSPORTATION AND HIGHWAYS

Bob Buckingham, Director, Financial Services Branch
Jon Buckle, A/Regional Director, Highways
Marc Daubner, Assistant Insurance and Claims Officer
Gordon Hogg, Assistant Deputy Minister, Administrative Services
Mel Kitson, Office Manager
James Lee, Maintenance Staff Engineer
Sandy Lukinuk, Personnel Programs Branch
Earl Lund, Chief Highway Engineer
Al Moir, Senior Manager
Betty Nicholson, Public Affairs
Douglas Rhodes, Director, Information Services Branch
Garth Shearing, Communications Engineer
Jerry Stevenson, Senior Manager, Financial Operations
Gary Tronrud, Headquarters Paving Engineer
Lawren Wager, Maintenance Programs Engineer

OTHER MINISTRIES AND AGENCIES OF GOVERNMENT

Attorney General
- Legal Services Branch

B.C. Purchasing Commission

B.C. Systems Corporation

British Columbia Assessment Authority

British Columbia Buildings Corporation

Energy, Mines and Petroleum Resources
- Government Personnel Services Division

Insurance Corporation of British Columbia

Ministry of Finance and Corporate Relations
- Consumer Taxation Branch
- Financial Services and Administration Branch
- Income Taxation Branch
- Office of the Comptroller General
- Treasury Board Staff

OTHER MINISTRIES AND AGENCIES OF GOVERNMENT (continued)

Provincial Secretary and Government Services
- Government Agents Branch
- Postal Servicer Branch
- Risk Management Branch
- Superannuation Commission

Solicitor General
- Motor Vehicle Branch

Workers' Compensation Board

APPENDIX G

1989/90 BUDGET ISSUE PAPER

(see attached)

1989/90 BUDGET

DEPUTY MINISTERS' REVIEW

MINISTRY OF TRANSPORTATION AND HIGHWAYS

HIGHWAY MAINTENANCE PROGRAM

ISSUE PAPER NUMBER 1

TITLE: Highway Maintenance Program (Privatization of the Road and Bridge Maintenance Activities)

FINANCIAL IMPACT:

	Request 1989/90	Projected Impact 1990/91	Projected Impact 1991/92
Funding Requirement	$62,612,338	$(4,181,385)	To be Determined as 3 year agreements expires during this period

FTE "Savings": 1989/90 Request 741.18 (estimated)
Less 1988/89 Request f3.241.181 (estimated)
FTE Savings a . a
Result of Privatization (2.500.00) (estimated)

(Due to eh. privatization of the road/bridge ❑ aine.n.nc. function., 144 FTEs for Contract Area Managers h.". now been provided for in the base FTE allocation for this program. These positions were not previously required).

PRIORITY:

High

DESCRIPTION:

"Funding Required to Meet Contractual Commitments Related to the Privatization of the Road and Bridge Maintenance Functions"

FINANCIAL AND STAFFING IMPACT:

As a result of the decision to privatize eh. road and bridge maintenance function.. the ministry is now required to fund contract costs which include opportunity costs associated with carrying equipment and inventory, together with inflationary costs and B.C.G.E.U. negotiated salary increases. (With the exception of the B.C.G.E.U. increase, such costs ha". not been provided for in the Ministry's annual estimates). While these costs are truly . part of road and bridge maintenance, past budgeting and accounting practices have been to ignore them. Contractor's bid pricer. however, have recognized '11 of these costs and as such. they must be reflected when determining the true cost of road and bridge maintenance.

An additional influencing component relative to this request is th. fact that contractors have anticipated substantial start up costs, hence the need for increased funding in the ● .rLy stages of the contract process and diminishing requirements toward the expiration of the 3 year agreements. The overall savings in terms of comparing the existing total cost of road and bridge maintenance over a 3 year period to the 28 bids, is estimated to b. $25.03 million.

FINANCIAL AND STAFFING IMPACT CONT'D

Attached, is a detailed analysis of the Ministry's road and bridge maintenance funding requirements for the 1989/90 fiscal year, together with a summary of gross payments to road and bridge maintenance contractors by fiscal year. This information is based on a tentative contract schedule, together with the known or anticipated contract amount.

Privatization initiatives will result in significant revenues to the Ministry for leased equipment. In all contract areas, monthly or annual payments for equipment and gravel are proposed. Given that most contracts have yet to be finalized and awarded, providing a revenue estimate would be premature. Based on information to date, it is estimated that the Ministry will receive approximately $6 million this year and $12 million in 1989/90, but the actual revenues will depend on timing of awards and finalized contract terms.

