

# Summary of your feedback on proposed traffic flow improvements for Ti Rakau Drive



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# Summary

Auckland Transport (AT) is proposing improvements to help with traffic flow along Ti Rakau Drive and nearby streets.

The improvements will support the recent launch of the East Auckland New Network bus routes. They will also provide an interim solution to relieve peak hour congestion until we implement the Auckland Manukau Eastern Transport Initiative (AMETI) Eastern Busway, due to be completed in 2026.

We consulted on the proposal from 9 October to 12 November 2017 and received 360 submissions.

## Outcome

Your feedback showed good support for our proposals in general, and we received many comments and suggestions. We have considered all your suggestions. Our responses to all your comments and suggestions are detailed in the final section of this report.

## Next steps

After considering all feedback, we will:

- proceed with the improvements to Ti Rakau Drive traffic flow as proposed
- review the new bus lanes on a regular basis to gauge their effectiveness.

Ti Rakau Drive is a major arterial road and we recognise that it is an essential connection for many residents and businesses in the area. We hope to complete this project with as little disruption as possible.

To minimise traffic and bus service interruption, we will work closely with the most affected residents and businesses, and endeavour to coordinate work times to minimise potential delay.

**We expect work to begin in late 2018.**

# Background

## Project overview

Ti Rakau Drive has traffic congestion issues particularly during peak times.

This proposal includes bus lanes and intersection changes which will improve Ti Rakau Drive and nearby streets by reducing queue times and improving reliability and punctuality of bus services.



## Aspects of project

There are six aspects of this project:

1. Introduce peak hour bus lanes on Ti Rakau Drive, between Wheatley Avenue and Gossamer Drive.
2. Remove right turns at the Edgewater Drive (east) intersection with Ti Rakau Drive.
3. Introduce two right turn traffic lanes into Gossamer Drive from Ti Rakau Drive.
4. Extend the two left turn traffic lanes into Botany Road from Ti Rakau Drive.
5. Extend the left turn lane into Ti Rakau Drive by changing the layout of Te Irirangi Drive at the Countdown entrance.
6. Introduce two left turn traffic lanes into Chapel Road from Ti Rakau Drive.

## 1. Peak hour bus lanes on Ti Rakau Drive

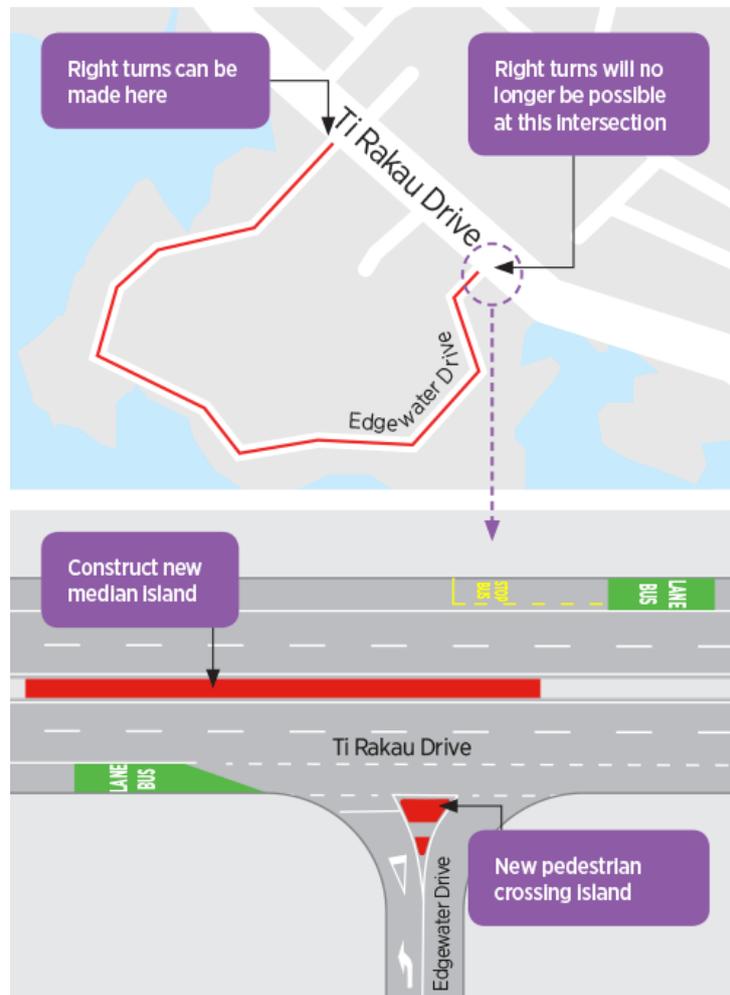


We proposed to install peak hour bus lanes on Ti Rakau Drive between Wheatley Avenue and Gossamer Drive. These will operate westbound 7am-10am and eastbound 4pm-7pm.

This will remove existing kerb-side parking during bus lane operating times. Parking would be allowed in these bus lanes outside these times.

By improving bus travel flow through this section, public transport will be faster, more reliable, and a more practical alternative for those travelling through the area.

## 2. Edgewater Drive (east) intersection

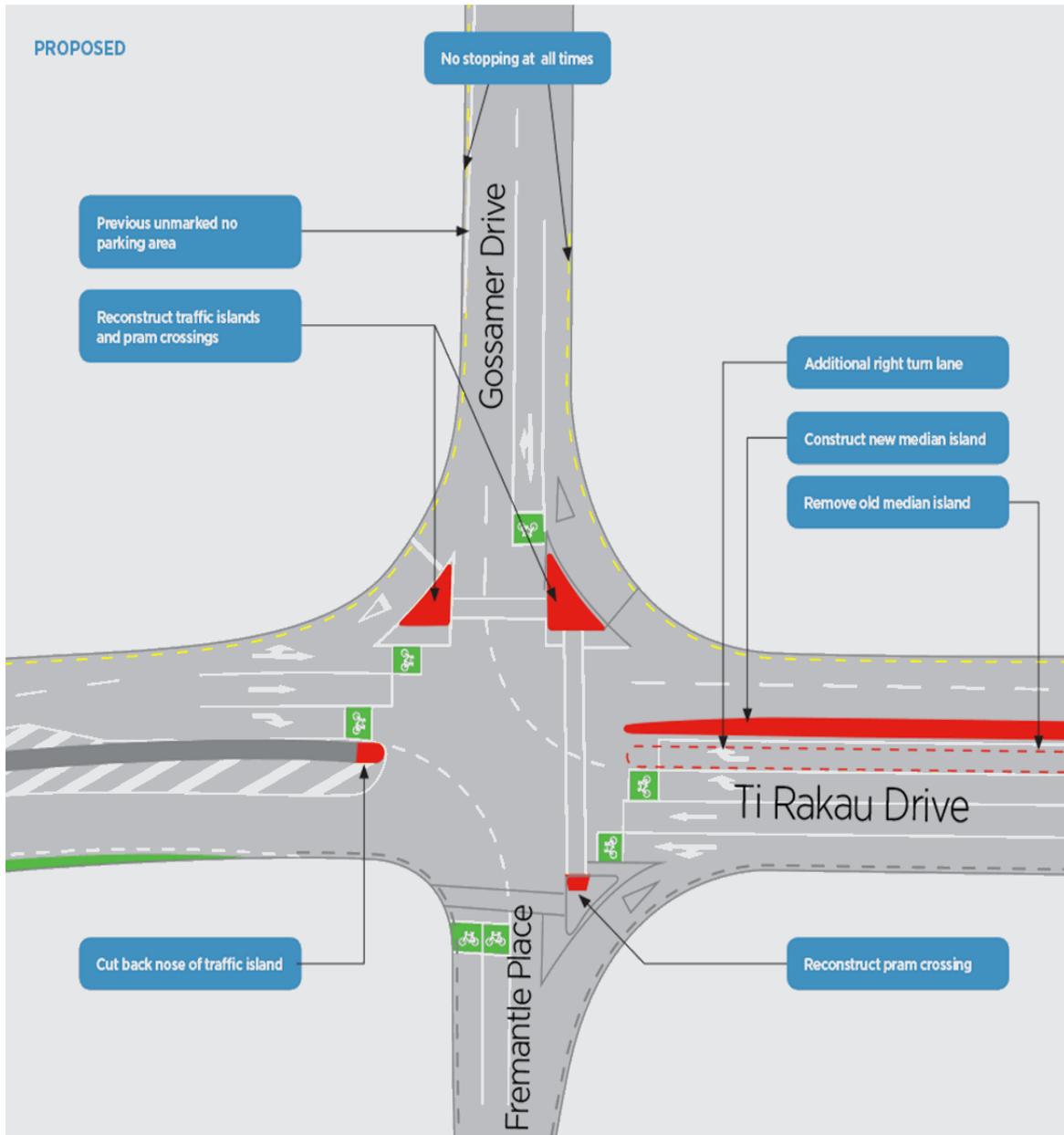


We proposed to remove the right turns from Ti Rakau Drive into and out of Edgewater Drive (eastern end).

Removing the right turns will provide the space needed for the bus lane and allow safer pedestrian movement across Edgewater Drive.

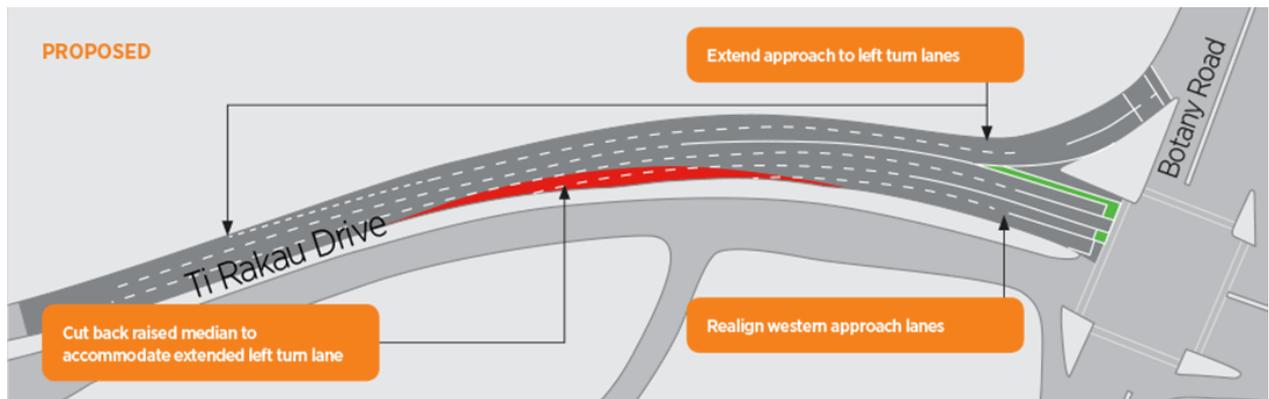
Vehicles turning right onto or from Ti Rakau Drive will be able to use the intersection at the western end of Edgewater Drive (see map for detail).

### 3. Gossamer Drive intersection



We proposed to add another right turn lane from Ti Rakau Drive (westbound) into Gossamer Drive. This change will allow more traffic to turn right from Ti Rakau Drive and improve the efficiency of the intersection.

## 4. Botany Road intersection

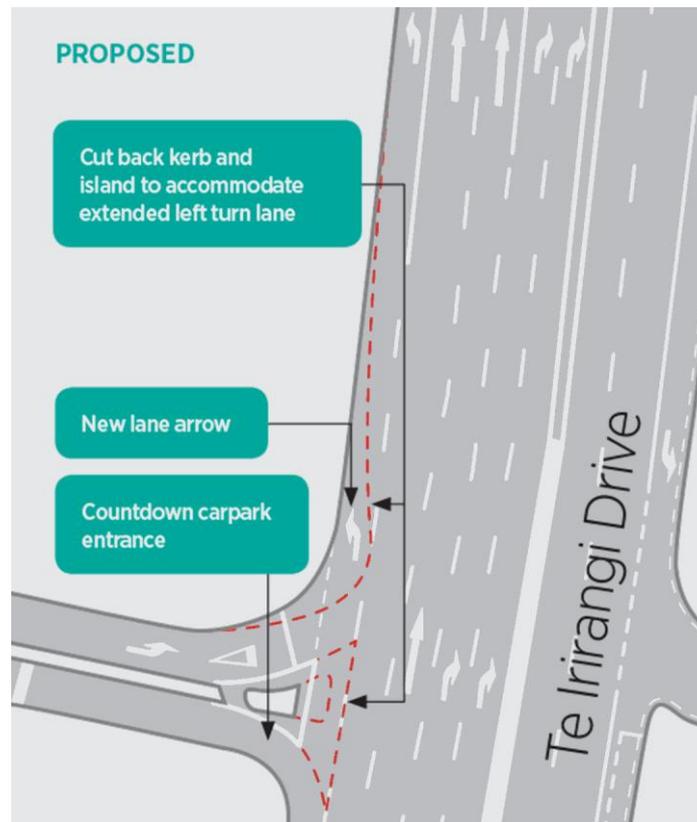


We proposed to extend the double left turn lanes from Ti Rakau Drive (eastbound) into Botany Road, by narrowing the wide centre island.

Often only one of the left turn lanes from Ti Rakau Drive is accessible as a result of queuing through-traffic.

Extending the second left turn lane will reduce wait times, improve traffic flow on Ti Rakau Drive and improve accessibility to businesses in the area.

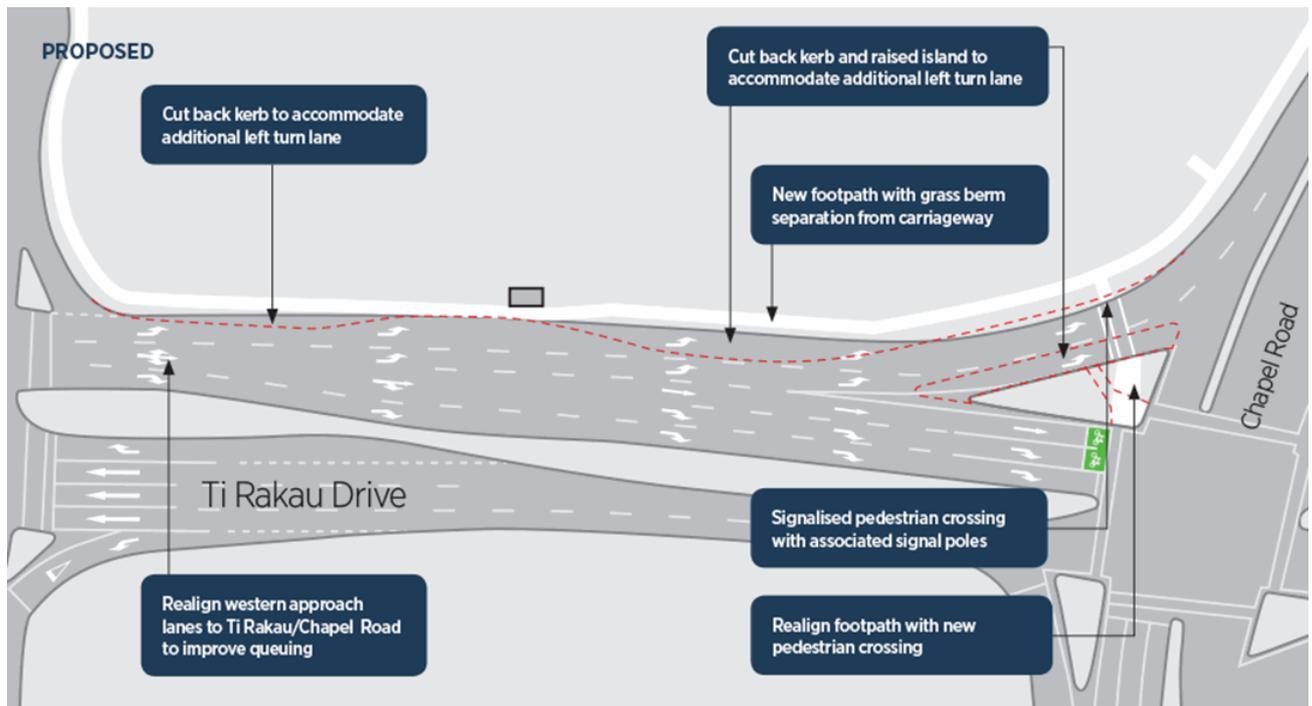
## 5. Te Irirangi Drive Countdown carpark entrance



We proposed to extend the length of the Te Irirangi Drive left turn slip lane into Ti Rakau Drive.

