
GUIDANCE FOR DEVELOPING
**PROGRAMME
BUSINESS CASES**
FOR STATE HIGHWAY INVESTMENT

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MORE INFORMATION

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If you have further queries, email outcomeplanning@nzta.govt.nz
call our contact centre on 0800 699 000 or write to us:

NZ Transport Agency
Private Bag 6995
Wellington 6141

This document is available on the NZ Transport Agency's website at www.nzta.govt.nz



CONTENTS

1	Introduction	1
1.1	Applicability of this Guidance	1
2	General Requirements	3
3	Reporting and Presentation	4
4	The Strategic Case	5
4.1	Programme context	5
4.2	Demonstrating the need for investment	5
4.3	Stakeholders	9
4.4	The role of the public in the programme business case	9
4.5	Evolution of the business case problems, benefits and measures into project objectives	9
5	Developing the Programme	15
5.1	Alternative and option assessment	15
5.2	Programme options development and assessment	21
5.3	Recommended programme	21
5.4	Recommended programme assessment	21
5.5	Programme financial case	22
6	Delivering and Monitoring the Programme	23
6.1	Management case	23
6.2	Stakeholder engagement and communications plan	23
6.3	Programme performance and evaluation	23
7	Assessing the Programme Business Case	25

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www.transportscotland.gov.uk/secondary-topic-contents/145

INTRODUCTION

The NZ Transport Agency uses a Business Case Approach as the basis for activity and programme development for investment from the National Land Transport Fund. The Business Case Approach supports planning and investing for outcomes, ensures early collaboration between stakeholders and development of a robust, evidence based investment case.

The Business Case Approach is a principles-based approach that clearly links our strategy to outcomes, and defines problems and their consequences thoroughly before solutions are considered. This principles-based approach ensures a shared view of problems and benefits early in the transport planning.

A key aspect of the Business Case Approach is that a case for investment is built progressively – starting with a strategic case, a programme business case, an indicative business case and finally a detailed business case – with decision points along the way that determine whether the investment is worthwhile in relation to the desired outcome. At every step of the way, there's a strong connection between strategy and outcomes.

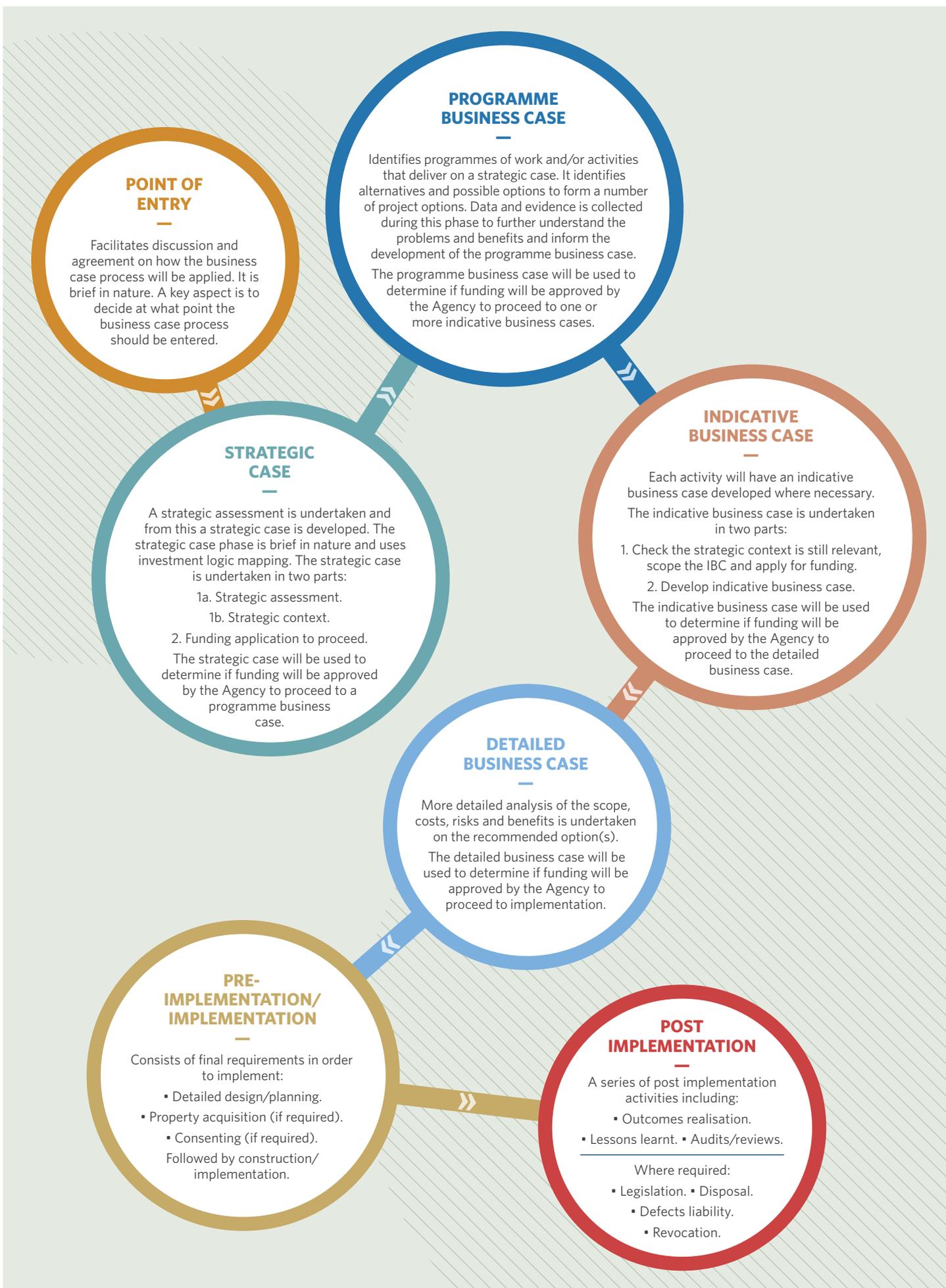
1.1 APPLICABILITY OF THIS GUIDANCE

Sector guidance on the application of the Business Case Approach for investment from the National Land Transport Fund is available on the NZ Transport Agency *Planning and investment knowledge base*¹.

This programme business case guidance has been developed specifically for application to the development of transport investments which incorporate state highway activities. It has been prepared to be consistent with the technical requirements of the NZ Transport Agency with regard State Highway Professional Services and is targeted towards NZ Transport Agency staff and practitioners engaged by the NZ Transport Agency to develop business cases incorporating potential state highway activities. However, the tools and guides available within this guidance and also available on the *Highways information portal*² may be helpfully adopted or adapted by other sector partners in discussion with the NZ Transport Agency.

¹ <https://www.pikb.co.nz>

² <http://hip.nzta.govt.nz>



GENERAL REQUIREMENTS

2

The purpose of this guidance is to provide instruction on fulfilling all standard requirements of the programme business case (PBC). As a principle-based approach the degree of effort applied to each step of the PBC will be dependent on the complexity and risk surrounding the particular planning activity and consideration of these and direction from the NZ Transport Agency will, in general, be set out in the Scope of Services of any request for Professional Services.

The development of a programme business case is essentially a transport planning exercise. As such, the PBC should not be seen as a 'planning for state highways' exercise but rather a broad exploration of assessing policies, plans and projects as part of a single network designed to improve and manage our transport systems. It can involve understanding the linkages between transport and the future shape of our towns and cities. It is also about changing people's attitudes towards travel to encouraging use of alternatives to the private car such as public transport and active modes, as well as increased integration with land-use planning.

The purpose of the PBC phase is to:

- Further explore the evidence base to confirm (or otherwise) that the problems or opportunities identified in the strategic case are correct through appropriate data collection and analysis, and will identify potential risks, dependencies and constraints;
- Develop the problems and benefits into SMART (specific, measurable, attributable, relevant and timed) investment objectives with a direct line-of-sight to the strategic case;
- Identify and confirm whether the network is fully optimised at present, before any improvements or new activities are considered;
- Identify a broad range of potential alternatives that give effect to the investment objectives. This should include activities from the broad spectrum of the NZ Transport Agency intervention hierarchy;
- Combine potential alternatives into a variety of possible programmes (long-list) that will give effect to the investment objectives and the problems as set out in the strategic case;
- Assess and present a range of possible programmes utilising the *NZ Transport Agency multi-criteria assessment framework for programme business cases* as a starting point. This includes:
 - Determining time frames, potential indicative benefit realisation returns, costs, risks and dis-benefits;

- Confirms strategic fit and determines effectiveness and anticipated efficiency rating.

- Recommend a preferred programme of works and a preferred way forward for further development of the investment proposal whilst providing enough information for the investor to form their own judgement on a preferred way forward;
- Identify phasing of activities that will support the programme outcomes; and
- Set out an agreed project and funding plan for the next phases of the business case for approval.

There are three core parts to the PBC as shown below:

PROGRAMME BUSINESS CASE ELEMENT

Part A – The Strategic Case

Programme context
 Demonstrating the need for investment
 Stakeholders
 Investment outcomes

Part B – Developing the Programme

Alternatives and option assessment
 Programme options development and assessment
 Recommended programme
 Recommended programme – assessment
 Programme financial case

Part C – Delivering and Monitoring the Programme

Programme governance and reporting
 Stakeholder engagement and communications plan
 Programme performance and review

The thinking and production of a PBC needs to be undertaken collaboratively between the Client and practitioner, no single element of the PBC should be developed in isolation of Client input and direction and, in some areas, Client leadership will be required in setting direction. This is particularly the case for:

- Part A: The strategic case;
- Part B: Developing the programme – recommended programme; and
- Part C: Delivering and monitoring the programme – programme governance and reporting.

REPORTING AND PRESENTATION

3

All PBC reports should:

- Utilise the current NZ Transport Agency programme business case template available at <http://hip.nzta.govt.nz>;
- Be proportional to the scale of the issues to be addressed;
- Provide sufficient detail and information so that those interested will not have to engage in further investigation to enable them to assess the project's effects;
- Be written in plain English so that the general public can readily comprehend the proposal and its effects;
- Avoid technical abbreviations and jargon or else provide explanations to clarify the terms used;
- Include appropriate plans, illustrations and photographs; and
- Follow a logical sequence and pattern.