As previously stated in the Budget overview, the environment relative to these activities is constantly changing as contracts are signed and employees consider their employment options. The budgetary requirements and FTE's will become more quantifiable by the end of November.

ALTERNATIVES:

None

LEGISLATIVE IMPACT:

Nil

IMPACT IF NOT APPROVED:

Unable to meet contractual commitments to private sector contractors performing road and bridge maintenance services.

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Reconciliation of the Highway Maintenance Issue Paper

The following amounts will need to be added to the Highway Maintenance sub-vote as . result Of Privatization:

	Millions --- $ ---
Employee Benefits (Note 1)	14.2
Holding Cost - Class A Equipment (P. Halkett decision)(Note 2)	4.6
Holding Cost - Inventory (P. Halkett decision) (Not. 2)	4.1
Holding Cost - Payroll (P. Halkett decision) (Hots 2)	0.9
Inflation Costs (Note 3)	19.6
Contract Managers - 144 new positions	7.0
BCGEU increase in contractor's bid (Note 4)	4.3
Start up Costs (Note 5)	7.9
Total Issue Paper	62.6

9.6

Note 1:

During the budget development process. employee benefits are excluded from the funding level, however, the price from the contractor includes these costs. To get a true comparison, the T.F.L. must b. increased by $14.171 million or the contract price must be discounted to exclude the,. costs for comparison purposes.

Note 2:

Holding costs totalling $9.6 million are cost, previously incurred by another Ministry (Finance) or Government generally. These h.". not been Ministry of T nsportation and Highways costs but now become . cost in our new contracts.

1) Class A Equipment: These arc lease costs paid by Finance to Roylease for heavy equipment. The costs become . pass through as the contractor will now pay the government out of our payments to then.
2) Inventory: These costs are "lost opportunity" costs or holding costs (interest) for inventory carried by Ministry of Transportation and Highways to date. Government accounting practices expense items on purchase; the contractor however h., real in costs of carrying inventory and as such. their bid price reflects the,. costs.
3) Payroll Costs: This is . direst saving to government (consolidated revenue fund) as we paid employees bi-weekly but now will pay th. contractor monthly in arrears. Ye calculated that the government will retain payroll costs (interest) for an average of six weeks.

Note 3:

The bid from the contractor was compared to our actual for 87/88 (inflated). As the first full ye.= of the contract is 89/90 for comparison purposes we have inflated our actual 87/88 by 4.1% in each of two years. The calculation of inflation is 19.6 million. Our base therefore. must be increased by this amount.. [Calculation: 4.1% of $234.3 million (1988/89 costs) plus 4.1% of $243.9 million (estimated 1989/90 costs)].

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Note 4:

Contractors var. permitted to included the costs of the recent B.C.G.E.U. settlement in their bids: The Ministry will require additional funding to pay this cost either through this issue paper or by . base adjustment prior to the Blue Book approval.

Note 5:

Contractors have □ .d. bids which require higher payments in the first year than in subsequent years, to cover start up costs.

HIGHWAY ROAD AND BRIDGE MAINTENANCE ANALYSIS (1988/89 TO 1989/90)

Original 1989/90 Base Funding as Provided by T.B.S.		255,711,693
Plus: Required Base Adjustments		
"Opportunity Costs"		
- Class "A" Equipment	4.621.243	
- Inventory	4,121,252	
- Payroll	931,938	9,674,433
Inflation Costs Paid to Contractor (4.1% compounded for 1988/89 and 1989/90 fiscal years)		19,607,453
Employee Benefits Paid by Contractor		14,171,101
144 Contract Area Manager Positions not previously in Ministry		7,000,000
B.C.G.E.U. Wage Increase in Contractor's Bid		4,292,792
"Adjusted" 1989/90 Base Funding		310,457,472
Less: Total 1989/90 Road/Bridge Maintenance Funding Requirements		318,324,031
Start up Costs of Contractor Bids		($7,866,559)

APPENDIX H

IMPACT OF ROAD AND BRIDGE MAINTENANCE PRIVATIZATION ON

B.C. BUILDINGS CORPORATION

(see attached)

British Columbia Buildings Corporation
3350 Douglas Street, Box 1112, Victoria, B.C. V8W 2T4 (604) 387-7211 Telex 049-7439

September 19, 1998

Mr. R. Hopp
Treasury Board Staff
Ministry of Finance and
Corporate Relations
617 Government St
Victoria, B.C. V8V 1X4

Dear Rick:

Road and Bridge Maintenance Privatization

Further to our meeting with Brian Xennedy of August 31, we have now completed an analysis of the estimated impact of the Road and Bridge Maintenance Privatization program on the B.C. Buildings Corporation, based on current known information.

