Before the Hearings Panel appointed by
Taupō District Council

In the Matter of	the Resource Management Act 1991 (**Act**)
And	
In the Matter of	An application for land use consent [RM240388], subdivision consent [RM240389] and variation to subdivision consent RM200118B for: 83 residential lots, 4 reserves, 5 road and over 6 stages; land use consent for earthworks and for additional building coverage, plot ratio and building setbacks; variation to Stage 9 of the previous subdivision stage.

Statement of Evidence of **Judith Makinson**

for Seven Oaks Kinloch Limited
Dated: 12 August 2025

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INTRODUCTION

Qualifications and Experience

1. My name is Judith Victoria Makinson.

2. I am a Director at CKL (NZ) Ltd, specialising in transportation engineering and hold a Bachelor's degree in civil engineering and a Master's degree in transportation engineering and planning from the University of Salford (UK). I am a Chartered Professional Engineer and am a Chartered Member of Engineering New Zealand. I am also a Chartered Engineer in the United Kingdom and a Member of the Institution of Civil Engineers. I have over 25 years' international experience working as a transportation engineer in both New Zealand and the United Kingdom with Arup, WSP Group, Gifford, TDG, Stantec and CKL.

3. I have undertaken Integrated Transportation Assessments ("ITAs") for major developments such as for 180ha of industrial land at Southern Gateway in Auckland and 450 residential dwellings at Northview in Hamilton. I have experience in assessing the traffic and transportation effects of rezoning land through plan change processes, including acting for South Waikato District Council in relation to rezoning 40ha of rural land to industrial in Putāruru.

4. I am qualified as an Independent Hearing Commissioner and in this role I have experience of considering the effects of major infrastructure projects through notice of requirement processes, rezoning of land as well as individual resource consent applications. These include the Te Ahu a Turangi Manawatū Gorge Road replacement, Te Pūtahi Ladies Mile rezoning and the Kiwirail Regional Freight Hub at Bunnythorpe.

Code of Conduct

5. While this is not an Environment Court hearing I have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment

Court Practice Note 2023. This evidence is within my area of expertise, except where I state that I am relying on material produced by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express. I understand it is my duty to assist the hearing committee impartially on relevant matters within my area of expertise and that I am not an advocate for the party which has engaged me.

Project Involvement

6. I supervised the preparation of ITA report dated 20 September 2024 for the application, which included an assessment of the traffic matters associated with the proposed 83 lot residential subdivision forming Stage 9 of the Seven Oaks Kinloch development. I also supervised the provision of additional information in response to a s92 further information request dated 5 December 2024 and subsequently liaised with Mr David Smith[1] acting as Taupō District Council's ("TDC") independent peer reviewer on traffic modelling and Mr Mike Keys acting as TDC's consultant Development Engineer. The final technical response ("Technical Note") arising from those discussions is dated 5 April 2025.

7. I have also read the Traffic Modelling Review ("Review") undertaken by Abley dated 7 December 2024 as it pertains to the CKL Technical Note dated 5 April 2025. I note that the Review concludes that the traffic modelling can be *"relied upon to demonstrate the potential effects of traffic from the Kinloch proposal on intersection performance"*[2].

8. I have also read the s42A Report dated 5 August 2025, paying particular attention to paragraphs 13.92 – 13.102, 13.138 – 13.141 and 14.33 – 14.36 relating to traffic matters. Paragraph 13.102 concludes that "*the potential transportation effects of the proposed development will be no more than minor'.* The s42A report also concludes that cumulative traffic effects will

[1] Principal Transportation Engineer, Abley
[2] Seven Oaks Kinloch Integrated Transportation Assessment Traffic Modelling Review", 7 December 2024, Abley

be no more than minor and that the proposed development *"is consistent with the relevant Transport objective and policies."*[3]

9. I have also read the Engineering Assessment prepared by Mr Keys which formed Appendix G of the s42A report, paying particular attention to Sections 9 and 11. Mr Keys notes in Section 11.i that he was included in the video conference consultation in relation to the updated traffic modelling. Mr Keys states that he agrees with Mr Smith's conclusion that the modelling can be relied on, and also with the conclusion from the CKL s92 response that the effects of the proposed development traffic on the CGB road network is negligible

10. I have visited the site and the wider area on several occasions and most recently on Tuesday 17June 2025. Weather conditions were good.

SCOPE OF EVIDENCE

11. My evidence that follows presents a brief overview of the key findings of the overall traffic analysis and assessment, and responds to submissions, paying particular regard to the following:

    (a) Existing road and traffic environment;

    (b) Proposed subdivision road network;

    (c) Expected traffic generation and distribution;

    (d) Capacity analysis of key intersections in the Kinloch area;

    (e) Wider road network effects, focusing on the Control Gates Bridge ("CGB");

    (f) Section 42A report and traffic modelling peer review; and

    (g) Submissions.

SUMMARY

[3] S42 Report paragraph 14.36

12. The Seven Oaks Kinloch (**Seven Oaks**) site is located in the northern part of Kinloch approximately 20 kilometres northwest of Taupō. Kinloch is accessed via Whangamata Road, which connects to Poihipi Road and then Wairakei Drive, the main arterial route into Taupō and toward State Highway 1 ("SH1"). The primary Kinlochroad network and wider road network are described in full in Sections 3.1 and 3.2 of the ITA. The notable change since the ITA was prepared is the alteration to the layout of the Whangamata Road / Kinloch Road intersection. It is my understanding that TDC has undertaken minor safety improvements at the intersection. In my opinion that these alterations are unlikely to have an effect on intersection capacity and that they provide benefits to pedestrians and cyclists.

13. I have assessed the traffic and transportation effects associated with the proposed 83-lot residential subdivision at Kahikatea Drive, Kinloch, including the subdivision road network and the wider connecting road network.

14. The proposed development will connect via Oakdale Drive and ultimately link to Whangamata Road. The internal road design and layout are consistent with 'NZS 4404:2010 Land Development and Subdivision Infrastructure' ("NZS4404") and provide suitable infrastructure for walking and cycling within the proposed residential environment, noting the inclusion of a shared 1.8m wide cycle path along the new section of Kahikatea Drive. This is consistent with existing provision and also aligns with the recommendation in the ITA to allow for pedestrian facilities to both sides of the road.

15. In terms of assessing the traffic effects of the proposed development, extensive consultation has been undertaken with Mr Keys and Mr Smith (representing TDC). This has resulted in the following key technical aspects of the analysis being agreed:

    (a) A peak hour trip generation rate of 0.59 trips per dwelling has been adopted, acknowledging the seasonal nature of occupancy in

Kinloch (55% of dwellings unoccupied at Census 2023). This results in 51 peak hour trips for the proposed development.

(b) Expected volume of traffic associated with the consented Lochviews Estates Development and the Plan Change 37 Nukuhau Plan Change ("PC37") have been considered, based on information provided in the Transportation Assessments presented for both of those applications. This reflects a higher trip generation rate and for PC37, and limits the number of dwellings that can be constructed prior to completion of the Control Gates Bridge ("CGB") project being led by TDC.

(c) The existing traffic volumes from specific surveys undertaken by CKL in August 2022 and November 20203 data as provided by TDC are robust and take account of higher traffic demands that occur at certain times of the year.

16. I have assessed the existing Kinloch road network for capacity, safety and function. The analysis shows that the Oakdale Drive / Whangamata Road and Kinloch Road / Whangamata Road intersections can reasonably be expected to operate at Level of Service ("LOS")[4] A in both the AM and PM peak periods under conservative traffic growth scenarios. It is also my opinion that the roads within the wider Kinloch community have sufficient capacity to accommodate expected increase in traffic demands arising from the proposed development without a noticeable drop in level of service.

17. Wider network impacts have been assessed using SIDRA modelling agreed with Mr Smith (peer reviewer for TDC). At key intersections either side of the CGB, additional delays caused by development traffic are assessed as being negligible. In the AM peak hour, which is the period of most interest to TDC, these additional delays are expected to be as follows:

[4] Level of service relate to typical travel delay times due to congestion. Level of service A reflects a situation where drivers experience minimal delay and traffic is free flowing, through to level of service F where drivers experience significant delay and the road network is considered to be highly congested.

(ii) Less than 1 second at Poihipi Road / Wairakei Drive;

(iii) 6–8 seconds at Norman Smith Street / Wairakei Drive; and

(iv) 5–8 seconds at Tongariro Street / Spa Road.

18. Overall, the proposal is expected to add an estimated 32 vehicles per hour at the key intersections either side of CGB. This equates to approximately one additional vehicle every two minutes. This effect is minimal, and distribution across approach roads further reduces impact.

19. Sensitivity testing confirmed that phase time adjustments at signalised intersections do not materially alter outcomes. Similarly, increased pedestrian demands are also not pivotal to intersection performance Calibration against observed queue lengths supports model robustness.

