Appendix 3

Business Case Template

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Business Case Template

The Ministry requires business cases to support investment decisions on program priorities, recommending projects for approval, advancing projects through the various approval phases and considering project amendments. Business cases are also required to be consistent with the Capital Asset Management Framework and related guidelines established by Treasury Board.

Business cases provide the foundation for a rational, defensible and transparent program development and implementation process. They establish the basis for investment and must be incorporated into the life cycle of a project; from conception through implementation. They must define investment drivers, objectives and outputs. They must be based on appropriate option selection, scope definition, budget requirements and implementation considerations.

Business cases must be complete, representative and developed based on accepted practices. They are not restricted solely to economic indicators (i.e. Net Present Value, Benefit/Cost Ratio) as it is recognized that it is not possible or appropriate to quantify all benefits, but the evidence presented must support the conclusions.

The project sponsor is responsible for the preparation and submission of business cases and ensuring that recommendations are supported by the analysis.

Business cases depend on the appropriate due diligence being applied at the applicable stage of project development, with respect to scope definition, value analysis, value engineering, road safety audits, peer group review, risk assessment and cost estimating.

This appendix provides the recommended framework and presentation for the submission of a business case as required under the Provincial ***Financial Administration Act***. It complements Appendices 2 and 4 in providing direction on Multiple Account Evaluation (MAE) and its inherent key component, benefit-cost analysis. There will be instances where more or less extensive analysis is required. More specifically, there may be instances where certain sections of the template are not applicable and don't need to be completed (e.g. the economic development account).

In order to provide an applied context to these guidelines, reference is made to a business case that was submitted to secure provincial and federal funding under the ***Strategic Highway Infrastructure Program – Highway Construction Component***. The illustrative business case is the "Chilliwack-Vedder Interchange Reconstruction Project"[1].

[1] Helen Berthin (Partnerships Department) and Avi Ickovich (Transportation Planning and Policy Department), Ministry of Transportation, ***"Chilliwack-Vedder Interchange Reconstruction Project-Business Case"***, 2003.

Executive Summary

This section should include:

- ☑ One or two sentence description of problem (i.e., safety, reliability, condition of infrastructure);
- ☑ Basis for investment
- ☑ Is the problem likely to get worse (i.e., related to traffic and population growth);
- ☑ Recommended scope of work;
- ☑ Very brief explanation on the efficacy, efficiency and cost-effectiveness of how the proposed solution (scope) will address the infrastructure deficiencies (e.g., a benefit-cost ratio of over x.x and an NPV of $xx.x million);
- ☑ Timing considerations (i.e. rehabilitation cycle dependency, 3rd party investments, etc.);
- ☑ Other factors driving investment.

Problem Identification & Definition

This section should include:

- ☑ Location and municipalities affected.
- ☑ Nature of the problem, quoting performance thresholds (per Appendix 1).
- ☑ Why the problem exists or is getting worse. Use tables if necessary that illustrate current situation vs. 25 year situation if not resolved. In other words why is the current infrastructure deficient and likely to get worse?
- ☑ History of infrastructure.
- ☑ Implications if deficiency is not resolved.

The following is an example of a statement on problem definition (i.e. what is causing the problem) and implications:

> ***The Interchange has serious safety deficiencies on all four ramps. It has a very high number of collisions and is ranked as one of the worst along the TCH corridor between the 160th St interchange in Vancouver and the District of Hope. Ramp deceleration and acceleration lanes are significantly below standard, and radii of***

the ramps are very tight. Because of the short weave distances and the tightness of the loops radii, traffic coming on and exiting must do so at very low speeds relative to the through traffic. This speed differential poses a safety concern, especially at times of high volumes. Another problem associated with the Interchange is the multiple exit and entrance points on the highway that affect weaving and create additional conflict. Also, unless additional capacity is provided at the intersections on Vedder Road, immediately north and south of the interchange, future traffic congestion and queuing will detrimentally affect and interfere with the performance of the interchange.

Background

Provide evidence and contextual information (e.g. population growth charts, collision charts) that illustrate the underlying factors causing the problems.