As we discussed at our meeting, any financial projections made at this time have to be very speculative as only one of the twenty-eight contract areas has culminated with a signed license of occupation. We have had discussions with the Project Directors and potential contractors in many of the other contract areas but these deals have not yet been signed and could, therefore, still change as we have learned through recent experience.

Also, those areas where we have a reasonably good idea of the potential rents were probably the easier areas in which to get an agreement. As negotiations continue they will undoubtedly become more difficult.

Based on the best information available to us at the present time, in 21 of 28 areas, the probable negotiated rents are approximately 73% of the normal special purpose prices payable by the ministry. This shortfall of 27% is a combination of yards not taken at all, partial takings and reductions resulting from a conversion to prices based on available market information for comparable facilities. Applying this general shortfall to the balance of the inventory, could result in a potential revenue shortfall exceeding $3,500,000 per annum. This total does, however, include the rental shortfall

.../2

associated with potentially surplus properties of $1,853,728 which would not continue if the properties were declared surplus to future ministry needs and the early termination penalty was paid by the ministry in respect of each yard.

If the normal early termination provisions of the Corporation's Accommodation Manual are implemented, an early termination penalty of $8,172,000 (representing the current net book value of the improvements) less any proceeds of sale attributable to the improvements would be chargeable to the Ministry of Transportation and Highways. Without the benefit of current market appraisals, it is impossible to say at this time what the proceeds of sale attributable to these improvements would be.

We have identified a list of 28 yards with a total depreciated replacement cost of $22,028,000 which we have either been told are definitely not required or told may not be required by the contractors. Conservatively, we estimate that if these yards were declared surplus by the ministry and put up for sale they could result in a loss to government (ie. ignoring the individual responsibilities of the ministry and the Corporation) of $3,900,000 in 14 of the 28 yards. If potential gains of $2,600,000 in the other 14 yards were to be offset against the losses the net loss to government would be in the order of $1,300,000.

I realize that the above numbers are global in nature, and I apologize for the delay in getting them to you, but considering the current constantly changing state of the negotiations, they represent our best estimate of the potential shortfalls which will result. I would recommend that once you have had the opportunity to review these numbers we sit down and discuss the possible alternative solutions that might be available in this instance.

Yours truly,

Bill

W.H. (Bill) Blair
Manager, Pricing

c.c. D. Truss
B. Kennedy
J. Robinson

APPENDIX I

COOPERS & LYBRAND REPORT ▪ MARCH 31, 1989

(see attached)

MINISTRY OF TRANSPORTATION AND HIGHWAYS

VALUATION OF MOBILE/ROLLING STOCK ASSETS

SOLD OR LEASED TO CONTRACTORS

PHASE I REPORT

Following is our report on Phase I of our review of the valuation methods and asset values used by the Ministry in its privatization activities. During this phase, we evaluated the reasonableness and fairness of the methods used by the Ministry.

Our report is organized under the following headings:

DEFINITIONS

For the purposes of this report we define:

- The Base Year - 1987, the date from which equipment age is calculated; 3
- Valuation Date - March 31, 1988, the date on which the equipment values are deemed to have been made;
- Present Value - the Ministry's estimate of equipment values as at March 31, 1988, arrived at by using an inflation adjusted, decreasing value formula;
- Residual Value - the calculated depreciated value that a item of equipment is expected to have at the end of its economic life with the Ministry. Used in lease rate calculations and potentially in establishing the value of equipment which reach the end of their economic usefulness during the currency of any lease agreements with contractors;
- Current Estimated Replacement Value - The price at which the Ministry buys ● quipment;plus an adjustment for inflation and the value of attachments to be fitted. This is used in determining Present Value.

SCOPE OF ASSIGNMENT

During our evaluation of the Ministry's methodology/assumptions we have performed the following:

- held discussions with Mr. J.L. Thornton P.Eng. Manager of Equipment and Materials with the Ministry in Victoria:
- reviewed the methods of establishing:
  - Present Value (Pv),
  - Residual Value (XV),
  - Current Estimated Replacement Value (CERV), and
  - Equipment Lease Rates;
- discussed the method of calculating PV's using the Ministry's "1.22 formula" (the Formula);
- discussed factors taken into consideration in establishing the values:
- prepared PV calculations using the *Formula for* various classes of equipment and compared these values with values published in pricing guides;
- reviewed equipment classification and sub-codes:
- used data obtained from personal attendance at auction sales to compare the Ministry's calculated PV's with auction sale values *Of* the Ministry's vehicles: and
- compared the Ministry's actual sales values with sales values calculated by the use of the Formula.

