

## **Pakuranga to Botany Urban Busway – Collaboration in the Auckland Super City**

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### **ABSTRACT**

The Auckland Manukau Eastern Transport Initiative (AMETI) is a group of transport projects aimed at improving transport choice and unlocking economic potential in the southeast Auckland area. It is one of NZ's largest transport projects with an investment of \$1.5 billion over the next 10 – 15 years and is one of the top priority transport projects in the Auckland Plan.

The Pakuranga to Botany section discussed in this paper comprises a significant section of the AMETI area. It is at scheme investigation stage and has spanned the formation of the Auckland "Super City". The project looks to provide an urban busway, cycleway and enhanced pedestrian and urban design outcomes while still having to cater for significant traffic volumes.

Large land requirements present an opportunity to trigger land use transformation. A key feature of the project is to ensure most remnant land can be regenerated into more intensive developments to maximise the transport investment and create a better urban form.

## INTRODUCTION

The Auckland Manukau Eastern Transport Initiative (AMETI) is a group of transport projects aimed at improving transport choice and unlocking economic potential in the southeast Auckland area. It is one of NZ's largest transport projects with an investment in the order of \$1.5 billion over the next 10 – 15 years and is one of the top priority transport projects in the Auckland Plan<sup>1</sup>.

### Background to Project

The current project builds on a number of previous initiatives in the area. Originally envisioned as the Eastern Motorway, the project has been refocussed to reflect a better balance between transport modes that will provide a more sustainable outcome.

The AMETI project<sup>2</sup> was initiated in 2005 as a tripartite partnership between the former Auckland City Council, Manukau City Council and the Auckland Regional Transport Authority. Following the Auckland region's local authority amalgamation in October 2010, it is now led by Auckland Transport (AT), a Council Controlled Organisation (CCO) of Auckland City<sup>3</sup>.

Due to the extent of the area, the project has been separated into several packages of transport infrastructure improvements, programmed for staged implementation over the next 10 to 15 years.

### AMETI Problem Definition and Study Area

For the last 20 years, the suburbs east of Pakuranga and Botany have been experiencing rapid population and economic growth creating significant increase in travel demand. This is placing significant pressure on existing transport facilities and services, which have historically had limited investment.

To the east, land uses are predominantly low density residential served by town centres, while to the west and south of the study area there are important industrial and commercial areas (Mt Wellington and East Tamaki).

The area currently has a population of 130,000 people (similar to the City of Dunedin) and is projected to grow to 165,000 people by 2031. The majority of people travel out of the area for employment, education or to access other services. Key destinations are the central Auckland area and Manukau.

The study area caters for some of the country's highest traffic flows and experiences some of the greatest levels of congestion at peak times. The slow travel speeds and long queues are having a negative impact on the economic performance of the entire region.

The current transport problem partly stems from the geography of the area as a peninsula separated from the Auckland isthmus by the Tamaki River. Two bridges provide the main access to the west, central and north Auckland area: the Panmure Bridge – a tidal three lane bridge with a narrow footpath on one side; and the Waipuna Bridge – a four lane vehicle-only bridge connecting the area to the southern motorway (SH1) via the South Eastern Arterial (SE Highway).

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<sup>1</sup> The Auckland Plan (also referred to as the spatial plan) is a broad-based 30-year strategy for Auckland that supports the Mayor's vision for Auckland to become the world's most liveable city.

<sup>2</sup> More information about the AMETI project can be found on Auckland Transport's website: <http://www.aucklandtransport.govt.nz/improving-transport/ameti/Pages/default.aspx>

<sup>3</sup> A CCO is a company or organisation in which the council controls 50 per cent or more of the votes or the right to appoint 50 per cent or more of the directors or trustees.

Combined, the two Tamaki River bridges carry approximately 90,000 motor vehicles per day a day. This is similar to the volume travelling through the Central Motorway Junction in Auckland's Central Business District (CBD) and gives an indication of the regional significance of the two corridors.

Buses are the main public transport option<sup>4</sup>. However, patronage is low due to the low density land uses, and there is limited bus priority so buses get stuck in the same congestion as other traffic. The nearest rail station for the area is at Panmure, which is only 2.5 kilometres from Pakuranga town centre. However, bus to rail connection is extremely poor.

