





**In Committee**

<b>Workshop Paper No.</b>	09/12/0300
<b>Submission Date</b>	8 December 2009
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<b>Recommended by</b>	Colin Crampton , Group Manager Highways and Network Operations 
<b>Subject</b>	<b>SH1 Kapiti Expressway: MacKay's Crossing to Peka Peka – Workshop Briefing</b>

**Purpose**

- 1 To brief the Board on the options for an expressway for State Highway One (SH1) through Kapiti in advance of a workshop to be held on 8 December 2009.
- 2 The workshop to be held on 8 December will provide a forum for officers to provide detailed feedback to the Board. Input to the workshop will include this Board Paper, the consultation report, and advice from urban design advisors. Board Members will hear a presentation on the options from NZTA officers, and will have the opportunity to ask questions and discuss the options with technical staff. The aim of the workshop is to enable Board Members to make an informed decision about the preferred option for an expressway through Kapiti.

**Recommendations**

- 3 There are no recommendations. This is material for the workshop

**Background**

**Kapiti Coast Planning**

- 4 The Kapiti district has one of the fastest growing populations in NZ, and in the past this has lead to urban sprawl problems for the district. These problems have been recognised in the Wellington Regional Strategy, which identified that development in Kapiti should be consolidated in existing urban areas as well as in two new growth areas (i.e. central Paraparaumu and Waikanae North).

- 5 KCDC has for some time been working to remedy the district's urban sprawl problems. In 2006, it adopted an Urban Management Strategy after extensive consultation with the community. This strategy seeks to consolidate future development of the district within existing urban areas (including Otaki), the new Waikanae North area and the undeveloped parts of central Paraparaumu (i.e. between the existing Town Centre and the Airport). The Strategy identifies that any future intensive development of Peka Peka, Otaihanga and Te Horo areas would not be encouraged. The Strategy also focuses on improving "internal connectivity" between existing urban areas, with emphasis placed on the two-lane Western Link Road. The strategy recognises that the Western Link Road traverses areas high in social and environmental values.
- 6 A local commitment to the WLR has influenced development of several longer term strategic planning frameworks. This includes the Paraparaumu Town Centre Local Outcomes document (2006) which is a non statutory document that sets out a long term vision for the community. The document includes a proposal for Rimu St to be recognised as the main street and a commitment to explore the feasibility of building a new town square on the eastern side of Rimu St. While the Western and Sandhills expressway options could adversely impact the town square concept, it is noted by KCDC in their submission that the eastern option could assist in reorienting the Paraparaumu town centre towards Rimu Road away from SH1.
- 7 Since the adoption of the Strategy, a number of major council and privately initiated plan changes have been approved. All of these plan changes have been consistent with the Strategy. Notable private plan changes include the rezoning of the Paraparaumu Airport to allow intensive commercial and industrial development to proceed in central Paraparaumu and the rezoning of 640ha of rural land to the north of Waikanae to allow mostly intensive residential development to occur. In both instances, how quickly these areas develop is largely dependent upon when the two-lane WLR becomes operational as there are a number of rules within the plan changes which require the WLR to have reached certain stages before further development can take place. KCDC's own plan changes include introducing a "Waikanae North urban edge", which limits the expansion of urban development north of Waikanae, and a more recent plan change that reinforces the Strategy's policy of consolidating retail and commercial activities within the district's main town centres. This latter plan change has however been appealed to the Environment Court by developers.

#### *Background on the Sandhills / WLR Route*

- 8 There have been various proposals for a roading link through the Kapiti Coast on what is now known as the Western Link Road route. The Government initially planned to construct a Wellington-Foxton Motorway. The Kapiti Coast section of the motorway became known as the "Sandhills Motorway." Due to funding constraints the motorway was never constructed. Various studies between the 1950s and 1990s confirmed the need to protect the route.
- 9 A key milestone in the history of the route was the 1994 *Kapiti Coast Roding Network Study* commissioned by KCDC. By this time KCDC had developed its draft District Plan. It was found that the growth assumptions in previous studies were outdated, in that the new District Plan included significantly more urban development in Paraparaumu and Waikanae.