FACTORS USED II? D-G VALUES

The Ministry used the following factors in determining equipment values its at March 1988:

- Equipment *Age*

The model year was generally used to determine equipment age; some exceptions were found where the year that the equipment was taken into service was used instead.

1987 was taken as the base year for calculation purposes. Accordingly equipment with a model year of 1987 is treated as being "0" years old.

- Equipment Classification

The equipment is classified according to an "Equipment Class Table' which forms an integral part of the Equipment Management System used by the Ministry.

The equipment is classed by type, such as automobiles, snow plows, compressors, forklifts, trucks and trailers. Each type is further classified to indicate certain common characteristics such as body type, engine type, capacity, gross weight, accessories fitted etc.

. Current Estimated Replacement Values (CERV)

The CERV of Ministry equipment is based on recent equipment purchases by the B.C. Government Purchasing Commission, plus the value of attachments fitted and an inflation adjustment.

In those instances where no recent purchases were made, we have been informed that price trends based on previous years were taken into consideration. Where this was considered unreliable, prices were checked with the suppliers.

From a cursory inspection of the replacement values used, the actual values entered in the Ministry records and the explanations given, it appears that the CERV's are representative of the replacement cost of items within a class.

METHODS USED IN DETERMINING VALUES

In calculating the present value (PV) and residual value (RV) of the equipment the following formula is used:

$$PV = \frac{CERV}{(1.22)^n}$$

Where n is the age of the equipment in years.

Using as an example a motor grader (Class Type Code L) with rated engine power of 135-180 KW (Classification Sub-Code 3020), a CERV of $150,000 would have the following PV for the model year indicated.

Model Year	CERV $	Age Years	PV $
1987	150,000	0	150,000
1986		1	122,951
1985		2	100,779
1984		3	82,606
1983		4	67,710
1982		5	55,500
1981		6	45,492

Model Year	CERV $	Age Years	PV $
1980		7	37,288
1979		8	30,564
1978		9	25,053
1977		10	20,535
1976		11	16,832
1975		12	13,797
1974		13	11,309
1973		14	9,269
1972		15	7,598

The Formula was found by Mr. Thornton, who is also Chairman of the Inter Ministry Rental Rate Committee which produces the B.C. Government, B.C. Hydro and B.C. Rail Equipment Rental Rate Guide.

The exact Source of the formula is not known, however we are advised it was found in a trade journal published in 1980 or 1981 which dealt with equipment costs and residual values.

The Formula has since been modified by Mr. Thornton to more accurately comply with Ministry of Highways experience and auction sale prices of equipment sold.

Mt. Thornton was unable to obtain a copy of the article for us and we cannot comment therefore on the scientific accuracy upon which the formula was based and any prerequisites for its use. We are not aware of the existence of any generally accepted formula which has been devised for the determination of equipment values.

As 1987 is taken as the base year in establishing PV and as the values were calculated in March 1988 there are certain errors inherent in the calculations, e.g.:

- equipment purchased or put into service in 1988 would be classified as being the same value as equipment acquired in 1987:

- equipment acquired in 1907 is classified as being "0" years old whereas factually the equipment may already be one or more years Old. This error is continued throughout the PV calculations.

We consider that the result of the base year/age calculation error results in the equipment age being understated and the PV's for some of the years being overstated. Accordingly, the estimated replacement value should be adjusted annually to assure continued PV accuracy as any residual values calculated at this stage would not otherwise comply with the basic premise of the formula.

General Comment

In our view, the range of equipment included in the Unit Type Table under classes A to Z appears too broad to allow for an accurate assessment of unit life expectancy and estimated replacement values. Further, the estimated replacement value increase from one classification sub-code to the next appears to be too broad. For example:

Class Type Code	Description	Sub-Code	CERV $
C	Compressors		
	To 7 C.M./M	1500	14,700
	Over 7 C.M/M	1502	100,000
D	Forklifts and Cranes		
	Forklifts (2,000-3,600kg)	1612	40,000
	Forklifts (3,600-5,000kg)	1613	70,000
	Cranes (10 to 30 t.)	1623	42,000
	Cranes (over 30 t.)	1624	400,000

The effect of these apparently inconsistent increases in CERV may be attributable to the fact that only one type of unit is bought within the sub-code class.

However, if more than one type is purchased and the CERV is based on the average value for the sub-code, the values calculated for the more expensive units may be understated.

We have not determined how many items are affected in this manner or the net result of the potential undervaluation.

