

BEFORE HEARING COMMISSIONERS

UNDER the Resource Management Act 1991
(‘RMA’)

IN THE MATTER OF the Proposed Waikato
District Plan (‘PWDP’), Hearing 25: Zone Extents

**STATEMENT OF EVIDENCE OF AARON JAMES GREY (PLANNING)
ON BEHALF OF
MICHAEL SHEN / M & M SHEN LUCKY FAMILY TRUST**

17 FEBRUARY 2021

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1. Introduction

Qualifications and Experience

- 1.1 My full name is Aaron James Grey. I hold a Bachelor of Planning with Honours from the University of Auckland and I am an Intermediate Member of the New Zealand Planning Institute.
- 1.2 I have had seven years' experience covering a wide range of land use and subdivision planning matters on behalf of private and public entities in New Zealand. During that time, I have been involved with many aspects of resource management including preparation and lodgement of resource consent applications, resource consent hearings, submissions, and presentation of evidence in respect of plan changes.
- 1.3 I currently hold the position of Senior Planner with CivilPlan Consultants Limited, which I have held for the past two years, and I previously held the position of Planner from April 2016. For the two years prior, I held the position of Planner with Baseline Group Limited in Christchurch.

Expert Witness Code of Conduct

- 1.4 I have read the Code of Conduct for Expert Witnesses contained in the Environment Court's Practice Note 2014. I have read and agree to comply with that Code.
- 1.5 I have complied with the Code of Conduct in preparing this evidence and agree to comply with it while giving oral evidence before the Hearing Commissioners, as if this were a hearing before the Environment Court. I have considered all material facts that I am aware of that might alter or detract from the opinions that I express. This evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

My Role

- 1.6 I have been engaged by Michael Shen, on behalf of M & M Family Trust ('the submitter'), to provide planning advice, inputs and assistance in relation to the Proposed Waikato District Plan ('PWDP') processes as it concerns the property interests of the submitter within the Waikato District.
- 1.7 The submitter's interests in the PWDP include the zoning of their property at 54 Dominion Road, Tuakau.

Scope of Evidence

- 1.8 The scope of evidence relates to the changes to zoning requested by the submission of Michael Shen, on behalf of M & M Family Trust (submission number 153).
- 1.9 This submission sought that the property at 54 Dominion Road, Tuakau, legally described as Lot 2 DP 153636 (held in RT NA91C/669), with an area of 6.4275 ha, be subject to the Residential zone across the whole of the site, rather than being split between Residential zone (applying to approximately 0.9 ha) and Rural zone (applying to approximately 5.5 ha), as shown in the PWDP.
- 1.10 This submission also identified consequential relief that the neighbouring properties at 48 and 50 Dominion Road (Lot 1 DP 485993 and Lot 2 DP 371796) be subject to the Residential zone across the whole of those sites. Submission 299 (by 2SEN Ltd and Tuakau Estates Ltd) has sought that change in zoning as primary relief. I understand that a section 32AA report and related evidence is being prepared by those submitters for Hearing 25.
- 1.11 I accept that the relief sought by the submitter in relation to 54 Dominion Road is reliant on the relief sought by submission 299 first being accepted by the Hearings Panel. For that reason, I have prepared my evidence with the assumption that occurs.

Approach to Evidence

- 1.12 My evidence has been prepared with reference to the section 42A framework report on zone extents, prepared by Dr Mark Davey and dated 19 January 2021. That report outlines three ‘lenses’ that form a Rezoning Assessment Framework, which Council will assess the merits of requests for changes to zoning sought in submissions against. These lenses are:
- (a) Lens 1: Assessment of Relevant Objectives and Policies in the Proposed Waikato District Plan.
 - (b) Lens 2: Consistency with Higher Order Policy Documents and Strategies.
 - (c) Lens 3: Best Practice Planning.
- 1.13 I consider each of these lenses in the context of the requested change in zone in subsequent sections.
- 1.14 To support my evidence, I have also prepared a section 32AA assessment of the requested change to zoning, which is attached as Attachment 1.
- 1.15 As noted above, my evidence is prepared on the assumption that the Hearings Panel first determine to grant the relief sought by submission 299, resulting in all of the properties at 48 and 50 Dominion Road, Tuakau, being subject to the Residential zone.

- 1.16 If the Hearings Panel determines not to grant the relief sought by submission 299, then I would not consider the relief sought by Michael Shen in relation to the property at 54 Dominion Road, Tuakau, to be appropriate. Similarly, if the Hearing accepts alternative relief in response to submission 299, then the relief sought at 54 Dominion Road will need to be reconsidered in light of that.

2. Lens 1: Assessment of Relevant Objectives and Policies in the Proposed Waikato District Plan

Objectives and Policies Identified in Appendix 2

- 2.1 Appendix 2 of the section 42A framework report provides a matrix of relevant objectives and policies for various scenarios for changes to zoning, including changes from the Rural zone to the Residential zone. I consider the requested zoning against the objectives and policies specified in that matrix (which includes strategic directions that may not be strictly classified as objectives and policies as described section 75(1)(c) of the RMA) as follows.

Strategic direction 1.5.1(b): Urban forms of residential, industrial, and commercial growth in the district will be focused primarily into towns and villages, with rural-residential development occurring in Country Living Zones. Focusing urban forms of growth primarily into towns and villages, and encouraging a compact form of urban development, provides opportunity for residents to "live, work and play" in their local area, minimises the necessity to travel, and supports public transport opportunities, public facilities and services.

- 2.2 As the requested change in zoning provides for additional urban growth within the Tuakau township, in a location within 1 km of the town centre, I consider that a compact form of urban development would be provided for as a result.

- 2.3 Therefore, I consider that the requested zoning is consistent with this strategic direction.

Strategic direction 1.5.2(a): Growth occurs in defined growth areas

- 2.4 Appendix 2 to the section 42A framework report states that “*Defined growth areas are ‘urban environment’ zones under the PWDP*”, in line with the text provided in Chapter 1.5.2 of the PWDP.

- 2.5 The site at 54 Dominion is partly but not fully subject to the Residential zone, which is an ‘urban environment’ zone. Therefore, I am required to conclude that the requested change in zoning, which affects that part of the site that is currently not in the Residential zone, is inconsistent with this strategic direction, on the basis that the land currently in the Rural zone is not a defined growth area.

2.6 However, I note that consistency would be achieved if the requested zoning were to be provided for by the Panel, as the site would then fully be within a “defined growth area”.

Strategic direction 1.12.3(a): A district which provides a wide variety of housing forms which reflect the demands of its ageing population and increases the accessibility to employment and community facilities, while offering a range of affordable options

2.7 In my view, enabling housing within land less than 1 km from the Tuakau Town Centre allows for accessibility to employment and community facilities to be increased.

2.8 In addition, given that the site is near to an established industrial area and has south-facing topography, I consider it likely that residential development would be targeted towards the lower end of the market and therefore increase the range of affordable housing options available in Tuakau.

2.9 Therefore, I consider that the requested zoning is consistent with this strategic direction.

Strategic direction 1.12.3(c): A district that has compact urban environment that is focused in defined growth areas, and offers ease of movement, community well-being and economic growth

2.10 This strategic direction overlaps with those considered above.

2.11 As per that assessment, I consider that the requested zoning supports a compact urban environment, but this could only be within a defined growth area if the requested change in zoning was provided for by the Panel.

Strategic objective 1.12.8(b)(i): Urban development takes place within areas identified for the purpose in a manner which utilises land and infrastructure most efficiently.

2.12 Similar to the above in relation to “defined growth areas”, the part of the site at 54 Dominion Road, Tuakau is not “identified for” urban development unless the requested change in zoning was provided for by the Panel.

2.13 However, the balance of the site and adjoining sites already within the Residential zone have been identified for urban development and infrastructure is to be provided to cater for that growth. Appendix 5 of the section 42A framework report identifies timing of 2023-2030 for this infrastructure, which will need to be included as part of the Council’s Long Term Plan. This includes servicing for the 0.9 ha area of 54 Dominion Road that is within the Residential zone.

2.14 In addition, the National Policy Statement for Urban Development 2020 requires Council to ensure sufficient capacity in townships' public reticulated network to service above the anticipated demand resulting from growth. This will be required regardless of which parts of Tuakau that growth is enabled in and so I presume that pressures on the capacity of infrastructure networks on a township scale would not be impacted by the requested zoning at 54 Dominion Road being accepted (since, otherwise, other land within Tuakau would then have to be subject to the Residential zone).

2.15 In order to support urban development of all of 54 Dominion Road, Tuakau, I consider that no significant additional bulk infrastructure would be required, given that bulk infrastructure to service the Residential zone along Dominion Road is already planned. I expect extensions of public networks to service all of 54 Dominion Road instead occur as part of future subdivision of the site, provided by the developer. Therefore, I consider that the requested zoning would enable additional urban development in a manner that utilises infrastructure most efficiently.

2.16 Subsequently, retaining the Rural zone over the majority of the site would, in my view, result in an inefficient use of land, given the ability of infrastructure.

2.17 Therefore, I consider that the requested zoning is consistent with this strategic objective.

Strategic objective 1.12.8(b)(ii): Promote safe, compact sustainable, good quality urban environments that respond positively to their local context.

2.18 Appendix 2 to the section 42A framework report states that "This should be interpreted to mean rezone requests to expand an urban area are contiguous with existing urban areas".

2.19 In that regard, I consider that the requested zoning is consistent with this strategic direction, noting the assumption that the Panel first determines that all of 48 and 50 Dominion Road should be subject to the Residential zone.

Strategic objective 1.12.8(b)(iii): Focus urban growth in existing urban communities that have capacity for expansion.

2.20 The requested change in zoning provides for urban growth for an existing urban community (Tuakau), which has been identified by the PWDP as having capacity for expansion. I also consider that the topography of the site is relatively suitable for urban development (and noting that it is similar to greenfield areas within the PWDP's Residential zone).

2.21 Furthermore, Appendix 9 of the section 42A report shows that the supply of residential land within the PWDP is not anticipated to meet demands (including as required by the NPS-UD) and so additional capacity should be provided for.

2.22 Therefore, I consider that the requested zoning is consistent with this strategic objective.

Strategic objective 1.12.8(b)(vi): Protect and enhance green open space, outstanding landscapes, and areas of cultural, ecological, historic, and environmental significance.

2.23 The site at 54 Dominion Road, Tuakau is not shown as subject to any overlays under Stage 1 or 2 of the PDWP (other than being identified as within the Waikato River Catchment, as all of the Tuakau township is). This suggests to me that there are no significant natural or physical features at the site that require the avoidance or mitigation of adverse effects from potential urban development.

2.24 I also note that an esplanade reserve has already been vested along the Kairoa Stream and that this is greater than the minimum 20 m requirement under the RMA. That esplanade is within the Reserve zone. Based on that, I do not consider matters related to the protection of that stream to be relevant to the requested zoning.

2.25 Due to this, I see no obvious reason why the requested zoning would be inconsistent with this strategic objective.

Objective 4.1.2(a): Future settlement pattern is consolidated in and around existing towns and villages in the district.

2.26 As previously discussed, I consider that the requested zoning achieves this objective due to the close proximity of the site to the Tuakau town centre.

Policy 4.1.3(a): Subdivision and development of a residential, commercial and industrial nature is to occur within towns and villages where infrastructure and services can be efficiently and economically provided

2.27 As previously discussed, Council already intends to provide public infrastructure to service that part of 54 Dominion Road and neighbouring sites in the Residential zone and I consider that extensions to these networks can be efficiently provided and funded by the future developer of the site. Further, the NPS-UD requires wider network capacity to cater for anticipated growth demands regardless of whether the site at 54 Dominion is subject to the Residential zone to meet development capacity requirements of the NPS-UD or not (and other land is instead).

2.28 On that basis, I consider that the requested zoning is consistent with this policy.

Policy 4.1.3(b): Locate urban growth areas only where they are consistent with the Future Proof Strategy Planning for Growth 2017.

2.29 Tuakau is identified by the Future Proof Strategy Planning for Growth 2017 as one of the townships where 80% of growth is to be provided for. The site at 54 Dominion Road, Tuakau also appears to be fully within the indicative urban limits shown on the maps included as part of this document.

2.30 Therefore, I consider that the requested zoning is consistent with this policy.

Policy 4.1.5(a): Encourage higher density housing and retirement villages to be located near to and support commercial centres, community facilities, public transport and open space.

2.31 As previously discussed, I consider that the requested zoning is consistent with this policy due to the close proximity of the site to the Tuakau town centre.

Objective 5.1.1(a): Subdivision, use and development within the rural environment [is provided for] where: high class soils are protected for productive rural activities; productive rural activities are supported, while maintaining or enhancing the rural environment; urban subdivision, use and development in the rural environment is avoided.

2.32 I note that “is provided for” was inserted into this objective by Council during the Hearings on the rural provisions. I consider it necessary for the objective to be amended as such in order for a logical interpretation of the provision to be derived.

2.33 A detailed analysis of the fertility of soils at 54 Dominion Road, Tuakau, has not been undertaken. However, I have relied on Landcare Research’s mapping and soil mapping prepared by Council for Waikato 2070 to determine that the soils at the property are likely to be Class 2.

2.34 This mapping also shows that the same soil class applies to the majority of the Tuakau township, including the growth area identified in the PWDP (zoned Residential or Village) along Dominion Road.

2.35 “High class soils” are defined by the PWDP to include Class 2 soils. Therefore, I must conclude that the requested zoning, which seeks to use land containing high class soils for urban development, will not achieve this objective. However, I also note that the adjacent Residential zone along Dominion Road already proposed by the PWDP does not achieve this objective either.

2.36 In addition, any urban development in the rural environment is to be avoided by this objective. Similar to earlier provisions, this objective can only be achieved if the Panel accepts the requested zoning (given that, once rezoned, the land would no longer be part of the rural environment).

Objective 5.3.1(a): Rural character and amenity are maintained.

Objective 5.3.4(a): Retain open spaces to ensure rural character is maintained.

2.37 These two objectives are considered together, given the generally overlapping themes that each relates to.

2.38 I expect that the use of land currently identified as ‘rural’ for urban development will result in rural character and amenity no longer being maintained and therefore the requested zoning would be inconsistent with these objectives.

2.39 However, these objectives can also relate to the impacts of the requested zoning on land remaining subject to the Rural zone. In that regard, I consider that the use of all of 54 Dominion Rd for urban purposes (following rezoning) would have limited impact on rural areas, given that the only interface with the Rural zone would be along its western boundary. Noting that, the character and amenity of the rural environment in general would, in my opinion, not be significantly affected by the requested zoning.