For example refer to the excerpt from a previously submitted business case:

> *The current population of Chilliwack is estimated at 68,000. Over eighty-two percent of the population lives in urban communities or suburban neighbourhoods, and the balance reside in the rural hillsides and farming areas.*
>
> *Chilliwack went through two growth spurts in the last 25 years – from 1979 to 1981 and from 1987-1994. From 1981 to 2001, Chilliwack grew at an average of 2.5% p.a. By 2010, its population could reach the OCP's target of 85,000.*
>
> *The population growth is primarily driven by migration from the Greater Vancouver Regional District (GVRD), with interregional migration accounting for up to 80% of the growth in boom times. Many residents commute to work in GVRD, and although this pattern will continue as part of its population growth, many migrants are being attracted to Chilliwack by local employment opportunities. The economic attraction reflects successes in economic development and coming-of-age as a medium-sized community.*

Chart 1 Growth in No of Chilliwack Households

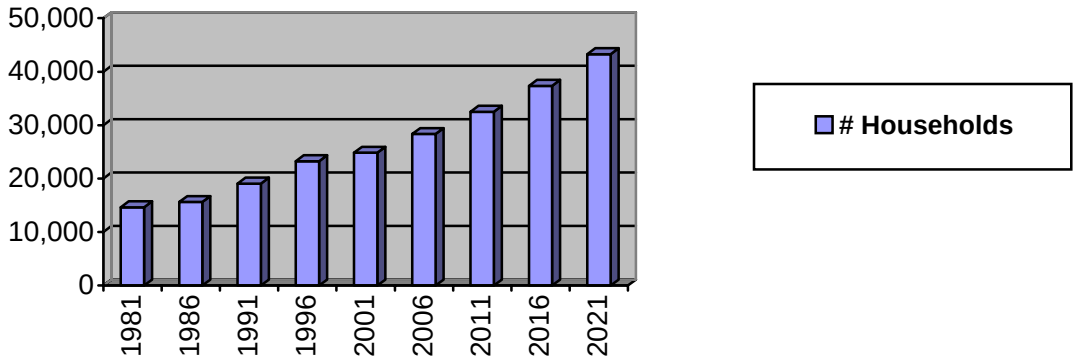
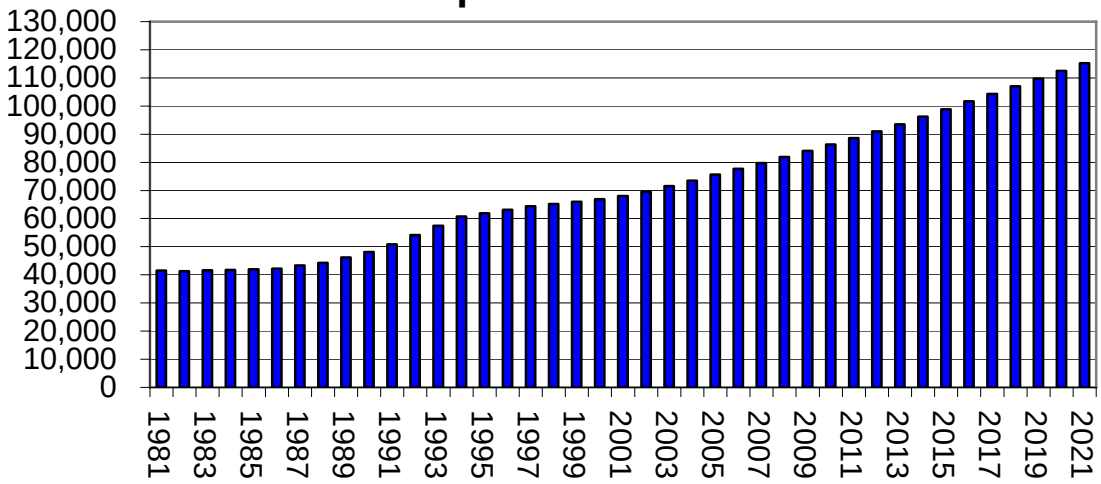