By reconstructing the layout of the Countdown carpark entrance vehicles turning left into Ti Rakau Drive would be able to enter this lane sooner, without having to queue with through-traffic. This would reduce the waiting time for left turning vehicles. This will improve the reliability of buses coming from Botany Town Centre.

## 6. Chapel Road/Ti Rakau Drive intersection



We proposed to add another left turn lane from Ti Rakau Drive (eastbound) into Chapel Road. A new signalised pedestrian crossing would also be installed on the slip lane to improve the safety of pedestrians.

The improvements would separate the large number of left turning and through traffic, resulting in less wait time. Traffic flow on Ti Rakau Drive would be improved allowing access to the greater eastern area.

## Activities to raise awareness

AT undertook a number of activities to share this proposal with the local community and the wider public. We sought feedback from everyone who wanted to have a say and provide views on this proposal. To publicise the consultation, we:

- posted brochures to 19,500 property owners and occupiers in a wide catchment area around Ti Rakau Drive
- emailed brochures to key stakeholders including businesses, schools, retailers, and emergency services in the area
- distributed brochures through Pakuranga Library, Citizens Advice Bureau Pakuranga-Eastern Manukau, Botany Library, Citizens Advice Bureau Botany and Botany Town Centre Management Services
- set up a detailed project webpage and an online feedback form on our website
- promoted the public consultation through our social media channels, including Facebook, Twitter, Neighbourly and LinkedIn
- distributed a media release to local papers
- advertised in the Eastern Courier, East and Bays Courier and Howick and Pakuranga Times newspapers
- held a public open day at Botany Town Centre on Saturday 28 October 2017, from 11am to 3pm
- presented to the Howick Local Board on 20 September 2017
- presented at the Southern Hui on 28 September 2017
- met with the Greater East Tamaki Business Association on 20 October 2017.

## Your feedback

We consulted on the proposal from 9 October to 12 November 2017. We received public feedback from **360** submitters.

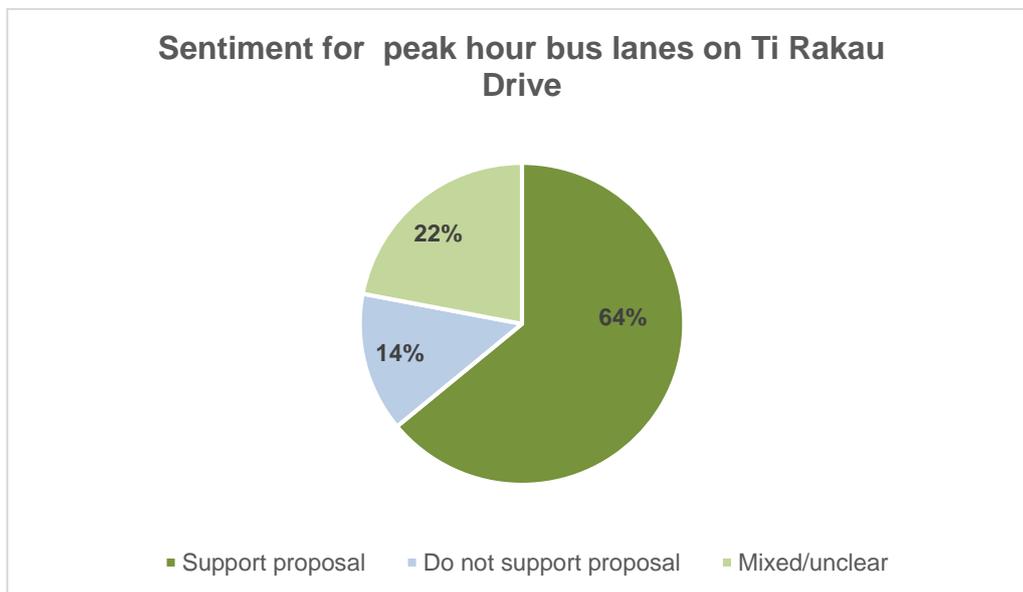
- **127** of these were submitted online, **225** were submitted using the freepost feedback form and **8** were submitted by email.

We have analysed your comments, which are summarised below. Many of the suggestions would require significant investment, which we cannot undertake. This project is an interim, low-cost solution until the AMETI Eastern Busway is fully implemented.

Please see the '[Your comments and our responses](#)' section for a detailed breakdown of the suggestions made in the feedback and AT responses to these.

The Greater East Tamaki Business Association and Bike Auckland also submitted on the proposal. Their submissions have been summarised separately in the '[Other submissions](#)' section.

## 1. Peak hour bus lanes on Ti Rakau Drive



The vast majority of submitters (183 respondents, 64%) indicated they like the proposed peak hour bus lanes on Ti Rakau Drive and suggested the proposal could even have longer bus lane operating hours and be extended further down Ti Rakau Drive.

*“A good idea to keep buses flowing, encouraging more people to use them.”*

*“Bus lanes are a great idea but the proposal does not go far enough.”*

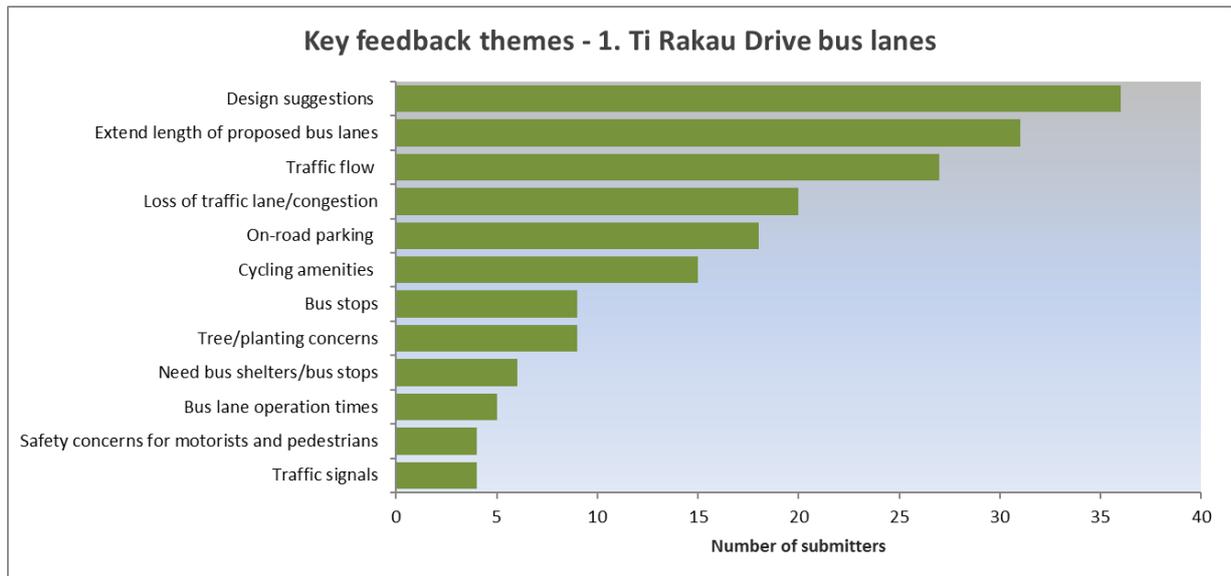
A smaller proportion of submitters (40 respondents, 14%) said they do not like the proposed bus lanes. The majority of these people felt bus lane provisions would worsen congestion or disrupt traffic flow along this busy route.

*“Stupid idea as it will cause massive traffic jam. Buses and cyclists are already causing a lot of problem from car users.”*

*“These bus lanes will not improve traffic flow. The problem is the one lane into Waipuna.”*

## Themes in feedback

We have analysed the public feedback to identify key themes shown in the graph below. We have grouped these themes into broader categories and provided detailed responses in [‘Your comments and our responses’](#) section at the back of this report.

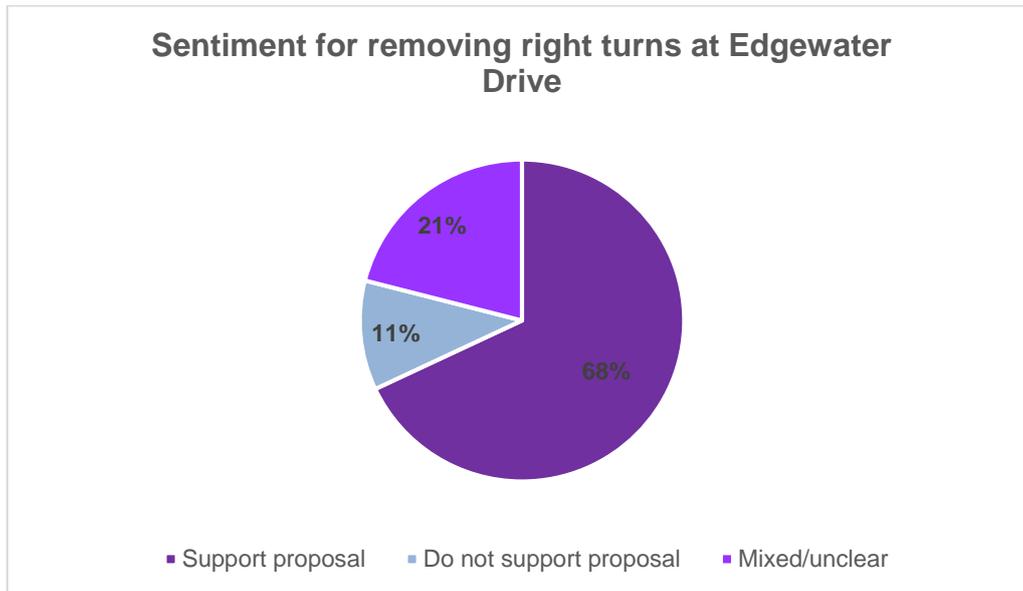


Some respondents who liked the proposal thought the bus lanes should extend beyond the proposed area on Ti Rakau Drive, to give buses priority during peak hour traffic along a greater length of this busy road.

Some respondents offered a range of road change suggestions to support the proposed bus lane provisions including sharing the bus lanes with T2 or T3 commuter traffic, widening the road to accommodate buses and parked cars and adding one or more lanes to Ti Rakau Drive to enable dedicated bus and commuter traffic.

Some people are concerned about congestion becoming worse, saying the proposal will reduce general traffic lanes during peak hour traffic. Some were also concerned that buses would cause congestion as they re-join traffic at the end of the bus lane.

## 2. Edgewater Drive (east) intersection



Sentiment for this proposal was very positive with 159 submitters (68%) saying they like the proposed removal of the right turn into Ti Rakau Drive.

*“Fantastic, will definitely help traffic flow and decrease crashes.”*

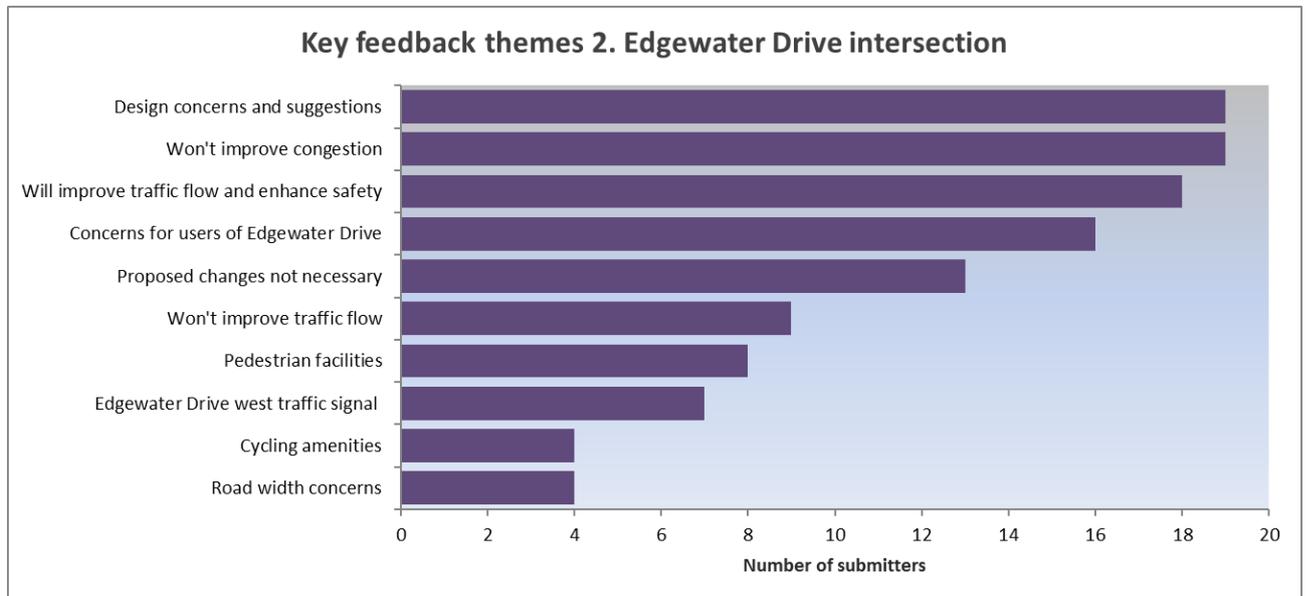
*“The right hand turn is particularly dangerous due to a lack of visibility across the two lanes of traffic so this proposal will be good.”*

A smaller number of submitters (25 respondents or 11%) said they did not like the proposal.

*“Will drive congestion up to Gossamer Drive if some people miss the Eastern right turn - that’s a negative drawback.”*

## Themes in feedback

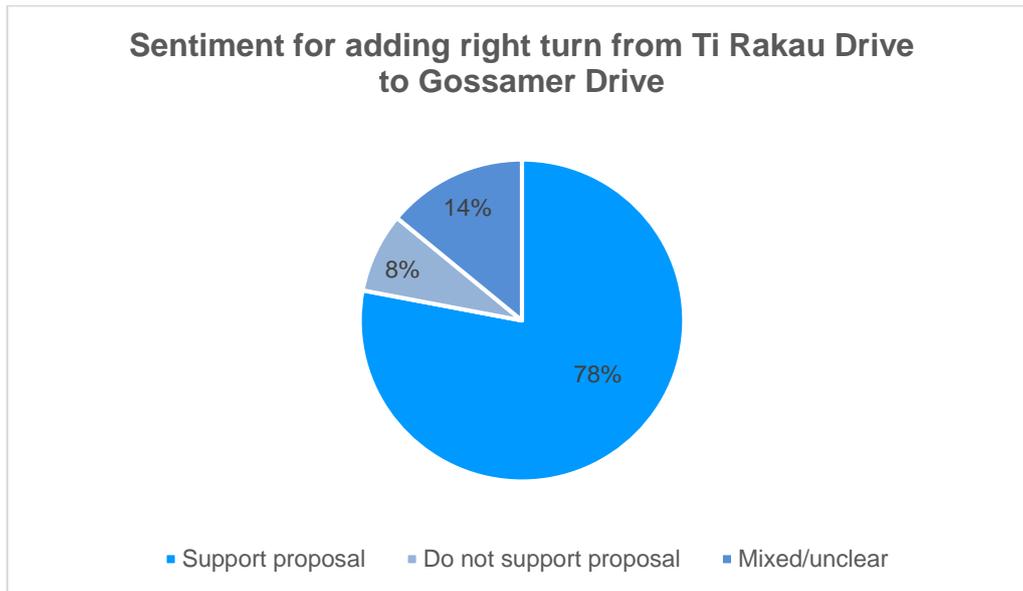
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The majority of submitters thought the proposal would improve traffic flow and enhance safety. Most felt that limiting right-hand turns into Ti Rakau Drive from side streets was sensible to control the number of vehicles crossing against the grain of traffic, thereby reducing the likelihood of preventable accidents.

Some of these people felt the pedestrian island was unnecessary and would impede traffic flows; others liked the proposal but wanted ‘U-turns’ to be clearly marked as illegal. Some people offered suggestions to help motorists familiarise themselves with the change.

### 3. Gossamer Drive intersection



The vast majority of submitters (212 or 78%) like the proposed addition of a right turn lane westbound into Gossamer Drive from Ti Rakau Drive.

