

12 EB3C Station Options Assessment

As detailed at Section 10.3 during the design refinement stage the EBA considered an assessment of a single bus station option in comparison to the Technically Preferred two bus station option would provide an opportunity to create a public transport hub, central to the community which potentially provides lower cost, faster travel time and only a marginal reduction in catchment coverage.

Three alternative options for a single bus station were then developed and assessed against the two bus station option. These alternative options all included the provision of a single centrally located bus station, as shown red in Figure 16, but with three variants of the position of the busway.

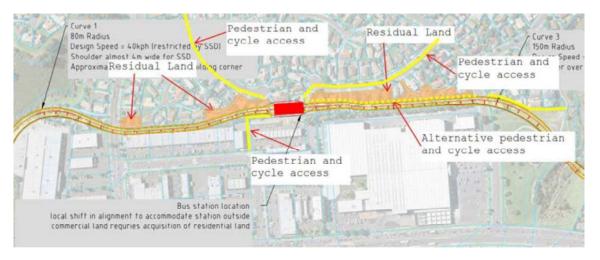


Figure 16 - single station central

12.1 Alternative options for single station

For the single station option, the three variants for the position of the alignment were:

- Option A Commercial Bund Alignment, One Central Station (Figure)
- Option B Commercial & Residential Alignment, One Central Station (Figure)
- Option C Residential Alignment, One Central Station (Figure 19)

A sketch of each variant is provided below. A key difference between the variants is the amount of land required from either commercial or residential land uses or both.



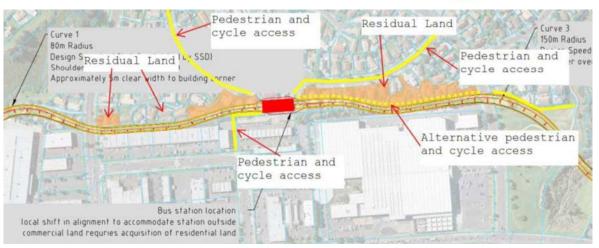


Figure 17 Option A - Commercial bund alignment

The alignment of Option A shows a busway entering the "commercial bund" area from Burswood Drive (west). The commercial bund is an area identified by the EBA as land behind the Commercial Units at 10 Torrens Road comprised of an earth bund. The Option A alignment is located within the Commercial Bund before connecting to the single station location and through to Burwood Drive (east) in the commercially zoned land at 320 Ti Rakau Drive.

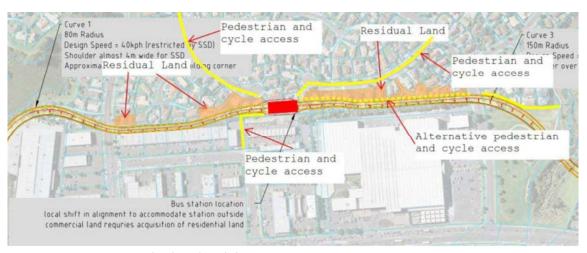


Figure 18 Option B -Commercial and Residential alignment

The alignment of Option B shows a busway entering the "commercial bund" area from Burswood Drive (west) before connecting to the single station location and through to Burwood Drive (east) in the residentially zoned land of Tullis Place and Heathridge Place.



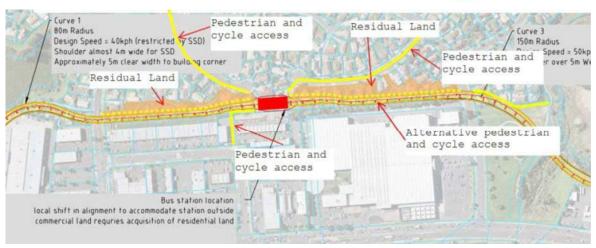


Figure 19 Option C - Residential alignment

The alignment of Option C shows a busway connecting Burswood Drive east to Burswood Drive West in the residentially zoned land of Tullis Place and Heathridge Place with a single station in the middle of the alignment.

12.2 Evaluation of the station options

An options assessment workshop was held on Friday 30 April 2021 to consider alternative designs for the position of the busway and bus stations for the EB3C section.

The options assessment workshop was attended by the following Technical Experts and Auckland Transport Subject Matter Experts:

Table 18 Technical assessors and AT SMEs

Technical Assessor	Technical Area
Chris Bentley	Urban Design
John Daly	Social Impact and Business Disruption
Shane Doran	Busway Operations and Transport
Fenella Fischer	Property
Andy Gibbard	Construction
Joe Grimes	Noise and Vibration
Simon Jones	Civil Design
Alisdair Simpson	Planning
Jarrod Snowsill	Planning (Workshop Facilitator)
John Williamson	Economics
AT Subject Matter Expert	Technical Area
Sujata Singh	Funding Advisor
Amy Thompson	Urban Design
Marcus Williams	Technical Interface Lead

The proposed options were considered to be consistent with the project objectives by the attendees of the workshop.



Technical Assessors were each asked to consider and provide feedback on the single station options in comparison to the technically preferred option (two stations located on the technically preferred EB3 C alignment).

12.3 Assessment of the station options

The following are comments from each of the technical assessors on the proposed options.

12.3.1 Urban Design

Chris Bentley (Urban Design/Visual/Landscape) considered that a single station in a central location would result in a more compact urban form. A central single station is also considered to be a greater catalyst for future urban intensification. The provision of a single station also removes the need to provide a bus station within a public reserve.

Option C provides an appropriate buffer between the busway and remaining properties and also provide increased opportunities for urban intensification and redevelopment. Options A and B are similar however Option C provides for a larger buffer. For Urban Design/Visual/Landscape Option C provides opportunities to provide a buffer between the busway and remaining residential properties as well as pedestrian and cycleway connections.

12.3.2 Social Impact and Business Disruption

John Daly (Social Impact) considered the two bus station option creates the least amount of residual land, as such, has the potential to reduce the number of displaced residents. It is however noted that more residents will be in close proximity to the alignment and associated disruption during the construction and operational phase. This is unless suitable mitigation can be put in place both during construction and permanently.

The single bus station options will create a greater extent of residual land, and result in the loss of properties along the alignment. However, this will allow for the land to be redeveloped and incorporating design and acoustic measures to mitigate impacts from the busway.

The proposed single bus station will be located between cul de sacs with slightly more exposure to residential activities compared to the two station option (located on the key access into the Burswood residential area). However, the central location will provide a new linkage between the business and residential areas, and overcome the severance created by the existing bund.

There are positive (increased connectivity and accessibility) and negative social impacts with all options. On balance there is a preference for the single bus station as this will remove residents that would otherwise experience construction and operational impacts in close proximity. There is also greater potential to redevelop land and design properties to respond to these impacts.

Option C avoids/minimises direct impacts on the business area. It is assumed that the new linkage can be provided without creating significant business disruption.

12.3.3 Property

Fenella Fischer (Property) noted that the single station options all result in an increase in property acquisition requirements. Each option is approximately \$12 -\$14M more than the Techcnially Preferred two station option.



Because fewer properties would be impacted and therefore the lower cost of property acquisition, the two-station option was preferred from the property perspective.

12.3.4 Future Urban Development Opportunities

Amy Thompson (urban Integration commented on the options with respect to future opportunities for Urban Development. Urban development includes opportunities for housing, employment growth as well as quality urban design outcomes and placemaking.

When analysing the opportunity for Urban Development both within and beyond the project footprint, three key conditions should be considered:

- 1. Land use change, and in particular:
 - a) Land use zoning to support a mix of uses
 - b) Land use zoning to support intensification
 - The introduction of new rapid transit station(s) to this stretch of the alignment under both scenarios will act as a catalyst in itself for land use change. Introduction of the NPS-UD will enable intensification, subject to any qualifying matters. At the time of the assessment there were no qualifying matters which were considered likely to limit the density in this area, with the assessor noting that Auckland Council was to undertake a plan change to implement the NPS-UD in 2022.
- 2. Land parcels in public ownership preferably assembled into developable parcels, rather than many smaller parcels in private ownership. Master planning and interventions on publicly owned land can act as a trigger for the private market to respond, and intensify in a planned way
- Connections to rapid transit connections to/from the station; activities within walking distance of station

The two station option and the single station options were assessed against these three conditions.

12.3.4.1 Two station option

Land Use Change

This option with stations at either end of Burswood enables growth as per the NPS-UD, and is similar in area to the single station options. At Burswood East the catchment would span significantly across Burswood Esplanade Reserve and the Transpower Substation (which whilst zoned Mixed Housing Suburban is an integral piece of the power network, and there is no indication that this site is likely to become surplus to requirements). At Burswood West the catchment would span across Pakuranga Creek.

Accordingly, this option would enable growth as per the NPS UD within walking distance of the stations, however much of the benefit of having two stations would be outweighed by impacts on Reserve and Marine environments.

Residual Land and Urban Development opportunity



The parcels of residual land for the two bus station option at Burswood East/West are marginal, with limited scope for the public sector to trigger a meaningful response from the market. Given the station locations on the periphery of the active commercial and residential areas, the sites are not overly attractive for investment beyond the transport corridor to trigger wider housing growth.

There is limited drive for placemaking interventions given the location of the stations on the periphery of the catchment.

Reference was made in the options session to the existing Chinatown site at Burswood West, and future integrated development opportunity. This opportunity would be enabled in both the single and two station option.

Connections to rapid transit

The presence of the two stations enables good catchment coverage (refer to the Busway Operations and Transport comments at 12.3.7 below). It does not introduce new pedestrian connections or overly improve connectivity across the primary catchment, however the main opportunity the assessor saw would be the strengthening of the connection through Burswood Esplanade Reserve to Golflands residential area to the north east.

12.3.4.2 Single station option

Land Use Change

The single station option enables growth as per the NPS-UD, likely to a similar extent in active land area terms as the two bus station option. The central location would likely lead to a plan change for the whole of the peninsula to the north, and would also span the commercial land to the south. This is similar in extent to the two bus station option.

Residual Land and Urban Development opportunity

Depending on alignment the single station option would lead to a linear parcel of residual land along the northern boundary of the busway. It is unlikely that the vision of the NPS-UD could be realised on this land due to the awkward parcel sizes and shallow depth. A development capacity assessment has been undertaken for Option B (being a combination of Residential and commercial acquisition), Figure 20, which shows 13 units could be accommodated on this land whilst providing good amenity for future occupants.



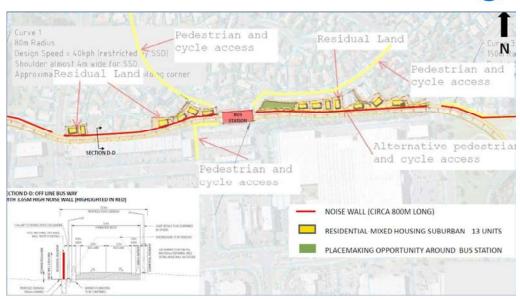


Figure 20. Option B Residual Land opportunity

However, a more comprehensive response to this land is enabled through Option C to look at a wider urban development opportunity. The capacity assessment for Option C below (Figure 21) incorporates the residual land into a wider parcel, creating a separation from the busway and introducing natural surveillance, making the bus station the focal point of the place with some higher density mixed use development around it.

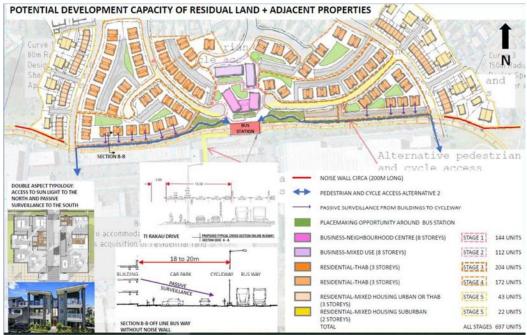


Figure 21 Option C Residual land opportunity

This comprehensive approach creates an opportunity to increase potential residential units from approximately 115 to approximately 697 units. In qualitative terms, it delivers a medium density place, with rapid transit at the heart, and a mix of uses within walking distance.

Early discussions with Eke Panuku Development Auckland (Thompson/Young) have been positive – Eke Panuku are enthusiastic about the place-making opportunity presented by this alignment.



Whilst the discussions with Eke Panuku have been preliminary it is a positive signal that this option presents the better opportunity for urban outcomes.

Connections to rapid transit

The central station option introduces a north/south connection through the commercial area, as well as E/W pedestrian connectivity along Dulwich Place and Heathridge Place. This is a particular strength of this option.

As the residual land assessment show for Option B and Option C the single station option presents a good opportunity for Urban Development, with the best opportunity likely presented by Option C as this option has the potential to increase the number of residential units in the area within walking distance of rapid transit.

12,3,5 Noise and Vibration

Joe Grimes (Noise and Vibration) considered there was little difference between the two bus station option and one station option. The reason for this is that a similar number of properties will be impacted. It was also noted that the one station options would bring the busway alignment closer to residential properties, and as such suitable screening would need to be implemented. For all options operational noise was not considered to be significant and all potential noise and vibration impacts can be mitigated.

For Noise and Vibration, the effects are not particularly distinguishable between the options.

12.3.6 Construction

Andy Gibbard (Construction) considered that Option C maximises the distance from construction activities including retaining wall, earthworks and pavement construction to adjacent remaining residential properties, as under options A & B, residential buildings remain within 5-10m immediately adjacent to the proposed construction of these works.

In addition, a single station option requires less resources for construction and will likely reduce construction timeframes.

12.3.7 Busway Operations and Transport

Shane Doran (Busway Operations) considers there is little difference between the two bus station and one station options from an operational perspective. Main advantages of a single bus station option are improved bus movements to/from Harris Road and a marginal reduction in travel time for services as the buses would only be required to stop at one station and not two as is the case with the two bus stations arrangement (however dwelling times may increase at the single bus station, but are anticipated to still be lower than stopping twice).

From a passenger perspective the one bus station offers improved connectivity between services by providing better opportunities for interchanging and consequently offering customers with increased access to employment and residential areas. As a comparison, the revised route 152 service connecting with the proposed busway would not connect with the revised151 nor the revised 153 service with the two-station arrangement while all three services will connect at the one station options and therefore offer an improved level of service to customers.



The single bus station option does have a reduced walk-up for the current residential catchment of around 200 dwellings based on a 10-minute walk time. The walk time to capture the additional 200 dwellings is in the order of 1 minute and is considered to be a marginal difference. The walkable catchment for the employment area remains the same.

Overall, from a bus operations and customer convenience perspective the one bus station option is considered to be better than the two station option.

12.4 Risks and Opportunities

Each technical assessor, and the AT SMEs were asked to identify any risk and opportunities associated with the options. These risks and opportunities were identified by the Technical Assessors and summarised as follows:

- For any option the construction team has identified the former Greenmount Land fill site
 as a potential location for a construction support area (or other site yet to be determined),
 meaning the construction support area is common for any option.
- The technically preferred two station option has increased construction risks compared t
 the other options due to the narrowness of the corridor available for construction
 activities and the proximity to residential houses.
- There is a risk that the technically preferred option will require additional property and potentially relocation of residents during construction.
- The centrally located options potentially provide better stormwater management opportunities (in residual land).
- It was noted by the Technical Assessor for property that the acquisition of residential properties is less complicated than commercial properties as commercial properties are more likely to contain complicated tenancies.
- The centrally located options would result in a bus station being provided closer to more residential properties.
- Suitable screening of buses would be required (for all options).
- Centrally located options may allow for better integration of noise walls into future redevelopment of residual land (smaller noise walls could be provided the further they are away from the alignment, and new dwellings could include noise attenuation).
- The two-station option, with the bund alignment would likely result in a noise wall being placed close to existing residential properties, potentially resulting in adverse visual effects requiring mitigation (indicatively a 2.0m 2.5m high noise wall + 1.0m 1.5m privacy screens).
- All bus station options would require lighting. Consideration needs to be taken of the
 potential effects that bus station lighting may have on adjacent or close by residential
 properties.



 Consenting risk (including land owner approvals) associated with locating a bus station in Burswood Reserve.

12.5 Summary of the Options Assessment

Overall, the consideration of the EB3C station options was comparable, particularly from an operational perspective. Based on the technical assessment undertaken, the benefits and disbenefits of a single bus station option are noted below.

The main benefits of a single bus station option are:

- Less impact on Burswood Esplanade Reserve through the removal of the station at this location (noting that the carriageway would remain).
- The central location of the single bus station would result in new linkages being formed between the Burswood residential area and the Ti Rakau Drive commercial area.
- From a construction perspective, a single bus station will require less resources than the two bus station option.
- The single bus station, alignment option C, is preferred from a construction perspective as
 it provides the maximum distance between construction activities and residential
 properties.
- .

Of the 3 centrally located options considered, Option C was preferred by the Urban Design Technical Specialist and AT SME as it presented greater potential for future redevelopment of the area.

The main disbenefits of a single bus station option are:

- Due to the increased land requirements, a greater number of existing residents will be displaced
- All single bus station options will result in increased land acquisition costs when compared
 to the current preferred two station option. The likely land acquisition costs are \$12 to
 \$14M.
- •

Both the central and two bus station options were identified by the Technical Assessors as meeting the Eastern Busway Alliance project objectives.

Operationally the two options have been assessed as having marginal differences. The single centrally located option is seen to be a better urban design outcome when compared to the two bus station location, and the centrally located option has also been assessed as a better option when future urban development opportunities are considered.

The single centrally located option was also seen as preferable when considering constructability. However, the increase in cost to acquire the additional land for the centrally located option and the further displacement of residents are substantial negatives.



13 EBA Key Decision for EB3C station options

Subsequent to the Options Assessment, the EB3C alignment was developed further using a value engineering process. Through that process, a number of risks were identified by the design and construction teams which have significant impacts on costs, constructability and impacts on adjacent residential and commercial stakeholders.

The ALT considered the Options Assessment described in section 12 above, and the additional risks, oportunities and other considerations that are detailed in this section 13, on 8 June 2021. The ALT endorsed the single centrally located station within the Burswood Residential alignment (Option C) to progress as part of the technically preferred scheme (rather than the previous two station alignment).

13.1 Risks and opportunities

The additional risks and opportunities considered by the ALT when deciding to endorse Option C (in addition to the findings of the Options Assessment for the EB3C stations) are set out below:

13.1.1 Burswood Residential alignment (Option C) – risks and opportunities

- increased reputation risk as a number of residential homes being impacted during a housing crisis – this could be perceived as taking the 'easy option' and targeting homeowners and ratepayers, rather than commercial businesses
- greater opportunity for increased housing in medium to long term and enhanced access to busway stations for Burswood and surrounding community and improved walking and cycling experience

13.1.2 Commercial Bund alignment (Option A) – risks and opportunities

- increased construction challenges and risks as there are likely to be greater vibration, noise and dust impacts with residents living so close
- potential impact to liveability or desirability of homes in the long term with high noise walls and busy busway on back boundary
- opportunity for enhanced access to busway station for Burswood and surrounding community

13.2 Further considerations

In addition to these risks and opportunities, a number of further considerations were identified by the various EBA workstreams and considered by the ALT when deciding which station option to endorse. These further considerations are described below.

