Memorandum

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Matter	Delmore – Fast-track Approval application – Collector Roads

Introduction

1. Auckland Council's feedback on the substantive application for approvals for Delmore states that "…the proposal does not provide an appropriate road hierarchy with the one arterial road (NoR6) and 28 local roads," and contends that a collector road must be included in each development Stage along Roads 1, 24, 14 and 5). [1]

2. It is not agreed that collector roads are required for the reasons set out in this memorandum. The reasons for this are multi-disciplinary, so this memorandum has been prepared jointly by Commute Ltd, McKenzie & Co, Barker & Associates (urban design), and Vineway Ltd's in-house architect.

Strategic Planning / Urban Design

3. The topography of the site, in combination with the location of watercourses and protected bush / SEAs, along with the alignment of the NoR6 Road are the defining characteristics which inform the resulting block structure and street network. When considered together, these characteristics effectively result in a pattern of development that could be characterised as a series of small, interconnected "mini neighbourhoods" of no more than 200 to 300 dwellings as demonstrated schematically in **Figure 1** below. As a result, fairly low vehicular traffic volumes on local roads throughout the development are anticipated.

4. All roads across both the Delmore development and Ara Hills eventually converge / meet with the NoR6 Road which will eventually provide exit points from the Upper Orewa Area in two locations – at Grand Drive (over SH1) and at Wainui Road (via Upper Orewa Road). As such, the internal road network (across the Upper Orewa Area in general) does not (and cannot) provide wider sub-regional connectivity. Those roads now requested to be amended to collector roads are considered to be of low strategic network significance. They primarily provide local access

[1] Refer to point 4 in the table at para 249 of the "Memorandum of Strategic and Planning Matters for Auckland Council" for the quoted summary text. This is based on feedback from Auckland Transport and BECA, external consultant assisting the Auckland Council traffic team.

for residents consistent with the function of a local road, whilst still providing for some internal connectivity across the development.

