UFTI Programme Business Case Peer Review

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Summary of Peer Review Findings

Conclusion

The Urban Form and Transport Initiative (UFTI) Programme Business Case (PBC) is sound and the approach taken reflects best practice as an innovative urban form lead business case. I have identified a few areas of weakness that will need further improvement in the next stages, but none of these undermine the overall credibility of the UFTI Final Report.

Conformity

The PBC conforms with NZTA requirements. UFTI piloted the Indicative Economic Ratio (IER) methodology and the peer review concludes that approach was fit for purpose – albeit with some recommended improvements around transparency of cost/benefit estimation.

Strengths

The review found the following areas of PBC were strong:

- Evidence – supporting technical reports and comprehensive up to date data sources underpins the PBC
- Problem identification – clarity of problem (challenge) statement, investment logic mapping and benefit measures provide solid foundations
- Policy alignment – there is strong alignment with national policy (such as GPS and Urban Development Partnership) and regional policy (such SmartGrowth and RPS)
- Conceptualising urban spatial forms – the methods used to develop the options were sound and covered a broad range of alternative settlement patterns
- Constraints maps – these were generally comprehensive and professionally put together
- Short listing – the multicriteria assessment was thorough, logical and expert led
- Preferred option – the Connected Centres option was a hybrid that emerged from further stakeholder feedback and sensitivity analysis and drew on the best aspects of the short listed options
- Design concepts and principles – these were grounded on sound transport planning evidence and experience and guided the development of the preferred option and detailed packages
- Packages - detailed and staged implementation packages were developed, and modelled and costed, and provided a comprehensive and appropriate level of detail to proceed to the next stage.

Further work

The review (in Table 2) highlights nine risks and assumptions that, although not critical to the conclusions of PBC, will need further work. The four most important of these are:

- Partnership with tangata whenua - the lack of engagement and resourcing of Iwi to contribute to spatial planning has been strongly criticised by tangata whenua. This creates risk to UFTI. In particular there are significant Maori land and cultural interests in the proposed growth areas that need to be resolved in a positive way in order to progress.
- The nexus of SmartGrowth and Connected Centres settlement patterns, the related achievability of urban densities and requisite frequency of mass transit services and the ability to overcome land prices and market forces in the housing market.
- Natural hazard constraints, especially understanding tsunami and liquefaction risks at a more granular level, and determining if the high urban densities can be achieved in areas like Tauriko West due to topography
- Delivery risk – this is discussed more fully in Section 9 and 10, however, in summary there are two interrelated implementation risks:
    - Financing – the need for additional funding and revenue sources, and in particular the need to “capture the value” of urban growth
    - Governance – the purely collaborative approach of SmartGrowth will struggle to resolve the major urban growth tensions and a more formal partnership with delegated joint decision making arrangements may be required for success.

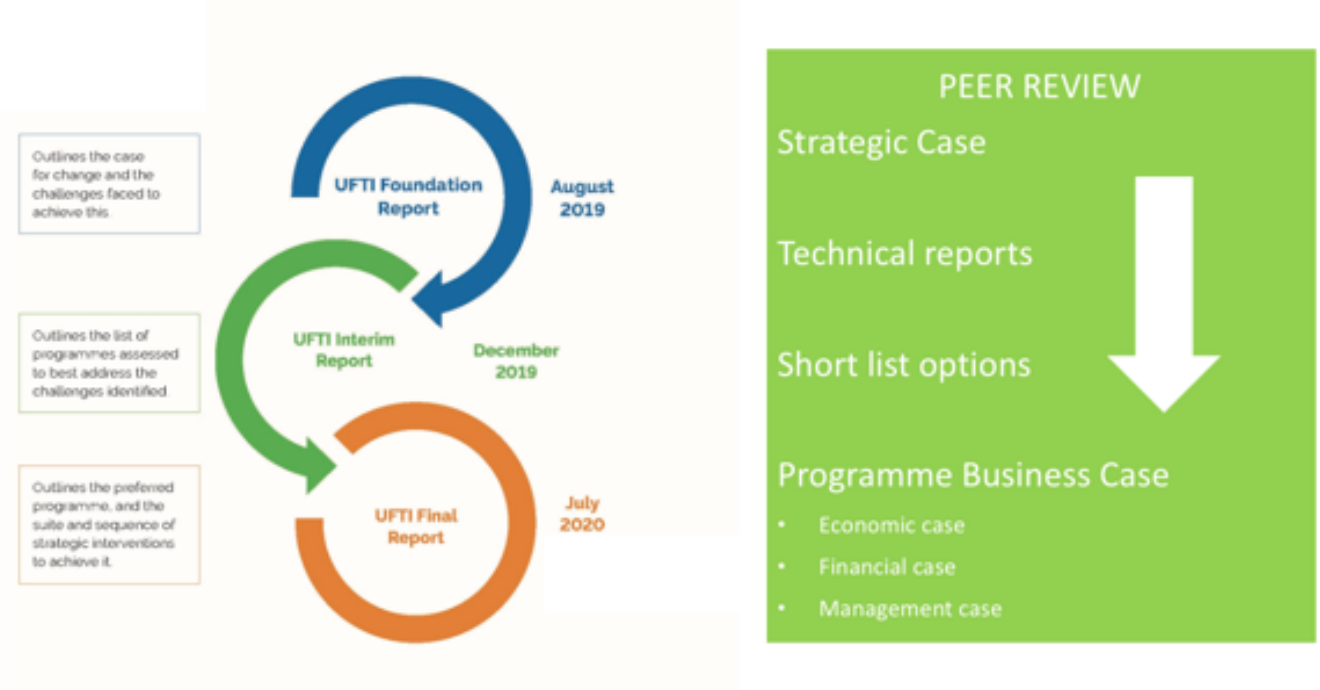
1. Background to UFTI and the PBC

The Urban Form and Transport Initiative (UFTI) was established to provide an agreed strategic and integrated delivery plan for the Western Bay of Plenty's future urban form and multi-modal transport system. This plan will enable the partners to deliver urban form, land use, and transport changes and improvements over time to achieve the agreed strategy.

The UFTI project was developed over three phases as outlined on the left side of Figure 1 and set out to achieve the following objectives:

- To enable and shape a sustainable, vibrant, efficient, and more liveable urban form
- To enable and support sufficient housing supply in existing and new urban areas to meet current and future needs
- To support access to economic and social opportunities as the western Bay of Plenty's population and economy grows
- To improve measurable transport outcomes such as congestion levels, road safety, travel choice and private vehicle dependency, and environmental impacts (including CO_2)
- To ensure long lasting economic, social, environmental and cultural benefits and value for money from the agreed strategic plan.

Figure 1: Key deliverables and peer review



UFTI delivers these objectives through a series of building blocks (refer right side Figure 1):

- The foundation report – which is effectively the strategic case
- Technical reports – which support the Programme Business Case
- The interim report – which summarises the short listing of options
- The final report – which is the Programme Business Case and includes the economic, financial and management cases.

This report is a peer review of the Programme Business Case (PBC), but in order to thoroughly understand the PBC it is necessary to also peer review the building blocks.

2. Methodology for the peer review

This peer review is designed to provide assurance around both the conformity and credibility of the programme business case. In this sense it is aimed at providing assurance to the UFTI governance, and NZTA in particular (because of their requirements under the Investment Assessment Framework or IAF).

However, given the PBC is part of an integrated urban landuse and transport programme (rather than just a transport project per se), there is a need to adapt the NZTA peer review guidance to provide the same level of assurance around a much broader and more complex integrated programme (refer summary of NZTA peer review requirements in Appendix 1).

In this respect, it must be recognised that UFTI is a urban-form lead programme business case – it starts with the desired spatial landuse growth pattern and then addresses how to move people and goods in that context. Consequently, given this context - and the inherent complexity that comes with it - it is much harder to consider the PBC only in terms of a 'normal' NZTA PBC methodology.

Therefore, the peer review will focus on whether the PBC firstly presents a credible urban growth plan within the recognised landuse constraints and secondly whether the business case is sufficient to support NZTA investment. In this context it will focus on areas of strength and weakness, and areas for improvement and further work.

Consequently this peer review focusses on how credibly the UFTI PBC 'stacks-up' in terms of:

- Following good process
- Supporting data, evidence and research
- Clarity of the problem statement
- Alignment to policy goals and objectives
- Consideration of options, alternatives
- Understanding of assumptions and risks
- Realistic analysis of the economics and financials
- Logical and feasible conclusions, and assessment of delivery risk
- Conformity with NZTA requirements
- Overall peer review conclusion.

The review weaves the urban landuse development context into each of the above aspects. Specifically, the key strategic spatial planning questions are considered as an integral part of the peer review, namely;

- Context and objectives – what is the issue we are dealing with?
- Desired future states – what do we want to achieve?
- A set of maps – what is the most effective and appropriate future spatial layout, and what leading and enabling infrastructure is required?
- Implementation – how will this spatial layout be delivered and what are the urgent, priority 'key moves'?

3. Good Process

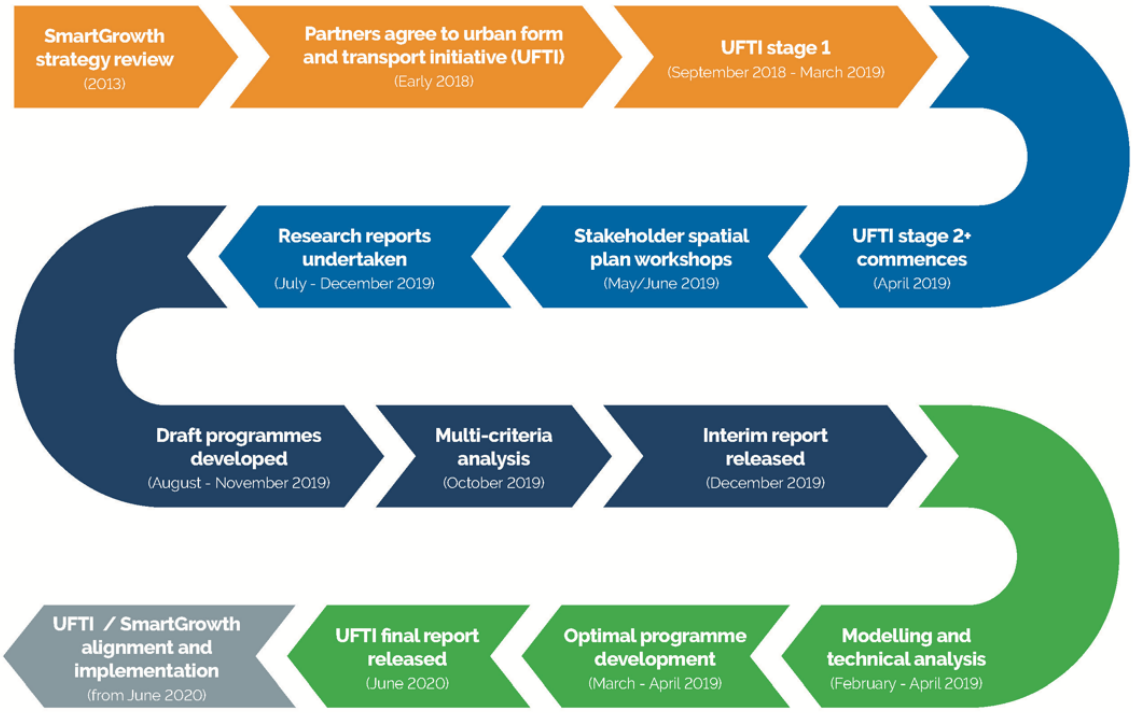
Following a good process is critical to success of a complex programme such as UFTI. I have assessed below the following aspects:

- Governance

- Capability and expertise
- Methodology
- Quality assurance
- Iwi partnership
- Stakeholder engagment.