The aim of the programme business case report is to provide a concise summary of the work undertaken to demonstrate that the PBC process has been followed. Whilst the report should be concise, the size of the report will be determined by the complexity of the transport planning exercise undertaken.

The programme business case report is intended to act as a summary of technical reports completed throughout a PBC study and, as such, the principal audience should be viewed as the public. Where appropriate, the PBC report should refer to the availability of technical reports, but should not normally include such technical reports.



4

THE STRATEGIC CASE

Part A of the PBC confirms the strategic case and presents more robust exploration of the problems, benefits and desired outcomes to provide a robust evidence base on which to explore alternatives and develop programmes. Further development of the understanding of the problems and benefits, of wider constraints and opportunities and defining agreed investment objectives is where the majority of practitioner effort is required.

In the majority of instances, in the period between completing the strategic case and commencing the PBC it is unlikely that the environment would have changed to the extent that the strategic case is no longer valid. However, the longer the time period between the two cases, the greater the chance that the political, economic and policy environments will have changed.

Therefore, the problem owner will generally undertake a review of the strategic case as part of the funding application for the programme business case, to ensure that the problems, benefits and alignment to an organisation's strategic direction are still relevant. This review then forms the basis and starting point for the PBC and is recommended to be incorporated into any Request for Proposal for Professional Services to support the development of the PBC.

In developing the PBC therefore, it is anticipated that the PBC author would only be responsible for incorporating the approved strategic case into the programme business case with appropriate editing to retain consistency of written style with the programme business case.

4.1 PROGRAMME CONTEXT

Sufficient analysis is required by the practitioner to concisely describe the economic, geographic, environmental and social context of the study area. This is not an analysis of problems and opportunities but is setting the relevant context about the area in which the investment is proposed. This is a descriptive rather than analytical exercise, builds from the strategic case, and aids in setting success factors which complement the programme objectives.

The economic context is a description of the principal sectors and industries within the study area as well as a summary of factors affecting performance.

The geographical and environmental context is the area likely to be affected by the programme. This will include demonstrating an understanding of the natural and built environment including existing transportation infrastructure to ensure the PBC will

meet legislative requirements and implement the Transport Agency's environmental and social responsibility policy.

The social makeup of the area likely to be affected by the programme should be described.

4.2 DEMONSTRATING THE NEED FOR INVESTMENT

The confirmation of problems and opportunities within the transport and land-use system identified in the strategic case must form the starting point for the programme business case.

The process of refining the strategic case problems, benefits and measures (baselines and targets) and developing a clear understanding of the problems and opportunities are parallel and iterative processes. The initial identification of problems undertaken as part of the strategic case has informed the problems and benefits statements, however, it will be necessary to further investigate these to drill down to the heart of the issues and either confirm or otherwise, the root causes. It is essential that consideration is given to existing and future problems and opportunities that may potentially arise. Similarly, those perceived by Stakeholders should also form a part of the PBC process.

The 'status of the evidence base' element and Part B of the strategic case will aid in determining the focus for the exploration of problems.

Existing or new data can assist in the identification of problems. Transport models are also a potential source for analysis of existing and potential problems, but models must be treated with caution. Their contribution is limited to the modes and interactions that are modelled on and this may not cover the full set of problems pertinent to a business case. Each model is underpinned by a set of implicit and explicit assumptions that will influence any assessment of problems. Such assumptions will need to be understood and considered. When considering problems it will also be important for the practitioner to consider issues and constraints that face the study. 'Issues' are uncertainties that the study may not be in a position to resolve, but must work within the context of. 'Constraints' are the bounds within which a study is being undertaken.

This element of the business case process is often given insufficient attention and its importance should not be underestimated. For the programme business case it is anticipated that a significant portion of a practitioner's efforts will go into demonstrating the need for investment.

THE DO-MINIMUM AND REFERENCE CASE SCENARIOS

In order to properly understand future issues, problems, and opportunities on the transport network, as well as how long current ones may persist, it is necessary to understand how the demand, supply, and cost of travel in the study area is likely to change in the future. This is done by establishing the do-minimum and reference case scenarios. This will provide a baseline against which all interventions can be considered. This baseline should be developed alongside the analysis of problems and opportunities.

Note that for a programme business case there is no expectation that this baseline will be modelled in a transport or land-use model, although if outputs from such models are readily available they may be used to inform the baseline; however, the baseline established during the programme business case should be as consistent as possible with that used for modelling purposes in the later stages of the business case.

Relevant factors which may affect the demand for transport are:

- New developments in the study area (eg residential, retail, offices);
- Changes in national demographics (eg an increase in the proportion of the elderly may increase demand for leisure travel and shift travel demand from peak to off-peak);
- Changes in travel behaviour and information available to travellers;
- Changes in the size and composition of the local population;
- Transport infrastructure pricing policies;
- Vehicle ownership and use;
- Passenger transport service pricing policies; and
- Transport regulatory policies.

Relevant factors which may affect the supply of transport are:

- New infrastructure (eg roads, rail stations, cycle facilities);
- Passenger transport service costs;
- Management of existing and new infrastructure;
- Changes to existing infrastructure (eg high-occupancy vehicle only lanes); and
- Changes to existing transport services (eg increased frequency on public transport).

Some factors which may affect the cost of travel are:

- Congestion;
- Parking charges;
- Fares (eg the advent of integrated ticketing on public transport); and
- Travel time.

Note that these lists are not exhaustive.

The identification of these factors forms an important part of any PBC; however, the resources devoted to this process should be proportionate to the scale of the study. In most cases it will be sensible to limit the analysis to the geographical area of the study; however, if there are significant changes occurring outside the study area, such as competing developments or new infrastructure schemes, these should be included.

There is also a set of external factors which will affect the transport baseline; these include national GDP growth, fuel prices, and vehicle efficiency changes. These factors will typically be outside the scope of the setting of the baseline at the PBC stage. They should, however, be addressed at later stages, in line with *Economic evaluation manual* guidance.

UNCERTAINTY LOG CLASSIFICATIONS

PROBABILITY	STATUS
Committed: The outcome will happen or there is a high probability that it will happen	Policy or funding approval Tenders let Under construction
More than likely: The outcome is likely to happen but there is some uncertainty	Submission of planning consent application imminent Adopted plans*
Reasonably foreseeable: The outcome may happen, but there is significant uncertainty	Adopted plans* Draft plans Development conditional upon interventions going ahead
Hypothetical: There is considerable uncertainty whether the outcome will ever happen	A policy aspiration

**Whilst adopted plans may be viewed as containing interventions that are likely to happen, it should be recognised that they will typically represent a local authority's aspiration for the local area, and therefore their forecast changes to land-use and development should be treated with caution, particularly where these forecasts imply levels of growth which are significantly above the national trend. It will typically be appropriate to subject these predicted changes to sensitivity tests.*

EXAMPLE UNCERTAINTY LOG

FACTOR	TIME	UNCERTAINTY	IMPACT ON PROGRAMME	COMMENTS
Factors affecting demand				
400 houses developed at location A	2016	More than likely	Medium	Land classified in local plan for housing. Application submitted to local planning authority
Superstore at location B	2018	Reasonably foreseeable	Low	Currently speculative project. Land use identified in unitary plan (fairly high uncertainty about timing and exact location)
Factors affecting supply				
Increase in rail capacity at C	2018	Committed	Low	Under construction
Factors affecting cost				
Local integrated ticketing scheme	2014	Reasonably foreseeable	Low	Business case under preparation for funding of a scheme

In all cases, it is important that predicted changes in future land-use are based upon documented evidence, and that this evidence is recorded.

To assist in the definition of a do-minimum and reference case, the factors influencing demand, supply and costs of travel should be analysed and recorded for the study area, each in turn, and used to construct an uncertainty log, an example of which is illustrated above. The aforementioned classifications of uncertainty should be used.

Note that, for transport improvements which affect the state highway, commitment from the NZ Transport Agency or Ministers is required before a scheme can be classified as 'committed'. For improvements which impact upon local authority controlled infrastructure, the commitment of the relevant local authority is required.

The results of this process should be formally recorded in an uncertainty log and reported as an appendix to the PBC. As at all stages of business case, a wide range of stakeholders should be consulted to ensure that the uncertainty log has a broad basis of support. Although the initial development of the uncertainty log should occur during the PBC, the evidence used to arrive at the assessment should be recorded and kept under review as the business case develops. It is essential that the allocation of likelihoods to proposals be carried out in a way that is realistic and based on local knowledge.

The uncertainty log should also highlight the interactions between different factors. An example of part of an uncertainty log is given at the top of this page.

As well as uncertainty over the occurrence of any given factor, it is recognised that it is equally possible for there to be uncertainty relating to its timing. This should be reflected in the uncertainty log, but it is left up to the Client, with the practitioner's support, to agree with Stakeholders the best approach to adopt when there is more than one source of uncertainty associated with a single factor. It is also recognised that, due to the long timescales of

transport interventions, some factors may occur in the relatively distant future. The uncertainty log should reflect the fact that uncertainty increases the further into the future the time period being considered. There is no set time horizon over which potential factors should be considered; rather, the time horizon for the study is left up to the judgement of the Client and Stakeholders with advice from the practitioner. Again, it is emphasised that the resources devoted to this stage of the PBC should be proportionate to the scale of the study.

DEFINING THE DO-MINIMUM

The do-minimum is defined as the most likely transport situation over the course of the appraisal period if no intervention were to occur. It should therefore be based on the assessment set out in the uncertainty log. At the local level, the composition of the do-minimum will involve the practitioner exercising judgement, but the Client expects that only factors which are classed as 'committed' or 'more than likely' would be included in the do-minimum, with factors classed as 'reasonably foreseeable' or 'hypothetical' reserved for sensitivity testing through the use of reference cases.