20. The peer review undertaken by Mr Smith concludes that the traffic modelling accurately assesses the expected traffic effects of the proposed development.

21. In my opinion, development contributions to fund a future CGB capacity upgrade is a proportionate response to the limited effect of this development on the wider Taupō network and aligns with TDC policy.

22. Submitters have raised concerns around intersection upgrades, road widths, pedestrian safety, and parking pressures associated with the Kinloch boat ramp and marina. In my opinion, existing and proposed infrastructure meets applicable standards and that traffic levels will remain within acceptable limits. I also consider that the proposed development is likely to have little effect on the existing parking issues within Kinloch associated with boating activities.

23. In my opinion, Kinloch is a highly walkable community, and increased density from the development is likely to assist the viability of local services and provision of public transport. The proposal aligns with transportation

objectives of the District Plan and NPS-UD, particularly through enabling internal connectivity and supporting mode choice.

24. In my opinion the inclusion of pedestrian facilities to both sides of the new section of Kahikatea Drive appropriately mitigates the expected traffic effects of the proposed development, bearing in mind that Seven Oaks will contribute to the costs of transportation infrastructure planned by TDC through development contributions.

25. Regardless of any development contributions payable by Seven Oaks, it is my opinion that the traffic and transportation effects of the proposed development are less than minor and that there are no traffic or transportation reasons why the application should be declined.

EXISTING ENVIRONMENT

26. The Seven Oaks site is located in the northern part of Kinloch approximately 20 kilometres northwest of Taupō. Kinloch is accessed via Whangamata Road, which connects to Poihipi Road and then Wairakei Drive, the main arterial route into Taupō and toward State Highway 1 ("SH1"). The primary Kinloch road network[5] and the wider road network[6] are described in full in Sections 3.1 and 3.2 of the ITA.

27. The key matters in relation to the Kinloch road network are as follows:

    (a) Whangamata Road is a rural two-lane district arterial road with a posted speed limit of 60km/h in the vicinity of Kinloch. The layout of the Whangamata Road / Kinloch Road intersection has been amended since the ITA was written. As observed during my site visit in June 2025, the intersection now includes a left turn slip lane on Whangamata Road into Kinloch Road and a raised table with pedestrian resting rails and median island on Kinloch Road.

[5] The Kinloch road network assessed includes Okaia Drive, Kahikatea Drive, Oakdale Drive, Lisland Drive, Kinloch Road and Whangamata Road and the various intersections between these roads

[6] The wider road network assessed includes Poihipi Road, Wairakei Drive and the Whangamata Road / Poihipi Road, Poihipi Road / Wairakei Drive, Wairakei Drive / Norman Smith Street / Tongariro Street and Tongariro Street / Spa Road intersections

(b) Kinloch Road connects Whangamata Road to Kinloch village. It is a district arterial road as far as Lisland Drive, before reducing in status to a collector road. Its formation changes from a more typically rural road to a more urban one (i.e. footpaths and streetlights) just to the south of 'The Loch Up' storage facility and some 370m north of Lisland Drive.

(c) Lisland Drive provides connection between a large area of residential subdivision and Kinloch Road. The roads within the subdivision are representative of lower density residential subdivision, and typically comprise two traffic lanes, wide berms and footpaths to one or both sides of the road. These roads include Oakdale Drive, and Kahikatea Drive. Road geometry, carriageway widths, and sight distances are appropriate for the current function and traffic demand and are in general accordance with NZS4404.

(d) Visibility at the Oakdale Drive / Whangamata Road and Kinloch Road / Whangamata Road intersections following the speed reduction between Kinloch Road and Oakdale Drive from 80km/h to 60km/h, is compliant with the speed limit requirements as set out in Section 3 of the ITA.

28. There is one public transport service operating in Kinloch which connects with Taupō. The Route 35 is a hail and ride service i.e. no formal bus stops, and provides a round-trip service to Taupō on Wednesday afternoons[7]. Active mode infrastructure is present in the form of a short section of shared path along Whanagamata Road, along one side of Kinloch Road, then footpaths along the local road network.

29. In terms of road safety on the Kinloch local road network considered in the ITA[8], the personal and collective road safety risk ratings and historic crash records are low.

[7] ITA section 4.2

[8] Sections 3.4 and 3.5 The reduced speed limit of xxkm.hr on Whangamata Road in the vicinity of Kinloch is appropriate (Table 7)

30. The wider road network is largely as described in Section of 3.2 of the ITA with road safety being considered in Section 3.4 and 3.5 of the ITA. I am not aware of any changes to the road network other than the Kinloch Road / Whangamata Road intersection upgrade noted above.

TRAFFIC VOLUMES

31. A range of information sources was used to assess existing traffic volumes during the preparation of the ITA and subsequent Technical Note:

    (ii) Video surveys were undertaken in 2022 to assess traffic volumes at:

        A. Oakdale Drive / Whangamata Road;

        B. Kinloch Road / Whangamata Road;

        C. Whangamata Road / Pohipi Road; and

        D. Pohipi Road / Wairakei Drive.

    (iii) TDC traffic data from November 2023 was used to assess traffic volumes at:

        A. Norman Smith Street / Wairakei Drive / Tongariro Street

        B. Tongariro Street / Spa Road

32. The potential for and extent of seasonal variation in traffic volumes was also considered given Taupō is a key tourist destination and the high degree of holiday home ownership within Kinloch[9]. The comparison was based on state highway network data and showed that there was generally an increase in traffic demands during the later months of the year. In my opinion, the use of traffic survey data from August and November takes account of this fluctuation of traffic demands and is therefore robust.

[9] ITA Section 3.3 paragraphs 3.3.6 to 3.3.10 and Tables 3 to 5

ROAD SAFETY

33. A detailed review of the NZTA Crash Analysis System ("CAS") crash history data over the 5-year period 2019 – 2023 and up until September 2024 is presented in Section 3.4 of the ITA. I have supervised a review of the CAS data between September 2024 and the end of July 2025. The following additional crashes have occurred on the road network under consideration:

    (i) A non-injury crash occurred in November 2024 at the Pohipi Road / Whangamata Road intersection when a vehicle turning right from Whangamata Road collided with a through vehicle travelling west on Pohipi Road.

34. I have also supervised a review of the collective and personal road safety risk ratings reported in Section 3.5, Table 7 of the ITA. The NZTA MegaMaps database identified these two categories of road safety risk rating:

    (ii) Collective risk is the measure of how likely a crash is to happen along a given stretch of road network.

    (iii) Personal risk relates to the chance that if a crash does occur that it involves a given individual. It is not unusual to see higher personal risks on a road, particularly when there are low traffic numbers.

35. I acknowledge that MegaMaps is a retrospective analysis tool based on crash data from 2017 to 2021. Therefore, the risk profile classifications are indicative of a somewhat historic environment and may not be entirely reflective of the existing environment, noting some recent changes to speed limits and also intersection upgrades.

36. Regardless, the road safety risk ratings have not changed. Based on the revised CAS data and these risk ratings, I consider that:

(i) The reduced speed limit of 60km/hr on Whangamata Road in the vicinity of Kinloch remains appropriate;

(ii) Poihipi Road would benefit from speed management;

(iii) The risk classifications on Tongariro Street and Spa Road are likely due to the very high traffic volumes experienced and the lack of alternative river crossing options.

PROPOSED DEVELOPMENT ROADS

37. The proposal seeks resource consent for an 83-lot residential subdivision to be developed over multiple stages on land located at the northern edge of the Kinloch settlement. The site is accessed via Kahikatea Drive and will ultimately connect to the wider Kinloch roading network via Oakdale Drive. The internal layout is described in the application documents and illustrated Figure 40, Section 6 of the ITA.

38. In terms of road cross section, revised proposals were included in the updated Engineering Report dated 3 June 2025. This was prepared after the ITA was completed and therefore section 10 of that report has been superseded. I have therefore undertaken a review of the revised road cross sections here.

39. Kahikatea Drive is proposed to have a 25m wide road corridor with two separated 3m wide carriageways with 2m wide parking lanes. A 1.4m wide footpath is included to one side of the road and a 1.8m wide shared path to the other. This is generally consistent with the collector road function of NZS4404 'Figure E23 – Urban Live and Play', and also Figure E13 – Suburban Live and Play'.

40. Okaia Drive has been constructed as far as the roundabout. It is proposed that a 20m road corridor with an 8.5m wide carriageway and a 1.8m wide shared path to one side of the road will continue on the northern side of the roundabout across the frontage of the first four new lots, reducing to an

approximately 18m cross section with 7m wide carriageway. Both the 18m and 20m wide cross sections of Okaia Drive generally exceed the requirements of NZS4404 'Figure E22 – Urban Live and Play', and also Figure E12 – Suburban Live and Play', which represent local road cross sections.

