

ŌTAKI TO NORTH OF LEVIN DETAILED BUSINESS CASE: INITIAL ALIGNMENT REVIEW

PREPARED FOR NZ TRANSPORT AGENCY

May 2020



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NZ Transport Agency

Ō2NL Initial Alignment Review Report

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1. Introduction

State Highway 1 (SH1) is New Zealand's premier highway, but the section between Ōtaki and Levin is afflicted by a number of serious safety, efficiency and resilience problems. The importance of this section of SH1 is characterised by its function in connecting Wellington to the upper North Island, where no other resilient route exists. It also provides an essential economic connection to Palmerston North, the largest freight node in central New Zealand.

Therefore, Waka Kotahi NZ Transport Agency (Waka Kotahi) has been investigating potential upgrades and new alignment options to address the issues with the existing SH1 route. In 2018, an Indicative Business Case (IBC) was endorsed, which included endorsement for an offline highway, from Taylors Road in the south to north of Levin (and bypassing Levin (the Project or Ō2NL Highway), and a 300m corridor (the preferred corridor) for further investigation. This Project was subsequently included in the NZ Upgrade Programme to *"improve safety and access, support economic growth, provide greater route resilience, and better access to walking and cycling facilities"*.

Waka Kotahi is now undertaking a Detailed Business Case (DBC) to refine the new highway alignment, interchange locations / options, and local road connections for the preferred corridor plus undertake scheme design and obtain funding approvals.

As set out in Figure 1 below, the preferred corridor is located to the east of State Highway 1 (SH1) and State Highway 57 (SH57). In summary, heading north, the proposed new highway will extend from the northern end of the Peka Peka to Ōtaki Expressway (which is located approximately 2km north of the Ōtaki township) and will re-connect into SH1 and SH57 to the north of Levin.

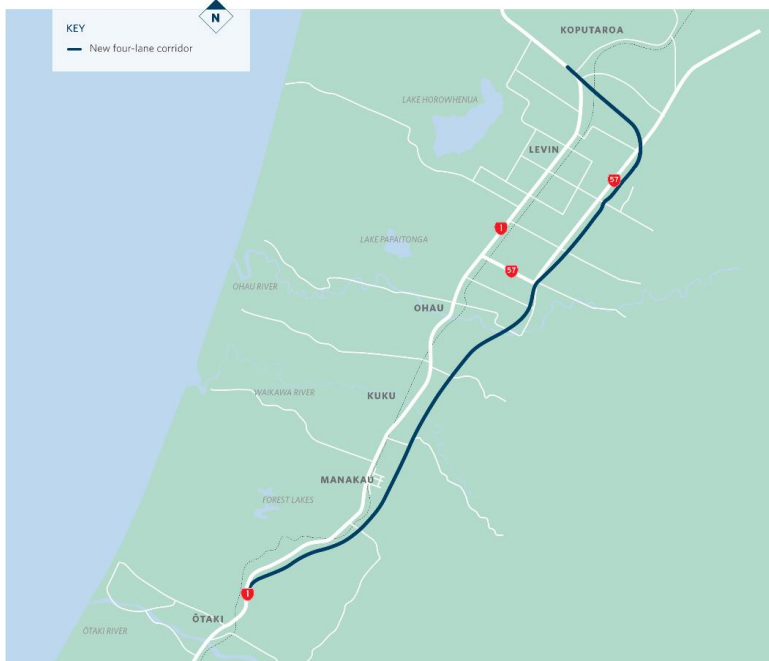


Figure 1 – Preferred 300m corridor for the Ō2NL Highway

At the completion of the IBC it was identified that development and assessment of potential alignment options within the preferred 300m corridor would be one of the first key activities needing to be undertaken when developing the DBC.

The IBC also identified that further option development and assessment would be required for the highway's interchanges and for any major changes to the local road network. The development and assessment processes for both of these key project features are documented in separate reports.

2. Purpose

The purpose of this report is to set out the Ōtaki to North of Levin (Ō2NL) Design Team's recommendations for the long list of highway alignment options to be further investigated within the Ō2NL Project's preferred 300m corridor.

This initial alignment option assessment phase is part of the Ō2NL's DBC multi criteria analysis (MCA) process that is being undertaken to help identify an emerging preferred highway alignment.

3. Overview of the Ō2NL Highway route alignment selection process

In brief, in order to identify an emerging preferred highway alignment, the following DBC processes are being undertaken:

- Step 1 - Initial route analysis – including identifying “fixed points” for the highway, “highway zones” and initial alignment options for each zone
- Step 2 - Review of the long list of initial alignment options – including removing sub-optimal alignments
- Step 3 - Undertake an initial MCA process to identify an emerging preferred highway alignment, with the outcomes to be documented in a Draft MCA Report
- Step 4 - Undertake Iwi and public engagement on the outcomes of the initial MCA process
- Step 5 - Following completion of Iwi and public engagement processes, review and update the MCA process and Draft MCA Report to identify a preferred highway alignment, and
- Step 6 - Recommend a preferred highway alignment to the NZ Transport Agency for its consideration.

This report summarises the processes and recommendations of the Design Team for **Steps 1** and **2** above. It is acknowledged by the Design Team that its recommendations in both Steps 1 and 2 may need to be reviewed / amended following completion of Steps 3 to 6.

4. Initial route analysis (Step 1)

4.1 Identification of fixed points

Based on the IBC's preferred 300m corridor, the Design Team identified the key fixed points for the preferred 300m corridor. Such points included the corridor's start and finish points, the location of known Resource Management Act (RMA) 1991 Section 6 matters (e.g. significant ecological or heritage areas), areas with significant property (e.g. Maori land) as well as engineering constraints (e.g. topography). These locations were identified primarily from the IBC constraint maps and topographical data.

4.2 Identification of zones

Following identification of the fixed points, the Design Team divided the corridor into zones (ranging from ~1.5km to ~4.5km in length) in order to identify and assess the long list of alignment options in more detail per zone.

The identification of each zone's location was based on engineering / environmental considerations (e.g. topography, preliminary interchange location and waterway locations).

From this process a total of 10 zones were identified (named A to L).

4.3 Route options generation

Next, generally five or six 80m alignment routes were identified for each highway zone (though there were a couple of instances of additional alignments being included, such as the northern extent). The Design Team identified that an 80m width was sufficient to contain the road (e.g. four lanes and road shoulders) plus the shared path and landscaping, drainage and earthworks in most places.¹

Each 80m alignment option was predicated on horizontal geometry standards (from the Design Philosophy Statement), property information and topographical information plus a review of the IBC constraints and opportunities map. Each alignment route considered was two dimensional (i.e. no vertical alignment aspects were considered).

All alignment options are presented within the discussion in the next section of this report.

5. Review of initial route alignment options (Step 2)

The review of the initial route alignment options was undertaken by the Design Team at a workshop held on Monday, 16 March 2020.

The main purpose of this workshop was to undertake a screening process to determine whether any of the initial 80m alignment options that had been identified for the preferred 300m corridor could be recommended for removal or could be adapted to a more optimal alignment.

The attendees at the Design Team workshop were: Selwyn Blackmore (Transport Planning Lead), Jamie Povall (Design Manager), Phil Peet (Team Leader), Keith Weale (Geometrics Lead), April Peckham (Resource Planner), and Chris Hansen (Lead Resource Planner).

5.1 Workshop screening process methodology

The workshop screening process was based on the tasks set out below.

5.1.1 Task 1: Filter 1

First, the workshop attendees reviewed the IBC's constraints and opportunities map for the 300m corridor (including the investigations undertaken as part of the initial route analysis work as discussed above in Section 4.2) in order to identify any alignment options that were obviously fatally flawed.

5.1.2 Task 2: Filter 2

Next, the workshop attendees considered the remaining 80m alignments (as a result of undertaking Filter 1) for each highway zone and asked the following questions, which are primarily based around the MCA criteria being used throughout the O2NL project development process:

- Does any alignment impact on a residential dwelling(s)?
- Does any alignment impact on any known community/lwi assets (including future HDC growth areas)?
- Does an alignment make re-connecting the local road network more complex?
- Is an alignment located within a flood zone, if so, will it make it more complex to construct?
- Does the alignment impact on a known/significant ecological area?
- Does the alignment impact on high quality productive land?
- Does an alignment optimise (or compromise) preferred bridge crossing locations?

¹ It is noted that future design stages and designation processes will result in the 80m width being narrowed in the most part. However, in some areas, the 80m width may increase around interchanges, areas of cut/fill, drainage and stormwater treatment, parallel service roads and mitigation such as bunding and planting in some areas

- Does the alignment make connecting the alignment in the zones to the south and/or north more complex to implement?
- Will the local topography for the alignment make constructability more complex?
- Will the alignment result in sub-optimal property parcel outcomes?
- Will the alignment impact on a special amenity area (as defined by the Kapiti Coast District Council's District Plan)?

If the workshop attendees' collective answer was "yes" to any of the above questions, it then used its professional technical expertise to identify whether alignment option(s) should be removed from further consideration or adapted to a more optimal alignment.

5.1.3 Task 3: Document workshop processes and outcomes

The final step was to document the screening process and recommendations made at the Design Team workshop.

5.2 Task 1: Constraints and opportunities

Workshop attendees reviewed / discussed the constraints and opportunities map identified in the IBC (and in the initial route analysis work undertaken in Section 4.2). Workshop attendees noted that this map had played an important role in helping to determine the preferred 300m corridor.

Workshop attendees ultimately agreed that there weren't any obviously fatally flawed 80m alignment options from its review of the IBC's constraints and opportunities map.

5.3 Task 2: Zone-by-Zone assessment

This section of the report records the workshop attendee's key discussion points on the initial long list of alignment options identified for each highway zone, and its subsequent recommendations for removing any alignment option or for adapting an option to a more optimal alignment.

5.3.1 Zone A

Zone A is located generally between Taylors Road and Forest Lake Road.

The 80m alignment options considered by workshop attendees for Zone A are presented in Figure 2.