The Ministry does not take into consideration any major overhauls or betterment of equipment in calculating PV's. While in the Ministry's use the equipment is well maintained, but when it approaches replacement age no major repair expenditures are incurred. Equipment usage hours and general condition are similarly not specifically taken into consideration in establishing values. The engine hours and general condition of equipment are assumed to be average.

CONCLUSIONS

In our opinion, the methods utilized by the Ministry to value, as at March 1988, the mobile/rolling stock assets sold or leased to contractors, while not absolutely accurate, are reasonable and fair. In general the methods used in determining equipment values appear to have resulted in an overstatement of value for the newer equipment, and depending on the type of equipment, equipment manufacturer, and equipment condition, resulted in an undervaluation of some of the older items.

In addition to the factors used by the Ministry, values are also dependent on:

- manufacturer:
- model;
- dealer backup;
- usage;
- condition:
- maintenance;
- appearance;
- major repairs;
- physical location of the equipment: and
- market conditions at the time and place of sale.

These factors do not appear to have been considered in the Ministry's calculations. However, in those instances where the equipment is obtained from one manufacturer and usage and condition are the same, the value of all items in the group are likely to be the same. In many instances the Ministry's equipment did fall into such groups.

Where there is more than one supplier, and/or equipment condition varies, the possibility of errors, resulting in lower values being calculated, may have occurred. Without checking sales values of individual items of equipment, we are unable to comment on the effect this might have had on the overall sales value of equipment.

In general we found that the Ministry's PV's for later models of equipment were higher than the values published in equipment price guides.

As equipment age increases some of the factors not taken into consideration in the Ministry's calculation become increasingly important and some of the values might therefore be understated. The time that this occurs varies with the type of equipment.

The apparent error in the base year age classification results in an increased value in the initial stages but the effect thereof diminishes with equipment age.

It appears that greater accuracy could have been achieved had the same formulas not been used for all types and classes of equipment. The net effect in the short term appears to have been an overstatement of values for the majority of the number of items considered. However, without checking the age and value of the equipment sold in terms of the Privatization contracts we are unable to provide a definitive answer on the effect this might have an the overall valuation.

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Report dated May 29, 1989

MINISTRY OF TRANSPORTATION AND HIGHWAYS
Valuation of Mobile/Rolling Stock Assets
Sold or Leased to Contractors
Phase II Report

Following is our report on Phase II of our review of the valuation methods and asset values used by the Ministry in its privatization activities. During this phase, we compared as at March 31, 1999, the mobile/rolling stock asset values included in the *asset sale" agreements and the *closing documents* with estimated fair market value and the value of assets as calculated by the Ministry. This review included both assets sold and assets leased to contractors.

Our report is organized under the following headings:

Contract Selection

Twenty-eight contracts for the privatization of highways maintenance were entered into by the Ministry. We were provided with copies of all the contracts to assist us to select the contract areas to be reviewed.

We identified six contract areas (1,4,6,7,10 and 17) for our initial review. We endeavoured to select contracts which had:

- the highest value of equipment sold;
- the largest value of equipment leased;
- the highest contract value;
  and after the initial review
- different contract negotiators.

Area 1 was eliminated as it was the basis of the Auditor General of British Columbia's Report on Highways Privatization; areas 4 and 7 were eliminated as they had the same contract negotiator as area 6. The contract areas finally selected were 6, 10 and 17.

Equipment Class Selection

We selected seven classes of equipment to be reviewed based upon their value as a percentage of the total value of equipment owned by the Ministry. Collectively they represent approximately 54% of the total value of mobile/rolling stock equipment used by the Ministry as at March 31, 1999.

The equipment classes selected were:

Class	Description	• Class Value as % of total Ministry Equipment %	Number in Sample	Value of sample $ Million
3020	Motor graders (135kw - 180kw)	12	12	0.43
4410	Light-loaders 4 x 4 (under 2 cubic metre cap.)	5	19	0.33
4430	Loaders (2 - 3 cubic metre capacity)	1	1	0.03
5030	Crawler tractors/loaders and wheeled-dozers over 90kw.	1	1	0.04
9040	Diesel dump-trucks (11,000kg- 14,000kg)	24	24	0.97
9080	Diesel dump-trucks (over 14,000kg) 6 x 4 and 6 x 2 diesel	7	13	0.46
9410	Gasoline pick-ups (4 x 2)	4	10	0.02
		54	80	2.18

• The percentages are approximate and are based on equipment population and values previously calculated by us based on information obtained from the Ministry.

Equipment Unit Selection

We examined purchase agreements and lease documents entered into between the contractors and the Ministry and randomly selected equipment items in the classes noted above.