Chart 2 Chilliwack: Historic and Projected Populations



Potential Societal Benefits

Identify significant provincial, federal and municipal benefits of the proposed project:

For instance:

- *Improved air quality and more efficient energy use due to a reduction of idling and stop and go traffic.*
- *Improved safety, performance and reliability to the interchange area and the Trans Canada Highway, or other Highways that are part of the National Highway System. These would include statements on decreases in traffic collisions and outcomes (fatalities, injuries, property damage).*
- *Supporting the local economy. Opportunities include tourism due to easy access off highway for shopping, parks, recreation, camping and hotels, the potential development of federal facilities, improved opportunities for nearby First Nations, and improved access to downtown and government services. (Note that this is not to be confused with the MAE's economic development account which is discussed later in this document, and in more detail in Appendix 2, "MAE Guidelines").*
- *Safety improvements in event of earthquake since the new structure would be built to current seismic standards. Provides local community access across the freeway for emergency vehicles in the event of an earthquake, and provides provincial/federal benefits since the bridge crosses the disaster response route.*
- *Travel time benefits.*
- *Multimodal benefits, including safer pedestrian and cycling access.*
- *Opportunities for cost-sharing that would allow for all potential beneficiaries to maximize leveraging their respective investments. More specifically, it would allow prospective partners the ability to obtain otherwise cost-prohibitive infrastructure.*

Option Generation

After problem identification and definition, solution options need to be generated, representing the range of reasonable alternatives available to the ministry. The MAE team should not be too quick to focus on the most obvious or conventional solution options -- some “lateral thinking” to identify unconventional approaches almost always yields better options or at least improvements to the more obvious options. Finding the best solution option is usually about finding the best mixture of all types of actions available to the ministry, rather than an “either-or” process that selects one type of action instead of another.

Since the results of any evaluation are only as good as the options developed, a creative and broad-ranging process must be used to generate candidate options. The differing points of view of users, stakeholders, and other government agencies make for a broader range of options, if they are involved in the option generation process.

The evaluation of an incomplete or inappropriate set of alternatives, no matter how sophisticated, will not assist in identifying the best course of action. It may simply serve to explain why one sub-optimal alternative is better than some other.

Too often, proposals are presented in isolation and compared only to a do-nothing or status-quo base case. This is inadequate. If there indeed is a problem, then it is likely that any proposed solution may appear attractive. However, it may not be the best alternative to pursue. What is required is the identification and consideration of a wide range of possible solutions to the problem at hand. Proponents of a particular project should be challenged to consider what they would or could do without it.

The MAE project team should take steps to ensure that a suitable list of options is generated, according to the following guidelines:

- a full set of options must be generated before MAE can begin;
- the best options will usually be composites of a number of different available actions;
- there may be limited benefit in evaluating similar options; better value often comes from evaluating distinct options which include all the available actions, and refining the “best” options in more detailed planning later.

As a preliminary checklist of the types of actions which should be included in one or more options, the following may be used:

- Actions which encourage the use of other transportation modes (e.g., provision of additional non-road mode infrastructure)
- Actions which use existing highway capacity more efficiently (e.g., transportation demand management, transportation systems management)
- Actions which preserve and protect the highway infrastructure (e.g., highway maintenance and rehabilitation, corridor protection)

Determining a “Base Case”

Usually it will be necessary to define a “base case” against which to compare the other options being considered. The base case identifies what would happen if the decision makers did “nothing”.

Two approaches are traditionally used for determining the base case. The MAE team should use its knowledge of the decision makers and the funding process to determine which approach is most appropriate in each case.