Policy 5.3.8(a): Protect productive rural areas by directing urban forms of subdivision, use, and development to within the boundaries of towns and villages

2.40 The area of 54 Dominion Road subject to the zoning request is not within the current boundary of Tuakau (but could be if the Panel provides for the requested zoning). Therefore, this policy instructs the existing rural use of the land to be protected.

2.41 However, I would argue that by allowing for urban development directly adjacent to the Tuakau township, in closer proximity to the town centre than other sites that have been zoned for urban development, that this action reduces demand for urban forms of subdivision, use and development in less suitable areas outside of the boundaries of towns and villages.

2.42 Therefore, I consider that, on face value, the requested zoning is not consistent with this policy, but that effects resulting from the requested zoning being provided for would achieve this policy.

Policy 5.3.8(b): Ensure development does not compromise the predominant open space, character and amenity of rural areas

2.43 The open space, character and amenity of the site at 54 Dominion Road will become compromised by development to the south (Industrial zone), north, north-east and north-west (Residential and Village zones) and west (assuming 48 and 50 Dominion Road are to be within the Residential zone) should development be undertaken in accordance with the PWDP. For that reason, I consider the effects of the additional urban development in this area enabled by the requested zoning on the character and amenity of rural areas to be minimal.

2.44 In regards to the interface with the Kairoa Stream to the south, an esplanade reserve has already been vested in this location and so, I consider that urban development at 54 Dominion Road will not compromise the natural character associated with the stream.

2.45 Therefore, I consider that the requested zoning will not be inconsistent with this policy.

Policy 5.3.8(c): Ensure subdivision, use and development minimise the effects of ribbon development

2.46 I consider that the requested zoning avoids the creation of ribbon development by extending urbanisation along Dominion Road for the full depth of the property.

2.47 In my view, the zoning pattern in the PWDP is ribbon development, as it only allows for a restricted depth of urban development from Dominion Road, even though land further to the south (across the railway line) is also subject to urban development.

2.48 Therefore, I consider that inconsistency with this policy is avoided as result of the requested zoning.

Policy 5.3.8(e): Subdivision, use and development opportunities ensure that rural character and amenity values are maintained

2.49 As per the above commentary, I concede that urban development of 54 Dominion Road would not enable the rural character and amenity values to be maintained on that site, but I consider that the values of the rural environment in general are not significantly affected by the requested zoning.

2.50 Therefore, I consider the inconsistency with this policy to be minimal.

Policy 5.3.8(f): Subdivision, use and development ensures the effects on public infrastructure are minimised

- 2.51 As discussed earlier, I do not anticipate that any additional bulk infrastructure is necessary to service additional urban development at 54 Dominion Road, with proposed networks for existing Residential zoned land to be extended by developers, at which time it can be appropriately sized. Further, the NPS-UD requires wider network capacity to cater for anticipated growth demands regardless of whether the site at 54 Dominion is subject to the Residential zone to meet development capacity requirements of the NPS-UD or not (and other land is instead).
- 2.52 Therefore, I consider the requested zoning to be consistent with this policy.

Other Objectives and Policies Considered to be of Relevance

- 2.53 The section 42A framework report appears to suggest that when the matrix provided in Appendix 2 identifies the scenario of the sought change in zoning, then this provides an exhaustive list of all relevant objectives and policies to that sought change in zoning. However, I consider that there are a handful of further objectives and policies that should be given regard to for the sought change in zoning (although perhaps of lesser importance), which would still be relevant for the purpose of Lens 1. These are considered as follows.

Objective 4.1.1(b): The minimum targets for sufficient, feasible development capacity for housing in the Waikato District area are met, in accordance with the requirements of the National Policy Statement on Urban Development Capacity 2016

- 2.54 I interpret this objective to refer to the National Policy Statement on Urban Development 2020, instead, which has replaced the 2016 version.
- 2.55 Appendix 9 to the section 42A framework report details the projected demand for households within Tuakau (and other towns) and enabled development capacity over the short, medium and long term. This identifies that the enabled development capacity only meets 80% of the short term, 92% of the medium term and 63% of the long term targets required by the NPS-UD. Additional capacity for 2,400 dwellings is necessary within the next 30 years in order for the PWDP to give effect to the NPS-UD.
- 2.56 Assuming that future urban development of 54 Dominion Road would meet the minimum expectation of Policy 4.1.5(b) for 12 households per hectare, the requested zoning would enable additional development capacity of 66 dwellings. While not significant in isolation, the data in Appendix 9 makes it clear to me that every additional opportunity for urban development within and directly adjacent to the Tuakau town centre is critical to ensuring that the NPS minimum targets are met.

2.57 Therefore, I consider that the requested zoning allows for this objective to be met.

Policy 4.5.10(a)(ii): Tuakau is developed to ensure existing intensive farming and industrial activities are protected from the effects of reverse sensitivity by considering the location of new residential development.

2.58 I am of the understanding that the restricted extent of the Residential zone at 54 Dominion Road is due to the proximity to the Industrial zone on the opposite side of the railway line to the south. While this is not explicitly stated in the PWDP, the zone boundary matches that originally proposed by Plan Change 16 to the Waikato District Plan (Waikato Section), with the summary report for that plan change identifying that a Rural zone buffer was retained in order to avoid reverse sensitivity effects resulting from the “permitted industrial activities” undertaken by Tuakau Timber Treatment, specifically in relation to noise, but also in relation to odour.

2.59 Plan Change 16 was supported by an air quality assessment prepared by Tonkin & Taylor, which recommended a 250 m separation distance be maintained between all industrial and residential zone interfaces surrounding the Whangarata Industrial area. However, a peer review prepared by Jacobs raised a number of issues with this recommendation and requested that Council provide further reasoning and legislative basis for applying the Rural zone buffer rather than using other methods to manage reverse sensitivity effects. These documents also supported the Tuakau Structure Plan and remain available on Council’s website. As Council withdrew Plan Change 16, the suitability of the buffer zone was not subject to any further scrutiny.

2.60 However, alternative assessment of odour effects was provided by AECOM to support the submission on Plan Change 16 related to the neighbouring properties at 48 and 50 Dominion Road. This assessment concluded that “a separation distance of 150 m distance, would protect future growth within the two proposed zones [now Residential zone and Industrial zone under the PWDP], and the effect of new housing on the current industrial clients of the Bollard Road Industrial Zone”. This report is provided as Attachment 2.

2.61 In terms of noise, I consider that the acoustic assessment by Marshall Day on behalf of Council for the Tuakau Structure Plan and Plan Change 16 is flawed as it was prepared with the assumption that there will be an air quality buffer zone extending 250 metres from the industrial zone boundary (as part of the status quo) and did not identify whether this buffer was necessary from an acoustic perspective. In response to this report, the submission on Plan Change 16 related to the neighbouring properties at 48 and 50 Dominion Road provided its own acoustic assessment (by Hegley Acoustic Consultants, provided as Attachment 3), which concludes that no special treatment to control noise is necessary as noise would be within the levels anticipated by the district plan noise rules. I note that the noise restrictions in Rule 20.2.3 of the PWDP are more generous than those proposed by Plan Change 16, and so this conclusion should remain valid.

2.62 Therefore, based on the above (and relying on the recommendations of AECOM and Hegley Consultants Limited), I consider that a separation distance of 150 m between the Industrial zone and the Residential zone is necessary in order to protect industrial activities from the effects of reverse sensitivity.

2.63 54 Dominion Road is set back a minimum of 88 m from the Industrial zone, although there is a separation distance of approximately 157 m at its south-eastern corner. Approximately 3,850 m² of the site would be within 150 m of the Industrial zone and all of this land is subject to steep topography where existing pine trees have been planted. Refer to Figures 1 and 2, **Error! Reference source not found..**



Figure 1: Topography of 54 Dominion Road and Surrounds
(Contours sourced from Auckland GeoMaps)

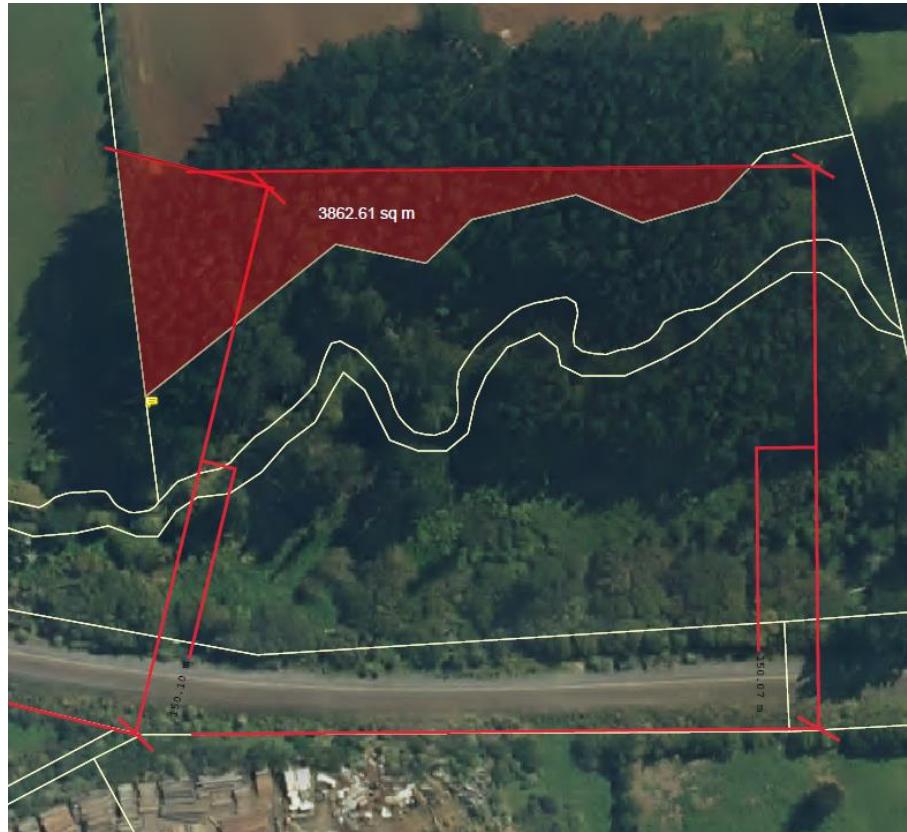


Figure 2: Area of 54 Dominion Road within 150 m of the Industrial zone

- 2.64 Given that only a relatively small portion of this site is within the 150 m recommended buffer and that this land may not be suitable for urban development due to geotechnical reasons, I consider that a Rural zone buffer is not the most appropriate method to enforce the necessary separation to protect industrial activities from the effects of reverse sensitivity. I consider that a Residential zone over the whole of the site remains suitable, although it would be prudent to consider imposing additional rules either requiring the 150 m setback to be adhered to or for this land to be vested in Council as reserve.
- 2.65 The PWDP proposes, at 54 Dominion Road, a setback between the Residential and Industrial zones of between 400 m and 450 m. Such an excessive separation distance is not supported by any of the reporting referred to above and, given the above, I consider is not necessary in order to protect industrial activities from the effects of reverse sensitivity.
- 2.66 Therefore, it is my view that the requested zoning is more consistent with this policy, although I note that additional provisions may be necessary in order to ensure that a 150 m buffer from the Industrial zone is maintained (with the current method of applying the Rural zone not being suitable).

Policy 4.5.10(a)(iii): Future neighbourhood centres, roads, parks, pedestrian, cycle and bridle networks are developed in accordance with the Tuakau Structure Plan.

- 2.67 The Tuakau Structure Plan is dated December 2014. Figure 15 of this document shows the anticipated Connection Network and Figure 16 shows the anticipated Green Network.
- 2.68 These figures show a riparian cycle and pedestrian network being established along Kairoa Stream and the stream corridor forming part of a Strategic Green Link. The majority of 54 Dominion Road (although not the full extent of the Rural zone at that site) is shown as part of this Strategic Green Link.
- 2.69 The PWDP does not identify any method of delivery of this Strategic Green Link. Unless the Council intends to purchase the property for use as open space through the Public Works Act or a direct purchase, the lack of urban development provided for by the site's zoning (Rural zone) would mean that there would be no opportunity for additional land to be vested in Council at the time of future subdivision, on the basis that subdivision of land 6.4 ha in area in a Rural zone is not provided for. A Residential zone, however, would, from my experience, enable a Strategic Green Link to be established alongside residential development of the site.
- 2.70 I also note that as the Strategic Green Link shown in the Tuakau Structure Plan does not cover all of the Rural zone at 54 Dominion Road, the conversion of that land for open space purposes anticipated by the Structure Plan would further fragment the rural uses anticipated by the site's Rural zoning. The application of a Residential zone to the remainder of that land would, in my view, avoid this.
- 2.71 For these reasons, I consider that the requested Residential zone at 54 Dominion Road would be more consistent with this policy than the Rural zone, as it would provide a method to implement this policy at this site.

Objective 4.6.6(a): The amenity values of sensitive activities and ecosystem values outside of industrial zones are protected from the significant adverse effects of industrial activities

- 2.72 This objective relates to reverse sensitivity, which I have covered in detail above. As per that conclusion, I consider that the requested zoning would not result in inconsistencies with this objective, although I note that additional provisions may be necessary in order to ensure that a 150 m buffer from the Industrial zone is maintained, which only affects a small portion of land at 54 Dominion Road.

2.73 I also note that this is an objective applying to activities in the Industrial zone and specifying that (as is implemented by Policy 4.6.7(a)), the significant adverse effects of industrial activities are to be managed within the zone extent so that the amenity values of sensitive activities in other zones (such as the Residential zone), which may be adjacent are protected. I therefore do not consider that this objective is directly relevant to a decision to change the zoning of land from Rural to Residential, as the adverse effects referred to should be internalised within the Industrial zone if this objective is achieved.

Policy 5.2.3(a): Subdivision, use and development minimises the fragmentation of productive rural land, particularly where high class soils are located

2.74 This policy relates to Objective 5.1.1(a), which was discussed above. I have assumed that the site at 54 Dominion Road contains high class soils.

2.75 I note that this policy refers to the minimisation of fragmentation of productive rural land, rather than referring to avoiding. This suggests that some fragmentation is suitable.

2.76 I consider that the fragmentation of 54 Dominion Road would be more suitable than other fragmentation that would be necessary in order to achieve the requirements of the National Policy Statement on Urban Development 2020. In this case, the site is already relatively small for rural activities (6.4 ha) and, assuming that the neighbouring properties at 48 and 50 Dominion Road are also zoned Residential, the site will almost be surrounded by urban zones.