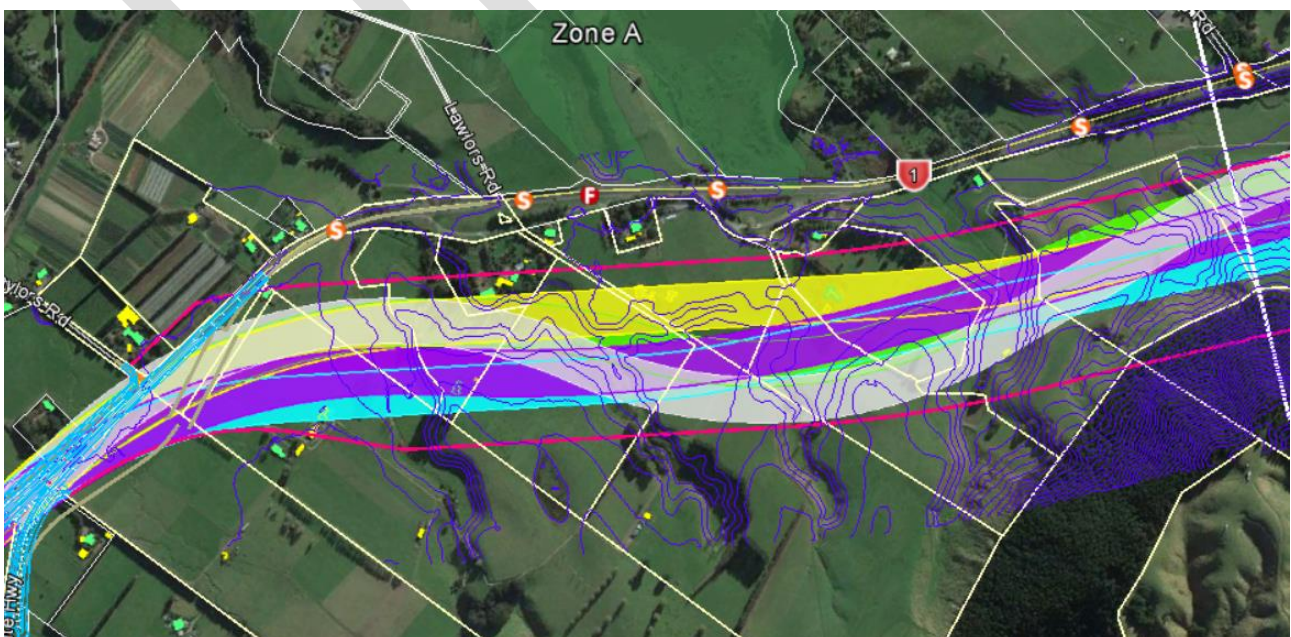


Figure 2 – Alignment options considered for Zone A

After considering the constraints within Zone A and the Task 2 (i.e. Filter 2) questions, workshop attendees made the following key comments / observations:

- It was noted that the interface between the Peka Peka to Ōtaki (PP2O) Expressway's northern connection and Ō2NL's southern connection was likely to be highly complex from a geometric design perspective.² As such, this constraint was likely to limit the number of alignment options available at Zone A's southern boundary. Workshop attendees also discussed the importance of avoiding the steep terrain on the eastern side of the corridor from a construction cost and complexity perspective. It was noted that previous consultation processes had highlighted that there were local tangata whenua considerations to be considered
- At the southern end (i.e. the PP2O / Ō2NL interface), the purple and cyan alignments weren't supported by workshop attendees as they considered that these alignments would create sub-optimal horizontal curves for the highway, and would have more impacts on local buildings and Maori land when compared to the other alignment options considered at this location
- In the "middle" of the zone (i.e. from Property 21 heading north), the purple, cyan, green and white alignment options were considered better than the other options as they avoided local water courses and local buildings. Consequently, the yellow alignment option wasn't supported for further investigations / assessment, and
- At the Zone A / B boundary, workshop attendees considered that the alignment needed to "track back" onto either the green, white or yellow alignments as these were furthest away from the eastern forestry area and its associated steep gradients and tangata whenua considerations.

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are set out in Figure 3.



Figure 3 – Favoured alignment options for Zone A

5.3.2 Zone B

Zone B is located generally between Forest Lakes Road and the Honi Taipua hillock.

² On the basis that when the Ō2NL Highway is constructed, all of the traffic from the proposed revoked State Highway 1 north of Taylors Road would need to use the 90° horizontal curve that is being constructed as part of the PP2O Expressway beneath the new Waitohu Stream Bridge

The 80m alignment options considered by workshop attendees for Zone B are presented below in Figure 4.

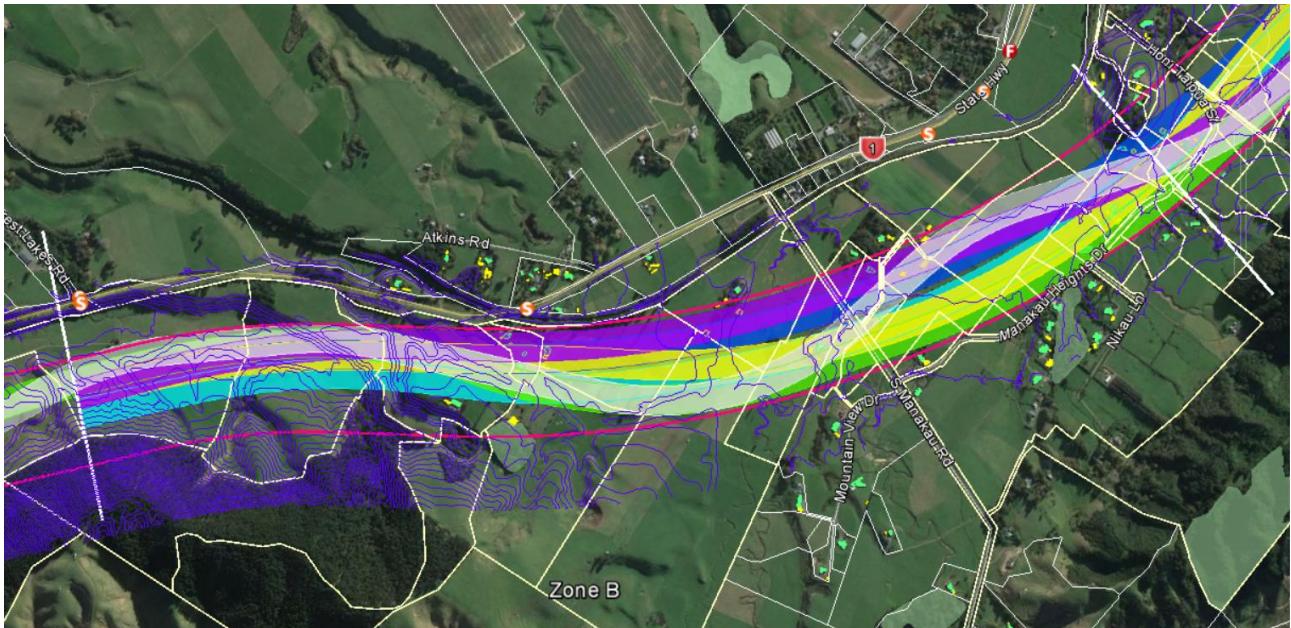


Figure 4 – Alignment options considered for Zone B

After considering the constraints within Zone B and the Task 2 (i.e. Filter 2) questions, the workshop attendees made the following key comments / observations:

- It was noted that there are two special amenity areas from Schedule 3.1 of the KCDC District Plan located in Zone B [these being KO16 (Stables Bush) and KO164 (Pohutukawa Stand)]. It was noted that the District Plan's preference was for these special areas to be avoided if possible
- Workshop attendees noted that it will be important to consider how best to retain connectivity for Manakau Heights Drive / the Honi Taipua Street eastern rise when deciding on the final alignment at the Zone B / C boundary (e.g. whether and/or how Manakau Heights Drive is connected to Honi Taipua Street and the Manakau Village)
- At the southern end of Zone B, the dark blue, purple and yellow alignment options weren't supported by workshop attendees due to their likely adverse impacts on KO16 and existing dwellings
- At South Manakau Road, all alignment options were considered feasible, and
- At the Zone B / C boundary, the dark blue alignment option was not supported by workshop attendees due to its potential adverse impacts on the Honi Taipua hillock and surrounding native bush.

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are set out in Figure 5.

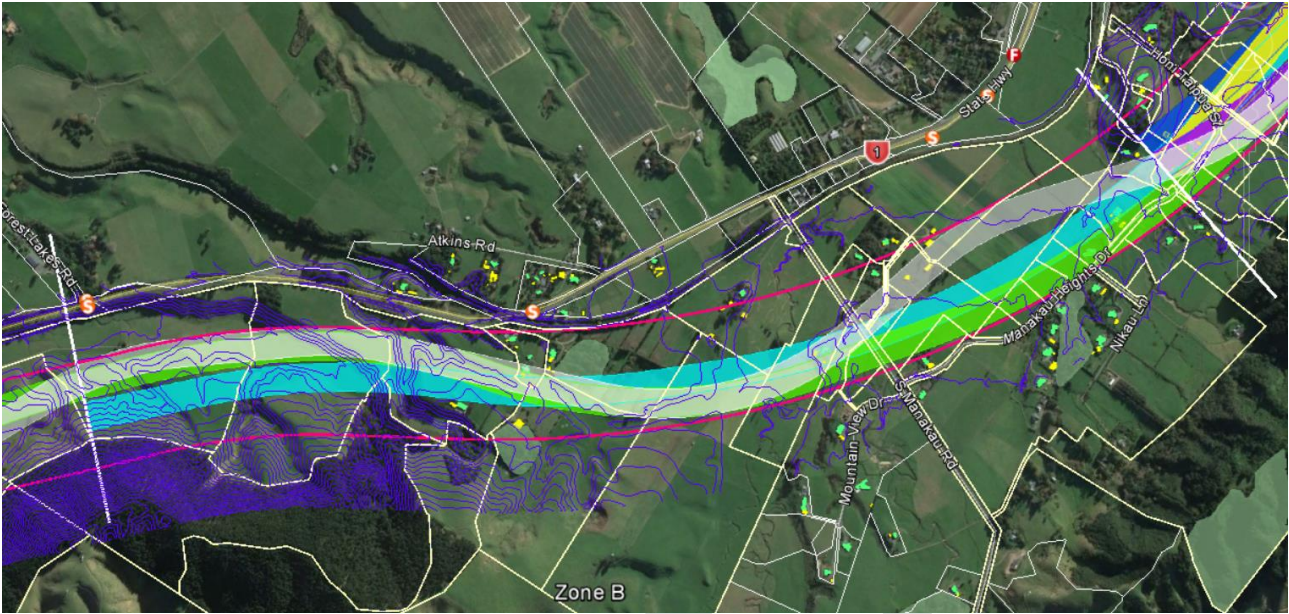


Figure 5 – Favoured alignment options for Zone B

5.3.3 Zone C

Zone C is located generally between the Honi Taipua hillock and to the immediate north of North Manakau Road.

The 80m alignment options considered by workshop attendees for Zone C are presented below in Figure 6.