*“I agree that it will clear the build-up along Ti Rakau back to the bridge, particularly at rush hours.”*

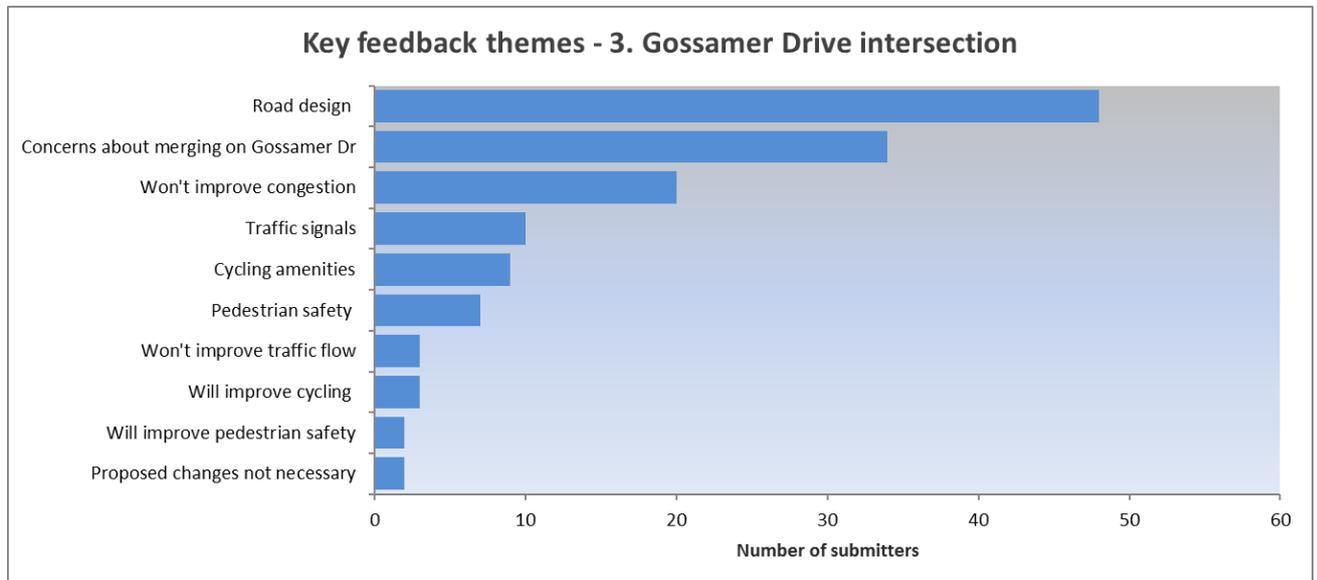
*“The two right turning lanes are very much needed. It can be unsafe at peak when travelling west through that intersection.”*

Only 23 submitters (8%) said they did not like the proposal.

*“This is pointless and again will increase thoroughfare traffic around school pedestrian areas.”*

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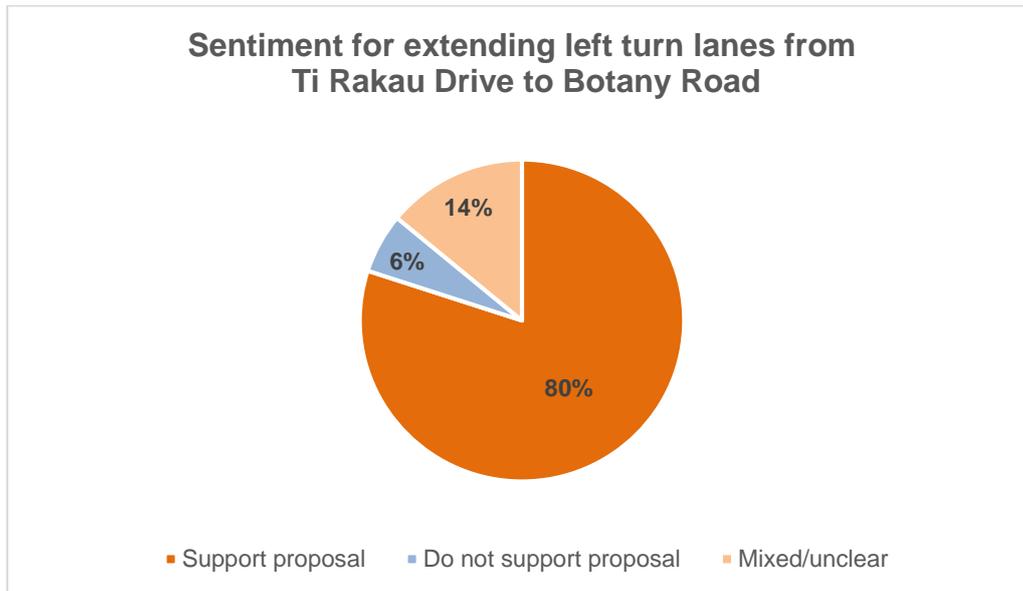


Submitters were keen to see the work being undertaken as soon as possible with minimal impact to the public as possible.

We received a number of road change suggestions, ranging from widening Gossamer Road to accommodate the new lane to replacing the traffic signal controlled intersection with a roundabout.

*“A roundabout would be a better solution. The reason this junction backs up is due to the traffic lights.”*

## 4. Botany Road intersection



The majority of submitters (215 or 80%) expressed support for Botany Road intersection proposal.

*“Great idea. Often cars can't access both lanes due to the narrow start of the LH lane & cars in straight ahead lane.”*

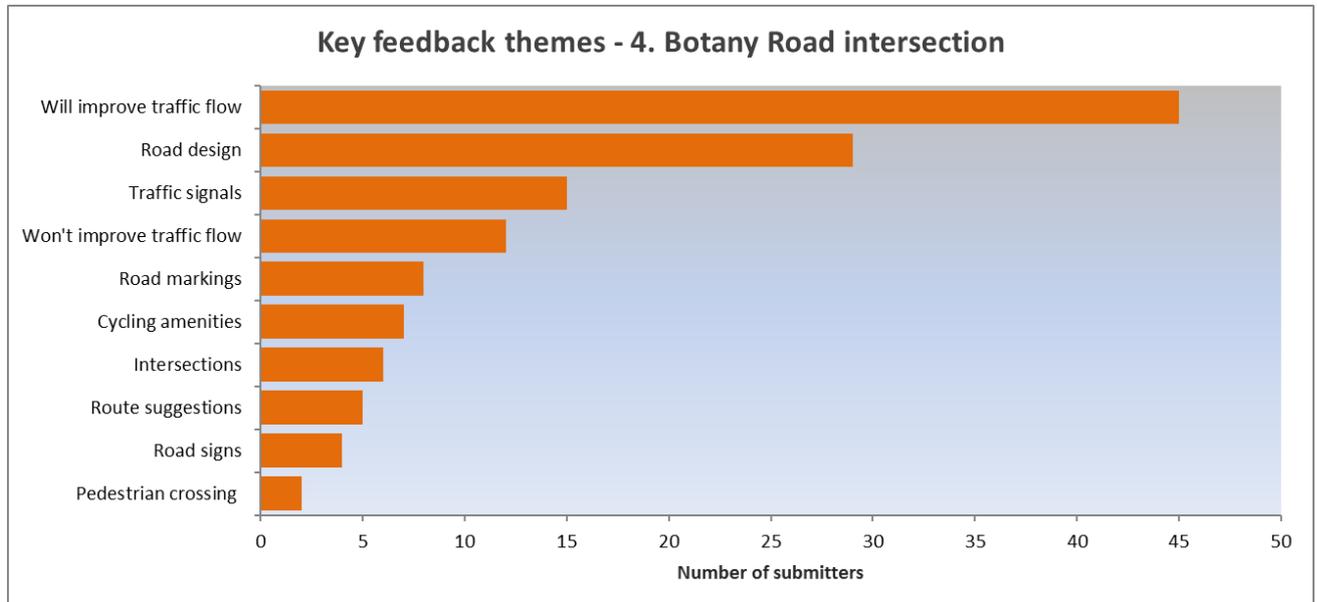
*“Definitely needed & support, so long as people can't/don't queue, jump last minute!”*

Only 15 people (6% of respondents) said they did not support it.

*“In my opinion this is a lot of work for minimal gain; I have lived very close to this intersection for 12 years & don't think this is a major problem.”*

## Themes in feedback

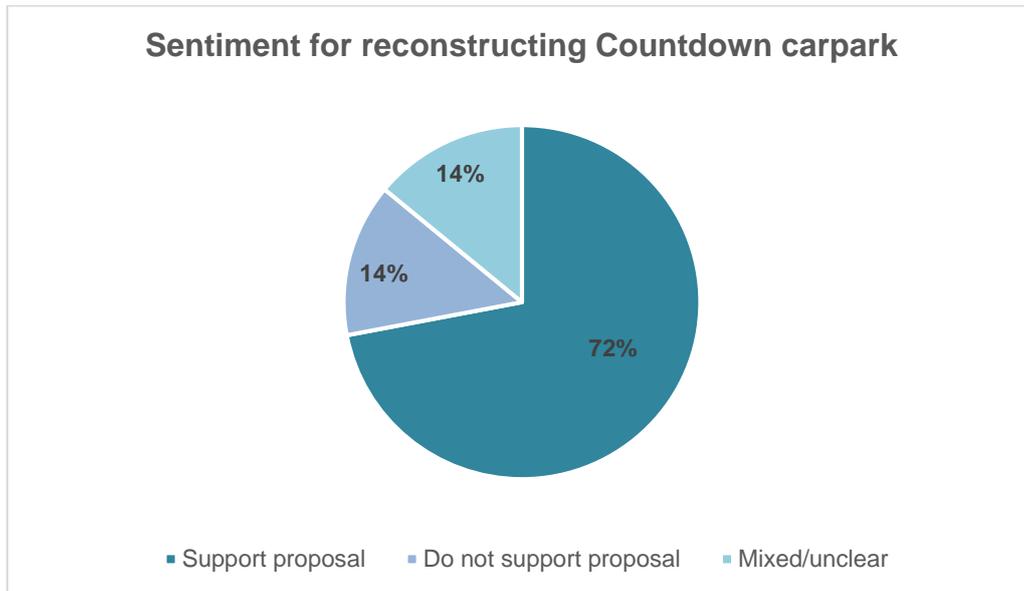
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Submitters thought the proposal would improve traffic flow, reinforcing the strong show of support from respondents.

Respondents offered a range of road change suggestions both to support the proposal and as alternatives to the proposed design, to improve this area for all roads users.

## 5. Te Irirangi Drive Countdown carpark entrance



The majority of submitters (180 respondents or 72%) like the proposal to extend the slip lane at the Te Irirangi Drive entrance to the Countdown carpark.

*“Long overdue. The left turn from Te Irirangi Dr into Countdown is too abrupt and sharp/narrow entry.”*

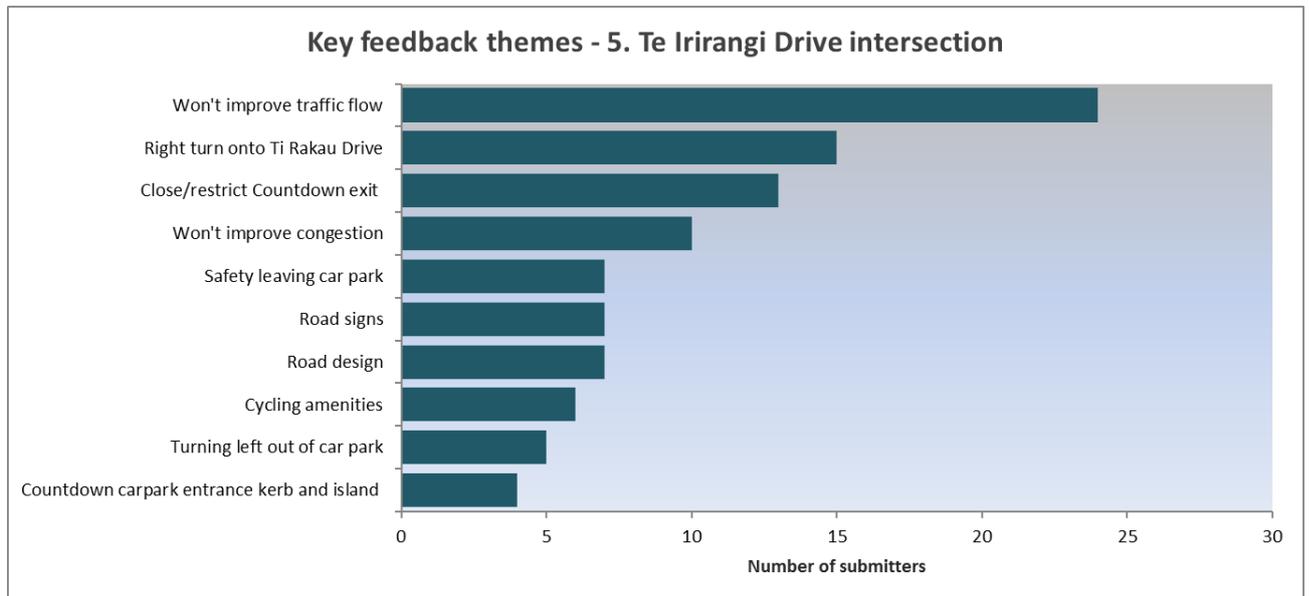
*“Useful as that lane tends to jam up especially coming out of botany town centre.”*

Whereas, 36 submitters (14%) said they do not like this proposal.

*“In my opinion this is a lot of work for minimal gain, most traffic flow is straight ahead, not left turning.”*

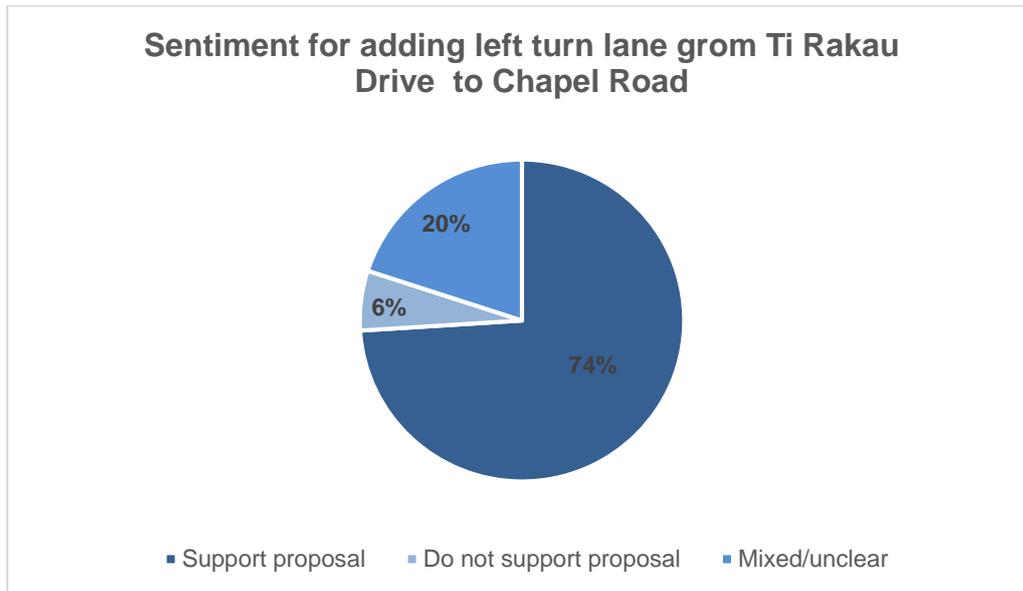
## Themes in feedback

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Some people expressed concerns about right-turning cars exiting the Countdown needing to cross two lanes of traffic, saying it poses a major safety risk to all road users. Some submitters thought that the Countdown exit should be closed or restricted to improve traffic flows and safety.

## 6. Chapel Road/Ti Rakau Drive intersection



The majority of submitters (180 respondents or 74%) like the proposal to add an additional left turn lane from Ti Rakau Drive eastbound into Chapel Road.