13.2.1 Transport Planning input:

Both the residential (Option C) and commercial bund (Option A) alignments meet the transport planning objectives) and technical functionality.

The residential alignment also allows for a direct pedestrian and cycling connection into Tullis Place and Dulwich Place improving active mode connectivity from the station into the commercial area. Further, the residential alignment improves safety between buses and general traffic particularly at the



intersection with Burswood Drive (east) by increasing the distance between the intersection and vehicle access into Bunnings. The width of the commercial bund alignment precludes the provision of cycleway and pedestrian facilities. The residential alignment allows for a high-quality cycleway and footpath parallel to the proposed busway connecting Burswood Drive east and west providing a safe connection through the project area.

The two bus station option with stations adjacent to China Town and Burswood Esplanade Reserve has a larger walking catchment area connecting with approximately 100 more residential properties than the 1 station option (which is located between the 2 cul de sacs of Tullis and Dulwich Places). However, the travel time for the one bus station option will be faster and more reliable than the two bus station option with buses only required to stop and start once, reducing dwell time.

Further, the provision of one station mid-block (common to options A, B and C) between the intersections with Burswood Drive allows buses to be given a 'green wave' through these intersections providing reduced travel time and improved reliability when compared to the two bus station option where some bus services would be required to stop at these intersections.

The one bus station options improve accessibility by providing a direct connection into Tullis and Dulwich Places. The one station options also allow people to interchange between the current 351, 352, 353, 70, 705 and 706 bus services at the one location providing a more integrated transport system and offering customers greater travel choices and destinations and an improved level of service. The linking of these services at one common station location also improves legibility of the system as well as increased customer security with improved passive surveillance.

13.2.2 Design Input:

There are a number of cost savings that can be identified if a single bus station (whether Option A, B or C) is adopted, due to the reduction in elements that are required for construction:

- One less bus station
- Lower noise walls and less screening to residential properties thereby providing better amenity outcome
- Fewer concrete crash barriers
- Reduced drainage due to the adoption of drainage swales
- less construction conflict of the cycle facilities due to the removal of the interface between bikeway and utility services along Ti Rakau Drive.

, The change to the station location also provides the following benefits:

- Reduced impact on adjacent residential properties by increasing the distance between the busway and residents with the ability for a buffer zone to be incorporated
- Provision of direct cycleway and pedestrian facilities to the station and improved connectivity into Burswood
- Provision of direct connection between the bus station and commercial precinct through to Torrens Road rather than via Burswood Drive



- Improved legibility for customers and increased customer security with greater passive surveillance
- A more integrated transport system linking all bus services at the one location improving the level of service, travel choices and potential destinations for customers.
- Reduced travel time and improved reliability offering a better service for customers.
- Reduced impact on Burswood Esplanade Reserve with a reduced busway footprint through this
 area.
- Improved safety by removing the intersection between the busway and Burswood Drive away from the access into Bunnings

13.2.3 Construction Input:

Both the residential and commercial bund alignments are constructable, however on further development of the construction methodology the commercial bund alignment was determined to carry significant construction risks specifically associated with vibration impacts which could potentially cause damage to residential properties adjacent to EB3C. These are discussed further below:

- The commercial bund alignment includes the construction of noise walls within close proximity of houses.
- The existing ground conditions and geotechnical investigations in the area may include basalt, which potentially could result in extremely difficult conditions for foundation of the noise walls.
- Potential vibration effects of activities relating to noise wall construction, drainage and utilities excavation, earthworks and pavement construction
- Preliminary advice from the Noise and Vibration specialists suggested there was potentially high
 impact and likelihood for noise and vibration to impact adjacent dwellings, particularly given the
 minimal distance of circa 1-2m between the proposed noise wall and existing dwellings. The
 high potential for basalt subsurface conditions increases the impact and likelihood.
- The cross-section space is constrained and therefore the cycleway and footpath were designed to be along Ti Rakau Drive rather than following the busway alignment.

Risks associated with the commercial bund alignment:	Potential Impact on Costs:	Potential Impact of delay:
Close proximity of residential properties to the alignment being sensitive to vibration and noise during construction	Dwellings and garages potentially impacted by potential construction of retaining wall footings, and erection of noise wall panels	Productivity reduced due to use of small plant to manage/minimise vibration during footing excavation. Safety risk of lifting fence posts



		and wall panels immediately adjacent existing dwellings.
Potential of Basalt Outcrops along the bund	Basalt outcrops visible along alignment. Excavation of retaining wall foundations, drainage trenches and utilities/ITS conduit trenches could require rock breaking methods	Reduction in productivity due to rock breaking activities required, difficult to manage effects of rock breaking immediately adjacent dwellings including managing noise and vibration
Construction of the cycleway along Ti Rakau Drive	Additional traffic management staging required to maintain access during construction within Ti Rakau Drive, reduced windows of work during off-peak times in order to access site and manage potential congestion Relocation of utility networks potentially required	Additional time, traffic staging and resources required to manage

Construction considerations in respect of a two-or 1 station layout are described as follows:

- The reduction in station numbers enables a reduction in resources and programme duration required to construct the original concept of 2 stations.
- Additionally, the original Technically Preferred design placed both stations in a location that impacted access to adjacent activities – the western station at the access point to the Ti Rakau Drive Bridge works, the eastern station requiring the footprint of the material handling yard in Burswood Reserve.

13.2.4 Environmental Specialists input:

The off line commercial bund alignment was, on the basis of the preliminary analysis carried out in the options assessment described in section 12, preferred by the environmental specialists as it minimised impacts on residential property and had lesser social impacts. However, with further analysis of the construction effects, including noise and vibration, on the residential houses that are in very close proximity, the necessary mitigations, such as reducing construction impacts through equipment choice, could not adequately mitigate effects.

Additionally, with the high-level survey information to inform the final cross section required for the busway, long term effects on adjacent residential property, including 2.0 -2.5 metre high noise walls and potential privacy screening on top of that would result in a poor long term outcome for those properties especially where the houses immediately abutting the busway.

On balance the environmental specialists considered that the decision to acquire residential property associated with Option C, while more expensive than the Technically Preferred scheme and with some



adverse outcomes for the community through the loss of houses and residents, would allow the busway to develop without generating outcomes that would significantly reduce the amenity of the remaining adjoining properties.

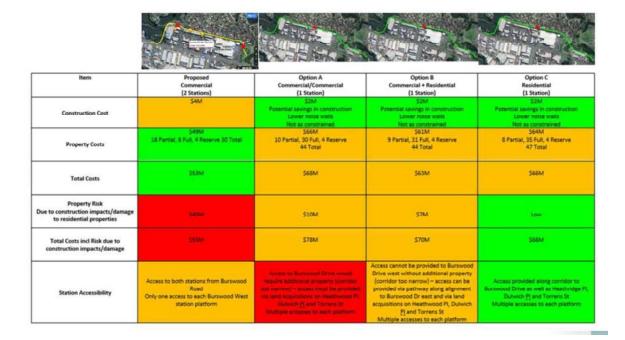
13.2.5 Consultation Input

As engagement with property owners and the community had not taken place on either the Technically Preferred design or option or the reference design at this stage in the options process, it is difficult to provide an informed position on likely stakeholder views at this stage. Mana whenua have not indicated a clear preference as pros and cons can be seen for both options and feedback has focused on the sustainable use and re-use of homes and infrastructure, whichever option is selected. Elected representatives have also not indicated a preference and can see the challenges and opportunities with both options.

13.2.6 Costs Input

A high-level cost summary setting out the costs and property risks for the two station and single station options, including key assumptions is set out below in Table 19 and this information was provided to the ALT.

Table 19 – Cost Summary





13.3 ALT Decison:

As noted above, after considering the information that had been provided, on 8 June 2021 the ALT endorsed the single centrally located station within the Burswood Residential alignment (Option C) to progress as part of the technically preferred scheme (rather than the previous two station alignment through commercially zoned properties).

At the ALT Operations Meeting on 10 June 2021, and taking into account the matters outlined above the ALT confirmed the following changes to the EB3C design

- Single bus station located between Chinatown and Burswood Drive in place of the current two stations located at Chinatown and Burswood Esplanade Reserve.
- A shift in the busway alignment from the commercial bund (the Technically Preferred design) to the residential area

The Technically Preferred design identified at Section 9 of this report was subject to design refinement as described above in Sections 10 -13 of this report. This design refinement process resulted in changes to the Technically Preferred Design being the inclusion of Option E (the alignment through Burswood Reserve) and Option C being a single station arrangement for EB3C with an alignment through residentially zoned properties. This revised design was termed the Reference Design by the EBA and is shown below at figure 22.



Figure 22: Reference Design.



14 Updated MCA

14.1 Options Evaluation

Following further consideration of the Options Assessment process that was carried out in relation to EB3C, as described above, the EBA identified that whilst the Options Assessment was comprehensive it would have been worthwhile undertaking an MCA process through which the one-station option (which became the reference design) was scored using the MCA criteria against the technically preferred scheme (the Commercial Offline option, with two stations) and the Commercial Online option.

In addition, since the Options Assessment process had been carried out, community engagement had been undertaken and it was considered to be appropriate that an MCA process be undertaken so that feedback from engagement could be taken into account.

The EBA therefore undertook an MCA evaluation of the Reference Design against the Commercial Online and Offline options. The MCA evaluation followed the process detailed at Chapter 5 of this report. The MCA criteria used in the 2021 Options Assessment were considered to remain relevant and appropriate.

A workshop was held by the EBA on 18 October 2022.

At this workshop the EBA Customer and Community Lead presented the outcomes of engagement undertaken on the Project from commencement of engagement with the Public from November 2021. A summary of this engagement is set out below and was provided to the workshop attendees to inform them of feedback received during in engagement and to assist in their consideration of the options.

14.1.1 Community Engagement

Through the consideration of the design options in 2021 there was an instruction by AT to the EBA not to engage with the public on the various options being considered as there was a desire held by AT to only present an affordable scheme to the public. Upon engagement with the public in late 2021 the Online and Offline Commercial alignments were presented with the Offline alignment (i.e. the Reference Design, with its single station and alignment through the Burswood residential area) presented as the preferred alignment.

Engagement with the public began in November 2021. This engagement was undertaken virtually due to COVID-19. The EBA met with directly affected landowners, and virtual interactive consultation rooms were available to the public. A further 8-10 sessions were held in person in the Burswood community, for residents, businesses, stakeholders, and those interested, as COVID-19 restrictions eased.

Overall feedback from the residential community at the time was that there was general opposition to the Reference Design alignment through Burswood. The proposal to acquire approximately 39 properties had not been anticipated and created a high level of concern particularly from directly affected owners. There were concerns with the housing crisis and affordability of having to relocate. Perceived impacts on community include increased crime, theft, risk to pedestrian and vehicle safety, and loss of residential parking.

No engagement was undertaken with the community on the Offline commercial bund option, as through the engagement process the EBA detailed that this option was investigated and discontinued following design development.

The community expressed a preference for the Online option, or for the elevated option over Ti Rakau Drive (compared to the Offline option) previously assessed and consulted on by AT in 2018, and/or made the request to provide for a park-and-ride facility to support the proposed bus station.

Community feedback raised concerns relating to impacts from construction noise, vibration, access to residences, environmental concerns for the coastal marine area (particularly structures), wetlands,



water quality, flora, and fauna, including bats, skink, bird species, and those in the marine environment. Overall, it was perceived that the busway would have a negative impact on the ecology of the Burswood area.

Although the potential for future urban development to provide greater density within 100m of the proposed bus station was acknowledged, this brought about fear from those consulted for existing residents due to the impact it would have on the community and its existing fabric.

From mid-2022, responses from directly affected property owners have largely progressed to acceptance of the Reference Design alignment and have expressed their desire for certainty on the next steps moving forward. The community expressed that the ongoing uncertainty of the Project alignment would impact their mental health and wellbeing.

Evolving conversations with the wider community have led to receiving their support for the Reference Design alignment. For example, the community understand the rationale for the proposed Burswood bus station location and its benefits. This means moving away from earlier concerns/ oppositions raised by the community.

Relative to feedback received from the residential community, the business community as well as Greater East Tamaki Business Association (GETBA), strongly favour the Offline option, given that the commercial premises located on both side of Ti Rakau Drive will be largely unaffected by the project. The Online option along Ti Rakau Drive would have resulted in significant negative impacts on businesses, likely expecting a fall in turnover if not loss of operation, and potentially the loss of property access rights and parking from construction impacts.

Potential impacts of all EB3C options were considered by the community to be widespread. Affected properties include Chinatown, Bunnings, residents and reserves, with impacts also considered to be restrictions on access and parking to properties, and traffic congestion on Ti Rakau Drive.

Burswood Esplanade Reserve will be impacted by the proposed work. The esplanade reserve has an existing walking and cycling path which connects to Golflands Drive. This linkage was emphasised by cycling advocates and residents. In terms of behavioural observations, more people are seen using the paths rather than open green space itself.

Engagement will be ongoing through the life of the project. The EBA 's approach is to continue to have one-on-one conversations with the neighbours of those directly affected, with the purpose to acknowledge and highlight themes we have heard to date, and address how EBA aims to mitigate and respond to those themes. The EBA Property team is continuing to work with directly affected owners through the negotiation process. EBA will seek to continue to strengthen relationship with businesses, stakeholders, and residents.

The community were engaged with regarding the proposed stormwater upgrades, including improvements to stormwater outfalls, treatment, and water quality.

14.2 Evaluation of the Options

14.2.1 Scoring of the alternative options

The technical assessors assessed each option, providing a score, based on the scale provided in Table 9. A visual overview of the scores provided for each option is presented in Table 20. The three options were considered by the Technical Assessors to be able to include available mitigation measures to address potential impacts and are reflected in the scores below. The scores shown below are based on mitigation being provided to each option.

A difference between the scoring of the updated MCA and the initial MCA undertaken by the EBA for the project is that the Project Objectives were scored individually in the MCA update. This was done to provide more granularity in respective of the project objectives and was identified by the EBA as a gap



in the initial MCA. This involved the Technical Assessors reassessing the Commercial Online and the Commercial Offline option against the project objectives, as well as the Reference Design.

Table 20 – Summary of Scores

	OPTION	OPTION	OPTION
table 18 Summary of assessments Area of Expertise	COM ONLINE	COM OFFLINE	COM Burswood OFFLINE/ Reference Design
	With Mitigation	With Mitigation	With Mitigation
Constructability	-1	-2	-1
Impact upon utilities	0	0	0
Acoustics	0	-2	-2
Air Quality	0	-3	-3
Property	-4	-2	-3
Marine Ecology	-2	-2	-2
Freshwater and Terrestrial	-2	-3	-1
Urban Design	0	-1	3
Landscape and Visual	0	-2	-2
Social Impact	1	1	1
Traffic and Transport (temp. effects)	-2	-1	-2
Traffic and Transport (permanent effects)	3	4	5
Stormwater	2	0	1
Planning, consenting and legislation	4	0	0
Project Objective: provide a multi modal transport corridor that connects Pakuranga and Botany to the Wider network and increases choice of transport options	2	2	4
Project Objective: Provide Transport Infrastructure that integrates with existing landuse and supports a quality compact urban form	1	-2	1



Project objective: Contributes to accessibility and place shaping by providing better transport connections between, within and to the town centre – Urban Design	-1	1	1
Project Objective Contributes to accessibility and place shaping by providing better transport connections between, within and to the town centre Transport	2	2	4
Project Objective: Provide Transport Infrastructure that improves linkages, journey time and reliability of the public transport network	2	5	5
Project Objective: Provide Transport Infrastructure that is safe for everyone	1	1	4

Assessment information is provided in the MCA framework attached in Appendix 3.

14.3 Assessment of the Alternative Options

As part of providing a score for the Reference Design (Commercial Offline Burswood Option) the technical assessors provided a high-level assessment, outlining the reason for the scores provided. A copy of the scoring sheets, including the written comments can be found in Appendix 9.

The technical assessors' comments are summarised below. The scores for the project objectives show the scoring each option received against the individual project objectives.

The remaining technical assessments repeat the scores from the MCA described in section 6 of this report and the scoring for the Commercial Offline Burswood option. As part of the updated MCA process the assessors were invited to reconsider the scores given to the Commercial Online and Commercial Offline options in the original assessment. None felt it was necessary to do so and so no changes were made to the scores.

85



14.3.1 Performance against Project Objectives

14.3.1.1 Provide a multi modal transport corridor that connects Pakuranga and Botany to the Wider network and increases choice of transport options

Commercial Online (2)	Commercial Offline (2)	Commercial Offline	l
		Burswood (4)	

The Technical Assessor identified that the Online Commercial Option provides good quality facilities for buses as well as providing for private and freight vehicles and that cycling and walking facilities are improved compared to existing facilities with cycling facilities provided on verge along Ti Rakau Drive.

It was noted that the quality of walking and cycling facilities in particular for the Commercial Online and Commercial Offline options are significantly worse than the Commercial Offline Burswood which provides off road high quality facilities. The Offline Commercial Option provides good quality facilities for buses as well as providing for private and freight vehicles, however the cycling and walking facilities are a marginal improvement compared to existing facilities with cycling facilities provided on the verge along Ti Rakau Drive in this option. In this regard the quality of walking and cycling facilities in particular are significantly worse than the Commercial Offline Burswood option which provides off road high quality facilities.

The Commercial Offline Burswood Option provides high quality facilities for buses, cycling and walking as well as providing for private and freight vehicles and the quality of walking and cycling facilities in particular are significantly better than the Offline Commercial and Online Commercial options.

14.3.1.2 Provide Transport Infrastructure that integrates with existing landuse and supports a quality compact urban form

Commercial Online (1)	Commercial Offline (-2)	Commercial Offline
		Burswood (1)

The Technical Assessor considered that the online option integrates with the existing Ti Rakau Drive road corridor and commercial land use and therefore results in a compact urban form. The Commercial Offline option does not integrate with the existing residential or with the commercial land uses and it extends through Burswood Esplanade Reserve and therefore does not result in a compact urban form. The Commercial Offline Burswood option is considered to integrate with the residential area by providing a convenient bus station within easy walking distance for the Burswood Peninsula. The Commercial Offline Burswood option is also capable of supporting future urban intensification and the creation of a new compact urban form.