2.77 Therefore, I consider that the requested zoning would not be inconsistent with this policy to a notable degree.

Weighting and Conclusion

2.78 I consider that it is clear that providing for the Residential Zone across all of 54 Dominion Road, Tuakau, is supported by the objectives and policies that identify in general the suitable locations for urban growth. Specifically, the site is directly adjacent to an existing Residential zone (more so after 48 and 50 Dominion Road are also zoned Residential), the site is within 1 km of the Tuakau town centre, which promotes a compact urban form, and the site is within the indicative urban limits shown on the maps in Future Proof Strategy Planning for Growth.

- 2.79 For those objective and policies that specify that urban growth is to be limited to “identified areas” or similar terms (which are to be interpreted to mean the urban zones of the PWDP), consistency cannot be achieved unless the requested zoning is provided for. As consistency with these objectives and policies is reliant on the zoning of land, rather than the zoning being determined by the contents of the objectives and policies, I do not consider that these provisions are particularly relevant to a consideration as to whether to place a site within a rural or urban zone, instead being relevant to the activities that are provided for in each zone.
- 2.80 However, I consider there to be two main points of contention of the requested zoning in relation to the objectives and policies, related to high class soils and those related to reverse sensitivity.
- 2.81 The requested zoning is unable to meet Objective 5.1.1(a)(i), as this would result in high class soils no longer being protected for productive rural activities. However, I consider it necessary for this objective to be appropriately weighed against provisions of the National Policy Statement for Urban Development 2020 (‘NPS-UD’), which the PWDP was not drafted to give effect to (as it was notified prior to the NPS being gazetted).
- 2.82 The NPS-UD requires Council to enable development capacity in excess of the anticipated demand. Appendix 9 of the section 42A framework report demonstrates that the enabled development capacity in Tuakau is not meeting the minimum requirements of the NPS, Therefore, additional development capacity within Tuakau will be necessary.
- 2.83 As almost all of the Tuakau hinterland contains high class soils, I consider it highly unlikely that all high class soils will be able to be protected as per Objective 5.1.1(a) while also meeting the NPS requirements. Policy 5.2.3(a) appears to recognise that it is impracticable to avoid all fragmentation of rural land and that this should instead be minimised. As per the commentary provided against that policy, I consider that fragmentation of 54 Dominion Road would be more suitable than other fragmentation of rural land, noting that the site is relatively small and would almost be surrounded by urban zoning.
- 2.84 Therefore, while the requested zoning is contrary to Objective 5.1.1(a)(i), I consider that higher order documents indicate that zoning that is inconsistent with this objective may still be suitable.

2.85 In terms of reserve sensitivity between the Business and Residential zones, the above assessment has demonstrated that the method used in the PWDP, which provides for a 400 to 450 m Rural zone buffer, is surplus to that required in order to protect industrial activities from the effects of reverse sensitivity. Specialist assessment prepared to support submissions on Plan Change 16 (which proposed the same zoning pattern) has determined that a buffer of only 150 m is necessary. Given that only a small area of the site at 54 Dominion Road (3,850 m²) is within 150 m of the Industrial zone and this land has topography that would not necessarily support urban development, I consider that all of this site being subject to the Residential zone would still be consistent with the objectives and policies relevant to reverse sensitivity (especially compared to the option of a small area of Rural zone remaining), although I also consider that additional rules may be necessary in order to ensure the 150 m separation distance is adhered to.

2.86 With regard to all of the above assessment, I therefore consider that applying the Residential zone to all of 54 Dominion Road better achieves, on balance, the objectives and policies of the PWDP more than the current application of the Rural zone does. Similarly, I consider that the Residential zone in this location is more likely to achieve, on balance, these objectives and policies when compared to an alternative scenario where other land in the Tuakau hinterland is changed from Rural to Residential zone, noting Council's obligations under the National Policy Statement for Urban Development 2020 to ensure that enabled development capacity exceeds anticipated demand.

3. Lens 2: Consistency with Higher Order Policy Documents and Strategies

3.1 The section 42A framework report identifies the following higher order policy documents and strategies relevant to the Waikato District:

- (a) Waikato Regional Policy Statement;
- (b) Waikato-Tainui Environmental Plan, Tai Tumu, Tai Pari, Tai Ao;
- (c) Maniapoto Environmental Management Plan, Ko Ta Maniapoto Mahere Taiao;
- (d) Future Proof (2009);
- (e) Waikato 2070;
- (f) National Planning Standards;
- (g) National Policy Statement on Urban Development 2020; and
- (h) Vision and Strategy for the Waikato River.

3.2 I also consider it relevant to assess the requested change to zoning against the following documents:

- (a) National Policy Statement on Freshwater Management 2020;
- (b) Tuakau Structure Plan (2014); and
- (c) Waikato District Blueprint 2019.

3.3 I am aware that a National Policy Statement related to high class soils is anticipated to be gazetted later this year. As this has not occurred at the time of writing this evidence, it is premature for me to undertake an assessment against the expected contents of this document. Should this NPS be gazetted prior to the preparation of rebuttal evidence or appearance at the hearing, I will undertake further assessment at that time, if necessary.

3.4 I will assess the requested change to zoning against these documents in the subsequent sections.

Waikato Regional Policy Statement

3.5 The PWDP is required by section 75(3)(c) of the RMA to give effect to the Waikato Regional Policy Statement.

3.6 The section 42A framework report identifies, accurately, that the PWDP objectives and policies should reflect the stance of the WRPS. As per the discussion above, I consider that the requested zoning is generally consistent with the PWDP objectives and policies, although some inconsistency with the provisions related to high class soils could arise.

3.7 For all matters other than in relation to high class soils, I will assume that the general consistency with PWDP objectives and policies indicates consistency with the WRPS objectives and policies.

High class soils

3.8 I note that the WRPS objective related to high class soils states: *“The value of high class soils for primary production is recognised and high class soils are protected from inappropriate subdivision, use or development”*. While the PWDP provisions generally align with this objective, the use of *“inappropriate”* here is an important difference. Since I have concluded that urban development at 54 Dominion Road is otherwise appropriate – and more appropriate than potential other locations currently in the Rural zone – this objective does not necessarily require the high class soils at the site to be protected from urban development.

3.9 Similarly, the implementation methods specified in section 14.2.1 of the WRPS only seek that urban development on high class soils is “*restricted*” (rather than avoided) and that urban development be directed onto soils of lesser versatility “*where there is an option to do so*”. As I am of the understanding that the majority of the Tuakau hinterland consists of high class soils, I expect there are limited options for urban development on soils of lesser versatility and that the PWDP already anticipated urban development in these areas.

3.10 Therefore, the WRPS gives me more confidence that the application of the Residential zone at 54 Dominion Road is suitable, even though the land is assumed to contain high class soils.

Implementation Method 6.1.8

3.11 Implementation method 6.1.8 specifies the information required to support new urban development and subdivision. The section 42A framework report identifies that this information is to be provided in evidence for submissions seeking a change from rural to urban zoning. I address each point as follows:

(a) *“the type and location of land uses (including residential, industrial, commercial and recreational land uses, and community facilities where these can be anticipated) that will be permitted or provided for, and the density, staging and trigger requirements”*

The Residential zone is sought to apply to all of 54 Dominion Road, Tuakau. The list of land uses anticipated are as specified in Chapter 16 of the PWDP. A minimum density of 12-15 households per hectare would be anticipated as per Policy 4.1.5(b) of the PDWP.

(b) *“the location, type, scale, funding and staging of infrastructure required to service the area”*

I have assumed that infrastructure to service 54 Dominion Road would be provided via extensions of bulk infrastructure provided to service the Residential zone along Dominion Road (already included in the PWDP) and the cost will be borne by the developer of the site. The ultimate design can be confirmed at subdivision stage. Further, the NPS-UD requires wider network capacity to cater for anticipated growth demands regardless of whether the site at 54 Dominion is subject to the Residential zone to meet development capacity requirements of the NPS-UD or not (and other land is instead).

- (c) *“multi-modal transport links and connectivity, both within the area of new urban development, and to neighbouring areas and existing transport infrastructure; and how the safe and efficient functioning of existing and planned transport and other regionally significant infrastructure will be protected and enhanced”*

I have assumed that transport infrastructure for 54 Dominion Road would be provided via extensions of the transport network provided to service the Residential zone along Dominion Road (proposed by the PWDP) and the cost will be borne by the developer of the site. The ultimate design can be resolved at subdivision consent stage. There is also the opportunity for a walking and cycling network to be provided above the northern banks of the Kairoa Stream, which the current Rural zone does not necessitate.

- (d) *“how existing values, and valued features of the area (including amenity, landscape, natural character, ecological and heritage values, water bodies, high class soils and significant view catchments) will be managed”*

The natural values related to the Kairoa Stream are already protected through the existing esplanade reserve.

- (e) *“potential natural hazards and how the related risks will be managed”*

Potential natural hazards affecting the site are understood to only relate to site stability, particularly in the southern portion of the site. Risks related to site stability can be appropriately managed at subdivision stage through provisions of the PWDP and section 106 of the RMA.

- (f) *“potential issues arising from the storage, use, disposal and transport of hazardous substances in the area and any contaminated sites and describes how related risks will be managed”*

Hazardous substances are not anticipated. Sites containing contaminated soils will be appropriately managed at the time of subdivision or urban development in accordance with the provisions of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

- (g) *“how stormwater will be managed having regard to a total catchment management approach and low impact design methods”*

Stormwater is anticipated to be discharged to the Kairoa Stream (the site being within its catchment) and a discharge consent will need to be obtained from the Waikato Regional Council to authorise this. It is anticipated that the provisions of the Waikato Regional Plan will require the appropriate consideration of low impact design methods.

- (h) *“any significant mineral resources (as identified through Method 6.8.1) in the area and any provisions (such as development staging) to allow their extraction where appropriate”*

There are no known mineral resources at the site.

- (i) *“how the relationship of tāngata whenua and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taonga has been recognised and provided for”*

There are no known cultural effects that would result from the change of zoning of the property at 54 Dominion Road, Tuakau. It is specifically noted that this site does not include the Kairoa Stream (since esplanade reserves was vested in 2006, where undocumented archaeological sites may exist.

- (j) *“anticipated water requirements necessary to support development and ensure the availability of volumes required, which may include identifying the available sources of water for water supply”*

The water requirements for the Tuakau township will be no greater than those necessary in order to support the development capacity required by the National Policy Statement for Urban Development 2020.

- (k) *“how the design will achieve the efficient use of water”*

The use of water by urban development will be the same as other areas of the Tuakau township within the Residential zone.

- (l) *“how any locations identified as likely renewable energy generation sites will be managed”*

Renewable energy generation sites are not anticipated.

- (m) *“the location of existing and planned renewable energy generation and consider how these areas and existing and planned urban development will be managed in relation to one another”*

Existing renewable energy generation sites have not been observed in Tuakau.

- (n) *“the location of any existing or planned electricity transmission network or national grid corridor and how development will be managed in relation to that network or corridor, including how sensitive activities will be avoided in the national grid corridor”*

The site is not in close proximity to a National Grid corridor or electricity transmission network.

- 3.12 On reflection of this information (and acknowledging the discussions made in the remainder of the my evidence), I consider this land to be suitable for residential development and therefore can be subject to the Residential zone.

**Waikato-Tainui Environmental Plan, Tai Tumu, Tai Pari, Tai Ao / Maniapoto
Environmental Management Plan, Ko Ta Maniapoto Mahere Taiao**

- 3.13 The PWDP is required by section 74(2A) of the RMA to take into account any relevant planning document recognised by an iwi authority and lodged with the territorial authority, to the extent that its content has a bearing on the resource management issues of the district.

- 3.14 On review of these documents, I have not identified any provisions that the requested zoning would directly contradict. I also note that the site at 54 Dominion Road is not known to contain any waterbodies (the Kairoa Stream is separated from the site by the existing esplanade reserve) or sites of cultural significance.

Future Proof (2009)

- 3.15 The PWDP is required by section 75(3)(b)(i) of the RMA to take into account any management plans and strategies prepared under other Acts. This includes Future Proof (2009).

- 3.16 The 2009 version of Future Proof did not include Tuakau as it was then part of the Franklin District. Therefore, this document is not considered to be relevant to the requested zoning.

Future Proof Strategy Planning for Growth 2017

- 3.17 The PWDP is required by section 75(3)(b)(i) of the RMA to take into account any management plans and strategies prepared under other Acts. This includes Future Proof Strategy Planning for Growth 2017.

- 3.18 As outlined in the section 42A report, Future Proof 2017 has limited weight, as *“it is not mentioned in the WRPS, so it is not mandatory for the WDP to give effect to it.”*

3.19 However, Policy 4.1.3(b) does directly reference Future Proof 2017. As I have previously identified in assessing the requested zoning against that policy, the site at 54 Dominion Road, Tuakau is within the indicative urban limits shown on the maps included as part of this document and Tuakau is identified as one of the townships where 80% of growth is to be provided for.

3.20 Therefore, I considered that the requested zoning is consistent with Future Proof Strategy Planning for Growth 2017.

Waikato 2070

3.21 The PWDP is required by section 75(3)(b)(i) of the RMA to take into account any management plans and strategies prepared under other Acts. This includes Waikato 2070.

3.22 Waikato 2070 was adopted by Council on 19 May 2020 as the district's growth and economic development strategy.

3.23 Waikato 2070 provides a 'development plan' for each township within the district, including Tuakau. The residential activity zone along Dominion Road generally aligns with the Residential and Village zone extents in the PWDP but is shown as indicative. I therefore consider that extension of the Residential zone in the PWDP across all of 54 Dominion Road is unlikely to be inconsistent with this development plan.

National Planning Standards

3.24 The PWDP is required by section 75(3)(ba) of the RMA to give effect to the National Planning Standards.

3.25 I do not consider the National Planning Standards to be of direct relevance to the requested zoning, given that changes to plan provisions are not sought.

3.26 However, I do accept the suggestion in the section 42A report that the Residential zone be renamed to the General residential zone in accordance with the Planning Standards' zone names. I consider that a change of name to the residential zone to be only administrative in nature, with no change in effects on the environment.

National Policy Statement on Urban Development 2020

3.27 The PWDP is required by section 75(3)(a) of the RMA to give effect to the National Policy Statement on Urban Development 2020.

3.28 I consider the National Policy Statement on Urban Development 2020 to be of critical importance to the requested zoning, and I have already identified the relevance of this NPS in earlier assessment.