*“A good idea. There are two lanes at this intersection. I think it could work well.”*

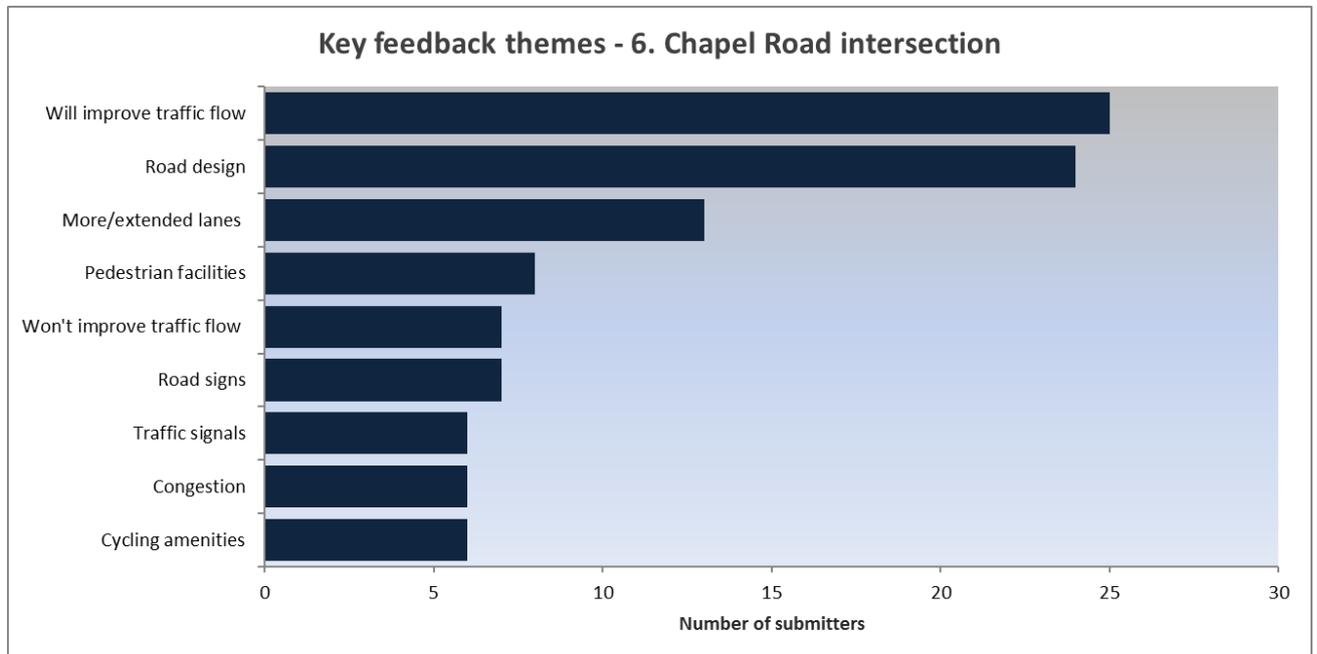
*“Fantastic. Would be much better.”*

Comparatively few submitters (14 respondents or 6%) said that they did not like the proposal.

*“Not an issue, do not waste tax payer money on this.”*

## Themes in feedback

We have analysed the public feedback to identify key themes shown in the graph below. We have grouped these themes into broader categories and provided detailed responses in [‘Your comments and our responses’](#) section at the back of this report.



## Other submissions

In addition to public feedback, we also received submissions from the Greater East Tamaki Business Association and Bike Auckland. Their feedback is summarised below and their concerns and suggestions have been included in [‘Your comments and our responses’](#) section.

### Greater East Tamaki Business Association (GETBA)

GETBA supports this proposal. It has provided additional feedback on safety concerns and congestion hot spots as well as suggested solutions for the intersections at Sir William Avenue/Smales Road, Trugood Drive/Cryers Road, Smales Road/Allens Road/Harris Road, Lady Ruby Drive/Kerwyn Avenue/Springs Road and Crooks Road/Harris Road. We will continue to work with the association to address the points it made.

### Bike Auckland

Bike Auckland supports the proposals for peak hour bus lanes along Ti Rakau Drive and for the Edgewater Drive (east) intersection. However, it believes that some of the other proposals do not sufficiently improve cycling and walking safety in the area. Bike Auckland commented that:

- the Gossamer Drive intersection proposal does nothing to improve an intersection that is hostile to walking and cycling. As a minimum, they would like zebra crossings added over the slip lanes
- they expressed concern that the proposals were so car-focused; believe the proposed Botany Road and Chapel Road intersections will remain very unpleasant and unsafe environments for cyclists.

## Your comments and our responses

This project is an interim, low cost solution that will provide some benefits towards improving bus services and relieving congestion until the Auckland Manukau Eastern Transport Initiative (AMETI) Eastern Busway is in place.

To improve traffic flow along Ti Rakau Drive we have prioritised areas with more severe congestion, as outlined in the consultation brochure. Our budget constraints mean that we can only make changes in these areas at this stage.

Thanks for all the feedback we received. We have collated these into the six aspects of this project and separated out feedback specifically for cycling and walking, general comments and comments on the surrounding area (outside this project). We have provided our responses to this feedback in the table below.

1. <a href="#">Peak hour bus lanes on Ti Rakau Drive</a>	2. <a href="#">Edgewater Drive (east) intersection</a>
3. <a href="#">Gossamer Drive intersection</a>	4. <a href="#">Botany Road intersection</a>
5. <a href="#">Te Irirangi Drive Countdown carpark entrance</a>	6. <a href="#">Chapel Road/Ti Rakau Drive intersection</a>
7. <a href="#">Cycling and walking</a>	8. <a href="#">General comments</a>
9. <a href="#">Comments on surrounding area</a>	

Your feedback	AT response
<b>1. Peak hour bus lanes on Ti Rakau Drive</b>	
<b>1.1. Bus lane extension</b>	
<ul style="list-style-type: none"> <li>Should go up both sides of Ti Rakau Drive until Reeves Road/ extend to Waipuna Bridge/to Edgewater shops/to Pakuranga Rd and Harris Rd</li> <li>- too short, will create congestion as buses re-join main traffic flow, won't have much impact</li> </ul>	The Ti Rakau Drive project is an interim, low cost solution to provide congestion relief and some benefit to bus services. The scope of this project is limited to working within the carriageway with only minor local widening proposed to minimise project costs.

Your feedback	AT response
<ul style="list-style-type: none"> <li>• Should be the entire length of Ti Rakau Drive/entire length between Pakuranga Town Centre and Botany Metropolitan Centre</li> <li>• More bus lanes at certain locations (especially on the approach from Wheatley Avenue to Tiraumea Drive)</li> <li>• Should extend from Ti Rakau bridge on Gossamer Drive to Pakuranga Highway/to Reeves lights</li> <li>• Widening bus lane outside the church between Ti Rakau Drive bridge to Freemantle Place</li> <li>• At the Chapel Road intersection there should be a transit lane on the most left of the left hand turn lanes and a transit lane for the left of the two right hand lanes</li> </ul>	<p>The location and extent of the bus lanes have been chosen as buses experience unreliable and unpredictable travel times in this area, and we can accommodate bus lanes in this location with only localised road widening required. Extending the bus lanes as suggested would not be possible without widening of the carriageway.</p> <p>The AMETI Eastern Busway project proposes busways along the entire length of Ti Rakau Drive and the section from Pakuranga to Botany is currently in the AMETI design and consenting phase.</p> <p>We will be design the bus lanes with merges at either end to enable buses to re-enter the main traffic flow with minimal disruption. During bus lane operating hours, traffic is frequently queued alongside the bus lanes or slow moving so merging buses should not affect traffic flow.</p>
<b>1.2. Bus lane operating hours</b>	
<ul style="list-style-type: none"> <li>• Make 24/7 bus lanes the entire length of Ti Rakau Drive</li> <li>• Longer bus lane operating hours               <ul style="list-style-type: none"> <li>- in the afternoon with a 2.30-3pm start time instead of a 4pm start time</li> <li>- westbound bus lane should operate in evening also (traffic almost heavy as mornings)</li> <li>- from 6.30-10am and 4-8pm</li> <li>- from 6am-10am (morning) and 3pm-7pm (afternoon/evening)</li> </ul> </li> <li>• Shorter bus lane operating hours               <ul style="list-style-type: none"> <li>- finish at 9.30am and 6pm/6.30pm</li> <li>- 7am-9am in the morning; proposed afternoon hours fine</li> <li>- Reduce afternoon hours to 4pm-6pm to minimise parking concerns for residents in area</li> </ul> </li> <li>• Confine buses to bus lane only during peak times</li> </ul>	<p>We proposed the bus lane hours of operation based on the busiest time of day for traffic, which is 7-10am and 4-7pm.</p> <p>At this stage, we don't propose to extend or shorten the bus lane operating hours but once in operation we will review the hours on a regular basis.</p> <p>Buses can use either the bus lane or the general traffic lanes to minimise journey times, depending on traffic.</p>
<ul style="list-style-type: none"> <li>• Enforce bus lane operating hours and fine everyone using the lane during the proposed times</li> </ul>	<p>It is illegal to use a bus lane during bus lane operating hours and any offending vehicle may be issued with an enforcement notice.</p>
<ul style="list-style-type: none"> <li>• Review after six months to gauge effectiveness of the bus lane introduction</li> </ul>	<p>After we have implemented the bus lanes, we will closely monitor their operation.</p>
<b>1.3. Parking</b>	
<ul style="list-style-type: none"> <li>• Need to be able to park along Ti Rakau Drive during peak hours               <ul style="list-style-type: none"> <li>- difficult for houses with lots of occupants/with little or no off-street parking</li> </ul> </li> </ul>	<p>The parking surveys that we undertook along Ti Rakau Drive, between Gossamer Drive and Wheatley Avenue, showed that parking demand</p>

Your feedback	AT response
<ul style="list-style-type: none"> <li>- check impact of loss of parking with residents in project area</li> <li>• Should be no parking along entire length of Ti Rakau Drive (clearway)</li> <li>- major arterial, not many cars parked anyway</li> <li>- causes congestion as cars/buses merge in and out</li> <li>- extend no parking to 300m down Edgewater Drive East.</li> </ul>	<p>was low during peak times. Our survey also showed that only a small number of vehicles parked along Ti Rakau Drive throughout the morning or evening peak periods. Some motorists either departed or arrived during these times.</p> <p>Alternative parking is available on adjacent side streets during the peak operational times.</p> <p>The proposal is only for specific sections of Ti Rakau Drive where parking is generally infrequent and often only where shoulders are provided. There may be benefits in prohibiting parking along the whole corridor but this is not within the scope of this project</p>
<ul style="list-style-type: none"> <li>• Cars will remain parked in bus lanes during operating hours, causing more congestion as buses merge into general traffic to pass parked cars</li> </ul>	<p>It is illegal to park in a bus lane and any offending vehicle may be towed.</p>
<ul style="list-style-type: none"> <li>• Use berm for parking</li> </ul>	<p>It is illegal to park on the berm as it causes damage that increases maintenance costs. As the berms along Ti Rakau Drive are generally narrow, parking on them may result in vehicles overhanging the footpaths hindering pedestrian access and creating safety issues.</p>
<b>1.4 Share vehicle lanes</b>	
<ul style="list-style-type: none"> <li>• Make a T2/T3 rather than bus lane only</li> <li>- ensures maximum use of space and rewards carpooling</li> <li>• Bus lane should allow for vehicles with multiple occupancy</li> <li>• Consider sharing bus lanes with trucks to enable movement of larger vehicles, freeing up traffic</li> <li>• Consider allowing taxis to use proposed bus lanes</li> <li>• Consider allowing EV vehicles to use proposed bus lanes</li> <li>• Consider allowing trades and other transport companies to use proposed bus lanes.</li> </ul>	<p>We have investigated providing T2/T3 lanes instead of only bus lanes. However, the key outcome for this road corridor is to improve public transport between Botany and Pakuranga so our design is for bus lanes. This also supports the East Auckland New Network bus routes and AMETI Eastern Busway.</p> <p>The proposal is for a bus lane that can be shared by motorbikes and cycles. Allowing other vehicles into the bus lanes will reduce the benefits for buses, which have high occupancies, particularly in the peak times.</p>
<ul style="list-style-type: none"> <li>• Motorbikes should be able to use bus lane</li> <li>• Consider allowing cyclists to use bus lane.</li> </ul>	<p>Motorbikes and cyclists can use the bus lane.</p>
<ul style="list-style-type: none"> <li>• Prefer light rail or underground train over bus lanes</li> <li>• Consider tunnels to solve congestion issue and house underground metro trains.</li> </ul>	<p>AMETI Eastern Busway investigated a range of options (including light rail) and the current preferred option is for a dedicated busway.</p>

Your feedback	AT response
<b>1.5 Bus stops</b>	
<ul style="list-style-type: none"> <li>• Indent bus stops               <ul style="list-style-type: none"> <li>- “the west ward bus stop between Greenmount Drive and Harris Road in front of the Warehouse Stationery needs to be set back away from the road - Currently in the morning, the bus stop is actually situated within the left lane and when buses stop there, it causes major back logs of traffic in that lane right back to the botany intersection.”</li> <li>- create indented ‘lay-bys’ for buses in this areas to pull for passenger pick-ups and drop-offs, out of the way of the general traffic flow</li> <li>- bus stop 6140 near Gossamer Drive will block vehicles</li> <li>- all bus stops along Ti Rakau Drive</li> <li>- enables cyclists to pass without having to merge into general traffic lanes</li> </ul> </li> <li>• A lower cost option for the bus lane would be to have lay-by at the bus stops which allows traffic to flow while buses pick up passengers</li> </ul>	<p>The proposed design will provide greater priority for buses. Indented (setback) bus stops make it difficult for buses to re-enter the traffic flow. Indented bus stops require widening the carriageway, which is not practical due to the available road reserve width.</p> <p>Bus Stop 6140 will be located within the bus lane and therefore when buses stop here they will no longer block general traffic.</p>
<ul style="list-style-type: none"> <li>• Fewer bus stops along Ti Rakau Drive</li> <li>• Create more bus stops along Ti Rakau Drive in general</li> <li>• Need bus stop in between Roseburn and Mattson (long way to walk from Aurea Ave to get bus to town or train station)</li> </ul>	<p>The Auckland standard is for 400 – 500 metres between bus stops to help provide a better, faster service. Removing bus stops increases walking distances and can deter bus use.</p>
<ul style="list-style-type: none"> <li>• Install bus shelters at all bus stops</li> </ul>	<p>Under another programme of work, we are reviewing bus stop use to determine whether a bus shelter is required.</p>
<ul style="list-style-type: none"> <li>• Install car parks at main bus stops</li> </ul>	<p>AT concentrates car parking for public transport at key locations such as train stations and park and ride sites. It is not practical to provide car parking at every bus stop as this does not provide an efficient use of resources and can create operational issues for buses and other road users.</p>
<b>1.6 Bus route, frequency and timing</b>	
<ul style="list-style-type: none"> <li>• Need bus route that takes people from near Aurea Ave to Half Moon Bay ferry.</li> <li>• Ensure street furniture such as streetlights and other overhanging structures have sufficient height clearance space to accommodate regular and double-decker buses to pass by safely.</li> <li>• Increase bus services in this area to run every 5 minutes to make service more effective.</li> </ul>	<p>We have recently reviewed bus routes within the East Auckland area and rolled out new routes. Bus stops are located on Ti Rakau Drive at the end of Aurea Avenue. The frequent service routes on Ti Rakau Drive connect to Pakuranga and to Botany Downs, where routes are available to Half Moon Bay ferry.</p>