Selection of the equipment items to be reviewed was at our sole discretion. We attempted to select as broad a range of equipment by age and manufacturer as possible, to more accurately reflect the diversity of the equipment held by the Ministry.

Definitions

For the purposes of this report we define:

- **The Base Year as** - 1987, the date from which equipment age was calculated by the Ministry.

- Valuation Date - March 31, 1988, the date on which the equipment values are deemed to have been made.

- Original Price - the price at which the equipment is reflected in the records of the Ministry of Highways.

- Present Value (PV) - the Ministry's estimate of equipment values as at March 31, 1988, arrived at by using an inflation-adjusted, decreasing value formula.

- sales value (SV) - the calculated net price at which individual items of equipment were sold to contractors, being the Present Value less any discounts: for leased items, the Sales Value equals Present Value.

- Estimated Value (EV) - our estimate of the fair market value of the equipment as at March 31, 1988. This is the price at which the equipment, in the same condition and location as they are at present, could have been sold by a willing seller to a willing purchaser, who would continue to use the equipment for road maintenance purposes.

  Selling costs and any extraneous matters which may have influenced the selling prices actually arrived at by the Ministry's negotiators have not been deducted from our values.

- Current Estimated Replacement Values (CERV) - the price at which the Ministry buys equipment plus an adjustment for inflation and the value of attachments to he fitted. This is used by the Ministry in determining Present Value.

- casualty Value (CV) - the value at which the Ministry is to be reimbursed for an item of equipment if it is totally destroyed during the lease contract. It is based on the unit's Present Value in the Base Year less a depreciation factor of approximately 188 per annum.

Review Procedures

Documents Reviewed

We reviewed contract documents to determine equipment values, discounts given to contractors on the purchase of equipment and which equipment items would form part of our sample. Other documentation reviewed by us included:

. documents obtained from the Ministry showing sales of Ministry equipment at auctions;

. published auction sales values of contractors' equipment and trucks as well as advertised prices of similar equipment being advertised for sale in Canada and the U.S. (see Appendix);

. equipment sales value information obtained at auctions we have attended and on equipment we have sold;

Interviews

We held discussions with:

- Mr. J.L. Thornton, P.Eng., Manager of Equipment and Materials with the Ministry in Victoria;
- Mr. Alex Mackie, C.A., Project Manager, Internal Audit Division; and
- Mr. [illegible] Clark, who headed up the Privatization Commission negotiation team.

Site Inspections

We selected contract area 17, Williams Lake, to do our physical inspection of equipment because it provided the broadest coverage of the selected equipment classes.

As part Of our inspection and review we:

- inspected 14 items of equipment within Contract Area 17 in the Williams Lake, Alexis Creek and Bella Coola areas;
- held discussions with equipment operators, the mechanical foreman and the general manager of the contracting company;
- reviewed the logbooks of the equipment physically inspected;
- inspected equipment attachments;
- took photographs of the equipment inspected;
- made a summary of the general appearance and condition of the equipment, their operating hours and/or mileage; and
- checked serial numbers of the equipment inspected for identification purposes.

Observations

Discrepancies in Contract Details

We found certain discrepancies in the classification of equipment and a possible error in either equipment age or serial number.

One Caterpillar 140G grader is shown in the Ministry's records as being in class 3020 end another in class 3010. The one in class 3010 with serial number 81V339 is shown as being a 1977 model and the one in class 3020 with serial number 81V533 (a later one) is shown a8 being a 1976 model.

For the purposes of our review we have considered them both to be in class 3020 and having the model years given in the Ministry's records.

Equipment Condition

We consider that the equipment inspected was in good operating condition and that it had been well maintained. Operating hours were generally lower and condition generally better than average for equipment of the same age.

Various accessories have been fitted, or are available-to be fitted, to the equipment to allow for multiple use.

valuation Assumptions

In arriving at our estimate of value of the equipment, we have assumed per our definition of Estimated Value, that the equipment would be sold for its intrinsic value and that extraneous factors would have no bearing on the determination of value.

We are therefore unable to determine to what extent factors such as volume purchase, contract area, number of bidders, contract value or other factors may have influenced the negotiators in arriving at the final equipment values.

Assumptions

For the purposes of our Estimate of Value we have assumed that:

- all trucks in classes 9040 and 9080 (diesel dump-trucks) are equipped with a dump box, a sanding box, an under-body plow and a front-mounted snow plow, as well as a sand/salt spreader with electronic controls similar to those we inspected:
- all crawler tractors are fitted with a winch, snow blade and regular blade and regular and ice tracks similar to those we inspected;
- all equipment not physically inspected by us are in the same or similar condition to the equipment we have inspected;
- the equipment would be purchased by someone who is involved in road maintenance in the area in which the equipment is located; and
- the equipment would be sold for its intrinsic value and that no extraneous matters would influence its selling price.

