

REPORT

**Three Parks Plan Change
Ballantyne Road Access Assessment
Response to Firth Industries Submission**

Prepared for Queenstown Lakes District Council

AUGUST 2009

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Three Parks Plan Change Ballantyne Road Access Assessment Response to Firth Industries Submission

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1 Introduction

Firth Industries operate a site to the south west of Ballantyne Road which functions as a Concrete Batching Plant. The site has two accesses onto Ballantyne Road, one for each of the two land parcels understood to constitute the Firth site (see Figure 1). Both operate for both entry and egress of vehicles.



Figure 1 - Location of Firth Industries site on Ballantyne Road

The Firth site accesses Ballantyne Road in close proximity to the proposed access point for an intended new Arterial status road to serve the proposed Three Parks development zone (see Figure 2).

In response to a proposed Plan Change to the District plan, Firth Industries have provided a submission, highlighting their concerns over the potential safety implications for their access and operations on

Ballantyne Road as a result of the proposed intersection location of the new arterial link intersection with Ballantyne Road.

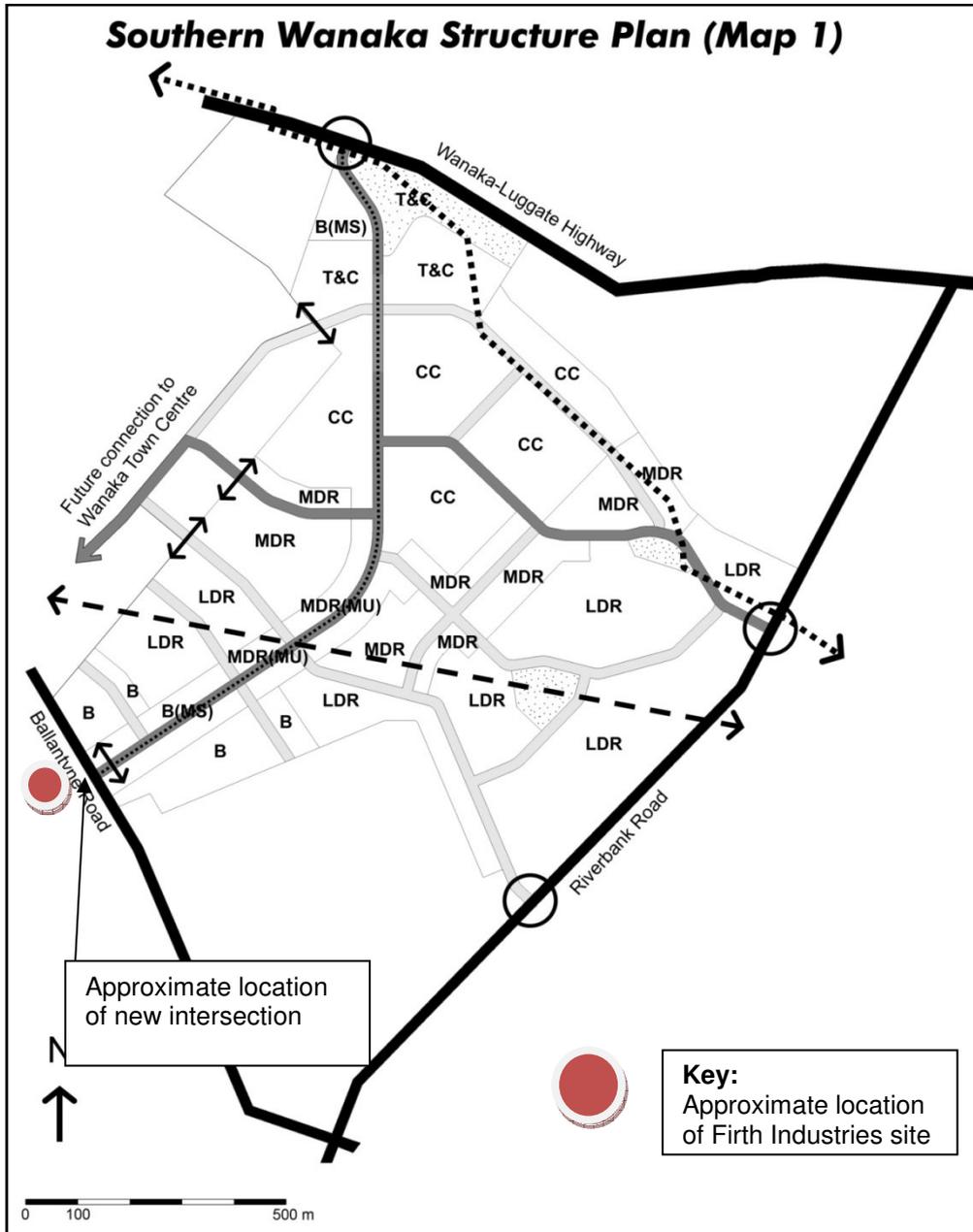


Figure 2 - Proposed Three Parks development zone (extracted base plan from Southern Wanaka Structure Plan)

The Three Parks Zone proposals are for a mixed use development of the land bounded by Ballantyne Road, Riverbank Road and the Wanaka Luggate Highway (Refer to Figure 2 and 3). This proposed development has been the subject of a Southern Wanaka Structure Plan consultation and now forms the proposed Plan Change 16 to the District Plan.

Firth Industries (located at 82 Ballantyne Road, Wanaka) have lodged a Submission to the proposed Plan Change. The submission opposes the proposed location of the new Arterial Road where it intersects with Ballantyne Road, on the grounds of the potential traffic safety effects from the increased vehicle

movements in the area, the potential impact of those movements and the proposed interchange location on the daily access activities of the existing Firth Industries site.