14.3.1.3 Contributes to accessibility and place shaping by providing better transport connections between, within and to the town centre – Urban Design

Commercial Online (-1)_	Commercial Offline (1))	Commercial Offline Burswood (1)
(= <u>/_</u>	(- //	

The technical assessor for urban design considered that the Commercial Online Option is not as accessible to users of the busway as the two offline options given the separation of the busway alignment from the residential catchment. The Commercial Offline and Commercial Offline Burswood Options are more accessible to the residential community and business areas.



14.3.1.4 Contributes to accessibility and place shaping by providing better transport connections between, within and to the town centre – Transport

Commercial Online (2)_	Commercial Offline (2))	Commercial Offline
		Burswood (4

The Commercial Online Option and the Commercial offline option were both considered to provide moderate quality walking and cycling facilities while the location of the busway stations provides convenient, safe and direct connection with the commercial precinct with good access to the Burswood residential community.

The technical assessor considered that the Commercial Offline Burswood option provides higher quality walking and cycling facilities and also that the location of the busway station provides a convenient, safe and direct connection with the Burswood community and commercial precinct.

14.3.1.5 Provide Transport Infrastructure that improves linkages, journey time and reliability of the public transport network

Commercial Online (2)	Commercial Offline (5)	Commercial Offline
		Burswood (5)

The Commercial Online Option requires buses to pass through 5 sets of traffic signals along Ti Rakau Drive. The buses being in a dedicated busway will improve travel times compared with the existing situation where buses mix with general traffic however the travel times and reliability will not be as good as the Commercial Offline or Commercial Offline Burswood options.

The Commercial Offline Option through the 'bund' behind the commercial properties on the northern side of Ti Rakau drive will provide faster and more reliable travel times for buses as it avoids 5 sets of traffic signals along Ti Rakau Drive (which the Commercial Online option does not avoid). In addition, bus services will be able to be provided with a 'green wave' from the entry to the Busway at near 386 Ti Rakau Drive through to west of Gossamer Drive through signal pre-emption. In terms of bus travel time and reliability this option is similar to the Commercial Offline Burswood option with the exception that this option has two stations at Burswood and therefore would be marginally slower/less reliable.

The Commercial Offline Burswood Option will provide faster and more reliable travel times for buses than the Commercial Online option as it avoids 5 sets of traffic signals along Ti Rakau Drive. In addition, bus services will be able to be provided with a 'green wave' from the entrance to the Busway near 386 Ti Rakau Drive through to west of Gossamer Drive through signal pre-emption. In terms of bus travel time and reliability this option is similar to the Commercial Offline option with the exception that this option has only one station at Burswood and therefore would be marginally faster/more reliable.

14.3.1.6 Provide Transport Infrastructure that is safe for everyone

Commercial Online (1)	Commercial Offline (1)	Commercial Offline
		Burswood (4)

The Commercial Online and Commercial Offline options provide cycling and walking facilities along Ti Rakau Drive on the verge with improvement to existing facilities, particularly cycling facilities provision on the verge. However, the cycling on verge along Ti Rakau Drive crosses multiple accesses into and out of businesses which increases the potential for vehicle to cycle conflict. The quality of walking and cycling facilities were therefore considered to be significantly worse than the Commercial Offline Burswood option.

The Commercial Offline Burswood Option provides high quality off road walking and cycling facilities which removes vulnerable users from conflicts with vehicles. The location of the busway station also



provides a convenient, safe and direct connection with the Burswood community and commercial precinct and removes the need for residents to interact with the high volumes of traffic on Ti Rakau Drive.

14.3.2 Legislative (RMA) and consenting Considerations

Commercial Online (4)	Commercial Offline (0)	Commercial Offline
		Burswood (0)

The assessment of the Commercial Online and Commercial Offline options against this criteria is set out at section 6.2.2 above. Similar to those options, the Burswood Option was not considered to be fatally flawed from a legislative (RMA) and consenting perspective either.

The provision of an online busway within the commercial sections is preferred from a consenting perspective as the environmental effects will remain within or similar to the existing road corridor. The offline options are considered to generate new adverse effects beyond Ti Rakau Drive within the Coastal Marine Area of Pakuranga Creek and within Burswood Esplanade Reserve.

The offline commercial options would likely generate a greater level of adverse effect than the online option, and as such will require a higher level of environmental mitigation to enable the options to gain consent. The Commercial Offline and the Commercial Offline Burswood options interact with the CMA and areas of Open Space that are identified within the Auckland Unitary Plan and wetlands/watercourses that are recognised and afforded a level of protection in the National Policy Statement for Freshwater Management.

Overall, it is considered that all the options are feasible, however more mitigation would be required to enable the Commercial Offline and Commercial Offline Burswood options to gain consent compared to the online commercial option.

14.3.3 Constructability

Commercial Online (-1)	Commercial Offline (-2)	Commercial Offline
		Burswood (-1)

The constructability assessment considered a range of factors, including resourcing, access, programme implications and traffic management.

From a programme perspective, the offline options are considered to have a reduced construction period. Both the offline commercial options would reduce the construction period by 6 months compared to Commercial Online.

Another advantage of the offline options is that they reduced the need for complex traffic management arrangements along Ti Rakau Drive, as well as providing a safer working environment for onsite staff. The offline options also reduce the need for re-location of local utility services that current sit within the footpath/berm of Ti Rakau Drive.

The Commercial Offline Burswood Option scored more positively in comparison to the Offline Commercial option given that a wider construction corridor would be provided, providing more space for construction activities, and would not directly abut as many residential properties (meaning construction impacts on adjoining properties would be less, e.g. impacts from noise and vibration and the potential for structural damage to residential properties would be less).

88



14.3.4 Transportation Effects - Temporary

Commercial Online (-2)	Commercial Offline (-1)	Commercial Offline
		Burswood (-2)

The Commercial Offline Burswood Option is considered to have no/minimal impact on traffic between Burswood Drive East and West during construction as most of the construction of the busway and active transport infrastructure does not require construction on existing roads (i.e. it can be constructed offline of the road network).

Where the busway is to be constructed on the section of Ti Rakau Drive adjacent to Burswood Esplanade Reserve and 380 Ti Rakau Drive the number of traffic lanes will be reduced from three in each direction to two in each direction to allow for the construction of the busway on the northern side of Ti Rakau Drive. The reduction of traffic lanes will increase travel times for traffic during construction of this section.

Access to businesses along Ti Rakau Drive are not changed from the current situation, with the exception of the Mobil and Gull petrol stations where access to the petrol stations will be disrupted and the EBA propose to acquire these businesses.

This impact is significantly less than the online busway option but worse than the Offline Commercial option.

14.3.5 Transportation Effects - Permanent

Commercial Online (3)	Commercial Offline (4)	Commercial Offline
		Burswood (5)

The Commercial Offline Burswood option provides better travel time and reliability for cars and freight than the Online Commercial option and is similar to the Commercial Offline option as a result of the reduction of traffic lanes between Guys Reserve and Greenmount Drive and has no change to traffic arrangements between Greenmount Drive and Pakuranga Creek.

The Commercial Offline Burswood Option will provide faster and more reliable travel times for buses than the Online Commercial Option as it avoids 5 sets of traffic signals along Ti Rakau Drive. In addition, bus services will be able to be provided with a 'green wave' from the entry to the busway near 386 Ti Rakau Drove through to west of Gossamer Drive through signal pre-emption. In terms of bus travel time and reliability this option is similar to the Commercial Offline option with the exception that this option has only one station at Burswood and therefore would be marginally faster/more reliable.

Pedestrian and cyclist facilities are far better with the Commercial Offline Burswood Option than the other two options as the Commercial Offline Burswood Option provides a dedicated bi-directional off road cycleway and footpath between Gossamer Drive and Guys Reserve.

The Commercial Offline Burswood Option provides a safer option than both the other two options particularly for vulnerable users with off road cycle and pedestrian facilities.

The Commercial Offline Burswood Option single station provides better access to residents in the Burswood area than the Commercial Online Option and maintains a reasonable access to the commercial properties with a dedicated link between the station and Torrens Road. Further the single station allows passengers on buses from Harris Road to interchange conveniently, increasing the effective catchment of the busway. This service operation is not achievable with either the Commercial Online or Commercial Offline options.

Access to the road network is maintained as per the existing conditions with the Commercial Offline Burswood option. Access to properties on Ti Rakau Drive is maintained as per the existing situation with



the exceptions that the Mobil service station just east of Pakuranga Creek and the Gull petrol station just east of Howick and Eastern Depot. Acquisition of these properties will be required.

The Commercial Offline Burswood option has no impact on parking currently utilised by existing commercial uses.

14.3.6 Marine Ecology

Commercial Online (-2)	Commercial Offline (-2)	Commercial Offline
		Burswood (-2)

The impacts of the Commercial Offline Option and the Commercial Burswood option were considered by the Technical Assessor to be similar, as the proposed bridge across the CMA is common to both options.

Due to the existing marine ecological values, the overall level of effect is assessed as low for the offline commercial options, and mitigation is not considered necessary.

The online option would have less impact on the CMA but treated discharges of sediment (during construction) and treated discharges of stormwater (operational) has been assumed.

14.3.7 Freshwater and Terrestrial Ecology

Commercial Online (-2)	Commercial Offline (-3)	Commercial Offline
		Burswood (-1)

The Technical Assessor for Freshwater and Terrestrial Ecology considered the effect the busway options would have on existing vegetation, habitat for wildlife and birds and the impact upon wetlands and freshwater streams.

The options for the commercial section are considered to have an adverse effect, due to the interaction with existing freshwater steams and identified wetlands in the Burswood Esplanade Reserve. The level of impact is greater for the offline options, due to their potential to directly affect the location of wetlands in Burswood Esplanade Reserve. The offline alignments result in the busway running across the reserve, likely requiring a bridge structure across the wetlands and streams. The alignment could potentially result in the loss of habitat connectivity within the reserve. This option would need to be carefully designed to reduce the impact of the busway upon the wetlands and will require the consideration of appropriate mitigation.

It is noted that the Commercial Offline option previously scored a (-3) given the alignment through Burswood Esplanade Reserve behind the Howick and Eastern Bus Depot site at 380 Ti Rakau Drive. If the Commercial Offline option had been altered to have the same alignment through Burswood Esplanade Reserve as the Commercial Offline Burswood option then the scores would have been the same.

14.3.8 Built environment / Urban Design

Commercial Online (0)	Commercial Offline (-1)	Commercial Offline
		Burswood (3)

The technical assessor considered that the Commercial Offline Burswood option will provide a catalyst for intensification & urban regeneration whilst also providing better and more accessible transport options for the residents of Burswood as previously detailed in the consideration of the single station option assessment. The Commercial Offline Burswood Option also provides a cycleway adjacent to the busway connecting the respective ends of Burswood Drive and connecting through the Burswood Esplanade Reserve. The Commercial Offline Burswood option also has less impact on Burswood



Esplanade Reserve than that the previously assessed Commercial Offline Option. The scoring above reflects a summary of the assessment of the Urban Design Criteria and the project objectives.

14.3.9 Landscape and visual effects

Commercial Online (0)	Commercial Offline (-2)	Commercial Offline
		Burswood (-2)

The Landscape and Visual effects of the Commercial Offline Burswood option were considered to be similar to that of the Commercial Offline Option. The potential landscape and visual impacts of the Offline options include:

- vegetation removal,
- landform modification,
- the construction of a bridge over CMA with impacts on the estuary, removal of mangroves
- Visual impact of the proposed bridge on adjacent residential properties,
- Loss of open space within Burswood Esplanade Reserve, although the Commercial Offline Burswood Option is slightly less than the Commercial Offline Option as only the cycleway extends through Burswood Esplanade Reserve behind 380 Ti Rakau Drive.
- Visual amenity impact through the removal of houses and construction of the busway and bus station on the Burswood residential community

14.3.10 Social Effects

Commercial Online (1)	Commercial Offline (1)	Commercial Offline
		Burswood (1)

The technical assessor for Social Impact Effects considered the following construction and permanent impacts in their assessment:

- Impacts on Community facilities/Open Space;
- Impacts on viability/productivity of business land areas; and
- Impacts upon social connectivity and amenity.

The technical assessor considered the engagement summarised at section 14.1.1 above but no changes were made to the score for the Commercial online or commercial offline option. The technical assessor also considered the adverse and positive impacts of these effects.

The consideration of adverse effects included the number of properties to be acquired which may cause the greater displacement of people due to the busway alignment being located further north into the Burswood residential community than the other options. The Commercial Offline Burswood option removes 37 residential properties and approximately 115 residents from an established community. This was considered to result in fear/stress/concern within the Burswood community about being displaced.

It was also considered that the Burswood Esplanade Reserve will be reduced in space and severed (people need to cross the busway to access it from the west) but it was recognised that the Commercial Offline Burswood option reduces this impact compared to the Commercial Offline option.

Construction disruption to residents / businesses during construction was also identified as an adverse impact by the technical assessor.

The consideration of the positive impacts included the potential for enhanced public transport use from the centralised bus station in very close proximity to residents which also serves the industrial/business community north of Ti Rakau Drive as well as becoming a hub for routes from the south of Ti Rakau



Drive. The Commercial Offline Burswood option also creates a continuous safe cycling route, which follows the busway, and provides enhanced walking facilities.

The majority of the benefits of the Commercial Offline Burswood option are likely to be realised at a local catchment level (i.e. local jobs, employing local industry/businesses and Burswood residents). Whilst there would be some severance at intersections, greater connectivity to the wider catchment area will be provided.

The options were also seen to be consistent with the directives in the National Policy Statement on Urban Development in improving accessibility for people by way of public or active transport.

14.3.11 Acoustics Considerations

Commercial Online (0)	Commercial Offline (-2)	Commercial Offline
		Burswood (-2)

For construction noise and vibration, the Commercial Offline Burswood option will have the potential for adverse effects since the works will be taking place in proximity to existing residential receivers. Adverse effects will be less at receivers set back further from the works and as the works progress along the alignment. Construction noise and vibration effects will be temporary and can be mitigated/managed through the Construction Noise and Vibration Management Plan.

For road traffic noise, the busway will introduce a new noise source to the Burswood residential area, and will be close to the receivers immediately adjacent, however a noise barrier is already proposed in the preliminary design, which will help to reduce noise effects at these receivers.

Due to the adverse effect on residential properties to the north of the alignment, this option has been scored -3 without mitigation and -2 with mitigation. This scoring is the same the score for the Commercial Offline option.

14.3.12 Property Impacts

Commercial Online (-4)	Commercial Offline (-2)	Commercial Offline
		Burswood (-3)

The technical assessor considered the engagement summarised at section 14.1.1 above but no changes were made to the score for the Commercial online or commercial offline option. The technical assessor for property impacts assessed the Commercial Offline Burswood option and advised that the property impacts of this option would require the acquisition of 37 full residential properties and 2 full commercial properties, with 4 partial properties (2 residential, 2 commercial) required. In total 43 properties would be impacted by the Commercial Offline Burswood option.

The Commercial Offline Burswood option impacts the most properties and the base property cost is higher than what was assessed for the Commercial Online and Commercial Offline options.

The base property acquisition cost for the Commercial Offline Burswood option has been established by a valuation desktop exercise. Under this option, there is significantly less mitigation or business loss cost assumptions (Public Works Act claims), by comparison with Commercial Online, which has been previously identified as a significant component of those costs. The disruption to businesses at Ti Rakau Drive during construction of the Commercial Online Option including access to the businesses and loss of carparking (which can be claimed under the Public Works Act) will be significant and the cost of this may far exceed the base property cost.

Property ownership under the Commercial Offline Burswood option is predominately freehold and single titles, rather than multiple ownerships (such as lease holders agreements and land owner titles and unit titles) which exist along Ti Rakau Drive and would need to be acquired for the Commercial



Online option. The commercial offline acquisitions are considered more straight forward than those that are held in multiple ownership, which will result in savings in the cost of acquisition.

The Commercial Offline option has the least impact on property, however there are a lot of assumptions in this option, including that that the busway is able to be constructed in this compact area without impacting residential dwellings that are in close proximity.

14.3.13 Impact on Utilities

Commercial Online (0)	Commercial Offline (0)	Commercial Offline
		Burswood (0)

As detailed at Section 6.2.13 of this report, all the proposed options for the busway will interact with local and transmission utility services, with the ultimate effect being neutral as services would be maintained.

14.3.14 Stormwater Considerations

Commercial Online (2)	Commercial Offline (0)	Commercial Offline
		Burswood (1)

Stormwater considerations were not assessed previously as it was considered that the potential effects of stormwater would require water quality treatment regardless of the option selected. Stormwater considerations were included in the MCA update for completeness.

The technical assessor provided the following comments in relation to stormwater considerations:

Commercial Offline Burswood

- Offline from Ti Rakau Drive reduces the interaction with overland flow and flooding issues.
- Avoids crossing Burswood Esplanade Reserve waterways which avoids potential reduction of flood carrying capacity
- The busway is treated by green infrastructure (best practice GD01).
- Discretionary treatment of other carriageways by green infrastructure

Commercial Offline

- Offline from Ti Rakau Drive reduces the interaction with overland flow and flooding issues.
- Crossing Burswood Esplanade Reserve waterways has potential to reduce flood carrying capacity
- The busway is mostly treated by green infrastructure (best practice GD01), some is via a Gross Pollutant Traps

Commercial Online

- Online Ti Rakau Drive alignment will interact with overland flow and flooding issues more than offline options.
- Not crossing Burswood Esplanade Reserve waterways avoids reducing flood carrying capacity
- The busway is mostly treated by green infrastructure (best practice GD01) along with one carriageway, the rest via GPTs.
- Mitigation would involve similar approach to management of overland flow and flooding in EB2/EB3R.



15 Updated Sensitivity Analysis

A sensitivity analysis was undertaken on the updated MCA results using the same methodology as that detailed at Section 8 of this report. The Sensitivity Analysis is attached at Appendix 10. The Sensitivity analysis has been undertaken to apply weighting to the assessment criteria used for the MCA. The raw scores showed a preference for the Commercial Burswood Offline option. The costs considered design, construction and property acquisition costs.

When weighting is applied the EB3 Commercial Burswood option performs better than the Commercial Offline and the Commercial Online options in the Transport Benefits, Effects, and Equal weighting scenarios. The Commercial Offline option performs best when costs are weighted, and the Commercial Online option performs better when the environmental weightings are applied.

Table 19 Updated Sensitivity Analysis:

Weighting and sensitivity analysis						
Scenario	Ranked first	Ranked second				
Equal	Commercial Burswood Offline	Commercial Offline				
Transport Benefits	Commercial Burswood Offline	Commercial Offline				
Environmental	Commercial Online	Commercial Burswood				
Effects	Commercial Burswood Offline	Commercial Offline				
Cost	Commercial Offline	Commercial Burswood Offline				
Combined	Commercial Burswood Offline	Commercial Offline				

The provision of weighting shows that, in most circumstances, the best performing option is the Commercial Burswood Offline. In particular the Commercial Burswood Offline Option performed better when weighting was applied in transport benefits and effects. The Commercial Burwood Offline Option ranked second when cost weightings were applied, but the difference in score to the 1st ranked Commercial Online option was small (198 to 190).