- 3.29 One of the key directions of the NPS-UD (through Policy 2) is to provide “at least” sufficient development capacity to meet expected demand for housing over the short term, medium term and long term. Appendix 9 to the section 42A framework report identifies that the development capacity enabled by the PWDP in Tuakau does not meet the requirements of the NPS in any of these terms. Therefore, additional land for residential development is necessary.
- 3.30 The NPS-UD also directs Councils to enable more people to live in areas that are near centre zones where a range of commercial activities and community services are provided (Objective 3 and Policy 3). The Tuakau town centre qualifies as a centre zone (as per the NPS-UD definition) and the site at 54 Dominion Road is within 1 km of this centre. Therefore, I consider that the NPS-UD does not necessarily support the Rural zone being applied to the site at 54 Dominion Road, especially since the majority of sites within similar distance to the town centre are subject to urban zoning.
- 3.31 Policy 4 of the NPS specifies that any departure from Policy 3 (such as applying a Rural zone to a site in relatively close proximity to a town centre) is only enabled if the site is subject to a qualifying matter listed in clause 3.32(1) or if the requirements of clause 3.33(3) are met.
- 3.32 In addition, clause 3.33(1) specifies that it is the requirement of the territorial authority to justify a modification to Policy 3 for a specific area. While I understand that this requirement did not apply at the time that the PWDP was prepared, a decision by the Panel to confirm the Rural zone at 54 Dominion Road should now be reliant on Council preparing an evaluation report on this specific zoning, which has not yet occurred.
- 3.33 I do not consider that the site at 54 Dominion Road exhibits any of the listed qualifying matters listed in clause 3.32(1) – which include matters related to section 6 of the RMA< the protection of significant infrastructure and the provision of open space – and note that buffer zones for managing reverse sensitivity effects are not listed.
- 3.34 I therefore welcome Council’s further evaluation under clause 3.33 as to why the application of the Rural zone over the majority of 54 Dominion Road is appropriate and necessary. If reliance is given to the assessment prepared on behalf of Council for Plan Change 16 (discussed earlier), then I would not consider that a 400 m to 450 m Rural zone buffer modifies the requirements of Policy 3 “*only to the extent necessary*” to accommodate the matter of reverse sensitivity, noting that Council’s specialist reporting for Plan Change 16 only recommended a separation distance of 250 m.
- 3.35 Therefore, I consider that the zoning in the PWDP fails to achieve the requirements of the NPS-UD. I also consider that the requested zoning would be supported by the NPS-UD and enable the requirements of the NPS-UD to be better met.

Vision and Strategy for the Waikato River

- 3.36 Section 13 of the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 requires district plans to give effect to the vision and strategy for the Waikato River set out in Schedule 2 of that Act. This vision and strategy has also been incorporated into the Waikato Regional Policy Statement, which the PWDP is required to give effect to under section 75(3)(c) of the RMA.
- 3.37 I do not expect the requested zoning to result in significant adverse effects on the Waikato River, noting that activities that have potential effects on the health and wellbeing of the Waikato River, such as bulk earthworks and stormwater discharge, are subject to the provisions of the Waikato Regional Plan, which is also required to give effect to the vision and strategy for the Waikato River.
- 3.38 In addition, as all of the Tuakau township and surrounding hinterland are within the Waikato River catchment, there are no alternative locations for the Residential zone that would not have any effect on the Waikato River, and as per the NPS for Urban Development 2020, Council is required to provide sufficient development capacity within Tuakau.

National Policy Statement on Freshwater Management 2020

- 3.39 The site at 54 Dominion Road does not contain any waterbodies to which the NPS-FM would be directly relevant to. However, the site does adjoin the Kairoa Stream along the southern boundary. I am not aware of any wetlands within 100 m of the site.
- 3.40 I do not consider there to be any provisions within the NPS-FM that are directly relevant to the application of the Residential zone at 54 Dominion Road.
- 3.41 However, I recognise that activities related to the urbanisation of this land – such as the diversion and discharge of stormwater – will need to be considered against the objectives and policies of the NPS-FW. These activities are anticipated to require resource consent in accordance with the Waikato Regional Plan, which is required to give effect to the NPS-FW and (if relevant) the National Environmental Standards for Freshwater. I expect that those processed with ensure that these activities are undertaken in accordance with the relevant provisions of the NPS-FW

Tuakau Structure Plan (2014)

- 3.42 The PWDP is required by section 75(3)(b)(i) of the RMA to take into account any management plans and strategies prepared under other Acts. This includes the Tuakau Structure Plan 2014.
- 3.43 The Tuakau Structure Plan 2014 identifies the use of the Rural zone as a buffer zone between the existing Industrial zone and the proposed Residential zone. The zone boundaries of the PWDP are generally consistent with the zoning shown by the Structure Plan.
- 3.44 It is therefore clear to me that the requested zoning would not be in accordance with the Tuakau Structure Plan.
- 3.45 However, I do note that the assessment supporting the establishment of a buffer zone has been questioned (including by a peer review ordered by Council) and the extent of the buffer zone does not appear to be following the recommendations of the specialist assessment provided to Council.
- 3.46 I also wish to draw attention to the fact that this structure plan is now seven years old and predates a number of new planning documents that I consider the requested zoning would be in accordance with and the proposed buffer zone to be inconsistent with, such as the National Policy Statement for Urban Development 2020.

Waikato District Blueprint 2019

- 3.47 The PWDP is required by section 75(3)(b)(i) of the RMA to take into account any management plans and strategies prepared under other Acts. This includes the Waikato District Blueprint 2019.
- 3.48 The Waikato District Blueprint for Tuakau identifies an area that includes the part of 54 Dominion Road that the PWDP places in the Rural zone on its map. but I am unable to determine the intention or reasoning for this identification.
- 3.49 One of the identified proposed initiatives for Tuakau is to “*Address the interface between residential and industrial land. Consider sports fields as a buffer (1)*”, but this is attributed to the interface to the west of the industrial area (shown as “1”), rather than to the north.

3.50 If the purpose of the identification of 54 Dominion Road on the map is related to addressing the interface between residential and industrial land, then it is considered that this is already provided for by natural and physical features between 54 Dominion Road and the Industrial zone, including the railway line, the Kairoa Stream, the existing esplanade reserve and steep topography adjacent to the stream. In addition, specialist assessment considered earlier has recommended a separation distance of only 150 m, which is significantly less than the wide buffer area highlighted on the Tuakau map.

3.51 Assuming further clarity on how to interpret the map for Tuakau does not change my opinion, I consider that the requested zoning would not be inconsistent with the Waikato District Blueprint 2019.

Overall Consistency

3.52 Given the above considerations, I recognise that the requested zoning is not consistent with all of the relevant higher order documents.

3.53 However, on balance, I consider that the requested zoning can still be supported in the context of the higher order documents, noting that:

- (a) I consider there is strong direction under the National Policy Statement for Urban Development 2020 for the requested zoning to be accepted;
- (b) Where inconsistency with the objectives and policies of the PWDP were previously noted, the provisions of the higher order documents were generally less strict and more accommodating of the request (for example, in relation to high class soils);
- (c) The documents that the requested zoning is not consistent with (such as the Tuakau Structure Plan) are only required to be taken into account (rather than given effect to) and also pre-date other documents that generally support the requested zoning.

4. Lens 3: Best Practice Planning

4.1 As I have concluded that the requested zoning is, on balance, suitable under Lenses 1 and 2, Lens 3 is to be considered in order to confirm the ultimate suitability of the requested change in zoning.

4.2 Paragraph 161 of the section 42A framework report identifies the following best practice guidance to be followed when making changes to zoning:

- (a) Economic costs and benefits are considered.
- (b) Changes should take into account the issues debated in recent plan changes.
- (c) Changes to zone boundaries are consistent with the maps in the plan that show overlays or constraints (e.g., hazards).
- (d) Changes should take into account features of the site (e.g., where it is, what the land is like, what it is used for and what is already built there).
- (e) Zone boundary changes recognise the availability or lack of major infrastructure (e.g., water, wastewater, stormwater, roads).
- (f) There is adequate separation between incompatible land uses (e.g., houses should not be next to heavy industry).
- (g) Zone boundaries need to be clearly defensible, e.g., follow roads where possible or other boundaries consistent with the purpose of the zone.
- (h) Zone boundaries should follow property boundaries.
- (i) Generally, no "spot zoning" (i.e. a single site zoned on its own).
- (j) Zoning is not determined by existing resource consents and existing use rights, but these will be taken into account.
- (k) Roads are not zoned.

4.3 The above matters are further elaborated in Appendix 3 to the section 42A framework report and are considered in the following assessment.

Economic costs and benefits are considered

- 4.4 The economic costs and benefits of the requested zoning have been considered in the section 32AA report that I have simultaneously prepared alongside this evidence (Attachment 1).
- 4.5 I consider that the requested zoning will result in economic costs, but that these costs should not be any greater in scale to those that would arise by other rural land being zoned for residential purposes. In some cases, such as in relation to infrastructure, I consider that these costs would be less than the alternative.
- 4.6 In assessing costs, I have compared the requested zoning with an alternative hypothetical application of the Residential zone over a similarly sized rural site, rather than with the status quo. I consider this is necessary due to the requirements under the National Policy Statement for Urban Development 2020, which requires Council to provide at least sufficient land development capacity. In the case of Tuakau, Appendix 9 to the section 42A framework report has identified that these requirements are not being met by the PWDP and so additional land would need to be subject to the Residential zone. In the absence of the requested zoning, approximately 5.5 ha of other rural land (approximately 16 ha if the zoning of the neighbouring properties at 48 and 50 Dominion Road is also not changed) would need to be subject to the Residential zone in order for these requirements to be met.

Changes should take into account the issues debated in recent plan changes

- 4.7 While the Waikato District Council notified Plan Change 16 to the Waikato District Plan, which related to the zoning of 54 Dominion Road, Tuakau, this plan change was withdrawn by Council prior to commencement of any hearings, with the intention for the contents of this plan change to form part of the PWDP. Therefore, the issues related to the zoning of this land were not fully debated, with no decision on that plan change having been made.

Changes to zone boundaries are consistent with the maps in the plan that show overlays or constraints

- 4.8 Of the mapped overlays listed in Table 2 of Appendix 3 to the section 42A framework report, 54 Dominion Road is only subject to the Waikato River Catchment overlay, which affects all of Tuakau.
- 4.9 It is therefore my opinion that the proposed Residential zone would not result in any inconsistencies with overlays or mapped constraints.

Changes should take into account features of the site

- 4.10 Other than the southern portion of the site adjacent to the Kairoa Stream esplanade reserve (coinciding with the land within 150 m of the Industrial zone where residential development is not preferred) that has steep gradients, the remainder of the site exhibits topography that is, in my opinion, suitable for residential development (and is similar to the adjoining area already within the Residential zone).
- 4.11 The proximity of the site to the Industrial zone is noted, and this is covered in the section regarding incompatible land uses further below.
- 4.12 I also consider that the site size is suitable for a medium scale residential development to be provided for. Of note, the existing entrance strip to Dominion Road has a width (20 m) that can provide for a public road, should development of the site occur prior to the development of neighbouring sites.

Zone boundary changes recognise the availability or lack of major infrastructure

- 4.13 As discussed earlier, bulk infrastructure is to be provided by Council to service residential development along Dominion Road between 2023 and 2030. I consider that servicing of the site at 54 Dominion Road could be provided for by extensions to this infrastructure that would be funded by the developer of the site. Final capacity of the infrastructure could be designed to respond to the zone extent and associated demand.

There is adequate separation between incompatible land uses

- 4.14 The matter of the necessary separation between the Residential and Industrial zones has been discussed in detail earlier.
- 4.15 I also consider it necessary to note that the land to the south of railway line is within the Industrial zone and not the Heavy Industrial zone. My opinion on the use of the Rural zone buffer included in the PWDP would likely be different if that land was to be in the Heavy Industrial zone instead.
- 4.16 I also consider it necessary to note that there are multiple examples in the PWDP where the Residential and Industrial zones adjoin, including at Tuakau (with 17A Coles Road being an example of a Residential zone greenfield site that is in a rural zone under the operative plan). Council has provided no specific reasons as to why the use of a Rural zone buffer is necessary in this specific interface when it has not been used as a method elsewhere.

4.17 Given the previous commentary, I consider that the existing natural and physical features of the land between the Business zone and the site at 54 Dominion Road (including the railway line, the Kairoa Stream and topography) is sufficient to ensure that the recommended 150 m setback for residential activities is adhered to. Specific rules requiring this setback to be complied with could be imposed in order to ensure this, although I do not consider this to be strictly necessary due to topographical constraints within the area of the site less than 150 m from the Industrial zone.

Zone boundaries need to be clearly defensible

4.18 The requested changes to zoning would result in the following new zone boundaries:

(a) To the south, between 54 Dominion Road and Lot 3 DP 153636 (esplanade reserve); and

(b) To the east, between 54 Dominion Road and 154B Dominion Road.

4.19 The boundary between 54 and 50 Dominion Road is not a zone boundary as I am making the assumption in my evidence that the Panel first accepts the relief of other submitters for the site at 50 Dominion Road to be fully within the Residential zone.

4.20 For the southern boundary, I consider that this is a defensible boundary as it follows existing property boundaries and is in general alignment with the adjacent Kairoa Stream, a natural boundary, with separation only being due to the esplanade reserve being within the Reserve zone.

4.21 I note that the eastern boundary would not follow any physical features, although it would follow a property boundary. This could result in pressures for the site at 154B Dominion Road to also be within the Residential zone, noting that the sites to the north of 154B Dominion Road are also within the Residential zone or the Village zone under the PWDP.

4.22 In the submission prepared for Michael Shen, I considered that it could be suitable for the Residential zone boundary to align with the tributary of Kairoa Stream that runs north-south up to the corner of 140, 142 and 154B Dominion Road (which is where the boundary between the Residential and Village zones is currently provided). However, this would not follow a property boundary and so would not necessarily be any more defensible than the boundary between 54 and 154B Dominion Road.

4.23 However, it is clear to me that the requested zoning provides for much more defensible boundaries than those provided by the PWDP. The boundary that splits the site between the Rural and Residential zone does not follow any physical features and there is no clear basis for the specific location of that boundary. The weakness of this boundary has been demonstrated by the submission of Michael Shen and the owners of the neighbouring properties at 48 and 50 Dominion Road.

Zone boundaries should follow property boundaries

- 4.24 Zone boundaries as a result of the requested changes would follow property boundaries.
- 4.25 The placement of the eastern zone boundary along the boundary of 54 and 154B Dominion Road (compared to a boundary along the stream in 154B Dominion Road) is preferred due to the preference for zone boundaries to follow property boundaries.
- 4.26 Currently, the boundary between the Residential and Rural zone does not follow any property boundaries and I do not consider it to be consistent with good planning practice.

Generally, no "spot zoning"

- 4.27 As the requested changes involve the extension of the adjacent Residential zone, spot zoning is not proposed.