Walking and cycling in the area is unattractive and dangerous as there are no cycling facilities and a lack of pedestrian crossing facilities across the busy arterial roads.

Not surprisingly, the community do not see public transport, cycling or walking as a realistic choice and this is represented by the low up-take – only 4% of journeys to work by bus in the 2006 census, which is one of the lowest in the Auckland region, and 2% for walking and cycling.

The significant volume of through traffic has also stifled the vitality of the two town centres – Pakuranga and Panmure - that it traverses.

Figure 1 illustrates the AMETI context and outlines the Pakuranga to Botany Scheme Assessment study area that is the focus of this paper.

### **Overall AMETI strategy, aim and objectives**

Given the constrained geographic area, providing sufficient vehicular capacity in the arterial road network to meet the growing demand will be difficult and ultimately have high financial, social and environmental impacts. Developing alternatives to private car travel is critical to ensuring the transport system can provide for the recent and planned population growth in a sustainable manner.

The aim for AMETI is to create a high amenity and efficient multi-modal transport system that provides transport solutions for all road users and creates improved travel choices by making public transport, walking and cycling viable alternatives to driving a car.

AMETI project objectives are to:

- Provide for sustainable movement of people, goods, and services in a modern, planned and integrated manner (planning horizon of 30 years);
- Provide connectivity between communities and businesses;
- Promote economic development and the economic and social well-being of communities;
- Provide for Auckland's growth needs (planning horizon of 30 years);
- Improve safety for all road users;
- Promote good urban design - a sense of place, physical safety, and environmental sensitivity; and
- Achieve the above in a culturally and environmentally sensitive manner.

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<sup>4</sup> There is a ferry service from the northern part of the area into Auckland CBD that is well used however; it only services a proportion of the area's population.

The strategy is based on the principle that investing in public transport, walking and cycling will make these options more viable to commuters, thereby freeing up roads for freight and business traffic for which there are no alternatives. However, it is still recognised that key congestion points along primary vehicle routes still need to be unlocked via targeted road improvements.

Whilst the primary focus of AMETI is on delivering transport solutions, it is also considered to be a transformational project presenting significant opportunities to integrate transport planning and investment with land use development. Aspects of this are discussed in greater detail in the following sub-sections.