Your feedback	AT response
<ul style="list-style-type: none"> <li>Concerns and questions about how this proposal links to AMETI project – prefer AMETI construction got underway first to avoid duplication of works and make AMETI the priority project</li> </ul>	<p>We have reviewed street furniture to ensure it is appropriate for double decker buses.</p> <p>The new Eastern Bus Network has introduced Frequent Service bus routes along Ti Rakau Drive. Although these don't currently have a five-minute frequency, the frequencies of the services have increased. The AMETI Eastern Busway will provide further opportunities to increase bus frequency along Ti Rakau Drive.</p> <p>The proposed project has been designed to provide short-term benefits while minimising works that would be redundant when the AMETI Eastern Busway is constructed.</p>
<b>1.7 Intersections</b>	
<ul style="list-style-type: none"> <li>Implement something to prevent cars turning left into Gossamer Drive from using the bus lane</li> </ul>	<p>The volume of traffic turning left into Gossamer Drive is relatively small so we consider this would not cause any significant operational issues.</p>
<ul style="list-style-type: none"> <li>Address Ti Rakau Drive / Reeves Rd intersection inefficiencies to help with this bus lane proposal – without this, bus lanes may negatively impact traffic flows</li> </ul>	<p>The AMETI Eastern Busway project proposes a flyover over this intersection to facilitate a busway and improve intersection efficiency.</p>
<ul style="list-style-type: none"> <li>Create a no exit at the Tiraumea and Ti Rakau Drive junction, the one near to the Waipuna junction, i.e. the 2nd junction further down Ti Rakau Road</li> </ul>	<p>Closing the exit from Tiraumea Drive would increase the volume of traffic onto Mattson Road intersection at Ti Rakau Drive and increase the volume of traffic travelling on some of the residential streets. At this stage, we don't propose to make any changes to Tiraumea Drive.</p>
<b>1.8 Road design</b>	
<ul style="list-style-type: none"> <li>Build an appropriately sized parking facility at Panmure to support train users</li> </ul>	<p>This project is an interim, low cost solution that will provide some benefits towards improving the bus services and relieving congestion until the AMETI Eastern Busway is in place.</p>
<ul style="list-style-type: none"> <li>Allow three lanes along Ti Rakau from Harris Road to improve the traffic flow and stop other drivers from using the current right turn only lane into Greenmount Drive cutting back into Ti Rakau Drive</li> <li>Create new lanes of traffic either side of Ti Rakau Drive to accommodate proposed new bus lanes.</li> </ul>	<p>We have designed the bus lane and two vehicle lanes ensuring that there is adequate space. We will need to undertake some minor widening and remove tree on berm and median strip so that the new lane arrangement can fit and operate safely.</p> <p>We haven't proposed significant carriageway widening, as this would be redundant when the AMETI Eastern Busway is constructed. This proposal has been designed to provide bus lanes only within the available carriageway width.</p>

Your feedback	AT response
<ul style="list-style-type: none"> <li>• Bus priority traffic lights are a must</li> </ul>	<p>Since the bus lanes are an interim, low cost solution, we are unable to provide bus signals at this stage. The AMETI Eastern Busway project will provide more significant bus priority measures in the future.</p>
<ul style="list-style-type: none"> <li>• Ensure all lanes are wide enough to accommodate all buses, cars, and trucks to be next to each other</li> </ul>	<p>Vehicle tracking has been checked to ensure that vehicles can use the proposed traffic lanes.</p>
<ul style="list-style-type: none"> <li>• Replace median island with a thinner metal crash wall to allow more road space</li> </ul>	<p>The width of the central median is governed by the width required for right turn pockets. Replacing the median with a metal barrier would restrict vehicles making a right turn and have an impact on the operation of the existing signalised intersections.</p>
<ul style="list-style-type: none"> <li>• Create three lanes each way on Ti Rakau Drive to future-proof improvements and manage congestion.</li> </ul>	<p>Providing three traffic lanes along the whole length of Ti Rakau Drive would result in significant works that would be redundant once the AMETI Eastern Busway is constructed.</p>
<ul style="list-style-type: none"> <li>• Remove bush/garden wall between Gossamer and Wheatley Avenue and turn that into another lane</li> </ul>	<p>The bush/garden wall between Gossamer Drive and Wheatley Avenue is a retaining wall as the east and westbound carriageways are at different levels. For the proposed short-term measures, it is not practical to remove the retaining wall as this is a significant piece of work. It is being investigated under AMETI Eastern Busway.</p>
<ul style="list-style-type: none"> <li>• Don't put bus lanes on Ti Rakau Drive as this would reduce existing three lanes to two lanes</li> </ul>	<p>The current lane arrangement is one parking bay plus two traffic lanes in each direction. We will be retaining the two existing traffic lanes in each direction and repurposing the parking bay as a bus lane. There will be no overall loss in traffic lane capacity.</p>
<ul style="list-style-type: none"> <li>• Address traffic light phasing in general along Ti Rakau Drive to improve traffic flows</li> </ul>	<p>We regularly review traffic light phasing. The traffic signals are computerised and coordinate with other signalised intersections and operate based on vehicle demand using sensors under the road.</p>
<ul style="list-style-type: none"> <li>• Trees removed to make way for double decker buses should be relocated/reinstalled</li> <li>• New trees should be planted to make up for removed trees</li> <li>• Don't like tree removal/don't understand need for removal</li> <li>• Remove trees/bushes on centre strip</li> </ul>	<p>The trees that are close to the carriageway or overhanging it will be removed or trimmed so that double decker buses can travel closer to the kerb. For every tree we remove, we plant four trees in the nearby residential area.</p>
<ul style="list-style-type: none"> <li>• Minimise disruption during construction</li> </ul>	<p>Traffic management during construction will be subject to approval and will consider how the works can be undertaken while minimising effects on road users.</p>

2. Edgewater Drive (east) intersection	
2.1. Safety	
<ul style="list-style-type: none"> <li>• Stop U-turns at this intersection</li> <li>• Increasing traffic at western end of Edgewater Drive will cause bottlenecks and issues, and encourage dangerous U-turns at these lights</li> </ul>	<p>We are banning the right turn in this location to provide the space needed for the proposed bus lane. Since we will be extending the median strip in this location U-turns will not be possible.</p> <p>The U-turn movement at the Edgewater Drive (west) intersection would be undertaken under signal control therefore this would be safer than the existing U-turn at the eastern intersection.</p> <p>There will only be a small change in traffic volumes at the western end of Edgewater Drive with the closure of the right turn movements at Edgewater Drive East. Surveys show the highest hourly volume is less than 50 vehicles per hour (less than one per minute).</p>
<ul style="list-style-type: none"> <li>• Widen Edgewater Drive</li> <li>• Install no parking lines on all outside curves on this road</li> </ul>	<p>We will pass the suggestion for a no parking line and widening onto our Traffic Safety team for consideration.</p>
<ul style="list-style-type: none"> <li>• Install traffic lights at eastern end of Edgewater Drive</li> </ul>	<p>Since the Edgewater Drive East intersection will be left-in, left-out only we do not believe traffic lights will be required. People who want to make the turn using traffic lights can use the Edgewater Drive West intersection.</p>
<ul style="list-style-type: none"> <li>• Include a pedestrian overbridge</li> </ul>	<p>The proposals are for short-term measures prior to the implementation of the AMETI Eastern Busway. Therefore, major works such as a pedestrian overbridge have not been considered.</p>
<ul style="list-style-type: none"> <li>• New pedestrian crossing island is unnecessary due to resulting reduced traffic flow into/out of Edgewater Drive</li> <li>• Increasing traffic at western end of Edgewater Drive will be unsafe with school children crossing, and blind corners at this end</li> </ul>	<p>There will only be a small change in traffic volumes at the western end of Edgewater Drive with the closure of the right turn movements at Edgewater Drive East. Surveys show the highest hourly volume is less than 50 vehicles per hour (less than one per minute). This won't affect the safety for pedestrians.</p> <p>The proposed pedestrian island will help pedestrians walk along Ti Rakau Drive and cross Edgewater Drive. It will reduce the turning speed of motorists into Edgewater Drive and reinforce the left turn out only.</p>
2.2. Share vehicle lanes	
<ul style="list-style-type: none"> <li>• Allow cars to use a short part of the bus lane to enter and merge with Ti Rakau Drive</li> </ul>	<p>Motorists can use a bus lane for up to 50 metres when turning left. However, drivers should still wait for a gap in the traffic before turning left and give way to bus lane users.</p>

2.3. Traffic signals	
<ul style="list-style-type: none"> <li>Need to improve phasing at the western Edgewater Drive intersection to cope with new demand</li> <li>Fix the other end where it already chokes on traffic turning right into Edgewater Drive from Ti Rakau Drive for the change to be effective</li> </ul>	The modelling shows that the signalised intersection with Edgewater Drive can accommodate the increased right turning traffic with minimal impact on queuing on Ti Rakau Drive. There are only a small number of vehicles currently making the right turns into and out of the eastern Edgewater Drive intersection.
<ul style="list-style-type: none"> <li>Add 'B' bus traffic lights at the western intersection of Edgewater and Ti Rakau</li> </ul>	A "B" signal is normally used to allow buses in a bus lane to go ahead of general traffic. Since the bus lane will not extend as far as this intersection buses would be mixed with general traffic and a "B" signal would not work.
2.4. Right turn ban	
<ul style="list-style-type: none"> <li>Median island is not required as will funnel traffic flow too much</li> </ul>	The median island is to prevent right turn movements in order to provide more space needed for the bus lane and allow safer pedestrian movements across Edgewater Drive.
<ul style="list-style-type: none"> <li>Consider longer turning lane and cross-hatching markings to prevent cars blocking access (instead of banning right-turns) at eastern end of Edgewater Drive</li> </ul>	Right turns at the eastern Edgewater Drive need to be banned for safety. This is because the revised layout reduces visibility for motorists turning into Edgewater Drive and removes the available flush median width for right turners out of Edgewater Drive to make the movement in two stages.
<ul style="list-style-type: none"> <li>Concern that residents on the north side of Ti Rakau Drive have to travel west</li> </ul>	Residents on the north side of Ti Rakau Drive can currently use Wheatley Ave and Edgewater Drive to turn around to head West on Ti Rakau Drive. Residents to the West of Wheatley Avenue will still be able to use Wheatley Avenue to turn around. We suggest that residents between Wheatley Avenue and the banned right turn at Edgewater Drive use Freemantle Place as an alternative side street for turning.
2.5. Other feedback	
<ul style="list-style-type: none"> <li>Concern for the affect the right turn into Marriot Road will have for vehicles going to the Plaza</li> </ul>	<p>The modelling shows that the signalised intersection with Edgewater Drive can accommodate the increased right turning traffic with minimal impact on queuing on Ti Rakau Drive. This should not have a significant impact on the ability to access Marriot Road via the right turn from Ti Rakau Drive.</p> <p>There are only a small number of vehicles currently making the right turns into and out of the eastern Edgewater Drive intersection.</p>

<ul style="list-style-type: none"> <li>• Ensure new road layout is well sign-posted as confusion and late lane changes will cause more congestion</li> </ul>	<p>Road markings will be designed to make the layout clear for motorists. We will install temporary signage to inform drivers of the new layout during and after construction.</p>
<ul style="list-style-type: none"> <li>• Put red barrier lines on Edgewater Drive entrance</li> <li>• Make Edgewater Drive 'one way'</li> </ul>	<p>It is assumed that the red barrier referred to is to highlight the entry to the intersection. The proposed traffic refuge island is intended to slow turning vehicles and may achieve a similar affect.</p> <p>Edgewater Drive cannot be made one-way due to the restricted visibility at the eastern intersection with the proposed bus lanes. If it was one-way, this intersection would need to be signalised which would introduce further delay along Ti Rakau Drive due to the additional controlled intersection.</p>

3. Gossamer Drive intersection	
<b>3.1. Timing of work</b>	
<ul style="list-style-type: none"> <li>Carry out this work as soon as possible</li> <li>Undertake any work during school holidays.</li> <li>How long will construction take?</li> </ul>	<p>We plan to start the work in late 2018.</p> <p>We will carry out the work during times to ensure as little impact to the public as possible.</p> <p>We expect construction of the Gossamer Drive intersection to last around four months as work will be restricted to certain times of the day. Residents will be notified closer to the construction period.</p>
<b>3.2. Congestion and traffic flow</b>	
<ul style="list-style-type: none"> <li>Concern that proposal will make evening peak hour traffic towards Pakuranga Road worse</li> <li>Concern that increased traffic flow will carry congestion onto Pakuranga Road/Gossamer Drive intersection</li> <li>Need to improve the other end of Gossamer Drive as well to alleviate congestion at Ti Rakau end</li> <li>Concern this will increase thoroughfare traffic around school pedestrian areas</li> </ul>	<p>There is already a high demand for traffic to use Gossamer Drive as this is a connecting link between Ti Rakau Drive and Pakuranga Road. The proposal should not significantly affect motorist's choice of route to turn right into Gossamer Drive.</p> <p>We are aware of the operational constraints at the other end of Gossamer Drive and will monitor the intersection with Pakuranga Road.</p>
<ul style="list-style-type: none"> <li>Concern that lack of access from Ti Rakau Dr north side to travel west will make people turn right at Gossamer to go west on right-turn arrow</li> </ul>	<p>A right turn phase is provided at the Gossamer Drive intersection. Motorists must obey red light signals. Surveys at the Edgewater Drive east intersection showed that there was a maximum of three vehicles per hour making a U-turn so the small additional number making the movement should not have a significant impact on the operation of the Gossamer Drive intersection</p>
<ul style="list-style-type: none"> <li>Concern this will cause more congestion as not enough room on Gossamer Drive for cars to merge</li> <li>Continue the two right turn lanes deep into Gossamer for at least 100m</li> <li>Widen end of Gossamer Drive to allow easy merging from two right turn lanes</li> <li>Use some berm to widen Gossamer Rd slip lanes on each side of the road</li> <li>Widen road and include yellow line</li> <li>Changes need to be made at other end of Gossamer Drive to ensure both streams of traffic have enough room and time to merge</li> </ul>	<p>On Gossamer Drive, we have extended the 'no stopping' at all times lines to allow sufficient length for the two lanes of traffic to merge into one. Generally, the traffic heading north on Gossamer Drive is not congested so should not have any flow-on effect at the Gossamer/Ti Rakau Drive intersection.</p> <p>Gossamer Drive does not need to be widened for this project therefore there will not be any changes to the berm.</p>
<ul style="list-style-type: none"> <li>The right turn into Gossamer Drive already restricts through flow along Ti Rakau Drive, a further lane (turning) might compound the problem</li> </ul>	<p>Currently westbound right turning traffic on Ti Rakau Drive queues back and blocks the through lanes, which during the peak periods prevents</p>

	<p>through traffic from travelling through the intersection. The additional right turning lane at the Gossamer/Ti Rakau Drive intersection is to help right turning traffic to enter Gossamer Drive and relieve the through traffic. It will make the intersection more efficient by redistributing green time to other traffic movement, so there will be less delay for everyone.</p>
<ul style="list-style-type: none"> <li>• Concern that the lanes in parts of Ti Rakau Drive are already too narrow, large vehicles cannot maintain their lane and encroach on other traffic in adjacent lanes</li> <li>• Ban heavy vehicles during peak hours or completely – concerns for resident safety on this corner with two lanes.</li> </ul>	<p>The layout has been checked for vehicle tracking to ensure vehicles can turn in two lanes. The layout will also be subject to road safety audit which would highlight any potential safety issues.</p> <p>A heavy vehicle ban by time of day is not appropriate at this location as it is difficult to ban vehicle types by time of day and it would cause difficulties for deliveries.</p>
<ul style="list-style-type: none"> <li>• Ensure new road layout is well sign-posted as confusion and late lane changes will cause more congestion</li> </ul>	<p>Road markings will be designed to make the layout clear for motorists. We will install temporary signage to inform drivers of the new layout during and after construction.</p>
<ul style="list-style-type: none"> <li>• Concern that removing parking from Gossamer Dr will inconvenience residents and encourage faster vehicle speeds along this section</li> <li>• Make Gossamer a 60km per hour zone</li> </ul>	<p>Our parking surveys showed a low demand for on-street parking both at peak times during the operation of the bus lane and at other times. There are alternative locations on adjacent side streets for residents to park if there is insufficient space within their property. Parking will still be allowed outside bus lane operating hours.</p> <p>We do not expect speeds to increase as vehicles will need to merge into one lane after turning into Gossamer Drive.</p> <p>Since this is an interim solution a speed limit reduction has not been included in the project scope. We will pass your comments on to the AMETI Eastern Busway team for their consideration.</p>
<ul style="list-style-type: none"> <li>• Concern that the current bus stop in that vicinity could hinder the traffic flow</li> <li>• Allow traffic to use bus lane between the last bus stop and Gossamer Drive</li> <li>• Use space to extend the bus lanes/transit lanes through the intersection instead of another right-turn lane</li> </ul>	<p>The bus stop on the northern side of Ti Rakau Drive is placed at the end of the bus lane, so buses that are stopped here will not block general traffic as it will be able to bypass the bus stop using the general traffic lane.</p> <p>This project is to deliver interim, low cost solutions to optimise the existing network. Extending the bus lane through the intersection would be expensive and would not provide the capacity improvements that the double right turn seeks to address. Instead of extending the bus lanes, the proposed double right turn provides operational benefits for the eastbound movement by enabling greater green time that will improve bus journey times. Westbound buses also benefit as the second right turn lane reduces queues that spill over into the westbound through-lanes.</p>