The do-minimum should also include minor operational changes arising from Network Operating Plans, which can be expected to be carried out as conditions deteriorate. These improvements should not be significant, with any significant changes considered as an option in their own right as part of the alternatives identification stage of the PBC.

The do-minimum should be:

- Unbiased (that is, as likely to be exceeded as undershot, on any relevant measure);
- Coherent and self-consistent (if X is 'highly likely' to be accompanied by Y, then both X and Y should be included);
- Free-standing (not dependent on other scenarios for its definition); and
- Realistic and plausible.

DEMAND AND LAND-USE IN THE DO-MINIMUM

The practitioner is required to work with the Client and Stakeholders to agree the most likely view of the future growth appropriate to the study area.

As a minimum, the NZ Transport Agency has growth scenarios which are required to be used as a reference case for any studies affecting the state highway network.

DEFINING THE DO-SOMETHING

For the purposes of an economic appraisal, the do-something is defined as the do-minimum with the transport intervention; ie there is no additional development in the do-something.

Where practitioners are undertaking an assessment of the operation, environmental or patronage impact of an intervention, however, the expected level of additional development should be included in the do-something.

REFERENCE CASES

As part of the development of the PBC, practitioners will propose appropriate reference cases to be explored during the indicative and detailed business case phases which match the assessment of uncertainty as set out in the uncertainty log. Practitioners should not feel limited to developing a single reference case. The number of reference cases identified should be sufficient that, in the view of the Client and Stakeholders involved, the uncertainties set out in the uncertainty log are adequately reflected.

If all uncertainties are treated separately, the likelihood exists that a large number of potential reference cases could be developed. Such an approach is likely to be impractical and disproportionate, and instead factors should be grouped when forming reference cases. This should be done using the analysis in the uncertainty log, taking account of any interdependencies of different factors. Again, it is expected that reference cases will be:

- Coherent and self-consistent; and
- Evidence based and defensible.

Within the PBC it will not be necessary to assess programmes against developed reference cases but will be used to determine the scope of subsequent business case phases. For the PBC it is simply important that the uncertainty around the forecast do-minimum is recognised.

DATA ANALYSIS

For a full understanding of the study area and the transport system under consideration practitioners must identify appropriate data analysis requirements.

The nature and extent of data analysis within a PBC is clearly correlated with its complexity and the resources available. The effort put into the analysis of data must be commensurate with the scale of the strategic case, the study area context and potential impacts of the alternatives and options to be considered.

However, practitioners must ensure that the analysis of data provides sufficient evidence of the problems and/or opportunities. The analysis of data should provide a significant contribution to establishing a robust evidence basis for a

programme business case rather than simply providing contextual information.

An appropriate evidence base is crucial when moving to the refinement of the strategic case problems and benefits statements and associated measures (baselines and targets) as the business case progresses.

This is reflected by the iterative nature of the analysis of problems and opportunities, and objective refinement through the business case process.

REFINING AND IDENTIFYING PROBLEMS AND OPPORTUNITIES

It is important to recognise that actual and perceived problems or opportunities within the transport system must be the rationale for any business case.

Practitioners should look beyond the immediate manifestation of such problems on the transport system. The analysis should, instead, explore the root causes and consequences of problems. At this phase of the process, opportunities for improvements to the transport system and the way it is used should be explored.

Practitioners should ensure that an appropriate analysis of data has been undertaken to provide an evidence base. The Highways information portal provides guidance on available data sources.

ISSUES AND CONSTRAINTS

In parallel to problem and opportunity analysis, relevant issues and constraints should also be considered within the context of a programme business case. It is important that the identification of problems and opportunities are considered within the wider context.

'Issues' are uncertainties that the study may not be in a position to resolve, but must work within the context of. Examples of issues include:

- Uncertainty at the time of the study whether a major road or rail link will be built that will affect the study area;
- The impact of a major new land-use development has yet to become clear; or
- A study for a neighbouring area may lead to a proposal that results in significant changes to through trips passing across a study area.

Practitioners, with the Client should account for, or if possible neutralise, such issues through liaison with neighbouring authorities, government departments and agencies, and transport operators.

'Constraints' represent the bounds within which a study is being undertaken. These may include, but are not limited to:

- The statutory powers of an authority to promote change; or
- The funding levels that can realistically be obtained;

Similarly, constraints on the shape of a particular alternative could be affected by:

- Sensitive areas of ecological, landscape or heritage importance;
- Built-up areas;

- Rivers or railway lines which are expensive to bridge; and
- Rough terrain making infrastructure works expensive.

REPORTING

It is expected that the thorough analysis of existing and future problems and opportunities will have comprised a significant proportion of the methodology adopted to develop the programme business case and, therefore, clear evidence of existing and future problems and opportunities must be presented in the PBC report.

A textual statement of the assessment of problems and opportunities together with identification of any issues and constraints should be presented in the PBC report.

The statement should summarise the sources of data and any consultation activities undertaken. It should highlight the key problems, issues, constraints and opportunities and also provide details of associated severity/magnitude and the root causes and consequences of such problems, issues, constraints and opportunities.

Practitioners should avoid simply providing background information for the study area. The geographic scope of the study should be presented with clear evidence of the problems and/or opportunities together with the methods of analysis used.

4.3 STAKEHOLDERS

The scope of consultation for the PBC should be clearly specified by the Client in the general scope of the Request for Proposal. The Client will have set out in the brief:

- How stakeholders will be identified;
- How stakeholders will be consulted with;
- How stakeholders will be communicated with; and
- Expectations of the NZ Transport Agency for public engagement.

Practitioners therefore need to develop and maintain a more detailed Consultation Management Plan on behalf of the Client which is aligned to the Client scope and is required to be approved by the Client.

Practitioners should develop further the process for engagement with those parties who are critical for the development of the PBC and document the views of the Stakeholders and how those views have/have not been incorporated into PBC development.

4.4 THE ROLE OF THE PUBLIC IN THE PROGRAMME BUSINESS CASE

In order to fully understand and confirm the problems and issues, there may be value in consulting with members of the public alongside key Stakeholders. The scale and focus of this consultation must be proportionate to the programme business case itself and draw from other consultations where appropriate.

The Client will specify in the scope the degree to which participation and consultation is required for the programme business case considering that:

- People will naturally have more reliable views about current problems, potential opportunities, issues and constraints than those predicted to occur in the future;
- People are more likely to be concerned with issues that directly affect them, their immediate environments and lifestyles; and
- Some may also be well informed on more strategic issues and could contribute a useful perspective on these.

4.5 EVOLUTION OF THE BUSINESS CASE PROBLEMS, BENEFITS AND MEASURES INTO PROJECT OBJECTIVES

OVERVIEW

An outcome of the strategic case which frames the starting point to the PBC is an initial set of weighted problem and benefit statements and initial thinking around potential measures. These have been developed by key Stakeholders through the investment logic mapping process and will be reflective of the nature of those conversations, the level of information available and the knowledge of participants at that time. These will have been presented in the strategic case and reported in the appendix as a benefit map, next page.

On completion of the more detailed problems analysis undertaken for the PBC it is appropriate to refine and develop the benefit map further to reflect the new learnings gained from the PBC through the formulation of SMART investment objectives.

The strategic case problems and benefits are central to the business case; however, through the development of the PBC they can often be refined in order to improve the overall quality of the appraisal of options and their ultimate results.

Practitioners and Consenting Authorities are used to talking about 'objectives' in the sphere of transport projects. Within the context of the business case process, investment objectives are derived from a refinement and blending of the original strategic case problem, benefit and measures.

In taking the strategic case problems and benefits forward to investment objectives, practitioners should do so in accordance with the following principles:

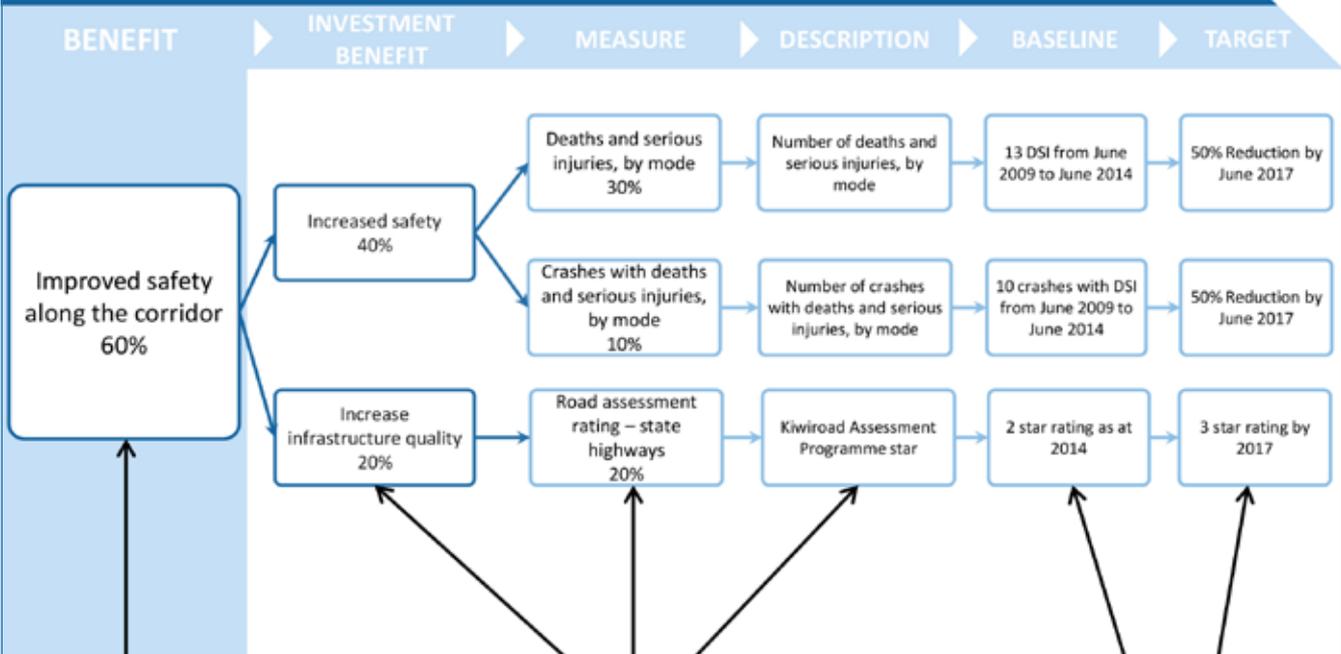
- Investment objectives should express the outcomes sought in the study area as opposed to any of the activities planned to achieve them;
- The formulation of investment objectives should have a clear line of sight back to the strategic case and take full account of the investigation of the root causes and consequences underlying identified problems or opportunities;
- It is recognised that investment objectives may not be entirely SMART (ie include targets) at the PBC phase but such investment objectives should be set in a way to facilitate the establishment of entirely SMART investment objectives as part of the indicative business case development;
- NZ Transport Agency's *Investment performance measurement* resources should be fully used in setting investment objectives;



Benefits Map Example

Subtitle

BENEFIT MAP



Derived either at the end of the ILM or at the start of the benefit workshop by the stakeholders. This is the benefit gained from addressing the consequence part of the problem statement.