1. The *zero-based* approach is most appropriate if funding is only made available through the actions of the decision makers. This approach assumes that nothing will be funded unless action is taken to do otherwise. In the base case, then, no work will be done on the roads, except routine maintenance-- the roads will be allowed to "go back to weeds".
2. The *business as usual* approach is most appropriate where program funding is available for maintenance and rehabilitation of roads to keep them to the current standard, but the decision makers must act to either add capital improvements, or to reduce the level of maintenance

The following table gives examples of types of alternatives (Options) to be evaluated:

	Options To Be Considered
1	Alternate project schedules
2	Alternate project resourcing (i.e., cost-sharing, private-public partnerships, user pay/ beneficiary pay)
3	Alternate design standards/ geometrics
4	Alternate design configurations within selected route
5	Alternate materials and methods for construction
6	Identifying alternate routes within the corridor and corresponding assessment and implications
7	Alternate degrees of corridor protection (i.e. acquisition of Right-of-Ways)
8	Analysis of operational improvements
9	Analysis of non-transportation solutions
10	Alternative mixes of different modes of transportation
11	Can enhanced maintenance and rehabilitation eliminate, delay or postpone the need for the project?

Although a full set of options should be generated in this section of the report (business case), it is acceptable to dismiss options that are not viable without further discussion in subsequent sections of the business case. For instance, the following is an excerpt from the Vedder Interchange Reconstruction Project.

> *Option (3) was dismissed because the incremental benefits relative to costs compared to Options (1) and (2) are minimal. More specifically, in order to achieve the "Benefit-Cost Ratio" of the Vedder option (at 4.16), the upgrade from the two lane version to the four lane version of the Evans Overpass would need to generate over $20 Million of additional benefit.*

Multiple Account Evaluation

Multiple Account Evaluation complements the quantitative information of Cost-Benefit Analysis with additional quantitative or qualitative information. Refer to Appendix 2.

Cost -Benefit Analysis:

The table below illustrates the required elements of the Cost-Benefit Analysis component of the MAE. An explanation of each of the elements as well as examples of their use in actual business cases are also included below.

Discounted Costs (Financial Account)	Construction Cost	Salvage Value	+/- in Maintenance and Rehabilitation	
Discounted Benefits (Customer Service)	Time-Savings	Vehicle Operating Cost – Savings	Accident Cost-Savings	Disruption During Construction

Net Present Value	Discounted Benefits – Discounted Costs (Maximizes Differences between Societal Benefits and Costs)
B/C Ratio	Discounted Benefits / Discounted Costs (Societal Benefits relative to Societal Costs)

Financial Performance Account - to document the investment implications of the alternatives from both a corporate and broader government perspective.

This is the cost to the infrastructure provider(s) of each option. It is expressed as a life cycle cost which is the present value of capital costs, periodic rehabilitation costs and annual maintenance costs, discounted at the appropriate discount rate over a 25 year planning period to the current year. The discounted costs to be considered include but need not be limited to:

- Construction and Property Costs – The preferred cost-estimating technique and methodology is the elemental parametric approach (see Appendix 5). This method tabulates construction costs using a quantity take off system extended by unit rates. It then applies factors to the construction costs to develop soft cost items such as design, engineering, project/program management, resident engineering and contingency. Standard MoT unit rates and factors were used in this estimate.

- Maintenance and Rehabilitation - The proposed projects may yield either an increase or decrease in these costs depending on the scope of improvement. For instance added capacity such as 4-laning often can result in a net increase in rehabilitation and maintenance over a 25 year period. Conversely, a replacement of a bridge in poor condition may result in cost-savings for these operating costs.

Ideally, pavement rehabilitation (resurfacing) costs should be based on local experience. Alternatively, a value of $45,000/lane-km (based on 2006 data) can be assumed for non remote locations south of Prince George. North of Prince George and for other remote locations (e.g. Queen Charlotte Islands) costs can go as high as $80,000/lane-km. Assume resurfacing is required every 15 years.

Pavements resurfaced near the end of the planning period are assigned a salvage value equal to:

Salvage value of resurfacing = Resurfacing cost x (1-N/10)

where N is the number of years remaining to the end of the planning period. For example, N=2 for a highway resurfaced in 2020 and a planning period ending in 2022.

Roadway maintenance costs can be assumed to be $4,000/lane-km based on existing maintenance contracts that expire in 2013.