The programme was established from the beginning with clear terms of reference which included governance structure, clear purpose/objectives, defined scope and a set of deliverables and milestones. Figure 2 sets out the process followed by UFTI. The detailed methodology is very comprehensive and logical and is set out in in more detail on page 36 of the UFTI Final Report.

Figure 2 – the UFTI Journey



The governance has three levels with clear roles, and I have evidenced that they meet regularly and provided appropriate guidance to the project team:

1. Smart Growth Leadership Group (SGLG) – this group involves Mayors, Chairs and a senior official from NZTA. It provides the governance oversight. SGLG is kept regularly informed of progress and key milestones. They delegate the key decisions on the programme to the Executive Review Group.
2. Executive Review Group (ERG) – this group consists of Council CEOs and a senior representative of NZTA. They typically meet monthly and have made the 'big decisions' around issues such as the design principles and approving the growth scenarios.

3. Project Leadership Group (PLG) – this group consists of senior officials from the partners and Priority One[1] and provides the 'day-to-day' management. They provided peer review and challenge to the Project Team on the detail of the work programme and the outputs. This is where key issues were raised and if possible resolved. Those that could not be resolved were escalated to the ERG.

The core Project Team includes suitably qualified and experienced professionals, and they ran the 'day-to-day' operation of the UFTI project. They brought in additional capability through out-sourcing experts and technical reports where needed. Appendix 2 reviews all the technical reports prepared (see next section on Evidence). In addition, the project had access to expertise from partners and through an expert panel (the latter was used for the multi-criteria analysis and short listing). In my view the project had access to all the expertise necessary.

Quality assurance was built into the project, in particular, the PLG and expert panel was critical in this regard. Furthermore, critical technical documents were independently peer reviewed (eg; modelling and economic case).

Figure 3 – Stakeholder Workshops

1 Economic development agency

A comprehensive stakeholder engagement plan was developed and implemented. The focus was on engaging with the core stakeholders and partners, rather than direct engagement by the UFTI team with the wider community – although a wide range of collateral was provided for the broader community via a website (eg; newsletters, including channels to have input).

Figure 3 sets out the stakeholder engagement process and insights. There is a clear evidence trail for this information being recorded and the insights being considered by the Project (this includes a Technical report which drew lessons from partner organisations on community engagement eg; annual plan processes) and a summary of written comments received and responses from the UFTI team (published on the UFTI website). All the issues raised are well summarised in each of the three main UFTI reports.

In comparison, engagement with tangata whenua has been more problematic. The original plan was to engage via Iwi leaders using the established SmartGrowth framework. However, it appears this was of only limited success because of the lack of capacity of the Tu Pakari advisor to facilitate meaningful engagement in a complex planning exercise such as UFTI.

UFTI did commission a desktop study (see Appendix 2 – Review Technical and Support Reports) which collates publicly available tangata whenua perspectives relating to urban growth and associated infrastructure and transport needs. The report provides a comprehensive background to the issues facing tangata whenua and makes recommendations on working in partnership, resourcing iwi to participate and involving them in developing the cultural constraints mapping.

In response to these shortcomings two reports (including a presentation on tangata whenua survey insights) were commissioned from *He Manukura* (see Appendix 2). This enabled Iwi expertise to review UFTI reports and provide cultural insights. Notwithstanding, the reports are highly critical of the lack of previous engagement, the time constraints in preparing the report and lack of Treaty partnership in the way UFTI has been developed to date.

I think this demonstrates that while UFTI's intent was to have active engagement and open dialogue with Iwi, this has not been fully achieved to date. On the other hand, the cultural maps developed by *He Manukura* are quite detailed and advanced (compared to others I have seen in New Zealand) and they are already adding value. Furthermore, the report concludes that the "connected urban villages is more conducive to our values and timeframes" which has similarities with the UFTI preferred Connected Centres programme – this indicates that aspirations are at least not diametrically opposed.

My conclusion is that, despite the process shortcomings to date, the *He Manukura* engagement and reports provide a useful guide on the way forward, and there is an opportunity to work more closely in partnership in the future as UFTI is further refined and the spatial plan developed through SmartGrowth. This is especially important because significant areas of Maori land are within proposed urban growth areas and therefore resolving these issues will require a different way of working in a partnership, and in particular the SmartGrowth partners resourcing Iwi to develop their own spatial plan as part of the next phase.

4. Evidence

Having a sound and comprehensive evidence base is fundamental to a credible PBC. In order to verify the quality of the evidence I have reviewed each of the technical reports and constraints maps (see Appendix 1) and reviewed the population, housing and transport

growth data scenarios that underpin the modelling, economic case and the UFTI Final Report (PBC).

The suite of technical reports is comprehensive and with a few caveats they are all of a high standard:

- Some of the reports are at a 'point of time' and need to be read in that context (eg; Eastern Corridor Report is written within the previous SmartGrowth paradigm)
- The KiwiRail metro passenger services report is limited because it does not include cost estimates, however, these were developed later as part of the cost estimating workshops (see Section 11 – Conformity assessment)
- The shortcomings of the reports on tangata whenua engagement are discussed above in Section 3 - Good Process.

In terms of data inputs underpinning the forecasting and transport modelling, I have reviewed the following critical information sources:

- Population growth – UFTI uses high growth estimates from NIDEA which have been updated for the 2018 census. NIDEA have been used consistently through the SmartGrowth process and the high growth rates match long term historical growth rate trends
- Economic growth – the economic scenarios are built off the population growth estimates and the base information found in the Summary of Economic Information report
- Housing and employment growth – the housing and employment scenarios are developed from the above reports and information sources, and the assumptions about how these could play out spatially are found in the Tools for Increasing Social and Affordable Housing and Allocation of Dwellings and Employment reports
- Transport growth – UFTI uses NZTA and Council transport data in the transport modelling alongside the above population, economic, housing and employment scenarios. This is supplemented by data from the Regional Freight Flows study and the assumptions about how these could play out spatially in the Strategic Function (key journeys and levels of service) and the PT Mode Shift Scenarios reports.

In addition to the technical reports, UFTI updated its data sources and generated new information to fill gaps (see Appendix 3).

While I am not qualified to do a technical review of population or economic data, my qualitative assessment is that they are credible and internally consistent. The data are brought together in the transport modelling report and then applied to costs and benefits developed in the economic case. I have also reviewed both the modelling and economic case, and found that they are well grounded on the data and applied consistently across the programme.

Ultimately, the Review needs to determine how well the evidence supports the conclusions in the PBC – this is detailed in the subsequent sections.

5. Problem definition

The UFTI Foundation report sets out the problem as a series of 'challenges' (see Figure 4 below). These challenges are based on evidence detailed in the Foundation report, which builds on the data and understanding derived from SmartGrowth programme developed over 15 years – in particular the SmartGrowth Strategy 2004 and a series of subsequent sub regional reports (eg; the Public Transport Blueprint).

The Foundation report is therefore a 'refresh' of the evidence of the urban growth and transport problems faced by the WBoP sub region. The report is thoroughly cross referenced to the technical reports and other data sources, which have been developed and peer reviewed over a number of years. The data have continued to be refined as the PBC has been developed (eg: constraints maps). I have not identified any significant gaps in information. However, extrapolating trends into the future is always problematic because of the potential for disrupters and other social and economic changes – these inherent assumptions and risks are discussed in subsequent sections.

All the reports taken as a whole describe each problem (challenge) and the causes and effects in detail. Some of this cause and effect analysis is straight forward, for example the reports show clearly that congestion and deaths/serious injuries are increasing and that with forecast urban growth patterns (both population increase and dispersed settlement), and with the predominance of car travel, these problems are forecast to get much worse (ie: the problem needs addressing). On the other hand, for issues such as the growing restrictions on people to access social and economic opportunities, it is harder to demonstrate cause and effect due to the multiple demographic and social drivers. However, UFTI does a good job of illustrating the correlation between limited transport choice and these problems, and points to key indicators that show deteriorating future trends in social and economic opportunities that need to be addressed with some urgency.

UFTI did not undertaken a new Investment Logic Mapping (ILM) exercise; rather it built by synthesising the ILMs previously carried out by partners (the process for developing the problem/challenge statements is described in Appendix 3). A high level summary of this ILM in Figure 4 shows the broad cause and effect relationships between the problem (challenges) and the benefits. I think this synthesis was a sensible approach because a new ILM would not have added any value, and this approach logically builds on the previous ILM workshops and provides continuity in terms of stakeholder engagement and expert knowledge of the problem.