This report, commissioned by Queenstown Lakes District Council, assesses the validity of the concerns raised in the Firth Industries Submission and the potential to mitigate those concerns through the subsequent detailed design of the proposed Arterial Road access to Ballantyne Road via a new intersection.

Council is seeking specific advice, namely:

- Whether there are any such potential safety issues;
- Whether these can be overcome through intersection design; or
- Whether there is a need to re-locate the intersection and, if so the required location.
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2 The Firth Industries Submission

In submitting on the proposed Arterial Road access for the Three Parks Plan Change, Firth Industries have sought the following amendments to the Proposed Plan Change in order to mitigate their concerns:

1. That the location of the “New Arterial Road” (*as indicated in Figure 1*) where it intersects with Ballantyne Road be shifted either to the northern – most or southern – most boundary of the Plan Change area on Ballantyne Road; or
2. Where the relief sought in Point (1) is not granted that:
 - a. No access be permitted from Ballantyne Road into the Plan Change area: or
 - b. The Plan Change is rejected
3. Any consequential amendments required to give effect to this submission.

3 Proposed Three Parks Arterial Road and Traffic Implications for Ballantyne Road

MWH New Zealand completed a Traffic Impact Assessment for the Three Parks proposals on behalf of QLDC in November 2008. This assessed the high level outputs from a Wanaka Transportation Model as prepared by Gabites Porter in 2007, and focussed on modelling Option 3 for the proposed package of land use development within the Three Parks area.

The Three Parks land use proposal comprises of a retail centre, approximately 250 lots of medium density residential development, approximately 500 lots of low density residential development, business development and open space. The proposed development areas are shown in Figure 3. For an assessment of traffic impact assessments arising from the development, future year scenarios have been assessed at the year 2026.