- Salvage – In discounted cash flow analysis, expenditures do not include interest payments or depreciation. Capital expenditures are reported on a cash flow - as incurred - basis. However, any differences in the asset mix at the end of the planning period should be reflected by an estimate of its remaining or salvage value (sometimes referred to as “Residual Value”). This can be captured by crediting in the final year of the planning period, the depreciated replacement cost of any newly acquired assets.

The following guidelines are required to promote consistency across all business cases in the Ministry:

- A discount rate of 6% (real) should be applied for purposes of a base case scenario. Sensitivity analyses at 4% and 8% should be undertaken to determine the effect of differences in the assumed cost of capital on the financial implications of the alternatives.

- **Cost Estimate-** An appropriate cost estimate is required with the application of contingency consistent with the stage of development, the level of unknowns and the degree of risk. The budget and cash flow is to be in “as-spent” dollars (i.e. escalated) for the proposed schedule. Refer to Appendix 5.

- All financial costs used in a benefit cost analysis must be in current year dollars (non-escalated).

- **Surplus land** – Although the value of surplus land should be estimated and presented in the business case, it *should not* be used to reduce the financial costs used in the benefit cost analysis.

- Financial costs are gross of cost sharing with the exception of the case where cost sharing is for scope items not required by the project but being delivered for a 3rd party (i.e. municipal sewer upgrade).

- The estimated financial impact on the organization should reflect the incremental effect of each alternative on the total system revenues and expenditures as opposed to the capital and operating expenditures of the alternative considered on its own. These system implications should be forecast over a sufficiently long planning period to capture all significant effects. For purposes of standardization it is important to examine incremental effects to capital and operating costs of each option.

- The impact of capital investments on rehabilitation, maintenance and operating costs must be appropriately defined. Specific attention needs to be given to the cost profile for the base case and the cost profile for the proposed case.

- The timing of capital investments is influenced by these (i.e. co-ordinating a passing lane project with a collateral paving project or scheduling four laning to coincide with the optimum time for pavement resurfacing)

Customer Service Account (Benefits) - serves to document the net benefit or value that customers or users derive from the alternatives. The principal summary measure of performance is the discounted sum of annual benefits, i.e., the present value (PV) to the Ministry and society as a whole. These benefits must include but need not be limited to: time savings, vehicle operating cost savings and collision cost savings, as identified above.

If safety is identified as one of the fundamental drivers for the project, then the nature and severity of the safety problem must be defined. Indicating that the collision rate is higher than the provincial average does not provide the basis of a problem. Refer to Appendix 1.

Transportation economics is beginning to incorporate disruptions during construction. In fact, there have been some estimates from US studies indicating that the disruption costs of some projects are never recovered throughout the subsequent useful life of the improvement. It should also be remembered that disruption costs for truck traffic also carry a higher premium than for automobile traffic, and thus are particularly important for trucking and goods movements. It is therefore important to capture this impact as either neutral ($0) or a dis-benefit (negative) of the proposed option.

It is also important to capture any significant interactions among benefits: e.g. travel time savings associated with collision reductions, travel time savings associated with improved reliability (reduced road/lane closures), and other benefits specific to the investment.

Net Present Value and Benefit Cost Indicators

As indicated in the table above these cost-performance indicators can be determined by the absolute and relative differences between the benefits and cost (Customer Service Account vis-à-vis the Financial Account required to provide it).

The NPV indicates the magnitude of the net benefit from each option [2]. Since, the government is faced with a fixed amount of capital for transportation investments, examination of capital costs be conducted in terms of NPV rather than relying solely on other measures such as B/C ratios and Internal Rates of Return. The objective is to maximize the difference between discounted benefits and discounted costs when comparing the societal costs (or resources used) to the anticipated societal benefits. This is referred to as maximizing NPV.

If we rely exclusively on the Benefit-Cost ratio for capital planning purposes, we fall into the "Stop Sign Syndrome" or trap, where we pursue the project that may have the best return per dollar invested rather than projects that maximize the actual difference between societal benefits and costs. The stop sign may save a life that is valued at a recognized $4 million level, at a low cost of $1,000, thus yielding a very high return per dollar invested. The Benefit-Cost ratio approach would favor low-cost projects, which in the extreme would mean creating project packages (Capital Plans) that would **not** allow us to fund those projects that merely achieve a 2:1 return yet yield $100 million of benefits. Using the Stop Sign example we would end up with a program of SMALL projects.