41. Proposed Road 1 will also have a 20m wide cross section which is the same as Okaia Drive. In my opinion this is also an appropriate local road layout.

42. Roads 2 and 3 are proposed to have a 16m wide corridor including a 7m carriageway and a 2m wide shared path to one side of the road. In my opinion, this is generally consistent with the principles of NZS4404 'Figure E12 - Suburban Live and Play' and 'Figure E22 - Urban Live and Play' local roads.

43. In my opinion, the proposed road cross sections are generally consistent with or exceed the requirements of NZS4404 (particularly in relation to providing shared footpath / cyclepath where there is a general presumption in NZS4404 for on-road cycling) are consistent with the existing subdivision road environment and provide a suitable level of walking and cycling access in the context of Kinloch.

TRAFFIC GENERATION AND DISTRIBUTION

44. The assessment of traffic generation for the proposed development presented in Section 7.1 of the ITA was superseded during the s92 process by the assessment in the Technical Note. The key matters arising and which should be noted are as follows:

    (i) The original ITA use of the industry standard of 0.9 trips/hour per household[10] was considered overly conservative given some 55% of dwellings in Kinloch were unoccupied at the time of the 2023 Census. This shows the highly seasonal nature of occupation within the village. A lower rate of 0.59 trips/hour/dwelling based on a survey of a 188-dwelling

[10] NZ Transport Agency Research Report 453 (RR453) Trips and Parking Related to Land Use, Table C1

subdivision in Gulf Harbour, Whangaparaoa was adopted instead. This resulted in a peak hour trip generation of 51 trips.

(ii) Commuter Waka[11] data shows that 61.4% of trips (32 in total) from the wider Mapara area travel to and from Taupō via the CGB, 29.8% (15 trip) are internal to the area, 2.8% (2 trips) head north on Wairakei Drive and 4.1% (2 trips) head west on Poihipi Road. The Mapara area was used as a proxy for travel behaviours to, from and within Kinloch.

(iii) An inbound / outbound trip distribution of 25% / 75% was used for the AM peak hour analysis and an inbound / outbound trip distribution of 63% / 37% was used for the PM peak hour analysis. This is based on the typical distribution of traffic based on the Institution of Transportation Engineers Manual, 10th Edition ("ITE") Single Family Detached Dwelling (Land Use Code 210).

45. The assessment of trip generation in the Technical Note for other committed development[12] was undertaken as follows:

(i) A value of 0.72/dwelling in the morning peak hour and 0.85/dwelling in the evening peak hour were adopted in accordance with the traffic analysis presented as part of PC37 as set out in the Technical Note and ITA[13] was retained for that development. I note that there is a pre-CGB upgrade limit of 140 dwelling applied to the PC37 area which limits AM peak hour traffic generation to 101 trips and PM peak hour traffic generation to 119 trips.

[11] Based on 2018 census data, 2023 not being available at the time of issue of the Technical Note
[12] Other committed development in Kinloch is set out in Table 8 of the ITA and includes the Hunt Club Inc (30 lots), The Terraces (55 lots), Seven Oaks (160 lots), Oakdale Drive (12 lots), Workshop Site (6 lots), The Poplars (12 lots), The Fairways (54 lots), Kinloch Golf Course (108 lots), The Kinloch Manor (12 lots), Edmund Hillary Outdoor Education (1 lot), Locheagle Developments (30 lots)
[13] ITA Section 7.2.5, based on the Nukuhau Plan Change WSP Report "Nukuhau Private Plan Change" dated October 2020

(ii) Traffic associated with the Lochview Estate was assessed based on the 0.9 trips / dwelling per hour as per the traffic analysis presented during the consenting process for that development. Some 570 lots are consented, leading to peak hour traffic generation of 513 trips. There does not appear to be a development limit placed on this development linked to delivery of the CGB.

(iii) A trip rate of 0.59/dwelling per hour was adopted for the remainder of committed development within the Kinloch area. Timing of development was also considered, resulting in some 228 new dwellings being expected in the area by 2027[14]. This equates to some 135 trips in the peak hours, not all of which are expected to go to Taupō.

(iv) The inbound / outbound trip proportions and the distribution of traffic to the road network mirror that provided in the technical assessments for those developments.

46. The resulting traffic flows are shown in Appendix 1.

LOCAL INTERSECTION ANALYSIS

47. As part of the original ITA, SIDRA capacity analysis of the Oakdale Road / Whangamata Road and Kinloch Road / Whangamata Road intersections was undertaken for the AM and PM peak hours. The analysis was based on video traffic surveys undertaken in 2022[15]. Two 'With development' scenarios were analysed for each peak hour:

(i) With Seven Oaks development only; and

(ii) With Seven Oaks Development and 10% increase in background traffic to allow for other committed developments.

[14] Technical Note table 1
[15] ITA Section 3.3

48. No specific allowance was made for Nukuhau Plan Change or for Lochviews Estate traffic as this is unlikely to directly impact Kinloch.

49. The analysis results are shown in Tables 10 and 11 of the ITA[16] for the Oakdale Road / Whangamata Road and shows that the intersection operates at level of service ("LOS") A in both the AM and PM peak hour. Similarly, the results of the SIDRA analysis for the Kinloch Road / Whangamata Road intersection are included in Tables 12 and 13 of the ITA. Again, the intersection operates at LOS A in all scenarios tested with minimal queueing and delay being anticipated.

50. In my opinion, this analysis is robust as it is based on the originally adopted peak hour trip rate of 0.9 trips/dwelling. During consultation with Mr Keys and Mr Smith, it was agreed that there was no need to reanalyse these intersections given the revised peak hour trip rate of 0.59 trips / dwelling is around 65% of that originally assessed.

51. I have considered whether the revised layout of the Kinloch Road / Whangamata Road intersection will alter the outcome of the analysis in the ITA. Given the highly robust trip rate used and the assessed LOS A level of performance, and the additional left turn slip which is likely to make the intersection more efficient operationally, it is my opinion that the outcomes of the original intersection analysis remain valid and would not be altered by updating to the new layout.

52. In terms of other intersections within Kinloch, it is my opinion that all intersections will be able to accommodate the expected levels of traffic generated by the proposed and existing developments as traffic volumes would be less that those experienced at the intersection with Whangamata Road.

[16] ITA Section 8.2

WIDER ROAD NETWORK INTERSECTION ANALYSIS

53. A number of intersections remote from Kinloch were considered to have the potential to be affected by development traffic flows due to the sensitivity of the CGB and the intersections either side of it. These include:

    (i) Poihipi Road / Wairakei Drive;

    (ii) Norman Smith Street / Wairakei Drive; and

    (iii) Tongariro Street / Spa Road.

54. A methodology for testing the effects of the proposed development was agreed with Mr Smith and Mr keys as follows:

    (i) Establishing the existing operation of the network;

    (ii) Testing the effects of the proposed Seven Oaks development against that existing background;

    (iii) Considering the accepted PC37 modelling as the future year baseline model as this included consideration of other committed developments; and

    (iv) Testing the effects of the proposed Seven Oaks development against that future 'with Nukuhau' network.

55. The analysis assumed that the CGB remains the only way to cross the river and does not account for a second river crossing. It was agreed with Mr Keys and Mr Smith that a second river crossing would unlock significant additional capacity to the north of Taupō and that additional modelling of scenarios with a second river crossing would not be necessary.

56. The Poihipi Road / Wairakei Road intersection will be signalised to unlock development within PC37 but will only occur once a second river crossing is provided. The modelling provided as part of our Technical Note therefore retained the current layout. The modelling approach is set out in full under

item 6 of the Technical Note and is generally considers the following four scenarios:

(a) The ‘existing’ scenario is the traffic volumes based on August 2022traffic survey data;

(b) The ‘existing with proposed development’ scenarios adds the traffic from the subject site to the surveyed volumes to allow assessment of effects should the subdivision occur before any other consented development (i.e. wider Kinloch expansion, PC37 or Lochviews Estate);

(c) The ‘background’ scenario which considered the effects of those other consented / known developments (i.e. wider Kinloch expansion, PC37 or Lochviews Estate); and

(d) The ‘background with proposed development’ scenario which adds proposed development traffic to assess effects if it occurs after the other known developments.

57. The PC37 modelling has assessed the southern approach to the Spa Road / Tongariro Street roundabout as having two lanes. Since that modelling was undertaken, this approach has been reduced to a single lane as part of TDC’s change in the function of Tongariro Street. Within the SIDRA modelling, this layout change was resulting in unrealistic queuing on this approach. To address the change in layout at the roundabout, it was agreed with Mr Smith to shift 50% of demands from the southern approach onto the eastern approach of Spa Road.