Should primarily come from the Planning and Investment Knowledge Base *Investment performance measurement*, list of *measures* and are agreed by stakeholders at the benefit workshop as to the best way to measure the benefit sought.

Agreed initial baseline and targets with stakeholders in the benefit workshop. These can be refined as the evidence base is confirmed through subsequent Business Case Phases.

To create SMART investment objectives the above information needs to be used. For example:
 "We will improve safety along the corridor between 'X' and 'Y' by reducing the number of deaths and serious injuries over the next 3 years (2014 – 2017)"
 "We will improve the infrastructure quality along the corridor between 'X' and 'Y' from a 2 star rating to a 3 star rating by 2017"

RESPONSIBILITY FOR DELIVERING THE BENEFITS		
Name	Position	dd/mm/yyyy
Business Problem Owner: <firstname surname>		Version no: <e.g. 0.1, 1.0 etc>
Facilitator: <firstname surname>		Initial Workshop: <dd/mm/yyyy>
Accredited Facilitator: Yes / No		Last modified by: <firstname surname dd/mm/yyyy >
		Template version: 1.0

- A regular dialogue should take place between Practitioners and Decision Makers throughout the objective setting process; and
- Any application for funding, support or approval from the NZ Transport Agency will be assessed, in part, on whether there is a clear statement of investment objectives supported by an explanation of their derivation.

TERMINOLOGY

In this and subsequent sections, a distinction needs to be made between two classes of objectives:

- The term 'investment objectives' is used to describe those objectives established or adopted by the Client for the purposes of the study in particular (the task for which they are developing a business case); and
- The term 'success factors' will be used to refer to other objectives that underpin established policy directives. These exogenous set of objectives will be used to describe existing objectives to which the practitioners should take cognisance of during the programme business case development but, by definition, are independent from the exercise in hand. Such policy directives may have been set by the NZ Transport Agency or a third party;
- Examples of success factors could relate to:
 - Value for money – we constantly consider how to deliver the outcomes sought in the most effective and efficient manner to obtain the best value for money;
 - Environmental and social responsibility – land transport investment can have positive as well as negative impacts on the environment. Investment in new state highways that remove traffic from suburban streets can significantly improve the living environment for many people. However, improvements can also have adverse impacts on those living closest to the improvements. These impacts need to be addressed at reasonable cost in the course of securing approvals if the full benefits of transport investment are to be realised.

There are a number of Acts of Parliament which underpin the work the Transport Agency does with the aim of ensuring that transport projects contribute positively to the environments they sit in.

Land Transport Management Act 2003 – the legal foundation of the Transport Agency is the Land Transport Management Act. The Act established the Transport Agency and requires us to undertake our functions in a way that contributes to an effective, efficient, and safe land transport system in the public interest. The Act contains operating principles for the Transport Agency which includes exhibiting a sense of social and environmental responsibility.

Resource Management Act 1991 – the Resource Management Act (RMA) promotes the sustainable management of natural and physical resources. The state highway network and the various environments it interacts with are resources

that fall within the remit of the RMA and need to be sustainably managed. The RMA has a particular focus on ensuring that the adverse environmental effects of activities are avoided, remedied or mitigated.

The Transport Agency aims to be socially and environmentally responsible. We promote an accessible and safe transport system that contributes positively to New Zealand's economic, social and environmental welfare, and we are committed to acting in an environmentally and socially responsible manner; and

- Health and safety – as part of the government's vision to improve New Zealand's health and safety performance by 25 percent by 2020, the Transport Agency will meet and exceed the requirements of the new Workplace Health and Safety legislation which came into effect in April 2015.

A number of other words and expressions are frequently used to describe objectives. Examples are: Goals and aims, which are generally used in describing strategic objectives; Targets, which normally refer to measures and indicators in which objectives can be expressed; and Thresholds, which might be minimum requirements or 'hurdles' which an option must pass. Different practitioners will also use terms such as 'criteria' and 'indicators' to describe the thing measured, such as the number of crashes. Sometimes, a hierarchy of objectives is proposed which goes from a general or strategic statement of an objective (for example to 'improve safety') to increasingly specific aims (for example 'to reduce traffic accidents by 25% in the study area by 2005'). Simplicity, clarity and adherence to SMART principles will ensure that there should be no difficulty in terms of either precision or understanding of investment objectives.

INVESTMENT OBJECTIVES

In developing a programme it is essential to be clear as to what the study aims to achieve. The term 'investment objective' is used to describe those objectives adopted for the purposes of the specific study being undertaken. The investment objectives should express the outcomes sought for the study and will describe (while avoiding indications of potential solutions) how problems will be alleviated. Additionally, the investment objectives provide the basis for the appraisal of alternatives and options and, during post-implementation, will be central to monitoring and evaluation.

The development of the strategic case problems, benefits and measures to a meaningful set of investment objectives is important and offers significant value for a number of reasons. They:

- Provide all Stakeholders with a clear indication of what practitioners are trying to accomplish;
- Serve as a basis for directing and guiding the entire study process;
- Can provide motivation, unity and integration;
- Facilitate accountability from the Decision Maker; and
- Introduce clarity where there may exist strong vested interests and entrenched views on priorities.

In the context of the business case, investment objectives offer the following additional benefits:

- Investment objectives allow the proper appraisal of candidate options, allowing the Decision Maker to make an informed choice;
- They can help the practitioner to develop apposite and creative options by focussing thought; and
- They establish the main purpose for proceeding with a decision thus allowing the option development to be revalidated to avoid project 'creep'.

The definition of investment objectives for a particular exercise is not new to the NZ Transport Agency's Business Case Approach. The case for the formulation of appropriate investment objectives is compelling, most notably through taking into consideration the many unwelcome potential outcomes of proceeding without specific objectives. Investment objectives will be specific to each individual study and the specific problems and opportunities to be addressed. Consequently, it is expected that investment objectives would differ between individual studies. It is, therefore, not practical to be prescriptive about the formulation of the investment objectives.

SMART INVESTMENT OBJECTIVES

Transport planning should be about delivering the desired changes in a study area and it is therefore crucial that the investment objectives reflect this and should therefore reflect the intent of the problems and benefits of the strategic case and express outcomes. In the strategic case, investment outcomes are articulated in very general terms indicating the desired direction of change. Through the PBC process the practitioner is expected to refine these. It is imperative that investment objectives are expressed with SMART principles in mind. This will enable them to be finalised through the business case process as more information becomes available. The strategic case supported by analysis of data and evidence of problems and/or opportunities is crucial in setting robust investment objectives.

Through the PBC process investment objectives must be finalised in more specific terms and where appropriate, include a target.

A SMART objective will be:

- Specific – it will say in precise terms what is sought;
- Measurable – there will exist means to establish to the NZ Transport Agency's satisfaction whether or not the objective has been achieved;
- Attainable – there is general agreement that the objective set can be reached;
- Relevant – the objective is a sensible indicator or proxy for the change which is sought; and
- Timed – the objective will be associated with an agreed future point by which it will have been met.

SMART investment objectives can be challenging to set – they demand insight, careful consideration and impose greater

accountability. There is, however, an importance attached to making the necessary effort in deriving SMART investment objectives from the strategic case as:

- The SMART investment objectives provide an essential focus on the outcomes sought for the study area and, if intelligently set, will facilitate the satisfactory resolution of any conflicting priorities; and
- Provide a clear statement of the goals of a project or programme which supports statutory processes.

The approach to setting investment objectives is outlined below and should be followed thoroughly as a three step process within the overarching business case process:

- At the strategic case phase, statements of problems, benefits and associated measures are set with SMART principles in mind – it is recognised that these may not be entirely SMART (ie include targets or indicators) at the strategic case phase but these should be set in a manner which enables them to be made SMART-er as the business case process progresses;
- Within the PBC phase, as further information becomes available the strategic case statements are formulated into investment objectives and sharpened to ensure that, where possible, they are sufficiently SMART (ie include targets or indicators); and
- Within the IBC stage the investment objectives are refined further to be specific to the activity being developed with clear linkages back to the programme level which allows the overall programme success to be measured as part of post-implementation monitoring and review.

The approach described in the following section to developing investment objectives is set out as an example rather than a template. It is an effective approach which can be carried out quite quickly. It can also function effectively when used in a more detailed planning exercise involving substantial consultation elements. Its outputs can readily be incorporated into a partially developed objective framework by a process of pair-wise comparison.

SETTING SMART INVESTMENT OBJECTIVES

This approach is founded on the direction set by the strategic case but allows for a broad consideration of the actual and potential situation in the study area and encourages both lateral thinking and openness to perhaps unexpected factors and issues.

Practitioners should approach this task with the existing set of defined problems set out in the strategic case. Together with considering the widest range of issues, practitioners should adhere to the principle of seeking out the root causes and consequences.

