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ŌTAKI TO LEVIN ROAD OF NATIONAL SIGNIFICANCE

**IMPLICATIONS OF ROUTE OPTIONS NC4 & NC5
ON LEVIN EASTERN GROWTH AREA**

LANDSCAPE + URBAN DESIGN

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1 INTRODUCTION

1.1 Two route options have been shortlisted for the Ōtaki to North of Levin 'Road of National Significance' (RoNS) expressway in the area east of Levin:

- NC4 – which is adjacent to the existing edge of Levin parallel with Arapaepae Road
- NC5 – which swings in an arc approximately 1km east of Levin.

1.2 Arapaepae Road currently forms the eastern edge of Levin. The area east of Arapaepae Road comprises rural and rural-residential properties, but has been earmarked for further residential development. The purpose of this memo is to consider the implications of the routes on such development. The need for the investigation arose from a multi-criteria analysis (MCA) of a range of possible route options between Taylors Road (north of Otaki) and State Highway 1 north of Levin. During the MCA process the impact on the Gladstone Greenbelt Structure Plan area (which provides for semi-rural or large-lot residential development) was raised, and attention also drawn to recent investigations into potential urban development east of Levin.

1.3 The area in question is currently zoned 'Greenbelt Residential Deferred' for which the development standards include a minimum serviced lot size of 2000m². Lifting the 'deferred' status depends on a Council resolution that reticulated services are adequate to service the lots – in the meantime the provisions of the rural zone remain in place.