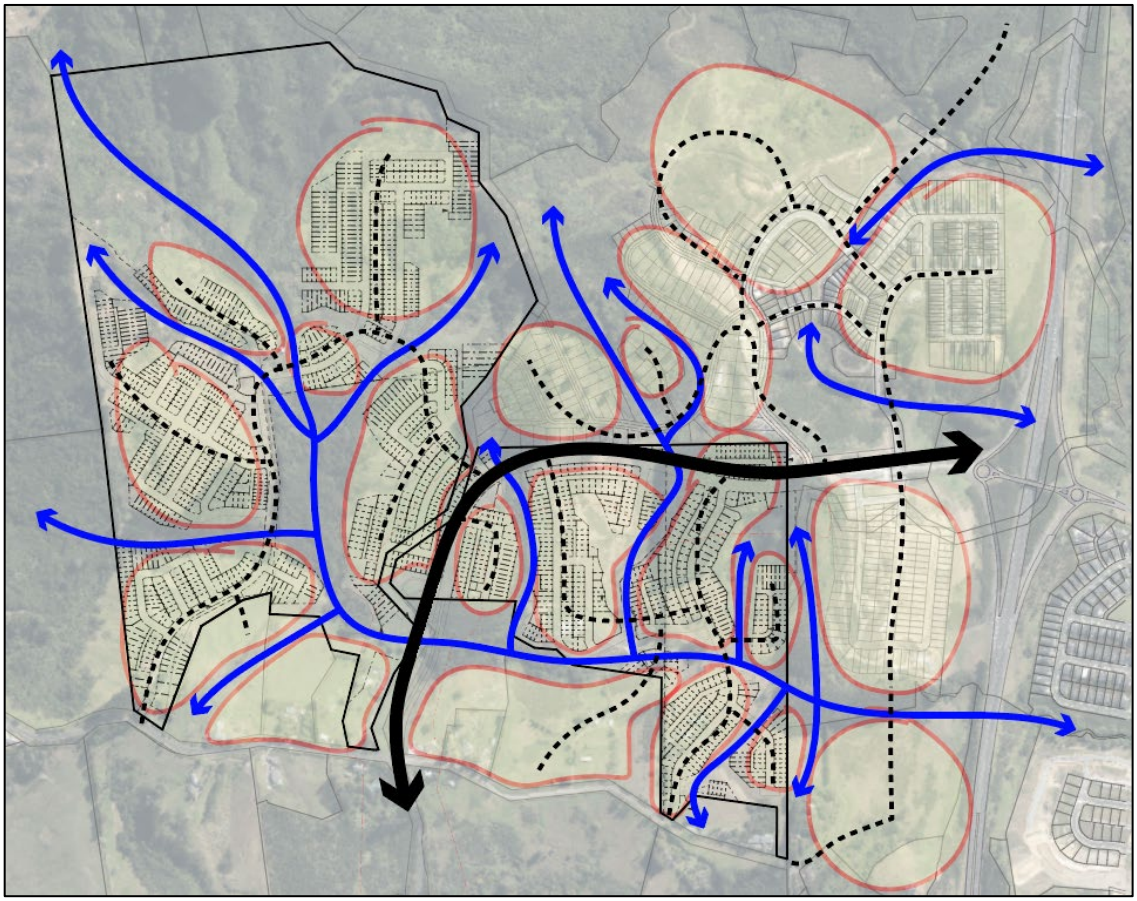

Figure 1 - "Mini Neighbourhoods" (yellow) in relation to the NOR6 Road and Watercourses. Source: B&A.

5. Amending the design of these roads to a collector road also has a number of potential disbenefits in design terms. Assuming an increase in road width to 24m (aligning with the design of collector roads in the nearby Milldale development), a change to a collector road would result in the loss of approximately 5,200m^2 of developable area in Stage 1 and approximately 10,800m^2 in Stage 2. In addition, further land would be required to be altered to accommodate revised slope batters / retaining to enable the construction of appropriate building platforms. Conservatively, we have estimated that approximately 90 dwellings (at a minimum) would need to be removed from the overall development.

6. The practical impact of this is likely to be much larger. For the stage 1, amending the road gradient from the current 12.5% to 10% as required for a collector road along its current alignment would result in increases in retaining heights of between 5m to 7m in the vicinity of the stream crossing just south of JOAL 40. For Stage 2, it is estimated that retaining would need to increase by a further 3m near the stream crossing just south of Road 22. Alternatively, a less direct and more circuitous route could be utilised to help achieve suitable grades in Stage 2. However, this would require the

loss of more dwellings (and potential patronage), further reducing the justification for a collector road in this location. We note that considerable work and optioneering has been undertaken by the wider applicant team to address the challenging topography and reduce the volume of earthworks and retaining required across the entire development. The practical impact of Council's request would invariably see significant increases to the height of retaining along both proposed collector routes.

7. Further, based on the applicant's teams experience at nearby Milldale, Auckland Transport are typically opposed to vehicle crossings onto collector roads within new greenfield developments – instead requiring access via JOALs. This would add a further complication to the redesign associated with the additional space required to accommodate a JOAL, in addition to the road widening required for a collector road, severely compromising the delivery for housing adjacent to Road 1.

8. In addition, an upgrade to collector roads would also inevitably have an impact on the character and place of the development. Specifically, the requirements of a collector road (and the need to accommodate bus movements) largely removes the ability to include traffic calming features within the design (e.g. vertical deflection like speed humps or horizontal deflection like kerb build outs / carriageway narrowing). In this regard, the design requirements of collector roads also make them more attractive for those travelling in private vehicles through reduced friction and increased speeds that can be achieved. This is not considered desirable within these relatively discrete residential areas.

Civil Engineering

9. The site's steep topography limits achievable road grades in Stage 2 to a maximum of 12.5 percent. However, both Auckland Transport's Transport Design Manual (TDM, Section 5.3) and the Austroads Guide to Road Design (Chapter 3 – Geometric Design) cap collector-road and designated bus-route grades at 8 percent. Because Stage 2 exceeds this limit, the alignment cannot safely or feasibly accommodate a collector road or bus operations without significant modifications.