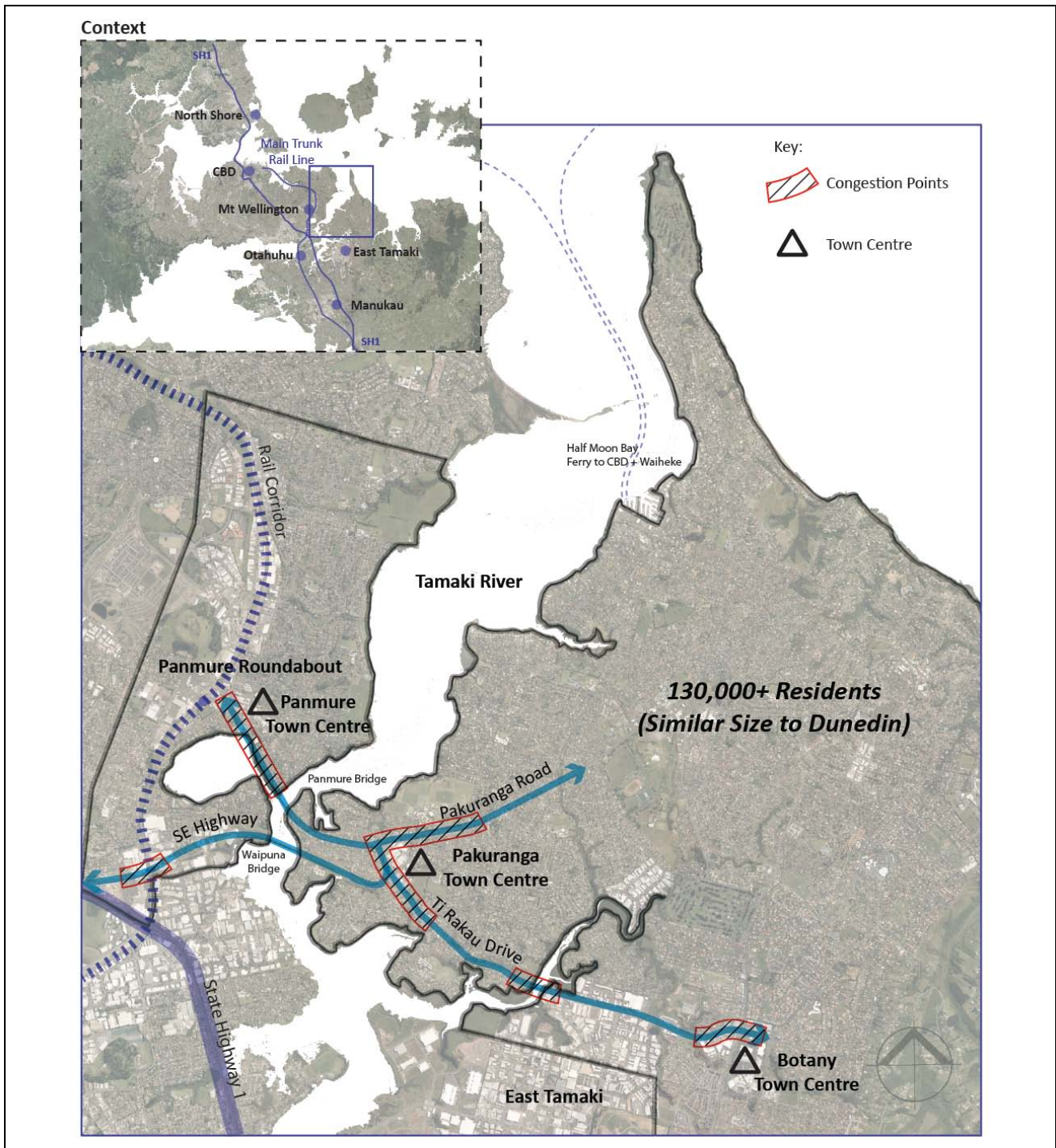


Figure 1 – The AMETI study area and key problems

## AMETI PAKURANGA TO BOTANY SCHEME ASSESSMENT

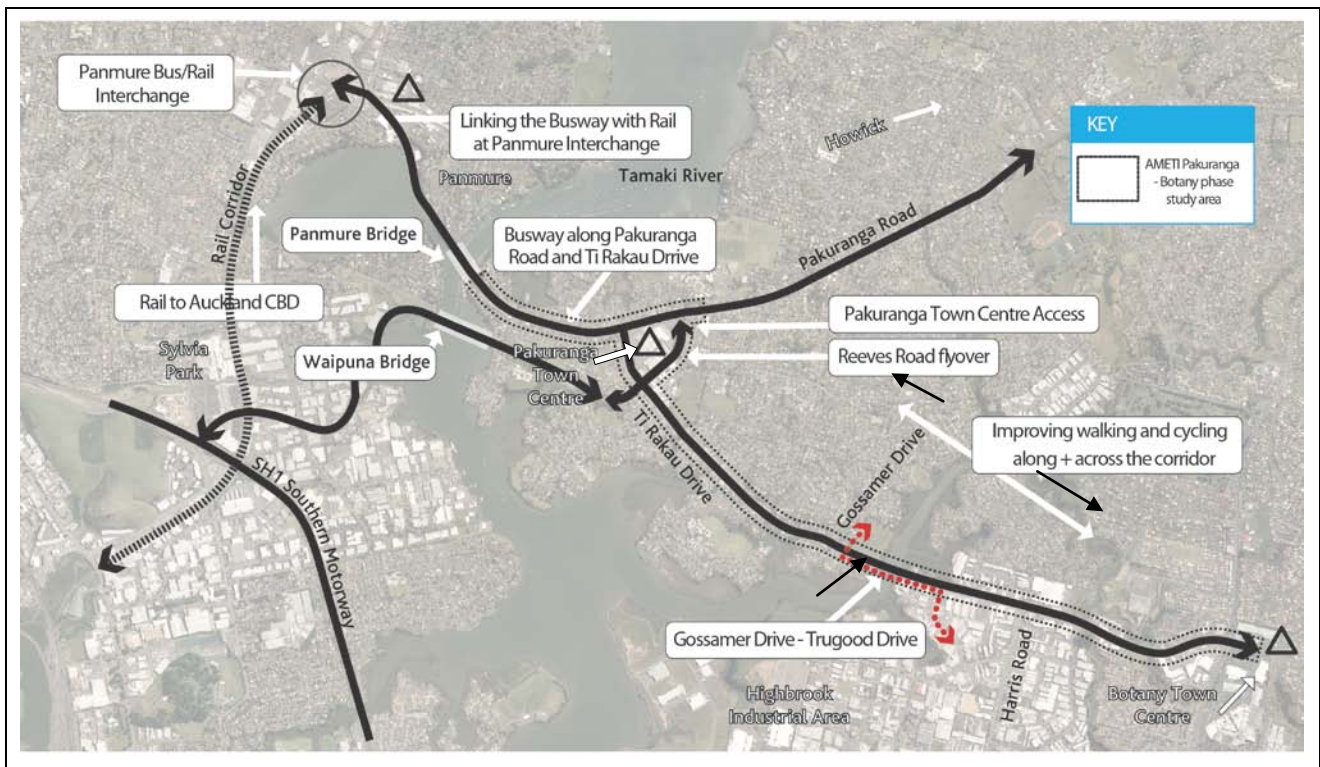
In February 2010, Manukau City Council (MCC) engaged GHD Limited (GHD), in partnership with Aurecon, to undertake investigations of the Pakuranga to Botany section of the AMETI project. The main deliverable is the preparation of a Scheme Assessment Report (SAR) for improvement works on Pakuranga Road, Ti Rakau Drive and the proposed Reeves Road flyover. At the time of writing this paper, this report was approximately 90% complete. The study corridor is 7 kilometres long.