Zoning is not determined by existing resource consents and existing use rights, but these will be taken into account

- 4.28 The requested changes to zoning have not taken into account any existing resource consents or existing use rights.
- 4.29 I consider that the current zone boundary shown in the PWDP is inferred to be in response to the Tuakau Timber Treatment facility that operates on Bollard Road through existing use rights. The use of zoning to manage adverse effects arising from an existing use is therefore, in my opinion, not consistent with good planning practice.

Roads are not zoned

- 4.30 No roads are to be zoned.

Conclusion

- 4.31 Overall, I consider that the assessment under Lens 3 provides no substantial reasons as to why the requested change in zoning would not be in general accordance with best practice planning guidance.
- 4.32 Of note, I consider that the current zoning pattern shown in the PWDP is not in accordance with best practice planning guidance for the reasons specified in the above sections.

5. Other Matters Related to the Section 42A Framework Report

Purpose of the Rural Zone

5.1 Paragraph 236 of the section 42A framework report states the following:

“The purpose of the Rural Zone is essentially to give primacy to rural production and access to minerals. Several issues are addressed to that end including conserving high-class soils, reducing fragmentation of productive land and managing the adverse effects of rural activities.”

5.2 I draw attention to this comment as in no part of this description is the use of the zone to separate residential and industrial zones mentioned. Therefore, in my opinion, the Rural zone should not be applied primarily in order to separate incompatible uses. I consider that zone interface rules (such as building setbacks from zone boundaries) are the most appropriate methods to be used by the PWDP to manage such effects.

6. Potential Future Urban Zone

6.1 A section 42A report has been prepared by Jonathan Clease, dated 26 January 2021, that relates to potential Future Urban and Residential Medium Density Zones being introduced into the PWDP as a result of submissions.

6.2 The recommendations outlined in paragraph 145 of this section 42A report is that a Future Urban zone should be introduced and apply to land that *“meet the policy tests but where no structure plan is in place and/or capacity is not plausible within the next 10-15 years”*.

6.3 Based on earlier assessment, I consider that the site at 54 Dominion Road generally meets the relevant policy tests. However:

- (a) Residential development at the part of the site within the Rural zone has not been subject to a structure plan (the Tuakau Structure Plan specified that his land be a Rural zone buffer); and
- (b) While infrastructure to service the development is anticipated within the next 10-15 years, this is not certain.

6.4 Alternative relief to apply a Future Urban zone to the site at 54 Dominion Road, Tuakau, has been considered as part of the attached section 32AA assessment. In this assessment, I concluded that a Residential zone was a more efficient and effective method to achieve the objectives of the PDWP, given that I consider that any uncertainties regarding urban residential development of the site can be resolved as part of a resource consent process, rather than necessitating an additional plan change process, which would be required if the site was subject to the Future Urban zone.

6.5 I also consider it necessary to acknowledge the requirements of NPS-UD in terms of what can be considered to be “plan-enabled” development capacity. Specifically, a Future Urban zone is only to be applied to long-term development capacity, with short- and medium-term development capacity needing to be subject to a zone where residential development is either a permitted or restricted discretionary activity (for medium-term, this zoning can be in a proposed plan rather than an operative plan).

6.6 In this regard, I note that:

- (a) The PWDP does not currently meet the NPS requirements for short-medium-term development capacity (only 92% is provided for);
- (b) The remainder of the Dominion Road future residential area is identified by Waikato 2070 to be medium-term development capacity (3-10 years); and
- (c) Infrastructure to service the Dominion Road future residential area is to be provided for in the Long Term Plan (in accordance with the NPS-UP definition of “infrastructure-ready” for medium-term development capacity).

6.7 Given these factors, I consider it most suitable for a Residential zone to apply to 54 Dominion Road, rather than the Future Urban zone, so that the land can meet the definitions of medium-term development under the NPS-UD and contribute towards Council achieving the minimum requirements outlined in the NPS-UD.

7. Conclusion

7.1 In my evidence, I have considered the change in zoning at 54 Dominion Road, Tuakau, requested by Michael Shen and conclude that:

- (a) The requested zoning would achieve, on balance, the objectives and policies of the PWDP more than the current application of the Rural zone does;
- (b) The requested zoning is consistent with the higher order documents that should be given a greater weight, such as the National Policy Statement on Urban Development 2020;
- (c) The requested zoning is consistent with good planning practice for zone boundaries, with the zoning proposed by the PWDP not being in accordance with good planning practice;

- (d) Should the requested zoning not be accepted, I anticipate that other land within the Tuakau hinterland would need to be subject to the Residential zone (in order for the PWDP to give effect to the NPS-UD) and that adverse effects related to this hypothetical rezoning would be the same or more severe than those arising from the requested zoning;
- (e) While the Future Urban zone could be suitable for the site at 54 Dominion Road, I do not consider that this is necessary and it would be more appropriate in light of the requirements of the NPS-UD for this land to instead be subject to the Residential zone.

7.2 As stated earlier, this conclusion is based on the assumption that the relief sought by submission 299, to place the Residential zone over the entirety of the properties at 48 and 50 Dominion Road, is provided for by the Hearings Panel. Should no changes to the zoning of those properties shown in the PWDP occur, then I would instead conclude that the relief sought in relation to 54 Dominion Road should not be granted. Should alternative relief be proposed or provided for at 48 and 50 Dominion Road, then the suitability of the Residential zone at 54 Dominion Road would need to be considered.

AARON JAMES GREY

17 FEBRUARY 2021

- Attachment 1 Section 32AA Assessment
- Attachment 2 AECOM Odour Assessment
- Attachment 3 Hegley Acoustic Consultants Noise Assessment

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RESIDENTIAL ZONE AT 54 DOMINION ROAD, TUAKAU SECTION 32AA ASSESSMENT

Project Name:	Proposed Waikato District Plan – Zoning at 54 Dominion Road, Tuakau
Client:	Michael Shen
CP Project No:	1941
CP Document No:	R01v1
Date of Issue:	17 February 2021
Originator:	Aaron Grey – Senior Planner
Reviewer:	Emma Bayly – Planning Team Leader

1. The Rezoning Proposal

The primary relief sought is that, under the Proposed Waikato District Plan (PWDP), the property at 54 Dominion Road, Tuakau, legally described as Lot 2 DP 153636 (held in RT NA91C/669) and with an area of 6.4275 ha, be subject to the Residential zone across the whole of the site, rather than the current split zone applied under the PWDP, with the Residential zone over approximately 0.9 ha and the Rural zone over approximately 5.5 ha.

This relief is reliant upon the neighbouring properties at 48 and 50 Dominion Road (Lot 1 DP 485993 and Lot 2 DP 371796) also being subject to the Residential zone across the whole of those sites. That relief has been sought by submission 299 (by 2SEN Ltd and Tuakau Estates Ltd). A section 32AA report and related evidence is being prepared by those submitters.

It is accepted that the relief sought in this report is reliant on the relief sought by submission 299 first being accepted by the Hearings Panel and for that reason the following section 32AA report is prepared on the assumption that occurs. The subsequent assessment is therefore against the baseline that all of 48 and 50 Dominion Road is within the Residential zone (and the effects of extending the Residential zone across all of 54 Dominion Road as well) rather than the zoning pattern in the Proposed Waikato District Plan (where 48 and 50 Dominion Road are also split zoned).

1.1 Relevant Objectives of the Proposed Waikato District Plan

Appendix 2 of the Section 42A Framework Report (prepared by Dr Mark Davey, dated 19 January 2021) identifies that the strategic directions, objectives and policies that are relevant to submissions that seek changes from the Rural zone to the Residential zone. The objectives (therefore excluding strategic directions in sections 1.5 and 1.12.3, and policies in sections 4.3 and 5.3) listed are as follows:

- Objective 1.12.8(b)(i): *Urban development takes place within areas identified for the purpose in a manner which utilises land and infrastructure most efficiently.*
- Objective 1.12.8(b)(ii): *Promote safe, compact sustainable, good quality urban environments that respond positively to their local context.*
- Objective 1.12.8(b)(iii): *Focus urban growth in existing urban communities that have capacity for expansion.*
- Objective 1.12.8(b)(vi): *Protect and enhance green open space, outstanding landscapes, and areas of cultural, ecological, historic, and environmental significance.*
- Objective 4.1.2(a): *Future settlement pattern is consolidated in and around existing towns and villages in the district.*
- Objective 5.1.1(a): *Subdivision, use and development within the rural environment where: high class soils are protected for productive rural activities; productive rural activities are supported, while maintaining or enhancing the rural environment; urban subdivision, use and development in the rural environment is avoided.*
- Objective 5.3.1(a): *Rural character and amenity are maintained.*

Other objectives of the Proposed Waikato District Plan that are considered to be relevant to the requested zoning are the following:

- Objective 4.1.1(b): *The minimum targets for sufficient, feasible development capacity for housing in the Waikato District area are met, in accordance with the requirements of the National Policy Statement on Urban Development Capacity 2016.*
- Objective 4.6.6(a): *The amenity values of sensitive activities and ecosystem values outside of industrial zones are protected from the significant adverse effects of industrial activities.*

As no changes to any of these objectives are proposed and no new objectives are sought to be introduced, no assessment under section 32(1)(a) of the RMA is necessary.

1.2 Scale and Significance of the Rezoning Proposal

In determining the scale and significance of the rezoning request, the following is noted:

- The spatial extent of the rezoning request is an area of approximately 5.5 ha, which is part of a single Record of Title (although it is noted that the request is reliant upon the rezoning of a further 10.5 ha across the sites at 48 and 50 Dominion Road).

- The rezoning request is of significance to the local Tuakau township but not necessarily of district or regional importance.
- The rezoning request's alignment with higher order documents has been covered by the evidence prepared simultaneously to this section 32AA report, with the conclusion that there is, on balance, general consistency.
- The rezoning request would enable the conversion of rural land to residential development, which results in a significant difference to outcomes, character and amenity.
- The rezoning request is not anticipated to affect resources that are considered to be a matter of national importance (in terms of section 6 of the RMA), except that there would be the opportunity for public access along the Kairoa Stream (provided for in Lot 3 DP 153636) to be enhanced by adjacent urban development, noting that this public land is currently landlocked.
- An additional 5 ha of urban land is anticipated to have implications on land use and transport integration matters and infrastructure servicing, but these are not expected to be significant given that the rezoning request would be an extension of an existing (much larger) urban zone and the land is within 1 km of the Tuakau Town Centre.
- The rezoning request would increase the opportunities for residential development within the Tuakau township, not restrict them (as the current PWDP zoning would).

Overall, it is considered that the rezoning request is of small- to medium-scale and of notable significance. The following assessment contains a level of detail that corresponds to this position.

1.3 Other Reasonably Practicable Options to Achieve the Objectives

The following zoning patterns have been considered as potential options to achieve the objectives of the Proposed Waikato District Plan:

- Status quo: 0.9 ha of 54 Dominion Road, Tuakau, is subject the Residential zone, and 5.5 ha is subject the Rural zone.
- Preferred Option: All of 54 Dominion Road, Tuakau (6.4 ha) is subject to the Residential zone.
- Alternative Option 1: All of 54 Dominion Road, Tuakau (6.4 ha) is subject to the Rural zone.
- Alternative Option 2: All of 54 Dominion Road, Tuakau (6.4 ha) is subject to a new Future Urban zone.

The status quo has been considered to be an inappropriate option for achieving the relevant objectives as outlined in the submission by Michael Shen (on behalf of M & M Shen Lucky Family Trust) on the Proposed Waikato District Plan.

The benefits and costs of the preferred option (being the relief sought by Michael Shen) are considered within subsequent sections of this report.

Alternative Option 1 (which would change the zoning of land from Residential zone to Rural zone) is dismissed as it would not achieve the objectives of the Proposed Waikato District Plan for the following reasons:

- The area of the site within the Residential zone that would, under this option, now be in the Rural zone is already identified for urban development, including in higher order documents, and so this option would not allow for land and planned infrastructure to be used most efficiently;
- The site is in close proximity to the Tuakau town centre (less than 1 km) and so this option would prevent compact urban growth (assuming that other areas further from the town centre are zoned for urban purposes in order to meet demand);
- This option would result in the access leg between two areas of Residential zone being subject to the Rural zone, a form of 'spot zoning' that should be avoided; and
- The option does not allow for the land to contribute towards the achievement of the targets set by the National Policy Statement for Urban Development 2020 (succeeding those in the NPS-UDC 2016).

Alternative Option 2 is proposed in response to the section 42A report prepared by Jonathan Cleese, dated 26 January 2021, related to proposed Future Urban and Residential Medium Density Zones. This alternative option is however reliant upon the Hearings Panel first deciding to introduce a Future Urban zone into the PWDP. The benefits and costs of Alternative Option 2 is considered within subsequent sections of this report.

2. Benefits and Cost Analysis of the Rezoning Proposal

The following assessment provides high level consideration of the benefits and costs associated with identifying all of 54 Dominion Road as suitable for urban residential development, either through the application of the Residential zone (Preferred Option) or the Future Urban zone (Alternative Option 2, if the zone is introduced into the PWDP).

2.1 Environmental

The requested zoning will result in the logical extension of the proposed residential environment, which can be recognised by part of the site already being within the PWDP's Residential zone and the proximity of the site to the Tuakau town centre. Therefore, the requested zoning has the environmental benefit of contributing towards a compact urban form for Tuakau and avoids environmental costs associated with providing for residential land in other, less suitable, rural areas.

Costs associated with the encroachment of urban development into the rural environment are not considered to be significant, given that the land will already be surrounded by urban zones (assuming that the properties at 48 and 50 Dominion Road are to be within the Residential zone), the site is relatively small for a rural property (5.5 ha of land within the Rural zone) and the site is visually separated from rural sites to the west by gullies.

2.1.1 Natural Hazards

The site at 54 Dominion Road has not been identified by Stage 2 of the PWDP as being subject to any significant risks from natural hazards.

The southern portion of the site is noted to contain steep topography (maximum grade of approximately 50%), with more gentle but still notable grades (roughly 5-15%) across the remainder of the site. The site therefore is considered to be potentially at risk from site instability, which would affect or be affected by urban development.

While site-specific geotechnical assessment has not been undertaken, high-level assessment undertaken by Council as part of the Tuakau Structure Plan places the northern half of 54 Dominion Road (being an area greater than the land shown in the PWDP as Residential zone) in “Category A – Low Risk” and the remainder of the site in “Category B – Some Risk”. No parts of the site are shown as being within “Category C – Moderate Risk” or “Category D – High Risk”. This high-level assessment suggests that risks arising from site stability are able to be suitably managed if urban development were to be provided for at the site.