10. Widening the corridor to a full collector cross-section—with cycle lanes, wider footpaths and berms—would substantially increase earthworks volumes and require steeper tie-in grades on side streets. Moreover, the larger horizontal curve radii needed for buses and heavy vehicles are impractical on the existing terrain.

11. For these geographical and technical reasons, local roads are the only practically achievable road type. Building a collector through Stage 2 would demand extensive retaining walls, deeper cuttings and oversized culvert crossings to control grades, making it neither viable nor cost-effective.

Traffic / Transport

12. Both stages / potential collector routes have been reviewed in relation to traffic volumes and the following is noted:

    1. Stage 1 accommodates approximately 470 dwellings. However, not all would use Road 1 (potential collector road) due to other routes available to the NoR6 arterial Road (eg Road 2 and Road 3). It is estimated that 50% of these dwellings would use Road 1, or 240

dwellings. Using the RTA daily trip rate of 0.65 daily trips per dwelling, this equates to 1,500 vehicle per day on Road 1 (maximum at its northern end).

2. Stage 2 accommodates approximately 780 dwellings. Stage 2 does however have two "links", one to the NoR6 road (Road 5) and one to Upper Orewa Road (Road 17). As per the Item 2 above, approximately 30% (380 dwellings) of the total Delmore site is expected to use Road 17 to access Upper Orewa Road (via a new roundabout). As such the other 400 Stage 2 dwellings will use Road 5 to link to NoR6 Road, essentially resulting in a 50/50 split across Stage 2. As such both these roads will accommodate 2,500-2,600 vpd (0.65 daily trips per dwelling). Figure 2 below summarises the projected traffic volumes arising from the proposal.