It is common in transport planning to focus on what is wrong and how to fix it. This approach misses a very important point that transport can unlock opportunities to make life better in an area. It is helpful therefore to ask the question 'what good things

could emerge in the study area from changes to transport?' It is important not to be unrealistic about what can be achieved but, at the same time, to imagine the extent to which things might change. It may be most helpful to look at opportunities using the same series of suggested areas listed for problem analysis although care must be taken not to stray from the scope of the direction set by the strategic case. One means to achieve this is to consider the strategic case problems and ask whether there are any naturally opposite opportunities.

Having listed problems, opportunities, constraints and uncertainties, practitioners should attempt to draw these items together into a cogent framework of investment objectives. It is accepted that, at this stage, investment objectives may not be entirely SMART, instead being set with SMART principles.

The strategic case and NZ Transport Agency's *Framework for investment performance* provides a useful basis for this. Practitioners should use the five outcome classes of the *Framework for investment performance* (the framework) as a starting point.

The framework aims to make it easier to measure investment performance, and is divided into 5 outcome classes:

- Network performance and capability;
- Safety;
- Health;
- Cost; and
- Environment.

The outcome classes are further divided into attributes to make it easier to select measures. The framework is populated with measures. These currently cover the 'network performance and capability' and 'safety' outcome classes. Measures for the other three outcome classes are under development and will be added over time. Existing measures will also be updated as more effective measures are developed or discovered.

The above process could lead to a substantial number of investment objectives which now will need to be worked up in more detail. Practitioners should aim to apply the SMART principles, described above, in moving towards precise and relevant final investment objectives. It is important to remember that the specific values associated with objectives can be altered at a subsequent stage in light of new data or experience, so practitioners should not be unduly wary of proposing provisional figures. The process of refining the various investment objectives will make any conflicts between them increasingly explicit. It is helpful to address these conflicts directly by comparing each pair of SMART objectives and identifying those for which there is a possibility that one could be met at the cost of achieving the

other. Where conflicts are identified, it will be necessary to do one of two things. One or both of the objectives can be altered so as to remove the conflict; or accept that weighting will ensure the relative importance of these objectives which will be reflected in the outcome of the appraisal.

An important part of the refinement process is to ask whether the objectives developed are sufficiently specific in terms of: demographic or social groups; modes; geographic areas; or the focus of the strategic case.

Irrespective of the approach adopted by the practitioner to develop investment objectives relevant to the PBC, it is essential that the key focus of the study, set out in the strategic case, is not diluted by considering a wide range of marginal issues or through the inclusion of items which, for the transport planning context in question, are not relevant.

There should be appropriate involvement of Stakeholders through participation and consultation as early as possible in the process of establishing investment objectives. This is a particularly important stage in the development of the PBC to clearly and purposefully engage with the Investor. Reaching a broad agreement on the investment objectives of the PBC will provide a focus for the continued development of the business case and will prove vital if, at a later date, objections to specific alternatives and options emerge. If it can be demonstrated that particular alternatives and options meet the agreed objectives for a study, it can be asserted that such options are in keeping with the view of the wider stakeholder group and that there is evidence to support these alternatives. The application of structured thinking and proper consultation will pay significant dividends.

The reporting on investment objective setting within the PBC should briefly outline the approach adopted and state the investment objectives clearly and show a direct link back to the strategic case statement of problems and benefits. In summarising the methodology used, it should be demonstrated that the principles of value-led SMART investment objectives, have been followed. Practitioners must clearly demonstrate the relationship between the strategic case, the analysis of data, evidence of problems and/or opportunities, and the derivation of the investment objectives. These are the essential first phases of the programme business case and practitioners must not proceed to alternative and option assessment until there is confidence in the evidence base and articulation of investment objectives.

It is anticipated that to ensure appropriate focus there should be no more than six clearly defined investment objectives for the PBC.

PROGRAMME BUSINESS CASE WORKSHOPS

PBC workshops can include outcomes, options and alternatives, programmes, etc.

There are a number of key roles common to PBC workshop sessions, these being:

- The problem owner;
- The investor;
- The facilitator; and
- The stakeholders.

ROLE	RESPONSIBILITIES
Problem owner(s)	<ul style="list-style-type: none"> ▪ The person who has identified the business problem or opportunity ▪ Responsible for delivering the expected benefits ▪ Has authority to act and make decisions on the problem or opportunity
Investor	<ul style="list-style-type: none"> ▪ Usually a member of the Planning and Investment Group who has authority to make likely subsequent investment decisions associated with the investment ▪ Provide assistance and advice on the planning signals and investment process ▪ To help identify stakeholders and workshop participants ▪ Contribute to the one network strategic context, including relevant evidence ▪ Contribute to genuine and ongoing engagement and along with other stakeholders, constructively testing assumptions and evidence to ensure a robust business case ▪ Provide planning and investment signals (from the GPS, the agency's Investment Assessment Framework etc), ie what are the outcomes or priorities that investors may choose to invest in
Facilitator	<ul style="list-style-type: none"> ▪ Expressing the workshop objectives and outcomes in plain language and concepts ▪ Distilling the real problems or opportunities and making explicit the relationship with causes and consequences ▪ Obtaining the agreement of all participants to the outcome of the workshops ▪ Challenge the logic of what participants say; lie-detector and mediator ▪ Guides the building of really strong evidence base for each workshop ▪ Obtain and properly consider the opinions of key stakeholders
Stakeholders	<ul style="list-style-type: none"> ▪ Assists in forming the problems and opportunities ▪ Help contribute supporting evidence and define outcomes, options, etc as relevant to the theme of the workshop ▪ Help provide evidence to ensure that each statement can be supported ▪ Have authority to make decisions at the workshop to ensure progress is made on substantive problems ▪ Able to advise on the alignment of the PBC with their organisation's strategic direction

DEVELOPING THE PROGRAMME

5

The Land Transport Management Act 2003 (LTMA) stipulates that the NZ Transport Agency can only approve activities if it is satisfied that the activity has, to the extent practicable, been assessed against other land transport alternatives.

Part B of the programme business case maps the path from identifying a broad range of alternatives and options through to considering a range of programmes (combinations of alternatives and options) to identifying a recommended programme. Consideration of a range of programmes provides the opportunity for the Transport Agency and stakeholders to influence the direction of the programme business case and form their own view of a preferred programme.

5.1 ALTERNATIVE AND OPTION ASSESSMENT

It is vital to develop alternatives and options that reflect the full range available and that seek to meet a business case's defined investment objectives, not just immediate manifestations of problems. In the past, consideration of alternatives has perhaps been given less attention than required and hence guidance is therefore offered on the generation of alternatives/options, the sifting process and option development.

By way of definition 'alternatives' refer to types of activities such as improvements to demand, productivity or supply (including improvements to highways, local roads, public transport, walking and cycling improvements, land use measures, travel demand management) that are other means of achieving the same programme objectives.

Options refer to different activities within an alternative. For example, for the highway improvement alternative, options might include building a passing lane, building a truck only lane, widening a road to four lanes or building a dual carriageway with a central barrier.

ALTERNATIVE AND OPTION GENERATION, SIFTING AND DEVELOPMENT

The purpose of alternative and option generation, sifting and development is to derive a range of options which should provide the solution/s to meet the investment objectives and alleviate the problems or opportunities identified in the strategic case.

This element of the programme business case must not be started until a thorough analysis of problems and opportunities has been completed and, until robust investment objectives are set. It is vital to derive alternatives and options which fully reflect the range available and at this early phase in the business case process, this exercise should not be constrained.

It is imperative that practitioners cast the net wide in generating alternatives and options as potential solutions to the identified problems and opportunities; both stakeholder participation and wider consultation can have a role to play.

In larger exercises, alternative/option sifting will be necessary to reduce the number of options and their combinations to manageable levels. This is done through identifying any alternatives and options that are likely to be infeasible on the basis of constructability, consentability, fundability or other relevant criteria. Practitioners should identify any alternatives and options whose likely timing is inconsistent with the timeframes identified in the strategic case. This is not a detailed feasibility test but a simple review using broadly correct assessments to ensure time and resource is not wasted on pursuing alternatives and options of limited value. However, it is important that the consideration of these alternatives and options is formally recorded through the business case process and along with the rationale for their early rejection.

Alternative and option generation, sifting and development should be carried out in a logical, transparent and therefore auditable manner. To this end, practitioners may find it appropriate to adopt a formal structured decision making process. Stakeholder and wider consultation may have an important role to play in this process. To allow alternatives and options to be considered, outline designs may be required and a broad assessment made of capital and other costs, and implementation timescales. There is, however, no requirement to develop new alternatives to the same degree as those that have a transport planning history. What is required is a pre-feasibility assessment of alternatives and options, sufficient to allow appraisal to take place.

ALTERNATIVE AND OPTION GENERATION

Once the situation in the study area has been examined, problems and opportunities identified and investment objectives set, the next step is to start developing options which will achieve the desired outcomes. The most common way of generating or defining options for analysis is to assess solely how the problem being confronted can be ameliorated or eliminated. In more simple applications this might be seen as acceptable, but even so, this should be done in the context of the investment objectives set for the work.

The generation of alternatives and options can only be considered to be all-embracing if an objective-based approach is followed. That is, explicit consideration is given to deriving alternatives and options with the intent of meeting the investment objectives, rather than investigating how retrofitting extant options with some

history may contribute. In general terms, alternatives and options should be generated through the following sources:

- As ideas/outputs from the consultation and participation process;
- Ideas/proposals which have a history and which (or derivations thereof) remain viable options;
- Through the statutory planning and policy process, both for transport initiatives and land-use plans; and
- As ideas/outputs from a structured decision making process followed by the team undertaking the study.

The range of policy instruments available to the consultant include but need not be limited to:

- Land-use measures;
 - Development mix;
 - Development density;
 - Parking; and
 - Travel plans.
- Infrastructure measures;
 - New and improved roads;
 - New and improved rail;
 - Light rail;
 - Guided bus;
 - Park and ride;
 - Terminals and interchanges;
 - Cyclist and pedestrian routes;
 - Lorry parks; and
 - Transhipment areas.
- Management measures;
 - Conventional traffic management;
 - Physical restrictions on car use;
 - Regulatory restrictions on car use; and
 - Parking controls.
 - Urban traffic control systems;
 - ITS;
 - Bus priority; and
 - High occupancy/freight lanes.
- Information provision;
 - Conventional signage;
 - Variable message signs;
 - Real time driver/passenger information, route guidance and satellite navigation;
 - Parking guidance and information systems;
 - Public awareness campaigns; and
 - Timetable and other information.
- Pricing measures.
 - Fare levels and structures; and
 - Parking charges and road user charges.