Scoring the EB3C options of Online, Offline and Commercial Burswood Offline indicated that the Commercial Burswood Offline Option performed well against the Project Objectives and other MCA criteria and supports the earlier assessment, detailed at section 10 -13 of this report undertaken by the EBA.



16 Outcome of the Updated MCA

Scoring the EB3C options of Online, Offline and Commercial Burswood Offline through the update MCA indicated that the Commercial Burswood Offline Option performed well against the Project Objectives and other MCA criteria. The MCA also showed that the Commercial Offline Option was the cheapest option followed by the Commercial Offline Burswood Option. The Commercial Online option performed well against the environmental criteria given less impact on Burswood reserve and the CMA.

Overall, the updated MCA supported the outcomes of the design refinement and assessment of the Burswood Esplanade Reserve and Stations options detailed at sections 10-13 of this report. The outcomes of the MCA were reported to the ALT on 04 December 22. As the updated MCA confirmed the outcomes of the previous options assessments and didn't necessitate any additional design changes the findings of the updated MCA were endorsed by the ALT and no further changes to the reference design were considered necessary at that time.



Appendix 1: Long List Options Assessment

The following information is provided:

- Sifting score sheet for EB3 Residential
- Sifting score sheet for EB3 Commercial

eening Factors	DRAFT														
stern Busway															
ailed Business Case															
©: EB3 Residential															
16/11/2020															
						Surregy I	Eignen and Options								
lo. Screening Factors	Option 0	Option 1	Option 2	Option 3	Option 4	Option 5 Survey on Local Roads on North of Ti Rakau Drive move	Option 6 Central running business on wentbound lanes and widen for	Option 7	Option 8	Option 9	Option 10	Option 11	Option 12	Option 13	Option 14
		Survey at rear of residential land	Busway at front of residential land	Specimen Design with on road cycle facilities	Central narrow with ed station	carriagesty to a new alignment.	central turning closely on windowed annuard wider for wentbound general traffic		Remove Sus Station at Edgewater	Tidal Traffic	Cycleway on coantal alignment		Busway offline into Gosamer	Bi-directional cycle facility on one side of the conidor on	only Scheme Design
· · · · · · · · · · · · · · · · · · ·		Offline businesy along the back of the residential properties on			Optimised Specimen Design with narrow lanes and mid-block statio			Variant on Option 6. Existing westbound carriageway converted to				Busway located on elevated structure along centre of Ti Rakau			
			southern side of Ti Rakau Drive, with stations along the alignment.		locations and 'eel station' configuration.	Ti Rakau Drive		basway. New westbound traffic lanes are combracted to the	combined centrally located station.	alternating the direction and purpose to suit peak demands, as for	Pakuranga Bridge	Drive. Dedicated bi-directional cycle facilities provided on northern		corridor, with a footpath only on the opposite side.	separated uni-directional cycle facilities, with raised
			Complete separation to Ti Rakau Drive. On road uni-directional	and shared path on southern verge).		1	existing verge to minimise impacts on existing utility services.	southern side of the existing verge to minimise impacts on existing		Auckland Harbour Bridge, Centro-nurning-busway.		side of Ti Rakau Drive with shared path on southern side.	furning eastbound to head towards Botany. Assumes a new bridge		Widens both sides of Ti Rakau Drive. This encompass
	Intersections. Widens both sides of Ti Rakau Drive.	directional cycling facilities provided on the existing road by removing parking.	cycling facilities provided on the exhiting road by removing parking. All adolning side roads would require signalised intersections to			1	Unidirectional cycle facilities provided on-road.	utility services. Cycle facilities located between baseay and gener traffic larges.	ni l				over Pakuranga Bridge on northern side of exhiting bridge (NS. bridge excluded from option).		work done prior to 2017, which assessed a range of op and identified a preferred.
		removing parking.	All argoining side roads would require signalistic intersections to provide for safe traffic operations. All properties would require right					Partic Units.					progress upon operary.		and identified a preferred.
			of way or access lane to the mar of the property with no properties.			1		1							
			with direct access to Ti Rakau Drive.												
						1		1							
1 Does it achieve an acceptable bussay alignment/system?		4	0				4								
Does the option significantly improve affordability? Does the option provide a safe environment for all users?		5	4				4								
Does the option provide a safe environment for all users? Does this option have a leaser degree of difficulty for statutory approvals.															
Does this option minimise impact on access for properties along Ti Rakau Drive?															_
Does this option minimise impacts to properly (i.e less properly to be aquired)?															_
7 Does it support urban integration and growth?															
Does it minimise impacts on significant utilities?															
Score	0	9	4	0	0	0		0	0	0	0	0	0	0	
Ranking		1 Provides for multi-modal transport outcomes. Offline combraction			Provides for multi-modal transport outcomes. Not affordable due		2 Provides for multi-modal transport outcomes. Provides a legible								
	Provides for multi-modal transport outcomes. Not affordable due to impact on major utilities and stormwater drainage requirements.		operations will cause additional delays to groves fraffic and bus				business not must make its support outcomes. Provides a region business notices that is visible to customers. Offline construction	Provides for multi-model tramport outcomes. Provides a legible business nation that is visible to customers. Offline construction		of flow, along Ti Rakau Drive Inboth directions in AM / PM peaks. In	Cycleway is much longer and steeper (approximately twice the	Provides for multi-modal transport outcomes. Not affordable due scale of structures required. Potential privacy issues for adjacent			as a Provides for multi-modal transport outcomes. Not affi
	Additional costs for online traffic management during combuction				Impact on major usins is and stormwater dramage requirements. Additional costs for online traffic management during combruction		through largely Council counsel residential properties avoids the	through furnity Council council residential properties avoids the			enginer a more direct roday, serves more as a recreational cyclesian so does not serve the project objectives. Could be used		properties along Colsamer Drive. Postereal for consaminated and	in w. option. As scheduling factors have not been assessed as in it a component that could be included in any option. Not	
			services. Proximity of the busyaw to general traffic lanes is not		and elongated programme duration. Residual residential land	sections are narrow. Therefore substantial property impact. Cuck				s. accommodate turning laws. Business allowent would need to be		Potential noise effects on adjacent residential grownties -	potential alternative bridge crossing to link to offline EB3	progressed.	during communition and elongated programme duration
	provides opportunities for urban integration and growth. Not	Rakau Drive. Residual land between two carriagnways support	intuitive for pedestriams and could cause safety issues (navigating	provides opportunities for urban integration and growth. Marginal	provides opportunities for urban interzation and growth. Marshall	facilities would not provide for all som and abilities due to	reducing costs substantially. Additional drainage requirements to	reducing costs substantially. Additional drainage requirements to	Additional costs for online traffic management during construction	located on either northern or southern side to allow for tidal flow	screening factors have not been assessed as this is a component	particularly northern side of corridor. Potential CPTED issues with	Commercial options. If combined with offline commercial ESS		facilities separated from general traffic with narrower
	progressed due to affordability.						ne accomodate 1% AEP flood immunity to be investigated. Residual	accompdate 1% AEP food immunity to be investigated. Residual		operation for general traffic / freight. If busway is centre-numing.	that could be included in any option. Not progressed.	passive surveillance of elevated bus station(s). Location of piers on			Residual residential land provides opportunities for urb
			directions). All future redeveloped residential properties would need			combuction, however this would have increased disruption to	land supports redevelopment. Future redeveloped front row	land supports redevelopment. Future redeveloped front row	provides opportunities for urban integration and growth. Minor	four general traffic lanes needed each direction either side of the		Ti Rakau Drive for elevation structure would conflict with existing			integration and growth. Not progressed due to affords
				for cyclists due to degree of separation from general traffic. Not	footprint / cross-section of 2m across the corridor. An eel station	adjoining residential properties. Does not make use of properties			y Improvement in affordability compared to Specimen Design due to			major utilities. Visual impacts of elevated / grade-separated	time and reliability benefits. Busway still interacts with utilities and	1	
		long right of ways or access lanes. Noise wall likely required to mitigate effects on adjacent residential properties. Retaining wall	access lanes. No direct property access onto Ti Rakau Drive for	progressed	configuration could be applied as VE sub-option, therefore not progressed as a standardne option.	already acquired on Ti Rakau Drive. Option not progressed due to impact on local properties, poor quality business alignment.			removing one station. Potential to be incorporated in other option as part of W. Not progressed due to reduced catchment coverage			structure at street level / views to structure, in addition to shading and urban design issues. There may be some complicatly with	results in associated costs. Increased length of busway, additional property acquisition costs and assumed additional length of bridge		
Summary of decision made		mitgase effects on adjacent residential properties, seraining scale may be required due to topography - to be investigated. Future			progressed as a sumasione opeon.		the color to contribute and properties. Online properties, to be already acquired for the project. Reduced traffic management for			property acquisition required on Ti Rakau Drive. Spriftcent impact		obtaining statutory approvals due to potential effects. Not	property acquision coun and assumed additional length of bridge sould make this option unaffordable. Bridge interface: Potential	'	
		redeveloped front row properties would have access directly to Ti	need to service remaining residential properties to rear. Noted a			arriade tales are to dain, ereales or company and		offlire construction resulting in faster and lower commutation cos		on affordability. Likely there is insufficient residual land remaining		progressed.	coastal and ecological impacts on Pakuranga Creek due to new		
		Rakau Drive which may be more affractive for development.	number of residential properties are now Council-owned and there				Cycle facilities can be provided to a standard observed elsewhere	in Qual-directional cycle facility between general traffic and business		for redevelopment. Not progressed.			bridge crossing. New bridge length approx. 400m vs existing bridge		
			is an opportunity to reconfigure titles to provide alternative access.			1		comidered to be usualle. Access to and from the cycle facility alo					185m, therefore increased cost. Bridge alignment may be close to		
	1	l	Not considered to provide an acceptable businey alignment,	I	1	1		It's length is challenging due to requirement to provide access acro		1	I	1	residential pemisula to the north of the creek. Is a VE option:		1
	1		combined with safety issues associated with non-initiative	I	1	1	11 Rakau Drive.	general traffic lanes / businay. This generates potential safety issu			I	1	pending EB3C scheme selection. Not progressed.		1
			configuration, was not progressed.			1		for active mode users and potential unreliability for businey due to additional crossings. Commuter cacints using facility for entire	•						
	1	l		I	1	1		length may have a direct lowners however due to access lower th	. [1	I	1			1
								facility may not be within for all one and shifting	-						
Proceeds to scheme-level option development?															

Critical Success Factors
Eastern Busway
Detailed Business Case
Zone: E83 Commercial
Date: 13.11.20