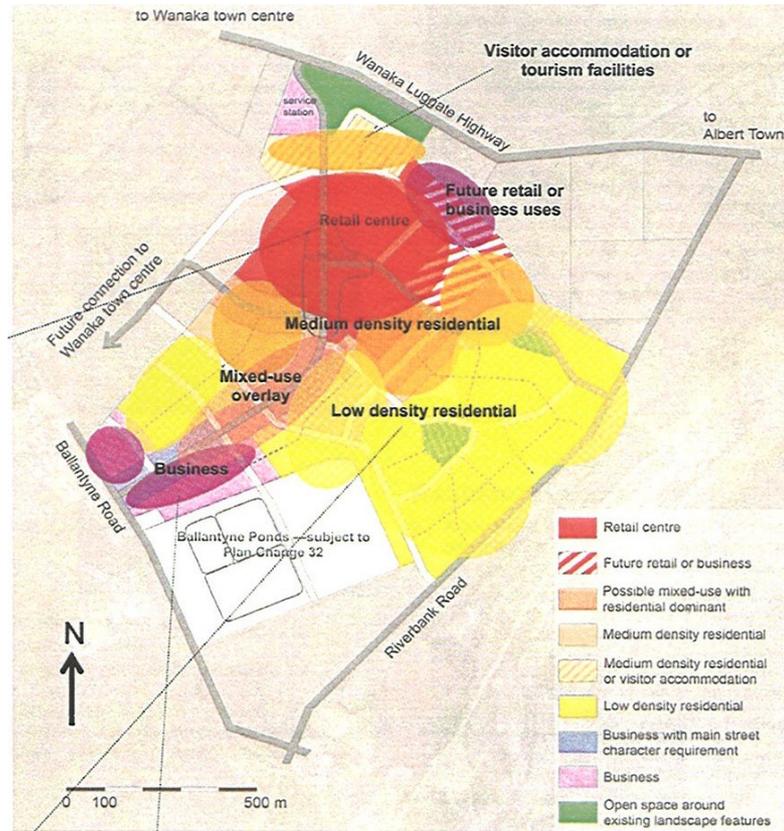


Figure 3 - Proposed land use allocations within Three Parks development area (extract from Structure Plan Concept diagram)

The access configuration interpreted from the original 2007 model assumed a north to south – west arterial road connection through to Ballantyne Road (the intersection that is the subject of this report); together with a future connection further north onto Ballantyne Road, and two additional connections to Riverbank Road. Figure 2 identifies the proposed location of the intersection with Ballantyne Road and its relationship to the Firth Industries site.

The model and subsequent impact assessment projects increases in all day, am and pm peak flow levels on Ballantyne Road to the north and south of the proposed intersection with the new arterial route. The existing and projected 2 hour am and pm peak flow levels under development Option 3 are shown in Figure 4.