Further guidance and details on alternatives and options is available on the NZ Transport Agency's Integrated Planning Toolkit available at <http://www.nzta.govt.nz/planning-and-investment/planning>.

The toolkit will allow you to:

- Choose a strategic objective and tools, concepts or processes that will deliver the objective;
- For any given tool, identify the strategic objective that this meets; and
- Review case studies that highlight examples of integrated planning.

A recommended approach to developing a range of alternatives is through a series of workshops:

- Alternatives workshop – whereby the Client, Stakeholders and practitioner workshop the alternatives and gain agreement on the breadth of feasible measures; and
- Recommended programme workshops – the process of considering a range of alternatives and packaging them together to form an overall programme. This is described further in §5.2.

If the Client requires an alternatives and options workshop it is expected that the Client will clearly define responsibilities for organising these in any Request for Proposal.

In developing alternatives practitioners may find the template produced as an output of the *Alternatives and preferred programme workshops* (refer <http://hip.nzta.govt.nz>) useful.

Practitioners should document all alternatives and options that arise from the alternatives and preferred programme workshops, identifying any alternatives and options that may be missing from those identified at the workshop.

ALTERNATIVE AND OPTION ASSESSMENT

On identifying a long list of alternatives and options and shortlisting to exclude alternatives/options which are either clearly infeasible or of limited value, the next stage is to test each alternative against the investment objectives and key criteria.

In this respect, the assessment of alternatives and options in the PBC is an initial appraisal and involves a qualitative assessment of their likelihood of meeting the investment objectives. The assessment of alternatives and options for the PBC is intended to focus appropriate effort and resource towards alternatives and options which merit more detailed development through the indicative and detailed business case phases and eliminate options which are unlikely to meet the investment objectives, alleviate problems or realise opportunities identified in the strategic case and PBC.

The assessment of alternatives and options in the PBC should concentrate on the following areas:

- An initial assessment of the likely impact against investment objectives;
- An initial assessment of the likely impact of alternatives/options against BROAD criteria associated with the feasibility, affordability and likely public acceptability of alternatives/options; and

PROGRAMME BUSINESS CASE**ASSESSMENT OF ALTERNATIVES SUMMARY TABLE**

(To be completed for each option)

PROPOSAL DETAILS

BUSINESS CASE NAME:	NAME OF PROJECT MANAGER & REGION:
BUSINESS CASE PURPOSE:	<i>Investigate and develop preferred option for ...</i>

ALTERNATIVE NUMBER X - (DESCRIPTION)

ALTERNATIVE DESCRIPTION:

ESTIMATED TOTAL PUBLIC SECTOR FUNDING REQUIREMENT:

	LOWER	UPPER
CAPITAL COST (\$M):		
NET PROPERTY COST (\$M):		
OPEX (\$M/30YR):		
MAINTENANCE (\$M/30YR):		
PRESENT VALUE OF COST TO GOVT. (\$M):		

ESTIMATED BCR RANGE:

TIMING OF NEED:	OPTIMAL PROGRAMME:	LIKELY:	
IAF PROFILE:	STRATEGIC FIT: H/M/L	EFFECTIVENESS: H/M/L	EFFICIENCY: H/M/L

INVESTMENT OBJECTIVES

OBJECTIVE: List each of the investment objectives in summary, together with a target where appropriate. Where appropriate, give details of how the objective is likely to be refined moving into the indicative business case to ensure it meets SMART principles.	PERFORMANCE AGAINST INVESTMENT OBJECTIVE: <i>For each investment objective describe to what extent the alternative is expected to meet the objective.</i>
RATIONALE FOR SELECTION OR REJECTION OF ALTERNATIVE:	<i>State whether the proposal is being selected for consideration at programme business case or being rejected. Describe why the proposal is favoured over the other alternatives or why the proposal is being rejected from further consideration.</i>

IMPLEMENTABILITY APPRAISAL OF OPTION X

Feasibility:	<p>From a technical standpoint, how straightforward will it be to implement the alternative/option?</p> <p>Are any novel/untried/leading edge technologies involved? Might there be any risks involved in developing or implementing the alternative/option or significant associated hazards which may pose a health and safety risk in the design, build and final product?</p> <p>Might there be notable property risks to delivery? Might the alternative/option affect other infrastructure providers and in what way?</p> <p>What consenting risks might there be which could affect delivery or cost risk?</p> <p>Are there any factors which might adversely affect the ability to operate or maintain the alternative/option over its projected life without major additional costs?</p>
Affordability:	<p>What are the funding risks of the alternative? Could the alternative be funded under traditional methods or would more novel approaches seem likely? Would there be potential cash flow risks which affect the desired delivery programme? Are there possible ongoing operating cost risks? If operating subsidies are required, how might these be funded?</p>
Public/ Stakeholders:	<p>Has the alternative been made public? If so, how acceptable is the alternative? Are there real or anticipated objections from particular sections of the community or from particular stakeholders?</p>

MULTI-CRITERIA ASSESSMENT OF ALTERNATIVE/OPTION X

CRITERION	SCALE OF IMPACT	SIGNIFICANCE OF IMPACT	SUPPORTING INFORMATION
SAFETY:	<p>Description of impacts</p> <p>Assessment using 7 point scale</p>	<p>Description of impacts</p> <p>Assessment using 7 point scale</p>	<p>How will the alternative/option enhance safety for different types of transport users? Will it involve gainers and losers in terms of safety? Are there impacts on personal safety/security? What will be the impact on fatal and serious?</p>
ECONOMY:	<p>Description of impacts</p> <p>Assessment using 7 point scale</p>	<p>Description of impacts</p> <p>Assessment using 7 point scale</p>	<p>How will the alternative/option affect traffic volumes, journey times, or the reliability of travel times? Will there be gainers and losers, and if so what are the impacts on users and operators of different transport modes and in different areas?</p> <p>How might the alternative/option enhance the development potential of adjacent land, help attract new jobs, help existing businesses?</p>
ENVIRONMENTAL AND SOCIAL:	<p>Description of impacts</p> <p>Assessment using 7 point scale</p>	<p>Description of impacts</p> <p>Assessment using 7 point scale</p>	<p>Drawing from the environmental context, are there potential adverse impacts on the natural environment (habitat, flora and fauna)?</p> <p>Could the alternative/option impact the coastal marine area, wetlands, lakes, rivers or their margins?</p> <p>How does the alternative/option affect accessibility for transport users and for others, including access to jobs, services and other facilities? How does it impact community cohesion and severance?</p> <p>Are there opportunities to enhance infrastructure for, and/or improve access to public transport and/or active modes of travel such as walking and cycling?</p> <p>How could the alternative/option increase/decrease air quality and/or noise effects?</p> <p>With reference to the environmental context, what sensitive receivers or recorded scheduled or listed sites/areas of historical, cultural or archaeological importance could be affected by the alternative/option?</p>

Template of the table to complete can be found at <http://hip.nzta.govt.nz/processes/project-development/programme-business-case>

- An initial assessment of the likely impact of alternatives/options against the following considerations:
 - Environmental and social;
 - Safety; and
 - Economic.

At this stage in the PBC practitioners must produce an indicative assessment of the scope and scale of the benefits and impacts associated with an alternative/option for each area noted above.

It should be noted that quantitative information can be used as evidence of impacts if this is available and likely to support the assessment.

In assessing alternatives the template below should be utilised to provide a succinct, plain English, assessment of alternatives. A digital and latest version of the summary table is available at: http://hip.nzta.govt.nz/__data/assets/pdf_file/0011/51401/PBC-Assessment-of-Alternatives-summary-Table-V1.pdf

ASSESSMENT AGAINST INVESTMENT OBJECTIVES

Performance against the investment objectives is crucial. The choice of the recommended programme of alternatives and options and the rationale for that recommendation (as required in the PBC) should therefore be founded upon the investment objectives. A summary of the performance of each alternative/option against each investment objective is required. At this stage, it is recommended that this will be a wholly qualitative appraisal based on the likely impacts of the option against each investment objective. However, where quantitative information is available without expending significant additional resources this can also be used to inform the assessment.

A qualitative assessment should be completed for each alternative and option, against each investment objective. It may be appropriate to use a seven point scale assessment (described below), that considers the relative size and scale of impacts. It is important that practitioners provide details of why options are unlikely to meet the investment objectives sufficiently and as such, should be rejected at this stage. The reasons for rejection should be clearly outlined. It should be noted that options should not be recommended for further development unless they are likely to contribute sufficiently to meeting the investment objectives and addressing the problems and/or opportunities identified. If required by the Client, practitioners should undertake appropriate stakeholder participation and consultation in order to gain agreement on the likely performance of alternatives/options against the investment objectives.

ASSESSMENT AGAINST FEASIBILITY, AFFORDABILITY AND LIKELY PUBLIC ACCEPTABILITY

Alongside considering performance against the investment objectives, as part of the PBC an initial assessment of the feasibility, affordability and public acceptability of an alternative or option must be undertaken. Practitioners must consider the following:

- Feasibility – a preliminary assessment of the feasibility of construction or implementation and operation (if relevant) of an alternative or option and the status of its technology (eg prototype, in development, proven) as well as any cost,

timescale or deliverability risks associated with the construction or operation of the alternative/option, including consideration of any obvious departures from design standards that may be required.

- Similarly, consideration should be given to who would operate the option, including, if relevant, their statutory powers to operate an option and any other issues (eg cost) which may impact on its operation;
- Affordability – the scale of the financing burden on the promoting authority and other possible funding organisations and the risks associated with these should be considered together with the level of risk associated with an option's ongoing operating or maintenance costs and its likely operating revenues (if applicable); and
- Public acceptability – the likely public response is of importance at this initial PBC phase and reference to supporting evidence, for example results from a consultation exercise, must be provided where appropriate.