58. This allows for the redistribution of traffic from the CBD given that there are multiple routing options to both Tongariro Street and Spa Road from the CBD while maintaining the same overall demands through the intersection. This readjustment reflects the fact that the PC37 modelling used as the basis for the ‘background‘ analysis scenarios occurred before the road network change was implemented by TDC.

59. Analysis of the listed intersections was undertaken using SIDRA 9.1 The analysis presented in the Technical Note supersedes the analysis presented in the ITA and I therefore do not consider it further. A summary of the updated analysis is as follows:

(i) Calibration of the queue lengths and delays observed within the modelling was based on Google Map queue length data at the Poihipi Road / Wairakei Road intersection as described under Point 1 of the Technical Note. Based on my discussions with Mr Smith he was satisfied that the modelled queues and the Google Maps queues were of a similar order and that this provided adequate calibration of the models.

(ii) Sensitivity testing of the Norman Smith Street / Wairakei Drive intersection to assess the impact of pedestrian demands showed that these had no impact. This is because the signal phase during which pedestrians are given green time to cross Norman Smith Street is governed by the through traffic green signal on Wairakei Drive and vice versa for the pedestrian crossing on Wairakei Drive. Both scenarios allow for a left turning vehicle to have to give way to pedestrian movements.

(iii) In the AM peak hour, the key modelling results are as follows:

(A) At Poihipi Road / Wairakei Drive, the proposed Seven Oaks residential subdivision traffic is expected to increase delay by less than one second;

(B) At Norman Smith Street / Wairakei Drive intersection, the development traffic increases overall average delay by 6 seconds; and

(C) At the Tongariro Street / Spa Road intersection, the development traffic increases overall average delay by 5 seconds.

(iv) In the PM peak hour, the key modelling results are as follows:

(A) At Poihipi Road / Wairakei Drive, the proposed Seven Oaks residential subdivision traffic is expected to increase delay by less than one second;

(B) At Norman Smith Street / Wairakei Drive intersection, the development traffic increases overall average delay by 8 seconds; and

(C) At the Tongariro Street / Spa Road intersection, the development traffic increases overall average delay by 8 seconds.

60. The proposed Seven Oaks development is expected to add only 32 vehicles per hour to the Norman Smith Street / Wairakei Drive and Tongariro Street / Spa Road intersections. This represents one vehicle approximately every two minutes. The practical increase of one vehicle every two minutes is low and therefore unlikely to have a practical effect on the road network.

61. In addition to the above and as described in response to item 8 of the Technical Note, I supervised additional sensitivity testing in relation to modelled phase times of the Wairakei Drive / Norman Smith Street intersection. This identified that slight changes to phase times or overall cycle times did not have a significant bearing on overall delay.

62. TDC has identified that a capacity upgrade to the road network across the Waikato River is required and funding for identifying such solutions is included within the Lond Term Plan. This funding includes a proportion from development contributions, suggesting that a degree of development prior to completion of the CGB is necessary for this project to achieve its funding

targets. It is my opinion that the minimal traffic effects of the proposed development will be addressed by delivery of the new river crossing and that the levying of development contributions towards the Council-led solution is an appropriate mitigation approach[17] for the likely 1 additional vehicle every 2 minutes on this part of the network associated with the proposed development.

SECTION 42A REPORT

63. I have read the s42A Report prepped by Ms Wood, the Appendix G Engineering Assessment prepared by Mr Keys and the Traffic Modelling Peer Review undertaken by Mr Smith.

64. Mr Smith concludes that the traffic modelling is an accurate assessment of traffic effects. I agree with this conclusion.

65. Mr Keys notes his involvement in the consultation relating to the updated traffic modelling presented in the Technical Note of 5 April 2025. He concludes that he agrees with the conclusions drawn in both that review and also with Mr Smith's conclusions. I agree with this conclusion.

66. Ms Wood state that she has relied on the technical assessment under taken by experts representing TDC and in that regard, that the proposed development is consistent with the relevant Transport Objective and Policies of the District Plan and that traffic effects are no more than minor. Ms Wood recommends that the land use and subdivision consents be granted and I agree with this recommendation.

SUBMISSIONS

67. I have read the submissions relating to traffic and note the following matters have been raised:

[17] I acknowledge that DCs are not an RMA matter and are imposed via the Local Government Act 2002. As explained in my evidence, no infrastructure *vis-à-vis* CGB/Waikato River crossing is necessary to mitigate the minor traffic effects of this development. Nevertheless, any cumulative effects over time will be addressed through the provision of the TDC planned infrastructure that Seven Oaks will contribute towards via DCs.

(i) The upgraded Kinloch Road / Whangamata Road intersection;

(ii) Road width and lane defect upgrades;

(iii) Subdivision road safety;

(iv) Parking;

(v) Policy alignment; and

(vi) Capacity at the CGB and traffic effects to the north of Taupō.

Upgraded Whangamata Road / Kinloch Road intersection (Ms Coubrough)

68. I have reviewed the recent alterations to this intersection and consider that the raised table, median island and resting rail provide a suitable link between the Whangamata Road shared path and the off-road path along the east side of Kinloch Road. In my opinion the additional traffic from the proposed development is unlikely to have a material effect on the safe use of this intersection by active mode users.

Road Width and Lane Defect Upgrades (Ms Coubrough)

69. The submission is not clear on which road cross sections and lane defects are of concern. The TDC 'Code of Practice for Development of Land[18]' ("CoP") sets the minimum technical standards expected in relation to expectations for subdivisions. Section (C) Transportation (iv) Construction of the CoP refers to NZS4404:2004 as an appropriate means of compliance with the Council's requirements for road construction. This document has been superseded by NZS 4404:2010. I have assumed that the intent of the CoP is to continue to align with NZS4404 as that document is updated over time. I have therefore considered the existing road network in the context of the 2010 version of NZS4404.

70. In relation to the proposed road network for the new area of subdivision, I consider that these are generally consistent with NZS4404 as discussed

[18] Adopted 29 September 2009

earlier in my evidence. In relation to the existing roads within the wider Lisland Drive subdivision, I have measured these to be between 16m and 20m wide[19] and I consider that they are also consistent with the standards set out in NZS4404 which I discussed earlier in my evidence.

71. The urban section of Kinloch Road also generally conforms to NZS 4404 Table 3.2. Road Design Figure E23 – Urban Live and Play, changing in nature to the north of 'The Loch Up' to be rural in nature. At this point, the road corridor retains its generally 20m wide corridor and has two marked lanes of some 3m – 3.5m width. The capacity of a single traffic lane is typically between 1,000vph and 1,800vph depending on width and the degree of side friction (i.e. on street parking, number of vehicle crossings, width of shoulder etc). The 2022 traffic surveys identified a peak hour traffic demand of 170 on Kinloch Road[20]. Considering a robust case of all of this traffic occurring in a single lane and adding on all development traffic, the total lane demand would be some 222vph. This is approximately 25% of the lower end assessment of lane capacity and I am satisfied that Kinloch Road can accommodate anticipated traffic volumes.

<u>Subdivision Road Safety (Mr Keith)</u>

72. Mr Keith raises a number of concerns in relation to the safe operation of Okaia Drive, Kahikatea Drive and Oakdale Road, particularly in relation to pedestrians and cyclists. He is concerned about the lack of footpath on the northern side of Kahikatea Drive, the number of tradespeople who would be involved in building the new houses and lack of traffic calming measures on the road.

73. I have discussed road formation and suitability earlier in my evidence and remain of the option that the existing and proposed road cross sections within the subdivision are suitable to accommodate the various walking, cycling and traffic demands within the area. I also note from my site visits

[19] Based on aerial photography in the GRIP GIS system
[20] ITA section 3.3 Table 1

that there are wide berms where footpaths are not provided, affording opportunities for people to walk along that side of the road also, or wait off the carriageway to cross the road. Sight lines are generally good, giving pedestrians and drivers ample opportunity to take note of each other within the road corridor.

74. In terms of traffic calming and vehicle speeds, this is largely a matter of compliance and enforcement. A 50km/hr speed limit is standard within an urban environment and there are processes available to TDF if a slower speed limit is considered necessary in future. I note that ether have been no reported crashes within Kinloch and that the collective and personal road safety risk ratings are low throughout. As such, I do not consider that traffic calming measures are necessary to mitigate effects of the proposed development.

Parking (Kinloch Community Association)

75. Mr Brittain has raised a number of issues in relation to boat ramp access and parking on berms, at the Domain, and in the village centre, with particular regard to damage caused and safety effects.

76. I acknowledge the concerns raised. From Mr Brittain's information, there would appear to be an existing issue around poor driver behaviour and parking compliance and enforcement, and the frustration expressed with this is understandable. I also note that Kinloch boat ramp and marina area is not reserved for residents and can reasonably be expected to provide facilities for those living or staying outside of Kinloch.