<b>3.3. Traffic control</b>	
<ul style="list-style-type: none"> <li>• Place a set of traffic lights here so that when traffic is turning out of Fremantle Place there is a red light for traffic turning left from Gossamer Drive</li> <li>• Install a roundabout</li> <li>• Remove slip lanes and control left turns by signals to protect pedestrians</li> <li>• Cut corner off for traffic turning left into Gossamer from Ti Rakau Drive</li> <li>• Improve phasing so that it lets more vehicles through at a time (right-turn into Gossamer)</li> <li>• Install more sophisticated and responsive lights/sensors</li> <li>• Synchronise light phases further up and down Ti Rakau Drive to compliment movements.</li> </ul>	<p>We have undertaken traffic modelling at the intersection to check its performance and the proposed layout provides the most efficient operation.</p> <p>A roundabout is not suitable for traffic control at the Ti Rakau Drive and Gossamer Drive intersection as it carries too much traffic to be an effective or safe control.</p> <p>The proposals are for short-term measures that minimise physical works, as the intersection will be significantly altered as part of the AMETI Eastern Busway project; therefore, the slip lanes are being retained. Removing the slip lanes will affect the operation of the intersection as left turning vehicles will hold up through movements when held on a red for a crossing pedestrian.</p> <p>The proposed double right turn will improve the capacity of the right turn to Gossamer Drive. This will also enable more green time to be provided to the eastbound through movement. Overall, there are benefits to the intersection with the proposed changes.</p> <p>The traffic signals are computerised and coordinate with other signalised intersections and operate based on vehicle demand using sensors under the road.</p>
<ul style="list-style-type: none"> <li>• Need overpass through to Highbrook to remove traffic from Ti Rakau, Cryers etc – leave Ti Rakau for those needing to get to South Eastern arterial</li> </ul>	<p>This project is for short-term measures, therefore, significant works such as an overpass have not been considered.</p>
<ul style="list-style-type: none"> <li>• Extend the bridge crossing Tamaki Strait</li> <li>• Widen the bridge</li> <li>• Remove cycle stops</li> <li>• Recess the bus stop on Gossamer Dr</li> </ul>	<p>The project scope is for low cost solutions only so any bridge works would not be possible within this project.</p> <p>Cycle stop boxes provide a safe area in front of a general traffic lane, at a signalised intersection, to give priority to cyclists over other traffic. These will not be removed because they provide safety for cyclists.</p> <p>Indented (set-back) bus stops make it difficult for buses to re-enter the traffic flow and require widening of the carriageway that is not practical in this instance due to location of the adjacent driveway and side street.</p>
<b>3.4. Road widening and lanes</b>	
<ul style="list-style-type: none"> <li>• Feeder lanes need to be plus two as making double lanes (bigger intersections) causes bottlenecks</li> <li>• Do not impede traffic going straight through: widen this section of Ti Rakau Dr for new right-turning lane (rather than removing width from existing)</li> </ul>	<p>Currently westbound right turning traffic on Ti Rakau Drive queues back and blocks the through lanes, which during the peak periods prevents through traffic from travelling through the intersection. The additional right turning lane at the Gossamer/ Ti Rakau Drive intersection is to help right turning traffic to enter Gossamer Drive and relieve the through traffic.</p>

<ul style="list-style-type: none"> <li>Needs at least three lanes both ways on Ti Rakau Dr for future proofing.</li> </ul>	<p>The additional right turn doesn't negatively affect the traffic signal timing and shouldn't create additional delays to the overall intersection performance.</p> <p>The proposal only makes minor changes to the width of the lanes to provide the additional right turn lane. It is considered that this will not have a notable effect on the through movement capacity.</p> <p>This intersection is included within the scope of the AMETI Eastern Busway project and since this project is to provide an interim solution, major upgrades are not within the project scope or budget.</p>
<p><b>3.5 Bus stops</b></p>	
<ul style="list-style-type: none"> <li>Reconsider the relocation of bus stops on Gossamer Drive, especially outside 172 – used heavily by school children and would disrupt school travel for many young people.</li> </ul>	<p>Bus stop locations are likely to be modified when the Ti Rakau Drive section of the AMETI Eastern Busway project is implemented, so we won't be reviewing the location of bus stops along the whole corridor at this time.</p>

4. Botany Road intersection	
4.1. Traffic flow volumes and road changes	
<ul style="list-style-type: none"> <li>Concern that turning lane not long enough for the volume of traffic turning and it stops traffic from going straight ahead</li> <li>Make the new lanes longer by using more of the median right back to Te Koha Road</li> </ul>	This project is constrained by budget and the width of the road reserve and we have extended the length of the turning lanes as much as possible without impacting on the footpath and berm and ensuring that there is an adequate median.
<ul style="list-style-type: none"> <li>Concern with the way straight through traffic at the Ti Rakau Botany Road intersection interacts with traffic turning left from Botany Road into Ti Rakau. ('Botany Road traffic should need a green light to turn left and the left hand lane coming through the intersection on Ti Rakau should be able to stay in that lane.')</li> </ul>	In the proposed design, we are changing the lane layouts so that eastbound traffic travelling on Ti Rakau Drive will be able to remain in the left hand lane right through the Botany Road intersection.
<ul style="list-style-type: none"> <li>Concern that this will add more traffic to the narrowing past the golf course on Botany Road</li> </ul>	This project seeks to optimise the Botany Road/Ti Rakau Drive intersection. We are providing more queue storage for the left turn movement so that Ti Rakau Drive traffic can flow more freely. The project does not propose to send more vehicles down Botany Road.
<ul style="list-style-type: none"> <li>Close exit and entry from St Columba Church; restrict access to/from the church via Golflands Drive, Faldo Drive and Tiger Drive behind the main roads.</li> </ul>	We have discussed access to the church with St Columba Church and minor modifications to the driveway are proposed. For consenting reasons, it is not possible to amend the access to Tiger Drive.
<ul style="list-style-type: none"> <li>Address unsafe transition, from left hand lane which goes straight through intersection, for those wanting to turn left into Chapel Road.</li> </ul>	We will develop the road markings during the detailed design and these will be subject to a road safety audit.
<ul style="list-style-type: none"> <li>Extend the right turning lanes at this intersection further back down Ti Rakau Drive.</li> </ul>	This project is constrained by budget and the width of the road reserve and we would not be able to extend the right turn lanes without affecting the footpath and berm and ensuring that there is an adequate median.
<ul style="list-style-type: none"> <li>Include a roundabout</li> </ul>	The proposals are all low cost solutions to optimise the existing network. A new roundabout is outside the scope of this project.
<ul style="list-style-type: none"> <li>Add a third left turning lane from Ti Rakau Drive to Botany Road.</li> </ul>	Our analysis shows that the current proposal provides significant benefits without needing to widen the carriageway, which would significantly increase the cost of the project.
<ul style="list-style-type: none"> <li>Consider three straight through lanes by re-creating the original lane next to Botany Road traffic island.</li> </ul>	If we were to recreate the original lane next to the Botany Road traffic lane, we would only be able to accommodate a very short lane due to the proposed new arrangement. It was considered more beneficial to provide a cycle lane in this space instead.

<ul style="list-style-type: none"> <li>Reduce middle straight lane leading up to intersection and make it dual.</li> </ul>	<p>This project is constrained by budget and the width of the road reserve and we would not be able to add an additional lane without affecting the footpath and berm and ensuring that there is an adequate median.</p>
<ul style="list-style-type: none"> <li>Add a turning lane from Cascade Road left into Botany Road to support proposed improvements.</li> <li>Add a turning lane from Botany Road left into Millhouse Drive to support improvements.</li> <li>Consider road turn-off to access Golflands to redirect residents away from the intersection and free up traffic.</li> </ul>	<p>Cascades Road and Millhouse Drive are outside the geographical area for this project.</p> <p>With the road network that is in already place, comprising mainly local roads designed for low volume residential use, it would not be possible to connect into these and redirect large volumes of traffic through these areas.</p>
<ul style="list-style-type: none"> <li>Extend two new left turn lanes through to Botany Road up to the ABC daycare centre to help people access this and other neighbouring businesses; extend as far down Botany Road as possible.</li> </ul>	<p>There is not enough space to accommodate an additional two lanes on Botany Road – this is an optimisation project and we are only looking at low cost solutions.</p>
<ul style="list-style-type: none"> <li>Ensure lanes are wide enough on Ti Rakau Drive to allow six trucks abreast leading up to intersection.</li> </ul>	<p>We are unaware of any safety issues with the existing lane widths in this location. Any new road designs are checked using vehicle tracking software to ensure that they are suitable for large vehicle movements.</p>
<ul style="list-style-type: none"> <li>Reduce speed limit to make the whole intersection safer.</li> </ul>	<p>Since this is an interim solution, a speed limit reduction has not been included in the project scope. We will pass your comments on to the AMETI Eastern Busway team for their consideration.</p>
<ul style="list-style-type: none"> <li>Put up barriers to discourage drivers wanting to turn left from 'pushing in' near the intersection.</li> </ul>	<p>With the addition of an extra left turning lane it will be easier for left turners to access the turning lanes. We therefore expect this pushing in behaviour to reduce without the need for physical barriers.</p>
<p><b>4.2. Give way</b></p>	
<ul style="list-style-type: none"> <li>Make left hand lane turning left a give way to address long queue trying to turn left into Botany Road from Ti Rakau Drive.</li> <li>Remove the traffic light turning left from Ti Rakau to Botany Road to create a free flowing dedicated left lane</li> </ul>	<p>Double-left turns are signalised for safety reasons, as there is a higher risk of car crashes by having a give way arrangement for a double-left turn. This also means that we can provide a signalised pedestrian crossing, making it safer for pedestrians to cross at this location.</p>
<p><b>4.3. Traffic signals</b></p>	
<ul style="list-style-type: none"> <li>Introduce a diamond phasing along the Ti Rakau Drive</li> </ul>	<p>A diamond phasing arrangement may be beneficial for some movements. However, vehicle tracking indicated that there is not enough space under the current layout for the right turn vehicles to turn simultaneously because of the dual right turn lanes on both approaches.</p>

<ul style="list-style-type: none"> <li>Concern with straight through traffic at the Ti Rakau Botany Road intersection interacting with traffic turning left from Botany Road into Ti Rakau (“Botany Road traffic should need a green light to turn left and the left hand lane coming through the intersection on Ti Rakau should be able to stay in that lane.”)</li> </ul>	<p>The Botany Road left turn will need to give way to Ti Rakau Drive traffic. Traffic lights would increase the delay for left turning traffic.</p>
<ul style="list-style-type: none"> <li>Change traffic light phasing to improve traffics flows           <ul style="list-style-type: none"> <li>- traffic turning right into Tarnica (on the green arrow) from Botany Road; align with traffic looking to exit Tarnica Drive and turn left into Botany Road</li> <li>- long wait for traffic going straight through to Chapel Road exit caused by red lights</li> <li>- adjust around peak traffic times at this intersection</li> <li>- synchronise lights at this intersection with Chapel Road set of traffic lights, plus the Botany Town Centre/501 set of lights</li> <li>- phase traffic lights to allow sufficient traffic to make the right hand turn at this intersection too</li> <li>- Botany Road turning right into Ti Rakau is very frustrating as the right arrow (at times) only allows for 3 x cars to go</li> <li>- Longer phasing for evening traffic flow</li> <li>- Lights for K Mart and McDonalds need to be re phased to enable traffic crossing Ti Rakau Drive to flow.</li> </ul> </li> </ul>	<p>We have reviewed the intersection signal timings and movements and we will ensure that they are optimised.</p> <p>We have also examined the coordination between intersections along Ti Rakau Drive and changes have been proposed as part of the project.</p>
<ul style="list-style-type: none"> <li>Add extra traffic light arrow for left turning traffic.</li> </ul>	<p>The median width on Botany Road does not provide sufficient space for an additional left turning traffic signal. If a signal was installed it could be struck by vehicles resulting in potential safety issues for motorists and ongoing maintenance issues.</p>
<p><b>4.4. Road markings and signs</b></p>	
<ul style="list-style-type: none"> <li>Paint yellow broken lines to prevent off-street parking especially past Eliminate College</li> </ul>	<p>Eliminate College is on Botany Road and is outside the geographical area of this project. We will provide this feedback to the Traffic Engineering team for consideration.</p>
<ul style="list-style-type: none"> <li>Paint white lines to allow people to exit the driveway of St Columba Church as is difficult to cross the existing three lanes at most times of day</li> </ul>	<p>This proposal means that those exiting St Columba Church would need to cross more lanes of traffic in order to turn right. White lines used as a clear area in this situation tend to increase the risk of crashes therefore, we won't be incorporating these into this project.</p>
<ul style="list-style-type: none"> <li>Early road markings to show the two left-hand lanes are left turn only – so drivers know to get into the correct lane/s much further ahead of the intersection</li> </ul>	<p>We will review road markings during the detailed design phase of the project.</p>
<ul style="list-style-type: none"> <li>Put yellow cross lines at exit from Pak n Save carpark to signal to drivers to keep this area clear, and prevent traffic blocking carpark exit</li> </ul>	<p>The Pak'n'Save exit and the Te Koha Road / Ti Rakau Drive intersections are outside the geographical area of this project. We will</p>

<ul style="list-style-type: none"> <li>Put in lines to stop people from blocking the intersection of Te Kaha Road and Ti Rakau Drive</li> </ul>	<p>pass these suggestions on to our Traffic Engineering team for further investigation.</p>
<ul style="list-style-type: none"> <li>Add signage to support left-turning lanes proposal and promote better driver behaviour           <ul style="list-style-type: none"> <li>- no go straight sign way ahead so people don't change lane late and slow down straight traffic</li> <li>- add signage early to ensure traffic approaching this intersection select the appropriate lane</li> <li>- install 'no U turn' signs at the intersection to discourage drivers from making this dangerous manoeuvre</li> </ul> </li> </ul>	<p>We will review road markings and traffic signage during the detailed design phase and install additional signs if required.</p>
<p><b>4.5. Bus stops</b></p>	
<ul style="list-style-type: none"> <li>Remove the bus stop on the eastbound lane opposite the Hub shopping centre as the congestion caused limits the effectiveness of the proposed amendments</li> <li>Create a layby to allow buses to clear the traffic flow when stopping.</li> </ul>	<p>Bus routes, stop locations and layouts have been reviewed and optimised as part of the East Auckland New Network project. Indented (set-back) bus stops make it difficult for buses to re-enter the traffic flow. The proposed design will provide greater priority for buses.</p>

## 5. Te Irirangi Drive Countdown carpark entrance

### 5.1. Kerb work

- Cut back the kerb from the other side of Countdown entrance and leave median kerb from Countdown entrance (proposal “encourages rat running at speed up that lane”)
- Concerns about traffic speed resulting from freeing up the lane
- Extend left turn INTO Countdown car park off Te Irirangi
- Concerns about pedestrian safety as a result of kerb/island cut back
- Cut back kerb but leave island to allow free flowing traffic turning left into Ti Rakau

We are cutting back the median kerb outside the Countdown entrance to help left turning traffic get into the correct lane sooner, including buses. It is not designed to encourage higher speeds.

Although the proposals extend the left turning lane, the lane will be relatively short and will require motorists to slow down to make the left turn into Ti Rakau Drive so we don't believe that speeds will increase.

The proposed changes require relatively minor works that can be achieved at modest cost. Extending the left turn lane requires more significant works that are not proposed at this stage.

The design will be subject to a road safety audit and if necessary amendments may be made to the design. The island cutback will not affect the movement of pedestrians, as they will continue to cross in the same location.

The intention of this proposal is to enable motorists turning left into Ti Rakau Drive from Te Irirangi to enter the left turn lane earlier than they do at present, when there are queues in the through lanes on Te Irirangi Drive. This benefits buses as well as general traffic. The suggestion to keep the island as it is would only help vehicles exiting Countdown and not motorists on Te Irirangi Drive.

### 5.2. Carpark exit and entrance

- Change entrance to left turn in only
- Make left turn only from car park exit
- Ban left hand turns into Ti Rakau from Te Irirangi Drive
- Redirect vehicles exiting Countdown car park to use the exit onto Ti Rakau Drive
- Make egress 'entrance only' with exits via the two traffic light controlled egresses, one to Te Irirangi Drive and one to Ti Rakau Drive
- Make Countdown access on this side of the road an 'entrance only' for vehicles coming along Te Irirangi Drive
- Close entrance/exit altogether and encourage use of other entrances instead

Countdown has an approved entry and exit at this location and we are unable to change this.