ASSESSMENT OF IMPACTS

A qualitative assessment should be completed for each option against safety, environmental and social, and economic considerations.

A seven point scale assessment that considers the relative size and scale of impacts is recommended to capture the likely impacts of options but detailed assessment should not be undertaken until the indicative business case phase. It should be noted that at this phase, qualitative information on likely impacts is all that is required, but where available, quantitative information can be provided. For each criterion above, the practitioner should therefore note whether the option would bring:

- Major benefit – these are benefits or positive impacts which, depending on the scale of benefit or severity of impact, the practitioner feels should be a principal consideration when assessing an option's eligibility for investment;
- Moderate benefit – the option is anticipated to have only a moderate benefit or positive impact. Moderate benefits and impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together do so;
- Minor benefit – the option is anticipated to have only a small benefit or positive impact. Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is invested in or otherwise;
- No benefit or impact – the option is anticipated to have no or negligible benefit or negative impact;
- Minor cost or negative impact – the option is anticipated to have only a minor cost or negative impact. Minor costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so.
- Moderate cost or negative impact – the option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for investment, but taken together could do so; or

- Major cost or negative impacts – these are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility for investment.

It should be noted that on the whole, supporting qualitative information on impacts is all that is required at this stage, but where available, quantitative information should be presented alongside the assessment using the seven point assessment scale.

A summary of the requirements when undertaking assessment against each criterion is presented below and in more detail at <http://hip.nzta.govt.nz/processes/project-development/programme-business-case>

Environmental and social – the key environmental attributes and characteristics of the study area must be summarised. This should draw attention to the particular qualities of the area, making reference to specially designated parts within the study area and to known proposals for change.

The collation of existing environmental baseline data is important at the outset to allow an informed view to be taken of the vulnerability of the study area to likely changes associated with transport or other options under consideration.

For the PBC, the data will be generally limited to readily available existing information. The collection of information may involve, in the first instance, desk studies of existing records or NZ Transport Agency and stakeholder material and data.

It is unlikely that any field surveys will be required where environmental assessment is being undertaken for a PBC rather than an individual more specific option or option level as part of an IBC or DBC, as the emphasis is likely to be on identification of relevant environmental issues and the broad scale and nature of potential impacts rather than on detailed predictions.

Baseline data should, as far as possible, be adequately documented and of known quality and updated at regular intervals in accordance with reliable procedures. Gaps and uncertainties in data should be identified. The key purpose of the PBC is to allow a comparison of alternatives and options, enabling those alternatives and options which are unsuitable on environmental grounds to be filtered out at an early stage. It will also help to scope required appraisals at the indicative business case phase.

In summary, it is important to:

- Confirm the nature of the option including the alternatives under consideration;
- Identify the range of likely impacts on the environment;
- Identify and agree with the Client the extent to which these impacts need to be investigated;
- Identify methodologies to be employed;
- Define data availability and agree with the Client further data gathering requirements;
- Set the indicative thresholds and significance criteria to be used in the evaluation of impacts; and
- Identify broad mitigation measures.

At the PBC stage, a qualitative assessment should be completed using the seven point scale assessment, considering the relative

size and scale of its impacts. The supporting information could include:

- Are there significant impacts on the environment? and
- What are the distributional impacts, who will be the gainers and losers?

Assessment relies on reliable and readily available baseline information to give an indication of the significance of impacts. The topics for which more in-depth data are to be collected should be agreed with the Client. Further information can be found on the Highways information portal at <http://hip.nzta.govt.nz/technical-information/environmental-and-social>

Safety – the safety criterion comprises two sub-criteria: crashes and security. In the PBC, the practitioner should take account of impacts against both sub-criteria including identifying for crashes which, if any, user groups may be affected and develop projections of what will be the likely impact of each alternative and option; and considering whether each alternative and option has any material impact on security for the users.

For the PBC a qualitative assessment should be completed using the seven point scale assessment, considering the relative size and scale of impacts. The supporting information could include:

- How will the option enhance safety for different types of transport users?
- What are the impacts on personal risk versus collective risk?
- Will the option involve gainers and losers in terms of safety? and
- Are there impacts on personal safety/security?

Economy – the economy criterion has three sub-criteria, which together should summarise the full extent of economic impacts resulting from an alternative or option. Not all programmes are amenable to economic analysis so a financial analysis is sometimes used instead. The economic criterion include:

- Economic efficiency, covers the benefits ordinarily captured by standard cost-benefit analysis including agglomeration – the transport impacts of an option;
- Wider economic benefits (WEBs) relate to the notion of potential transport impacts on agglomeration and the relationship between agglomeration and productivity; and
- Economic activity and location impacts (EALIs) allow the impact of an option to be expressed in terms of their net effects on the local and/or national economy.

At the PBC stage, an indicative assessment of the economic efficiency should be completed using the ranges as set out in the NZ Transport Agency Investment Assessment Framework, considering the relative size and scale of its impacts. The supporting information could include:

- How will the option affect traffic volumes, journey times, or the reliability of travel times?
- Will there be gainers and losers, and if so what are the impacts on users and operators of different transport modes and in different areas? and
- How might the option help attract new jobs, help existing businesses, open up appropriate land for development?

5.2 PROGRAMME OPTIONS DEVELOPMENT AND ASSESSMENT

Practitioners should investigate the possibility of packaging alternatives and options in order to achieve the desired outcomes. It is likely that no one alternative or option measure on its own will provide a solution to the problems within a study area. Packaging measures effectively can:

- Reinforce, extend or complement the impact of a particular measure;
- Mitigate potential adverse impacts of a particular measure; and
- Increase public acceptability of a particular measure.

It is important to recognise cumulative impacts which may arise from the packaging of measures. This should be accounted for fully during analysis.

The remaining alternatives and options should be assessed in the form of programmes. Again this is not a detailed evaluation of the alternatives and options but a broad brush evaluation using a high level assessment and where parameter values are required representative values are available for generic project types from the NZ Transport Agency.

A Recommended programme workshop – the process of considering a range of alternatives and packaging them together to form an overall programme through a collaborative environment with Stakeholders and Investors – is an effective means for commencing the necessary assessment of programmes. This assessment should include:

- Broad contribution to addressing the identified investment objectives;
- An assessment of broad benefit range;
- An assessment of broad dis-benefit range;
- An assessment of broad investment and operational cost range;
- An assessment of risks;
- An assessment of the programme profile and benefit cost ratio range;
- A likely phasing and implementation time frame;
- An overall ranking of each programme; and
- A recommended programme or programmes for consideration.

Key environmental and social impacts may be considered at a high level in these programmes. Practitioners should refer to NZ Transport Agency's *Minimum standard Z/19 – state highway environmental and social responsibility standard*.

If the Client requires an alternatives and options workshop it is expected that the Client will clearly define responsibilities for organising these in any Request for Proposal.

In assessing programmes, practitioners may find the template produced as an output of the *Alternatives and preferred programme workshops* (refer <http://hip.nzta.govt.nz>) useful.

Practitioners should document all programmes that arise from the recommended programme workshop(s) at a level of detail

that allows the investor to understand the rationale for forming a recommendation but also in a manner that allows the investor to form their own views of a preferred way forward.

5.3 RECOMMENDED PROGRAMME

Practitioners should provide an overview of the overall recommended programme of work. This involves identifying and describing:

- The work that is needed with broad timelines including all that is able to be determined at this stage;
- The level of outcomes that will be achieved; and
- The investment risk.

This is a high level overview and is not expected to be a detailed definition of the programme.

In providing a recommended programme the practitioner should separately identify:

- The essential elements that must be successfully delivered;
- The desirable requirements that would add value and bring about additional benefits but are not essential to successful delivery;
- The optional requirements, ie those things that might be delivered if sufficient budget were to be available; and
- The elements that are specifically excluded from the programme (to prevent scope creep).

Practitioners should ensure that the programme identifies key implementation activities by time (or any other trigger such as growth thresholds) to deliver the desired outcomes. Where there are complementary activities such as other interventions (examples include local road construction, other mode improvements, land use and other) these should be identified and their monitoring specified.

5.4 RECOMMENDED PROGRAMME ASSESSMENT

The assessment of the recommended programme identifies all the significant impacts of the programme, and the resulting value for money, to fulfil NZ Transport Agency's requirements for appraisal and demonstrating value for money in the use of public money.

The impacts considered should not be limited to those directly impacting on the measured economy, nor to those which can be monetised. The economic, environmental, social and distributional impacts of a programme are all examined, using predominantly qualitative information with quantitative and monetised information where this is available. In assessing value for money, all of these are consolidated to determine the extent to which a programme's benefits outweigh its costs.

Practitioners should assess and summarise the performance of the recommended programme against three key criteria:

- Investment outcomes;
- Programme risks; and
- Value for money.

In making this assessment the practitioner should consider the following questions.

INVESTMENT OUTCOMES

- How will the recommended programme meet the investment outcomes?
- Which programme items make the greatest contributions to the outcomes?
- What is the distribution of outcomes between Stakeholders accountable for delivery of programme outputs?
- Does the programme meet all of the specific outcomes?
- What are the critical dependencies? and
- How certain are we of achieving these outcomes?

PROGRAMME RISK

- What are the key programme risks and their inherent likelihood and consequences?
 - Technical;
 - Operational;
 - Financial;
 - Stakeholder/Public;
 - Environmental and social responsibility;
 - Safety; and
 - Economy.

This is a high level assessment of risks but reference to *Minimum standard Z/44 – risk management* may be useful.

VALUE FOR MONEY

- What is the indicative benefit cost ratio range? and
- Are there other relevant measures of value for money?

SENSITIVITY ANALYSIS

The above assessment is not a detailed assessment but a brief high level view. Accordingly there should be a range of costs, benefits and benefit cost ratios provided. This range is important in understanding the uncertainty and what drives that uncertainty.

This sensitivity analysis should be summarised as well as its implications for risk including the validity of the business case for the recommended programme.