77. I have searched the 2023 Census. The average household density within the Kinloch SA2 is 235.9/km^2. When this is applied to the 4.65km/^{2} area representing Kinloch, this equates to approximately 1,096 households within the SA2 Kinloch area. The proposed development would and 83 households. This is some 7.6% increase in potential parking and boat ramp access demands that would come from within Kinloch on its own, assuming the same level of boat ownership occurs within the proposed development

as currently exists within Kinloch. This takes no account of demand arising from outside of the village.

78. I conclude that the addition of 83 dwellings to Kinloch is likely to increase parking demand in and around the marina and village centre area but that overall, the effect of this is likely to be minimal (less than minor).

Policy Alignment (Te Kowhai Residents Society)

79. The submission refers to Policy 1-c of the NPS-UD and comments on the low level of goods and services on offer within Kinloch, the distance to Taupō and the lack of public transport facilities. I acknowledge that when considered in isolation and based on current service provision, Kinloch may not provide a 'full' access opportunity. However, acknowledging that I am not a planning expert, my understanding of how NPS-UD should be applied is that the objectives inform the policies. Objective 4 acknowledges that environments develop and change over time. Policy 1 also refers to supporting different housing type needs within communities.

80. The submission also refers to Policy 3f.2.1 of the District Plan which covers similar topics to NPS-UD Policy 1c in relation to encouraging walking and cycling and having a safe and efficient road network.

81. From a transportation perspective, intensification of development within Kinloch provides a greater demand for increased public transport services and also for the location of additional goods and services within the community, reducing the need for people to drive to Taupō for all goods and services. An example of this is the proposed ECE within the subdivision. I also consider that the internal walking and cycling network supports the NPS-UD and the District Plan in that Kinloch is a highly walkable community. The existing and proposed roads have sufficient capacity to accommodate expected levels of traffic demand and provide shared paths to at least one side of the road with Kahikatea Drive providing paths to both sides of the road.

Capacity at the CGB and traffic effects to the north of Taupō (Tukairangi Trust)

82. I have considered traffic effects on the CGB and the approaches to it in detail as discussed in earlier in my evidence. I conclude that the addition of one vehicle every two minutes is unlikely to have a practical effect on the operation of that part of the road network. As discussed above, while not an RMA matter, it is nevertheless relevant that Seven Oaks will be paying development contributions to assist in funding of the CGB upgrade or replacement when the need for that infrastructure is triggered and TDC commences works.

CONCLUSION

83. I have assessed the potential traffic and transportation effects arising from the proposed residential development at Kahikatea Drive, Kinloch. I conclude the following:

(i) The proposed subdivision road network and those of the wider Lisland Drive subdivision they connect with are suitable to meet the expected transportation demand of the proposed development;

(ii) The intersections within Kinloch, particularly those of Kinloch Road and Oakdale Drive with Whangamata Road have sufficient capacity to accommodate the expected traffic demands and for there to be a negligible effect on road safety at the same;

(iii) The proposed Seven Oaks development is expected to add only 32 vehicles per hour to the Norman Smith Street / Wairakei Drive and Tongariro Street / Spa Road intersections. This represents one vehicle approximately every two minutes. The trips generated would also be distributed to different movements at the intersection further reducing the concentration of any effects. As such, the practical increase

of one vehicle every two minutes is low and therefore unlikely to have a practical effect on the road network.

(iv) In terms of the wider road network, during the AM peak hour, the key modelling results are as follows:

(A) At Poihipi Road / Wairakei Drive, the proposed Seven Oaks residential subdivision traffic is expected to increase delay by less than one second;

(B) At Norman Smith Street / Wairakei Drive intersection, the development traffic increases overall average delay by 6 seconds; and

(C) At the Tongariro Street / Spa Road intersection, the development traffic increases overall average delay by 5 seconds.

84. While not an RMA matter, it is nevertheless relevant that Seven Oaks will be paying development contributions to assist in funding of the CGB upgrade or replacement when the need for that infrastructure is triggered and TDC commences works.

85. It is my opinion that there are no traffic or transportation reasons why resource and subdivision consent should not be granted.

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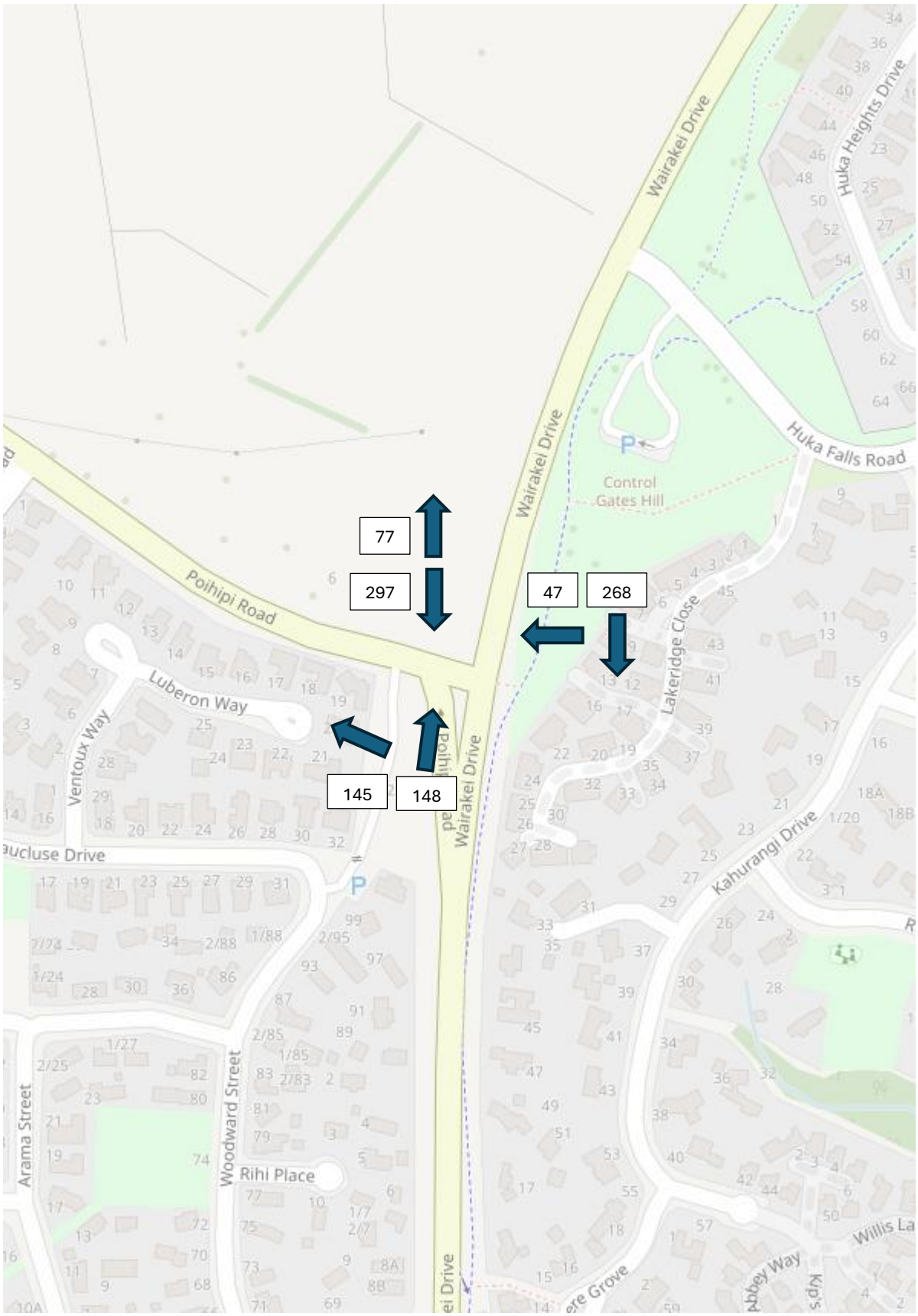
Judith Victoria Makinson