The following is an excerpt from the Vedder Interchange Reconstruction project on these economic performance indicators:

- *The Net Present Value of both options is favorable, although the Vedder Interchange upgrade generates a much better NPV of $28 Million. However, from a Benefit-Cost ratio perspective, the difference between the Vedder project coefficient of 4.2 and the coefficient for the Evans Road project of 4.8 is small and probably statistically not valid. Furthermore, on large projects, the proper measure is the NPV with only secondary importance to the B/C ratio. The B/C ratio will always favor small projects. NPV measures the net*

[2] The business case may wish to calculate and use other measures of performance as well. For example, the NPV per dollar of capital expenditure can be useful in ranking alternatives where the organization is subject to an overall capital constraint. The Payback period can be useful in highlighting vulnerability to uncertain future events.

incremental benefit to society not the comparison of costs relative to benefits. Nevertheless given fiscal constraints the B/C ratio should still be used as a secondary decision-making tool. In other words, since the NPV of the Vedder option exceeds the NPV of the Evans option, and the two options have similar B/C ratios, then the preferred option is Vedder option. An additional consideration here is that the Evans 2 lane option, unlike Vedder, has no access to the TCH and as a flyover is primarily a municipal element providing minimal provincial and federal benefits.

- *It should also be stated that another (unquantified) benefit of this project is that considering the significant improvements being undertaken, disruption to the road user during construction is very reasonable. It is expected that impact to users on key movements such as the SB to EB ramp and through traffic on Vedder and TCH will be minimal.*

Economic Development Account - serves to document the nature, magnitude and significance of the income and employment impacts of the alternatives.

- The economic development benefits of a project are subject to the empirically established principle of "Diminishing Marginal Utility" of transportation economics. The largest economic development benefits are to be found for those projects where access is created, an impediment to growth is eliminated, or new opportunities are created. This is in contrast to projects where the improvement merely provides added capacity or enhances the performance and safety of existing infrastructure and networks, and thus only limited new opportunities are created. Refer to Appendix 2.

Environment Account - serves to document the nature, magnitude and significance of the major biophysical and natural resource impacts of the alternatives. Some software packages such as Micro-BENCOST and HDM (World Bank Model) calculate and quantify these impacts (i.e., fuel consumption and vehicle emissions) along with the economic performance indicators of NPV and B/C ratios discussed above. Alternatively, for the Vedder Interchange Reconstruction project example, fuel consumption in litres per kilometer were calculated by the analysts using Emme/2 output and fuel consumption factors:

Total vehicle kilometers for the 2021 PM peak hour were grouped by the analysts into categories by the speed at which the vehicles operate. These values were factored up by the consultant to annual values. Emission quantities were calculated by the consultant for carbon monoxide, carbon dioxide, nitrogen oxide and hydrocarbons in grams per kilometer (g/km). The four quantities were obtained by factoring Emme/2 speed-based volumes up to annual figures, and subsequently coefficients were applied by the analysts to convert these quantities to emissions.

Refer to Appendix 2.

Social Account - serves to document the major impacts of the alternatives on the social fabric and values or goals of directly effected communities or groups, including, where relevant, impacts on specific aboriginal community values and concerns. These could include societal benefits and such as:

- Community Severance;
- Access to cultural and sporting events;
- An increase in pedestrian and cycling would entail health benefits not captured in traditional cost-benefit analysis;
- Safety improvements in event of earthquake since the new structure would be built to current seismic standards. Provides local community access across the bridge for emergency vehicles in the event of an earthquake, and provides provincial/federal benefits since the bridge crosses the disaster response route.
- Safer access and egress to the community and developments.

Refer to Appendix 2.

It is important to provide a summary table of the MAE results. This is dealt with in Appendix 2.