To achieve the AMETI strategy as previously outlined, the Pakuranga to Botany Scheme Assessment consists of developing seven key elements:

1. A major portion of the South Eastern Busway (7 kms) from east of the Panmure Bridge, along Pakuranga Road and Ti Rakau Drive connecting with Botany town centre. This will enable high quality, high frequency bus services and provide better access to rail via the Panmure Station;
2. The Reeves Rd Flyover, a 750 metre long viaduct providing a direct connection between Pakuranga Road and Waipuna Bridge and SH1. The enhanced vehicle route removes a significant portion of regional vehicle traffic from Pakuranga Road and Ti Rakau Drive bordering the Pakuranga town centre. This in turn facilitates the development of the busway along these roads, as well as other major improvements to the town centre;
3. A busway station at Pakuranga town centre to enhance bus access to the town centre and provide a high quality interchange facility between the primary frequent bus services on Pakuranga Road and Ti Rakau Drive and secondary local bus services;
4. A new arterial road layout and local road network around and within Pakuranga town centre that is more balanced to all transport modes and conducive to supporting planned redevelopment;
5. Addressing significant congestion at the Gossamer Drive to Trugood Drive section of Ti Rakau Drive by providing additional right turn bays for both side roads;
6. Significantly improved facilities for pedestrians and cyclists, in the form of wider footpaths and berms, tree planting along the corridor edge, and cycle facilities that are designed to be attractive to both confident as well as less confident cyclist (two-way cycle path on Pakuranga Road west of Ti Rakau Drive, and cycle ways with buffer between the live traffic lane on Pakuranga Road bordering the town centre and Ti Rakau Drive); and
7. Changing the local road network and access provisions along Pakuranga Road and Ti Rakau Drive to accommodate the busway and allow the regional arterial road to operate more safely and efficiently.

The works from Panmure town centre to Pakuranga town centre (including busway, bus station, town centre roads and flyover) is programmed for staged construction between 2015 and 2017 (subject to obtaining funding and consents). The section of Ti Rakau Drive south of the flyover is programmed for construction post 2021.

Figure 2 illustrates the Pakuranga to Botany Scheme assessment study area and proposed improvements.



**Figure 2 – The Pakuranga to Botany Scheme Assessment Study Area**

### Scheme Assessment Objectives and Approach

The key objective of the scheme phase is to confirm the footprint of the scheme, social and environmental impacts, engineering requirements, and costs, to ultimately allow route protection through a designation. A key component of this involves gaining key stakeholder agreement of the final scheme to ensure a good outcome is identified and minimise risk around the designation process.