2.1.2 Noise, Odour and Reverse Sensitivity

The requested zoning would result in the separation distance between the Residential Zone and the Business Zone being a minimum of 88 m (at the south-western corner), which increases to 158 m at the south-eastern corner. The PWDP provides a separation distance of between 403 m and 457 m at this location, although there is no separation between the two zones elsewhere in Tuakau.

Therefore, the requested zoning has the potential to result in reverse sensitivity effects related to noise and odour arising from industrial uses permitted in the adjacent Industrial zone.

This matter is covered in detail as part of the evidence prepared simultaneously to this section 32AA report. In summary:

- The specialist reporting relied upon by Council to establish the new boundary between the Residential and Rural zones at 54 Dominion Road (and adjacent properties), which dates back to the preparation of the Tuakau Structure Plan, is flawed, due to the odour reporting not addressing the matters identified in a Council-commissioned peer review and the acoustic reporting assuming that the recommendation of the odour reporting (250 m buffer) was the status quo (rather than identifying what, if any, separation was necessary);
- Council’s preferred zone boundary provided a buffer significantly larger than the recommendations of their specialist reporting, without any further justification; and
- Specialist reporting commissioned by submitters on Plan Change 16 recommended that a 150 m buffer be provided to appropriately address odour effects and that no measures were necessary in relation to noise, as noise effects arising from industrial activities would be as per the permitted standards for noise from an Industrial zone as observed in a Residential zone.

Therefore, reverse sensitivity effects are considered to be appropriately minimised as long as residential development is separated from the Industrial zone by 150 m (relying on the specialist reporting prepared by submitters on Plan Change 16). This means that over 5 ha of additional land at 54 Dominion Road can be changed from Rural zone to Residential zone without notable reverse sensitivity effects (and related costs to existing industrial activities and future residents) arising.

Approximately 3,850 m² of land at 54 Dominion is within 150 m of the Industrial zone and therefore may not be suitable for residential zoning due to the costs arising from reverse sensitivity effects. This area generally coincides with the areas of steeper topography where residential development would already be limited. Retention of the Rural zone at this location would avoid costs associated with reverse sensitivity effects, but the use of a Rural zone for a purpose that is not to provide for rural production land is not considered to be good planning practice. It is considered more appropriate for all of the site to be zoned Residential (or potentially Future Urban) with additional rules restricting residential activities within the 3,850 m² area of the site that is less than 150 m from the Industrial zone. This allows for the Preferred Option (or Alternative Option 2) to be acceptable whilst ensuring that costs associated with reverse sensitivity effects are avoided.

2.2 Social

The requested zoning is considered to result in various beneficial social effects associated with the growing Tuakau community. In particular, the site's location within 1 km of the Tuakau town centre provides for growth of the township in a manner that supports compact urban form that promotes the use of active transport modes to access commercial and community facilities.

It is also noted that the Preferred Option, whereby the Residential zone is applied to all of 54 Dominion Road, Tuakau, has the benefit of providing considerably more certainty on the site's intended use for urban residential development when compared to the application of the Future Urban zone. For the latter, urban residential development would be reliant upon an additional plan change process (at which time the suitability of the land for urban residential purposes can be relitigated) and still require the resource consent process.

2.3 Economic

The development of the site for urban purposes will undoubtedly result in economic costs borne by various parties. However, given that Council is mandated by the National Policy Statement for Urban Development 2020 to provide sufficient development capacity to meet demand (and Appendix 9 to the section 42A framework report identifies that the PWDP does not currently achieve this), it is important to also consider the opportunity costs associated with deciding to not accept the requested zoning and instead requiring other rural sites within Tuakau to be subject to the Residential zone in order to meet the NPS's obligations.

In addition, Alternative Option 2, which only applies a potential Future Urban zone, will result in significant economic costs associated with the necessity for a future plan change to enable urban development (which may be borne by Council), which could be avoided if the Preferred Option of applying the Residential zone is provided for.

2.3.1 High Class Soils

The site is assumed to contain high class soils, most likely being Class 2. The requested zoning would result in these high class soils no longer being used for rural production purposes, which would result in economic costs to the agricultural and horticultural markets.

However, almost all of the Tuakau hinterland is assumed to contain high class soils, based on Landcare Research's mapping and soil mapping prepared by Council for Waikato 2070. Therefore, any expansion of the Tuakau township (as would be required by the NPS-UD) would result in the same or similar economic costs. If it is assumed that the requested zoning at 54 Dominion Road will prevent the need for a similar area of high class soils to be zoned for urban residential purposes elsewhere in Tuakau, then the economic costs of doing so would be neutral with the costs of not doing so.

2.3.2 Infrastructure

Waikato District Council has indicated that the sites (or parts of sites) along Dominion Road that are within the Residential zone in the PWDP will be provided with bulk infrastructure, with this identified in the upcoming 2021 Long Term Plan. This includes servicing that small part of 54 Dominion Road that is within the Residential zone. The economic costs associated with the delivery of that bulk infrastructure therefore forms part of the status quo.

It is anticipated that extensions to the bulk infrastructure network to service future development of 54 Dominion Road will be necessary. As these networks will be predominantly internal to the site and required only in response to a resource consent application for subdivision of a single site, it is assumed that the costs of providing these network extensions would be borne by the developer.

While additional urban development may result in increased demands in capacity of reticulated networks servicing the Tuakau township, these are not anticipated to be in excess of the capacity demands necessary in order for Council to meet its obligations under the NPS-UD. Therefore, the economic costs associated with capacity of infrastructure networks of providing for the requested zoning is considered to be neutral with the costs of not doing so.

2.3.3 Economic Growth and Employment

As the change in zoning would be to enable residential uses (and no commercial uses), the anticipated land uses would not directly result in an increase in economic growth or employment. However, minor benefits to the economic growth of Tuakau could be attributed to additional residential development being provided for at the site.

2.4 Cultural

There are no known cultural effects that would result from the change of zoning of the property at 54 Dominion Road, Tuakau. It is specifically noted that this site does not include the Kairoa Stream (since esplanade reserves was vested in 2006), where undocumented archaeological sites may exist.

3. Evaluation of the Proposal

3.1 Reasons for the Selection of the Preferred Option

The Preferred Option has been selected as:

- The zoning of all of 54 Dominion Road, Tuakau, for urban residential development has various social and environmental benefits associated with providing for the anticipated growth of Tuakau as part of a compact urban form;
- Potential costs associated with reverse sensitivity can be minimised through adhering to a 150 m separation distance from the Industrial zone, which affects only a small area of land (and the use of the Rural zone as a method to enforce this separation distance is not considered appropriate);
- Economic costs, including in relation to loss of high class soils and provision of infrastructure, are considered to be the same or similar to the costs that are likely to result from rezoning other rural land in Tuakau for urban purposes that would otherwise be necessary, noting that Council's obligations under the NPS-UD to provide for sufficient development capacity are not being met by the PWDP; and
- The application of the Residential zone over all of 54 Dominion Road by the PWDP avoids the economic costs associated with a further plan change if a potential Future Urban zone was instead applied.

3.2 Extent to Which the Requested Zoning is the Most Appropriate Way to Achieve the Purpose of the RMA

As considered by this assessment, the requested zoning is an appropriate method for people and communities to provide for their social economic and cultural well-being, as it supports the continued growth of the Tuakau township by providing for additional development capacity in a location that enables compact urban form to be retained. The status quo (and any other potential option that does not provide for sufficient development capacity) fails to do so, as it unduly restricts the urban growth of Tuakau that is necessary to meet demand.

The loss of high class soils to urban development does not sustain the potential of natural resources to meet the foreseeable needs of future generations or safeguard the life-supporting capacity of soil (through use for food production). However, given the directions of the NPS-UD to provide for sufficient development capacity, the loss of high class soils around the Tuakau hinterland are considered to be almost inevitable, with the loss of a similar extent of high class soils in another nearby location likely to be necessary in order to meet those requirements if the requested zoning was not accepted.

The adverse effects of residential urban development at 54 Dominion Road can be appropriately avoided, remedied and mitigated as discussed above. In particular:

- Residential development would adhere to the PWDP Residential zone provisions in order to manage adverse effects internal to the site and at site boundaries;

- Geotechnical assessment at the time of resource consent can ensure that future development appropriately responds to site instability risks; and
- Reverse sensitivity effects can be minimised or avoided if a 150 m separation distance is adhered to, which can be imposed by a rule in the PWDP but is likely to occur in any case due to the topographical constraints of the land at 54 Dominion Road that is within this buffer area.

For these reasons, the Preferred Option is considered to be the most appropriate way to achieve the purpose of the RMA.

3.3 Assessment of the Risk of Acting or Not Acting if there is Uncertain Information About the Subject Matter of the Provisions

It is recognised that the above assessment has been undertaken only at a high level and so there is the potential that some of the information relied upon is uncertain. For example, it has been assumed that the site is subject to high class soils and at only low or moderate risks of site instability.

Because of this, it could be considered to be more appropriate to apply a Future Urban zone (as per Alternative Option 2) rather than a Residential zone (the Preferred Option). However, this is not considered to be necessary due to:

- The site having been considered to be suitable for residential urban development (particularly due to its close proximity to the Tuakau town centre);
- The need for sufficient development capacity to be plan enabled by the NPS-UD (only development capacity for over 10 years can be subject to a Future Urban zone); and
- The future requirement for subdivision consent to be obtained in order to allow for urban development to occur, at which time the suitability of the land in terms of natural hazards risks will be required to be assessed in detail (and an approved design is anticipated to appropriately respond to this). The subdivision process can also manage the interface with neighbouring sites, including integration of roads and infrastructure, and ensure a good overall urban design outcome.

4. Conclusion

The Preferred Option of applying the Residential zone across all of 54 Dominion Road is considered to be the most efficient and effective method to achieve the objectives of the PDWP for the following reasons:

- The Preferred Option efficiently utilises the land and future public infrastructure along Dominion Road;
- The Preferred Option promotes the establishment of a safe, compact, sustainable, good quality urban environment, resulting in a settlement pattern that is consolidated around an existing town (Tuakau);

- Existing green open space (e.g. the Kairoa Stream esplanade reserve), outstanding landscapes, and areas of cultural, ecological, historic, and environmental significance are not adversely affected by the Preferred Option;
- The Preferred Option contributes towards achievement of the development capacity requirements of the National Policy Statement for Urban Development 2020 (which replaced the 2016 version);
- The loss of high class soils to support the growth of Tuakau is considered to be almost inevitable (due to the majority of the Tuakau hinterland containing high class soils), regardless of whether the Preferred Option is given effect to or an alternative rural site is instead identified for residential development in order for Council to meet their NPS obligations;
- The Preferred Option allows for the rural character and amenity of sites remaining in the Rural zone to be maintained, noting that the status quo results in areas in the Rural zone that are compromised due to being surrounded by urban zones; and
- The amenity values of sensitive activities resulting from the Preferred Option will be protected from significant adverse effects arising from industrial activities within the Industrial zone to the south of the site as long as residential activities do not occur within 150 m of this zone, affecting only a small portion of the site at 54 Dominion Road, where urban development is already restricted by topography.

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Tuakau Air Quality Assessment

48 and 52 Dominion Road



Tuakau Air Quality Assessment

48 and 52 Dominion Road

Client: Pacific Engineering Projects Ltd

ABN: N/A

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1.0 Introduction

AECOM New Zealand Limited (AECOM) has been engaged by Pacific Engineering Projects Ltd (PEP) on behalf of the property owners of 48 and 52 Dominion Road Tuakau to prepare a report which assesses the potential air quality effects associated with local industry on this land, and the use of separation distances between industrial and residential zoned land, to control the potential for reverse sensitivity effects. This assessment will be used to support a submission on the proposed Tuakau Structure Plan Change 16 (PC16) to the Waikato District Plan. PC16 comprises of the rezoning of land around Tuakau for residential and industrial purposes to meet the growth demand, and is based on the 2014 Tuakau Structure Plan developed by the Waikato District Council.

2.0 Background Information

2.1 Site Location

The two properties at 48 (Lot 1 DP 485993) and 52 (Lot 2 DP 371796) Dominion Road (the sites), cover approximately 19 hectares of land. The sites are located approximately 800 m to the east of the Tuakau Town centre. The sites extend from Dominion Road to the north and slope to the south, towards the Bollard Road Industrial Zone. The properties are currently zoned as Rural under the Waikato District Plan. Land directly to the west of the sites is zoned Residential, some of which has houses still in the process of being constructed. The land to the north and east of the sites is zoned as Rural, and is mainly agricultural land with sporadic dwellings spread throughout.

The location of the sites is shown in Figure 1.

Figure 1 General Site Location



Map Source: Open Street Map

2.2 Topography

The sites gently slopes south from Dominion Road toward the Bollard Road Industrial Zone. On the southern boundary of the sites the land drops to create a gully that separates the sites and the Bollard Road Industrial Zone. The gully comprises of pasture, scrub and a large stand of mature pine trees. The sites elevation is approximately 5 m above the Bollard Road Industrial Zone.

2.3 Bollard Road Industrial Zone

The Bollard Road Industrial Zone is directly to the south of the sites. The Bollard Road Industrial Zone is bordered by a railway line to the north and Whangarata Road to the south. Land directly south of the sites is zoned Business (coloured blue in the map below) and this zone is surrounded by Industrial zoning (coloured purple in the map below), with Bollard Road transecting the business park.

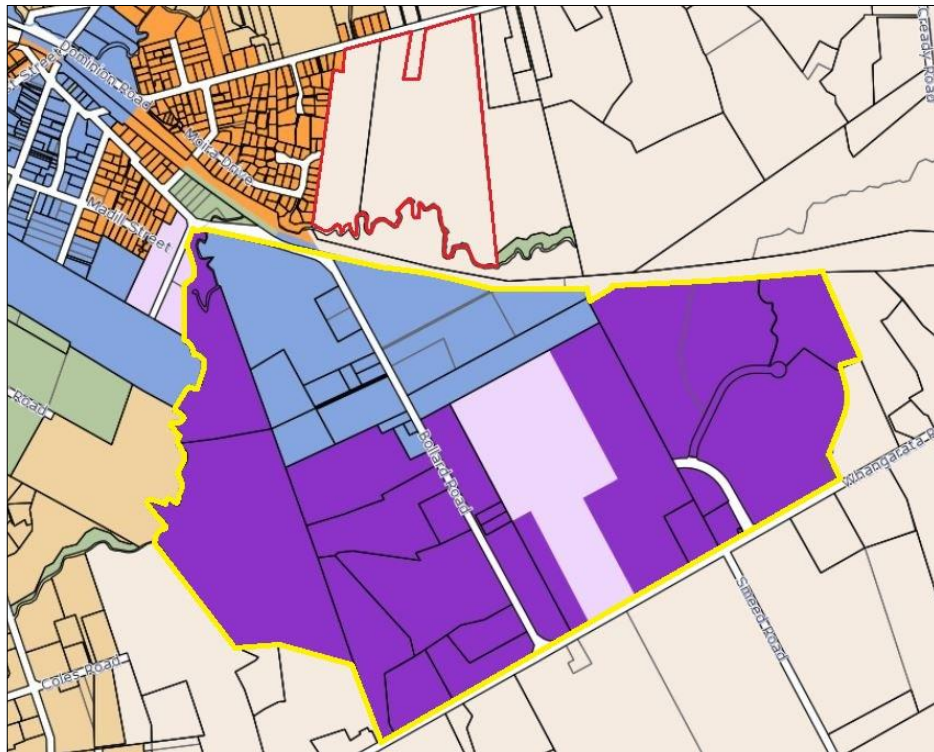
Within the Business and Industrial zoned land there are a number of industrial businesses; Dricon, Tuakau Grain, Fibreglass Tanks and Manufacturing Ltd, Tuakau Timber Treatment and Beams and Timber Direct Ltd (Tuakau Timber).