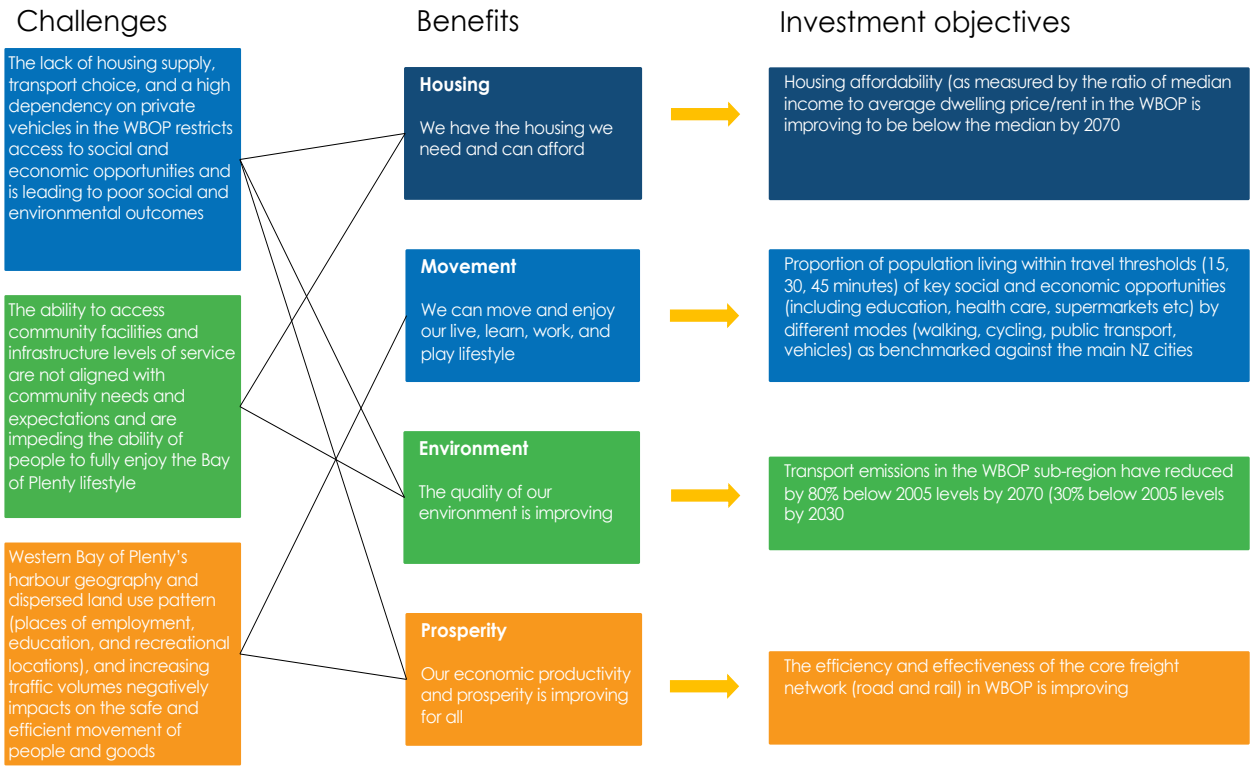
Overall, the Foundation report and subsequent documents clearly set out the strategic case for a re-think of urban growth settlement patterns and transport solutions, why it needs to be addressed now, and why integrated urban and transport solutions need to be put in place over the next 50 years to address the problem. In doing this it also identifies the benefits and objectives being sought by the community and stakeholders and links these back to the understanding of the causes and effects underlying the problem.

The intervention logic is then completed by proposing a set of investment objectives that can be used to measure whether the solutions developed address the problems. The fact that these are quantifiable measures, and used in the PBC, means the solutions can be mapped back to the problems.

Although not strictly part of the problem definition (they are further discussed in Section 7 - Options and alternatives), the development of constraints maps in my view completes the problem definition by placing the current challenges in the regional context – in many ways these constraints maps illustrate why WBoP has ended up with the urban settlement pattern and transport network that it has. These maps are based on the latest information sources and are very professionally put together.

However, as noted in the previous Section 5 - Evidence, the maps which overlay tangata whenua land and cultural values are still a work in progress – thus the constraints (and therefore problems) may not yet be fully defined in this report. In subsequent sections of this Review I also argue that the cost of land and how market forces will impact on the implementation of future urban settlement patterns is an area that will need further information and modelling.

Figure 4 – The problem and investment logic



6. Policy alignment

Section 11 - NLTF Conformity reviews UFTI's alignment with the GPS and Investment Assessment Framework (IAF), and concludes that the preferred Connected Centres programme has a high level of alignment. This section looks at the broader alignment with government policy and the regional policy context.

A number of aspects of the national policy context have changed, or become clearer, since the UFTI project was first instigated:

- spatial planning has become a strong national focus as part of the government's urban growth agenda
- the NZTA and Ministry of Transport have developed new strategic documents ('Arataki' and 'Toitu Te Taiao' respectively) which emphasise multi modal transport, accessibility and transport choice
- reduction in greenhouse gas emissions has become a key priority through the passing of the Climate Change Response (Zero Carbon) Amendment Act 2019.

UFTI has explicitly aligned its work with these policy developments. In regard to Arataki, the UFTI team has produced the following table on alignment with the Arataki 'step changes'.

UFTI also addresses the expectations set out in the Urban Growth Partnership Programme – see Figure 5 where I have identified that UFTI has systematically addressed all the key strategic spatial planning questions. Furthermore, the SmartGrowth partners have now committed to using the UFTI work as a key input into a joint spatial plan.

Table 1 - Alignment of UFTI to the Arataki step changes

	Arataki step changes	How UFTI aligns
1	Improve urban form – use transport's role to provide connections between people, product, and places	UFTI, through the development of the programme business case recommends the Connected Centres programme that integrates land use and transport planning in the western Bay of Plenty sub-region. There are two core concepts within the Connected Centres programme. The first is increasing the number of dwellings by intensifying the existing urban, current, and future growth areas. Doing so will maximise the land available for development and support a well-functioning multimodal transport system. The second is being able to access local social and economic opportunities within a 15-minute journey time, and sub-regional social and economic opportunities within 30–45 minutes. These concepts encourage strong local centres and connected neighbourhoods. To achieve these principles, the Connected Centres programme includes land use regulatory/policy changes which over time will increase dwelling densities. The transport system has been designed to complement the current and future land use and urban form, through multimodal infrastructure and service improvements which will enable and encourage modal shift. As these and other improvement take place, the connection between people, goods, and places will be enhanced with greater choice in mode and safe access.
2	Transform urban mobility – shift from our reliance on single occupancy vehicles to more sustainable transport solutions for the movement of people and freight.	The critical focus of the Connected Centres programme is to provide greater multimodal access and choice. Currently within the sub-region there is a significant volume of single occupancy vehicles particularly for trips during peak, this is partially due to the lack of viable transport choices options and historical use. With the recommended programme a number of multimodal infrastructure and service improvements are recommended. Macro level modelling suggests these improvements could increase multimodal share in the AM peak to at least 18% (from a 2-3% base). With the projected population and economic growth, the increased modal shift is critical to maintaining access for both people and goods. Without the shift away from single occupancy vehicles, access to core social and economic opportunities will become very constrained.
3	Significantly reduce harms – transition to a transport system that reduces deaths and serious injuries and improves public health.	Within the Connected Centres safety is addressed through the increased emphasis on multimodal use which limits exposure to road safety risk, and via a number of improvements to support multimodal use. The improvements whilst primarily about improving public transport and active mode throughput will also reduce deaths and serious injuries. Much of the state highway network has a good KiwiRAP rating with the exception of SH2 in the Northern Corridor. The SH2 corridor, however, has a number of safety improvements underway through the NZUP or NLTP 2018/21. With the implementation of these projects, safety risk on the SH2 corridor will reduce. When transport improvements are being undertaken as part of the UFTI Connected Centres programme, it is expected that a safe system design will be incorporated. This is one of the implementation principles developed for the Connected Centres programme.
4	Tackle climate change – support the transition to a low-emissions economy and enhance communities' long-term resilience to the impacts of climate change.	The Connected Centres programme is based on a scenario where the WBoP has reached 400,000 people. This scale of population and associated economic growth will increase GHG emissions. The high level and macro transport modelling suggest that transport related GHG emission will be approximately -47% less than the 'do minimum' comparator. This does suggest that some offset will be required, but significantly less than some of the alternative programmes tested via the transport modelling. The management of transport related GHG emissions is primarily related to Ministry of Transport modelling regarding the uptake of electric and other low carbon fuelled vehicles. The UFTI modelling is therefore reliant on national based policies to increase the uptake of low carbon fuelled vehicles.
5	Support regional development – optimise transport's role in enabling regional communities to thrive socially and economically.	The UFTI Connected Centres programme is primarily based on the western Bay of Plenty sub-region. Within the sub-regional focus, there is a strong awareness of the regional connections to Rotorua, Whakatane, Kawerau, Opotiki along with the wider Upper North Island context. The awareness manifests itself in the Connected Centres programme particularly in terms of enabling and maintaining freight access to the Port of Tauranga via the State highway and rail system, and support for wider network safety improvements (eg: SH36 to Rotorua), The Connected Centres could help the whole region thrive with greater access to the many social and economic opportunities as well as maintaining access to the Port of Tauranga.

In terms of policy alignment at the regional level, the SmartGrowth strategy is the collective expression of the regional aspirations, and UFTI explicitly aligns with the SmartGrowth 'five pillars of partnership' – see Figure 6 which shows the connection between SmartGrowth and UFTI. As noted in Section 3 Good Process, the SmartGrowth Leadership Group are the key

governance group for UFTI and this has ensured there is an alignment at the regional level. Notwithstanding the broad alignment at the regional policy level, I identify later in this review where there is some risk of mis-alignment in implementation level between the SmartGrowth settlement pattern and the more accessible urban form – see Table 2.

Figure 5 – Peer review of key aspects of the Urban Growth Partnerships

Figure 6 - Connection between SmartGrowth and UFTI

7. Options and alternatives

This section focuses on the logic, evidence and assumptions involved in developing the options and alternatives, and the preferred Connected Centres programme.