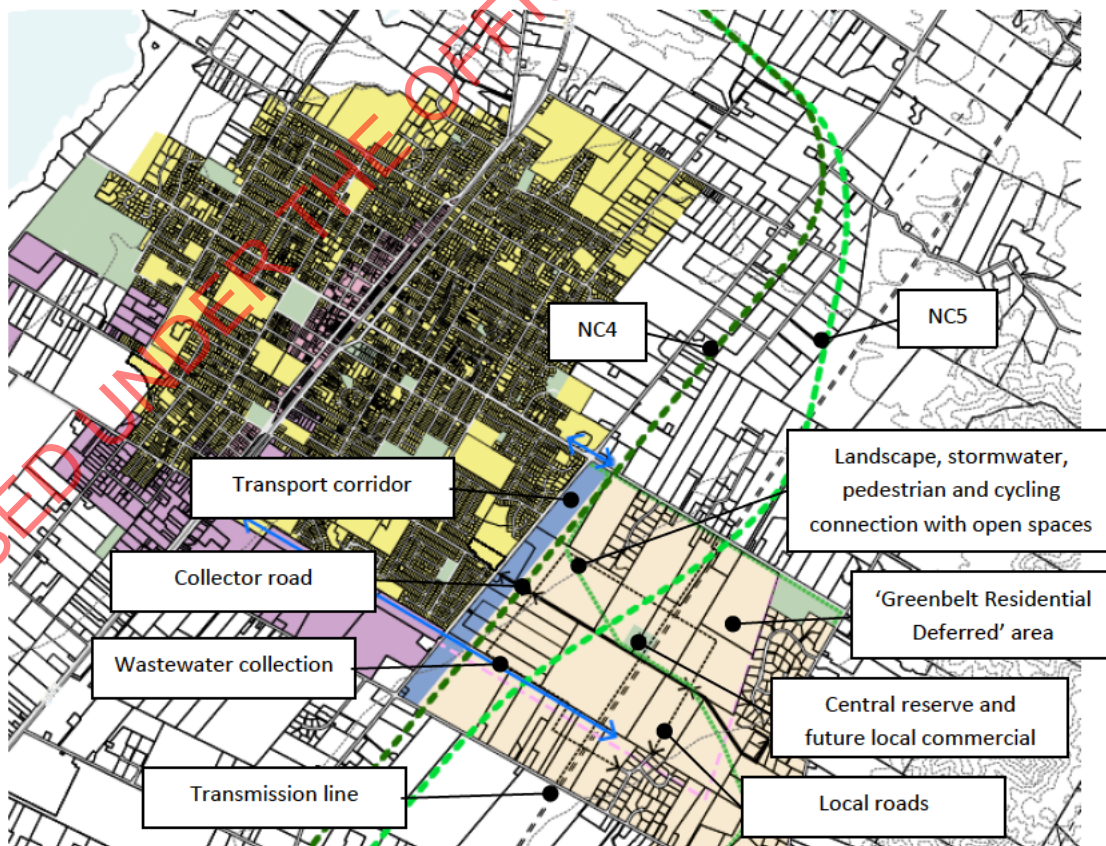


Figure 1: Map depicting NC4 and NC5 overlaid on Structure Plan 13 'Gladstone Greenbelt Levin – Queen Street/Tararua Road'

- 1.4 The structure plan for the area depicted above in Figure 1 (Structure Plan 13 in Schedule 8 of the operative Horowhenua District Plan) provides for a transport corridor adjacent to and on the eastern side of Arapaepae Road. It also depicts a basic network of roads, a greenway through the area, and a central reserve and local commercial node. It recognises the existing transmission line corridor, depicting a proposed local road aligned adjacent to the transmission lines. Otherwise, the 2000m² minimum lot size would provide for a semi-rural or large-lot residential type of development.
- 1.5 In the meantime, Council commissioned further recent investigations to accommodate projected growth in Levin over the next 20 years. These investigations have identified areas for potential urban residential development (on a pattern similar to Levin's current 500m² average lot size standards) including an area roughly 600 – 1000m wide east of Arapaepae Road between Queen Street East in the north and Tararua Road in the south. An area approximately 1000m wide is also identified south of Tararua Road for subsequent extension of such potential urban development.