DRAFT

						Busings	Janment Options					
CSF No. Critical Success Factors	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9	Option 10	Option 11	Option 12
	Specimen Design	Narrow	Offline Busway Commercial Buffer and Bus Depot North	Offline Residential and Bus Depot North	Specimen Design with Online Widening North	Specimen Design with Online Widening South	Viaduct	Narrow with Offline Bus Depot North	Split Direction Bus Lanes	Tidal Traffic	Specimen Design with Offline Cycleway	Scheme Design
· · · · · · · · · · · · · · · · · · ·	Centre-running busway on Ti Rakau Drive with off-street.	Centre-running busway on Ti Rakau Drive with off-street.	Option to relocate the busway only to the north, between the	Option to relocate the busway only to the north, within	Centre-running busway on Ti Rakau Drive with off-street.	Centre-running busway on Ti Rakau Drive with off-street.	Busway located on elevated structure along centre of Ti Rakau	Narrow centre-running busway on Ti Rakau Drive between	Variant off-line busway entails relocating just the eastbound	This option entails constructing as few as five traffic lanes, and	Centre-running busway on Ti Rakau Drive with bi-directional	Centre-running busway on Ti Rakau Drive with on-street.
	separated bi-directional cycle facilities on northern verge, with	separated bi-directional cycle facilities on northern yerge, with	commercial properties and residential properties and continuing	residential properties and avoiding commercial properties and	separated bi-directional cycle facilities on northern verge, with	separated bi-directional cycle facilities on northern verge, with	Drive. Dedicated bi-directional cycle facilities provided on	Burswood Crescent and Greenmount Drive (Option 2 cross-	busway lane to the north of the commercial properties, whilst th		r cycleway in northern buffer zone between commercial and	separated uni-directional cycle facilities, with raised median.
	shared use path on southern verge. Station platforms located or	shared use path on southern verne. Widens both sides of Ti Raka	u on the northern side of the Howick & Eastern Bus Depot. This	continuing on the northern side of the Howick & Eastern Bus	shared use path on southern verne. Station platforms located of	in shared use path on southern verge. Station platforms located	on porthern side of Ti Rakau Drive with shared path on southern	section) with off-street, separated bi-directional cycle facilities	westbound busway lane would remain centre-running on Ti	Auckland Harbour Bridge, Centre-running busway.	residential properties (Burswood).	Widens both sides of Ti Rakau Drive. This encompasses the work
	departure side of intersections. Widens both sides of Ti Rakau		variant hugs the commercial properties, along the line of an	Depot. Potentially excludes cycleway facilities.		ern departure side of intersections. Widens from the existing north		and footpath on northern verge, with shared use path on	Rakau Drive. Cycle facilities assumed to be located on Ti Rakau		(done prior to 2017, which assessed a range of options and
	Drive	bus stations (eel station configuration mid-block) and	existing earth bund. Potentially excludes cycleway facilities.			ve. kerb line only. Properties impacted to the south of Ti Rakau Dr		southern verge. Widens both sides of Ti Rakau Drive. Offline	Drive			identified a preferred option at the time and was referred as the
		intersections to reduce width						busway north of Howick & Eastern Bus Depot. This option				Scheme Design
								acknowledges the particular pinch point adjacent to the Bus				
								Depot, where land purchase would be complex. For this short				
								length the busway only would be relocated north.				
								icigar are businey only would be resource for it.				
1 Does it achieve an acceptable busway alignment?				4								
2 Does the option significantly improve affordability?		3	5	4				3				
3 Does the option provide a safe environment for all users?												
4 Does this option have a lesser degree of difficulty for statutory approvals?												
5 Does this option minimise impacts to property access along Ti Rakau Drive?												
6 Does this option minimise impacts to property?												
Score												
					U	U	U					0
Ranking	0	3-	1	2	0	0	0	3-	0	0	0	0
Ranking	Provides for multi-modal transport outcomes. Not affordable du	3 = e Provides for multi-modal transport outcomes. Considered to be						3 = ue Provides for multi-modal transport outcomes. Considered to be		Challenging from traffic operations perspective due to the	Provides for multi-modal transport outcomes. Potential CPTED	Provides for multi-modal transport outcomes. Residual residential
Ranking	to scale of property acquisition on commercial properties and	3 = Provides for multi-modal transport outcomes. Considered to be intuitive and legible for customers. Most direct busway route.	Removes some intersections for the busway, which is therefore	Removes some intersections for the busway, which is therefore	Impact to north of Ti Rakau Drive. Not affordable due to scale		of to scale of property acquisition on commercial properties and	intuitive and legible for customers. Slightly less directly busway	busway lane, the decrease in cross section is limited to ~3.5m,	evenness of flows along Ti Rakau Drive in both directions in AM /	Provides for multi-modal transport outcomes. Potential CPTED passive surveillance issues due to cycleway alignment between	land provides opportunities for urban integration and growth.
Ranking	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	intuitive and legible for customers. Most direct busway route. Some signals to navigate, however likely managed with priority.	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly	impact to north of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a	of to scale of property acquisition on commercial properties and other properties. Potential CPTED issues with passive surveillans	Intuitive and legible for customers. Slightly less directly busway ce route. Passenger comfort considerations due corners on	busway lane, the decrease in cross section is limited to <3.5m, therefore still impacts property on Ti Rakau Drive, while resulting	evenness of flows along Ti Rakau Drive in both directions in AM / g PM peaks. In addition to complex turning movements and the	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful	land provides opportunities for urban integration and growth. Marginal reduction in property acquisition, therefore insufficient
Ranking	to scale of property acquisition on commercial properties and	intuitive and legible for customers. Most direct busway route. Some signals to navigate, however likely managed with priority. Passenger comfort considerations due to eel station configuratio	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly in busway route. Passenger comfort considerations due corners on	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly busway route. Passenger comfort considerations due corners on	impact to north of Ti Rakau Drive. Not affordable due to scale- property acquisition on commercial properties, particularly a significant impact on the Howick & Eastern Bus Depot and	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to scale of property acquisition on commercial properties and other properties. Potential CPTED issues with passive surveillans	intuitive and legible for customers. Slightly less directly busway	busway lane, the decrease in cross section is limited to <3.5m, therefore still impacts property on Ti Rakau Drive, while resulting in additional property costs for the offline eastbound busway to	evenness of flows along Ti Rakau Drive in both directions in AM / g PM peaks. In addition to complex turning movements and the need to accommodate turning lanes. Busway alignment would	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 3.5m on Ti Rakau Drive cross-	land provides opportunities for urban integration and growth. Marginal reduction in property acquisition, therefore insufficient affordability reduction compared to Specimen Design. Potentially
Ranking	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	intuitive and legible for customers. Most direct busway route. Some signals to navigate, however likely managed with priority. Passenger comfort considerations due to eel station configuratio chicanes. Eel configuration for station location between	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly busway route. Passenger comfort considerations due corners on alignment. Potential CPTED matters for station location and	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly busway route. Passenger comfort considerations due corners on alignment. Potential CPTED matters for station location and	impact to north of Ti Rakau Drive. Not affordable due to scale- property acquisition on commercial properties, particularly a significant impact on the Howick & Eastern Bus Depot and properties on Harris Road junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a	of to scale of property acquisition on commercial properties and other properties. Potential OPTED issues with passive surveillant of elevated bus station(s), Affordability of structure. As cross- section cannot be narrowed enough to eliminate property costs	intuitive and legible for customers. Slightly less directly busway or oute. Passenger comfort considerations due corners on alignment. Narrow Ti Rakau cross-section and Eel configuration for station location between Edgewater and Huntington Drive	busway lane, the decrease in cross section is limited to ~3.5m, therefore still impacts property on 11 Rakau Drive, while resulting in additional property costs for the offline eastbound busway to the north behind commercial properties. Station location	evenness of flows along Ti Rakau Drive in both directions in AM / g PM peaks. In addition to complex turning movements and the need to accommodate turning lanes. Busway alignment would need to be located on either northern or southern side to allow	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 3.5m on Ti Rakau Drive cross-	land provides opportunities for urban integration and growth. Marginal reduction in property acquisition, therefore insufficient
Sanding Sanding	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	intuitive and legible for customers. Most direct busway route. Some signals to navigate, however likely managed with priority. Passenger comfort considerations due to eel station configuratio	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly in busway route. Passenger comfort considerations due corners on alignment. Potential OPTED matters for station location and visibility to be further considered to improve passive surveillance.	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly busway route. Passenger comfort considerations due corners on alignment. Potential CPTED matters for station location and visibility to be further considered to improve passive surveillance.	impact to north of Ti Rakau Drive. Not affordable due to scale- property acquisition on commercial properties, particularly a significant impact on the Howick & Eastern Bus Depot and properties on Harris Road junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to scale of property acquisition on commercial properties and other properties. Potential OPTED issues with passive surveillant of elevated bus station(s), Affordability of structure. As cross- section cannot be narrowed enough to eliminate property costs	intuitive and legible for customers. Slightly less directly busway ce route. Passenger comfort considerations due conners on alignment. Narrow II Babau cross-section and Eel configuration for station location between Edgewater and Huntington Drive does reduce cross section and associated properly impacts and	busway lane, the decrease in cross section is limited to -3.5m, therefore still impacts property on Ti Rokau Drive, while resulting in additional property costs for the offline eastbound busway to the north behind commercial properties. Station location undefined, therefore may improve catchment coverage to the	evenness of flows along Ti Rakau Drive in both directions in AM / 9 PM peaks. In addition to complex luming movements and the need to accommodate luming lanes. Busway alignment would need to be located on either northern or southern side to allow for tidal flow operation for general traffic, Chieght. If busway is	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 3.5m on Ti Rakau Drive cross-	land provides opportunities for urban integration and growth. Marginal reduction in property acquisition, therefore insufficient affordability reduction compared to Specimen Design. Potentially
Sandrag	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	intuitive and legible for customers. Most direct busway route. Some signals to navigate, however likely managed with priority. Passenger comfort considerations due to eel station configuratio chicanes. Eel configuration for station location between	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly on busway route, Passenger comfort considerations due comes on alignment. Potential CPTED matters for station location and visibility to be further considered to improve passive surveillance. Current level of investigation suggests busway can be	Removes some intersections for the busway, which is therefore neutral for additional distance. I travel time. Slightly less directly busway moute. Passenger comfort considerations due corners on alignment. Potential CPTED matters for station location and visibility to be further considered to improve passive surveillance impacts to 34 residential properties. This requires further review.	impact to north of Ti Rakau Drive. Not affordable due to scale- property acquisition on commercial properties, particularly a significant impact on the Howick & Eastern Bus Depot and properties on Harris Road junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to scale of property acquisition on commercial properties and other properties. Potential OPTED issues with passive surveillant of elevated bus station(s), Affordability of structure. As cross- section cannot be narrowed enough to eliminate property costs	intuitive and legible for customers. Slightly less directly busway or oute. Passenger comfort considerations due corners on alignment. Narrow Ti Rakau cross-section and Eel configuration for station location between Edgewater and Huntington Drive	busway lane, the decrease in cross section is limited to -3.5m, therefore still impacts property on Ti Rokau Drive, while resulting in additional property costs for the offline eastbound busway to the north behind commercial properties. Station location undefined, therefore may improve catchment coverage to the	evenness of flows along Ti Rakau Drive in both directions in AM / g PM peaks. In addition to complex turning movements and the need to accommodate turning lanes. Busway alignment would need to be located on either northern or southern side to allow	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 3.5m on Ti Rakau Drive cross- section, therefore some saving on commercial property costs	land provides opportunities for urban integration and growth. Marginal reduction in property acquisition, therefore insufficient affordability reduction compared to Specimen Design, Potentially reduced safety for cyclists due to degree of separation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormater drainage requirements and
Rambing	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	initative and legible for customers. Most direct bassay route Some signals to rasulgate, however likely managed with priority. Parsonger comfort considerations due to est station configuration chicanes. Eel configuration for station location between Edgewater and Hunnington Drive does reduce cross section and associated properly impacts and costs however the eel configuration does not entirely eliminate properly acquisition.	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly on busway route, Passenger comfort considerations due comes on alignment. Potential CPTED matters for station location and visibility to be further considered to improve passive surveillance. Current level of investigation suggests busway can be	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly busway route. Passenger comfort considerations due corners on alignment. Potential CPTED matters for station location and visibility to be further considered to improve passive surveillance.	impact to north of Ti Rakau Drive. Not affordable due to scale- property acquisition on commercial properties, particularly a significant impact on the Howick & Eastern Bus Depot and properties on Harris Road junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to scale of property acquisition on commercial properties and other properties. Potential CPTED issues with passive surveilland of elevated bus station(s). Afterdability of structure. As cross- section cannot be narrowed enough to eliminate property costs on Ti Rakau Drive affordability remains an issue. Visual impacts elevated 'grade-separated structure at street level / views to	intuitive and legible for customers. Slightly less directly busway ce route. Passenger comfort considerations due conners on alignment. Narrow II Babau cross-section and Eel configuration for station location between Edgewater and Huntington Drive does reduce cross section and associated properly impacts and	bussay Jane, the decrease in cross section is limited to -3.5m, therefore still impacts properly on Ti Rakau Drive, while resulting in additional property costs for the offline eastbound bussay to the north behind commercial properties. Station location undefined, therefore may improve catchment coverage to the residential areas (Burswood), Potential O'PED matters for station location and visibility to be further considered to improve passiv	evenness of flows along Ti Rakau Drive in both directions in AM.) PM peaks. In addition to complex turning movements and the inced to accommodate turning laines. Busway alignment would need to be located on either northern or southern side to allow for tidal flow operation for general straffic. Intellight. Its busway is centre-running, four general traffic lames needed each direction either side of the busway to allow for turning movements. Fixed	passive surveillance issues due to cycleway slignment between residential and commercial properties will need careful consideration. Swing approx. 3 5m on 11 Rakau Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design. However requires additional property costs for northern commercial buffer land for cycle facilities. Option not further propessed as not considered to	land provides opportunities for urban integration and growth Marginal reduction in property acquisition, therefore insufficient affordability reduction compared to Specimen Design. Potentially reduced safety for cyclists due to degree of separation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater drainage requirements and costs associated with online traffic management during.
Barriang	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	intuitive and legible for customers. Most direct busway route. Some signals to navigate, however likely managed with priority. Passenger confort considerations due to eet station configuratio chicanes. Eel configuration for station location between Edgewater and Huntington Drive does reduce cross section and associated property impacts and costs; however the eel	Removes some intersections for the busway, which is therefore neutral for additional distance / travel time. Slightly less directly on busway route, Passenger comfort considerations due comes on alignment. Potential CPTED matters for station location and visibility to be further considered to improve passive surveillance. Current level of investigation suggests busway can be	Removes some intersections for the busway, which is therefore neutral for additional distance. I travel time. Slightly less directly busway moute. Passenger comfort considerations due corners on alignment. Potential CPTED matters for station location and visibility to be further considered to improve passive surveillance impacts to 34 residential properties. This requires further review.	impact to north of Ti Rakau Drive. Not affordable due to scale- property acquisition on commercial properties, particularly a significant impact on the Howick & Eastern Bus Depot and properties on Harris Road junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to scale of property acquisition on commercial properties and other properties. Potential CPTED issues with passive surveilland of elevated bus station(s). Afterdability of structure. As cross- section cannot be narrowed enough to eliminate property costs on Ti Rakau Drive affordability remains an issue. Visual impacts elevated 'grade-separated structure at street level / views to	initialities and logibile for customers. Slightly less directly bassey route. Passenger comfort considerations due corners on alignment. Marrow IT Rabau cross section and Eel configuration for station location between Edysowater and Huntington Drive does reduce cross section and associated properly impacts and costs. For the section of bussey diffue north of the depot, due to topography, here would be increased amounts of earthworks.	bussay Jane, the decrease in cross section is limited to -3.5m, therefore still impacts properly on Ti Rakau Drive, while resulting in additional property costs for the offline eastbound bussay to the north behind commercial properties. Station location undefined, therefore may improve catchment coverage to the residential areas (Burswood), Potential O'PED matters for station location and visibility to be further considered to improve passiv	evenness of flows along Ti Rakau Drive in both directions in AM / PM peaks. In addition to complex luming movements and the need to accommodate turning lanes. Busway alignment would need to be located on either northern or southern side to allow for tidal flow operation for general traffic / freight. If busway is centre-running, four general traffic lanes needed each direction	passive surveillance issues due to cycleway slignment between residential and commercial properties will need careful consideration. Swing approx. 3 5m on 11 Rakau Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design. However requires additional property costs for northern commercial buffer land for cycle facilities. Option not further propessed as not considered to	land provides opportunities for urban integration and growth Marginal reduction in property acquisition, therefore insufficient affordability reduction compared to Specimen Design. Potentially reduced safety for cyclists due to degree of separation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater drainage requirements and costs associated with online traffic management during.
Bankins .	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	initative and legible for customers. Most direct bassay route Some signals to rasulgate, however likely managed with priority. Parsonger comfort considerations due to est station configuration chicanes. Eel configuration for station location between Edgewater and Hunnington Drive does reduce cross section and associated properly impacts and costs however the eel configuration does not entirely eliminate properly acquisition.	Removes some intersections for the bussay, which is therefore neutral for additional distance / travel time. Slightly less directly to bussay route. Passenger comfort considerations due corners on allignment. Potential CPED matters for station location and violability to be further considered to improve passive surveillance Current level of investigation suggests bussay can be accommodated within the buffer can be between the commercial commodated within the buffer can be between the commercial commodated and the control of the commercial commodated within the buffer can be between the commercial commodated and the control of the commercial commodated within the buffer can be between the commercial commodated and the control of the commercial commodated within the buffer can be between the commercial commodated and the commercial commodated to the control of the commercial commercial control of the commercial commercial control of the commercial commercial control of the commercial commercial commercial control of the commercial commercial control of the commercial commer	lemoves some intersections for the bussias, which is therefore neutral for additional distance. I vened time. Slightly less directly bussiasy route. Passenger comfort considerations due comies on alignment. Potential CPED matters for station location and vibility to be further considered to improve passive surveillance impacts to 34 residential properties. This requires further revisited as part of the next stage. Effects and consenting requirements for	impact to north of Ti Rakau Drive. Not affordable due to scale- property acquisition on commercial properties, particularly a significant impact on the Howick & Eastern Bus Depot and properties on Harris Road junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to scale of property acquisition on commercial properties and other properties. Petential OPED issues with prasive surveilland of elevated bas station(pl. Affordability of structure. As cross- section cannot be ensowed enough to eliminate property son. Til Rakau Drive affordability premisis an issue. Visual impacts elevated / grade-separated structure at street level / views to structure, in a delition to shading and urban design issues. There	initialities and logibile for customers. Slightly less directly bassey route. Passenger comfort considerations due corners on alignment. Marrow IT Rabau cross section and Eel configuration for station location between Edynositer and Huntington Drive does reduce cross section and associated properly impacts and costs. For the section of bussey diffice north of the depot, due to topography, here would be increased amounts of earthworks.	bussey are, the decrease in cross section is limited to -3.6m, therefore still impacts properly on 15 liabus bries, with leresulting in additional property costs for the offline eastbound bussey to the north behind commercial properties. Station location undefined, therefore may improve catchment coverage to the recidential area (Borwasoud). Potential OFED matters for station location and visibility to be further considered to improve passive surveillance. Effects and connenting requirements for costals	evenness of flows along Ti Rakau Drive in both directions in AM.) PM peaks. In addition to complex turning movements and the inced to accommodate turning laines. Busway alignment would need to be located on either northern or southern side to allow for tidal flow operation for general straffic. Intellight. Its busway is centre-running, four general traffic lames needed each direction either side of the busway to allow for turning movements. Fixed	passive surveillance haues due to cycleway alignment between residential and commercial proporties will need careful consideration. Saving approx 1.5m on Ti Rakau brive cross-section, therefore some saving on commercial property costs compared to Specimen Design. However requires additional property costs for northern commercials buffer land for cycle facilities. Option not further progressed as not considered to contribute sufficiently to affordability. However, this option has	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater fraingue requirements and costs associated with online traffic management during construction and enloqued programme duration.
Banking Sammer of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	Intailitie and legible for customers. Most direct busway router. Some signals to avaigate, however likely managed with protects. Possible statement of the protection of the statement of the control o	Removes some intersections for the bussay, which is therefore neutral for additional distance / Irvael time. Slightly less directly in bussay route. Passenger conflict considerations due corners and sistement. Political OFEID matters for estation location and sistemity to be further considered to insprove passive surveillance accommodated within the buffer and between the commentaria accommodated within the buffer and between the commentaria and residential properties. Buffer anne is espected to result in significantly lower property acquisition costs due fenere laysificantly lower property acquisition and some properties.	kemoves some interactions for the basway, which is therefore becutal for additional distance / travel time. Slightly less directly basway moste. Passenger comfort considerations due corners on sligment. Potential OPEED matters for station location and vibibility to be further considered to improve passive surveillance (impacts to 34 readedintal properties. This requires further work as part of the next stage. Effects and consenting requirements for coastal marine areas, open space and promiting to resident	impact to north of II Biokas Divie. Not alfordable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	intailitie and legible for customers. Slightly less directly busway or prude. Patrumper confort considerations due comers on alignment. Narrow IT Rabias cross section and 64 configuration for station location between Edgewater and Harmitgroin View of all one of the configuration of the configuration of the configuration of south For the section of busway offlien enth of the deepth opportunity of the configuration of the configuration of earthworks and/or new structures required, without proprient and	bursay Jane, the decrease in cross section is limited to -3.5m, therefore still impacts properly on 15 labau borhe, with eventual in additional property costs for the offline eastbound bursays to the north behind commercial properties. Station location undefined, therefore may improve catchment coverage to the control of the commercial properties. Station location undefined, therefore may improve catchment coverage to the control of the	evenness of flows along I Riskau Drive in both directions in AM / JM plansk in addition to complex turning movements and the need to accommodate turning tames. Busway alignment would need to be located on either northern or southern side to allow for tidal flow operation for general traffic / frieight. If Duxway is controveruning, for general traffic ans needed each direction either side of the busway to allow for turning movements. Fixed entire-running station locations cannot be stiffled easily hot controveruning.	passive surveillance haues due to cycleway alignment between residential and commercial proporties will need careful consideration. Saving approx 1.5m on Ti Rakau brive cross-section, therefore some saving on commercial property costs compared to Specimen Design. However requires additional property costs for northern commercials buffer land for cycle facilities. Option not further progressed as not considered to contribute sufficiently to affordability. However, this option has	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater fraingue requirements and costs associated with online traffic management during construction and enloqued programme duration.
Summary of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	Instititive and legible for customers. Most direct busway route, some signats to avaigate, however likely managed with priority. Passunger comfort considerations due to est station configuration chicanes. Est configuration for station location between Edgewater and Huntington Divise does reduce cross section and Edgewater and Huntington Divise does reduce cross section and configuration does not entertiely eliminate property acquisition between Huntington Station and Edit boundary near to the Howisk & Estation but depot and America Rica commercial	Removes some intersections for the bussay, which is therefore neutral for additional distance / Irvael time. Slightly less directly in bussay route. Passenger conflict considerations due corners and sistement. Political OFEID matters for estation location and sistemity to be further considered to insprove passive surveillance accommodated within the buffer and between the commentaria accommodated within the buffer and between the commentaria and residential properties. Buffer anne is espected to result in significantly lower property acquisition costs due fenere laysificantly lower property acquisition and some properties.	Emous some intersections for the bussay, which is herefore vectoral for additional distance. In trust limit, Biglighty loss directly bussay south. Passanger confirst considerations due corners on slignment. Potential OFED matter for station location and visibility to be further considered to improve passive surveillance impacts to 34 recibilitation propriets. This requirements for south of the next stage. Effects and consoniting requirements for constall marker was no, open space and promisity to residential activities to be further assessed. Further consideration of cycle facility requirements needed. Recommended this option is taken	impact to north of II Biokas Divie. Not alfordable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	inhalities and legible for customers. Slightly less directly business pouche. Personger confert considerations due corners on alignment. Narrow IT Rakkas cross section and 61 configuration for station location between Edgewater and Hantington Drive of doors reclude: ross sections and associated properly impacts and sociative properly impacts and sociative properly impacts and sociative properly impacts and propagally. There would be increased amounts of earthwards to propagally from would be increased amounts of earthwards can add or new structures required, which may present an affordability datallings. However, offline alignment reduces	bursay Jane, the decrease in cross section is limited to -3.5m, therefore still impacts properly on 15 labau borhe, with eventual in additional property costs for the offline eastbound bursays to the north behind commercial properties. Station location undefined, therefore may improve catchment coverage to the control of the commercial properties. Station location undefined, therefore may improve catchment coverage to the control of the	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate luming lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such continuous certification or certification	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional solutions. Option not further progressives a not considered to contribute sufficiently to affordability. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater fraingue requirements and costs associated with online traffic management during construction and enloqued programme duration.