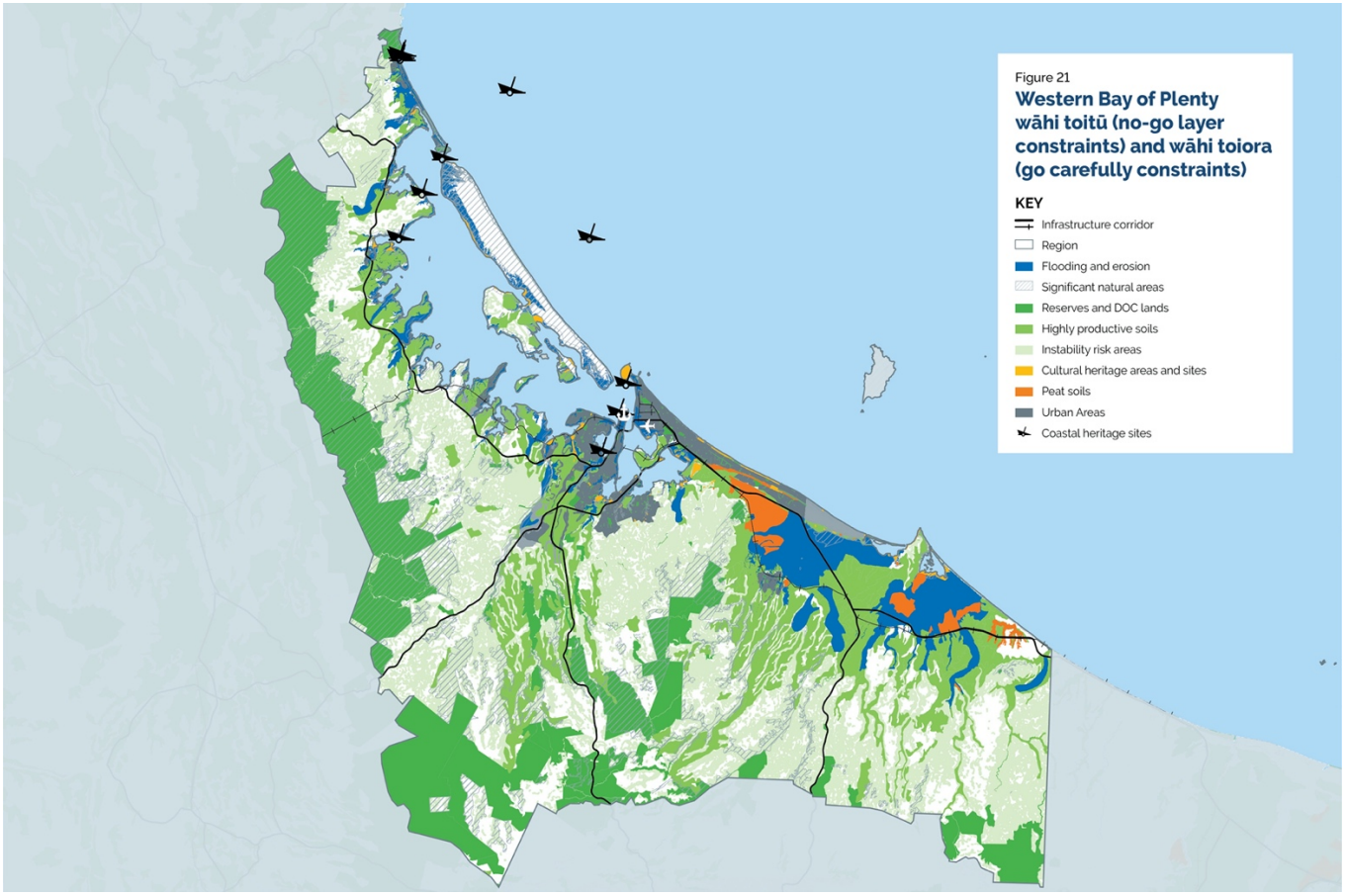
UFTI's development of options and alternatives is firstly in response to the 'bottom-up' evidence-based problem identification and the 'top down' policy context and alignment. Secondly, the engagement with tangata whenua, community and stakeholders also inform the choice of options (ie: mostly about what people desire). Thirdly, UFTI has learnt from what other successful cities have done around the world (ie: what works best). The final dimension is the mapping and understanding of the constraints on urban settlement in the region.

Constraints maps

UFTI has produced nine different constraints maps (see combined constraints map in Figure 7), and then more recently working with *He Manukura* who have developed a draft 'cultural overlay' map.

This review has concluded that the constraints maps are technically sound (refer Appendix 2, the Constraints Mapping technical report). These maps identify areas that are not suitable for urban development ('no go' areas) and other areas where there are constraints that need to be carefully considered as part of spatial planning work ('go carefully' areas). In addition, the report also identifies 'blue/green' corridors which are opportunities for enhancing the environmental/cultural/amenity of the urban environment.

Figure 7 – Combined constraints map



This constraints mapping has successfully been applied to the development of the long and short lists of options, and the selection of the preferred programme. The first concern with the application of the constraints maps is the categorisation of areas with tsunami and liquefaction risk as 'go carefully' rather than 'no go' areas. I can understand that there is sensitivity on this issue because of the existing development in some of these areas, and because of the greater level of investigation required to provide the granularity needed for planning. However, given the high risk of urban settlement in these areas I am of the view that this issue must be addressed in the next stage of joint spatial planning work in order to provide the certainty for future urban settlement.

The second concern relates to the constraints of relatively steep topography in some of the proposed growth areas (eg; the Western and Southern Corridors along Upper Belk, Keenan, Merrick and Joyce Roads) and the risk that the desired urban densities cannot be achieved.

Conceptualising urban settlement patterns and strategic journeys

UFTI needed to identify a preferred long-term urban settlement pattern for the sub-region that provides for the projected growth in population, housing, community facilities and

employment while responding to the local context and constraints. The methodology was to start at quite a conceptual level to develop a range of plausible urban settlement patterns, and then progressively develop the detail. The methodology was based on European Foresight Platform, and similar to that adopted in the Wellington Regional Growth Framework (WRGF) and Auckland/Hamilton Corridor.

The strategic alternatives for each of the components were developed through a series of separate technical reports (see Appendix 2). The logic was that the spatial form set the frame, and the other key components, such as the type and location of employment, housing and key journeys, were then built around it.

Development and assessment of the long list of options

Eight alternatives were developed:

- Dispersed growth
- Rail enabled growth
- Connected urban villages
- Two urban centres
- Eastern growth centre
- Northern growth centre
- Compact and connected city
- Response to natural hazards.

Each was designed to represent a plausible option that focussed around a particular spatial approach. Having a wide range of alternatives enables a transparent and balanced approach to testing whether each alternative addresses the problem and delivers the benefits over a 50 year period.

The alternatives were assessed using a multi-criteria assessment (MCA) methodology undertaken by an expert panel. The MCA is a well tested methodology involving a panel of experts in various fields and representatives of the stakeholders. The results are set out in the Interim report, and I have reviewed the detailed MCA spreadsheet assessments.

Development and assessment of the short list of options

The MCA process resulted in the three highest ranking options being shortlisted (ie: rail enabled, connected urban villages and two urban centres). A base case was also added, to make four shortlisted options for further analysis. The base case consisted of the dispersed growth programme, and included committed projects and projects 'likely' to proceed in the next 10 years (this is effectively the 'do-minimum' option, because the 'do-nothing' option was unrealistic – see further commentary in Section 11).

These shortlisted options were then further developed into programmes of transport activities (including capital improvements and maintenance/operation), and then further tested using the following:

- An assessment of the interventions required to ensure the strategic function of the Corridors was maintained under each scenario
- Strategic transport modelling using the Tauranga Transport Model (TTM)
- Economic analysis to provide a rough order estimate of programme costs and their indicative economic efficiency rating
- Ideas and considerations of the UFTI options from a Māori lens
- A more detailed land use and constraints analysis via the Planning Assessment report
- Testing through stakeholder workshops.

The core assumptions used in testing the UFTI programmes are outlined in the Final Report, but I have listed those that I think are most critical here:

- Key land use and transport moves to support population growth – 269,000 in first 30 years and 400,000 in 50-100 years
- The progressive conversion to low or zero emission private vehicles and a 20% mode shift to PT (note this is not mentioned in the Final report core assumptions list)
- Allowing for 30 years of development based on the current agreed SmartGrowth settlement pattern and RPS
- Key strategic assets that will not move within the planned UFTI timeframes (eg: Port of Tauranga)
- Matapihi is to remain low density rural land use unless landowners change their aspirations for the land.

I think the use of these assumptions is broadly supported by the evidence, expert opinion, Iwi and stakeholder engagement - and therefore seems reasonable. However, there are four caveats that should be considered:

- High population growth rates over 50 years may be difficult to sustain (high historical rates notwithstanding), however, I believe this uncertainty risk is partly overcome by adopting population trigger points
- Mass transit is very dependent on achieving the critical urban densities of 30 dwellings per hectare to make it viable. There is a complex relationship between lead infrastructure provision and attaining the necessary densities, which will need further analysis and sensitivity testing at the next stage
- Low/zero emissions vehicle and mode shift underpins achieving both the accessibility and climate objectives. However, there is a lot of uncertainty about how amenable Tauranga people will be to change (PT and cycling mode share levels have stayed stubbornly low) and the rate at which vehicle technology will change. This is a major implementation challenge
- Retaining the same settlement pattern for 30 years seems overly restrictive and may undermine the achievement of the long term desired settlement pattern. I can understand the need to provide planning certainty and utilise 'sunk' infrastructure investment, but this assumption would benefit from further sensitivity testing. The assumption risk is partially addressed though the design concepts (p62-63 of Final Report) which changes the target densities in the SmartGrowth areas from 15-17 dwellings per hectare to 30 dwellings per hectare and indicates that if growth cannot occur in the eastern SmartGrowth areas (eg: Te Tumu) then the preference is to bring forward alternative growth areas in that eastern corridor rather than revert to growth in the SmartGrowth western corridor – this will require changes to the SmartGrowth Strategy.
- Land prices and market forces in the housing market – there is an inherent assumption in the spatial planning and housing development plans that the four proposed urban centres will be equally attractive to house buyers and developers. However, I think there is a risk that the relative price of land will influence the rate of development and (as there has been in the past) there will be market pressure to open up new areas with lower land prices. In this regard, urban development in the north (eg; Te Puna) will be high cost, due to the value of Kiwifruit orchards, compared with the land to the west. This could be mitigated to some extent by the use of powers to acquire and assemble the necessary land. However, I think some sensitivity analysis needs to be carried out around this issue to understand its significance and trigger points.

The results of the economic analysis and transport modelling are summarised in the Final Report, and I have reviewed these in more detail in later sections of this report. The

‘Connected Urban Villages’ option has the highest economic efficiency and overall best fit with the benefit measures. The overall estimation of benefits is based on the transport modelling and this looks to be soundly based, albeit at a broad level. This view is reinforced because some of the findings are also well aligned with other similar integrated studies of high growth cities:

- A significant increase in vehicle kilometres travelled (VKT) and consequent decline of levels of service occurs under all options – no options achieve free flowing peak vehicle movements
- Programmes with more concentrated landuse have better accessibility, especially if supported by PT and walking/cycling.

Preferred option and actions to deliver programme

Further analysis and stakeholder feedback on the shortlisted options subsequently resulted in the development of a hybrid ‘Connected Centres’ programme as the preferred option. This option emerged from the sensitivity analysis which essentially optimised the economic efficiency and wider benefits of the ‘Connected Villages’ and the ‘Two Main Centres’ options, and pushed the more expensive ‘Rail Enabled’ growth option to beyond 30 years.

The Connected Centres option was then further refined/optimised through further technical input, detailed design work, key stakeholder review and engagement with *He Manukura* (in the latter case it is noted that this is an initial high level assessment and further engagement is required). The design concepts and principles are set out in the Final Report and are grounded on sound transport planning evidence and experience.