We appreciate that it is hard to turn right out of the Countdown entrance on to Te Irirangi Drive. We suggest that Countdown customers wishing to travel eastbound on Ti Rakau Drive exit the Countdown car park via the signals at Te Kaha Road (The Hub) onto Ti Rakau Drive for a safer and easier exit.

By removing more left turning vehicles from the straight-ahead lane this should help vehicles both turning left and travelling straight ahead by separating the traffic into its correct lanes.

We do not wish to ban left turns from Ti Irirangi Drive. This is an important road connection. The design will make it easier for people to turn left from Te Irirangi Drive.

	It is not desirable to close off this entrance, as it would increase travel distances and traffic through other critical intersections along Ti Rakau Drive.
<b>5.3. Clearway, roundabout and clear zone</b>	
<ul style="list-style-type: none"> <li>• Install roundabout at Ti Rakau Drive to let cars exit Countdown carpark</li> <li>• Introduce a keep clear zone at the carpark exit covering at least the first three lanes but not the right turn lanes</li> <li>• Install clearway lane as hard to drive out of Countdown car park in peak time</li> <li>• Clear signage required to differentiate between the left turn into Countdown and the left turn into Ti Rakau Drive</li> </ul>	<p>The proposals are all low cost solutions to optimise the existing network. A new roundabout is outside the scope of this project.</p> <p>White lines used as a clear area tend to increase the risk of crashes therefore; we can't incorporate these into the scope of this project.</p> <p>No road markings are proposed to differentiate between traffic turning left into Countdown and those turning left turn into Ti Rakau Drive. Vehicles moving into the left turn lane will indicate left and vehicles travelling to Countdown will also slow down to turn; this slowing will help motorists exiting Countdown to understand the drivers' intentions.</p>
<b>5.4. Other feedback</b>	
<ul style="list-style-type: none"> <li>• Concern that extending islands into first lane will squeeze traffic into remaining two and cause congestion</li> </ul>	Our design does not extend the islands at the Countdown entrance but cuts them back to create a longer left turn lane on Te Irirangi Drive.
<ul style="list-style-type: none"> <li>• Concern with crossing six lanes to make turn right onto Ti Rakau Drive from Countdown</li> <li>• Stop drivers from being able to cross four lanes of congested Te Irirangi Drive to get across to the right-turn bays</li> </ul>	We appreciate that it is hard to turn right out of the Countdown entrance on to Te Irirangi Drive. We suggest that Countdown customers wishing to travel eastbound on Ti Rakau Drive exit the Countdown car park via the signals at Te Koha Road (The Hub) onto Ti Rakau Drive for a safer and easier exit.
<ul style="list-style-type: none"> <li>• Different surface material requested for over the entrance/exit to Countdown to remind drivers that pedestrians cross/walk here</li> </ul>	We will consider coloured surfacing during detailed design.
<ul style="list-style-type: none"> <li>• Discourage drivers from left-turning into Ti Rakau from Te Irirangi Drive, or discourage drivers from exiting Countdown carpark onto Te Irirangi Dr: the combination of these two movements is very dangerous</li> </ul>	It is not possible to ban the left turn from Te Irirangi Drive to Ti Rakau Drive as there is no viable alternative and buses make this turn. Banning the left turn out of Countdown puts increased pressure on alternative traffic signal intersections.
<ul style="list-style-type: none"> <li>• Extend clearway times</li> </ul>	There are parking restrictions on this section of Te Irirangi Drive and motorists do not park on the carriageway, so we don't propose introducing any parking restrictions.
<ul style="list-style-type: none"> <li>• Provide cycleway</li> <li>• Change new lane into a bike or bus lane instead</li> </ul>	As the left turn lane is relatively short, converting the left turn lane to a bus lane or cycle lane would not provide any benefit.

## 6. Chapel Road/Ti Rakau Drive intersection

6.1. Pedestrian crossings and amenity	
<ul style="list-style-type: none"> <li>Place pedestrian crossings several car lengths back from the corner so when cars queue people can access the crossing without holding up traffic doing left hand turns</li> <li>Install a zebra crossing to improve pedestrian safety across the left turn lane</li> <li>Make crossing one coherent action (“This is a very busy pedestrian/wheel chair/mobility scooter crossing”)</li> <li>Level off crossing</li> <li>Make crossing wide enough to accommodate large numbers of pedestrians and access by wheelchairs etc</li> <li>Put an underground pedestrian tunnel in</li> <li>Believe this is much safer crossing option for pedestrians due to the high volume of traffic.</li> </ul>	<p>We will review the details of the pedestrian crossing during the detailed design and comments will be taken into consideration.</p> <p>We would like pedestrians to use crossings to keep them safe so we place them as close as possible to where people want to move.</p> <p>Placing crossings away from corners would encourage pedestrians to take risks and cross where it is not as safe.</p> <p>A signalised crossing is the safest option with a double left turn lane arrangement. Signalising this movement also creates an opportunity to provide a safer pedestrian crossing facility. There is a school nearby and children cross the road before and after school.</p> <p>Underground pedestrian tunnels have many negative impacts for pedestrians such as a longer crossing distance and security issues. It is also very expensive therefore; we have not pursued this option.</p> <p>The proposed crossing on the left turn lanes will be signalised, therefore vehicles will be stopped prior to the crossing and pedestrians will be able to cross under green man control unimpeded by queued traffic.</p>
<ul style="list-style-type: none"> <li>Not keen on signalised pedestrian crossing that holds up traffic</li> <li>Synchronise signalised pedestrian crossing with other traffic light phasing</li> </ul>	<p>The signalised pedestrian crossing provides a safer facility to cross the road compared to the existing uncontrolled facility. The left turn movement needs to be signalised for safety reasons regardless of whether a pedestrian facility is provided, due to the double left turn movement.</p> <p>The signal controlled left turn movement will be synchronised with the phasing of the intersection.</p>
<ul style="list-style-type: none"> <li>Very busy pedestrian/wheelchair/mobility scooter crossing – very steep and needs to be made more friendly for those with mobility issues</li> </ul>	<p>Crossing points will be designed to be as accessible as possible for the mobility impaired and constructed to the required standards. The signalised crossing will provide a safer crossing point.</p>
6.2. Road markings	
<ul style="list-style-type: none"> <li>Realign the white lines from Chapel Road to Ti Rakau Drive</li> </ul>	<p>The white lines have been designed to cater for large vehicles. We cannot realign them but will ask our maintenance team to mark them with longer life markings.</p>
<ul style="list-style-type: none"> <li>Graduate stop lines so that the driver on the inside lane has clear vision of the traffic to his right i.e. vision not blocked by a vehicle on his right side</li> </ul>	<p>The left turn movement is fully signalised so motorists need to have visibility to the signals and are not required to give way to approaching</p>

<ul style="list-style-type: none"> <li>- At the turn left into Chapel Rd, before the pedestrian crossing</li> <li>- Near the BP station where cars often block the left lane, as the traffic light tends to block our line of sight until very late</li> </ul>	<p>traffic from the right. The signalised left turn will address both of these concerns.</p>
<ul style="list-style-type: none"> <li>• The Ti Rakau approach road marking is confusing on the design plan. It shows you can access one of the left turn via middle lane once you passed the upstream intersection</li> </ul>	<p>We will review the road marking design during the detailed design.</p>
<b>6.3. Parking</b>	
<ul style="list-style-type: none"> <li>• Address parking outside Rymans Residential as issue with two lanes merging into one and the inability of drivers to accelerate up Chapel Road hill</li> </ul>	<p>This project delivers interim solutions along Ti Rakau Drive. Rymans Residential is more than 800m to the north of this intersection and is outside the scope of the geographical area for this project. We will pass parking concerns, in this location, to the Traffic Engineering team for consideration.</p>
<ul style="list-style-type: none"> <li>• Congestion has worsened considerably since roadside parking created by Bruce McLaren Village. Staff cars should be required to park on the property - allowing 2 lanes on Chapel Road</li> </ul>	<p>This is outside the geographical area for this project. We will pass on your comments to the Traffic Engineering team for their consideration.</p>
<b>6.4. Intersections</b>	
<ul style="list-style-type: none"> <li>• Main problem is further up Chapel Road at the Kilkenny Drive intersection where Chapel Road merges into one lane causing congestion</li> <li>• Proposal further feeds already congested Chapel Road further along where traffic comes to a standstill by Kilimanjaro Drive</li> </ul>	<p>These areas are outside of the geographical area for this project. We will pass on your comments to the Traffic Engineering team for their consideration.</p>
<ul style="list-style-type: none"> <li>• Install a roundabout to manage intersection traffic flows</li> <li>• Double roundabout</li> </ul>	<p>This project is to deliver low cost solutions to optimise the existing traffic network. A roundabout would require significant works to modify the layout of the intersection. It would also make it more difficult for pedestrians to cross the road. We don't propose to change the form of control at the intersection.</p>
<b>6.5. Road changes</b>	
<ul style="list-style-type: none"> <li>• Instead of having two left-hand turning lanes, extend the current left turning lane to the east Kmart entrance (by cutting back the kerb) so that there is a longer lane for merging into the northbound Chapel Rd traffic. Or even further to just past the BP so that the Kmart east exit traffic, and the BP traffic can use the slower merging lane to enter the Chapel Rd traffic</li> <li>• Extend merging lanes in Chapel Road to allow people more time to speed up and flow before merging.</li> <li>• Widen Chapel Road to support proposal</li> </ul>	<p>We cannot widen Chapel Road within the scope of this project as widening by an extra lane on Chapel Road would be significantly more expensive.</p>

<ul style="list-style-type: none"> <li>Chapel Road changes from four lanes to two lanes and back to three or four lanes. Should be four lanes right through from Whitford roundabout to Ormiston Road</li> </ul>	<p>This work is not proposed at this point and is outside of the scope of this project.</p>
<ul style="list-style-type: none"> <li>High volume left turn stuck behind straight and right turning traffic - 1 lane into 3 lanes is not good</li> </ul>	<p>We will review lane markings during the detailed design phase.</p>
<ul style="list-style-type: none"> <li>Add a right turn out of Botany Mall car park to support proposed changes.</li> <li>The Botany exit on Ti Rakau should allow traffic to go straight ahead into "500 Ti Rakau" (behind Subway). This will reduce traffic on the Te Irirangi/Ti Rakau and Ti Rakau/Chapel Road</li> </ul>	<p>Adding additional movements to this intersection is not favoured as it would reduce the capacity of the intersection and cause additional queuing elsewhere.</p>
<ul style="list-style-type: none"> <li>Suggest slowing traffic to 50km/h - cars going straight to Chapel Road at dangerously high speeds.</li> <li>Reduce speed limits by all schools and shopping centres in project area, such as Botany</li> </ul>	<p>Since this is an interim solution, a speed limit reduction has not been included in the project scope. We will pass your comments on to the AMETI Eastern Busway team for their consideration.</p>
<ul style="list-style-type: none"> <li>Install row of the yellow uprights from the triangular island for about 30m to prevent people wanting to push in late to the left turning lanes close to the intersection.</li> </ul>	<p>With the extended left turning lanes it will be easier for left turners to access the turning lanes. We therefore expect this pushing in behaviour to reduce without the need for physical barriers.</p>
<ul style="list-style-type: none"> <li>Remove bus stop by the turning lane to improve traffic flow</li> <li>Build a proper bus stop bay, out of the way of traffic</li> </ul>	<p>The bus stop will remain at its current location with appropriate bus stop markings. We do not believe that there will be significant disruption to general traffic as buses only stop when there is passengers boarding and alighting, and only for a short duration.</p> <p>An indented (set-back) bus stop makes it difficult for buses to re-enter the traffic flow</p>
<b>6.6. Traffic signals</b>	
<ul style="list-style-type: none"> <li>Adjust all light phasing is adjusted to different flows - hours and days</li> <li>Reset phasing of traffic lights for other cars turning into Chapel Road - to give more time for vehicles from Ti Rakau Drive to turn left into Chapel Road.</li> <li>From Chapel Road turn right to Dannemora Drive - always need to wait twice for traffic lights to change yet other lanes go two times</li> </ul>	<p>The traffic signals are computerised and coordinate with other signalised intersections and operate based on vehicle demand using sensors under the road.</p> <p>The software running the traffic signals will be reconfigured when we make the changes and we will take on board your comments.</p>
<ul style="list-style-type: none"> <li>Traffic flow is not backed up for very long during peak between the Kmart Megacentre entrance and Chapel Rd, due to the phasing of the traffic lights at the Te Irirangi, Kmart and Chapel Rd intersections.</li> </ul>	<p>Thank you for your feedback. Our observations and surveys have identified the need to address traffic issues for this movement.</p>

<b>6.7. Other feedback</b>	
<ul style="list-style-type: none"> <li>Concern that signalised lane will remove a big portion of gaps/ timing to allow left turn traffic to operate e.g. the only phase to run is during the Ti Rakau Phase and when the right turns are operating along Chapel Road</li> <li>Unnecessary queuing with two signalised left hand turns</li> <li>Safety issues with two signalised left hand turns</li> <li>Making two lanes will cause more congestion as there is a car park exit/entry and a petrol station close to the corner.</li> <li>Extend the merging lanes in Chapel Road as people will just slow down to merge in a very short space. There is no time to speed up and flow before merging.</li> </ul>	<p>The single lane give way is currently creating a bottleneck at the Ti Rakau Drive / Botany Road intersection. This is causing some eastbound traffic to turn left at Chapel Road instead. Our modelling shows that the signalised double left turn will improve the operation of the intersection, with a long enough green light and shorter queues on this approach because the double left turn lane increases the stacking capacity.</p> <p>The design plans are correct. Vehicles would be able to access one of the left turn lanes by starting out in the middle lane and then moving across to the left where the lane splits into two. We will install temporary signage to inform drivers of the new layout during and after construction.</p> <p>There will be no merge requirements as the two left turn lanes will be signalised from Ti Rakau Drive and will be flowing into a two-lane arrangement on Chapel Road. Since the movement will be signalised no merging is required. Chapel Road does not reduce to one lane until a further 800m to the north of the intersection.</p>
<ul style="list-style-type: none"> <li>Address issues for queues forming across BP forecourt and extending back into Chapel Road.</li> </ul>	<p>We acknowledge that there can be occasional lane changing on Chapel Road to avoid queues for the BP garage and the Kmart entrance. The new layout and two-lane approach from Ti Rakau Drive will allow drivers to approach Chapel Road from the right hand lane and bypass the queue. As drivers become familiar with the new layout, we expect to see an improvement in lane choice so that less lane changing is likely i.e. those wanting to access BP or Kmart would use the left hand lane and those wanting to bypass the queues would use the right hand lane.</p>
<ul style="list-style-type: none"> <li>Concern about congestion further north on Chapel Road near Kilimanjaro Drive where there is one lane</li> </ul>	<p>This project delivers interim solutions along Ti Rakau Drive. Kilimanjaro Drive is more than 800m to the north of this intersection and is outside the scope of this project. We will pass concerns about the congestion at Kilimanjaro Drive to the Traffic Engineering team for consideration.</p>