- 10 In 1995 the *Kapiti Coast Roding Network Study* concluded that the Sandhills route was more appropriately developed as a local arterial as it bisected land planned for urban development. Transit New Zealand agreed to the recommendation and, noting that an Expressway through the area was not then under consideration, transferred responsibility for the route to KCDC.
- 11 In 1996 KCDC lodged the Notice of Requirement (NoR) for a local arterial on the Sandhills route. Following a number of appeals, the designation was confirmed in 2006. KCDC have since obtained the Resource Consents and NZHPT approval required for the construction of Stage 1 of the Western Link Road (Te Moana to Raumatī Road).
- 12 Amendments to the existing WLR designation and/or new designations would be required for each option as follows:

Sandhills Option	Western Option	Eastern Option
<ul style="list-style-type: none"> <li>• New designation required for entire length of proposed expressway</li> </ul>	<ul style="list-style-type: none"> <li>• Amendment to WLR designation required if decision made to shift the local road connection to SH1 from Poplar Ave to 200 Main Road South</li> <li>• New designation required for new sections of SH1 expressway from Kapiti Rd to Peka Peka</li> <li>• Alterations to the existing SH 1 designation will also be required if 4 laning extends beyond designated corridor</li> </ul>	<ul style="list-style-type: none"> <li>• Amendment to WLR designation required if decision made to shift the local road connection to SH1 from Poplar Ave to 200 Main Road South</li> <li>• New designation required for new sections of SH1 expressway between Kapiti Rd and Te Moana Rd</li> <li>• Alterations to the existing SH 1 designation will also be required if 4 laning extends beyond designated corridor</li> </ul>

- 13 Therefore, the existing WLR designation could only be used to enable development of the new local road sections of the Eastern and Western options. The existing designation would need to be altered to allow the development of the Sandhills option. As such, the NoR alteration process would be the same as any new NoR application.
- 14 Interchange locations are similar in all of the three options. The exact location and number of interchanges is still to be determined in a future Scheme Assessment. However initial work indicates that the location of interchanges makes little difference to the selection of options, although the location of the interchanges does have a material impact on traffic benefits of an option. For example, the closer the interchange north of Waikanae is to Waikanae town centre the better as it brings the interchange closer to the settlement and consequently reduces journey times. Bringing the Peka Peka interchange closer to Waikanae also presents an opportunity to better define the northern limit of Waikanae and discourage urban sprawl towards Peka Peka which would be consistent with KCDC's Urban Management Strategy. Additionally, developers have made land available for a potential interchange in their structure plan design.

15 In 2007, Land Transport New Zealand agreed to a 90% FAR for “Stage 1” of the Western Link Road (Te Moana Road to Raumati Road). Subject to NZTA funding, construction on Stage 1 was intended commence in 2010.

## **RoNS Context**

- 16 The portfolio of Roads of National Significance (RoNS) was announced to reduce the cost of transport, to promote economic growth and productivity gains. There are seven RoNS, one of which is from Wellington Airport to north of Levin. It is proposed that the Wellington RoNS will be a high standard expressway and be the main inter-regional route.
- 17 The focus of this report is the Kapiti Coast section from MacKay's Crossing to Peka Peka. This section is characterised by slow travel conditions due to insufficient capacity, many at-grade intersections and significant side access.
- 18 The RoNS are promoted as an integrated solution within the wider network. This reflects the function of the highway as both an inter-regional route and a regional connector. On the Kapiti Coast this is true with the Kapiti Coast a significant local economy in its own right.

## **Consultation**

- 19 On 24 August 2009, NZTA began consultation with the Kapiti Coast community on two options for a four lane expressway between MacKay's Crossing and Peka Peka, as part of the Government's Roads of National Significance (RoNS) initiative. Included in this consultation would be a revisit of the Transit Board approved alignment for an expressway between Peka Peka and north of Otaki (including an Otaki bypass). The expressway between Peka Peka and north of Otaki is subject to a separate briefing paper.
- 20 The consultation was originally scheduled to close on 2 October 2009. After a significant amount of public interest in an option that used the Western Link Road (WLR) designation as the expressway alignment, this option was added to the consultation and the consultation period extended to 30 October 2009.
- 21 At the November Board meeting, the Board received the consultation summary reports. Further analysis of the consultation feedback has been submitted to the Board workshop for consideration.