The investigation was generally completed in two phases. The first phase was a scoping study that looked at broad corridor options including determining the most appropriate location of the busway in respect to general traffic (on either side of the road or down the centre) and the most appropriate side of the existing corridor for land purchase.

The second scheme phase then investigated in greater detail the preferred corridor option, reviewing aspects such as:

- cross section widths;
- intersection locations and types;
- bus stop locations;
- property access treatments;
- Pakuranga town centre bus station configuration;
- embankment and retaining wall requirements;
- impact of transport footprint on adjacent urban design and land uses outcomes (this was led by Auckland Council); and
- environmental and social impacts.

A wide range of options were available for the above, each with different impacts on the various transport modes and land purchase requirements.

## **PROJECT CHALLENGES AND THE ROLE OF COLLABORATION**

The multi modal nature and large scale of the project, as well as desire to integrate with land use intensification plans required a highly collaborative approach to transport planning. This paper has focussed on a select few examples to describe some of the challenges experienced by the project team and how these were addressed, as well as some of the key learning the project team derived from this.

The challenges discussed in the following sub-sections include:

- a) Changing personnel during the super city formation, which impacted key project stakeholders and the decision making process;
- b) The need to balance competing user demands and objectives;
- c) The need to integrate transport and land use objectives; and
- d) Dealing with different timings in collaborative work streams.

### **a) Identifying who to collaborate with - impacts of the Super City changes**

The number of key stakeholders involved in this project was extensive and reflective of the complex and large-scale nature of the project. An ongoing challenge throughout the project was managing the collaboration process with numerous key stakeholders.

This was always the case under the historic structure. However, after the October 2010 Auckland local authority amalgamation, the key stakeholder matrix became more extensive and complex because, whilst the Supercity produced one regional entity from the project's previous three partnership organisations, it also created new organisations within it (the various CCOs) and a new political and decision making structure.

Auckland local authority amalgamation occurred towards the end of the Scoping Phase, at a point when key decisions on the most appropriate location for the busway along the corridor and Pakuranga town centre bus station needed to be made – aspects of interest to many parties, including: traffic operations, cycling, land use, urban design, etc.

A key challenge for the project team during this time was to navigate the project through and beyond the amalgamation process and maintain effective collaboration with a changing stakeholder group.

Within this context, the approach adopted was to extend the project programme for the Scoping Phase (quite significantly) to allow the new organisations to regroup; the project team to identify the new and appropriate key stakeholders to collaborate with; and the newly formed AT to determine the new governance structure for the project. The latter impacted on the decision making framework for the project and the collaborative approach between the now separate organisations of Auckland Council (primarily representing land use and urban design interests) and Auckland Transport.

The project team had to make a concerted effort to reintroduce the project objectives and previously investigated options to the new stakeholder group and re-evaluate previous decisions in the light of new feedback from this group prior to advancing the project.

A real benefit for the project from the amalgamation was that the new Auckland Council was better resourced than the previous legacy councils to initiate the land use studies that were needed to inform and help realise the land use and transport integration opportunities presented by the project.

**KEY LEARNINGS (a)**

To collaborate effectively can often mean more time is required to complete a project. This has cost and programming implications. However, the end result should be a better outcome as well as securing stakeholder support, as by taking them along the 'decision making journey' of the project, they have been party to its development.

The value to the project should be a significant reduction in the risk of objections arising during later stages of the project and strong universal multi-organisational support for the delivery of the project.

**b) Dealing with Competing Demands and Objectives**

The area's geography means the majority of traffic is channelled through Pakuranga Road or Ti Rakau Drive – there are no alternate routes. For both corridors, this meant the project had to provide a new urban busway, strategic cycleway, enhanced pedestrian and urban design outcomes whilst still having to cater for significant traffic volumes.

A challenge for the project was to justify the resulting corridor width (in the order of 40 to 45 metres, with additional widening required at intersections) and the number of traffic lanes maintained, particularly to the land use and urban design stakeholders.

A Design Philosophy Statement (DPS) was developed in a collaborative manner with key stakeholders at the start of the project. This was found to be a useful tool for managing competing demands as it provided an agreed framework for decision-making when trade-offs needed to be made to elements of the project at later stages.