## 7. Cycling and walking

<ul style="list-style-type: none"> <li>• Provide a protected cycleway across the entire project</li> <li>- lots of people knocked off bikes, know lots of people who would cycle to work if it were safer</li> <li>• Any cycle infrastructure needs to be totally separate from motor vehicles for the cyclists' safety and user pays funds raised for that infrastructure. Bicycles should be registered and separated from motor vehicles.</li> <li>• Invest in separated cycleways to improve safety for cyclists at this very busy/dangerous intersection</li> <li>- Proposed cycle feeder lane on the east-bound approach 'feels a bit of a token'</li> <li>- The bike lanes need to start a lot earlier</li> <li>- Proposal too focused on the movement of cars; should have a multi-modal approach.</li> <li>• Provide cycleway on Chapel Road</li> <li>• Additional cycle lane on Ti Rakau Drive</li> <li>• Assign more space for cyclists entering and exiting Ti Rakau Drive</li> <li>• Feel the proposed changes will increase the risk to cyclists proceeding straight ahead or turning right to Chapel Road</li> <li>• Bus lanes will hinder cycling as cyclists are safer using the existing kerbside lanes than the proposed bus lanes "Why is the plan at the following link not being implemented?" <a href="https://www.youtube.com/watch?v=CU5YuHG6aoc">https://www.youtube.com/watch?v=CU5YuHG6aoc</a>"</li> <li>• Allow bikes in bus lanes</li> <li>• Consider how cyclists are going to get across two lanes to turn right on Gossamer Drive and do not narrow the left hand side of the road</li> <li>• Do not install cycling infrastructure along this road – will only add to congestion and is too unsafe</li> <li>• Add cyclists/pedestrian part to one side of bridge over the Pakuranga Stream - awful to walk along because it feels very exposed and windy, also very dangerous for cyclists getting wedged between very high kerb and the cars/trucks that whizz by</li> </ul>	<p>A major corridor upgrade would be required in order to deliver significant cycling infrastructure improvements.</p> <p>This project is a network optimisation project and does not allow us to look at major physical works such as a cycleway. However, we have accommodated as many additional cycle facilities (ie advance stop boxes) as we can within the scope of the project and cyclists will be able to use the proposed bus lanes.</p> <p>The AMETI Eastern Busway project proposes high quality cycle facilities along Ti Rakau Drive.</p> <p>The proposals shown in the You Tube link are concepts that are subject to further design work and public engagement.</p> <p>The provision of a cycleway on Chapel Road is outside of the geographical area for this project. We will pass your suggestion on to our walking and cycling team.</p> <p>Cyclists using the bus lanes will have less conflicting traffic than the kerbside lanes. Currently, cyclists need to weave from within the shoulder to the kerbside traffic lane to pass parked cars at all times of the day which can be a safety issue for cyclists. When the bus lanes are operational, there will be no kerbside parking allowed hereby removing the need for cyclists to weave.</p> <p>In the proposed design, buses would follow cyclists unless they can overtake using the adjacent traffic lane so this should not hinder cyclists.</p> <p>The project scope is for low cost solutions only so any bridge works would not be possible within this project.</p>
<ul style="list-style-type: none"> <li>• Signage emphasising cyclist straight through have right of way for proceeding straight ahead or turning right to Chapel Road</li> </ul>	<p>Signage will not legally give cyclists right of way so we cannot support this suggestion.</p>
<ul style="list-style-type: none"> <li>• Cycle racks at Countdown or at the bus stop.</li> </ul>	<p>AT generally only provides cycle parking at specific facilities such as stations or park and ride sites. Facilities are not provided at individual</p>

	<p>bus stops such the bus stop by Countdown on Ti Rakau Drive. Cycle parking at Countdown would need to be provided by the owner of the site as this is private property.</p>
<ul style="list-style-type: none"> <li>• Cyclists will struggle to turn right (two lanes): please ensure there is no narrowing of the left hand side of the road, which would create a pinch point</li> <li>• Cyclist pinch point caused by the centre median</li> <li>• Upgrade to overbridge or shared path (both sides) and add link to new cycle path being constructed at south-east end of bridge to Stonedon Drive</li> <li>• Upgrade existing walking underpass (western end of bridge) to link this new path to Riverhills Estuary Walkway (path along estuary between Pakuranga Baptist church – Riverhills Park – Riverhills School). Potential shared path instead?</li> </ul>	<p>There is insufficient space to create a cycleway through this section of Ti Rakau Drive at this stage. If a cycle facility were to be provided, it would be in isolation compared to the facilities in the rest of the corridor. Therefore, the facility would have little benefit at this stage.</p> <p>We will review lane widths during the detail design.</p> <p>It is not clear where the pinch point is created. There is at least 4.2m clear kerb-to-kerb width in all locations.</p> <p>The proposals are for short-term measures prior to the implementation of the AMETI Eastern Busway. Therefore, major works such as a pedestrian/cycle bridge have not been considered.</p>
<ul style="list-style-type: none"> <li>• Consider pedestrian safety in the design.</li> <li>• Ensure pram crossings are carefully constructed to allow mobility scooters/wheelchairs and children safe use</li> </ul>	<p>The proposals for this project are for short-term measures prior to the implementation of the AMETI Eastern Busway. Therefore, major works such as a pedestrian bridge have not been considered.</p> <p>Crossing points will be designed to be as accessible as possible, for the mobility impaired, and will be constructed to the required standards.</p>
<ul style="list-style-type: none"> <li>• Support efforts to improve pedestrian safety. The intersection of Te Irirangi/Botany Road/Ti Rakau is very pedestrian unfriendly. What more could be done to improve this?</li> </ul>	<p>Pedestrian facilities are not affected by the proposals at this intersection. Crossing distances and locations are unchanged.</p>
<ul style="list-style-type: none"> <li>• Need more pedestrian crossings, especially at intersections</li> </ul>	<p>This project is an interim, low cost solution which will provide some benefits towards improving the bus services and relieving congestion until the AMETI Eastern Busway is in place. The corridor will be substantially changed with the implementation of AMETI. Therefore the scope of this project is limited to some upgrades to existing pedestrian facilities.</p>
<ul style="list-style-type: none"> <li>• Remove zebra crossing.</li> <li>• Add zebra crossings over slip lanes to improve pedestrian safety</li> </ul>	<p>There are no zebra crossings within the extent of the project.</p> <p>Zebra crossings on the slip lanes are not proposed as the left turn traffic will be required to stop in the through traffic lane when stopping for a pedestrian. This creates a safety issue for traffic and for pedestrians as a rear end shunt may push a left turning vehicle forward onto the crossing.</p>
<ul style="list-style-type: none"> <li>• Build dedicated lanes/infrastructure to incentivise more environmentally friendly ways of transport and reduce traffic - safer and relatively faster, having own cycling and bus lanes to reduce car traffic</li> </ul>	<p>The AMETI Eastern Busway project will build a dedicated bus way along the Ti Rakau Drive corridor. AMETI proposes including high quality cycle facilities.</p>

<ul style="list-style-type: none"> <li>• Less car parking in cycle lanes would improve safety</li> </ul>	<p>Parking in cycle lanes is illegal. We encourage people to contact AT if this occurs so we can take action.</p>
<ul style="list-style-type: none"> <li>• Consider overhead/overhead crossing bridges to cross the busy four-lane traffic rather than slowing down the traffic at the traffic lights, also safer for pedestrians.</li> <li>• Need overhead pedestrian crossing bridge on Ti Rakau Dr before Gossamer Rd junction to facilitate bus passengers</li> </ul>	<p>Overhead bridges are often difficult to provide due to space requirements and result in very long ramps to allow for wheel chair users or those with mobility scooters. Pedestrians often avoid using bridges due to the additional walking distance and inconvenience of having to climb up stairs or ramps. Therefore, bridges are generally not a favoured option compared to at-grade facilities.</p>

## 8. General comments on the Ti Rakau Drive traffic flow improvements overall

We received a number of more general comments or suggestions about - or to support - the proposed improvements, and provided responses.

8.1 Further develop/enable East Auckland public transport	
<ul style="list-style-type: none"> <li>Extend trains to Botany/Pakuranga to improve access for eastern suburb residents.</li> </ul>	The AMETI Eastern Busway proposal is for a bus way from Panmure to Botany. This aims to provide high frequency, flexible public transport.
<ul style="list-style-type: none"> <li>Ban cars for 90 minutes morning and evening along Ti Rakau Drive to create clear transit way for buses and other transport workers (only until rail up and running efficiently).</li> </ul>	Auckland Transport is committed to providing mode choice for all users of the transport network and thus, a car ban is not favoured, nor is it practical.
<ul style="list-style-type: none"> <li>Relocate Pakuranga bus centre for more efficiency, especially in off peak times to utilise the capacity of either bus.</li> </ul>	A Pakuranga Bus Station is being reviewed as part of the AMETI Eastern Busway programme.
8.2 Traffic signals	
<ul style="list-style-type: none"> <li>Install traffic light at Dale Crescent to help people enter/exit Ti Rakau Drive safely – current 'Keep Clear' space often ignored and blocked by traffic.</li> </ul>	We are currently investigating proposals for Ti Rakau Drive to include the signalisation of this intersection. The eventual outcome will be subject to analysis and public engagement.
<ul style="list-style-type: none"> <li>Use more filter lights (flashing yellow to go if all clear) - too often I wait for arrows to turn green and there are no cars coming in opposite direction</li> </ul>	New Zealand Traffic Control Devices do not allow the use of yellow flashing signals unless there is a fault at the traffic signals.
8.3 Enforcement	
<ul style="list-style-type: none"> <li>More cameras at intersections. I'm often waiting at Botany Road/Te Irirangi or crossing at Ti Rakau/Te Irirangi and there are many red light runners. It's a very tricky/fast area.</li> </ul>	We will pass on your comment to our traffic safety team for their consideration.
8.4 Road changes	
<ul style="list-style-type: none"> <li>Use more roundabouts to keep traffic moving; like in Pukekohe.</li> </ul>	Roundabouts often require significantly more area than traffic signals and therefore require additional land purchase. In addition, they are not as easily negotiated by pedestrians, particularly those who are less mobile. Balanced flows between approaches are required for efficient operation of roundabouts; however, Ti Rakau Drive has a high through movement component.
8.5 Timing of work	
<ul style="list-style-type: none"> <li>Please try to do major parts of the road works in the school holidays.</li> <li>Suggest road works are done in quiet times such as Christmas.</li> </ul>	The construction works will be subject to development of Traffic Management Plans, which will take into account effect on traffic. This may include undertaking works at quieter times of the year.

<b>8.6 Long term effectiveness of the proposals</b>	
<ul style="list-style-type: none"> <li>• May be a short term fix and but won't have a great impact on the congestion issue at East Auckland during rush hour.</li> <li>• Think ahead and develop a new road system before you have to buy houses up to build bigger roads.</li> </ul>	<p>The proposals are intended to ease congestion in the short term prior to more significant works to improve public transport along the corridor. The improvements to bus services will provide greater mode choice for people.</p>
<ul style="list-style-type: none"> <li>• Don't believe altering flow at intersections is of benefit unless that flow of traffic is enabled to disperse through the full length of the road. Otherwise you just move the congestion to the next point in the road.</li> </ul>	<p>The proposals ease some bottlenecks at intersections. The Ti Rakau Drive bus lanes are proposed within the existing road space and allow buses to bypass existing queues. This provides travel-time savings with little impact on other road users.</p>
<ul style="list-style-type: none"> <li>• Consider Emergency Services vehicles and their requirements for safe/timely passage.</li> </ul>	<p>We do not believe that our proposals will significantly impact emergency services. We have consulted with them on our proposals.</p>

## 9. Comments on surrounding area

We received comments that are outside of the study area. We have collated these into common themes and provided responses.

<b>9.1. Greenmount Drive</b>	
<ul style="list-style-type: none"> <li>• Relocate bus stops on Greenmount Drive at the Ti Rakau intersection</li> <li>• Paint yellow lines down Greenmount Drive along JA Russell and Warehouse Stationery leading up to intersection to prevent parked cars from blocking whole left and right turning lanes at peak hour traffic</li> <li>• Impose a clearway after 4pm along the left hand lane</li> <li>• Set back the westward bus stop from the road, between Greenmount Drive and Harris Road, in front of the Warehouse Stationery (currently, in the morning, the bus stop is actually situated within the left lane and when buses stop there it causes major back logs of traffic in that lane right back to the Botany Road intersection)</li> <li>• Concern that there is heavy congestion on Greenmount Drive at the Ti Rakau Drive traffic lights and two lanes are having to merge into one outside of JA Russell driveway then back to two lanes again to make it through the lights</li> <li>• Set up no parking on roadside along Greenmount Drive going to Ti Rakau Drive (adjacent to warehouse factory)</li> </ul>	<p>We are relocating all bus stops as part of the AMETI Eastern Busway project.</p> <p>In the future, we will undertake a separate study to investigate your concerns over parking and bus stop locations at Greenmount Drive.</p>
<b>9.2. Burswood Drive (Bunnings end)</b>	
<ul style="list-style-type: none"> <li>• Leave Burswood Drive as a Burswood residents-only road rather than an entry for Bunnings</li> <li>• Include a separate entry to Bunnings and a dedicated left turning lane off Ti Rakau Drive so it is safer for drivers going straight through Burswood Drive</li> <li>• Concern that the left lane on Ti Rakau Drive close to Bunnings is often clogged due to a large number of vehicles wanting to turn into Burswood Drive for Bunnings</li> </ul>	<p>Burswood Drive is outside the geographic area of this project.</p> <p>We will pass your concerns regarding Burswood Drive to the AMETI Eastern Busway team for consideration.</p>
<b>9.3. Harris and Cryers Roads</b>	
<ul style="list-style-type: none"> <li>• Look at changing the junction of Ti Rakau Drive and Harris Road. ('Nothing has been done to this junction in the 18 years and yet the traffic has increased and the Highbrook business area has grown massively.")</li> <li>• Concern about the left hand lane from Harris Road onto Ti Rakau Drive where traffic cannot access the short second hand turning lane as it is always blocked by traffic turning right. This causes huge holdups and queue jumping. Traffic coming out of businesses on both sides of the</li> </ul>	<p>We are investigating these issues as part of the AMETI Eastern Busway project.</p>

<p>road near the junction adds to the problem and makes it more dangerous as they not only turn left but also try to cross lanes to turn right.</p> <ul style="list-style-type: none"> <li>• Concern about turning right (coming from Pakuranga) from Ti Rakau Drive onto Harris Road there are long queues of traffic near the petrol station onto Cryers Road and traffic has to cut into the left hand lane causing backlogs and accidents, as there is also traffic turning right into the businesses.</li> <li>• Look at putting lights, or a roundabout, at the corner of Trugood and Cryers Roads. It is a very accident prone area.</li> <li>• Widen Harris Road at Ti Rakau Drive to support proposal and other motorists for safer passage</li> </ul>	
<b>9.4. Ti Rakau Drive / Pakuranga Highway</b>	
<ul style="list-style-type: none"> <li>• The issue of the one-lane free turn from Ti Rakau Drive onto the Expressway remains unchanged - extremely slow area to get through. It would have been good to have this issue addressed as I see this as a far worse issue than the other six listed here.</li> <li>• A large number of cars wish to turn left into Pakuranga Highway but because there is only one lane it queues back a long way.</li> <li>• Need two left-turning lanes as you head over the Waipuna Bridge</li> <li>• Create a double-lane left turn from Ti Rakau Drive onto heading onto Waipuna Bridge to ease congestion and support bus lane proposal</li> <li>• Double left turn from Ti Rakau Drive into Pakuranga Highway</li> <li>• Delineate lanes more clearly at Pakuranga Highway / Ti Rakau Drive intersection to prevent cars/buses from crossing lanes, putting each other at risk of accidents leading up to the proposed bus lane area</li> <li>• Add two left-turning lanes as you head over the Waipuna Bridge instead</li> </ul>	<p>This intersection and the Waipuna Bridge are outside the geographic area of this project and falls within the AMETI Eastern Busway project area. Providing a second left turn lane to Pakuranga Highway would require significant changes to the carriageway to accommodate an additional lane. We will pass your comments to the AMETI team for their consideration.</p>
<b>9.5. Howick &amp; Eastern Bus Depot</b>	
<ul style="list-style-type: none"> <li>• Concern that the entry/exit to the depot is dangerous (“The buses have to cross three lanes of traffic to enter the depot making it dangerous during peak hours when drivers are most impatient. There are several buses entering and exiting the depot at most times and this disrupts the straight through traffic on Ti Rakau Drive. Suggest another set of lights.”)</li> <li>• Remove the solid median island at along Ti Rakau drive (opposite Howick &amp; Eastern bus depot)</li> </ul>	<p>Howick &amp; Eastern Bus Depot is outside the geographic area of this project. The Bus Depot is being investigated as part of a separate study.</p>

9.6. Other	
<ul style="list-style-type: none"> <li>• Fund beautification of Ti Rakau Drive. (“This is major arterial road for East Auckland and clearly heavily used, however sadly, we don’t feel any pride driving on this road. Some small things such as re-painting the Ti Rakau bridge railings that goes over the Tamaki Strait and some planting along the medians in the middle of the road would in add some extra appeal to the area.”)</li> <li>• Concern that the intersection that crosses the highway to Sylvia Park is dangerous with people and busses crossing into the left turning lane rather than waiting in the left (“Lanes need to be divided so people can’t do this.”)</li> </ul>	<p>These comments fall within the AMETI Eastern Busway project area and will be passed on to the AMETI team for consideration</p>