## **Options**

- 22 The Mackays Crossing to Peka Peka route is proposed to be a four lane, median divided expressway with limited access and grade separated interchanges. The road will be designed to an alignment of 110kph which accommodates a 100kph operational speed. Depending on the option chosen, local roads would also be required to enable the local road network to function effectively when through connectivity on the State Highway is subject to limited access points.
- 23 The options were developed as part of a strategic study and are only concept plans at this stage. Attachment 1 places these concepts into a normal project development lifecycle. Detailed development and assessment of the options, including expert evidence to support the designation and consenting of any of the options, will be complete at the end of the Investigation Phase. This is expected to take some 18 to 24 months.

24 The strategic study developed four concept options (Attachment 2) for an expressway route between Mackays Crossing and Peka Peka:

- *Upgrade the Existing SH Route ("Existing Route")* – involves the provision of a four lane expressway broadly on the existing alignment, including the provision of two new bridge structures where the expressway crosses the rail at Paraparaumu and re-crosses the rail south of Waikanae. (Note: Not included in Attachment 2)
- *Expressway Follows Western Link Road (WLR) Route ("Sandhills Option")* – utilises the current WLR route which passes between the towns of Raumati, Paraparaumu, Waikanae and their associated beach settlements. The section of this route between Te Moana and Raumati Road is currently consented for a two-lane local road known as the WLR.
- *Expressway Avoids Future Town Centres ("Western Option")* – provides a four lane expressway on the SH1 alignment as far north as Otaihanga, where it would swing west to join the WLR alignment which would be used between Waikanae and Waikanae Beach.
- *Expressway Follows Rail Corridor ("Eastern Option")* – involves a four-lane expressway running against the west side of the rail line between Mackays Crossing and Peka Peka. The route would utilise the existing SH1 corridor as far as Paraparaumu before following rail as far as Waikanae, where it then utilises the existing SH1 corridor again.

25 The Board initially decided to present the Eastern and Western options to the Kapiti Coast community for consultation.

26 The Existing Route option crosses the rail line through Kapiti in Paraparaumu and again immediately south of the Waikanae River. Both of the existing rail bridge structures would need to be replaced to accommodate a four lane expressway since they are too narrow. Additionally, the existing alignment has substandard curves at the Paraparaumu Rail Overbridge and the Otaihanga Bends – easing the curves would require substantial property take. Maintaining access to existing properties between Paraparaumu and Otaihanga would also require additional service roads creating a significant infrastructure footprint with numerous land small land parcels dispersed in between.

27 The upgrade of the existing alignment would continue to cross the rail line twice. This is a historic anomaly of the area which can be eliminated in any of the alternative options presented. In addition, traffic management would be challenging during the construction period. In summary, the Existing Route option is not believed to be a logical option to progress further and was therefore not included in the consultation.

28 The Sandhills option was originally set aside by the Board due to the severance it would create, its adverse impact on growth plans for the district and the fact that it is inconsistent with KCDC's recent (15 years) urban planning. Following the start of consultation, substantial public feedback encouraged NZTA to release this option for consultation.

### **Option Evaluation Criteria**

- 29 Section 20 of the Land Transport Management Act (LTMA) places specific obligations on NZTA in respect of decisions that impact the National Land Transport Fund. The NZTA is required to take into account the five objectives of the LTMA:

- Assists economic development
- Assists safety and personal security
- Improves access and mobility
- Protects and promotes public health
- Ensures environmental sustainability

30 The Agency must also take into account:

- the relevant GPS; and
- any national land transport strategy; and
- any relevant regional land transport strategy; and
- any national energy efficiency and conservation strategy; and
- any relevant national policy statement and any relevant regional policy statements that are for the time being in force under the Resource Management Act 1991; and
- any relevant regional public transport plan.

31 The methodology used to evaluate the three options reflects the above requirements. Five LTMA objectives will be assessed. Additionally, a reflection of objectives of the NZ Transport Agency's Investment and Revenue Strategy, The Government Policy Statement, the National Energy Efficiency and Conservation Strategy and the Wellington Land Transport Strategy. Impacts on public transport have been included in the assessment.