Currently industries that comply with the Waikato Regional Council Permitted Activity Rules can operate within the Business zone. This could include industries such as; vehicle maintenance, food manufacturing, milk processing, laundering and cleaning facilities. Within the Industrial zone, permitted, controlled and discretionary activities can operate. This could include industries such as; soap manufactures, fertiliser production, and galvanising plants.

Of the industries operating within the Bollard Road Industrial Zone, Dricon and Tuakau Grains have been identified as having resource consents to discharge air containing dust and/or odour. These industries would most likely have conditions imposed upon them, however in addition to these conditions the fundamental requirements of the Resource Management Act (RMA), Regional and District Plans; that no discharge whether odour or dust is objectionable to the extent that it causes an adverse effect at or beyond the boundary.

The current zoning of the sites and the surrounding area is shown in Figure 2. The sites are indicted by the red line; the yellow line indicates the Bollard Road Industrial Zone.

Figure 2 Current zoning around the sites



Map Source: Waikato District Council

2.4 Plan Change 16

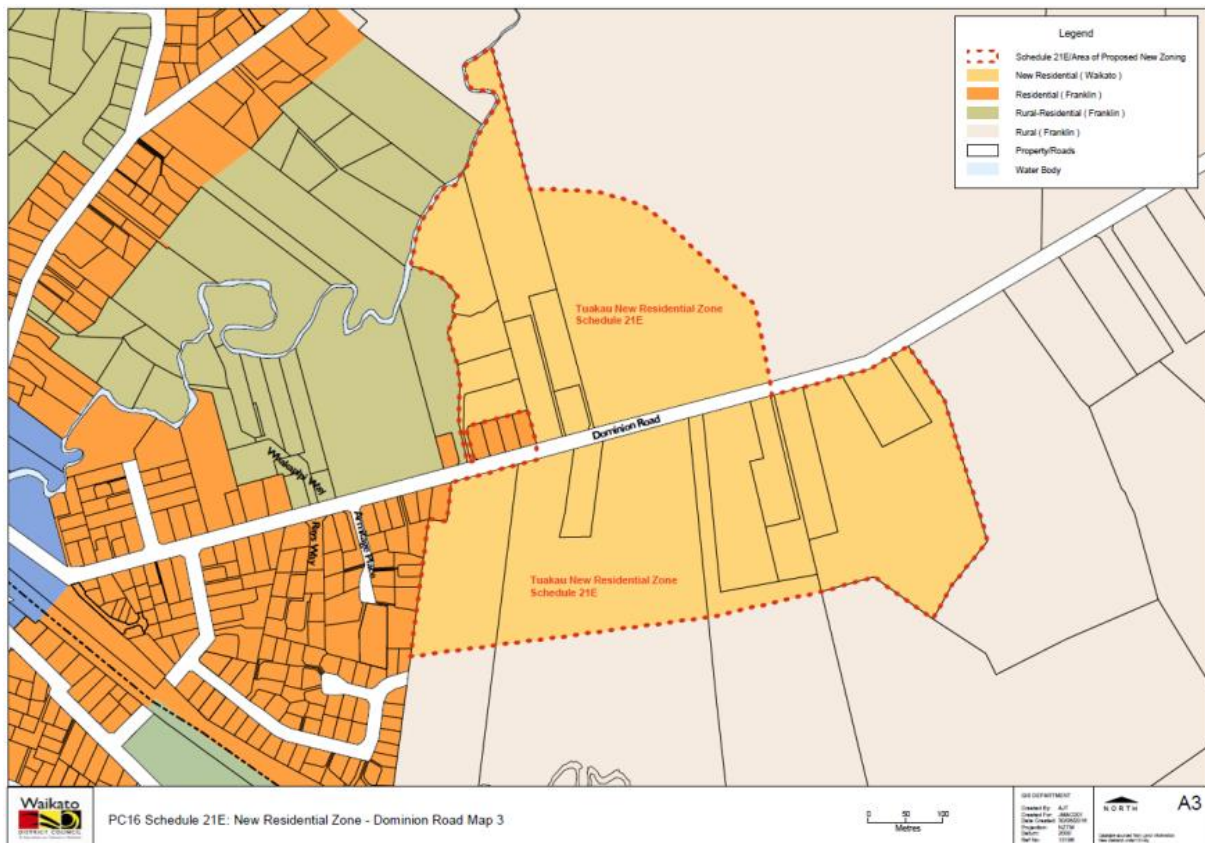
PC16 to the Waikato District Plan (WDP) seeks to change both the Franklin and Waikato Section of the WDP to cater for residential and industrial growth in Tuakau. The under lying document for PC16 is the TSP, which indicates the extent of the structure plan, intended zoning and how development is to be staged between 2016 to 2046.

During the development of this plan, WDC commissioned Tonkin and Taylor (T&T) to provide advice on the air quality effects and separation distance in regards to the TSP. T&T undertook a desktop assessment which considered the local industry, and researched literature both locally and internationally concerning the use of separation distances between industrial sites and residential dwellings. T&T identified a number of industrial sites within Tuakau that have the potential to discharge dust and/or odour. Using Australian guidelines, T&T applied separation distances to each of these industrial activities. Based on the desk top study T&T recommended a separation distance of 250 m around the Bollard Road Industrial Zone. The TSP and subsequently PC16 adopted this recommendation.

Figure 3 and 4 presents the proposed zoning for Tuakau. This proposes that part of 48 and 52 Dominion Road would be rezoned from Rural to Residential. A separation zone of at least 300 m between the Bollard Road Industrial Zone and the proposed Residential Zone has been applied. This separation distances comprises of the railway corridor, the gully, and the southern section of the sites. This separation distance is significantly different to other proposed Residential Zones to the east of the existing Industrial Zone, which appears to be approximately 100 m.

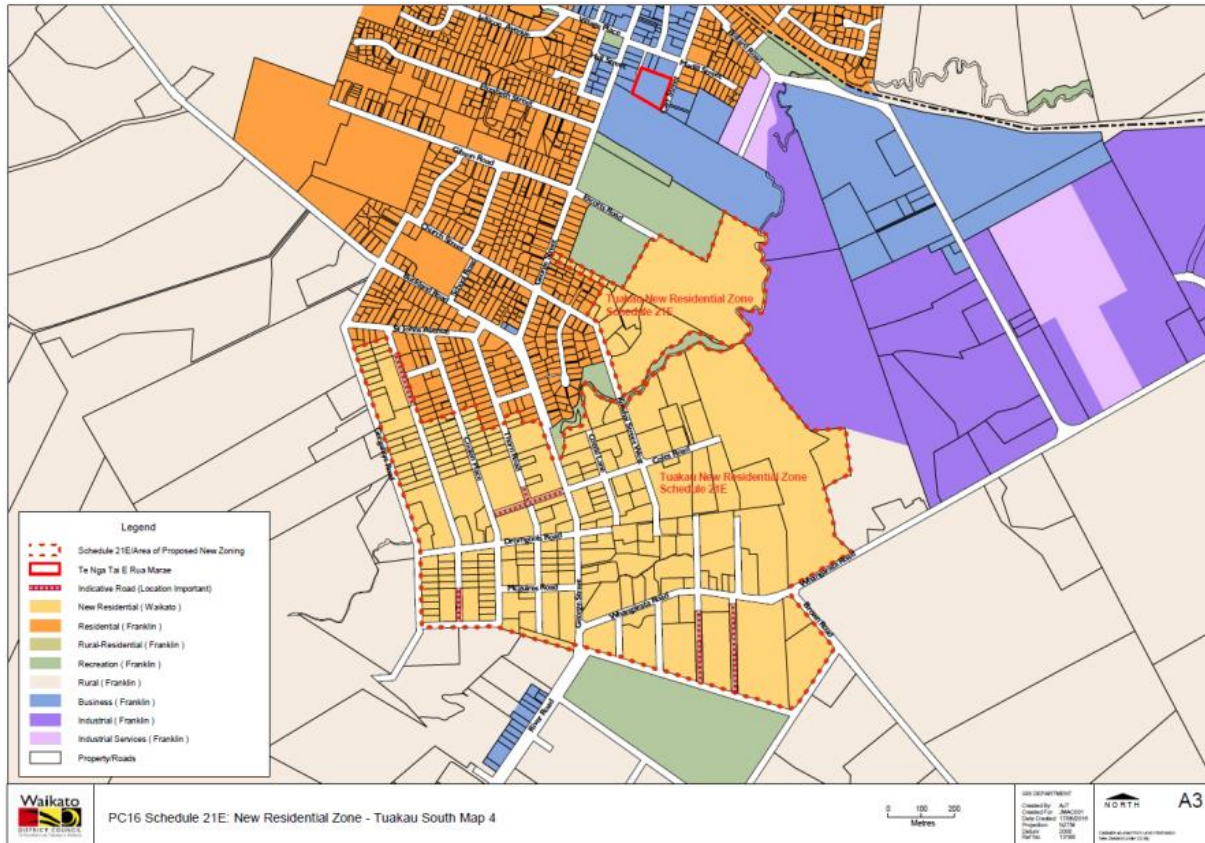
PC16 proposes that the existing Business zoned properties on Bollard Road are included into the industrial zone. This change does not increase the amount of industrial land available, as the existing Business Zone allowed for industrial use provided it was a permitted activity. Currently Tuakau Timber Treatment Limited and other smaller business operate in the Business Zone. This change means that activities that comply with the Waikato Regional Council Discretionary Activity Rules will be able to operate on this land.

Figure 3 Proposed Zoning for the Sites



Map Source: Waikato District Council

Figure 4 Proposed Zoning for Southern Tuakau



Map Source: Waikato District Council

2.5 Existing Separation Distances

Currently within Tuakau, industrial land use does not directly border residential land use. These land uses are separated by a combination of geological features (e.g. gullies), transport routes (roads and rail), and less sensitive land use (e.g. rural, business and light industrial). Under the current District Plan, there are a number of residential properties on Moira Road, Bollard Road and Madill Road that are around 120 to 130 m from land either zoned Business or Industrial in the Bollard Road Industrial Zone. In Figure 4 the proposed new Residential zone to the west of the Bollard Road Industrial Zone appears to have no separation distance, this proposed zoning seems to contradict the separation distance planned for the sites. If the proposed separation distances for PC16 is applied a large number of houses, both current and proposed will be within the separation zone. Some of these properties border the sites, and therefore there appears to be different standards being applied.

3.0 Assessment of Existing Environment

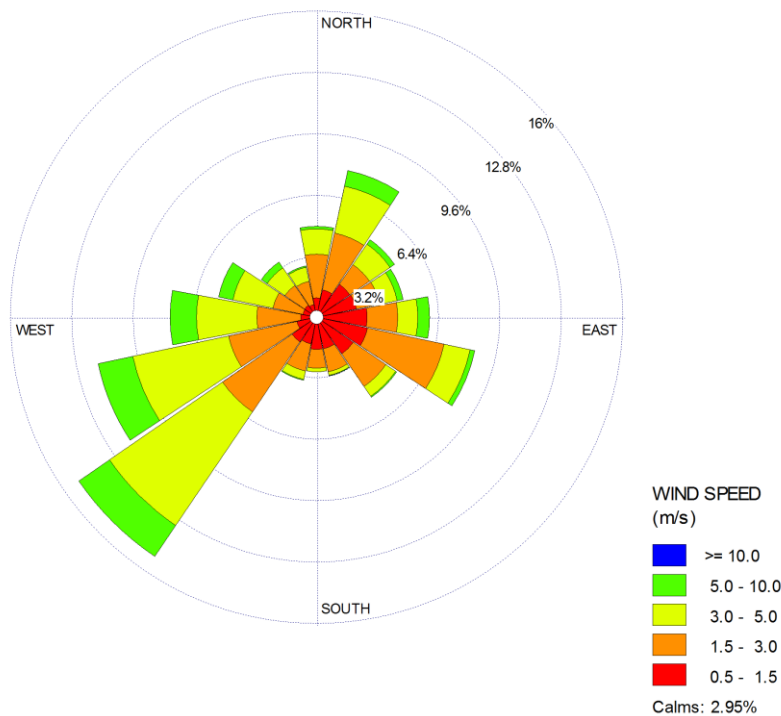
AECOM carried out site investigations to assess actual effects on the sites from the industrial area. The effects on the sites of odour and dust generated by existing activities in the Bollard Road Industrial Zone are discussed in the following sections.

3.1 Local Meteorology

AECOM has reviewed local meteorological data from monitoring stations located close to the proposed site and has used this information to help understand the meteorological conditions in Tuakau. Data from the Pukekohe Weather Station was obtained from the National Institute of Water and Atmospheric Research (NIWA) CliFo data base, a web based system that provides access to New Zealand’s national climate database.

The Pukekohe Weather Station is located approximately 10 km northwest of the site, at UTM, Zone 60, 310438m E, 5880300m N. Analysis of the wind data at the Pukekohe Weather Station between 1 August 2013 and 31 July 2016 indicates that the predominant wind directions are from the southwest and west-southwest. Wind data from this station has been presented as a wind rose in Figure 5.

Figure 5 Pukekohe Meteorological Data for the period 1 August 2013 to 31 July 2016



Winds coming from the south-southeast to south would place the sites in a downwind location of the Bollard Road Industrial Zone. Based on the meteorological data, 6.2% of the wind comes from this direction, with no wind from that direction greater than 5 m/s, the wind speed that would be required to carry dust from the Bollard Road Industrial Zone towards the sites. Table 1 presents the distribution frequency of wind speed. The wind sensor at the Pukekohe Weather Station is at 10 m, therefore wind speed at ground level will be lower, due to surface friction effect reducing the wind speed with height decrease. Wind speed of 5 m/s at 10 m would equate to approximately 2.5 m/s at 0.5 m. This means our assessment with respect to wind speeds is conservative.