The document outlined how the high level project objectives were to be achieved in the scheme design by articulating intended outcomes for each element or particular segment of the corridor. It identified and prioritised functions for the corridor and across the different segments within it for each mode / user, based on existing as well as intended land use and transport characteristics. It was developed beyond what is normally carried out for a transport project by also considering adjacent land use. This recognised that the success of the busway would require appropriate use and design of any remnant land.

The DPS outlined that the arterial road function of both Pakuranga Road and Ti Rakau Drive needed to be maintained. However, it also indicated that the private vehicle function along Pakuranga Rd would be of reduced priority compared to other modes.

This led the project team to a solution where reductions in lane capacity were not provided, however, additional traffic signals were provided on Pakuranga Road which is anticipated to result in a change to the function of the route from a high speed through traffic route to a more local traffic route.

Universal consensus on this outcome was not reached by all stakeholders, however, collaboration allowed all parties to understand the rationale behind the decisions.

Despite the agreement on a design philosophy at the outset of the project, some conflicting objectives still existed and difficult decisions had to be made by the team, especially on the designation width.



**KEY LEARNINGS (b)**

Collaboration does not necessarily mean achieving universal consensus on the final outcome. It does, however, allow parties to be involved in the process of developing the project and therefore understand the reasons why the final outcome is what it is. This goes some way to mitigating conflict / competing demands.

Developing and agreeing on a process to deal with competing demands at the outset of a project, together with stakeholders, is useful. It also provides transparency to the decision making process.

**c) Achieving Transport and Land Use Integration**

To achieve the desired transportation improvements, the need for significant widening of the corridor was identified early in the project. The impacts on adjacent properties are such that purchases of entire residential properties on one side of the corridor are required for the most part. However, the transport scheme will generally not require all of the area purchased so there will be remnant land of varying degrees along the corridor after the transport works are complete.

Without mitigation, the proposed widening of the transport corridor will have negative impacts on the remaining properties. The impacts (particularly noise and visual) will be exacerbated by the removal of the whole front row of properties that is currently acting as a buffer to the rear properties.

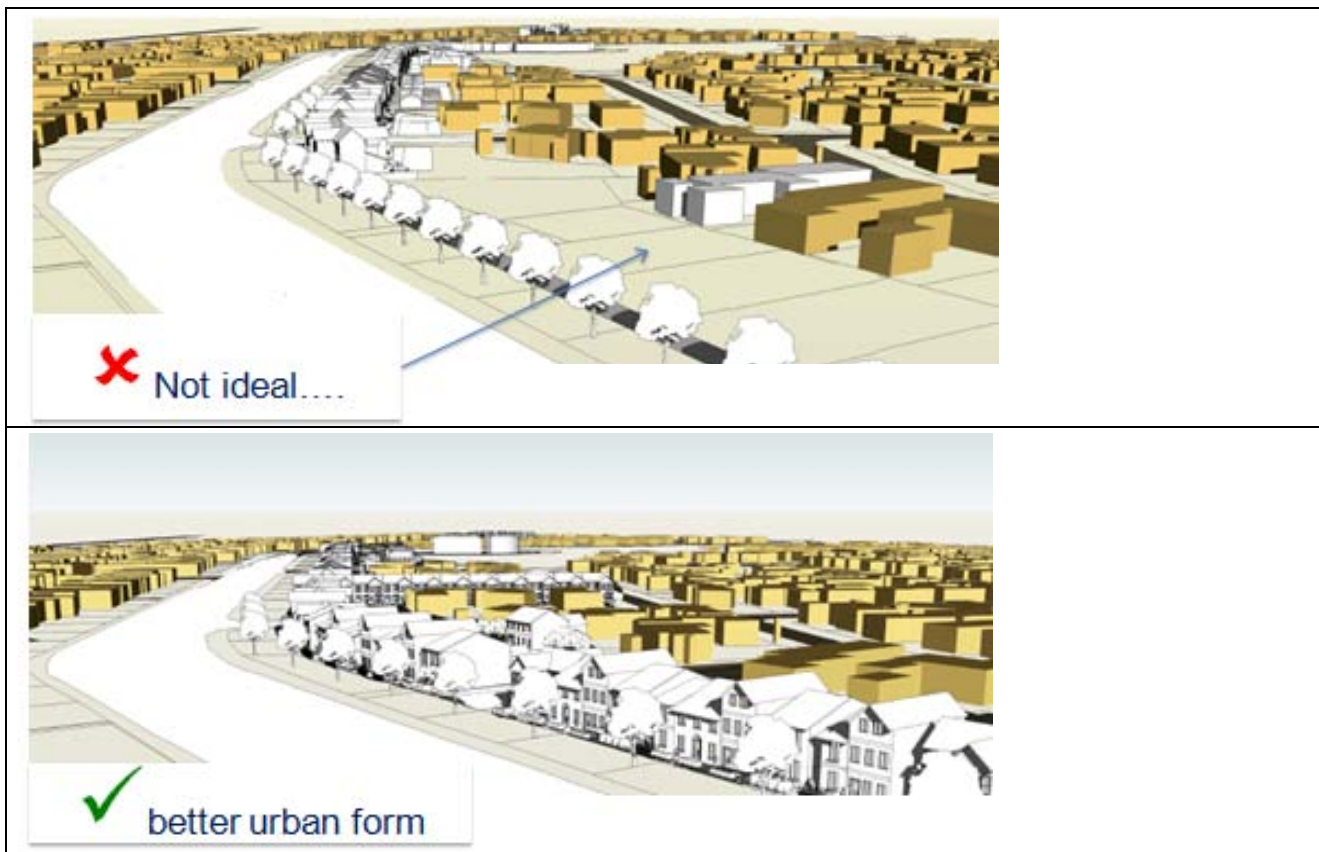
There are essentially two ways the scheme could attenuate the negative impacts on adjoining land use:

1. Construct noise walls, bunding and landscaping with any remnant land maintained as reserves / parks; or
2. Investigate the feasibility of reconfiguring the remnant adjacent land to allow for more intensive, high quality redevelopment. This should maximise the benefits derived from the transport investment and create a better urban form along the corridor. It should also help the Council achieve other objectives, such as more housing to accommodate projected population growth and developing a more compact sustainable city.

The first approach is commonly applied alongside motorways, however presents significant adverse impacts on the desired function and visual amenity of the project corridor, which is an urban arterial. The resulting urban form would be remaining dwellings backing onto the corridor or hidden behind noise walls and landscaping, a continuation of low density residential housing not conducive to public transport compounded by the total number of dwellings being less than before the busway was in place.

The second approach should create a better outcome; however, it required a high degree of collaboration with Auckland Council. Auckland Council began investigating the potential redevelopment of the remnant land midway through the scheme assessment. This investigation, together with finalising the scheme design, led by Auckland Transport, is an iterative process that is still on-going at the time of writing this paper.

Figure 3 illustrates the two approaches for adjoining land uses being investigated by Auckland Council and the project team.



**Figure 3 – Two mitigation approaches to land use impacted by the busway<sup>5</sup>**

A challenge for the project was that the designed transport scheme turned out to have a much wider corridor than originally assumed at the start of the land use study. This potentially reduced the viability of redeveloping the remnant land.

The project team had to review what was by now a well advanced scheme design so as to identify possible opportunities to reduce the width of the transport corridor (which was limited).

In turn, Auckland Council reviewed their original building typology assumptions and based on this, at the time of writing this paper, redevelopment appears to still be feasible on several sections of the corridor. Work on developing both aspects to confirm final outcomes are still on-going.

### **KEY LEARNINGS (c)**

Just looking at what needs to be done for transport could lead to missed opportunities as transport projects, particularly large ones, have the potential to drive transformation or urban renewal of an area. Transport planning and investment should be integrated with appropriate land use development to maximise the benefits derived from the transport investment and create a better urban form.

Collaboration means give and take by all parties. All parties need to be prepared to compromise on some aspects, where possible.

<sup>5</sup> Figures produced by the Built Environment Unit of Auckland Council for the project.