32 The option evaluation has been based on the conceptual alignments set out in the consultation brochure. Where constraints are known or have been flagged following consultation that would affect the evaluation, these have been incorporated into the assessment.

33 Public and stakeholder feedback has informed the assessment of each of the routes against the project objectives. The aim of the evaluation exercise is to capture the issues of significance to NZTA, KCDC as the consenting authority, other key stakeholders, and the public in general.

34 The evaluation framework has been designed to be objective, to minimise bias and also to be comprehensive in scope. It was important to capture the issues of significance to all stakeholders, without over-emphasising any one issue. The evaluation framework also aims to capture those intangible issues which cannot be easily quantified – such as impact on urban amenity or the impact on coastal processes.

35 The evaluation framework builds on previous evaluations used for Transmission Gully and Waterview and adapts those evaluation processes to reflect policy changes and the specific circumstances of Kapiti Coast. The announcement of Roads of National Significance (RONS) in March 2009 is a significant change to National Policy which has warranted the addition of a new evaluation criterion. Criteria relating to consenting risk and property purchase have also been included.

### **Option Evaluation**

36 A summary of the option evaluation process is set out below. The option evaluation spreadsheet is at attachment 3.



### *Common aspects of the three routes*

- 37 All three options achieve the National aspects of the RoNS strategy. The extent to which they achieve the Regional objectives varies according to the option.
- 38 The security and flexibility of the transport system would be enhanced by all of the options, specifically through the provision of one or more additional crossings of the Waikanae River.
- 39 All of the options significantly improve through and local traffic mobility. All options present an opportunity for improved walking and cycling routes.
- 40 All routes are known to utilise areas of unstable ground, so are considered to be equally risky in this respect.
- 41 No air and noise impact assessments have been completed. Normally this work would form part of a Scheme Assessment Report and would be completed prior to the application for a Notice of Requirement and resource consents.
- 42 Detailed analysis of safety and personal security has not been carried out and no comment is possible of the relative merits of the routes with respect to personal security. A limited safety analysis has been completed and indicates that there will be significant safety improvements on SH1 in all options due to the elimination of the risk of head-on and right turn accidents.

### *The Sandhills Motorway Option*

- 43 The Sandhills option is estimated to cost \$380M to \$500M. Only one new bridge structure over the Waikanae River is required as the existing State Highway bridge would be retained as a local road route. In addition, no new local roads are required so operational costs are low. This does mean, however, that the incremental net present value (NPV) of the Sandhills option is lower than for the Western or Eastern options.
- 44 The Sandhills Motorway option performs best in terms of minimising population displacement since the number of properties required is small and much of the property acquisition work has already been undertaken. A summary of the properties required is provided in the table below.

<b>Property Type</b>	<b>Sandhills</b>
<b>Total Land Parcels</b>	114
<b>Approximate Houses Required</b>	0
<b>Crown / Council Owned</b>	60
<b>Private Property</b>	54

- 45 Attachment 4 provides indicative delivery programmes for all three options. It is estimated that the Sandhills Motorway option can be completed in the same timescale as the other two options (end 2018) with a construction start in early 2014.
- 46 The Sandhills option would adversely impact on the long term plan for the development of Paraparaumu town centre as set out in KCDC's Urban Management Strategy. Additionally, this option would bisect the planned Waikanae North high quality residential development area.
- 47 This option would impact on community services and facilities due to its proximity to two schools in Raumati and increased severance between coastal communities and services in town centres. Whilst all options would impact on recreational areas, the Sandhills option may have a more severe impact due to its effect on the Nga Manu nature reserve, wetlands and potentially QE Park.
- 48 The Western and Sandhills options pass the Takamore Trust wahi tapu land and urupa and would necessitate the acquisition of additional wahi tapu land. In order to avoid further encroachment into wahi tapu land, it would be possible to construct an 80kph horizontal and 90kph vertical design speed road, equating to a speed limit of 70kph within the WLR designation. In general, the coastal plain area is known to have a rich history of Maori settlement and there is a greater risk of encountering a hitherto unknown Maori archaeological site on this alignment. All statutory iwi groups which were consulted with objected to the SandHills alignment on wahi tapu grounds.
- 49 Whilst all the alignments would affect the dunes landscape through Paraparaumu, and both the Western and Sandhills routes would affect wetlands areas to the north-west of Waikanae. It is expected that the Sandhills route would have a more significant impact on the dunes environment as the expressway is wider and the higher design speed limits the extent to which dunes can be avoided.
- 50 The Sandhills option provides no associated local infrastructure though the existing SH1 would become the local arterial. Whilst all options mean that pedestrians and cyclists are not readily able to use or cross the expressway, the Sandhills option places this potential impediment centrally within the district instead of down one side adjacent to similar linear features (e.g. the rail line).