Banking Summery of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	Institute and regible for contoners. Most direct bassay muter. Some signats to requise, however likely managed with priority. Passenger comfort considerations due to set station configuration chicanes. Est configuration for station location between Edigenate and Humington Driver does reduce cross section and associated properly impacts and costs, however the set configuration does not centility eliminate properly acquisition chicanes. As a state that a separate of the contoners is shown in the control of the contoners of properly set to the south. Further option refinement could include group reliable that was used to all directs and on the group reliable that was used to all directs and or shared our group reliable that was used to all directs and or properly and the set of the control and or properly and the control of the group reliable to the control of properly and the control of properly and the control of properly and the control of properly and the control of properly and properly	Removes some intersections for the busses, which is therefore neutral for additional distance. I travel limit Sulfight jess directly nowney route. Passenger conflict considerations due comers on subjement. Proteint OFIDs matters for station location and skibility to be further considered to improve peache suncellibrace. Current level of investigation suggests businesy can be excessibled in the buffer same between the consistent supplication of the property acqualistion control that level supplications are property acqualistion control and part of current conditions; powersall, This requires further relevant part of current conditions; powersall, This requires further relevant properties.	Emous some intersections for the bussay, which is herefore vectoral for additional distance. In trust limit, Biglighty loss directly bussay south. Passanger confirst considerations due corners on slignment. Potential OFED matter for station location and visibility to be further considered to improve passive surveillance impacts to 34 recibilitation propriets. This requirements for south of the next stage. Effects and consoniting requirements for constall marker was no, open space and promisity to residential activities to be further assessed. Further consideration of cycle facility requirements needed. Recommended this option is taken	impact to north of II Biokas Divie. Not alfordable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	Intalities and legible for customers. Slightly less directly bussay see souch Passanger comider considerations due corners on allayment. Narrow II lisabau cross section and Eel configuration (or Tastion location between Edigeasate and Huntington Driver of door reduce cross section and associated property impacts and costs. For the section of bussays offilms onto the deeper, due to proper play, there would be inversed amounts of entheorits and important plays, there would be inversed amounts of entheorits affectively in the plays of	bussey lane, the decrease in cross section is limited to 1.5 fm, therefore still impacts property on 11 fished brite, white resulting in additional property costs for the offline estibound bussey to the north behind commercial properties. Station location undefined, therefore may improve catchesest coverage to the redictival sense lightwarms of, Proteinal CoVID matters for station interesting the station of the control of the control of the station of the control of	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate luming lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such continuous certification or certification	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional solutions. Option not further progressives a not considered to contribute sufficiently to affordability. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater fraingue requirements and costs associated with online traffic management during construction and enloqued programme duration.
Sambing Sammary of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	Inhaltie and eighte for customers. Most direct boxway route, from signation resignation re	immore some interaction for the busines, which is therefore countries for additional foliations. I result the slightly less directly movement and the Patenings conflict considerations due common to additional to the properties of the patent and the patent control to the patent and the patent and the patent commonities of their hostification supports assert times commonities of their hostification support to a patent part patent patent patent patent patent patent part patent patent patent patent patent patent part of parent conditions (powersally). This requires for their part of the most stage. Efficiency and commonities of part of the most stage. Efficiency and commonities of part of the most stage. Efficiency and commonities of the part of the most stage. Efficiency and commonities of the part of the most stage. Efficiency and commonities of the part of the most stage. Efficiency and commonities of the part of the most stage. Efficiency and commonities of the part of the most stage. Efficiency and commonities of the part of the most stage of the part of the part of the most stage of the part of the most stage the part of the most stage the part of the	Emous some intersections for the bussay, which is herefore vectoral for additional distance. In trust limit, Biglighty loss directly bussay south. Passanger confirst considerations due corners on slignment. Potential OFED matter for station location and visibility to be further considered to improve passive surveillance impacts to 34 recibilitation propriets. This requirements for south of the next stage. Effects and consoniting requirements for constall marker was no, open space and promisity to residential activities to be further assessed. Further consideration of cycle facility requirements needed. Recommended this option is taken	impact to north of II Biokas Divie. Not alfordable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	habitive and logistic for customers. Signity less derively busses or usual resources control or condentation due correction and significant. National Till Salazu cross section and Ed or configuration. National Till Salazu cross section and Ed or configuration and control or customic busses with section and control or section section and control or customic for the section of bussessy diffice north of the depot due to propagably, there would be increased amount of carbinous's send or now structures required, within may present an admitsability shalingers between cellinas supported reductions and supported to the control of the co	bases you me, the docrase in cross section is limited to 3.5m, therefore still impacts properly on 18 labs Dive, white resulting in additional property costs for the offline estibound bussay to the north-behind commercial properties. Station location undefined, therefore may improve catchment coverage to the residential area (glasswood, Polechial OFFE) matter for station location and visibility to be further considered to improve passiva surveillance. Effects and consenting requirements for costals marine areas, open space and proximity to residential activities to be further assessed. The separation of the out certain of be further assessed. The separation of the two directions of the other consentations and the consentation of the second consentation of the second consentation of the second consentation of the second consentation of the consentation of the second con	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate luming lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such continuous certification or certification	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional solutions. Option not further progressives a not considered to contribute sufficiently to affordability. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater fraingue requirements and costs associated with online traffic management during construction and enloqued programme duration.
Summing Summary of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	makine and upplie for customers. Most direct bowery social, once signate in oneight, bowered likely magain with priority form signation resident. In the control of the c	immore some interaction for the bussey, which is therefore country for additional four Large families of large fill and country for the countr	Emous some intersections for the bussay, which is herefore vectoral for additional distance. In trust limit, Biglighty loss directly bussay south. Passanger confirst considerations due corners on slignment. Potential OFED matter for station location and visibility to be further considered to improve passive surveillance impacts to 34 recibilitation propriets. This requirements for south of the next stage. Effects and consoniting requirements for constall marker was no, open space and promisity to residential activities to be further assessed. Further consideration of cycle facility requirements needed. Recommended this option is taken	impact to north of II Biokas Divie. Not alfordable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	Intalities and ingliefe for customers. Signity less directly bussey to use the Possey consistent of consideration due and centered an allow or business produced and the produce	bussey lane, the decrease in cross section is limited to 1.5 fm, therefore still impacts property on 11 fished brite, white resulting in additional property costs for the offline estibound bussey to the north behind commercial properties. Station location undefined, therefore may improve catchesest coverage to the redictival sense lightwarms of, Proteinal CoVID matters for station interesting the station of the control of the control of the station of the control of	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate luming lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such continuous certification or certification	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional solutions. Option not further progressives a not considered to contribute sufficiently to affordability. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater fraingue requirements and costs associated with online traffic management during construction and enloqued programme duration.
Ramking Summary of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	Inhaltie and eighte for customers. Most direct boxway route, from signation resignation re	immore sum interaction for the busines, which is therefore countries for additional forms of the business, which is therefore movern forms of the Passings confert or understone duc corners on dispressed. Potential OFUT mentors for state in custom and suggested. Potential OFUT mentors for state in custom and suggested. Potential OFUT mentors for state in custom and suggested. Potential OFUT mentors for state in forms of the suggested of the potential of suggested of the potential of the potential of the potential of the potential of the potential of the potential of the potential of the potential of potential of potential of potential of potential of potential of potential of potential of potential potential of potential of potential of potential of potential potent	knowns some interactions for the busines, which is harefless found to facilitation fallows. Frame lime Stephily less descript business youth. Presempt conflict considerations due comes on disputes. Metallicat PUEI metallar for state in section and engages. The state of PUEI metallar for state in section and impacts to 34 residential properties. This requires faither review apart of the next state pletchard nor committee greatments for coastal marine areas, open space and proximity to residential coastal marine areas. Open space and proximity to residential coastal marine areas.	impact to north of II Biokas Divie. Not alfordable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	Including and inglish for customers. Signify less directly bussey to such Personage or international consideration due active and support of such Personage or international control of the such personage or international control of the such personage of the such control of the such cont	bussey lane, the decrease in cross section is limited to 1.5 fm, therefore still impacts property on 11 fished brite, white resulting in additional property costs for the offline estibound bussey to the north behind commercial properties. Station location undefined, therefore may improve catchesest coverage to the redictival sense lightwarms of, Proteinal CoVID matters for station interesting the station of the control of the control of the station of the control of	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate luming lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such continuous certification or certification	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional solutions. Option not further progressives a not considered to contribute sufficiently to affordability. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater frainger requirements and costs associated with online traffic management during construction and enloqued programme duration.
Sambing Sammary of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	makine and upplie for customers. Most direct bowery social, once signate in oneight, bowered likely magain with priority form signation resident. In the control of the c	immore some interaction for the busines, which is therefore countries for additional for additional for any finding fight less directly an example of the property conflict considerations due conven on the property conflict consideration due conven on the conventional form of the property conflict consideration and conflict the property conflict consideration and conflict the property conflict control for the conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict principles. Buffer and for conflict principles for the relative part of conflict principles. Effects and connecting repairments for conditional conflict principles and conflict principles. Buffer and connecting properties of the control principles and conflict principles and conflict principles. Buffer and connecting preparations for conditional conflict principles and conflict	knowns some interactions for the busines, which is harefless found to facilitation fallows. Frame lime Stephily less descript business youth. Presempt conflict considerations due comes on disputes. Metallicat PUEI metallar for state in section and engages. The state of PUEI metallar for state in section and impacts to 34 residential properties. This requires faither review apart of the next state pletchard nor committee greatments for coastal marine areas, open space and proximity to residential coastal marine areas. Open space and proximity to residential coastal marine areas.	impact to north of II Biokas Divie. Not alfordable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	mistille and legisle for customers. Signity less derively bussey or under Possey commercial consideration due commercial contraction and find configuration. Human II Salkau cross section and fill configuration in all productions and the configuration of the con	bussey lane, the decrease in cross section is limited to 1.5 fm, therefore still impacts property on 11 fished brite, white resulting in additional property costs for the offline estibound bussey to the north behind commercial properties. Station location undefined, therefore may improve catchesest coverage to the redictival sense lightwarms of, Proteinal CoVID matters for station interesting the station of the control of the control of the station of the control of	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate turning lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such content of the content of the content traffic. Fireight If Eusways is centre-running, patient surface, and one of the state of the bussay to allow for turning movements. Fixed centre-running state for other bussay to allow for turning movements. Fixed centre-running state for observation requirements are greater than Specimen Design will substantial property acquisition required on If Rabas Drive.	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional software of the commercial property costs compared to Specimen Design, However, this deption has classified. Option tool farther progressions at not considered to contribute sufficiently to affordshillity. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater frainger requirements and costs associated with online traffic management during construction and enloqued programme duration.
Summary of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	makine and upplie for customers. Most direct bowery social, once signate in oneight, bowered likely magain with priority form signation resident. In the control of the c	immore sum interaction for the busines, which is therefore countries for additional forms of the business, which is therefore movern forms of the Passings confert or understone duc corners on dispressed. Potential OFUT mentors for state in custom and suggested. Potential OFUT mentors for state in custom and suggested. Potential OFUT mentors for state in custom and suggested. Potential OFUT mentors for state in forms of the suggested of the potential of suggested of the potential of the potential of the potential of the potential of the potential of the potential of the potential of the potential of potential of potential of potential of potential of potential of potential of potential of potential potential of potential of potential of potential of potential potent	knowns some interactions for the busines, which is harefless found to facilitation fallows. Frame lime Stephily less descript business youth. Presempt conflict considerations due comes on disputes. Metallicat PUEI metallar for state in section and engages. The state of PUEI metallar for state in section and impacts to 34 residential properties. This requires faither review apart of the next state pletchard nor committee greatments for coastal marine areas, open space and proximity to residential coastal marine areas. Open space and proximity to residential coastal marine areas.	impact to north of II Biokas Divie. Not alforstable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	Including and inglife for customers. Signify less directly bussey to which Preserve provide increditations desired and externed an office of two file. Reserve provides increditation desired and externed an office or state of the section between Edynamic and its clinique for the desire discuss from the section of an associated properly imposts and costs. For the section of beausy office on the desired and associated and associated and associated and associated and afford desired provides and associated and associated and afford desired provides and associated a	bussey lane, the decrease in cross section is limited to 1.5 fm, therefore still impacts property on 11 fished brite, white resulting in additional property costs for the offline estibound bussey to the north behind commercial properties. Station location undefined, therefore may improve catchesest coverage to the redictival sense lightwarms of, Proteinal CoVID matters for station interesting the station of the control of the control of the station of the control of	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate turning lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such content of the content of the content traffic. Fireight If Eusways is centre-running, patient surface, and one of the state of the bussay to allow for turning movements. Fixed centre-running state for other bussay to allow for turning movements. Fixed centre-running state for observation requirements are greater than Specimen Design will substantial property acquisition required on If Rabas Drive.	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional software of the commercial property costs compared to Specimen Design, However, this deption has classified. Option tool farther progressions at not considered to contribute sufficiently to affordshillity. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater frainger requirements and costs associated with online traffic management during construction and enloqued programme duration.
Sambing Sammary of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	makine and upplie for customers. Most direct bowery social, once signate in oneight, bowered likely magain with priority form signation resident. In the control of the c	immore some interaction for the busines, which is therefore countries for additional for additional for any finding fight less directly an example of the property conflict considerations due conven on the property conflict consideration due conven on the conventional form of the property conflict consideration and conflict the property conflict consideration and conflict the property conflict control for the conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict principles. Buffer and for conflict principles for the relative part of conflict principles. Effects and connecting repairments for conditional conflict principles and conflict principles. Buffer and connecting properties of the control principles and conflict principles and conflict principles. Buffer and connecting preparations for conditional conflict principles and conflict	knowns some interactions for the busines, which is harefless found to facilitation fallows. Frame lime Stephily less descript business youth. Presempt conflict considerations due comes on disputes. Metallicat PUEI metallar for state in section and engages. The state of PUEI metallar for state in section and impacts to 34 residential properties. This requires faither review apart of the next state pletchard nor committee greatments for coastal marine areas, open space and proximity to residential coastal marine areas. Open space and proximity to residential coastal marine areas.	impact to north of II Biokas Divie. Not alforstable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	mistille and legisle for customers. Signity less derively bussey or under Possey commercial consideration due commercial contraction and find configuration. Human II Salkau cross section and fill configuration in all productions and the configuration of the con	bussey lane, the docrose in cross section is limited to 1.5 fm, therefore still imports properly on it likes brite, white resulting in additional property costs for the offline estibound bussey to the north behind commercial properties. Station location undefined, therefore may improve catcheset coverage to the residential stars lightwarms off, herefore the control of the contro	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate turning lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such content of the content of the content traffic. Fireight If Eusways is centre-running, patient surface, and one of the state of the bussay to allow for turning movements. Fixed centre-running state for other bussay to allow for turning movements. Fixed centre-running state for observation requirements are greater than Specimen Design will substantial property acquisition required on If Rabas Drive.	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional software of the commercial property costs compared to Specimen Design, However, this deption has classified. Option tool farther progressions at not considered to contribute sufficiently to affordshillity. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater frainger requirements and costs associated with online traffic management during construction and enloqued programme duration.
Summary of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	makine and upplie for customers. Most direct bowery social, once signate in oneight, bowered likely magain with priority form signation resident. In the control of the c	immore some interaction for the busines, which is therefore countries for additional for additional for any finding fight less directly an example of the property conflict considerations due conven on the property conflict consideration due conven on the conventional form of the property conflict consideration and conflict the property conflict consideration and conflict the property conflict control for the conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict principles. Buffer and for conflict principles for the relative part of conflict principles. Effects and connecting repairments for conditional conflict principles and conflict principles. Buffer and connecting properties of the control principles and conflict principles and conflict principles. Buffer and connecting preparations for conditional conflict principles and conflict	knowns some interactions for the busines, which is harefless found to facilitation fallows. Frame lime Stephily less descript business youth. Presempt conflict considerations due comes on disputes. Metallicat PUEI metallar for state in section and engages. The state of PUEI metallar for state in section and impacts to 34 residential properties. This requires faither review apart of the next state pletchard nor committee greatments for coastal marine areas, open space and proximity to residential coastal marine areas. Open space and proximity to residential coastal marine areas.	impact to north of II Biokas Divie. Not alforstable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	Including and inglife for customers. Signify less directly bussey to which Preserve provide increditations desired and externed an office of two file. Reserve provides increditation desired and externed an office or state of the section between Edynamic and its clinique for the desire discuss from the section of an associated properly imposts and costs. For the section of beausy office on the desired and associated and associated and associated and associated and afford desired provides and associated and associated and afford desired provides and associated a	bussey lane, the docrose in cross section is limited to 1.5 fm, therefore still imports properly on it likes brite, white resulting in additional property costs for the offline estibound bussey to the north behind commercial properties. Station location undefined, therefore may improve catcheset coverage to the residential stars lightwarms off, herefore the control of the contro	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate turning lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such content of the content of the content traffic. Fireight If Eusways is centre-running, patient surface, and one of the state of the bussay to allow for turning movements. Fixed centre-running state for other bussay to allow for turning movements. Fixed centre-running state for observation requirements are greater than Specimen Design will substantial property acquisition required on If Rabas Drive.	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional software of the commercial property costs compared to Specimen Design, However, this deption has classified. Option tool farther progressions at not considered to contribute sufficiently to affordshillity. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater frainger requirements and costs associated with online traffic management during construction and enloqued programme duration.
Summing Summary of decision made	to scale of property acquisition on commercial properties and other properties; further refinement through narrowing lanes	makine and upplie for customers. Most direct bowary social, once signate in oneight, boware tilely impassed with priority form signation insulprise. Description of the control of the c	immore some interaction for the busines, which is therefore countries for additional for additional for any finding fight less directly an example of the property conflict considerations due conven on the property conflict consideration due conven on the conventional form of the property conflict consideration and conflict the property conflict consideration and conflict the property conflict control for the conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict properties. Buffer are in expected to invent in another conflict principles. Buffer and for conflict principles for the relative part of conflict principles. Effects and connecting repairments for conditional conflict principles and conflict principles. Buffer and connecting properties of the control principles and conflict principles and conflict principles. Buffer and connecting preparations for conditional conflict principles and conflict	knowns some interactions for the busines, which is harefless found to facilitation fallows. Frame lime Stephily less descript business youth. Presempt conflict considerations due comes on disputes. Metallicat PUEI metallar for state in section and engages. The state of PUEI metallar for state in section and impacts to 34 residential properties. This requires faither review apart of the next state pletchard nor committee greatments for coastal marine areas, open space and proximity to residential coastal marine areas. Open space and proximity to residential coastal marine areas.	impact to north of II Biokas Divie. Not alforstable due to scale reporty acquisition on commercial properties, particularly a significant impact on the Howick & Enstern Buo Depot and properties on Harris Road Junction. Not progressed.	of impact to south of Ti Rakau Drive. Not affordable due to scale property acquisition on commercial properties, particularly a significant impact on Amera Place commercial properties and	of to xale of property acquisition on commercial properties and other properties. Protential (PETE) buses with grastive surveillant of elevated bus station(s). Affordability of structure. As cross- section cannot be narrowed mough to eliminate property cross on Ti Raksus Drive affordability remains an insue. Visual impacts elevated of god cooparated structure at street level / views to structure, in addition to studing and urban design insues. There may be some complexity with obtaining statutory approvals due	Including and inglife for customers. Signify less directly bussey to which Preserve provide increditations desired and externed an office of two file. Reserve provides increditation desired and externed an office or state of the section between Edynamic and its clinique for the desire discuss from the section of an associated properly imposts and costs. For the section of beausy office on the desired and associated and associated and associated and associated and afford desired provides and associated and associated and afford desired provides and associated a	bussey lane, the docrose in cross section is limited to 1.5 fm, therefore still imports properly on it likes brite, white resulting in additional property costs for the offline estibound bussey to the north behind commercial properties. Station location undefined, therefore may improve catcheset coverage to the residential stars lightwarms off, herefore the control of the contro	evenes of flows along Til Baba Dive in both directions in AM // My pasks. In addition to complex harming promeents and the need to accommodate turning lance. Bussay alignment would need to be boated on other northern or southern side to allow for sided flow operation for general traffic. In content such content of the content of the content traffic. Fireight If Eusways is centre-running, patient surface, and one of the state of the bussay to allow for turning movements. Fixed centre-running state for other bussay to allow for turning movements. Fixed centre-running state for observation requirements are greater than Specimen Design will substantial property acquisition required on If Rabas Drive.	passive surveillance issues due to cycleway alignment between residential and commercial properties will need careful consideration. Saving approx. 2.5m on 11 lizaksus Drive cross- section, therefore some saving on commercial property costs compared to Specimen Design, However requires additional software of the commercial property costs compared to Specimen Design, However, this deption has classified. Option tool farther progressions at not considered to contribute sufficiently to affordshillity. However, this option has the potential to be combined with Option 2 Narrow cross-section	land provides opportunities for urban integration and growth. Marginal reduction, in properly squalition, therefore insufficient affordability reduction compared to Specimen Design. Petentially reduced safety for cyclists due to degree of sparation from general traffic. Option not progressed. Not affordable due to impact on major utilities, stormwater frainger requirements and costs associated with online traffic management during construction and enloqued programme duration.