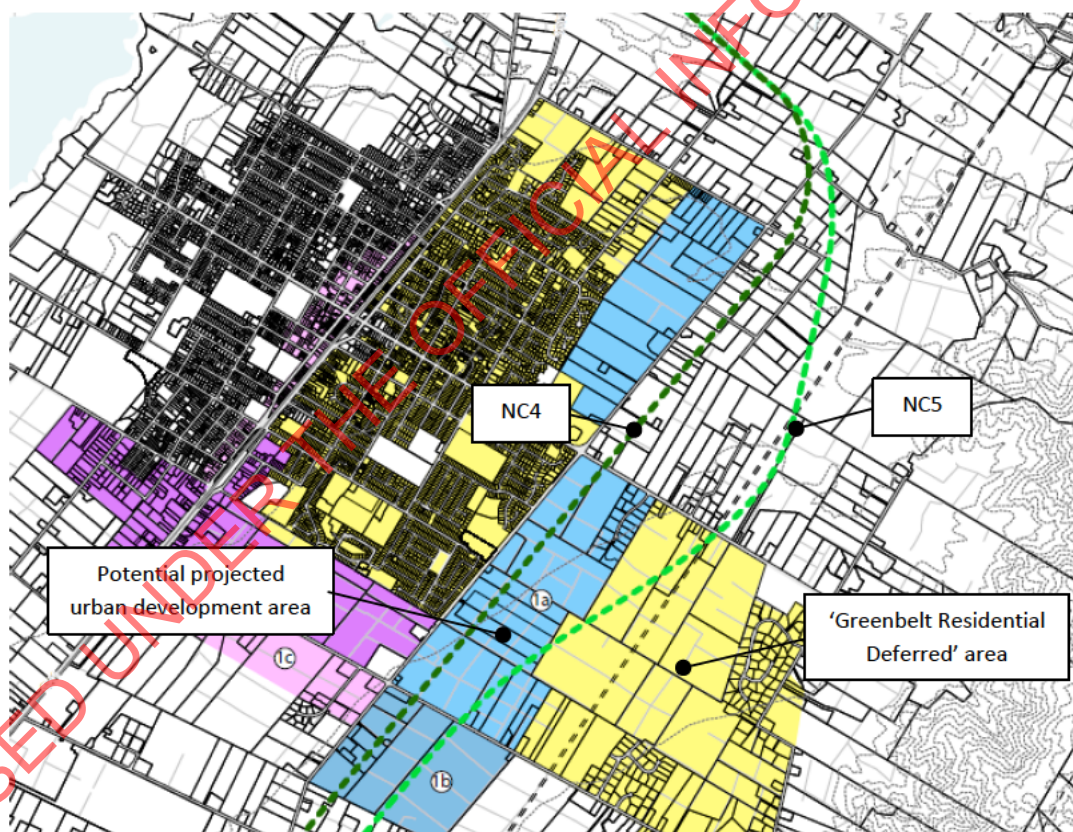


Figure 2: Map depicting NC4 and NC5 overlaid on 'Greenbelt Residential Deferred' area and potential projected urban development areas.

- 1.6 The RoNS standards require high-speed, dual-carriageway expressways with limited access. These standards lead to the following characteristics that are relevant when considering future development:
- The expressways have limited crossing points – and therefore potential impacts on connectivity;
 - The expressway will potentially form a barrier between different landuses – which can be an advantage if one is seeking a defensible boundary between, for instance, urban and rural areas, but can also be a disadvantage if seeking to integrate areas with the same landuse; and
 - Areas immediately adjacent to the expressway will be exposed to adverse noise and visual amenity effects.
- 1.7 The following memo is a commentary on the implications of the NC4 and NC5 route options for each of the development scenarios discussed above in light of these characteristics.

2 IMPLICATIONS OF ROUTE OPTIONS FOR THE EXISTING STRUCTURE PLAN

NC4

- 2.1 NC4 would be in keeping with the existing structure plan:
- The expressway alignment follows the transportation corridor identified on the structure plan, except that it is transposed approximately 100m to the east to avoid the stand of bush adjacent to Arapaepae Road and some 300m south of Queen Street;
 - The alignment is square to the cadastral and road pattern (both the existing and proposed pattern), making for efficient subdivision;
 - The expressway would form a clear and defensible boundary between Levin's urban area and the type of semi-rural development envisaged by the structure plan;
 - There would be no impacts on features of the structure plan, such as the local road network, the green network ('landscape, stormwater, pedestrian and cycling connection with open spaces'), central reserve, and 'future local commercial'; and
 - The 100m wide strip of land that would be left between Arapaepae Road and the expressway could be realistically developed for 2000m² lots accessed from a re-purposed Arapaepae Road.

NC5

- 2.2 NC5 would disrupt the pattern of development provided for by the structure plan for the following reasons:
- The expressway would bi-sect the structure plan area. It would divide what would otherwise be a coherent area, compromise some features of the structure plan (i.e.

the location of the central reserve and 'future local commercial'), and require reconfiguration of the proposed local road network and green network;

- The alignment is diagonal to the cadastral pattern, making for less efficient subdivision;
- The alignment would result in some land sandwiched between the expressway and transmission line corridor where they converge. It is likely, though, that the expressway and transmission line design would be integrated so that they are parallel with other where they come together, which would reduce the degree of impact on land development.

MCA Scoring

2.3 NC4 (as part of 'Route 2') received a more favourable ranking (for landscape and visual matters) in the MCA process for reasons that included:

- Its alignment adjacent to the eastern edge of Levin, reinforcing the existing boundary between urban Levin and the more rural or rural-residential character area; and
- Its square alignment with the cadastral and street pattern.¹

2.4 NC5, on the other hand, received a less favourable ranking (as part of 'Route 1') for reasons that included:

- Its bisecting of a rural and rural-residential area; and
- Its diagonal alignment to the cadastral and street pattern.²

3 IMPLICATIONS OF ROUTE OPTIONS FOR PROJECTED URBAN DEVELOPMENT

NC4

3.1 On the other hand, NC4 would be less preferable for the projected urban development being investigated east of Arapaepae Road for the following reasons:

- A new urban residential area in this location would be separated from Levin's existing urban area by the expressway: the urban development would be forced to leap-frog the expressway. Such effects would be compounded by the width of the existing Arapaepae Road corridor and the 100m offset between Arapaepae Road and the expressway;
- The two points of access across the expressway at Queen Street and Tararua Road would be less suitable for urban development than for a lower density semi-rural type of development envisaged by the existing structure plan. The expressway would also hinder a possible new connection from Arapaepae Road to Liverpool Street;