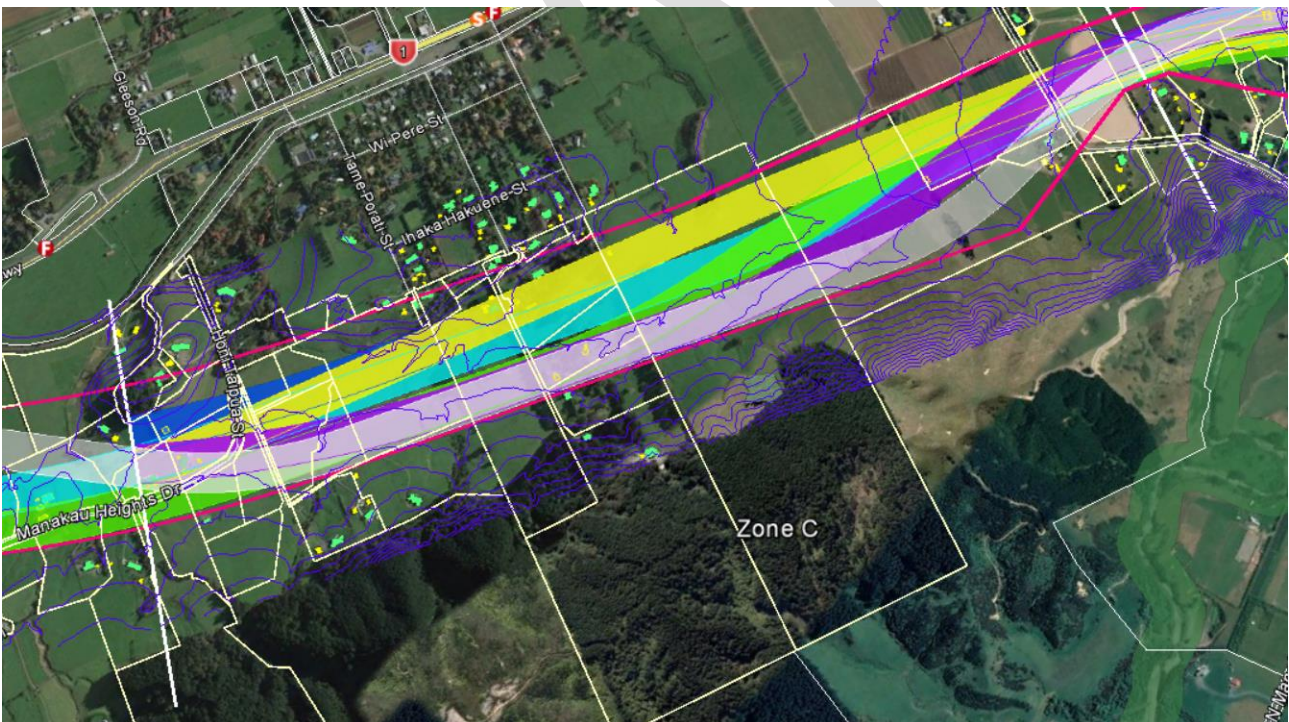


Figure 6 - Alignment options considered for Zone C

After considering the constraints within Zone C and the Task 2 (i.e. Filter 2) questions, the workshop attendees made the following key comments / observations:

- It was noted that no decision had yet to be made as to whether an interchange would be provided on the highway for accessing Manakau Village and surrounds. Nevertheless, it was noted that the design of the highway was likely to be “future proofed” for such a connection

- At the Zone B / C boundary, the dark blue alignment was not favoured due to the impacts on the Honi Taipua hillock and the workshop attendee's alignment preferences for Zone B
- Through "the middle" of Zone C and to the immediate east of the Manakau Village, the yellow, cyan and dark blue alignment options weren't supported by workshop attendees due to their close proximity to the Village (potentially increasing the impacts of the highway on the Village), and high likelihood that nearby local water courses would make them complex to construct. It was also noted by workshop attendees that these alignments were more likely to result in sub-optimal property parcels being created (when compared to the more favoured green and purple alignment options)
- To the immediate south of North Manakau Road, workshop attendees identified that the white alignment option to the "far east" of the zone might help to reduce effects on high class soils near North Manakau Road and could potentially enable the highway to better "fit" with local terrain. However, it was noted that there was a dwelling with some potential historical significance in this location, and
- At North Manakau Road (and the Zone C / D boundary), workshop attendees noted that the 300m corridor narrows considerably to avoid an historic building. As a consequence, attendees considered that all alignment options at this location were feasible, although an alignment closer to the western side of the corridor was favoured as it avoided the tight curves of North Manakau Road and would be located further away from the existing historic building. Attendees also noted that there may need to be geometric design departures at this location if further reductions in property impacts were to be pursued.

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are set out in Figure 7.

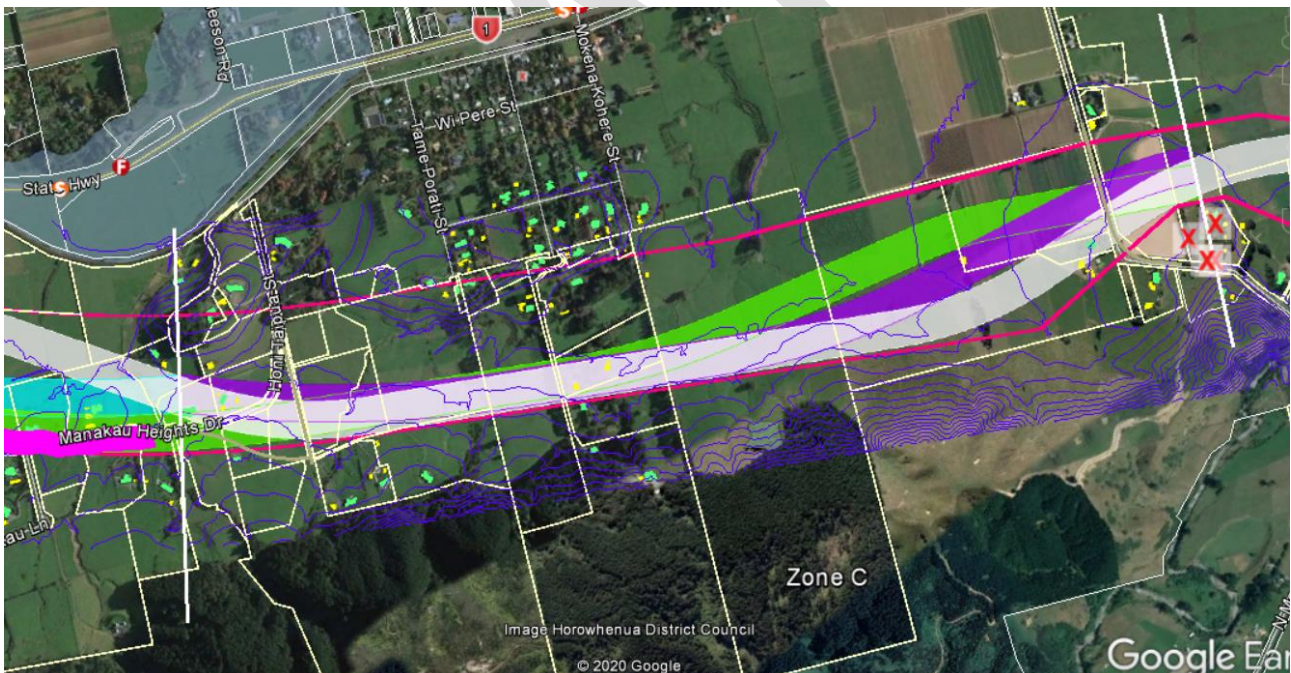


Figure 7 – Favoured highway alignment options for Zone C

5.3.4 Zone D

Zone D is located generally between the North Manakau Road and the Ohau River.

The 80m alignment options considered by workshop attendees for Zone D are presented below in Figure 8.



Figure 8 - Alignment options considered for Zone D

After considering the constraints within Zone D and the Task 2 (i.e. Filter 2) questions, the workshop attendees made the following key comments / observations:

- Workshop attendees noted that there were a number of existing features within Zone D that needed specific consideration, including:
 - Crossing the Waikawa Stream was likely to need a significant bridge structure to enable the highway to span the stream and local flood plain
 - The highway would need to traverse a large flood zone area to the immediate north of the Waikawa Stream
 - There are a number of properties containing high class soils located to the immediate north of Waikawa Stream
 - The hillock to the south / east of North Manakau Road is of significance to tangata whenua, and
 - Property 145 is understood to have heritage value (but further investigation is needed).
- At the Waikawa Stream, all alignment options were considered viable. Workshop attendees noted that this decision was consistent with its preference to retain all the alignment options at the Zone C / D boundary
- To the north of the Waikawa Stream, workshop attendees favoured removing the purple and yellow alignment options at this location as they were more likely to have adverse property impacts, and result in sub-optimal property parcels, when compared to the other alignment options
- At Zone D / E boundary, workshop attendees noted that the owners of a local quarry had expressed preference for the highway to pass close to their quarry and then directly over the Ohau River. Accordingly, the dark blue alignment was the favoured alignment option at this location, however the team also recommended retaining cyan, and
- Green was considered to be mostly a duplicate of other options and therefore was removed from further consideration.

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are set out in Figure 9.

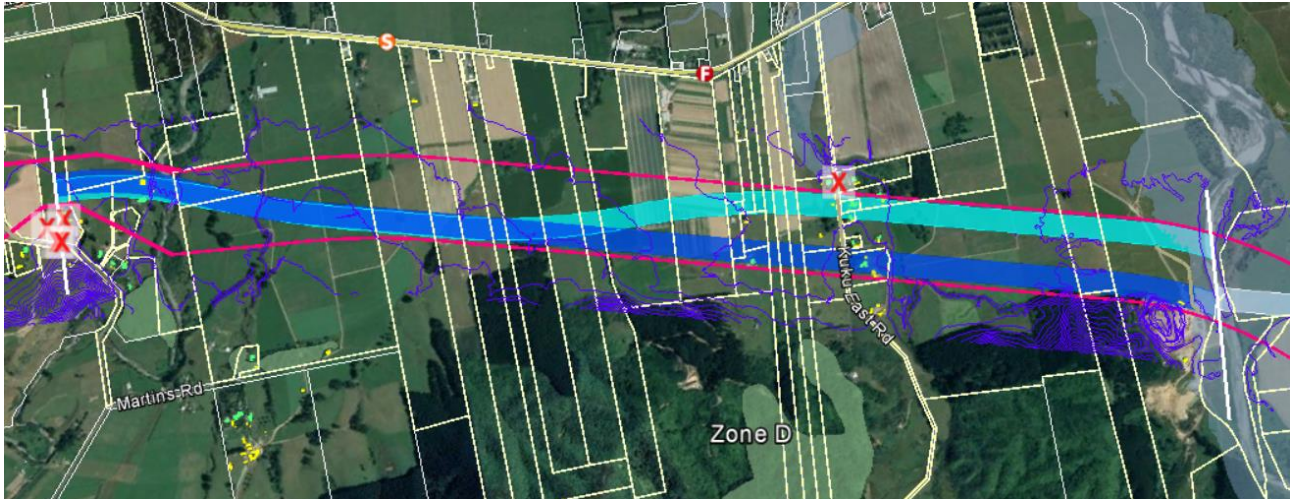


Figure 9 – Favoured alignment options for Zone D

5.3.5 Zone E

Zone E is located generally between the Ohau River and McLeavey Road.

The 80m alignment options considered by workshop attendees for Zone D are presented below in Figure 10.