Risks/ Sensitivity Analysis

The performance and efficacy of the respective options needs to be examined relative to unforeseen variations in underlying key cost and benefit assumptions. If options are generated independently of each other and/or are composites of a series of smaller engineering and non-engineering solutions (i.e., ITS), it is logical to assume the respective options would perform differently if one alters the underlying assumptions.

The following table should be created for each viable option[3]:

	Baseline	$^{+}$40% in Cost	$^{-}$40% in Cost	4% Discount Rate	8% Discount Rate	$^{+}$0.5% in Traffic Growth Rate	$^{-}$0.5% in Traffic Growth Rate
NPV ($Million)	**x.xx**	x.xx	x.xx	x.xx	x.xx	x.xx	x.xx
B/C	**x.xx**	x.xx	x.xx		x.xx	x.xx	x.xx

[3] As indicated in the section "Option Generation", some options can be dismissed outright without further evaluation. The 40% sensitivity test for costs was based on the fact in a recent investigation (comparison) of actual costs during construction to their respective costs identified in previously submitted business cases, the average cost-increase was 25.9% with a standard deviation of 38.69%.

Also please indicate other risks to the successful completion of the project which can include but are not limited to the following issues:

- ☑ Geotechnical problems
- ☑ Property impacts
- ☑ Stakeholder issues (e.g. municipal, First Nation)

Test of Reasonableness

Although this is not a formal section of the Business Case, the following questions should be addressed on analysis completed up to this point in the report:

- ☑ Does the Business Case capture, either quantitatively or qualitatively, the benefits and dis-benefits of the proposed investment?

- ☑ The present value of the salvage, or residual, value (for a 25 year analysis period) is typically no more than 20% of the capital cost, though it can be 40%-50% in the case of structures or infrastructure with extended service lives, such as bridges.

- ☑ Vehicle operating cost reductions are typically no more than 10% of vehicle travel time savings.

- ☑ The choice of a collision modification factor (i.e. the algorithm used to predict the effect of a safety improvement on the collision rate and severity) needs to be discussed, as sources often differ and there is typically a range of values to consider.

- ☑ Travel time savings need to reflect demand/supply curves over the course of a day and over the course of a year (i.e. additional lanes may not derive travel time savings under low volumes or may derive significantly lower travel time savings in the off-peak period).

- ☑ Traffic volume growth rates require caution. A 4% growth usually is unlikely to be sustained over a 25 year analysis period. Limits to growth apply as commuters react to the attractiveness of competing options.

Rehabilitation (Life–Cycle) Profile

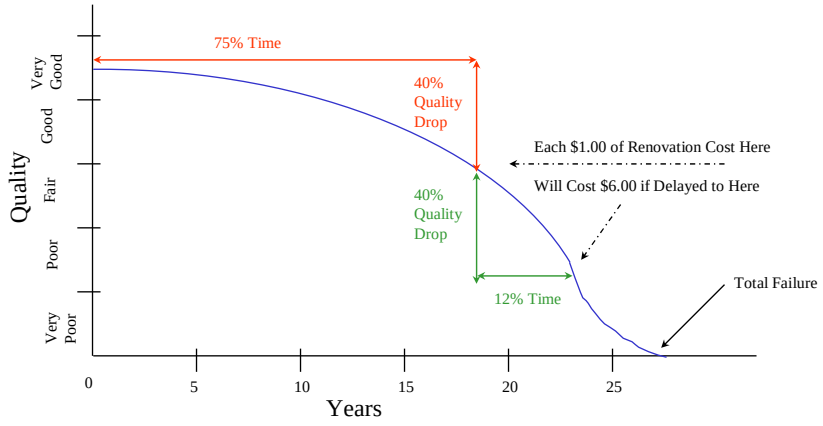
Although the effect on rehabilitation and maintenance will have already been incorporated into the analysis as part of the Benefit-Cost calculations in the “Financial Performance Account”, a separate reporting of the life-cycle costs for a proposed project should also be presented.