12 August 2025

APPENDIX 1 – TRAFFIC FLOW DIAGRAMS

Existing AM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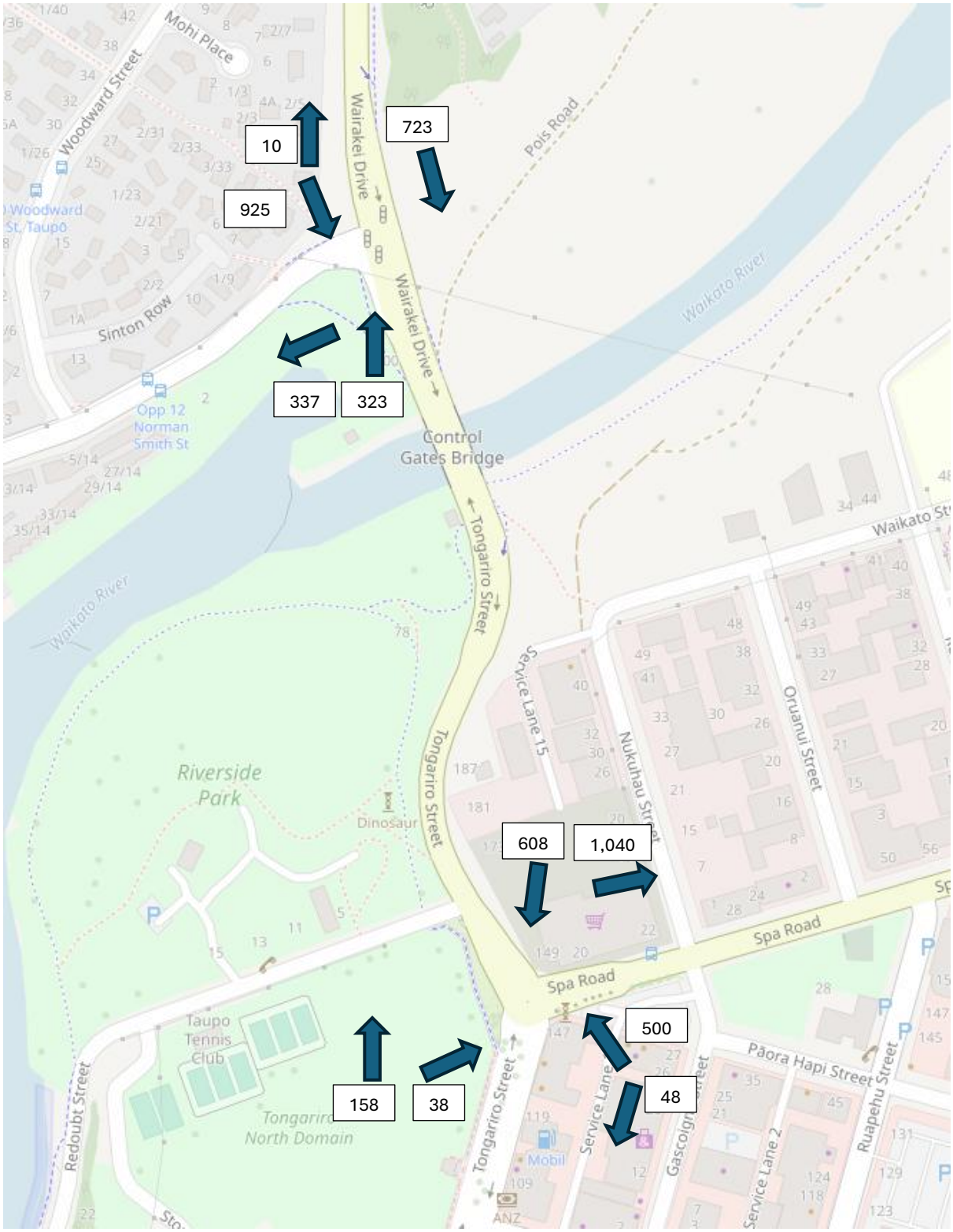
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Service Lane 15
Nukuhau Street
Oruanui Street
Waikato St
Riverside Park
Dinosaur
Spa Road
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Mobil