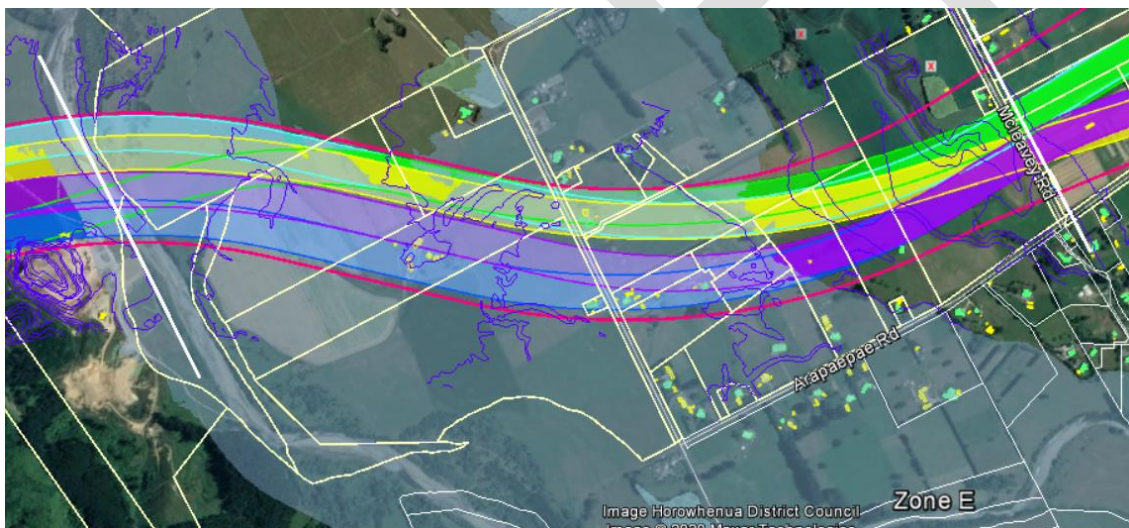


Figure 10 - Alignment options considered for Zone E

After considering the constraints within Zone E and the Task 2 (i.e. Filter 2) questions, the workshop attendees made the following key comments / observations:

- It was noted that there were a number of existing features within Zone E that needed specific consideration, including:
 - Crossing the Ohau River was likely to need a significant bridge structure to enable the highway to span the river and flood plain
 - McLeavey Bush might be a location where giant snails could be found (based on feedback previously provided by its property owner)
 - Muhunoa East and McLeavey Roads were likely to be severed by the highway and any re-connections would be complex from a design perspective, and
 - There had been a recent increase in the density of residential properties in the Arapaepae Road vicinity.

- To the immediate north of the Ohau River, workshop attendees favoured removing the dark blue and purple alignments at this location as they were more likely to have adverse property impacts when compared to the other alignment options
- At Muhunoa East Road, all alignment options were considered viable and could remain for further consideration
- At the Zone E / F boundary, alignment options that were further away from McLeavey Bush were favoured over the options located closer to the bush's location, although it was noted that all alignments avoid direct impacts on the bush
- After considering the location of the bush as well as the emerging alignment preferences at the southern Zone D / E boundary (and the alignment options for zone F), the green, yellow and cyan alignment options were preferred over the dark blue and purple alignments, and
- Yellow and cyan were almost identical so yellow was considered a duplicate and removed.

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are set out in Figure 11.

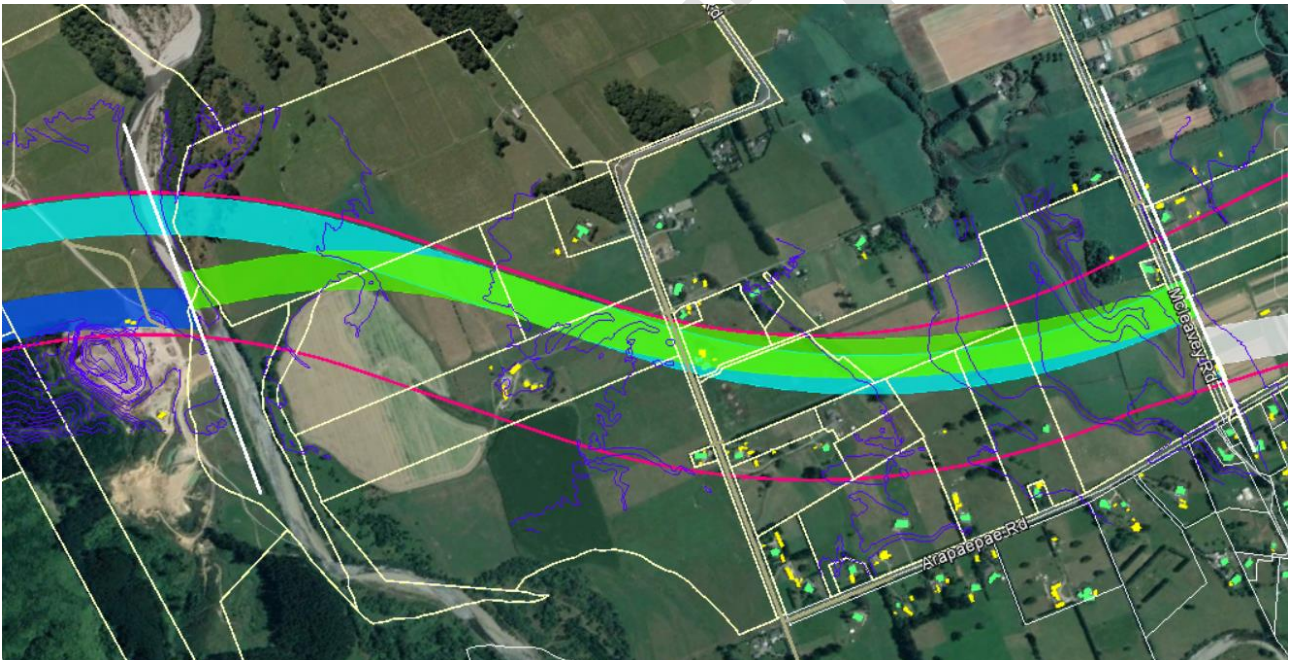


Figure 11 – Favoured alignment options for Zone E

5.3.6 Zone F

Zone F is located generally between McLeavey Road and Tararua Road.

The 80m alignment options considered by workshop attendees for Zone F are presented below in Figure 12.

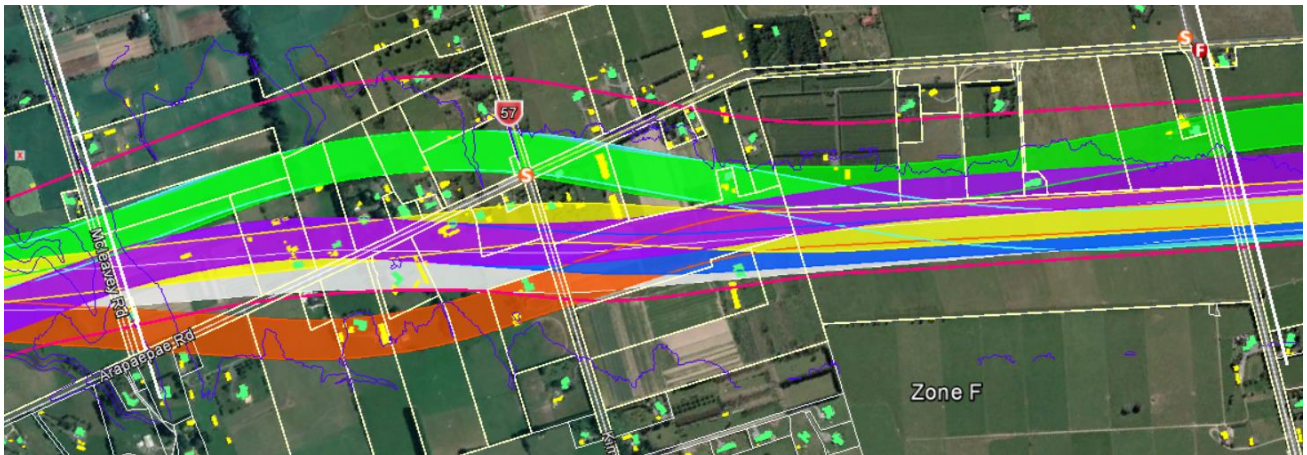


Figure 12 - Alignment options considered for Zone F

After considering the constraints within Zone F and the Task 2 (i.e. Filter 2) questions, the workshop attendees made the following key comments / observations:

- It was noted that there were a number of existing features within Zone F that needed specific consideration, including:
 - There is a high concentration of residential / rural properties in and around Arapaepae Road that were likely to be impacted by the highway (i.e. regardless of which alignment option was ultimately preferred). It was also noted that locating the highway alignment just outside of the 300m corridor (to the east) might help to reduce these impacts as well as reducing the complexity of reconnecting the local road network (see the orange alignment option in Figure 12 above)
 - The future “Levin interchange” is likely to be located within this zone and was therefore likely to dictate the final decision on where the emerging preferred alignment would ultimately be located. As such, workshop attendees acknowledged that they may need to revisit their alignment option preferences once final decisions had been made on the location and form of the interchange, and
 - Workshop attendees also noted that the Levin Interchange would require a number of local roads to be re-connected in the zone [e.g. Arapaepae Road (north and south) and Kimberley Road (north and east)].
- To the south and immediately north of Kimberley Road, workshop attendees favoured removing the green and cyan alignments at this location as they were more likely to have adverse property impacts, and create more sub-optimal property parcels, when compared to the other alignment options. In addition, attendees considered that reconnecting the local road network would be more complex if these options were to be favoured over the other alignments. Attendees agreed that the new orange alignment option should be further investigated as it would potentially result in fewer properties being impacted by the highway; however it was acknowledged that such an alignment would also result in properties not previously affected by the 300m corridor now being impacted
- Between Kimberley Road and Tararua Road (i.e. the Zone F / G boundary), workshop attendees also favoured removing the green and cyan alignments at this location as they were more likely to have adverse property impacts, and create more sub-optimal property parcels, when compared to the other alignment options, and
- The attendees noted yellow is essentially a duplicate so was discarded.

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are set out in Figure 13.