As noted above under shortlisting, there are significant assumptions and risks that are inherent in the preferred Connected Centres settlement pattern. These have been mitigated to some extent by the design concepts and planning principles adopted as part of developing the preferred option, and are discussed more fully in the next Section 8.

Detailed and staged implementation packages for the Connected Centres option have then been developed, and modelled and costed. These packages provide a comprehensive and appropriate level of detail to proceed to the next stage.

Finally, throughout the assessment and refinement of options and alternatives, UFTI have also looked at the impacts of options on different ‘persona’ or people profiles. This customer lens is a very useful cross-check on the cumulative impacts of the options, including the preferred Connect Centres option, and has the effect of making it more real for decision makers and the community.

8. Assumptions and risks

I have already discussed a number of assumptions and risks in earlier sections (also see Section 11 and Appendix 2), and this section consolidates these risks and potential mitigations in Table 2 and introduces some others that I believe should be considered further.

Of the nine assumptions and risks in Table 2, I highlight four below that will particularly need to be actively managed:

- Partnership with tangata whenua - the lack of engagement and resourcing of Iwi to contribute to spatial planning has been strongly criticised by tangata whenua. This creates risk to UFTI, and therefore SmartGrowth. In particular there are significant Maori land and cultural interests in the proposed growth areas that need to be resolved in a positive way in order to progress.

Table 2 – Critical assumptions and risks

Risk	Description	Mitigation
Partnership with tangata whenua	The lack of engagement and resourcing of Iwi to contribute to spatial planning has been strongly criticised by tangata whenua. This creates risk to UFTI. In particular there are significant Maori land and cultural interests in the proposed growth areas that need to be resolved in a positive way in order to progress.	There is an opportunity to work more closely in partnership in the future as UFTI is further refined and the spatial plan developed.
Population growth estimates	High population growth rates over 50 years may be difficult to sustain (high historical rates notwithstanding). Population growth rate assumptions are the key driver of housing, employment and transport needs in PBC, and therefore the biggest uncertainty and risk.	This uncertainty risk is partly overcome by UFTI adopting population trigger points. However, these assumptions will need ongoing sensitivity analysis to understand the timing of infrastructure packages.
Mass transit and urban density	Linked closely with the population growth rates issues are the assumptions about urban density. At a broad level the Connected Centres programme aims to achieve the densities (30 dwellings/ha) to make mass transit viable in the longer term. However, there are complex assumptions about timing of lead infrastructure and attaining the necessary urban densities to be resolved.	Further sensitivity analysis will be required on the timing of public transport investment to inform more detailed investment packages and business cases. This is intimately linked with the settlement pattern risk below.
Reducing greenhouse gas emissions	Low/zero emissions vehicle and mode shift underpins achieving both the accessibility and climate objectives, but there is a lot of uncertainty about how amenable Tauranga people will be to change (PT and cycling mode share levels have stayed stubbornly low) and rate at which vehicle technology will change – this is a major implementation challenge.	Ensuring a step change in mode shift will require a concerted programme to change public perception and some tough decisions about lead investment. While low emission technology will be primarily driven internationally, UFTI should plan to be a 'fast follower'.
Settlement pattern for the first 30 years	Retaining the same settlement pattern for 30 years seems overly restrictive and, notwithstanding the agreed design concepts around increasing urban densities and if necessary modifying the SmartGrowth patterns in the eastern corridor, this assumption may undermine the achievement of the long term desired UFTI settlement pattern. The nexus of this issue is achieving the urban densities needed to support PT mode shift - this is a critical in the medium to long term and linked to the land price issue – below.	These assumptions could benefit from further sensitivity testing to understand the significance and trigger points. Retaining the integrity of the long term settlement pattern and in particular remaining resolute on the urban density and PT mode shift elements will be a test of good governance.
Natural Hazard constraints	The categorisation of constraint areas, especially those with tsunami and liquefaction risk as 'go carefully' rather than 'no go' areas, may not adequately reflect the risk. There is also community sensitivity on this issue because of the existing development in some of these areas and because of the greater level of investigation required to provide the granularity needed for proper planning. Similarly, there are questions over whether the high urban densities can be achieved in areas like Tauriko West due to topography.	The potential risks associated with urban settlement in these areas and the implications for achieving the desired settlement pattern, means that further work needs to be undertaken in the next stage of joint spatial planning work.
Disruption and Covid-19	Within any future scenario planning the most difficult risk to mitigate is the unexpected event or disrupter. Typically these are the result of external economic shocks, natural disasters or technology change. This has been clearly illustrated by the Covid-19 pandemic, where the macro economic impact is still very uncertain, but most economic commentators are predicting a quite rapid 'v' shaped recovery – tending to suggest in the Covid19 scenario the long term population and economic trends are most probably still sound.	SmartGrowth partners need to monitor and understand potential disruption risk and be ready to adapt quickly. Noting that the Connected Centres option is more resilient to disruption than the existing Dispersed Growth option, and that the programme timing can be adjusted if the rate of population and economic growth slows.
Land prices and market forces in the housing market	There is a risk that the relative price of land will influence the rate of development and there will be pressure from the housing market to open up new areas with lower land prices. In this regard, urban development in the north (eg; Te Puna) will be high cost, due to the value of Kiwifruit orchards, compared to the land to the west.	Could be mitigated to some extent by the use of powers to acquire and assemble the necessary land. However, some sensitivity analysis needs to be carried out around this issue to understand its significance and trigger points.
Delivery and implementation risk	There are two interrelated implementation risks: • Financing – the need for additional funding and revenue sources, and in particular the need to 'capture the value' of urban growth • Governance – the purely collaborative approach of SmartGrowth will struggle to resolve the major urban growth tensions.	If alternative funding and financing is to be pursued and/or streamlined planning processes to be required, then some form of urban development authority (UDA) should be considered. Even without this driver a more formal partnership with delegated programme level decision making could be considered in order to provide stronger change leadership.

- SmartGrowth and Connected Centres settlement patterns – retaining the SmartGrowth settlement pattern, even with agreed modifications, may be overly restrictive. In particular, the achievability of urban densities and requisite frequency of mass transit services is a critical risk, as the ability to overcome land prices and market forces in the housing market.
- Natural hazard constraints - especially understanding tsunami and liquefaction risks at more granular level, and determining if the high urban densities can be achieved in areas like the Western and Southern Corridors due to topography.
- Delivery and financial risk – this is discussed more fully in Section 9 and 10. However, in summary there are two interrelated implementation risks:
    - Financing – the need for additional funding and revenue sources, and in particular the need to 'capture the value' of urban growth
    - Governance – the purely collaborative approach of SmartGrowth will struggle to resolve the major urban growth tensions and a more formal partnership with delegated joint decision making arrangements may be required for success.

9. Economic and financial case

This section reviews the economic and financial cases that have been developed to assist the option selection, demonstrate 'value for money' of the preferred option and ensure that there are adequate means of funding the programme.

The economic case (Beca report) pilots NZTA's Indicative Efficiency Rating (IER) tool. The application of the IER is reviewed in Section 11 – NLTF Conformity Assessment – and overall I conclude that it is 'fit for purpose'. The economic case has also been peer reviewed by NZIER and they conclude:

- The input assumptions made in the economic analysis are clear and actively reported (this is not always the case with all economic business cases we have reviewed).
- The economic case meets the broad requirements of an economic case in a programme business case as described by Treasury's guidance
- The analysis was systematic and each of the programmes was evaluated in a common and consistent approach, which is critical for ranking options and informing decision makers.

In summary the overall indicative efficiency range is 1.0-1.4, and this equates to a IAF 'low' efficiency score (L). Put alongside the 'high' results alignment this gives an overall IAF score of 'HL'.

While the economic case is well made for the PBC stage the following weakness or areas for improvement to be addressed during the next stage of UFTI have been identified:

- The cost estimations still have a large accuracy band and the future cost estimation needs to improve this and do it in a more transparent way (see Section 11 for more detail)
- The wider economic benefits (WEBs) were not quantified as part of the IER, and these benefits could be substantial if the qualitative analysis is a good indicator (eg; improved accessibility and employment, agglomeration).
- There is an opportunity for doing more sensitivity analysis, especially around constraints such as urban density and mass transit, tsunami risk, land use constraints and the restrictions on the settlement pattern in the first 30 years (see Table 2).
- Some incremental analysis has been done (limited by the IER tool and the detail available at the PBC stage). However, as the packages are further developed, refined and prioritised, then further incremental analysis will be necessary.

The NZIER financial case report sets out the broad parameters that need to be considered around funding and financing. The report provides a good summary of the advantages and disadvantages of the tools potentially available to the UFTI partners and I agree with the overall conclusion that it is premature to be making decisions on these at this PBC stage.

The report looks at two potential approaches to help understand the materiality of the private investment cost. The results are very preliminary but give some insight into the affordability issues the UFTI partners will face. I support the report's conclusion that in the next phase of the business case development the following inputs are critical:

- A detailed analysis of the affordability and timing of the base case
- Comprehensive development of the project sequencing and phase of the projects that combine to form the programmes.

However, I would emphasise that this should be done as a series of packages and detailed business cases.

The critical question that the financial case report does not, in my view, provide sufficient guidance on is whether there is a gap between funding likely to be available from traditional sources (ie: rates and NLTF) and the funding requirements of the preferred Connected Centres programme. As the report notes, these traditional sources are usually cheaper (lower cost of capital) and easier to implement. However, this is not a just question of the total amount but of also meeting any peak funding requirements and the changing mix of OPEX and capital.

Information from the UFTI team indicates that the total amount of funding needed in the next 50 years is similar to the average spend in the last 20 years (ie: $140m per year) – and so, everything else being equal, this is feasible. However, there is a challenge around funding the peaks of expenditure in the first decade (2020-30) and the fourth decade (2050-70). This will require the consideration of taking on extra debt (public or private) and additional revenue sources.

In terms of debt, the Councils are already close to acceptable debt levels and there are likely to be other major 'calls' on this debt (eg: three waters) in the medium to long term. Public Private Partnerships may be an option for larger infrastructure projects.

However, funding lead infrastructure via debt, whether public or private, is one thing but funding OPEX, especially PT in the early stages before patronage reaches more sustainable levels, is a different challenge that usually needs more revenue.

The SmartGrowth partners may therefore need to seriously consider additional revenue sources such as:

- Additional Crown funding share – such as 'NZ Upgrade' or 'Shovel Ready' funding
- New tolls or congestion charging
- Use of the local and regional asset base (eg: use of dividends from the Port of Tauranga, or capital raising off share values and other assets)
- Value capture – targeted taxes or rates to capture some of the private economic benefits.