#### *The Western Option*

- 51 The Western option is estimated to cost \$410M to \$680M with only one new bridge over the Waikanae River being required. A new section of local road would be required along the WLR corridor between Poplar Avenue / 200 Main Road and Kapiti Road which leads to higher operational costs than the Sandhills option but also a higher incremental NPV due to the benefits to local traffic.

- 52 The Western option requires substantial (though slightly less than the Eastern Option) property acquisition, although the number of houses required is considerably less than the land parcels affected. A summary of the properties required is provided in the table below.

<b>Property Type</b>	<b>Western</b>
<b>Total Land Parcels</b>	341
<b>Approximate Houses Required</b>	104
<b>Crown / Council Owned</b>	87
<b>Private Property</b>	254

- 53 It is estimated that the Western Option can be completed in the same timescale as the other two options (end 2018) with a construction start on the Expressway in early 2014. Construction on the local road between Poplar Ave and Kapiti Road could start in mid-2012.
- 54 The Western option would be consistent with current KCDC planning in that it would allow good integration with the planned town centre development. It would however bisect the planned Waikanae North high quality residential development area.
- 55 As with the Sandhills Motorway option, the Western option passes the Takamore Trust wahi tapu land and urupa and would necessitate the acquisition of additional wahi tapu land. As with the Sandhills Motorway option, there is potential to reduce this impact by reducing the design speed of the expressway.
- 56 The Western option lies somewhere between the Sandhills and Eastern options in terms of social environment, since the southern part of the route confines severance to the rail corridor. Both the Western and Sandhills options offer the opportunity for improved connections across SH1 through Waikanae due to reduced traffic through the town when a new expressway is built.

#### *The Eastern Option*

- 57 The Eastern option is estimated to cost \$610M to 930M. It requires considerable property purchase as well as new service roads in some locations. It would also require the construction of two new bridges over the Waikanae River: a local bridge on the WLR designation and a new expressway bridge. Two new sections of local road would also be required, between Poplar Avenue / 200 Main Road and Kapiti Road and between Otaihanga Road and Te Moana Road. The local roading improvements means that this option would have the highest operational cost but also the highest incremental NPV due to the benefits to local traffic.

- 58 The Eastern option requires substantial property acquisition, although the number of houses required is considerably less than the land parcels affected. A summary of the properties required is provided in the table below.

<b>Property Type</b>	<b>Eastern</b>
<b>Total Land Parcels</b>	388
<b>Approximate Houses Required</b>	140
<b>Crown / Council Owned</b>	54
<b>Private Property</b>	333

- 59 It is estimated that the Eastern Option can be completed in the same timescale as the other two options (end 2018) with a construction start on the Expressway in early 2014. Construction on the local road between Te Moana and Otaihanga could start in mid 2010.
- 60 The Eastern Option is consistent with KCDC's Urban Management Strategy and is relatively consistent with its growth plans in Paraparaumu and Waikanae (including town centres). The provision of new local roads will provide a high level of access to new, planned development areas in Paraparaumu and Waikanae.
- 61 Under the Eastern Option, benefits to the transport network can be delivered first by providing the consented second crossing of the Waikanae River. This will relieve congestion on SH1 while the expressway proposal is being developed.
- 62 The Eastern option provides the best route security due to the provision of two new road bridges.
- 63 The Eastern option performs better in terms of community cohesion since severance is confined to the rail corridor and new local infrastructure is provided, however, the impact on Waikanae Town Centre will require modifications to the access for town centre retail which currently fronts onto SH1. The shop frontage would be retained with a service road but there would be no access to the shops off SH1 or parking provision at the front of the shops. The access arrangements to the Coastlands shopping centre may also need to be altered since direct access off SH1 is not currently included in this concept (left-in, left-out access would be investigated under this option).
- 64 By following the existing rail line, the Eastern Option confines severance and impacts on urban form to that corridor.