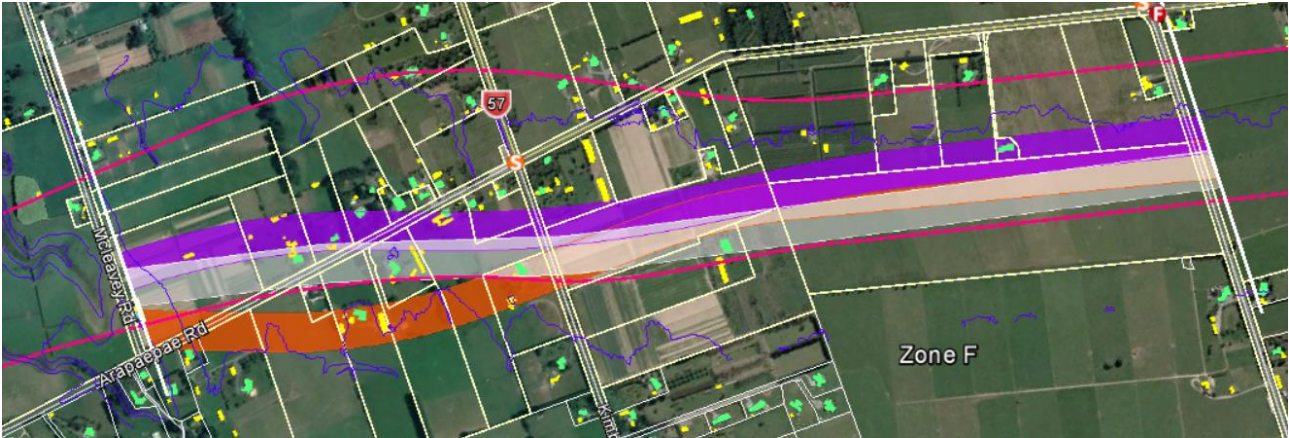


Figure 13 - Favoured alignment options for Zone F

5.3.7 Zone G

Zone G is located between Tararua Road and Queens Street.

The 80m alignment options considered by the workshop attendees for Zone G are presented below in Figure 14.

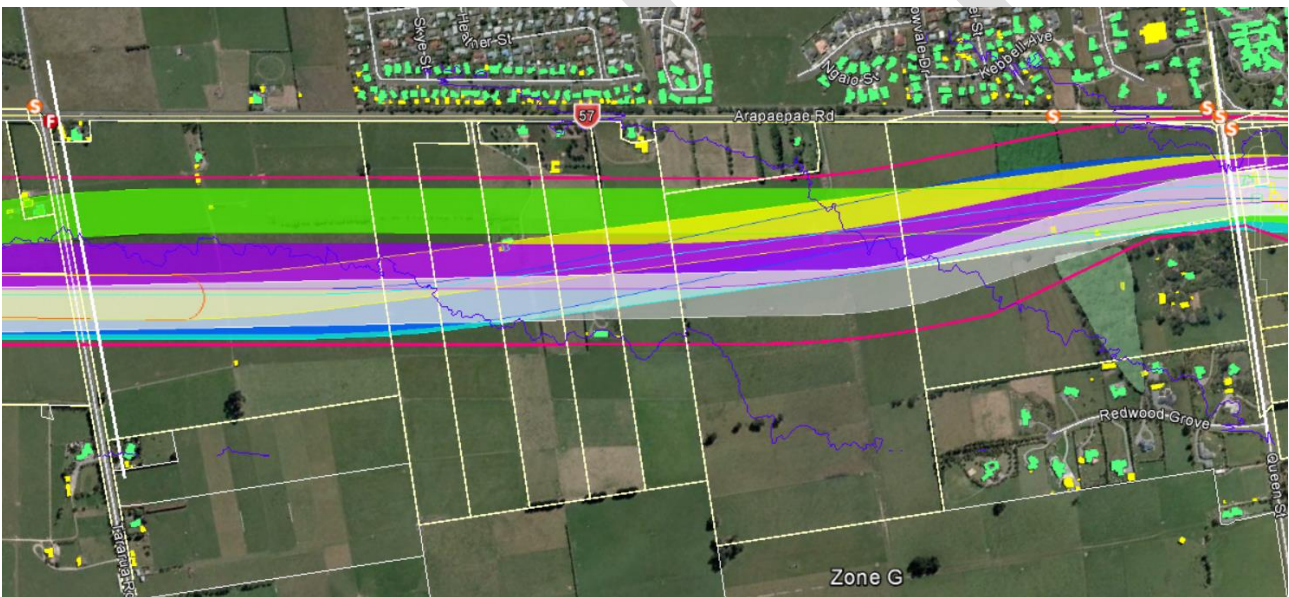


Figure 14 - Alignment options considered for Zone G

After considering the constraints within Zone G and the Task 2 (i.e. Filter 2) questions, the workshop attendees made the following key comments / observations:

- As with the previous section, any Levin interchange, if it were to be at Tararua Road, will likely dictate the emerging preferred alignment in this location
- The yellow, dark blue and green alignments were discarded as they were likely to adversely impact Arapaepae Bush (which is understood to potentially house giant snails)
- At Queens Street (i.e. the Zone G / H boundary), all alignment options were considered viable and were to be kept for further investigation. Workshop attendees noted the re-connection of Queens Street was likely to be complex from a geometric perspective, and could therefore be a deciding factor in the selection of the final alignment, and
- Horowhenua District Council had earmarked the area to the east of the 300m corridor for future residential development (i.e. the Gladstone Green proposal).

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are set out in Figure 15.

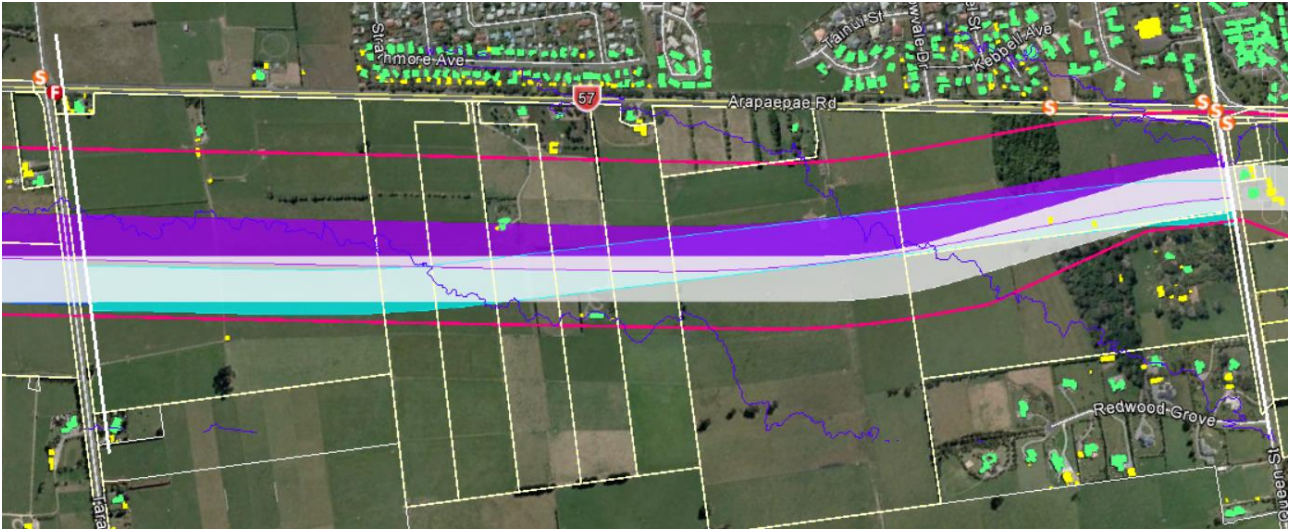


Figure 15 – Favoured alignment options for Zone G

5.3.8 Zone H

Zone H is located generally between Queens Street and Waihou Road (west).

The 80m alignment options considered by the workshop attendees for Zone H are presented below in Figure 16.

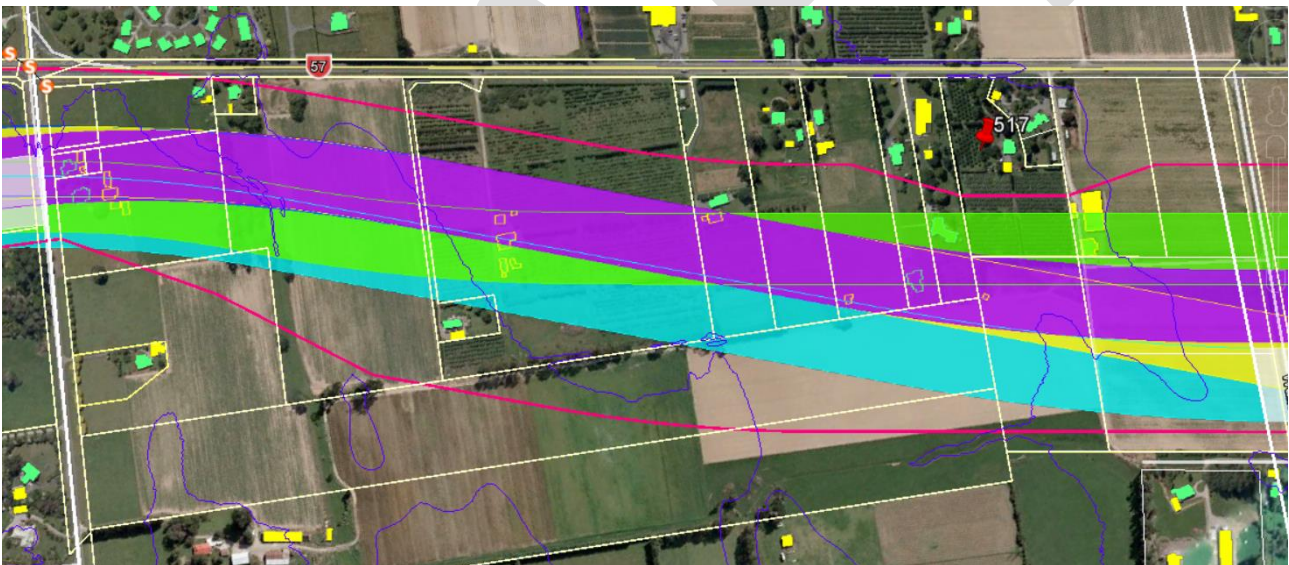


Figure 16 – Alignment options considered for Zone H

After considering the constraints within Zone H and the Task 2 (Filter 2) questions, the workshop attendees made the following key comments / observations:

- The green alignment option wasn't supported as workshop attendees considered that its impacts on the historic Annandale Manor (i.e. Property 517) would be more adverse when compared to the other alignment options, and
- Dark blue and yellow were also discarded based on being a duplicate of purple.

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are out in Figure 17.