These financing issues could potentially have major flow-on implications for the complexity of implementation (management case) and in particular the SmartGrowth governance and decision making framework needed. This is discussed further in the next section on Delivery Risk.

The financial case also raises the option of a regulatory asset base model (RAB) which if adopted would inevitably lead to changes in the governance arrangements.

10. Feasibility and delivery risk

In Part 4 – Delivering the Connected Centres programme – the Final Report sets out the management case or implementation plan for the next 10 years. The report notes that 'It requires multiple organisations with different mandates and funding priorities, to operate collectively to achieve a common goal over thirty years, while the operating environment (e.g. available information, certainty and risks, development viability, partner priorities, technology and funding and financing tools) changes and evolves constantly around them'.

The proposed implementation plan is developed in a series of packages containing the 'key moves' of multiple initiatives (their status and timing) that are required to implement them. Six of these of packages relate to the key corridors and urban centres:

- Central Corridor urban form and transport corridor package
- Western Corridor package
- Freight access to the Port and the upper North Island package
- CBD and Mt Maunganui package
- Northern Corridor package
- Eastern Corridor package.

Five further packages cover key cross-cutting issues:

- Enhancing the role of tangata whenua as a treaty partner
- Sub-regional housing supply and affordability initiatives
- Sub-regional PT, mode shift, and emission reduction initiatives
- Other transport, policy, and pricing interventions
- Portfolio management, funding, and financing package.

The packages are comprehensive and are consistent with the issues and principles identified in developing the preferred Connected Centre programme. The initiatives proposed, and timing of those initiatives, seem realistic.

The implementation plan also briefly covers other key elements of implementation at a high level (eg: stakeholder engagement, consenting strategy) – but acknowledges more work is needed in these areas. It also includes a section on benefit realisation, which will be critical for ongoing monitoring and reporting.

Risks and uncertainties

Table 14 of the Final Report outlines the implementation assumptions and uncertainties that need to be monitored and managed. This table correlates well with my earlier assessments of critical UFTI assumptions and risks (see Section 8 and Table 2 above). However, as I noted in Section 8, there are four risk areas that I believe will need special focus by SmartGrowth partners as part of implementation, namely:

- Partnership with tangata whenua
- SmartGrowth and Connected Centres settlement patterns
- Natural hazard constraints
- Delivery and financial risk.

Governance

The WBoP has developed over the last 20 years a mature collaborative model of governance based around SmartGrowth. It has recently been adjusted by agreeing to bring

in Ministerial representation to the governance table. Furthermore, I understand SmartGrowth is in conversation with Iwi about tangata whenua having a greater partnership role – potentially linking to the emerging Iwi co-management structures.

The UFTI implementation plan thus depends on the effectiveness of the strengthened SmartGrowth governance model. The plan proposes the use of the PASCI[2] framework to provide greater role clarity, and I believe this is a helpful suggestion.

However, there are six possible reasons why I think that UFTI and the SmartGrowth partners need to seriously consider alternative governance arrangements and give them greater priority in their portfolio management, funding, and financing package:

- The size and complexity of the leadership challenges ahead and rapid (if not radical) change required to achieve UFTI's objectives will need strong leadership, including the need to manage greater political tensions and opposition from interest groups
- The need to consider alternative funding, debt and revenue streams and to manage the commercial imperatives that come with them (eg; PPPs or RAB)
- If the BoP Regional Council were to consider using the region's asset base to support UFTI programme (especially PT) then another form of governance may be required
- The need for additional regulatory and planning powers to streamline land acquisition/consolidation and RMA consents and plan changes
- Many of the new delivery mechanisms discussed above will require a very different set of skills at the governance (and executive) level, in particular the ability to manage and share financial risk
- Lessons from other successful cities who have created a single entity to lead similar change (eg; Hobsonville in Auckland and Springfield in Queensland – refer Comparative Places Technical report).

Specifically, if alternative funding and financing is to be pursued and/or streamlined planning processes to be required, then some form of urban development authority (UDA) should be considered. Even without this driver a more formal partnership with delegated programme level decision making could be considered in order to provide stronger change leadership.

My conclusion is that effective governance is the biggest delivery risk.

11. NLTF conformity assessment

This section addresses the conformity of the PBC with NZTA's requirements under the NLTF and IAF:

A. Eligibility for NLTF and other funding

a) NLTF funding eligibility

I have reviewed the cost estimates spreadsheets and list of activities (ie: improvements, maintenance and operations) and based on the descriptions they are all eligible activities for funding under the NLTF.

b) Other government funding - transport

A number of projects within the UFTI preferred programme have either been committed, or are being considered, through other government funding sources:

2 Perform, Accountable, Control, Suggest, Inform.

- Improvement of SH2 Omokoroa to Tauranga is committed under the NZ Upgrade Programme (NZUP). The TNL section is going to tender shortly, but the Omokoroa to Te Puna section is still at the planning phase.
- The Rangiuru Interchange is being considered under the Provincial Growth Fund (PGF)
- Papamoa East Interchange is being considered for the Housing Infrastructure Fund (HIF). However, I understand there are iwi issues to be resolved before this could proceed.

I also understand there are some roading maintenance/operations upgrades in Tauranga and that multi-modal improvements on the Te Papa peninsular are being considered under the 'Shovel-Ready' funding programme, but no details are available at this stage.

I have not assessed the eligibility of these projects under these alternative funding arrangements, but they would all be eligible for the NLTF in due course (ie: the alternative funding is about bringing projects forward).

c) Other government funding - housing

It is outside the scope of this peer review to assess eligibility of the housing proposals for government funding (ie: projects that are not eligible under NLTF). However, MHUD and Kainga Ora have reviewed the PBC and have agreed that it aligns with government policy, and the three key priority activity areas:

- Priority A: Portfolio management of affordable and social housing
- Priority B: Project delivery of affordability housing (firstly in Te Papa Peninsula)
- Priority C: Sub-regional social and affordable housing action plan.

B. IAF assessment, results alignment and investment profile

I have reviewed the PBC results alignment assessment in the UFTI Final Report (PBC) and agree with the overall conclusion that the investment profile is HL for the preferred Connected Centres Programme.

Given the indicative efficiency range of 1.0 -1.4 this equates to a IAF 'low' efficiency score (L) – see commentary on consistency with EEM below.

In this regard, the wider economic benefits (WEBs) were not quantified as part of the IER, and these benefits could be substantial if the qualitative analysis is a good indicator (eg; improved accessibility and employment, agglomeration).

The results alignment analysis (UFTI Final Report, Table 12, p83-87) is thorough and comprehensive. I note there are some challenges around addressing resilience (especially coastal hazards). However, the other aspects of this "access policy result area" clearly score 'high' so this should not change the overall 'H' rating.

I also note that UFTI has studiously applied the investment hierarchy as required by the IAF – close inspection of the strategic journeys work and the detailed programme proposed demonstrates careful utilisation of existing system capacity before proposing capital improvement. Furthermore, the very nature of UFTI as an integrated transport and spatial planning process is an exemplar of applying the hierarchy.

Section 6 – Policy Alignment reviews alignment with the wider policy environment, in particular the MoT outcomes framework, Arataki and the Urban Growth Partnership.

C. Consistency with EEM and cost assessment methodology

NZTA is in the process of reviewing its Investment Decision Making Framework (IDMF). One of the proposals is to introduce a "first cut BCR" which would form an early assessment of economic "value". With NZTA's approval, the UFTI economic case has piloted one of these new tools - called the Indicative Efficiency Ratio Tool (IER).

The tool has been developed to generate a measure for efficiency where a programme does not yet have a calculated BCR using traditional EEM methodology. It is designed to provide an opportunity to understand the likely range of benefits associated with potential interventions, such that any value for money risks (eg: BC lower than 1) can be identified early in the process. In particular, it is intended to be used at the PBC stage to support an assessment for inclusion in NLTP, where there is no existing efficiency (BCR) assessment available. More detailed analysis of the BCR is still expected in later stages of the business case development and before any NLTF funding is made available for a project.

The key investment questions that the IER is intended to address are set out in Figure 1 below.

There is no detailed methodology or previous experience that can be used to benchmark the IER approach, and thus it is not possible to peer review conformity in the normal way. Rather it should be seen as a new approach that is in development, and this pilot is part of that development. I have therefore broadly assessed the UFTI IER against the key questions, and looked to identify any weaknesses in the way it has been applied.

Firstly, the IER was developed in a collaborative way with a range of transport experts being involved in workshops and challenge sessions to estimate the costs and benefits of groups of activities. These included rail experts from KiwiRail (note that the Metro Rail Technical Report did not give cost estimates but that these were made available through the interactive workshops). The consultants (Beca) also liaised with NZTA (Caroline O'Fallon) as they developed and tested the simplified procedure to give effect to the IER. Experts from the UFTI partner organisation peer reviewed the costs and benefits estimates, and comments received were addressed and estimates further refined.

Secondly, I discussed the approach used in detail with Beca (David Silvester pers. com.). The procedure used is summarised in the Economic Case report, especially in Appendix A. This procedure was used to assess the base case or do-minimum against the other short listed options – and ultimately to assess the preferred Connected Centres programme. There was some discussion with NZTA on the appropriateness of using a "do-nothing" option, but this was deemed unrealistic (given existing transport problems and committed projects in the pipeline), and a base case was developed which included committed projects and projects 'likely' to proceed in the next 10 years – this approach is not unusual and seems appropriate for the UFTI PBC.