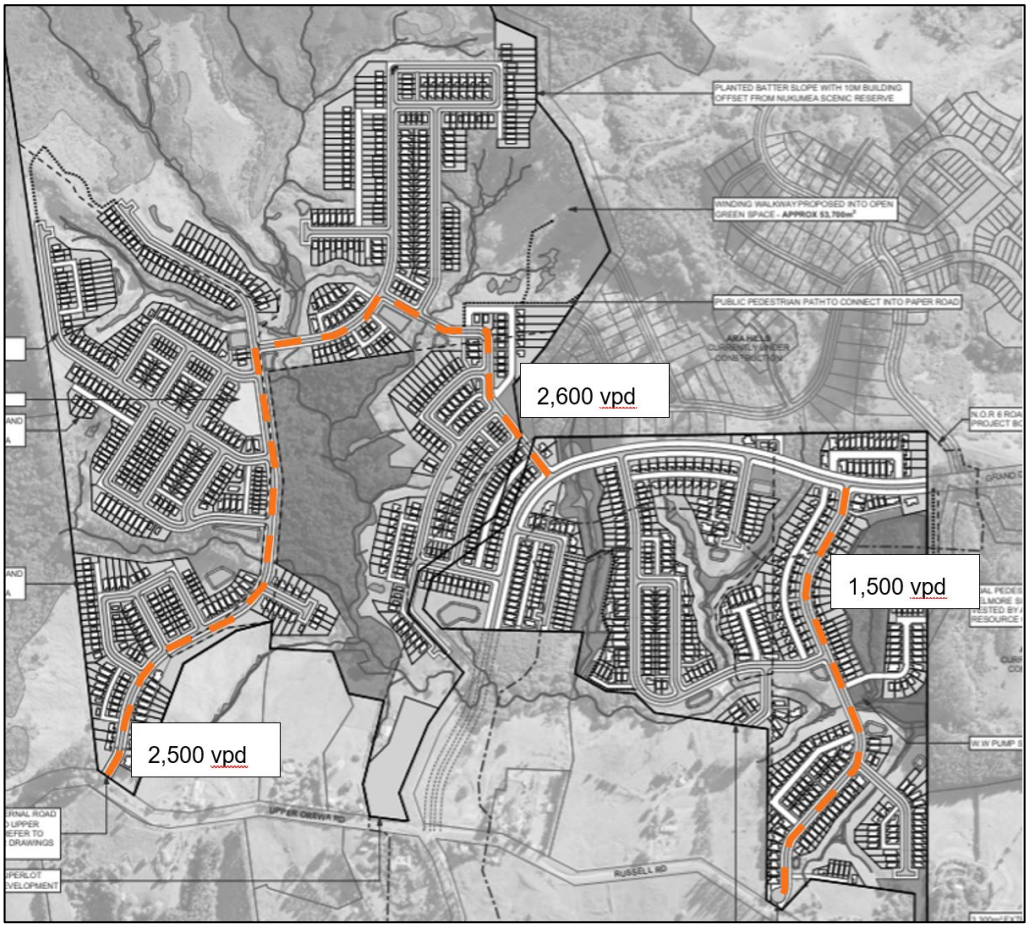

Figure 2 - Projected Vehicle Flows on both Collectors. Source: Commute

3. In addition to the above, consideration has been given to development of the remaining FUZ land to the south / south-east of Delmore. The Concept Structure Plan (**Appendix 47.1**) identified the potential to develop up to 600 additional dwellings across the balance 60 Ha of the Upper Orewa Area. This dwelling estimation takes into account the presence of large areas of SEAs, future esplanade reserves and other riparian margins across this area. Of

these 600 dwellings, only a portion of them would likely choose to access Road 1 for northbound trips towards the NoR6 Road. FUZ land located immediately to the east and west of the NoR6 Road would more logically utilise that road itself, while sites immediately south of Stage 2 of the Ara Hills development may also have the potential to utilise a connection through that site and potentially south to Kowhai Road. If using a conservative estimate of 400 additional dwellings which look to utilise Road 1 (i.e. 2/3 of the remaining FUZ land), using the same assumptions for Delmore, it is estimated that a total of 2,600 vpd would utilise this route.

13. When considering the above, it is noted that collector roads and separated cycle lanes are generally only considered to be required on roads which have volumes of over 3,000 vpd, as set out within Auckland Transport's Roads and Streets Framework (pg 33-50). Overall, both the Stage 1 and Stage 2 collector routes will not need to cater for more than 3,000 vpd with either the Delmore or future development of adjoining FUZ land. As such, collector roads are not considered to be required on transport grounds and the proposed roading hierarchy is considered to be appropriate.

14. In terms of public transport, **Figure 3** below shows the lots' proximity to bus stops on the NoR6 road (FTN bus route) assuming three pairs of bus stops near the intersections of Road 1 and Road 5 and Upper Orewa Road. Auckland Transport "Urban Streets and Roads Design Guide" notes an acceptable travel time of a 10 minute-walk to a Frequent Bus Service (which will be operating on the NoR6 in the future).