Leased Equipment

We have valued the leased equipment and compared our estimates with the Ministry's Present Value calculations as at March 31, 1988. However, in the case of leased equipment, the Present Value calculations do not necessarily reflect the value at which the equipment was subsequently sold or may eventually be sold.

Contractors have the right of first refusal to purchase leased equipment from the Ministry when it reaches the end of its expected useful economic life during the term of the contract, hut there is no formulated price at which the equipment may he purchased.

A "Casualty Value', based on the Ministry's Present Value calculations and discounted annually, is included in the contracts. The contracts do not state that equipment may be purchased at the Casualty Value amount. However, there appears to be some confusion over whether the equipment will be sold at this Price, and some contractors may assume that it will be.

As the Casualty Values do not make provision for adjustments based on Current Estimated Replacement Values in ensuing years, an element essential to the Formula, there 5s a possibility, that unless it 5s rectified, in any subsequent sale of leased items the equipment may be undervalued.

Equipment Sold

In general the equipment sold to contractors were pickups or older items of light equipment. The contractors had the right to decide which items they wished to purchase and, in some instances, were able to negotiate a discount on the Present Value amounts. Within our sample, discounts amounted to approximately 15% Of the Present Value of equipment items sold.

Findings and Conclusions

As reported in Phase I of our report to the Ministry, we found that later models of equipment were generally valued higher than our estimate of value. The inflated values in the earlier stage of the equipment life 5s due in part to the Base Year age classification error and the inflation adjustment in determining the replacement value.

As the equipment becomes older the effect of the overvaluation diminishes rapidly, due to the Formula's high rate of depreciation, resulting in the equipment becoming undervalued after approximately six years; i.e., in the present case using March 31, 1999 as the valuation date, models earlier than 1992.

Given the large number and diversity of equipment items, the valuation approach the Ministry adopted (e.g. defining classes and CERVs therefor: applying a formula) was reasonable. Greater accuracy, however, could have been achieved by defining more classes where appropriate and by comparing the formula results with actual sale values and adjusting as required before assets were sold or lease rates finalized.

The determination of 1997 as the Ease Year for Present Value calculations resulted in an apparent overstatement of values for the equipment by making the vehicles in effect appear to be one year newer than they were. This resulted in certain items having Present Values higher than their original purchase price.

In the **case** of older equipment, the high rate **of** depreciation applied by the Present Value formula without **any** ❐♏♑♋❐♎ **for** ● guipeent condition, operating hours, mileage, ***major*** repair, manufacturer and model appears to **have** resulted in an understatement ***of*** value.

Although there ***are*** a **number** ***of*** individual variances between OUT Estimate of Value and the Ministry's valuation, the net effect ***of*** the Ministry's Sales Value/Present Value calculations compared ***to our*** Estimates of Value is an overvaluation ***of*** **$3,949** in aggregate (less **than 0.2%** on Sales/Present Values) ***for*** the sample **of $2,183,449. While** we believe **our** selection ***of*** items is representative ***of*** the equipment population, the number of assets reviewed is not statistically significant and therefore the **sample** results may **not** be reflective of the entire equipment population.

References

First Offer	February 1989
Supply Post	March 1989
Truck & Trailer	March 1989
Machinery Trader	April 21, 1989
Rock and Dirt	April 1989
The Last Bid	February 1989
The Last Bid	June 1980
The Last Rid	April 1988
Data Quest Equipment Value Guide	

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Report dated May 29, 1989

MINISTRY OF TRANSPORTATION AND HIGHWAYS
Valuation of **Mobile/Rolling** stock **Assets**
Sold or Leased to Contractors
Phase II Detailed Report

Following is our report on Phase II of our review of the valuation methods and asset values used by the Ministry in its privatization activities. During this p&se, we compared as at March 31, 1988, the mobile/rolling stock asset values included in the "asset sale. agreements and the "closing documents" with estimated fair market value and the value of assets as calculated by the Ministry. This review included both assets sold and assets leased to contractors.

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Equipment Class Selection	2
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Contract Selection

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We identified six contract areas (1,4,6,7,10 and 17) for our initial review. We endeavoured to select contracts which had:

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Equipment Class Selection

We selected seven classes of equipment to be reviewed based upon their value as a percentage of the total value **of** equipment owned by the Ministry. Collectively they represent approximately 548 of the total value of mobile/rolling stock equipment used **by** the Ministry as **at** March 31, 1999.