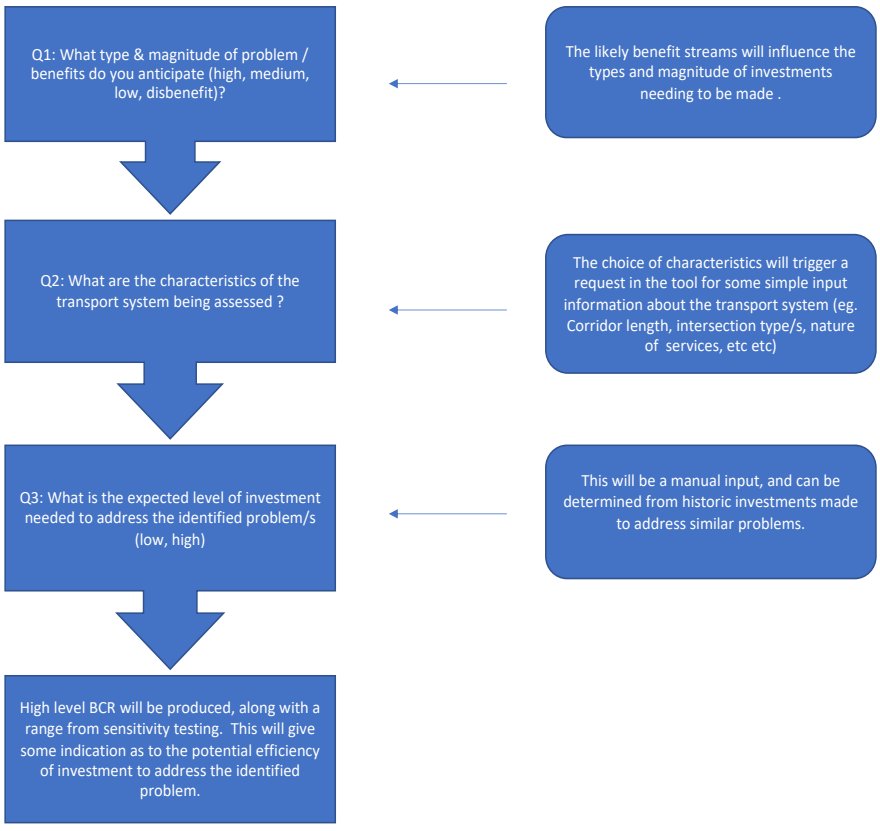
I also reviewed the detailed costs and benefits spreadsheets, and while noting that I am not an expert in such estimations, the information and assumptions look reasonable and the compilation thorough.

I would summarise the methodology as a spreadsheet based approach (this is one of the implementation options for an IER identified by NZTA). Each of the IER questions in Figure 1 was systematically addressed through these spreadsheets, using the following methods:

- Benefits streams were developed for groups of related activities – both primary and secondary benefits were identified, and linked to growth and monetised over a range of time periods

- Costs were identified for groups of related activities – estimates were made for each activity based on typical costs for that activity and then turned into a cost per kilometre (based on consultants experience and using similar type programmes eg; Auckland Supporting Growth Alliance and Let's Get Welly Moving):
    - Major structures (eg; bridges and stations) were identified and these estimated separately
    - Major risks that could increase costs significantly (eg; soil conditions) were identified and cost estimates adjusted to account for this
    - Maintenance and operating costs were also estimated on a similar 'typical' costs basis (eg: after considering a range of NZ cities, Wellington PT costs were used because of similar fleet size, population and geographical spread)
- Incremental analysis was undertaken by adjusting the timing and staging of various activities
- Sensitivity analysis was undertaken through the assessment of the shortlisted programmes, comparing each to the base case and particularly to programmes 2 and 3. This process enabled the development of a 5th hybrid programme which is now the preferred option
- The process enabled rough order costs to be developed for about 40 groups of activities, and for the shortlisted options and the preferred programmes as a whole, with an accuracy estimate of +50% or -10%.

Figure 1 - Indicative Efficiency Rating Tool Questions



My overall assessment was that the approach used, and the results derived, are fit for purpose for a PBC of this broad nature. I believe it provides a sound basis for making high level choices about the viability of the urban form proposed and the feasibility and staging of major activities under the programme. Furthermore, I think it strikes a balance between

optimising a comprehensive programme at a 'point in time', where there are inevitably a large number of factors and uncertainties to be considered, and the cost and time of doing a detailed economic efficiency assessment for each activity. The latter detailed BCR approach may appear more accurate but would need considerable refinement and a lot of additional work to be undertaken as the various packages were further developed.

In my view the weakness in the approach used was around transparency of the process. I would like to see a more deliberate audit trail of who was involved (and their expertise) and documentation of the key trade-off decisions and assumptions made in developing the detailed spreadsheets of benefits and costs. In future, a specific peer review by an expert estimator would also add credibility to the results.

12. Conclusion

My overall conclusion is that the UFTI Programme Business Case is sound and the approach taken reflects best practice as an innovative urban form lead business case. I have identified a few areas of weakness that will need further improvement in the next stages, but none of these undermine the overall credibility of the UFTI Final Report.

Appendix 1 – Summary of NZTA peer review requirements

The NZTA's peer review requirements for improvement activities involve the following steps and questions:

- Conformity – is the programme eligible for funding and does it conform with NZTA requirements?
- Credibility – does the programme adequately identify the issues, results, benefits, costs, assumptions and risks?
- Do-minimum and selection of alternatives – is the do-minimum selected and options chosen realistic and feasible, and do they include alternative transport modes and low cost options?
- Results alignment – is the results alignment for activities correct?
- Cost estimates – are cost estimates realistic and do they meet the parallel estimates process requirements?
- Cost-benefit appraisal – does the CBA conform with the EEM and are there any outstanding issues, departures, defects or omissions? Are the options mutually exclusive and has appropriate incremental assessment been done? How well have wider economic benefits been considered?
- Risk assessment and mitigation – has a full risk assessment been done and realistic mitigation measures considered?
- Sensitivity analysis – has the sensitivity of critical aspects of the programme been adequately covered-off, especially key data and assumptions that underlie the delivery of the desired outcomes?

Appendix 2 - UFTI technical and support reports peer review

1. Phase 1 – Eastern Corridor Report

Purpose

The purpose of phase 1 of the Eastern Corridor project is to identify whether there is a need for an additional urban growth area in the Eastern Corridor of the Western Bay of Plenty. This report therefore reviews housing and business demand and supply in the sub-region and identifies whether current capacity, plus that planned for the future, are adequate to cater for the anticipated growth. This report also provides a preliminary assessment of the Eastern Corridor as a potential future urban growth area against the objectives of the SmartGrowth Strategy.

Peer Review Findings

The report is set firmly in the SmartGrowth framework of growing 'up and out'. The population and housing growth predictions seem plausible:

- There is potential in Eastern Corridor for growth
- Growth in Eastern Corridor needed in medium term, but may be needed earlier if urban land is not released as planned
- The assessment favours growth in existing Te Puke settlement and has been re-assessed as part of UFTI
- Assessment of natural hazard resilience seems a bit limited (eg: it does not cover tsunami risk).

2. Tools for increasing the social and affordable housing in the Western BoP

Purpose

The purpose of the report is to identify strategies that would help meet current and future needs for right-sized social and affordable housing in the right places, in Tauranga and the Western Bay District (Western Bay).

Peer Review Findings

The report provides common definitions for social and affordable housing that can be applied in UFTI. It also clearly defines the problems and trends toward less affordability in Tauranga and Western BoP. Its discusses the role of central and local government, and suggests strategies that could be adopted by both to address the problems.

It thus provides a sound basis for the UFTI programme and some of its strategies are especially relevant when considering UFTI objectives around affordable housing. The planning strategies have emerged in the UFTI report, and others should be considered as complimentary measures to UFTI.

3. BoP regional freight flows study

Purpose

The purpose of the study is to inform UFTI and the Bay of Plenty Regional Council about the existing freight context and potential changes in freight movement that would need to be

considered and planned for in future planning studies such as UFTI, the Regional Land Transport Plan and Tauranga Transport Model scenarios.

Peer Review Findings

The study is a credible source of data and trends for both freight routes and flows, and the mix of commodities transported. The report makes recommendations about modelling scenarios, including disruptive scenarios that should be considered, eg: significant move to rail freight. This is an important foundation document for the PBC.

4. Comparative places – parts 1 and 2

Purpose

The purpose of this work is to identify comparable cities, areas, and suburbs to the Western Bay of Plenty sub-region that have undergone growth and intensification over the last 15-20 years. The work considers the planning tools, levers, and decisions that were used and made to achieve the current urban form.

Peer Review Findings

The study is designed to uncover what works and what doesn not work in planning for growth. Cities studied offer common lessons that appear to have been applied to UFTI:

- Bold vision, leadership and sustained implementation commitment
- The importance of lead, place-shaping infrastructure
- Integrating infrastructure, especially transport, as this is a key urban form driver and shaper. This includes having agreed infrastructure priorities
- A focus on activity corridors that integrate transport and long-term lane use (eg higher densities around nodes and public transport hubs)
- The need for a range of housing types and the provision of affordable housing
- A single or oversight governance entity
- Public and private investment
- Having ‘anchor’ projects which act as a catalyst for further development (usually based off a government(s) agencies or social infrastructure/building)
- Creating employment hubs (it is not just about housing or zoning land for industry) through targeting particular industries that will bring economic benefits and influence future labour force training
- Bringing people into a city or place by putting major attractors there (eg hospitals and universities)
- Comprehensive approaches to development that include social and physical infrastructure and place making/city shaping initiatives
- Importance of partnerships, cross government collaboration, aligned planning and investment implementation
- Having one brand and one narrative or story around the future of the area
- Effective community engagement from the ground up.

5. Waikato and BoP metro passenger service opportunities

Purpose

This KiwiRail report (and its extract on WBoP) was in response to a request for the following information:

- What can be accommodated on the rail network for the identified potential rail journeys – identify the rail infrastructure requirements and expected journey time/train speed for:
  - 15, 30 - and 60-minute frequency
  - a 50% or 100% increase in freight demand on the same network
  - whether there are suitable sites for stations already along the identified corridors and in KiwiRail ownership.

- Provide initial cost estimates for additional infrastructure required at P50 level of accuracy.

Peer Review Findings

The report is clear that it is unable to provide the information at the level of detail requested. This is because of lack detail/definition in the scope and the large range of unknowns and uncertainties. The authors are clear that 'the costs are indicative generic values not specific to the location' and that 'no funding decisions should be made on reliance of the points made'.

Notwithstanding, the report provides a good overview of the constraints, issues and opportunities facing the rail network in the two regions. I understand the UFTI preferred programme includes rail in out-years (dependent on population growth triggers) and the cost estimates have been further refined for this option.

6. Hewletts Road optimisation

Purpose

The Urban Form and Transport Initiative (UFTI) has identified the Hewletts Road corridor area near the Port of Tauranga as one of the critical projects for alleviating congestion, and optimising the corridor is the first stage of intervention to improve conditions to move people and freight more efficiently. The objectives for the investigation are to identify a range of measures that could be implemented quickly in preparation for the completion of the Baypark to Bayfair link (B2B) in 2021, and that aim to either maintain or improve travel conditions along the corridor.

Peer Review Findings

The problem is well defined, and although they have relied on slightly older growth data and modelling, I think the findings are still valid. They have developed both short term (low cost) and long term options to address the problems which are plausible and practical. The options need to be checked for alignment with the UFTI preferred programme.

7. High level spatial plan

Purpose

This report is intended assist with defining the different scenarios for urban form ('building up' or 'building out') within the sub-region. The high-level urban form scenarios outline land use development options to support liveable communities in the Western Bay of Plenty. A preferred long term urban form for the sub-region needs to be identified that provides for the projected growth in population, housing, community facilities and employment while responding to the local context and constraints.