Assessment methodology
First Filter
After first Riller
After first Riller, I any criteria is considered red then that option is not considered any further.
After first Riller, I any criteria is considered and first first product to identify those options which are worth further fiverligibles and consideration for including the development of schemes.

Scroting Scale

John Control (Scale and Scale and Scale

0	Meets criteria with some impacts
1	Contributes
2	Moderate contribution
3	Moderate to strong contribution
4	Strong contribution
5	Strongest contribution

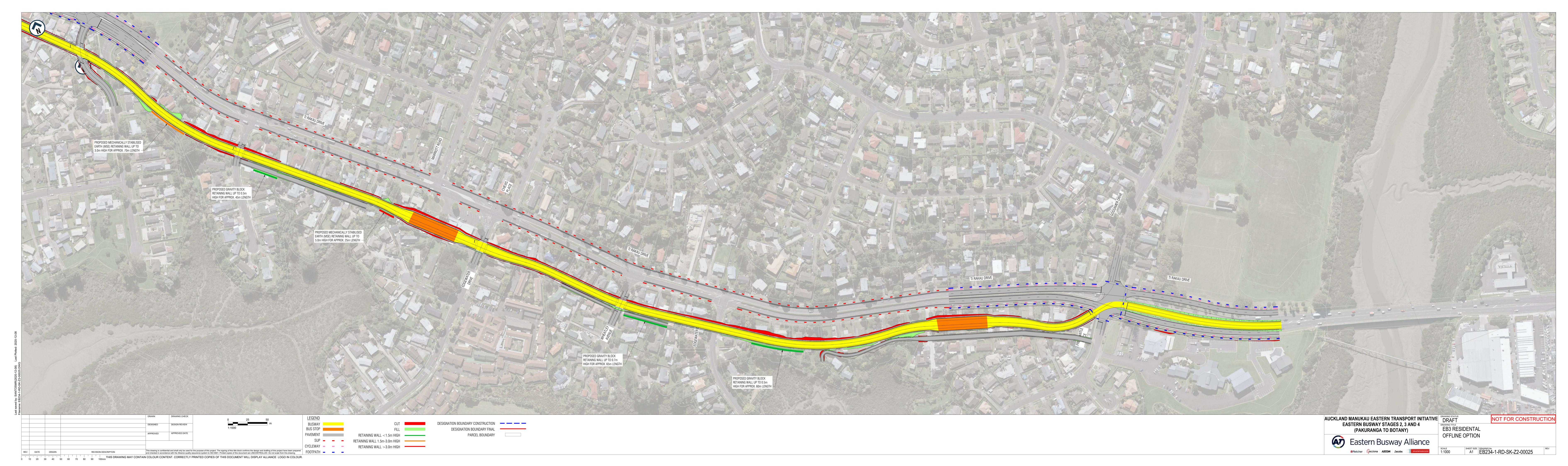


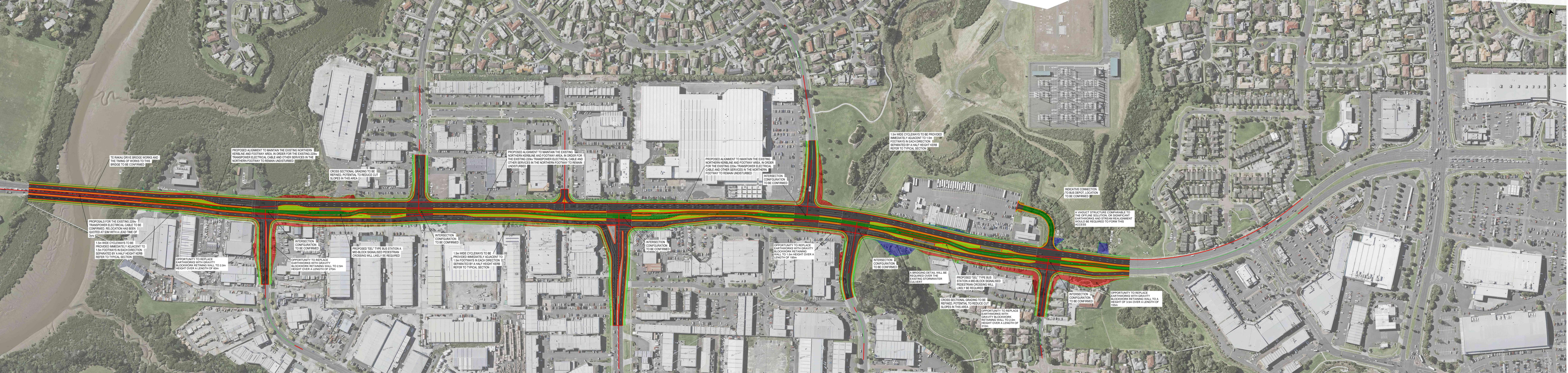
Appendix 2: Short List Options

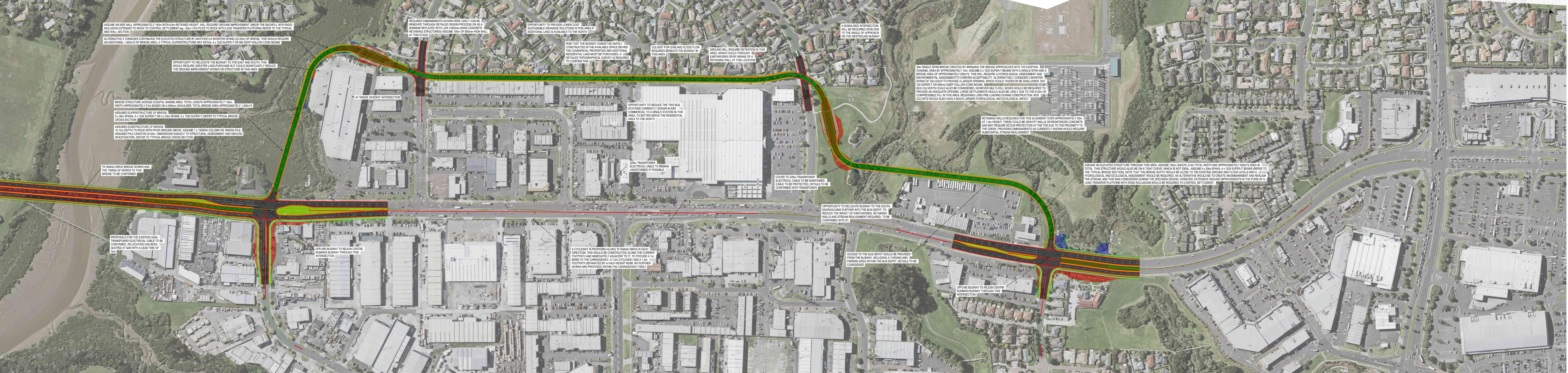
Plans of the alternative options assessed for EB3:

EB3 Residential: Online
 EB3 Residential: Offline
 EB3 Commercial: Online
 EB3 Commercial: Offline











Appendix 3: MCA Framework and Assessment

The following information is provided:

- A. Technical Assessors who undertook assessment of alternative options
- B. Guidance/ Criteria provided to Technical Assessors
- C. MCA assessment scoring outcome
- D. Scoring sheets from Technical Assessors



Appendix 3A: MCA Technical Assessors

The technical assessors and the areas of expertise who attended the MCA Workshop held on 4 February 2021 are noted below.

Assessor	Area of expertise
Andrew Gibbard	Constructability
James Arman	Impact upon utilities
Joe Grimes	Acoustics and vibration effects
Fenella Fisher	Property
Jacqui Bell	Marine ecology
Fiona Davies	Freshwater and terrestrial ecology
Chris Bentley	Urban design
Tom Lines	Landscape and visual
John Daly	Social impact
Tim Brown	Traffic and transport – temporary effects
TITI DI OWIT	Traffic and transport – permanent effects
Laura Laurenson	Planning, consenting and legislation
John Williamson	Business case/ project objectives

Appendix 3B: Assessment Guidance

Prior to the workshop Assessment Guidance pack was issued to the technical assessors. The pack was issue on 19 January 2021.

A copy of the Assessment Guidance follows.













Guidance for EB3 Options Assessment Workshop

Document Number: EB234-1-PL-GL-Z3-00000-1



IPAA – Guidance for EB3 Options Assessment Workshop

Document History and Status			
Rev	Date	Author	Status
Α	22 December 2020	Alisdair Simpson	Draft for internal review
В	14 January 2021	Alisdair Simpson	Draft – updated following internal review
1	19 January 2021	Alisdair Simpson	For issue
2			
3			

	Document Approval				
Rev	Action	Name	Position	Date	Signature
А	Reviewed by	Jarrod Snowsill	Lead RMA Planner	13 January 2021	Java Jeans V
В	Reviewed by	Karyn Sinclair	RMA Planning and Property and Sustainability Team Lead	15 January 2021	Birdi
1	Approved by	Karyn Sinclair	RMA Planning and Property and Sustainability Team Lead	19 January 2021	Birdi
2					
3					

Table of Contents

LIST OF A	Abbreviations and definitions	. 5
1	Introduction	. 6
1.1	Project overview	. 6
1.2	EB3 Assessment of alternatives	
1.3	Project Objectives	
2	Options for assessment	. 9
2.1	EB3 Residential section (West of Pakuranga Creek)	
2.1.1	Online Option	
2.1.2 2.2	Offline Option	
2.2.1	Online Option	
2.2.2	Offline Option	
2.3	Purpose	10
3	Options assessment	12
3.1	Scoring Criteria	12
3.2	Outcome	13
3.3	MCA Guidance	
3.4	Workshop participants	
4	Next Steps	18
Append	lix 1: MCA Workshop Agenda	19
Append	lix 2: Multi Criteria Assessment Scoring Sheet	20
Append	dix 3: Drawings of EB3 options	23
Figur	es I Eastern Busway Project stages	6
Table		
Table 1	Project contacts	. 7
Table 2	Project Objectives	. 7
Table 3	Overview of EB3 options	. 9
Table 4	Scoring criteria	12
Table 5	MCA Criteria/ Guidance	14
Table 6	MCA workshop participants	17



Table 7 Action required prior to workshop18











List of Abbreviations and definitions

Abbreviation and definitions	Description
AMETI	Auckland Manukau Eastern Transport Initiative
AT	Auckland Transport
EB1	Eastern Busway 1 (Panmure to Pakuranga)
EB2	Eastern Busway 2 (Pakuranga Town Centre Station)
EB3	Eastern Busway 3 (Pakuranga to Botany)
EB4	Eastern Busway 4 (Botany Town Centre Station)
Elevated PT	EB3 Elevated Public Transport
FOA	Further Options Assessment
MCA	Multi Criteria Assessment
Short Elevated PT	EB3 Short Elevated Public Transport
RTN	Rapid Transit Network

Introduction

1.1 Project overview

Eastern Busway Alliance

AMETI Eastern Busway will provide a multi-modal transport system to support population and economic growth in east Auckland. This involves the provision of improved transport choices and aims to enhance the safety, quality and attractiveness of public transport and walking and cycling environments. The dedicated busway will provide an efficient Rapid Transit Network (RTN) service between the Pakuranga and Botany town centres, while local bus networks will continue to provide more direct local connections within the town centre areas. The project also includes new walking and cycling facilities, as well as modifications and improvements to the road network.

The Eastern Busway will provide reliable journey times, providing East Auckland with a connection to the city's wider Rapid Transit Network (RTN). Stage 1 (EB1) from Panmure to Pakuranga is currently under construction, expected to be completed by mid-2021.

For the delivery of stages 2, 3 and 4 (EB2, EB3, and EB4) of the Project, the Eastern Busway Alliance was established in October 2020. The Alliance aims to have the Project completed by 2025. Figure 1 shows the location of the Project and the phases of delivery/ construction.



Figure 1 Eastern Busway Project stages

EB2 is not subject to any further alternatives evaluation beyond that undertaken in previous phases. EB4 alternatives evaluation will be undertaken as a separate exercise.

The EB 3 component of AMETI is located within residential zones between Roseburn Road and Gossamer Drive, the Coastal Marine Area where Ti Rakau Drive Bridge crosses Pakuranga Creek and commercial zones between Pakuranga Creek and Te Koha Road.

1.2 EB3 Assessment of alternatives

Eastern Busway 3 (EB3) comprises the section of the Project between Pakuranga and Botany town centres, following the Ti Rakau Drive corridor.

The EB 3 component of the Project involves the implementation of a range of multi modal transport improvement works including:

- A new dedicated Urban Busway approximately 3.6km long (between Mattson Road and Te Koha Road)
- Bus Stations located at Marriot Road, Gossamer Drive, Burswood Drive (east) and Huntington Drive;
- Walking and cycling facilities;
- Ancillary changes to the road network; and
- Ancillary works (e.g. Utilities relocation)

Alternative options have been developed for this section of the Project, generally based on an online option (within the road corridor) or an offline option (outside of the road corridor).

For design purposes EB3 has been broken down into residential and commercial sections, using the Pakuranga Creek as the logical breakpoint. The purpose of this document is to provide background material for participants of the options assessment workshop. The material contained within this document should be read thoroughly before the Options Assessment Workshop.

If you have any questions regarding the information provided in this document, please contact either of the following:

Table 1 Project contacts

Jarrod Snowsill	Lead RMA Planner	jarrod.snowsill@easternbusway.nz
Alisdair Simpson	Senior RMA Planner	alisdair.simpson@easternbusway.nz

1.3 Project Objectives

The draft objectives for the Project are outlined below.

Table 2 Project Objectives

Eastern Busway Objectives

Provide a multi-modal transport corridor that connects Pakuranga and Botany to the wider network and increases access to a choice of transport options

Provide transport infrastructure that integrates with land uses and supports a quality, compact urban form in Pakuranga and along the Pakuranga to Botany Busway Corridor

Improve the efficiency and resilience of the transport network surrounding Pakuranga town centre and between Pakuranga and Botany by providing a dedicated route for public transport to and from the eastern suburbs

Provide transport infrastructure that improves the linkages, relieves network constraints and improves journey time, frequency and reliability of the transport network.

Maximise the benefits of investment in transport infrastructure by extending network connections and delivering network improvements.

Contribute to place-shaping in Pakuranga town centre and along the Busway Corridor by providing better connections and accessibility between and within the centre and along the corridor for all transport users, including public transport users, pedestrians and cyclists.

Create a corridor that is safe for all road users, including public transport passengers, cyclists and pedestrians.







Д=СОМ



Enables and safeguards the future implementation of the Airport to Botany transit line and associated interchange modifications

2 Options for assessment

The following provides an overview of the alternative options for EB3 that are to be assessed. In total four options are presented below. Drawings for each option are attached to this report in Appendix 3.

To provide a consistent approach, for the purposes for the Project, Ti Rakau Drive runs east/west. Pakuranga Town Centre is described as being at the western end, with Botany Town Centre at the eastern end. Properties and land adjacent to Ti Rakau Drive are described as being to the north or south of the corridor/ alignment.

Each option is broken into two, using Pakuranga Creek as the breakpoint. For the purposes of this assessment the crossing of Pakuranga Creek is not being considered and will be documented at a later date.

Table 3 Overview of EB3 options

EB3 Alter	rnative Options for Assessment		
	Online Residential component		
1	Busway running along centre of Ti Rakau Drive		
	 New westbound traffic lanes formed directly south of existing roadway. 		
	New/upgraded walking and cycling facilities provided		
	Offline Residential component		
2	Busway positioned around 25m to the south of Ti Rakau Drive (rejoining roadway prior to Pakuranga Creek)		
	New/Upgraded walking and cycling facilities provided online		
	Online Commercial component		
3	Busway running along centre of Ti Rakau Drive		
3	New westbound traffic lanes formed directly south of existing roadway		
	 New/upgraded walking and cycling facilities provided (but below minimum standards) 		
	Offline Commercial component		
	Busway positioned north of Ti Rakau Drive, located behind commercial properties and the Howick and Eastern bus depot		
4	Busway would be located within/adjacent to coastal marine area (CMA)		
Busway would be located within Burswood Reserve			
	New/upgraded walking and cycling facilities provided online (but below minimum standards)		

Additional information on the options are provided below.

2.1 EB3 Residential section (West of Pakuranga Creek)

Between Pakuranga Town Centre and Pakuranga Creek, Ti Rakau Drive is surrounded by residential land use, generally formed by detached dwellings. Small sections of commercial activity are provided and generally provides local services to the immediate community.

2.1.1 Online Option

This option would result in the busway running within the road alignment. The busway would be positioned in the current location of the westbound traffic lanes of Ti Rakau Drive. New westbound traffic lanes would be formed directly to the south of the existing roadway.

To accommodate the wider road corridor, the existing houses to the south will be removed. Auckland Council currently owns the majority of the properties.

New/upgraded walking and cycling facilities will be provided within the Ti Rakau Drive corridor.

2.1.2 Offline Option

This option would result in the busway being positioned approximately 35m to the south of Ti Rakau Drive, leaving an area of residual land between existing road and the busway. This option would include the provision of new/upgraded walk and cycling facilities within the existing Ti Rakau Drive corridor. At this stage it is assumed that the residual land can be redeveloped for residential use.

To accommodate the busway, the existing houses to the south will be removed. Auckland Council currently owns the majority of the properties.

2.2 EB3 East of Pakuranga Creek (Commercial section)

Between Pakuranga Creek and Botany Town Centre the land use is mainly commercial (provided with a Light Industry Zoning, with some of the properties being within the Identified Growth Corridor Overlay by the Auckland Unitary Plan). Towards the eastern end, the adjacent land uses become more mixed and includes reserve land, residential properties and a bus depot.