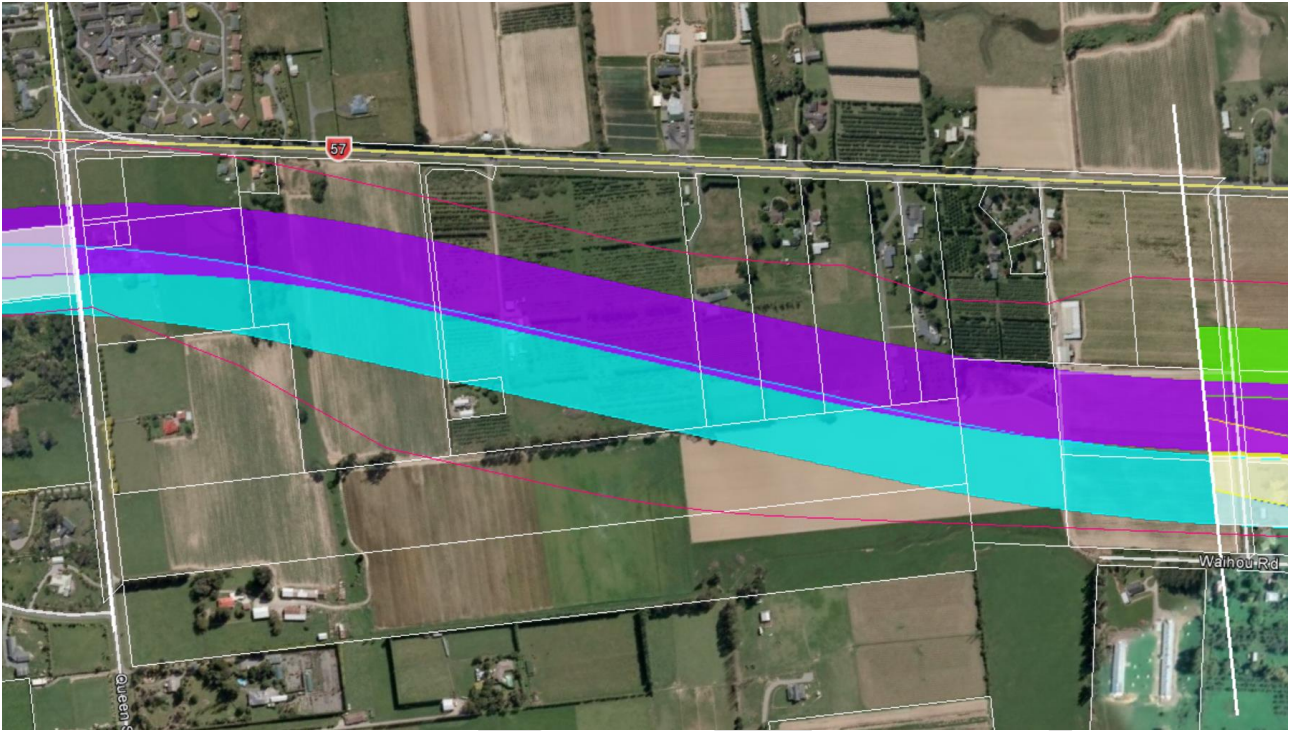


Figure 17 – Favoured alignment options for Zone H

5.3.9 Zone K

Zone K³ is located generally between Waihou Road (west) and Fairfield Road (north).

The 80m alignment options considered by the workshop attendees for Zone K are presented below in Figure 18.

³ It is noted that the zone letters are not always sequential as the process for determining and allocated zones resulted in some zones being combined.

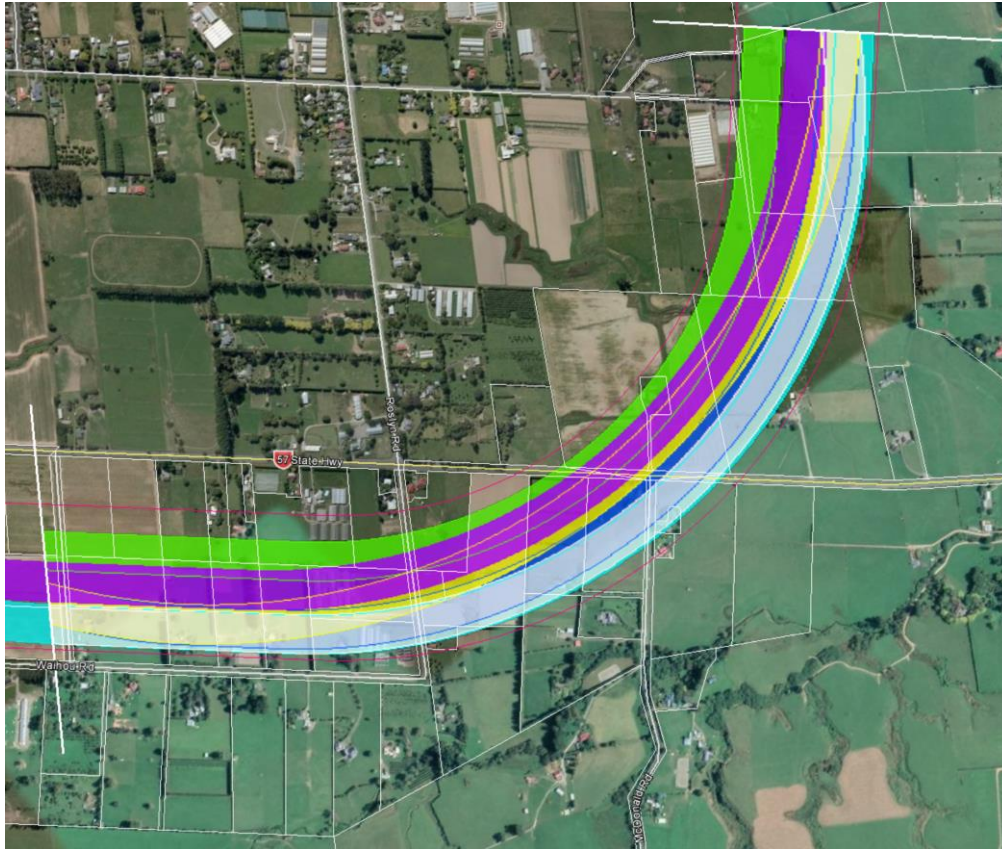


Figure 18 - Alignment options considered for Zone K

After considering the constraints within Zone K and the Task 2 (Filter 2) questions, the workshop attendees made the following key comments / observations:

- The final form of the (new) highway / State Highway 57 connection was likely to be the primary driver for determining the emerging preferred alignment option for this zone (it was noted that both grade separation and at-grade options were being considered for this connection). The Design Team's geometrics lead confirmed it would be preferable for the approach to SH57 to be closer to the western (and then northern) side of the corridor through the curve as this would likely benefit the future form of the interchange or intersection here by providing a more balanced layout and greater separation between the major approaches of the highway and SH57, and
- Noting the above bullet point, workshop attendees favoured removing the green and purple alignment options from the zone as they were more likely to have adverse property impacts, and result in sub-optimal property parcels, when compared to the other alignment options. Consequently, workshop attendees favoured investigating the cyan, dark blue and yellow alignment options further.

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are set out in Figure 19.

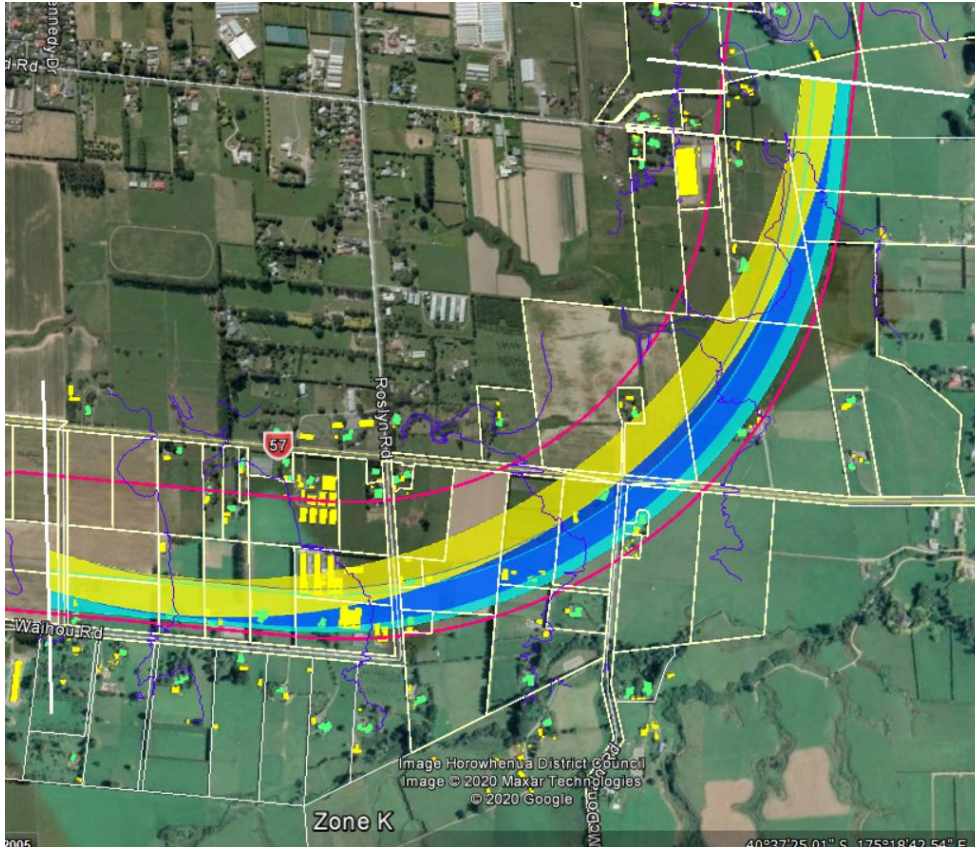


Figure 19 – Favoured alignment options for Zone K

5.3.10 Zone L

Zone L is located generally between Fairfield Road (north) and SH1.

The 80m alignment options considered by the workshop attendees for Zone L are presented below in Figure 20.

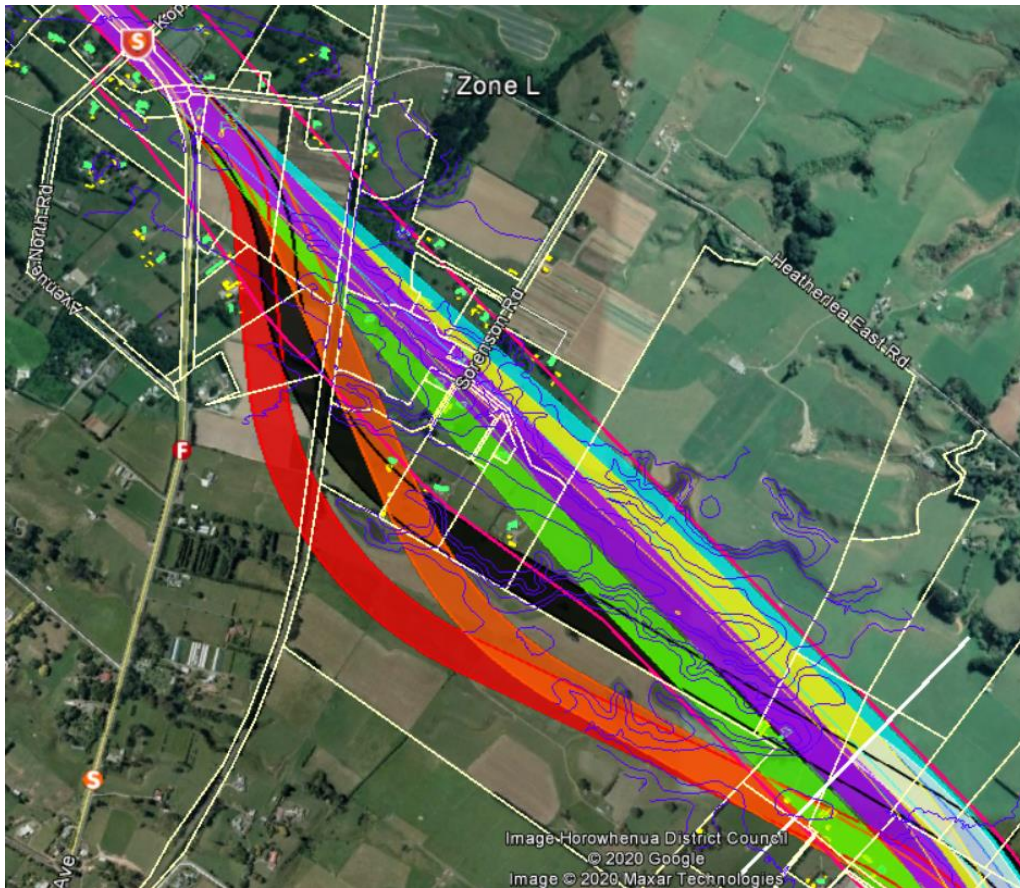


Figure 20 - Alignment options considered for Zone L

After considering the constraints within Zone L and the Task 2 (i.e. Filter 2) questions, the workshop attendees made the following key comments / observations:

- It was noted that the residents on Sorens Road had previously expressed a preference, during public engagement processes in 2018, for retaining local road connectivity in order to avoid community severance. Consequently, the 2018 Engagement Report recommended that alignment options outside of the zone near Sorens Road should be investigated. As such, workshop attendees considered new alignment options to the south of Zone L (i.e. the red, orange and black alignment options as set out in Figure 20)
- The red alignment option was not supported by workshop attendees due to it being located some distance beyond the 300m corridor, as well as requiring a combination of challenging vertical and horizontal curves in close proximity in order to avoid existing dwellings, rise over the rail line and then travel back to tie into the existing SH1 at-grade
- The dark blue, yellow and cyan options were not supported by workshop attendees as they considered that they would have more adverse impacts on Sorens Road's connectivity, and are more likely to create flood risks for the highway (due to it running longitudinally with local drainage channels) when compared to the remaining alignment options, and
- The remaining alignment options were considered viable and were to be kept for further investigation (i.e. the purple, green, orange and black alignment options).

Based on the above discussions, the alignment options favoured by workshop attendees to be advanced for further consideration in the MCA process are set out in Figure 21.

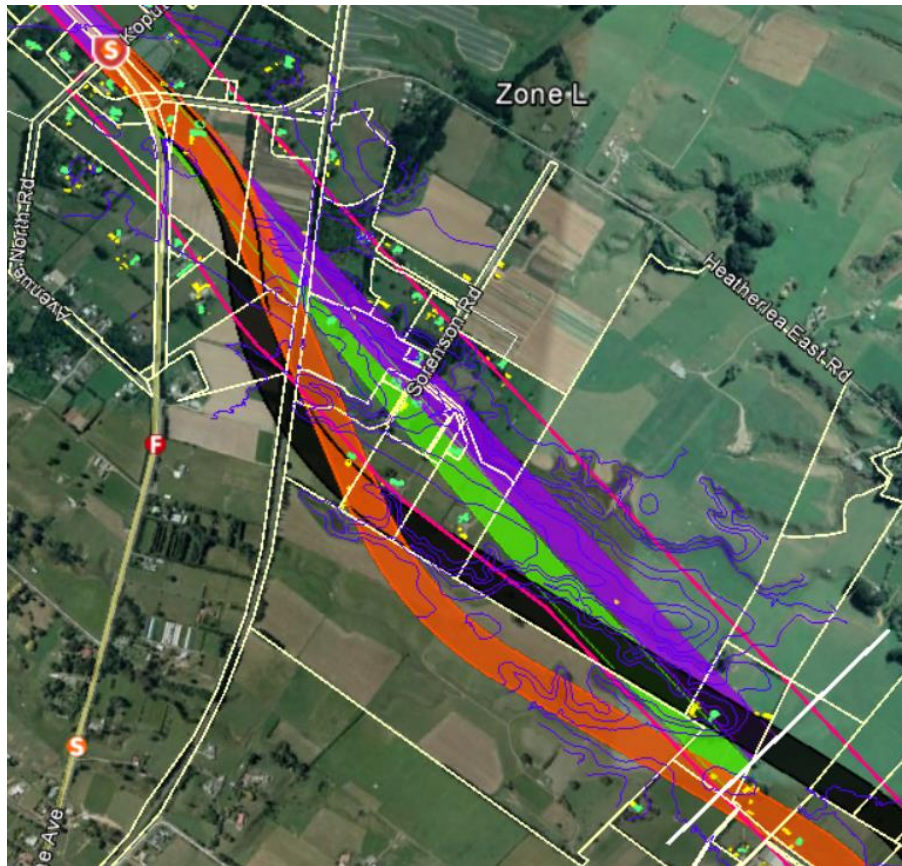
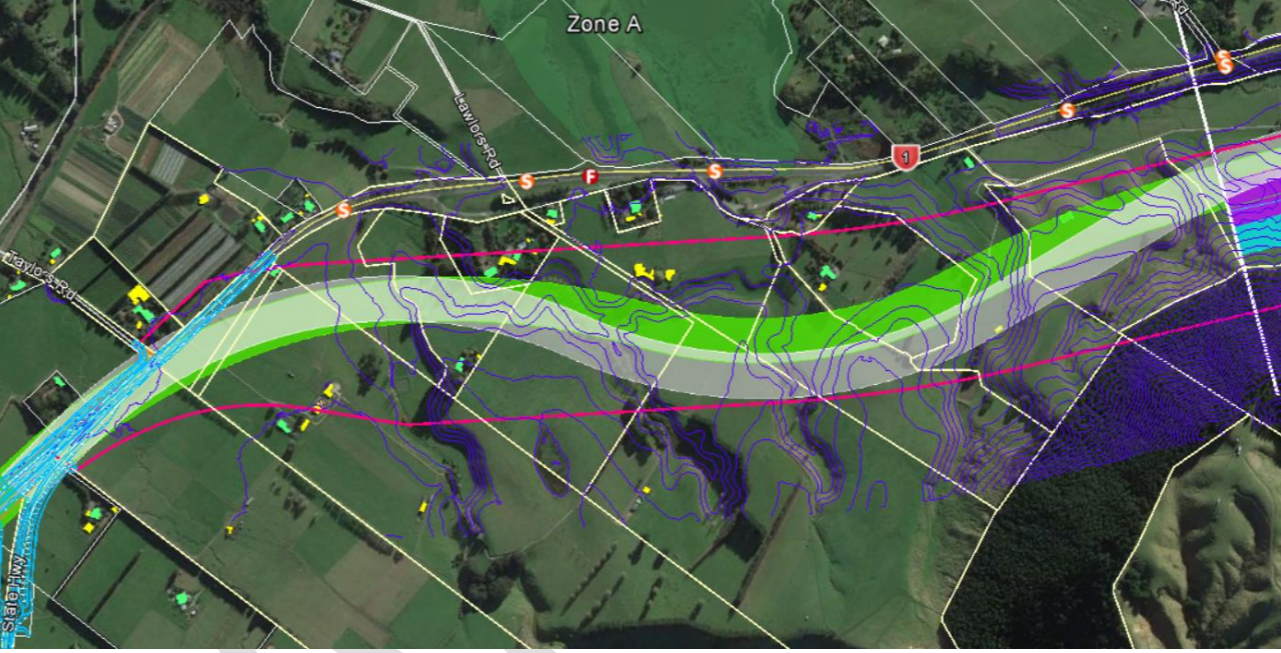
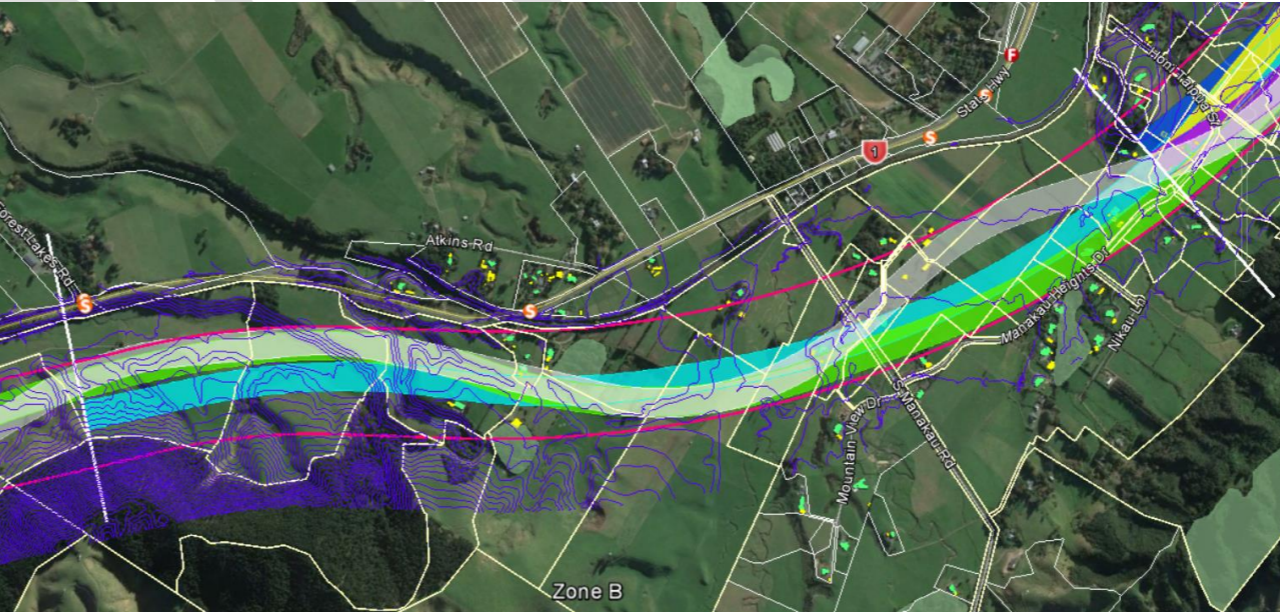