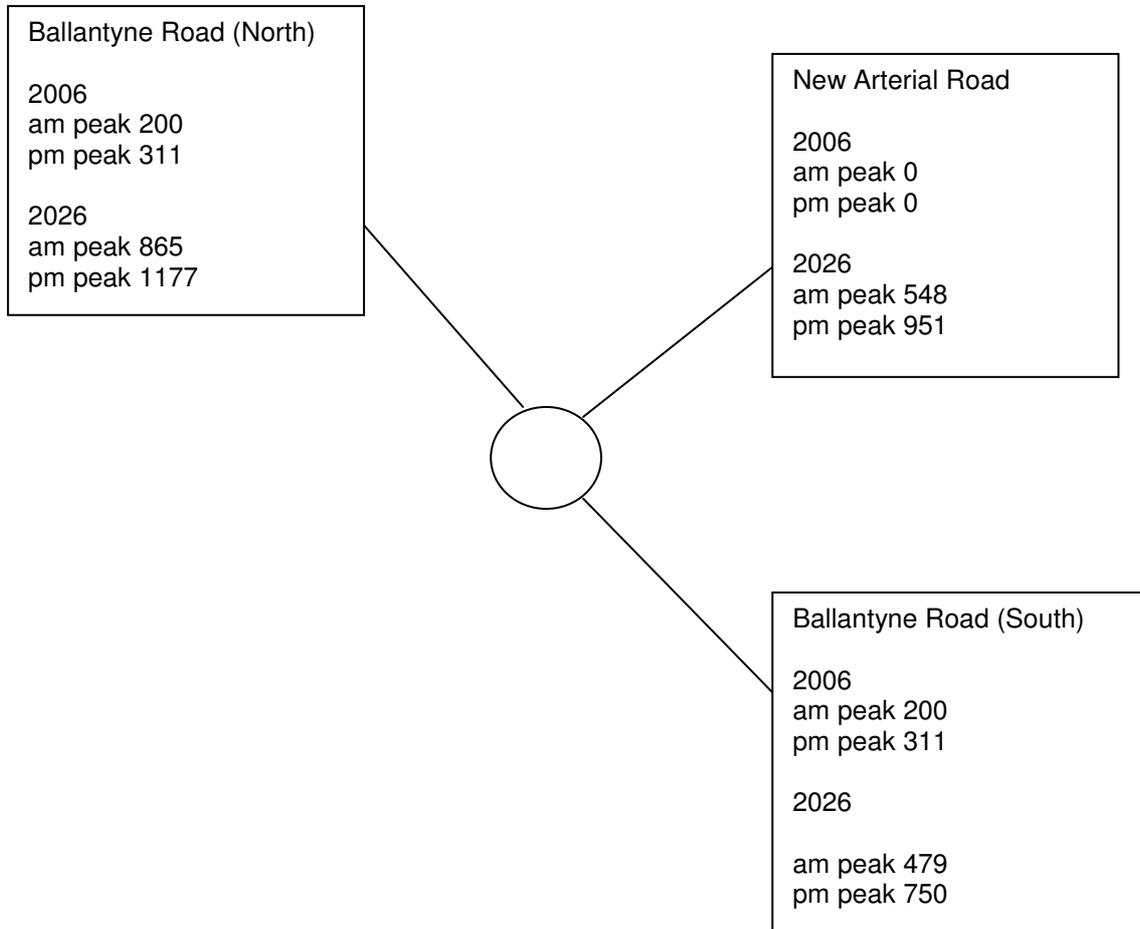


Figure 4 - Existing and projected morning and afternoon peak (2 – way) 2 hourly flow levels at the new arterial road intersection with Ballantyne Road.

Although details did not exist at the time of the Traffic Impact Assessment report preparation, it was assumed that all intersections within the proposed development and to the adjacent existing road network would be by either priority controlled intersections or roundabouts. Traffic signals were not expected to be deployed at any intersections. Therefore the potential for a signalised intersection with Ballantyne Road has not been considered in this assessment.

4 Existing and Proposed Access Arrangements – Ballantyne Road

Firth Industries have two direct accesses onto Ballantyne Road from their land holding to the south west of Ballantyne Road. There are further direct accesses from adjacent light industrial sites to the south of the Firth Industries site, along with a new retail store (Placemakers) also having direct access, again located further south on Ballantyne Road from the Firth Industries site..



Figure 5 - Google image of the location of the proposed Three Parks Development, showing its relationship to Ballantyne Road and a number of existing frontage premises having access to Ballantyne Road, including Firth Industries.