Life-cycle costing when incorporated into a longitudinal approach will provide the context as to why performance will begin to wane (e.g. deterioration of asset). If the continuum or longitudinal approach is adopted, any expected reduction of service is anticipated and corrected, or alternatively incorporated into the Capital Planning and Programming cycle. For instance, if significant deterioration is expected in Year 10 of a project, and adding capacity in Year 10 will also be required, then this fact should be reflected in the analysis.

The chart below illustrates the principle of deterioration and the opportunity to coordinate capital and rehabilitation decisions. Notice that in the first 75% of time (about 18 years) of the life of the pavement, according to this deterioration curve there is 40% drop in quality, a very slow deterioration rate. However, in the next 12% of time (about 4-5 years) there is also a 40% drop in quality, suggesting a significant increase in the rate of deterioration. By monitoring pavement performance/ condition over time, it is possible to intervene before rehabilitation activities become costly and/or ineffective in preserving the life of the asset. These optimal times of intervention are called “trigger points”. In this case, a dollar of rehabilitation in Year 18 will escalate to 6 dollars by Year 22.

This pavement example illustrates how the continuum or longitudinal approach allows the organization to be preventative (proactive) rather than reactive to negative performance indicators. We need to anticipate the timing of negative performance, and how programming decisions can provide value for money.

Costs of Pavement Deterioration (Based on U.S. Experiences)



Source: L.M. Richter, Pavement Management Saves $3 Million, American Public Works Administration, 1988 appearing in ***"Highway Asset Management Systems: A Primer",*** Transportation Association of Canada, 1999

Project Implementation

This section should include:

a) Description of project (scope);
b) Schedule - provide timelines (chart preferable);
c) Budget;
d) Cash Flow – include recoveries. A chart with the respective contributions and payments of partners (e.g., Transport Canada) is highly recommended.

Cost-estimating and reporting should adopt the following principles:

- As-spent versus current year dollars – Budgets and cash flows should be presented in "as-spent" dollars (i.e. escalated). However, financial costs used in a benefit cost analysis must be in current year dollars (non-escalated).
- Surplus land – Although the value of surplus land should be estimated and presented in the business case, it *should not* be used to reduce the financial costs used in the benefit cost analysis.
- Financial costs are gross of cost sharing with the exception of the case where cost sharing is for scope items not required by the project but being delivered for a 3rd party (i.e. municipal sewer upgrade).

Refer to Appendix 5.

Following is an example of a preliminary project schedule, provided in the Chilliwack-Vedder Interchange Reconstruction project:

Obtain project approvals and funding:	2002/2003
Project Definition and Project Agreement	2002/2003
Request for Expressions of Interest	2002/2003
Issuance of RFP	2003/2004
Award contract	2003/2004
Start Construction	2004/2005
Project Completion	2005/2006

If there is a possibility that ICBC will contribute funds to the respective project this should be highlighted, along with a summary of the safety benefits they are attributing to the proposed project as a basis of their contribution.

Advancement of Federal Transportation Strategies and Plans

Where the business case is required to support an application for a federal cost sharing program, a section is required to address how the project fits into the provincial Transportation Investment Plan (TIP), including long-range planning objectives, the project's priority ranking within the TIP, and how federal funds will advance or accelerate the project.

This information is required under the "Strategic Highway Infrastructure Program Prospective Analysis Framework"[4]. Contact the Program Development and Monitoring Branch for assistance.

Conclusions/Recommendations

Finally, the business case should provide a brief rationale for proceeding with the preferred option, such as the one provided below from the Vedder project:

- The Vedder Road/TCH interchange requires replacement or reconstruction of the highest priority due to the significant capacity and safety deficiencies
- The proposed improvements will yield large provincial, municipal and federal benefits, hence the opportunity for partnership and cost-sharing
- Benefits are significant, with an NPV of $28 million and a B/C ratio of 4.2. They include savings to travel time, vehicle operating, safety and fuel emissions; as well as contributing to community connectivity and economic development.

[4] Nicole Galvin, Project Manager, Surface Programs, Transport Canada, December 20, 2004