Figure 21 – Favoured alignment options for Zone L

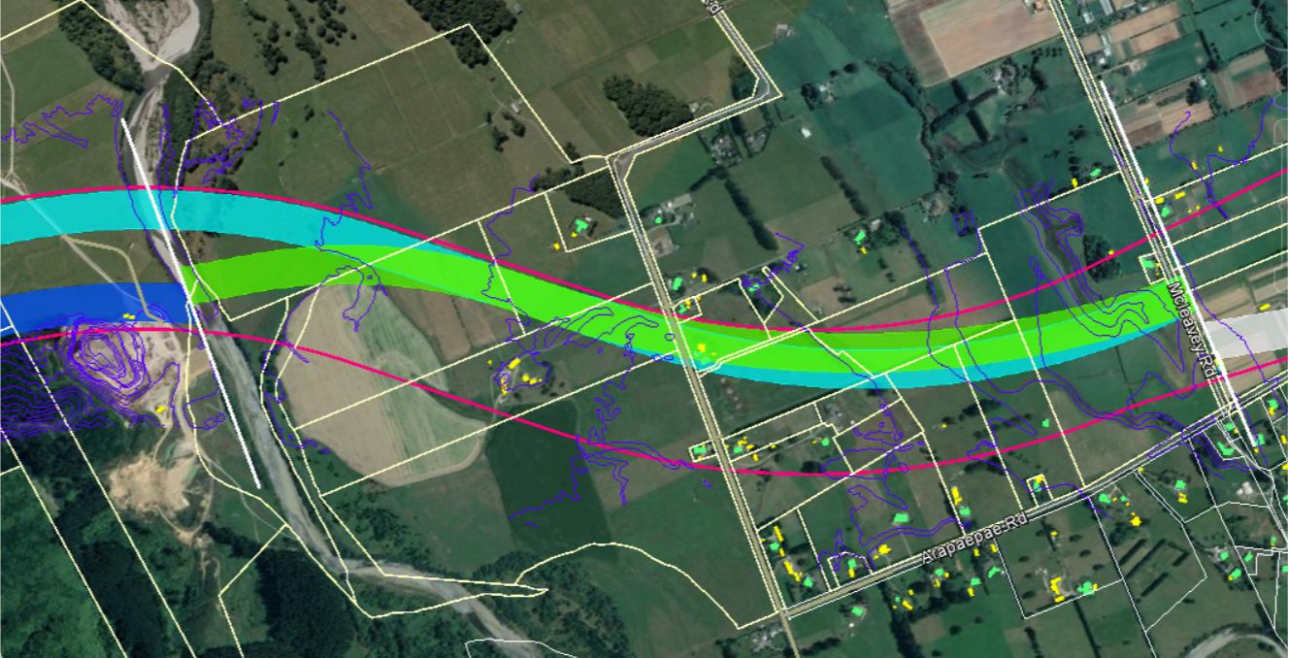
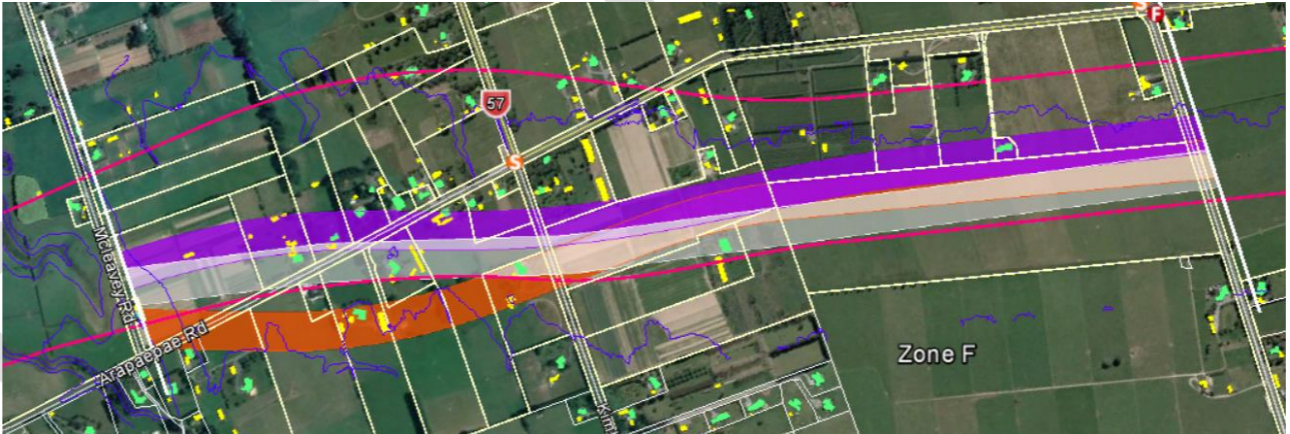
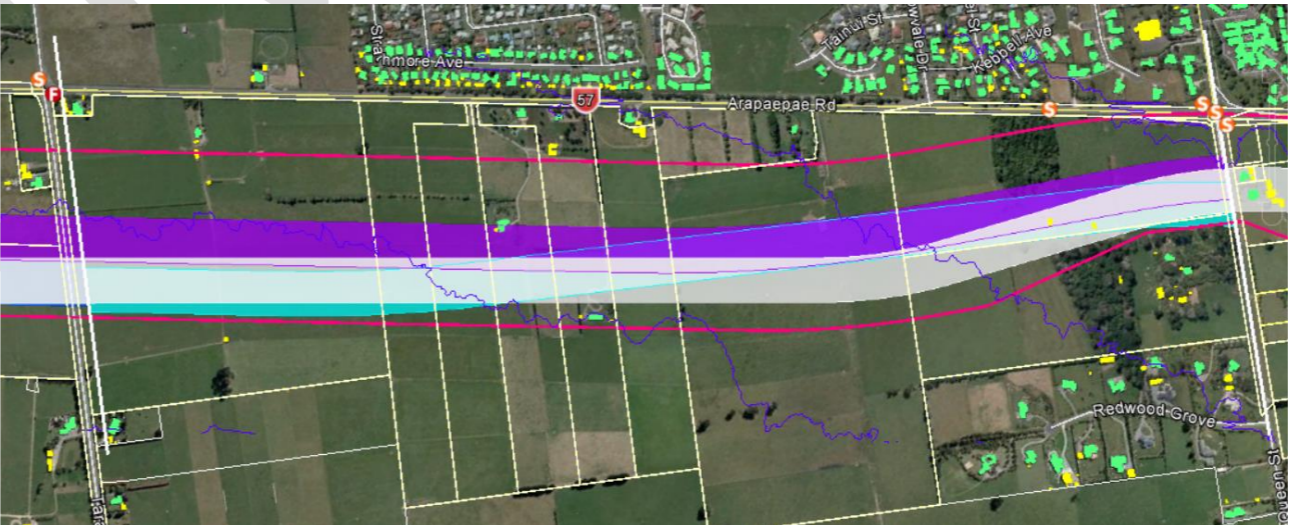
6. Summary

Table 1 summarises the alignment options favoured by workshop attendees for further consideration in the MCA process.

Table 1 – Summary of long list alignment options favoured for further consideration

Zone	Favoured Alignment Options	
<p>A</p> <ul style="list-style-type: none"> • Green and white alignments 		
<p>B</p> <ul style="list-style-type: none"> • Green, white, cyan alignments 		

<p>C</p>	<ul style="list-style-type: none"> • Green, purple, white alignments 	
<p>D</p>	<ul style="list-style-type: none"> • Dark blue and cyan alignments 	

<p>E</p>	<ul style="list-style-type: none"> • Green and cyan alignments 	
<p>F</p>	<ul style="list-style-type: none"> • Purple, dark blue, white alignments (<i>note dark blue is hidden on graphic</i>) 	
<p>G</p>	<ul style="list-style-type: none"> • Purple, white, cyan alignments 	

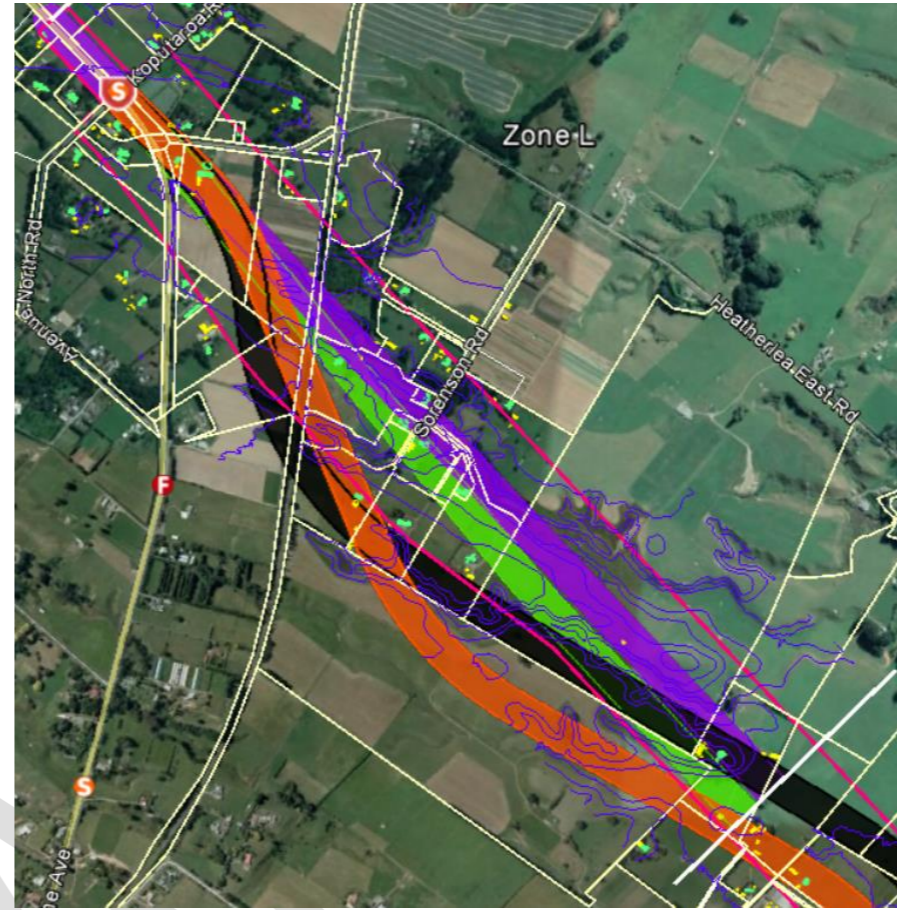
<p>H</p>	<ul style="list-style-type: none"> • Purple and cyan alignments 	
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<p>K⁴</p>	<ul style="list-style-type: none"> • Yellow, dark blue, cyan alignments 	
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^{4 4} It is noted that the zone descriptors (i.e. letters) are not always sequential due to the initial zone allocations requiring some zones to be combined

L

- Purple, green, orange and black alignments



7. Recommendations and next steps

7.1 Recommendations

The recommendations of this report are as follows:

- the alignment options favoured by workshop attendees at the Design Team workshop held on Monday 16 March 2020 be taken forward for further consideration in the MCA process, and
- the alignment options that were not supported by attendees at the workshop be removed from further consideration.

It is acknowledged that the recommendations from this report may need to be reviewed and/or amended as more information comes to hand during the MCA and consultation processes.

7.2 Next steps

If this report's recommendations are approved, the next step for the Design Team will be to take forward the alignment options favoured for further consideration as part of the next phase of the MCA assessment.

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