2.2.1 Online Option

This option would result in the busway running within the existing alignment of Ti Rakau Drive. Similar to the residential section, the busway would occupy the existing westbound traffic lanes, with new westbound traffic lanes provided immediately to the south of the existing roadway.

To accommodate the wider road corridor, property acquisition would be required of land currently to the south of Ti Rakau Drive. Only part of the properties to the south would be needed for the wider road alignment.

This option would result in upgraded/new walking and cycling facilities being provided within the Ti Rakau Drive corridor.

2.2.2 Offline Option

This option would result in the busway being located to the north of Ti Rakau Drive, behind the existing commercial development, but to the south of the Burswood residential area. Going east to west, the off line busway alignment traverses through Bard Reserve and crosses Burswood Drive (eastern end), enters the commercial area behind the Bunnings Warehouse. The busway alignment crosses the western section of Burswood Place and continues behind the China Town property, crossing the Coastal Marine Area on a bridge structure and re-joining Ti Rakau Drive at the Trugood Drive intersection.

2.3 Purpose

The Options Assessment workshop is to assess the alternative options for EB3 that have been developed. The purpose of the assessment is to help determine the preferred option, based on a range of criteria. Key technical specialists will participate in the assessment process.

This document has been developed to provide guidance, background information, outline the process, criteria and methodology for undertaking the EB3 assessment at the Options Assessment Workshop on 4 February 2021.



Following the Options Assessment workshop, a report shall be prepared to detail the outcomes from the assessment. This report will set out the process used to come to the workshop and subsequent work undertaken to identify the preferred scheme to be taken to the IPAB and subsequently Auckland Transport as the preferred scheme. Mana whenua will be engaged with separately but prior to identification of the preferred scheme.



3 Options assessment

An overview of the alternative options for EB3 are outlined in section 2 of this document. The following details the criteria and scoring information that shall be used to undertake the assessment.

The assessment is designed to provide a structured, consistent and systematic process for assessing options against one another. The process is aligned with the project objectives and RMA requirements, providing evidence of structured option analysis and maintaining consistency with other option assessment processes previously undertaken throughout the Project.

3.1 Scoring Criteria

The options will be scored against each criterion using the 11-point scale as outlined below. The assessment should not be comparative to the previous options considered. Rather the effects of the options should be considered against the existing environment.

When assessing the options, both the scale and significance of the effect must be considered, along with any feasible mitigation measures proposed. The colours provide the opportunity for a visual key alongside the numerical one which will enable ranking of the options. When assessing the options, both the scale and the significance of the effect must be considered, along with any feasible mitigation measures proposed.

Table 4 Scoring criteria

rable 4 scoring criteria		
Score	Description/ indicators for assessment	
-5 Very High Adverse Effect	National or Greater: Will have adverse effect on a nationally significant resource/ or may be experienced by a national scale audience; and/or May have a substantial/ complete effect (destruction) on the feature/ resource/ community identified; and/or Long Term/ Permanent = 20+ years.	
-4 High Adverse Effect	Regional: Will have adverse effects on a regionally significant resource or may be experienced by a regional or wider audience; and/or May have a high extent of impact on features/ resource/ community identified; and/or Long Term/ Permanent = 10 -20+ years.	
-3 Moderate Adverse Effect	Local Area Level Impact: Will have adverse effects on a locally significant resource (e.g. significant within an ecological district or within a catchment) or may impact on a local board community/ geographic scale; and/or May have a moderate extent of impact on the feature/ resource/ community identified; and/or Medium term = 5 -10 years	
-2 Low Adverse Effect	Local Area/ or Individual Level Impact: Will have adverse effects on a locally prevalent resource (e.g. site specific significant within an ecological district but only local effect or within a catchment) or may impact on a local board community/ geographic scale; and/or May have some extent of impact on the feature/ resource/ community identified; and/or Short term = 1 -5 years	
-1 Very Low Adverse Effect	Individual level impact: Will have adverse effects on resources not otherwise identified for their values or with otherwise innominate value or may impact a limited number of households (i.e. 20 households/ 50 people);	

	and/or	
	May have a low extent of impact on the feature/ resource/ community identified;	
	and/or	
	Very Short Term = <1 year.	
0	Negligible effects from current situation/ natural	
Neutral Effect		
+1 Very Low Positive Effect	Individual level benefit: Benefits will be experienced for resources not otherwise identified for their values or with otherwise innominate value. Benefits may be experienced by a limited number of households (i.e. 20 households/ 50 people); and/or May have a very limited and confined extent of benefits on the feature/ resource/ community identified; and/or Very Short Term = < 1 year.	
+2 Low Positive Effect	Local level Benefits (2): Benefits will be experienced by defined local environment or sub-catchment. Benefits may be on Census Area Unit or experienced by a limited number of households (i.e. 20-50 people); and/or May have a low extent of benefits on the feature/ resource/ community identified; and/or Short Term = 1-5 years.	
+3 Moderate Positive Effect	Local Level Benefits (1): Benefits will be experienced for values of an ecological district or within a catchment, or at a local board community/ geographic scale; And/or May have some extent of benefits on the feature/ resource/ community identified; And/or Medium Term = 5-10 years.	
+4 High Positive Effect	Regional Benefits: Benefits will be experienced for a sub-regionally significant resource/ experienced by a sub-regional audience; and/or May have a high extent of benefits on the feature/ resource/ community identified (and confident of benefits being realised); and/or Long Term Permanent = 10-20+ years	
+5 Very High Positive Effect	Regional or Greater Benefit: Benefits will be experienced by a whole region or across regions (including national) or may be to a regionally or nationally significant resource; and/or May have substantial benefits on features/ resources/ community identified. High degree of confidence of benefits being realised; and/ or Long Term/ Permanent = 20+ years.	

3.2 Outcome

The MCA process as described in this report has been developed to support consideration of alternatives and to assist in the selection of a preferred option.

A graphical representation of scoring will be produced in order to visualise the scores and this will be produced post-workshop.

No provision for the weighting of scores has been made; however, sensitivity testing may be conducted. This will be undertaken post-workshop.



3.3 MCA Guidance

Guidance for the MCA is provided below. This is provided as guidance to support your assessment of the options presented. Assessors should not comment on effects outside their field of technical expertise. However, we expect all experts to appreciate the assumptions and subsequent scores of other technical areas, especially where these assumptions may influence other technical areas.

Assessors shall provide an assessment of the significance of the potential effect of the option, assumptions made, and information relied upon to support or inform their assessment (e.g., any appropriate industry standards or guidelines). The options need consider the level of effect with and without mitigation. The mitigation needs to be clearly articulated.

Assessors also need to identify the likely costs of mitigation considered.

Table 5 MCA Criteria / Guidance

Benefit/Topic	Key Results Area/ Criteria	Guidance for consideration
	Provide a multi modal transport corridor that connects Pakuranga and Botany to the wider network and increases access to a choice of transport options	Provide for all modes (walking, cycling, bus, freight, general traffic). Connect Pakuranga and Botany together and to the wider network, with adequate linkages and connectivity between modes.
	Provide transport infrastructure that integrates with land uses and supports a quality, compact urban form in Pakuranga and along the Pakuranga to Botany Busway Corridor	The proposed option integrates well (in terms of form and access) with land uses anticipated under the AUP (part operative). Aligns well with proposed town centre development plans. Option provides for good accessibility to and supports a high quality, compact urban form in Pakuranga and along the busway corridor to Botany. Accounts for number of residential and commercial properties affected by the corridor. Overlay of future proposed land use under the AUP (part operative) Colocation with existing infrastructure (e.g. utilises
Performance against Business Case objectives	Improve the efficiency and resilience of the transport network surrounding Pakuranga town centre and between Pakuranga and Botany by providing a dedicated route for	existing Arterial routes) Demonstrates efficiency and resilience in transport network by providing a dedicated public transport route Efficiency based on - Length of corridor, number of intersections, arterials vs local roads.
	public transport to and from the eastern suburbs	Resilience: sensitivity to flow breakdown/alternative routes
	Provide transport infrastructure that improves the linkages, relieves network constraints and improves journey time, frequency and reliability of the transport network.	Demonstrates improvements in transport network reliability of connection, journey time and frequency of service. Length of corridor Journey time (approx.)
	Maximise the benefits of investment in transport infrastructure by extending network connections and delivering network improvements.	Demonstrates optimal use of existing infrastructure and proposed (new) network connections and network improvements. Supports other transport investment priorities and demonstrates a strategic fit i.e. where investment has already been made in the network (e.g. Panmure station). Does not preclude future connectivity into the Botany Busway Station (EB4) and onwards connection to Manukau.

	Contribute to place shaping in Pakuranga town centre and along the Busway Corridor by providing better connections and accessibility between and within the centre and along the corridor for all transport users, including public transport users, pedestrians and cyclists.	Supports future amenity and public realm improvements to the town centre and along the corridor. Provides legible and desirable connections to the town centre and land uses along the corridor. Provides a continuous corridor connection for all modes to the town centre and along the corridor. Minimises impact on existing place.
	Create a corridor that is safe for all road users, including public transport passengers, cyclists and pedestrians.	Ability to provide for accessible, legible, connected and (as far as practicable) safe general traffic, bus, pedestrian and cyclist infrastructure. Ability to provide separation of modes where necessary for safety
	Enables and safeguards the future implementation of the Airport to Botany transit line and associated interchange modifications	
Legislative considerations	Assessment against critical legislative requirements	Qualitative assessment of the consistency of the proposal with the Resource Management Act (1991), especially Part 2 matters, and high-level policy framework relevant to the Project e.g. NZCPS, NPS's, RPS, NES. Impacts on specifically scheduled and protected
	Can the option be constructed within	Archaeology, Built heritage, scheduled trees and features within AUP. Constructability incl. volume/balance of earthworks,
Constructability	reasonable and known construction constraints?	construction risks and general degree of difficulty Disruption to existing services and utilities Traffic management
		Programme
	Traffic and Transport effects	Operational effects: Journey time improvement / Congestion/queue length within corridor / congestion and queue lengths outside of corridor / PT reliability
		Effects on existing network - positive and adverse
		Levels of service of key intersections
Transportation		Operational performance of busway
Effects		Effects on surrounding network - SEART/ Waipuna Bridge/ Panmure
		Mode shift - busway patronage etc
		Construction effects: Temporary intersection layout, acceptable level of delay, property access, pedestrian and cyclist facilities, detours etc. PT reliability during the construction phase.
	Ecology	Freshwater Ecology - Adverse physical effects on freshwater receiving environments (any works within or in proximity to a stream or wetland).
Natural		Coastal Ecology - Extent of effects on significant marine areas (i.e. significant ecological areas) and physical footprint within the coastal marine area.
Environment/ Ecological Effects		Extent of effects (and ability to manage effects) on indigenous vegetation.
		Extent of effects on significant habitats of indigenous fauna (terrestrial).
		Extent of effects on landscapes and natural features including geological features, landform, vegetation (including trees), watercourses etc.

	Effects on Wahi Tapu and significant sites	Mauri, Waahi Tapu, Historical, Customary needs, Contemporary esteem
Cultural Heritage	Effects on waterways of value/significance to mana whenua	Mauri, Waahi Tapu, Historical, Customary needs, Customary resources, Contemporary esteem
(to be undertaken by mana whenua)	Effects on cultural Landscapes of value/significance to mana whenua	Mauri, Waahi Tapu, Historical, Customary needs, Customary resources, Contemporary esteem
	Effects on customary rights	Extent of effects on areas of protected customary rights (under Takutai Moana or Treaty Redress)
	Property Implications	Qualitative assessment of the scale of likely / anticipated effects from land take.
		Reasonable necessity and requirement for operation and construction. Considering extent to which additional land required has already been acquired for the Project and risk of acquiring land still needed
		Number of properties to be acquired Degree of difficulty of property acquisition (includes nature of land use, consideration of common land acquisition i.e. land owned by multiple parties)
		Type of property e.g. commercial versus residential versus parks/heritage
		Consideration of future land use (residual land use)
Built Environment	Impact on utilities and significant infrastructure	Requirements for relocation / design of alternative major infrastructure, including consideration of safety impacts of such requirements and risk of continuity of service over construction
		- e.g. Transpower National Grid, Watercare, Telecoms etc - account for cost of relocations if necessary
		Disruption - effects on networks and continuity of service
	Permanent effects – activities/use	The extent of effects on (or compatibility with) surrounding activities, with particular regard to public activities (such as town centres), land use, and character.
	Permanent effects – visual amenity	The extent of effects on visual amenity taking into account the character and visibility (prominence) of the proposal, the proposed built form, the character of the existing environment, the sensitivity of audiences, duration of view, magnitude of visual change and the experience of future road users.
	Noise and Vibration	Effects of operational noise and vibration on sensitive receivers.
		Effects of construction noise and vibration on sensitive receivers.
	Air Quality – Operational	Scoring of potential operational air quality impacts of each option taking account of the following factors:
Social Effects		Relative scale of traffic emissions from each option characterised from: Traffic volumes (whole fleet and HCV)
		- traffic volumes (whole fleet and HCV) - Level of service
		Relative scale of sensitivity of receiving environment for each option is this in a polluted/non-compliant airshed?
	Community facilities/ Open Space	The extent to which community facilities in the study area (including educational, health and leisure facilities) will be affected. During construction and permanent.
	Viability/ productivity of business land areas	Consideration of business disruption effects during
	The state of the s	construction and operation.

,	Discussion on the potential impacts on patterns of
	movement or communities of interest that might be
	affected by the construction/operation works, such that
	there may be a loss of social cohesion or fragmentation of
	existing community structures (e.g. disruption or
	severance of school zones, electoral catchments, etc).

3.4 Workshop participants

Participants will be invited to attend the MCA Workshop, at which the MCA will be undertaken along with relevant discussion on the issues, constraints and opportunities associated with the options. During the workshop, participants are expected to provide input and constructive challenge while scoring the alternative options.

The following environmental specialists are required to attend the options assessment workshop and provide input to the assessment process.

Table 6 MCA workshop participants

Name	Role/ Area of Expertise
Jarrod Snowsill	Facilitator
Alisdair Simpson	Facilitator
John Williamson	Project Objectives
Laura Laurenson	Legislative
Phil Skinner	Constructability
Tim Brown	Traffic and Transport
Jacqui Bell	Coastal Ecology
Fiona Davies	Freshwater and Terrestrial
Tom Lines	Landscape and Visual
Fenella Fisher	Property
Maurice Lubbock	Impact on utilities
Chris Bentley	Urban Design
John Daly	Social Impact
Joe Grimes	Acoustics
Bruce Clarke	Air Quality
Mana Whenua	Various

In addition to the above, representatives from the legal provider and Subject Matter Experts (SMEs) from Auckland Transport will be in attendance to provide comment where necessary.

4 Next Steps

An Options Assessment Workshop will be held at the Alliance office at Auckland Transport on February 4th 2021. All participants listed Section 3.4 above have been requested to confirm attendance.

A briefing pack will be sent to workshop participants prior to the workshop (this document). The briefing pack contains the following documents which will assist attendees in their understanding of the Project:

- Agenda
- Guidance for options assessment workshop including criteria to be assessed
- Alignment drawings (please note that these drawings are of a preliminary standard)
- Scoring sheets

In addition, a GIS link will be provided prior to the Workshop which will enable the user to overlay the options with other information to assist with the evaluation process.

Actions required to by workshop participants prior to attending the Options Assessment Workshop:

Table 7 Action required prior to workshop

ACTION	V	WHEN
•	Review the drawings and material provided in the briefing pack	Review of Drawings by 28 th of January, review of the briefing pack by 02 February 2020
•	Provide questions in writing for which answers would be useful at the workshop	2 February 2020
•	Provide provisional scoring and comments on each option. The template provided in Appendix 2 MUST be used.	
•	Attend workshop (see agenda provided in Appendix 1)	4 February 2020
•	Scoring And moderation shall be undertaken. This will be the final scoring for each option.	
•	Comment templates previous provided can be updated by hand on the day to reflect changes based on workshop discussion.	



Appendix 1: MCA Workshop Agenda

EB3 MCA Workshop

Date Thursday 4 February 2021

Time 09:00hrs

Venue Eastern Busway Alliance Project Office, Auckland Transport HQ, 20 Viaduct Harbour Avenue,

Auckland

Agenda item	Details	Time and duration
1.	Welcome, purpose, expected outcomes and introductions	09:00hrs to 09:15hrs (15 minutes)
2.	Assessor findings and questions (Assessors each provided with 10 minutes, with a further 5 minutes for questions from workshop participants)	09:15hrs to 12:00hrs (2hours and 45 minutes). Break provided at 10:40hrs for 20 minutes
3.	Live scoring and consistency moderating	12:00hrs to 13:00hrs (1 hour)
4.	AMT discussion post workshop (MCA participants not required)	14:00hrs to 16:00hrs (2 hours)











Appendix 2: Multi Criteria Assessment Scoring Sheet

			Multi	Criteria A	ssessmer	nt Scoring	Sheet			
Name o	f assessor	:								
Area of	assessme	nt:								
Guidano	e criteria	consider	ed:							
Option 7	1:									
Notes:										
Comme	<u>nts</u>									
<u>Assump</u>	<u>tions</u>									
Other in	<u>formatior</u>	n relied u <u>r</u>	<u>oon</u>							
No Miti	gation Sco	ore (pleas	e circle or	highligh	t score):					
-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Mitigati	on Score	(please ci	rcle or hig	jhlight sc	ore):					
-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Option 2	2:									
Notes:										
Comme	nts									

<u>Assump</u>	<u>tions</u>									
Other in	formatior	n relied u <u>r</u>	<u>oon</u>							
No Mitiç	gation Sco	ore (pleas	e circle o	highligh	t score):					
-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Mitigati	on Score	(please ci	rcle or hiç	ghlight sc	ore):					
-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Option 3	3:									
Notes:										
Commei	nts									
Assump	tions									
Other in	formation	n relied up	<u>oon</u>							











No Mit	igation Sco	ore (pleas	e circle o	r highligh	t score):	T				
-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Mitiga	tion Score	(please ci	rcle or hi	ghlight sc	ore):					
-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Option	4:									
Notes:										
Comm	onto									
Comme	<u>ents</u>									
Assum	otions									
<u>Assum</u>	<u>otions</u>									
<u>Assum</u>	<u>otions</u>									
<u>Assum</u>	otions									
	otions nformation	n relied uţ	<u>oon</u>							
		n relied uţ	<u>oon</u>							
Other i	nformation			r highligh	t score):					
Other i				r highligh	t score):	+1	+2	+3	+4	+5
Other i	nformation	ore (pleas	e circle o	-1	0	+1	+2	+3	+4	+5