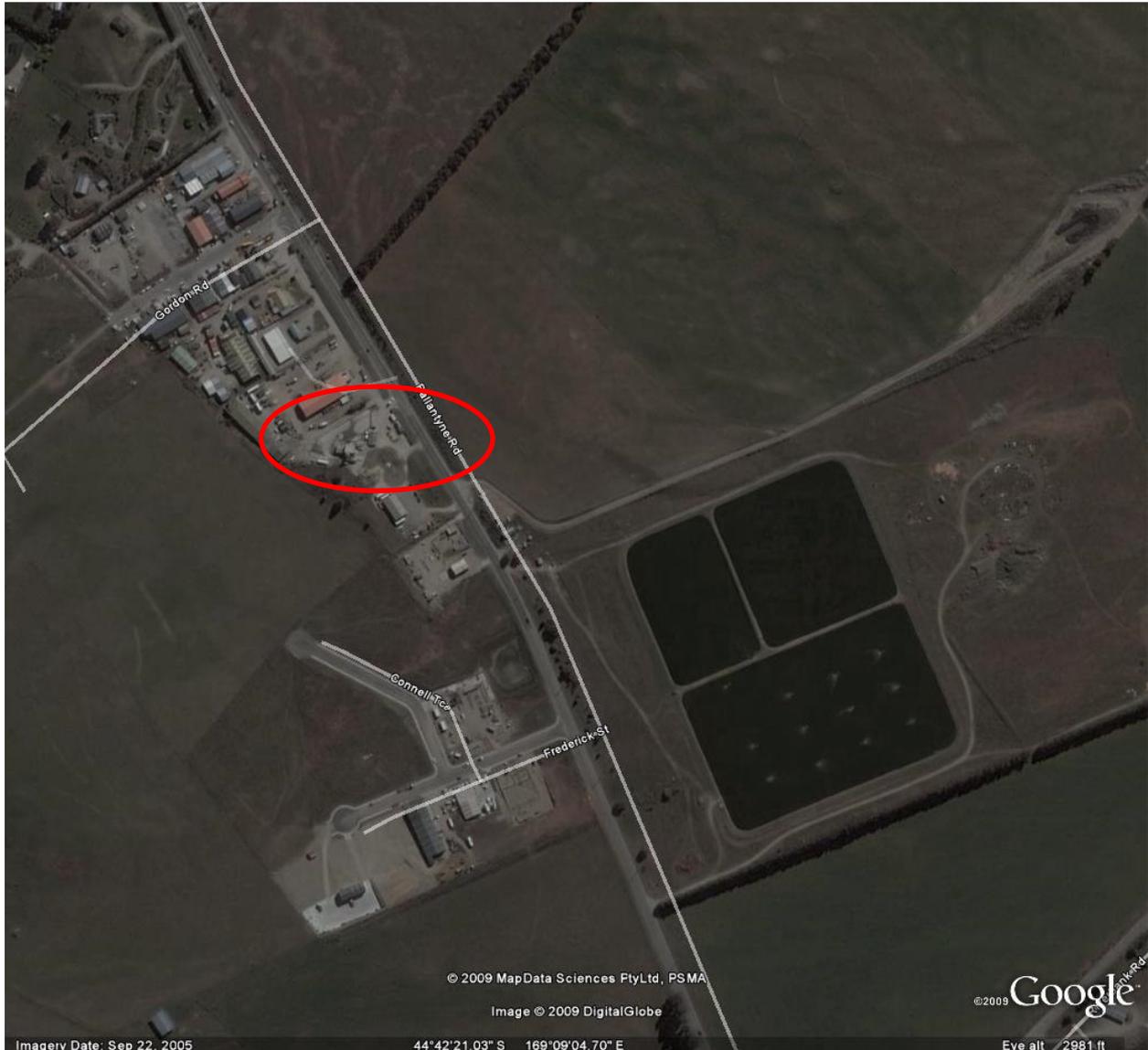


Figure 6 - Google image highlighting the Firth Industries site in relation to Ballantyne Road.

Ballantyne Road is on a relatively straight alignment adjacent to the Firth Industries site, with a largely flat grade rising gently to the north. The notable intersections in the locality are with Gordon Road and Frederick Street. These are local no-exit roads approximately 200m north and 300m south of the Firth Industries site. Both intersections are priority controlled, and give way to Ballantyne Road. Ballantyne Road is of two lane width throughout, with a carriageway width of approximately 6.7m close to the Firth Industries site.

The speed limit for this section of Ballantyne Road is 70km/h, the threshold for which is some 20m – 30m south of the Placemakers store access. South of this point, Ballantyne Road is rural with a 100km/h speed limit.

The two Firth Industries accesses afford good visibility to approaching vehicles on Ballantyne Road, consistent with the requirements for appropriate access onto a for a 70km/h speed limit road. Refer to Photograph 1 and Photograph 2.