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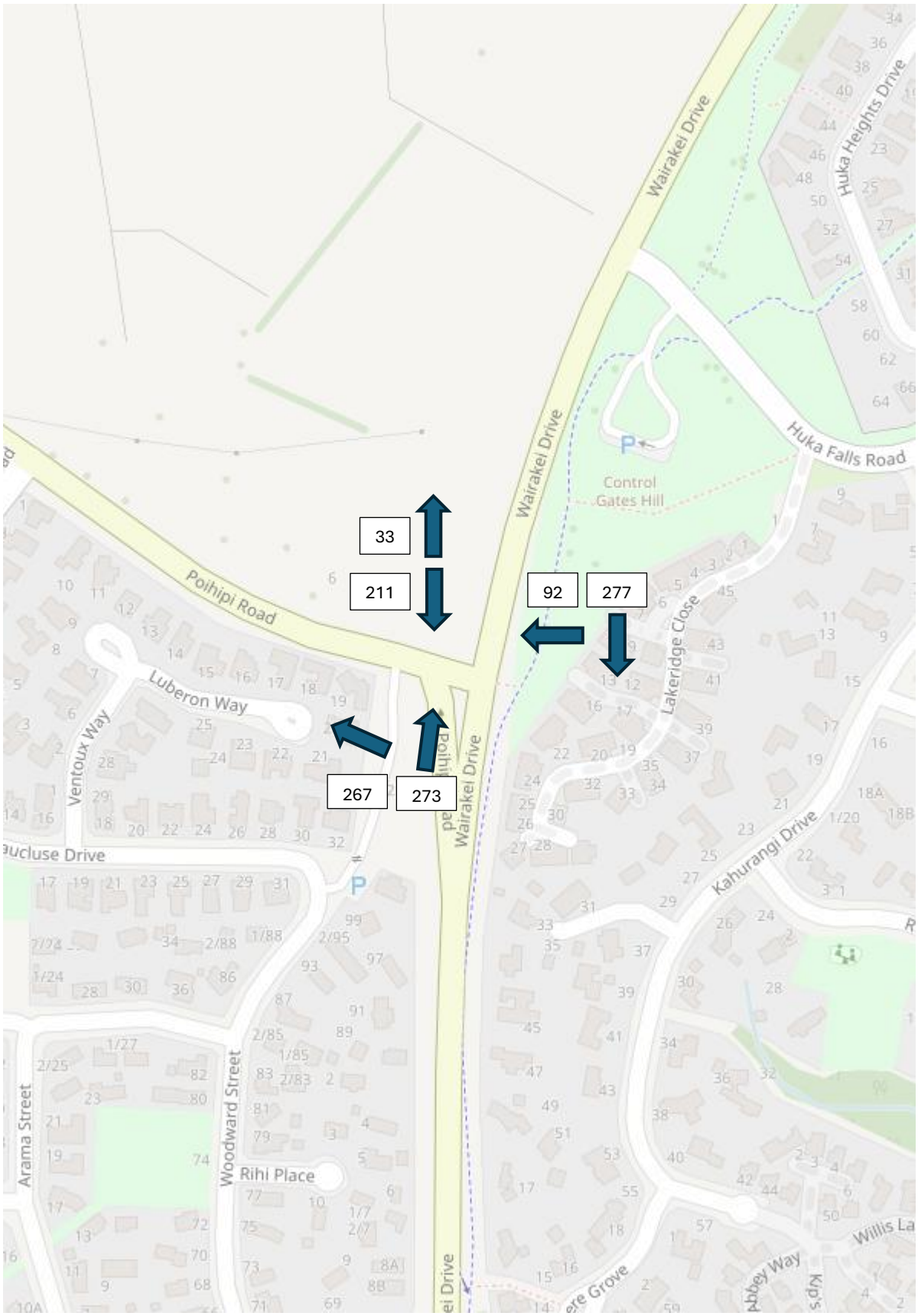
Existing PM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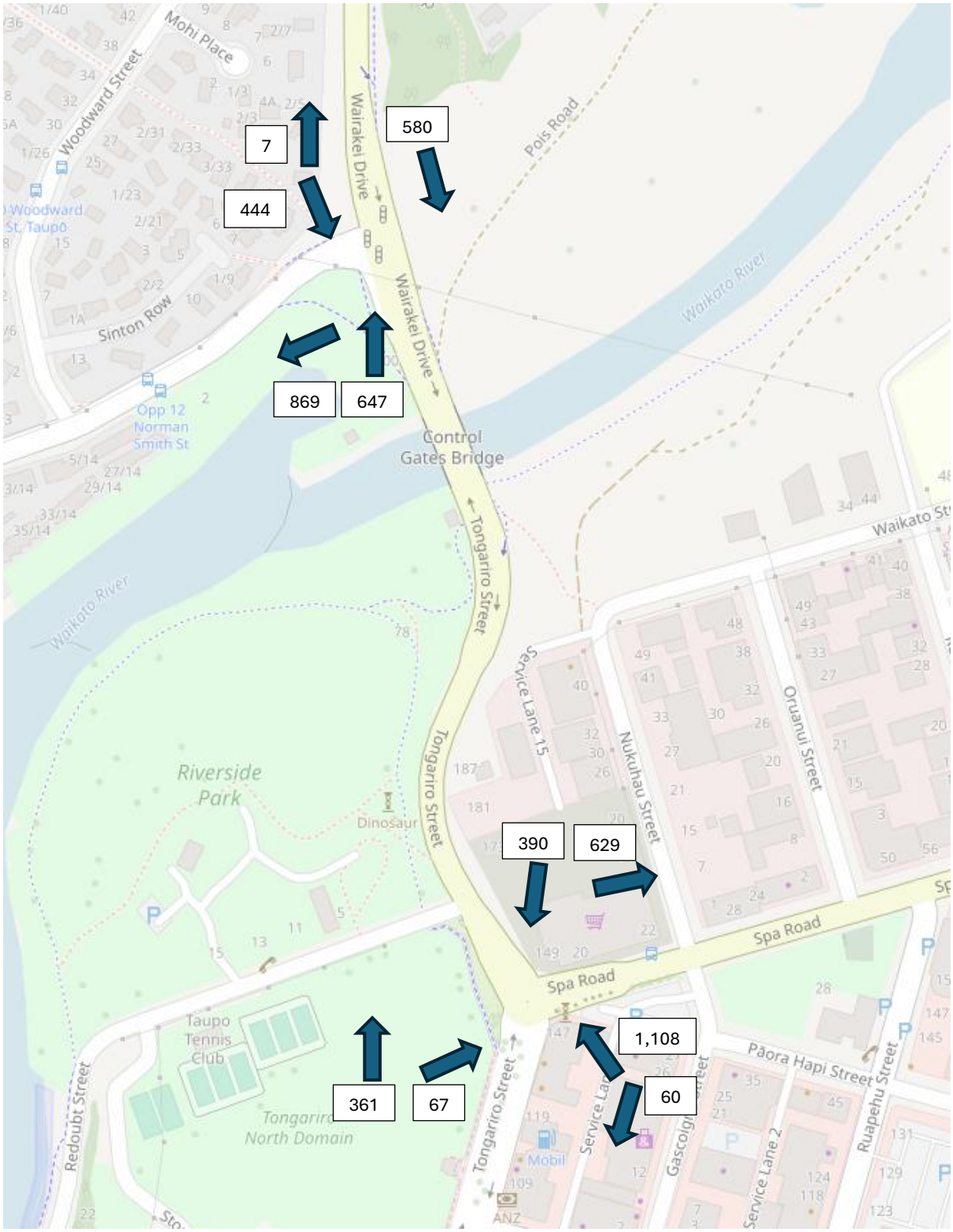
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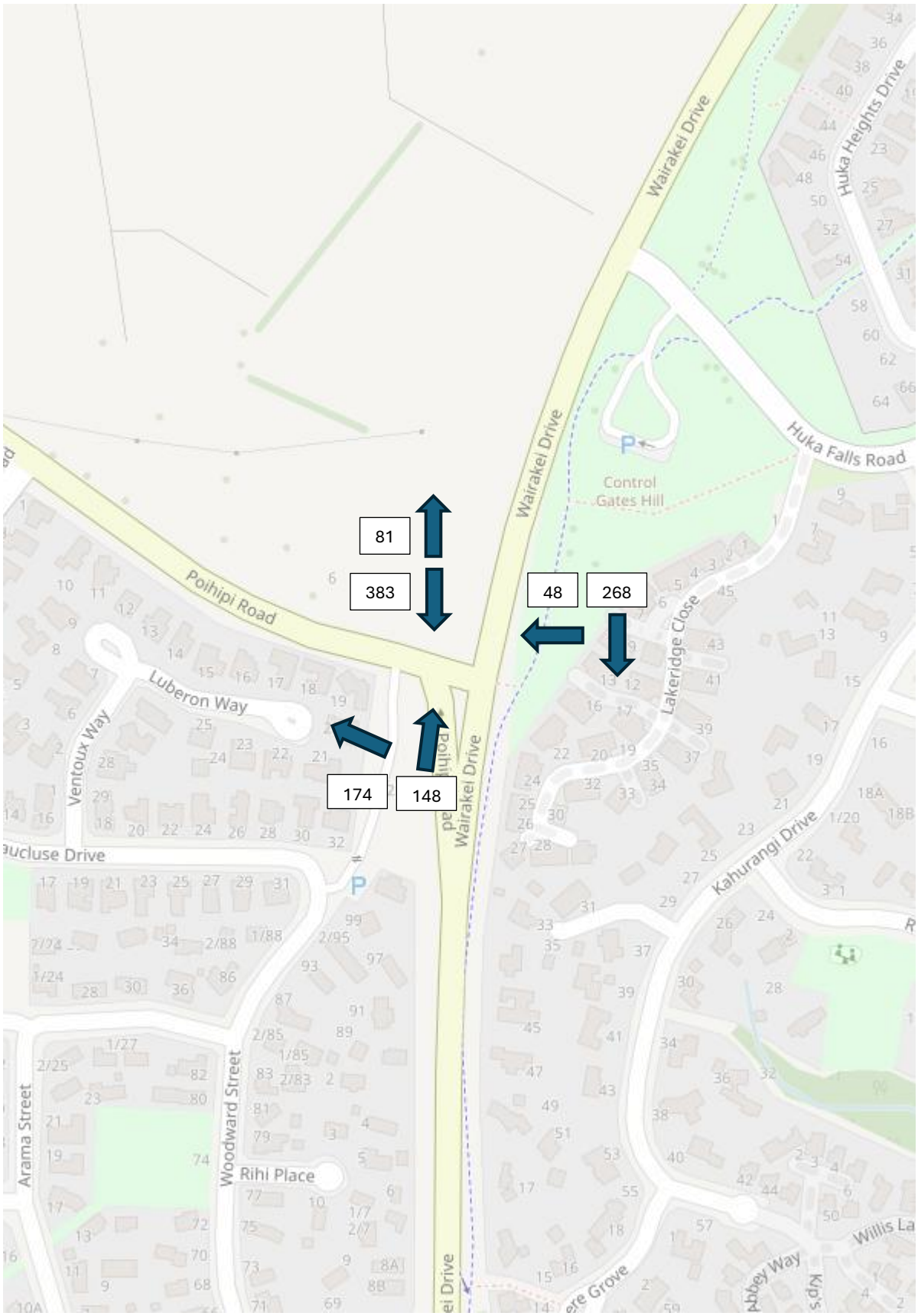