¹ Ōtaki to Levin Road of National Significance, MCA Combined Routes and Interchanges, Urban Design + Landscape + Visual, Isthmus, 16 November 2016, paragraph 4.18

² Ibid, paragraph 4.2

- The 100m offset of NC4 from Arapaepae Road is an inefficient dimension for urban development because it is too deep for single urban lots and too shallow for three rows of lots and a street. (It is noted though, that the actual alignment of the future highway could be fine-tuned to fit development patterns given that the route is nominally 150m wide at this point and the highway footprint may occupy in the order of 60m or thereabouts). The relatively narrow width would also restrict choices as to the future character of Arapaepae Road after it is divested as a State Highway (for instance, opportunities to develop it as a wide boulevard entrance to Levin); and
- The expressway would be exposed to urban residential lots on both sides – which may require such measures as set-backs (i.e. it would reduce efficient use of land made available for urbanisation) or noise walls (with potential visual amenity effects).

NC5

3.2 NC5 could result in a more favourable outcome for projected urban development east of Levin – potentially forming a logical boundary between urban development on one side of the expressway and semi-rural type of development on the other side. However, such an outcome would require the urban development area being adjusted to fit the expressway:

- At Tararua Road route NC5 is approximately 450m from Arapaepae Road and the projected area for urban development is approximately 1km wide; and
- At Queen Street East NC5 is approximately 1km from Arapaepae Road and the area projected for urban development is approximately 600m wide.

3.3 Such an adjustment would bias the urban development area towards Queen Street, which is Levin's central east-west axis.

3.4 Subject to such an adjustment, NC5 would have the following benefits:

- It would enable the new urban development area to be contiguous and integrated with Levin's existing urban area. Arapaepae Road could be effectively re-purposed as an urban collector road, connecting directly with a hierarchy of streets within the new urban area, and providing for effective distribution between the new urban area and Levin's street network. Creating a connection to Liverpool Street would also be more straightforward exercise than NC4;
- The new highway would form a defensible boundary between Levin's urban area on the one hand, and large-lot semi-rural development on the other;³ and
- Only one side of the highway would abut urban residential lots, reducing potential requirements for measures such as noise walls or off-set buffers. Larger lots to the east would provide more opportunities to address noise by way of setbacks.

3.5 It is worth noting that urban development east of Levin would require new structure plans regardless of the expressway option selected: The new urban area would require

³ For instance, the two points of access across the expressway at Queen Street and Tararua Road would be more suitable for the lower density area east of the highway

master-planning, and the structure plan for the balance of the large-lot semi-rural area would require reconfiguration.

4 CONCLUSIONS

Existing Structure Plan

- 4.1 Option NC4 would have a better fit with the pattern of development envisaged under the 'Greenbelt Residential Deferred' zone and the existing structure plan. The NC4 alignment is consistent with the location of the transport corridor depicted on the structure plan – except for its offsetting by 100m to avoid a stand of bush. The alignment reinforces the existing boundary between urban Levin and the large-lot semi-rural development envisaged to the east, and it is square with the cadastral and street pattern allowing for efficient development.
- 4.2 Option NC5, in contrast, would bi-sect the semi-rural area east of Levin, disrupt key features of the structure plan, and would be diagonal to the cadastral and street pattern.

Projected Urban Development

- 4.3 On the other hand, Option NC5 would be better suited to the projected urban development currently being investigated, subject to such an urban area being fine-tuned to match the expressway alignment. NC 5 would enable the new urban area to be contiguous and better integrated with Levin's urban area. It would provide a logical boundary between the urban area on one side of the expressway and the large-lot semi-rural area on the other.
- 4.4 By comparison, Option NC4 would be less preferable for such projected urban development. The alignment would force the urban development to leap-frog the expressway. It would result in the new area being separated from and less strongly integrated with Levin. It would also result in an inefficient strip of land between the expressway and Arapaepae Road, and would expose both sides of the expressway to urban residential lots.

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