Photograph 1: The two Firth Industries accesses (Arrowed) onto Ballantyne Road (looking south)



Photograph 2: Southern Firth Industries access looking south on Ballantyne Road.

Subject to detailed design (which is understood to have not commenced), the nominal location at which the new arterial road is proposed to junction onto Ballantyne Road, is approximately 20m south of the southern boundary and access to the Firth site (as shown on Figure 1).

If confirmed at this location, this would indeed place the arterial road intersection at or very close to the southern Firth Industries access. It is this issue that is in part the subject of the concerns expressed in the Firth Industries submission.

5 Safety Considerations

The proposed nature of the land development within the Three Parks area would seem unlikely to result in many direct vehicle movements (certainly of heavy vehicles) to and from the Firth Industries site across Ballantyne Road. However, the projected increases in traffic flow levels on Ballantyne Road as a consequence of the development proposals may result in an increasing safety impact from the interaction of slow moving heavy vehicles entering and leaving the Firth Industries concrete batching plant, and passing traffic on Ballantyne Road within the 70km/h zone.

The location of the proposed intersection is in close proximity to a number of existing access points onto Ballantyne Road. A review of the location against accepted best practice guidance for accessway standards (Transit Planning Policy Manual Appendix 5B) reveals that the proposed intersection would not meet the required separation distances between intersections and access points. For a 70km/h speed limit road, the recommended minimum distance between an accessway and the nearest intersection is 100 metres. As a consequence, this could result in conflicting turning movements, particularly if the intersection was of a simple T junction form.

Inspection of the Crash Analysis System (CAS) records for Ballantyne Road over the five calendar years 2004 – 2008 reveals two recorded crashes on Ballantyne Road over that period. One was at the intersection with Frederick Street (to the south of the section of road under analysis) – a non injury crash, and one at the intersection with Golf Course Road to the north – a minor injury crash.

Analysis of injury crashes for all New Zealand roads (*ref. RTS 6 – Guidelines for Visibility at Driveways*) indicates that approximately 10% of urban accidents and 6% of rural accidents occur at driveways.

There are currently no seal widened tapers at the Firth Industries accesses, or local widening to provide right turn bays, that could assist heavy vehicles to make manoeuvres with less disruption to the through traffic flow. With the significant projected flow increases on Ballantyne Road (Refer to Figure 4) such local carriageway widening would be worthy of further consideration.

For the purpose of this report, it has been assumed that the form of intersection proposed between the new arterial route and Ballantyne Road will be either a T intersection or a roundabout, as indicated in the November 2008 Traffic Impact Assessment report.

As noted above, for the proposed approximate location of the intersection between the new arterial road and Ballantyne Road, it would be difficult to isolate a convenient location for the new arterial road to form a suitable “T” intersection with Ballantyne Road, without the design compromising the recommended minimum distance between that intersection and nearby accessways, including that to Firth Industries. For this primary reason it would seem unlikely that such an intersection form would provide a suitable option for the proposed intersection location.

However, subject to detailed design, a suitable roundabout might be designed within the vicinity of the proposed location, the central island for which would likely be set off line to the north east of the current Ballantyne Road alignment. Subject to detailed design of such an arrangement, this could provide access to both the new arterial route to the north east and the southern access to the Firth Industries site to the south west, along with the two adjacent accesses south of the Firth Industries site (numbers 86 and 92 Ballantyne Road).

The provision of such a roundabout could also act as a beneficial speed reducing feature on this section of Ballantyne Road (which would need to be locally re – aligned to meet with it) and be of indirect benefit to the northern access to the Firth Industries site. A roundabout might also serve to reinforce the local 70km/h speed limit, the entry threshold for which exists south of the Placemakers store accessway. Although the approximately 70m spacing to the northern Firth Industries access remaining (if the intersection location remains precisely as shown currently) is less than the minimum recommended distance of 100m between an accessway and an intersection; consideration of local widening of Ballantyne Road to improve the remaining Firth Industries access for a right turn bay and local access

tapering should provide an appropriate solution. The rationalisation of the southern Firth Industries access with the accesses to the two adjacent land holdings to the south could well also offer advantages to the safety of this section of Ballantyne Road, in reducing the total number of individual accesses.