Peer Review Findings

The methodology is sound (based on European Foresight Platform and similar to WRGF and Auckland/Hamilton Corridor) and the scenarios are plausible, internally consistent and useful in terms of UFTI's needs. Population and housing growth predictions are high, but this aligns with historical trends and is appropriate for UFTI (ie: which proposes population trigger points rather than dates for implementation). The report is clear that this work is part of a wider spatial plan being developed for the region, and while there is a risk of mis-alignment of UFTI and the spatial plan, this is highly unlikely given the collaborative approach (if there is any risk it will be around the three-waters infrastructure). The report goes on to make recommendations about how the scenarios can be evaluated and refined and this advice appears to have been followed by the UFTI team.

8. Summary of economic information

Purpose

This report summarises the economic information currently available about the Western Bay of Plenty sub-regional economy to assist in informing UFTI. The report draws solely on existing information, and:

a) Summarises key economic information.
b) Comments on the currency and reliability of the information.
c) Suggests where and how information could be updated or improved.

Peer Review Findings

The report provides useful and accurate information as key inputs into the UFTI process. In particular it analyses population growth and travel to work information which is a critical input to many aspects of the UFTI work. It notes the inherent difference in forecasts from NIDEA compared with StatsNZ Census data. It uses 2013 census data and strongly recommends that this is updated for the 2018 Census. I have subsequently confirmed the PBC uses NIDEA forecasts updated for the latest Census.

9. Tangata Whenua perspectives on growth management

Purpose

This report is a desktop study which collates tangata whenua perspectives relating to urban growth and associated infrastructure and transport needs within the Western Bay of Plenty sub-region. It is intended to inform and guide the UFTI programme, in particular, constraints mapping and engagement with tangata whenua. It does not, in any way, attempt to articulate values, interests and aspirations of individual Iwi and hapū or alleviate any obligation to consult directly with hapū and Iwi.

Peer Review Findings

The report provides a comprehensive background to the issues facing tangata whenua and makes recommendations on next steps. The assessment of iwi planning documents, treaty settlement and other relevant documents is thorough. The proposed approach to working in partnership, resourcing iwi to participate and involving them in developing the cultural constraints mapping has been adopted with mixed results – see commentary in subsequent reports below.

10. He Manukura – Reports 1 and 2

Purpose

Two reports (including a presentation on survey insights) were developed by *He Manukura* to order to review UFTI reports, provide cultural insights and recommend ways of advancing tangata whenua aspirations through UFTI.

Peer Review Findings

The reports demonstrate an intention for active engagement with iwi and an open dialogue. This report included a review of the cultural overlays (and their reflection in constraints mapping), a survey of tangata whenua engagement, insights on how to improve engagement and recognition of aspirations through UFTI processes and governance.

The report is highly critical of both the lack of previous engagement (although the survey sample size is small), the time constraints in preparing the report and lack of treaty partnership in the way UFTI has been developed to date. I think the report provides useful recommendations on the way forward. However, these will need to be adopted for the next stages of UFTI and the spatial plan.

On the other hand, the cultural maps developed are quite detailed and advanced compared with others I have seen. Furthermore, the report concludes that the 'connected urban villages are more conducive to our values and timeframes' which appears to align reasonably well with the UFTI preferred programme of Connected Centres.

11. Targeted community insights

Purpose

The purpose of the community insights report is to provide an important authentic connection to people and communities. This will result in a better understanding of what people value in terms of how they like to live, work, play, learn and move in the Western Bay of Plenty sub-region on order to support the UFTI programme.

Peer Review Findings

Thirty-three documents were reviewed in total reflecting customer and community insights undertaken by the four UFTI partner organisations to develop an understanding of what people value. This provides a comprehensive summary of community views and aspirations.

It does not appear to cover any insights from UFTI specific community engagement in 2019 and 2020. However, the general themes are well reflected with the UFTI reports (Foundation, Interim and Final).

12. Public transport mode shift scenarios

Purpose

The aim of this report is to outline a suite of potential interventions and triggers that are likely to be required to achieve a range of future public transport mode share scenarios over the short (10 years), medium (11-20 years) and longer term (21-30 years). Note there was an agreed narrowing of scope of this report to focus on just PT, rather than alternative modes such as walking and cycling.

Peer Review Findings

This is a core base document for UFTI. The report undertakes a comprehensive review of actions and options that could be considered to drive mode shift in WBOP. It then prioritises these into short, medium and long term.

The scenarios developed are well aligned with UFTI outcomes and provide useful building blocks for the broader UFTI scenarios considered. The two base cases are bus-based and look realistic in terms of what is achievable in the medium term given capacity and other constraints. The higher 20% increase in PT mode share will require a step change into mass transit options – the report sets out the triggers for such a step change.

13. Constraints mapping report

Purpose

This work identifies areas that are not suitable for urban development ('no go' areas) and other areas where there are constraints that need to be carefully considered as part of spatial planning work ('go carefully' areas).

Peer Review Findings

This report, and the methodology that sits behind it, are a fundamental building block of the UFTI PBC. The approach is thorough and the results soundly evidence based (references are given, and expert opinion applied). The methodology has been refined/improved from similar spatial planning constraint mapping in NZ, for example, the report also identifies blue/green corridors which are opportunities for enhancing the environmental/cultural/ amenity of the urban environment.

The first concern with the application of the constraints maps is the categorisation of areas with tsunami and liquefaction risk as 'go carefully' rather than 'no go' areas. I can understand that there is sensitivity on this issue because of the existing development in some of these areas, and because of the greater level of investigation required to provide the granularity needed for planning. However, given the high risk of urban settlement in these areas I am of the view that this issue must be addressed in the next stage of joint spatial planning work in order to provide the certainty for future urban settlement.

The second concern relates to the constraints of steep topography in some of the proposed growth areas (eg; Tauriko West) and the risk that the desired urban densities cannot be achieved.

14. Allocation of dwellings and employment for UFTI programme modelling

Purpose

The purpose of this report is to collate and summarise the technical assessments undertaken in preparing indicative housing and employment land allocation across the subregion for each UFTI programme. The allocations are required for transport modelling using the Tauranga Transport Model.

Peer Review Findings

The report is an important building block for the modelling work that underpins the PBC. It sets out clearly the parameters, and more importantly the assumptions that sit behind those parameters, and how they should be used in the modelling. These all seem to be reasonable

and consistent – both with similar modelling and with other technical reports commissioned by UFTI.

15. Strategic function technical report

Purpose

The report has been developed to support the UFTI preferred programme in regard to the strategic functions required to deliver the preferred programme's urban form and transport spatial intent. It describes the user experience by mode and place - including trips made via passenger transport, active modes/micro mobility, trucks and cars. These descriptions are end-state, meaning they represent the intended future use of the corridor (eg: 50-100 years).

Peer Review Findings

The strategic journey descriptions are a critical underpinning to the UFTI preferred programme. They have been developed by building on the One Network Classification (ONC) and TUNS work and are consistent with these.

The classifications and descriptions generally provide sufficient detail for planning and investment purposes, although the 'activity streets' ONC classification seems to include everything possible (ie; not well differentiated). The report's tables provide greater clarity for the WBoP context. The report identifies issues and trade-offs that will need to be resolved and notes that it is an end-state description and a staged programme will need to be developed (ie; an updated network operating plan).

Appendix 3 - Developing the problem/challenge statements

The challenge statements in the Foundation Report describe the cause and effect of the housing and transport issues within the sub-region. For UFTI a number of the sub-regional issues are concentrated in three challenge or 'problem' statements.

The challenges identified for UFTI are:

Challenge 1

The lack of housing supply, suitable housing, transport choice, and a high dependency on private vehicles in the western Bay of Plenty restricts access to social and economic opportunities and is leading to poor social environmental outcomes.

Challenge 2

The ability to access community facilities, and infrastructure levels of service are not aligned with community needs and expectations and are impeding the ability of people to fully enjoy the Bay of Plenty lifestyle.

Challenge 3

Western Bay of Plenty's harbour geography and dispersed land use pattern (places of employment, education, and recreational locations), and increasing traffic volumes negatively impacts on the safe and efficient movement of people and goods.

These challenges focus on the sub-region's communities, housing and transport choices, and the communities' ability to access the many social and economic opportunities within the sub-region. The challenges also get to the heart of UFTI which is to develop an integrated land use and transport programme for the sub-region.

The challenge statements were derived from a combination of multiple strategies, plan, and business case developed for the sub-region. These include the:

- 2013 SmartGrowth Strategy
- Regional Land Transport Plan
- draft Tauranga Transport Programme Business Case
- draft Future Development Strategy
- Tauranga Urban Network Study
- BOP Regional Public Transport Plan
- WBOP PT Blueprint
- draft Tauranga Urban Strategy and Plan
- SH2 Tauranga to Waihi programme business case
- SH29 Tauriko for Tomorrow programme business case
- draft SH2 Te Puna to Omokoroa business case
- SH2 Eastern Corridor Study
- NZTA's Arataki – 10-year transport view
- Treasury's Living Standard Framework
- Ministry of Transport's Transport Outcomes Framework
- Various studies about Councils' community facilities and parks/reserves
- Various sub-regional cycling programmes.

The investment logic maps (ILMs) from business cases above and benefits, outcomes and key performance measures from the various strategies and plans were reviewed. From the ILMs and outcome statements, the UFTI project team identified the common urban form/ land use, housing, and transport themes to develop the UFTI challenge statements.
The challenge statements were further refined through the UFTI PLT and ERG, before being tested at a SmartGrowth Forum workshop. As the challenge statements were being refined, key aspects of the evidence to support the cause and effect within each was gathered. Most of the evidence was available within the existing business cases, strategies, and plans.

Some ‘new’ evidence was generated through UFTI to help support the challenge statements including:

- Using analysis from the Tauranga Transport Strategic Model (TTSM) to show the estimated accessibility communities would have by mode in 2031 under a business as usual scenario which extrapolated the current policy and investment setting out
- Collating TomTom travel data on key journeys within the sub-region and illustrating the average harmonic speed on these key journeys. This data was useful to provide a context to travel time delays experienced in the sub-region
- An analysis of pool visitors’ origin and destination to better understand customer preferences when access pool facilities
- Analysis of a modelled incident and the effects of an incident on the transport system. This analysis helps highlight how the harbour and peninsula based geography of the sub-region affects network resilience.

Other data such as population demographics and the cost of housing relative to incomes, were gathered from the existing documents and updated where relevant to support the cause and effect outlined in each challenge. These data were primarily sourced from the draft Tauranga Transport Programme and draft Future Development Strategy, both of which were fairly recent and completed in 2018.