The forecasting of future costs and benefits at the programme level will involve a degree of uncertainty and the economic analysis will be sensitive to the assumptions or predictions inherent in the analysis. This sensitivity analysis should include a discussion on the impact on the programme BCR.

A key focus of this broad brush sensitivity analysis should be traffic growth or drivers of traffic growth such as population and employment and draw from the uncertainty log.

It is recognised that these costs and benefits are NOT based on standard estimation procedures. This will be required at later business case phases. For this phase costs and benefits will largely be provided by means of ‘professional judgement’, ‘rules of thumb’ and experience providing a plausible range generated by other similar proposals. Further guidance on cost estimation at the programme business case level can be found at <http://hip.nzta.govt.nz/technical-information/cost>.

ASSESSMENT PROFILE

Practitioners should assess the programme using the latest *NZ Transport Agency investment assessment framework* profiles based on the information that is available at this stage. The assessment shall include each of the following elements:

- Strategic fit of the problem, issue or opportunity that is being addressed;
- Effectiveness of the proposed solution; and
- Economic efficiency of the proposed preferred programme.

The NZ Transport Agency will use the PBC and associated assessment profile to determine if funding will be approved by the NZ Transport Agency to proceed to an indicative business case for all or parts of the PBC. At the conclusion of the PBC the profile elements have a different status based on the information inherent in the analysis undertaken to date as set out below:

- Strategic fit – confirmed;
- Effectiveness – indicative; and
- Economic efficiency – indicative.

5.5 PROGRAMME FINANCIAL CASE

Practitioners should provide the recommended programme’s total indicative financial cost broken down by constituent activities. The practitioner should explain how these investments will be funded. This is a ‘broad brush’ analysis using generic numbers and not a detailed financial analysis.

An assessment of the broad affordability of the overall programme should be presented, indicating any agreements or understandings in place with commissioning bodies and/or any affordability gaps.

DELIVERING AND MONITORING THE PROGRAMME

6

6.1 MANAGEMENT CASE

The management case assesses whether a programme is deliverable. It tests the programme planning, governance structure, risk management, communications and stakeholder management, benefits realisation and assurance.

There should be a clear and agreed understanding of what needs to be done, why, when, how and by who, with measures in place to identify and manage any risks. The management case sets out a plan to ensure that the programme benefits are realised and will include measures to assess and evaluate this. The PBC should have a risk management plan proportionate to its scale.

The management case contributes towards the overall business case and needs to demonstrate that an appropriate project management regime is in place for the programme. The practitioner needs to address the following questions:

- Who is the programme client/sponsor?
- What is the overarching programme governance?
- What are the key go/no go decision points?
- Is it clear what would happen at each stage after a go/no go decision?
- Who is in charge? Is there a programme board or similar? and
- What is the allocation of roles and responsibilities between HNO, Stakeholders and other groups in the Transport Agency?

6.2 STAKEHOLDER ENGAGEMENT AND COMMUNICATIONS PLAN

The practitioner, with the Client's guidance, should outline an indicative stakeholder engagement approach for advancing the programme through to delivery.

How are the wider Stakeholder's expectations proposed to be met/managed through the implementation of the programme? What are the key messages associated with the programme and how are they to be communicated?

6.3 PROGRAMME PERFORMANCE AND EVALUATION

Assessing the performance of the programme should be ongoing through the programme development and delivery lifecycle. As part of the PBC a programme performance plan should be developed to outline how monitoring will be undertaken as the programme progresses. It is important to consider the scope of monitoring activity during a PBC. Failure to do so will make it difficult to assess the impacts of activities and the cumulative impact of the programme as a whole after its implementation.

The programme performance plan should form an integral part of the development and implementation of the programme and subsequent activity development. Measurable indicators of progress towards meeting the investment objectives will have been identified earlier in the PBC as part of the development of SMART investment objectives.

Effective monitoring requires the regular analysis of the information being gathered in order to continuously review the performance of the programme and constituent activities against the established investment objectives. Used in this way, monitoring should identify any areas of under-performance, and should also identify factors causing under-performance, thus allowing the Client and Stakeholders to implement appropriate changes at an early stage.

Monitoring performance is fundamentally important as it allows measurement to be made of whether a programme has been successfully implemented or not.

The levels of effort and expenditure required to monitor a programme will vary. There are a range of factors which should be considered when determining the appropriate level of effort and expenditure for a particular programme, including the level of resources available (both in terms of time and finances); the scale of the programme; the degree of innovation of the activities comprising the programme; and the degree of risk exposure associated with adverse outcomes and the quality/robustness of the monitoring outcome.

Resource requirements associated with monitoring should also be determined by the amount of information already available. It is important to scan for information that may already be in the public domain.

As the programme progresses, a monitoring report that reflects the proposed programme performance plan developed as part of a PBC, should be developed. The details of this programme performance plan should be clearly described within the monitoring report.

The monitoring report will allow performance against objectives and indicators to be formally recorded. Monitoring periods by their very nature are required to be flexible and responsive to the type of information which becomes available between prescribed monitoring intervals. A large, technical, document is not appropriate for a monitoring report. Rather, a summary report in which key findings and trends are identified and displayed in a readable format is preferable. The use of charts and diagrams rather than paragraphs of text to convey relevant information should be used wherever appropriate.

As the results of a monitoring plan are assessed, the detailed performance indicators and targets may need to be re-defined. The development of revised targets and performance indicators must be carefully considered and be compliant with SMART principles and be linked to the strategic case and investment objectives. In particular, such targets and performance indicators must continue to be achievable, yet challenging.

The programme performance plan itself may need to be reviewed over time and modified according to the extent to which it is achieving reliable and cost effective results.

For the purposes of the PBC it will only be necessary to provide an indication of the proposed scope of the programme performance plan to be undertaken. The plan should include:

- An outline of how monitoring will be undertaken, post-implementation, and the scope of the monitoring process;
- Any development of the investment objectives to refine challenging but achievable key performance indicators (KPIs) clearly linked to the strategic case;
- The collection, analysis and interpretation of data relating to any number of established indicators. The amount of effort and expenditure required should be appropriate to the scale and nature of the proposed intervention;
- The development of a monitoring report to detail the extent to which a project is delivering value for money and achieving the objectives set; and
- Timing of outcome evaluations – if undertaken too soon, final impacts may not have had time to ‘work through’, but if undertaken too late, resources will be wasted if the project is not efficient or effective.



ASSESSING THE PROGRAMME BUSINESS CASE

7

In preparing a programme business case it is useful to understand on what basis the NZ Transport Agency will assess the PBC. The following questions are presented as a guide to stakeholder reviews of the programme business case:

KEY REVIEW QUESTIONS	SUPPORTING QUESTIONS/EVIDENCE
Problem	
Is it clear what the problem is that needs to be addressed, both cause and effect?	<ul style="list-style-type: none"> Unambiguous problem statements drawn from the strategic case
Is there robust evidence to confirm the cause and effect of the problem?	<ul style="list-style-type: none"> A robust analysis of the supporting evidence base
Does the problem need to be addressed at this time?	<ul style="list-style-type: none"> Evidence of consideration of timing of need and certainty of occurrence
Is the problem specific to this investment? (or should a broader perspective be taken)	<ul style="list-style-type: none"> Reference to relevant business and other strategies Evidence of related programmes and projects Assessment of internal and external constraints
Benefits	
Have the benefits that will result from fixing the problem been adequately defined?	<ul style="list-style-type: none"> Unambiguous benefit statements drawn from the strategic case
Are the benefits of the recommended programme of high value to the promoting organisation(s) and the NZ Transport Agency?	<ul style="list-style-type: none"> Extracts from business and other relevant strategies Reference to relevant government and organisational policies Are the outcomes sought and underpinning business needs clearly defined and supported by the key Stakeholders? Is there evidence of Stakeholder involvement and support?
Will the investment objectives that have been specified provide reasonable evidence that the benefits have been delivered?	<ul style="list-style-type: none"> Evidence of consideration of the Framework for Investment Performance Measurement Clear line of sight between problem/benefit statements and investment objectives Clear distinction between investment objectives and success factors

KEY REVIEW QUESTIONS	SUPPORTING QUESTIONS/EVIDENCE
Are the investment objectives SMART?	<ul style="list-style-type: none"> • Outline of benefits realisation plan • Will benefits be measured using SMART investment objectives? <ul style="list-style-type: none"> ◦ Specific ◦ Measurable ◦ Achievable ◦ Relevant ◦ Time-bound • Are the main benefits supported by key Stakeholders?
Have the main risks moving forward been identified, as well as measures for their management and control?	<ul style="list-style-type: none"> • Outline of risk management strategy • Business risks • Service risks • Likelihood and impact (high, medium, low)
Strategic response	
Has a sufficiently wide range of alternatives and options been identified and assessed?	<ul style="list-style-type: none"> • Is there evidence of consideration of the full spectrum of the intervention hierarchy? • Has a sufficiently robust analysis of the performance of each alternative/option against investment objectives been undertaken? • Is the assessment against key risks/opportunities and success factors robust?
Is it clear what alternatives and options have been shortlisted and the rationale for their selection?	<ul style="list-style-type: none"> • Are the proposed alternatives and options feasible? • Are the proposed alternatives and options the most effective response to the problem (comprehensive and balanced)?
Has a sufficiently wide range of programmes been identified and assessed?	<ul style="list-style-type: none"> • Has a broad enough spectrum of alternative approaches to packaging up alternatives and options been considered?
Has a recommended programme been identified following robust analysis of the available options?	<ul style="list-style-type: none"> • Analysis of programmes against: <ul style="list-style-type: none"> ◦ Ability to deliver investment objectives ◦ Cost ◦ Time ◦ Risks ◦ Dis-benefits ◦ NZ Transport Agency Assessment Profile
Planning the next phase of the business case	
Has the thinking and alignment with key Stakeholders been undertaken to ensure all the necessary arrangements are in place for the successful commencement of the next phase?	<ul style="list-style-type: none"> • Programme Board/Committee and reporting arrangements • Programme manager and team • Programme plan and agreed deliverables • Budget estimate and resources