Site inspections in support of this assessment have shown that a farm access intersects with Ballantyne Road within 30m of the nominal intersection point of the new arterial road and Ballantyne Road. (Refer to photograph 3). This may provide a suitable approximate location to site a new roundabout intersection, providing this could be designed to avoid adjacent plot boundaries.



Photograph 3: Ballantyne Road looking north, with existing farm access to the right of picture beyond the utility pole. The adjacent site accesses to the west (left of picture) of Ballantyne Road are in the foreground, with the two Firth Industries accesses in the middle distance.

6 Consideration of Non Motorised Road User Needs

A potential roundabout access would not provide the best solution for cyclists at this location, although it would act to support the speed regime on Ballantyne Road as a speed reducing feature. However, subject to detailed design considerations, any local re – alignment of Ballantyne Road may offer opportunities to accommodate south to northbound cyclists on part of the existing alignment. At this stage the proposed local networks of cycling and walking linkages both within and accessing the Three Parks development are unclear, as are the expected patterns of demand following the completion of the development.

It would be very beneficial therefore to ensure that a non – motorised road user review and audit of the emerging design for this intersection and local linkages to cycling and walking networks is undertaken at the appropriate time.

7 Conclusions

Firth Industries have provided a submission in response to the Three Parks Plan Change, citing concerns over the proposed location of the new arterial road serving the Three Parks Development as it intersects with Ballantyne Road.

The nature of the concerns raised by Firth Industries is the potential for the location of the intersection and the associated increases in traffic levels on Ballantyne Road to interfere with the safe access and egress of heavy vehicles from the two accesses to Firth Industries' concrete batching plant. The nominal location for the intersection is some 20m south of the southernmost Firth Industries access.

This report and the associated site inspections have examined these concerns in response to the issues upon which Council seeks specific advice, namely:

- Whether there are any such potential safety issues
- Whether these can be overcome through intersection design; or
- Whether there is a need to re – locate the intersection and, if so the required location

Potential Safety Issues

There is some validity in the identified concern that projected increases in traffic flows on Ballantyne Road have the potential to result in increased interaction between passing traffic and the heavy (often) slower vehicle manoeuvres to and from the Firth Industries site. At present there is however no local widening of Ballantyne Road adjacent to the Firth accesses that would provide for beneficial entry and exit tapers to the site, and / or a dedicated right turn bay. Consideration of such local improvements would be of value.

Potential to Overcome with Intersection Design

The provision of a new arterial road intersection onto Ballantyne Road of a suitable form could provide an opportunity to improve local access arrangements to the benefit of safety in the vicinity of the Firth Industries access(es). On analysis, a T intersection form would seem unlikely to offer a suitable solution, as it is likely to be in conflict with best practice guidelines concerning the minimum spacing of intersections and nearby accesses; whereas a suitably located and designed roundabout may provide an appropriate option. This could include offering an opportunity to improve the access arrangements for both the southern Firth Industries access and the two accesses to premises to the immediate south of the Firth site. Therefore, preparation of detailed design options in consultation with both Firth Industries and the adjacent landowners would be beneficial in arriving at an agreed solution.

Whether there is a need to relocate the proposed intersection

A suitably designed roundabout intersection to meet the above objectives is likely to entail a local re – alignment of Ballantyne Road in the vicinity of the intersection location. However, the design process would need to involve an assessment of the likely land area implications in achieving a workable design. This may impact upon the desired land uses in the immediate vicinity, in relation to the Three Parks development proposals. Should the land implications to achieve a suitable design prove too onerous, then Council may consider the balance of advantage lies in re – locating the intersection with Ballantyne Road to an alternative location able to avoid close proximity to existing accesses on Ballantyne Road – either to the north or south of the investigated section of Ballantyne Road examined in this report.