#### **d) Dealing with different timings in collaborative work streams**

The proposed new busway station at Pakuranga town centre will require a portion of the town centre's at-grade car park. As a mitigation measure, Auckland Transport will need to replace the lost spaces with multi-story car parking to ensure the on-going economic viability of the centre. A significant opportunity is that Auckland Council owns a large portion of the centre's car park and has earmarked it for redevelopment.

Auckland Council, in collaboration with the Local Board and its community, initiated a master-planning exercise for the town centre midway through design of the transport scheme.

Gaining consensus on the preferred bus station configuration was one of the more challenging aspects of the project. Aside from technical complexities related to bus service configurations at this location, one of the main challenges was the different timing of the transport planning and land use planning work streams for the town centre.

The different timing resulted in initial bus station options being developed with limited information as to what the future land use aspirations were. This resulted in earlier options successfully meeting transport objectives, however, considered by the land use and urban design planners to be detrimental to the future redevelopment of the centre. As one of the objectives of the project was to be a catalyst for redevelopment in addition to providing transport solutions, the opposing view of a key stakeholder was a major issue for the project team to work through.

A challenge remaining for the project (beyond the designation process) is to ensure the bus station is implemented with the town centre development in a cohesive manner. However, the outcome should be a bus station that is integrated with a high quality development that will ultimately create a better outcome for the Pakuranga town centre and its community.

#### **KEY LEARNINGS (d)**

A challenge to early collaboration is that sometimes the information needed to influence decision making is not yet available or has not been developed yet. When it does become available, it may require a change in the project design or assumptions. Collaboration is therefore often iterative and all of the project team members need to be willing to incorporate relevant new information and in turn be willing to go back and review earlier assumptions or designs in light of this.

To minimise rework or redesign as much as possible, transport and land use projects that are obviously going to have significant interdependencies should be initiated at the same time (or at key milestones) and progressed in parallel from the outset.

Achieving this successfully requires a highly collaborative approach between the planning and transport teams - or two organisations in the case of Auckland. With the seven local authorities of the Auckland Region now amalgamated into one council, there is an opportunity to ensure better programme management of interdependent land use and transport work streams is applied. Even so, there will always be a need for an iterative approach as that is the nature of collaboration.

## SUMMARY AND CONCLUSION

For a complex multi-modal project such as AMET1, collaboration is critical to achieving a successful outcome. This collaboration can add multiple layers of complexity and lead to a number of challenges through the development of the project. However, the end result should be a better outcome than if no or limited collaboration had been undertaken.

### SUMMARY KEY LEARNINGS

The project team have identified a number of key learning from some of the challenges on this particular project. These include:

- Identifying the most appropriate collaboration participants at the outset and maintaining continuity of communications, consultation and working relationships with them through the decision making process is critical;
- Competing demands and objectives mean collaboration does not always result in universal consensus on all outcomes. What is important is communication and transparency of the decision making process;
- Just looking at what needs to be done for transport could lead to missed opportunities as transport projects have the potential to drive transformation or urban renewal of an area. Transport investment should be integrated with appropriate land use development to maximise benefits derived from the transport investment and create a better urban form.
- Transport and land use projects that are obviously going to have significant interdependencies should be initiated at the same time (or at the appropriate key milestones) and progressed in parallel from the outset; and
- Collaboration often requires an iterative approach to develop the ultimate solution; and
- In the spirit of collaboration, all key parties need to be willing to compromise on some aspects.

As this project is yet to be completed, the effectiveness of the collaboration undertaken with key stakeholders is yet to be fully tested. The first test will be when the designation for the route is submitted and publicly notified, approximately by the end of 2013.

However, so far, relationships with key stakeholders within Auckland Transport and the other key organisations remains positive and constructive and based on the consultation done to-date, the politicians and community are engaged with the project and generally very supportive.

The ultimate test will come after the scheme is built and whether the desired outcomes and benefits are actually realised. This could be many years away.

## **ACKNOWLEDGEMENTS**

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## **REFERENCES**

The Auckland Plan, 2012, produced by Auckland Council.

More information on the AMETI project can be found at Auckland Transport's website:

<http://www.aucklandtransport.govt.nz/improving-transport/ameti/Pages/default.aspx>

The website also includes a video that shows a flythrough of the planned busway from Panmure Station to Pakuranga town centre and Botany town centre. It also shows the bus stops and intersections of the planned busway in more detail.