Future AM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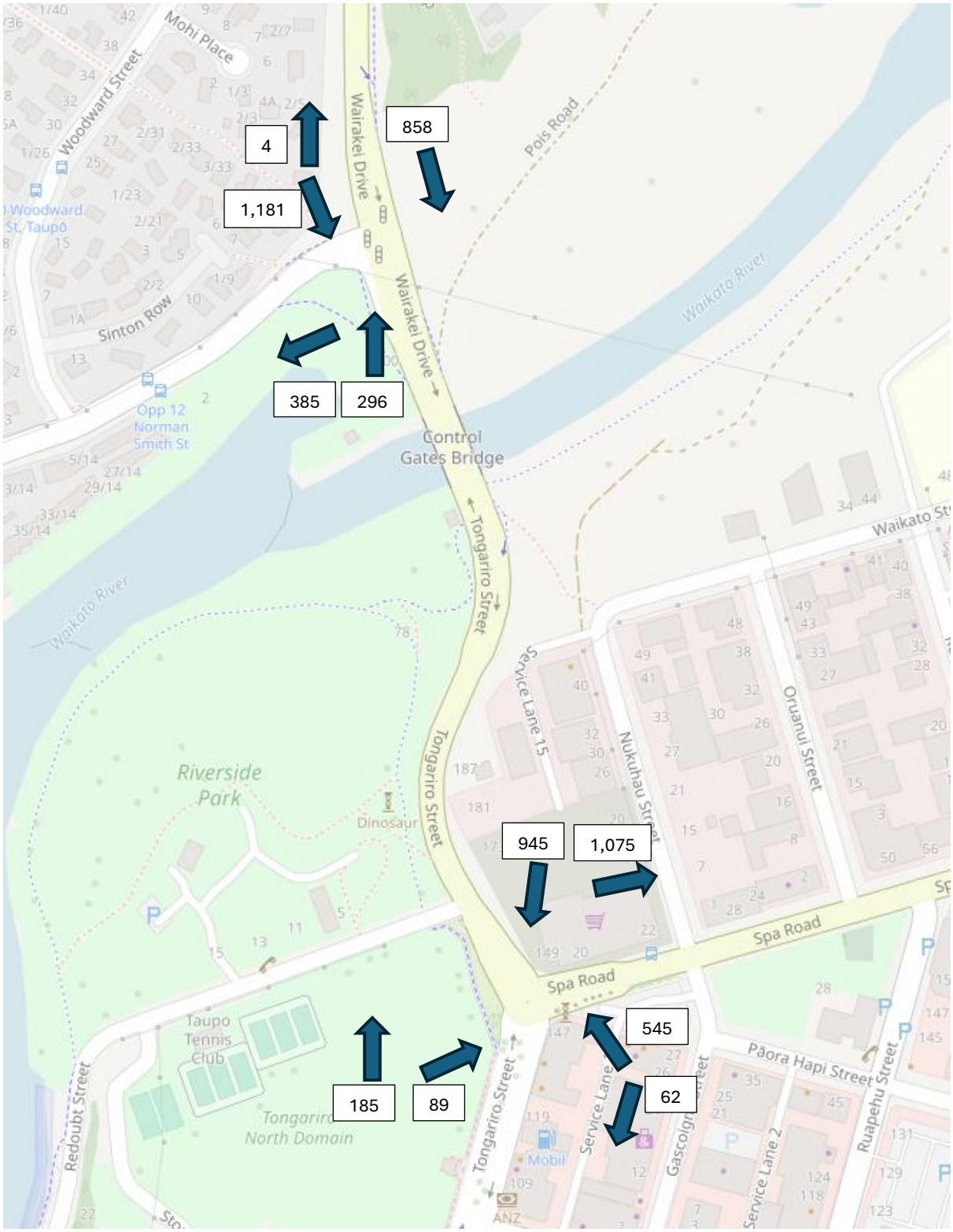
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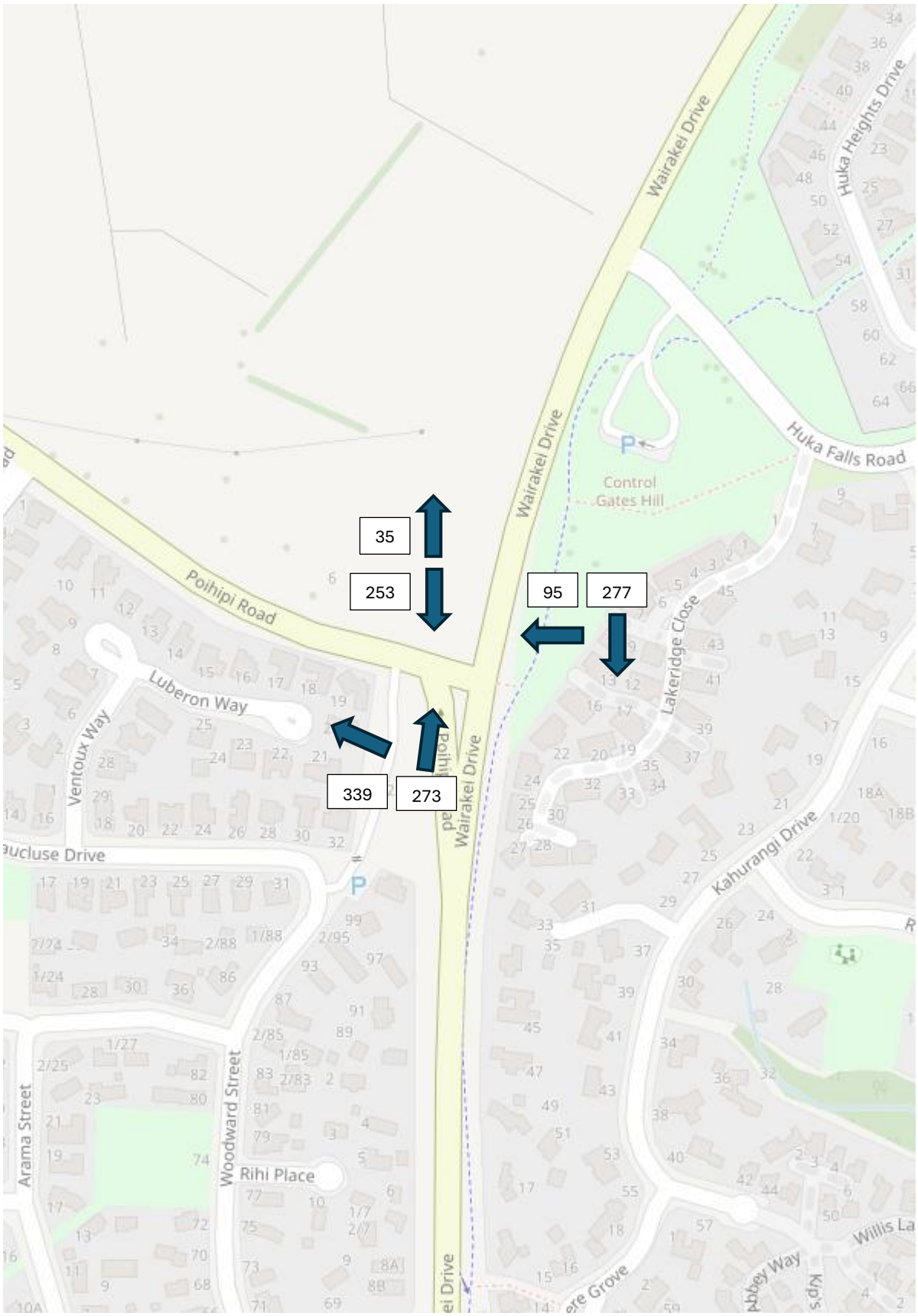
Future PM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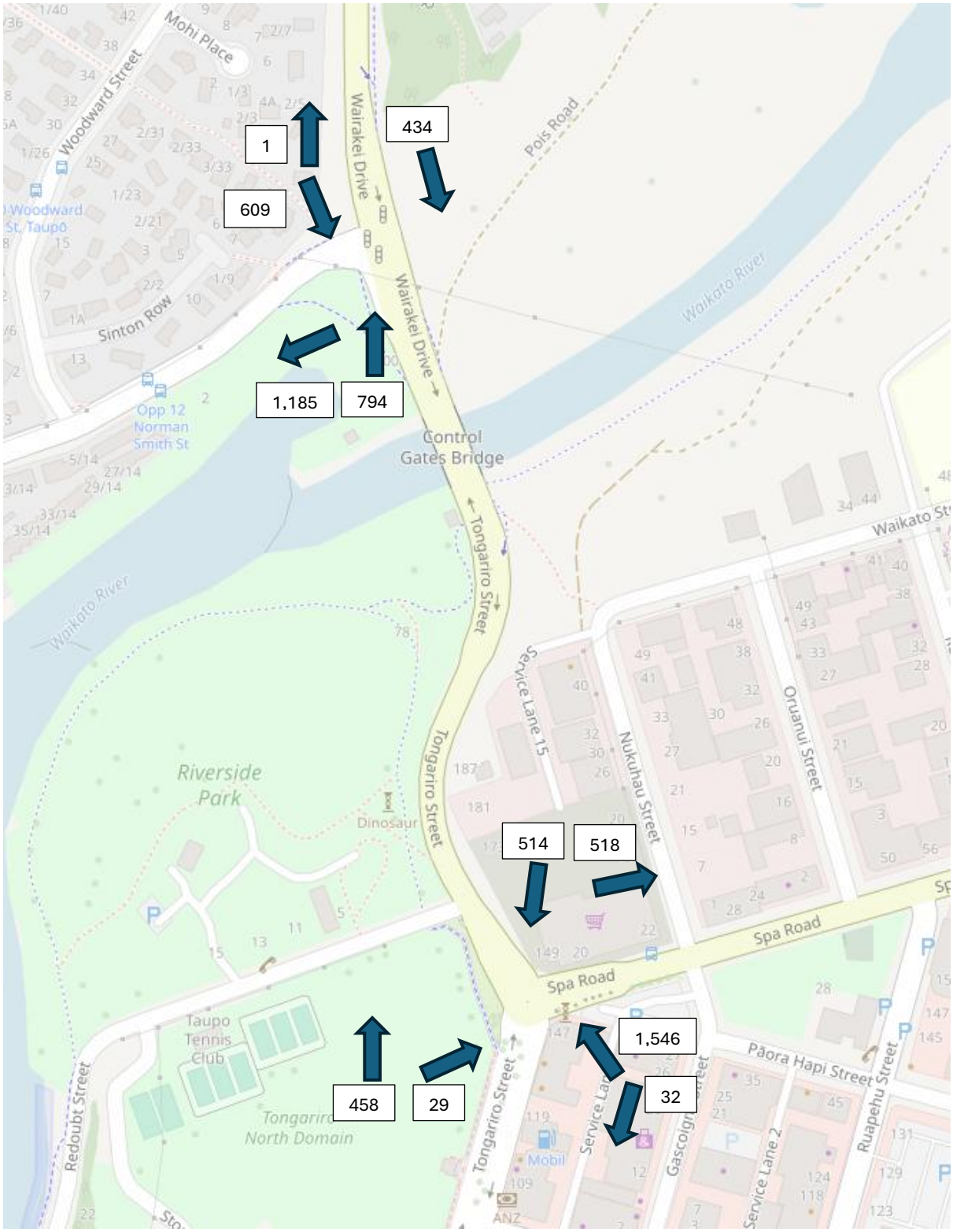
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