- 65 The Eastern option is superior to the Western and Sandhills options in terms of physical impacts on landscapes and sites of cultural significance because its impacts are limited to an already modified rail corridor.
- 66 No Maori land is required for the Eastern option. The local link across the Waikanae River passes through wahi tapu land and adjacent to an urupa. KCDC has already secured agreement with Takemore Trust to construct the local road.

*Alignment with LTMA (and other) objectives*

- 67 All three options score high for strategic fit as they make a significant contribution to the RoNS by providing an expressway for SH1. The Sandhills and Western options score low for effectiveness as they are not consistent with accepted local strategies and land use plans. The Eastern option scores high for effectiveness as it improves integration with land use and other transport modes.
- 68 The Western and Sandhills options both directly conflict with KCDC's planning aspirations for the district through the utilisation of the WLR corridor which has been earmarked for a local road and around which planning for the district has been based. The Eastern option does not directly conflict with KCDC's planning aspirations.
- 69 All options have BCRs predicted to be below 1. The Sandhills option marginally has the best BCR at 0.6 – 1.0 but the differences between the options are not significant. The BCR calculation is however a crude technique which does not fully capture all benefits.
- 70 No consideration of fuel prices has been undertaken during the strategy study.

**Funding**

- 71 In November 2009 the Board approved funding of \$386.2m for the investigation, design and property purchase phases of the Wellington Northern Corridor RONS package. This included \$92m for the MacKays Crossing to Peka Peka element and \$34.4m for the Peka Peka to Otaki element.
- 72 These allocations only provide for state highway expenditure – no provision was made for any local roads that are identified as critical to the operation of the RoNS.
- 73 It is noted that both the Western and Eastern options proposed between MacKays and Peka Peka include upgraded and or new local roads as part of the proposed solution, with significant lengths of local road proposed. In these two options, the proposed sections of new local road closely follow the WLR for which NZTA had previously committed to fund 90% of stage 1 (i.e. the section between Kapiti Rd and Te Moana Rd).
- 74 Funding for any local roads considered necessary to support the operation of the new expressway (regardless of which option is selected) is likely to be a key issue for Kapiti Coast District Council. This reflects the significance of legacy funding decisions (i.e. the previous commitment to a 90% FAR) and affordability issues that are likely to be raised by KCDC. For these reasons it is recommended the Board consider funding options for local roads and associated cost implications as part of the process of identifying a preferred option for the Kapiti expressway.

## Summary of Key Points

- 75 All three options fulfil the high-level RoNS objectives from an inter-regional perspective and they can be completed in approximately the same time period.
- 76 The differentiating factors which set the options apart are:
- How well they integrate into the local planning framework
  - The Regional transport benefits they deliver
  - How well they minimise adverse environmental and social impacts
  - When they start to deliver transport benefits (both Regionally and Nationally)
  - Risk of delivery fatal flaws
  - Cost
- 77 Subject to any other areas that the Board wish to hear detail on, it is expected that the workshop will focus on the above issues.

## In-Committee Status

- 78 Board Paper 09/12/0310 is in Committee to allow the Board free and frank discussion of the issues. We recommend Board paper 09/12/0310 remains in committee until such time as the public has been informed about the decision regarding SH1 Kapiti Coast Expressway Alignment.

## Attachments

- 79 There are 8 attachments to this paper <sup>1</sup>

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<sup>1</sup> Attachment 1: Project Development (Flow Chart)  
Attachment 2a: Expressway Options – Western (Concept Map)  
Attachment 2b: Expressway Options – Eastern (Concept Map)  
Attachment 2c: Expressway Options – Sandhills (Concept Map)  
Attachment 3a: Option Evaluation (Summary)  
Attachment 3b: Option Evaluation (Chart)  
Attachment 4: Indicative Summary Programmes  
Attachment 5: Urban Design Panel Report