The equipment classes selected were:

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Documents Reviewed

We reviewed contract documents to determine equipment values, discounts given to **contractors** on the purchase of equipment and which equipment items would **form** part **of** our sample. Other documentation reviewed by us included:

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- all trucks in classes 9040 and 9080 (diesel dump-trucks) are equipped with a dump box, a sanding box, an under-body plow and a front-mounted snow plow, as well as a sand/salt spreader with electronic controls similar to those we inspected;

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As the Casualty Values do not make provision for adjustments based on Current Estimated Replacement Values in ensuing years, an element essential to the Formula, there is a possibility, that unless it is rectified, in any subsequent sale of leased items the equipment may be undervalued.

Equipment Sold

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Findings and Conclusions

As reported in Phase I of our report to the Ministry, we found that later models of equipment were generally valued higher than our estimate of value. The inflated values in the earlier stage of the equipment life is due in part to the Base Year age classification error and the inflation adjustment in determining the replacement value.

As the equipment becomes older the effect of the overvaluation diminishes rapidly, due to the Formula's high rate of depreciation, resulting in the equipment becoming undervalued after approximately six years: i.e., in the present case using March 31, 1998 as the valuation date, models earlier than 1982.

Differences between Present Values and our Estimate of Value range from an overvaluation of $62,950 (51% error) for a 1986 Champion grader to an undervaluation of $54,465 (265% error) for a 1977 Caterpillar 14G grader.

Variances

We found the following range of variances between our Estimates of Value and the Ministry's Present Values/Sales Value.

Variances	Number of Items	Percentage %
> -50%	16	20
-50% to -25%	15	19
-25% to 0%	21	26
0% to +25%	15	19
+25% to +50%	12	15
> +50%	1	17

Approximately 39% of the sample had negative variances greater than -25% and 16% had positive variances greater than +25%.

A table summarizing our findings and schedules giving unit-by-unit valuations and differences may be found in the Appendix.

The five items reflecting the greatest undervaluation were manufactured by Caterpillar. As it is outside the scope of this assignment, we have not determined what percentage of the fleet was manufactured by Caterpillar and other manufacturers. Nor have we attempted to extrapolate the results of our findings to the Ministry's fleet, as this is also considered to be outside the scope of our Phase 2 assignment.

The difference between original prices and Current Estimated Replacement Values appears to be too high in many cases. It may be that the original purchase prices do not reflect the value of attachments subsequently added or the CERV is too high.

Examples where PV exceed the Original Price were found in 13 of the 80 items in the sample. Examples of undervaluations and overvaluations were found in leased and purchased equipment. Of the 57 leased items, 34 were undervalued and 23 overvalued. In the case of equipment sold, 18 items were undervalued and 5 items overvalued.

The information may be summarized as follows:

Leased Equipment

	No.	Difference $	PV $	Dif %
Items with Present Value < estimated value	34	(264,876)	724,140	(37)
Items with Present Value > estimated value	23	424,929	1,278,413	33
	57	160,053	2,002,553	8

Sold Equipment

	NO.	Difference $	Sales Value S	Dif %
Items vith a sales value < estimated value	18	(158,239)	166,511	(95)
Items vith a sales value > estimated value	5	2.135	14.385	15
	23	(156.104)	180.896	86
Total	80	3.949	2,183,449	0.2%

Older Units

Our sample of 80 units included, 57 vith model years prior to 1982 of which 51 vere undervalued.

of 23 units with model years from 1992-1987, only one unit, a 1992 Ford A64 loader vith a Present Value of $29,600, and a difference of $400, vas considered to he undervalued.

The results may he illustrated as follovs.

	NO.	Difference S	Sales or PV $	Dif %
Units vith model years 1981 and older	57	(429,798)	921,202	(47)
Units with model years 1982 and never	23	433.747	1.262.247	34
	80	3.949	2,183,449	0.2

Conclusions

Given the large number and diversity of equipment items, the valuation approach the Ministry adopted (e.g. defining classes and CERVs therefor: applying a formula) vas reasonable. Greater accuracy, however, could have been achieved by defining more classes vhere appropriate and by comparing the formula results with actual sale values and adjusting as required before assets were sold or lease rates finalized.

The determination of 1987 as the Base Year for Present Value calculations resulted in au apparent overstatement of values for the equipment by making the vehicles in effect appear to be one year newer than they were. This resulted in certain items having Present Values higher than their original purchase price.

In the case of older equipment, the high rate of depreciation applied by the Present Value formula without any regard for equipment-condition, operating hours, mileage, major repair, manufacturer and model appears to have resulted in an understatement of value.