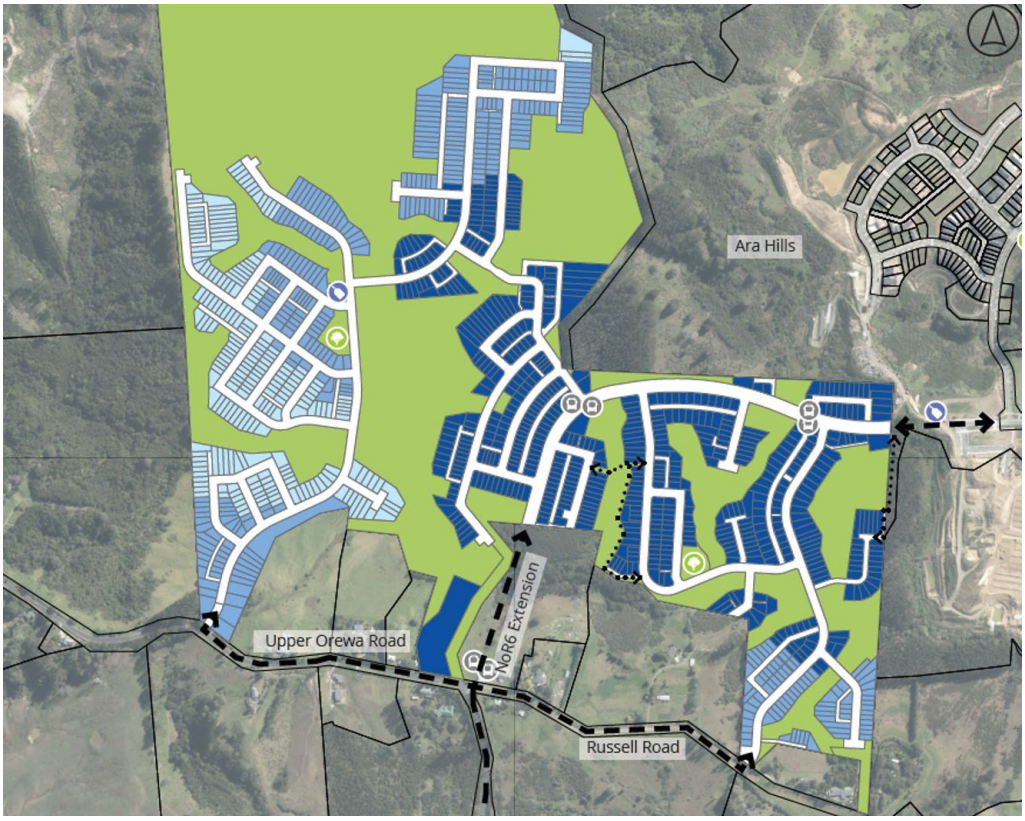

Figure 3 - Accessibility to (indicative) Bus Stops on the NOR6 Road. Source: B&A.

15. In observing the outcomes of the above assessment, we note that:

    - Dark blue identifies lots within a 500m walking distance (6 minute) to the FTN bus route bus stops (51% of lots);
    - Medium blue identifies lots within 800m walking distance (10 minute) to the FTN bus route bus stops (further 30% of lots); and
    - Light blue identifies lots beyond this distance (19% of lots).

16. We further note that all of Stage 1 is within a 10 minute-walk to a (future) Frequent Bus Service and thus a bus route through Stage 1 is not required. The Regional Public Transport Plan (2023-2031) (RPTP) targets (pg.45) having 42% of the population living within 500m of an FTN across the "North Region" by 2031. The proposal easily meets this target, with 51% of lots provided within this range. The 19% of lots (ca. 231) not covered above are all in Stage 2 are mostly at the edge of the site adjacent to the RUB. Even if a local service was provided via Road 17 most of these 19% of lots would still be located 200-500m from any reasonable stop location and thus an additional fixed-route service (likely at much lower frequencies than an FTN service) would not appreciably improve access via public transport.

17. Consideration has been given to the need to potentially enable the future expansion of a fixed bus service through other parts of the development. However, given the context of the Upper Orewa

Area with limited points of access to the wider transport network, these routes would involve extensive duplication of the FTN route along the NoR6 Road. Further, due to the site's topographical constraints, this was not considered desirable due to the inevitable decrease in frequencies and journey times associated with routes utilising these roads. Further, it is noted that an increase in road width to a collector standard does not require or guarantee that Auckland Transport will ever provide for a fixed bus service along these roads. As such, there would be a significant risk that only the disbenefits (in terms of place, yield etc) of upgrading these roads to a collector standard would be realised.

18. It is noted that Auckland Transport has established a programme of on-demand services to extend the reach of public transport services where conventional fixed route services are not suitable. As such, there remains potential for the further expansion of public transport coverage (via on-demand services) across the development. In our opinion, given the location of the site and its relatively unique topography when compared with most of urban Auckland, it could be a good candidate to explore the expansion of on-demand services, should the need arise.

Summary

19. To summarise, the applicant team has undertaken an extensive investigation and consideration of both the merits and practical implications of amending the scheme to provide for two collector roads within Stage 1 and Stage 2 of the Delmore application. In our opinion, there is no justification on transport grounds that would require these to be upgraded to collector roads now or into the future. Further, the impacts on such a design would result in a number of adverse effects to the proposal, including its viability, that far outweigh any perceived benefit.