Table 1 Wind Speed Frequency Distribution

Direction	Wind Speed (m/s)		Total (%)
	0 - 5	>5	
North	4.6	0.1	4.8
North northeast	7.0	0.8	7.8
Northeast	4.7	0.3	4.9
East northeast	4.3	0.3	4.6
East	5.3	0.6	5.9
East southeast	8.2	0.2	8.5
Southeast	5.0	0.1	5.1
South southeast	3.1	0.0	3.2
South	2.9	0.0	2.9
South southwest	3.3	0.0	3.4
South west	13.1	1.9	15.1
West southwest	9.8	1.8	11.7
West	6.3	1.4	7.7
West northwest	4.5	0.8	5.2
Northwest	3.2	0.4	3.5
North northwest	2.7	0.1	2.8

3.2 Odour Observations

Odour observations were undertaken to provide an understanding of existing odours from around the Bollard Road Industrial Zone. Odour observations took place over five days and at different times, to account for different production cycles within in the industrial area and metrological conditions. The findings of the odour observations undertaken on 3, 4, 5, 8 and 9 August 2016 are presented in the following sections.

3.2.1 Methodology

The ambient odour monitoring methodology utilised in this study is a variation of the method described in the German Standard Verein Deutscher Ingenieure (VDI) 3940 "Determination of Odorants in Ambient Air by Field Inspections" (VDI Method). This is the method recommended in the Ministry for the Environment (MFE) Good Practice Guide for Assessing and Managing Odour in New Zealand and is commonly used in Australia and Europe for odour assessment.

3.2.2 Sampling

The modified method used by AECOM involved using a single 'field odour scout' to visit a selection of sites and sample the ambient air every 10 seconds for 10 minutes giving a total of 60 samples per location per day. The field odour scout recorded the intensity of the odour (according to a set intensity scale), the odour character (from a list of 40 various odour descriptors), the wind direction, the wind speed, any rainfall, and the time and date for every sample. The intensity scale and odour descriptors are those described in the MFE Good Practice Guide and are listed in Appendix A. The wind direction was determined and recorded by the field odour scout using a compass. Wind speed was recorded according to the Beaufort Force scale.

3.2.3 Field Odour Investigations

AECOM staff carried out site visits on 3, 4, 5, 8 and 9 August 2016. The weather conditions during the site visits are summarised in Table 2. The metrological conditions during the odour investigation were most conducive to detect odour effects, with winds generally below 3 m/s.

Table 2 Summary of Weather Conditions

Sampling Date	Wind Direction	Wind Speed	Wind Strength	Rain
3 August 2016	Northwest	0.3 – 3.5 m/s	Very Light – Moderate Breeze	None
4 August 2016	Northwest	0.4 – 2.3 m/s	Very Light – Gentle Breeze	Sporadic light rain
5 August 2016	Northwest - North	0.9 – 2.2 m/s	Very Light – Gentle Breeze	Sporadic light rain
8 August 2016	Northeast	0.1 – 1.5 m/s	Calm – Gentle Breeze	None
9 August 2016	Northeast - East	0.6 -3.0 m/s	Very Light – Moderate Breeze	None

3.2.4 Field Odour Investigation Locations

The field odour investigation was carried out at various upwind and downwind locations of the sites, sampling locations varied depending on wind direction. The location of the odour surveys are shown in Figures 6 and 7.

3.2.5 Industrial Activity Type

The industrial activities that operate within the Bollard Road Industrial Zone do not appear to have any seasonal or large production variations. Production rates should be steady throughout the year, therefore odours detected during the odour investigations should be similar to odours that would be detected during different times of the year.

Figure 6 Odour Survey Sampling Locations 3 to 5 August 2016



Figure 7 Odour Survey Sampling Locations 8 and 9 August 2016



3.3 Odours Observed

Odours at each site that were observed during the odour investigations are summarised in Figures 8 to 17. Generally the odours observed were either very weak or weak in intensity, and transient in nature. A distinct onion odour was observed at Site 5, based on the intensity scale, this was the most intense odour detected.

Figure 8 Site 1 Odour Observations

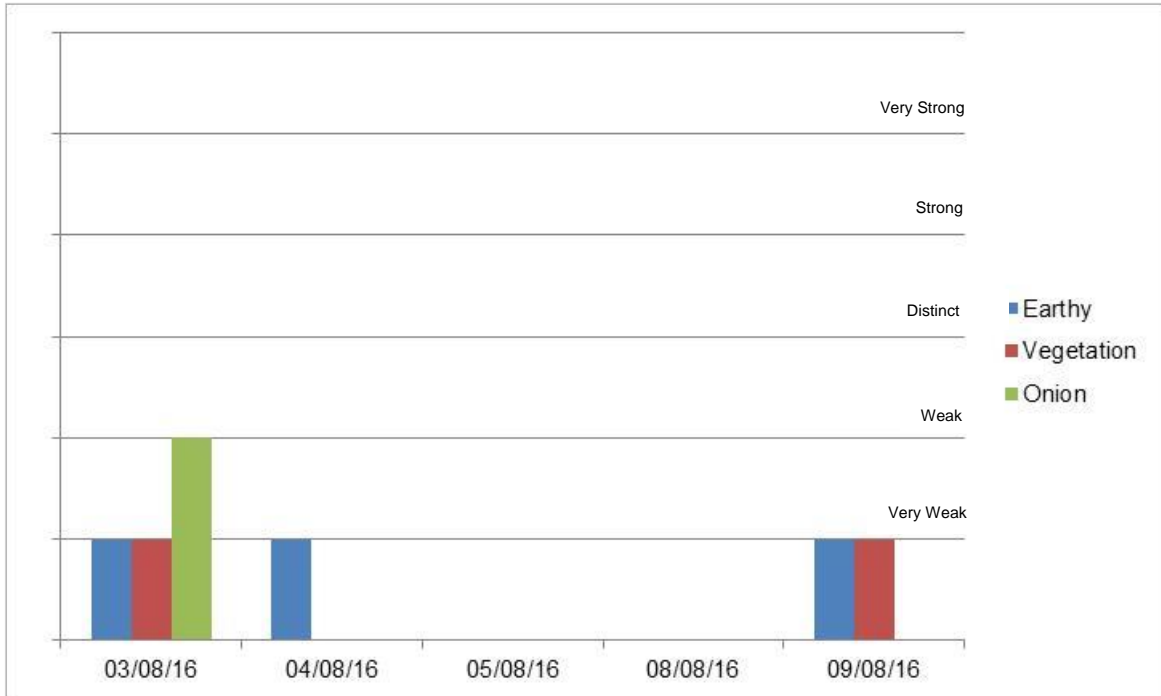


Figure 9 Site 2 Odour Observations

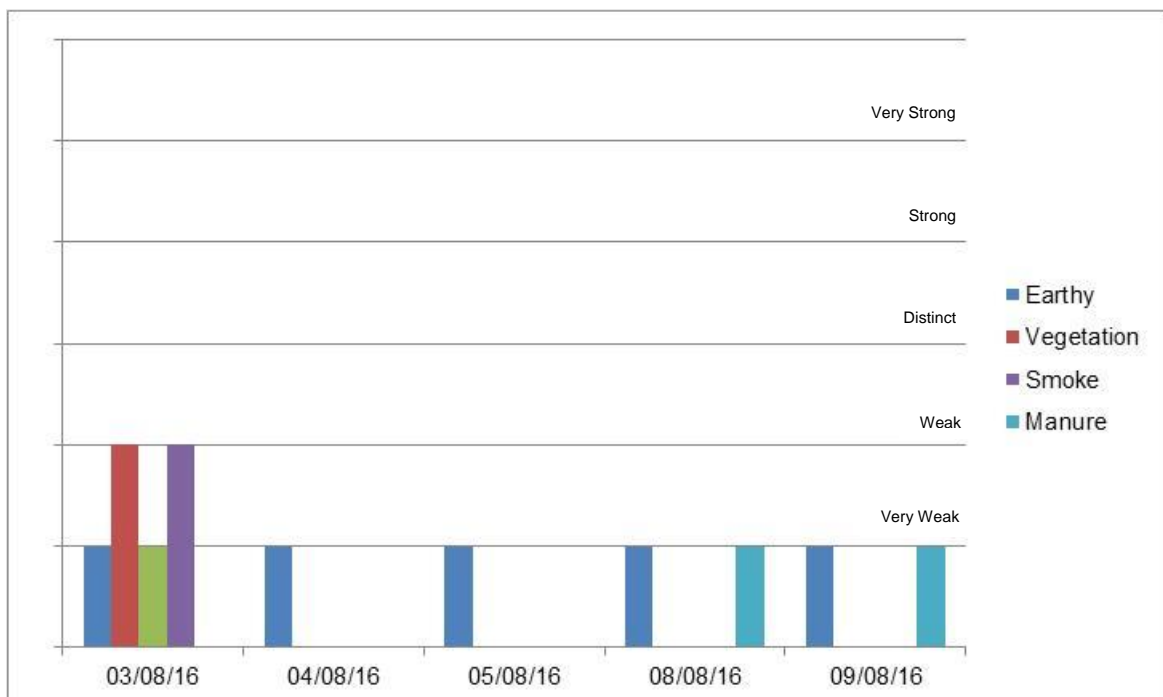


Figure 10 Site 3 Odour Observations

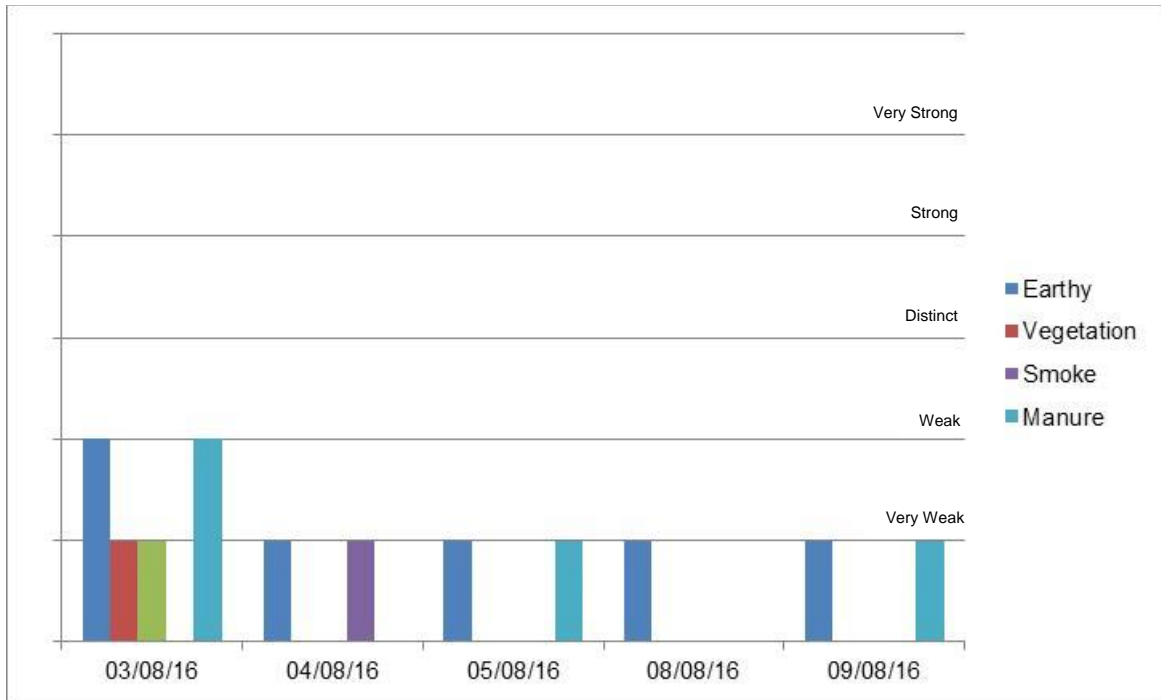


Figure 11 Site 4 Odour Observations

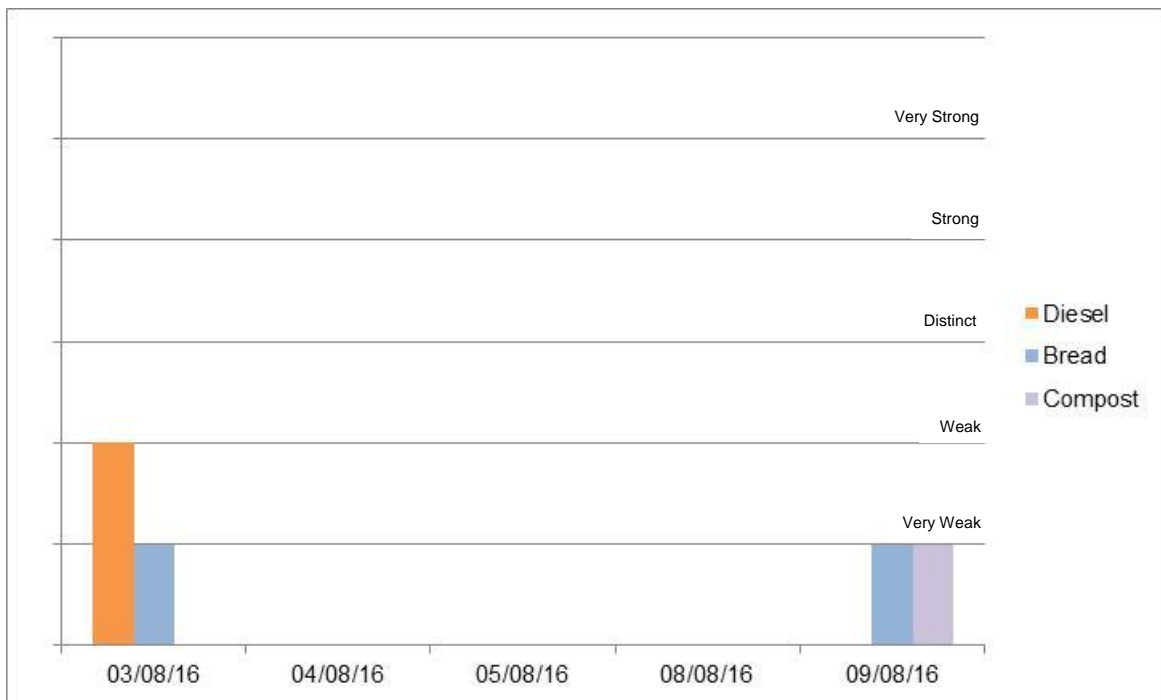


Figure 12 Site 5 Odour Observations

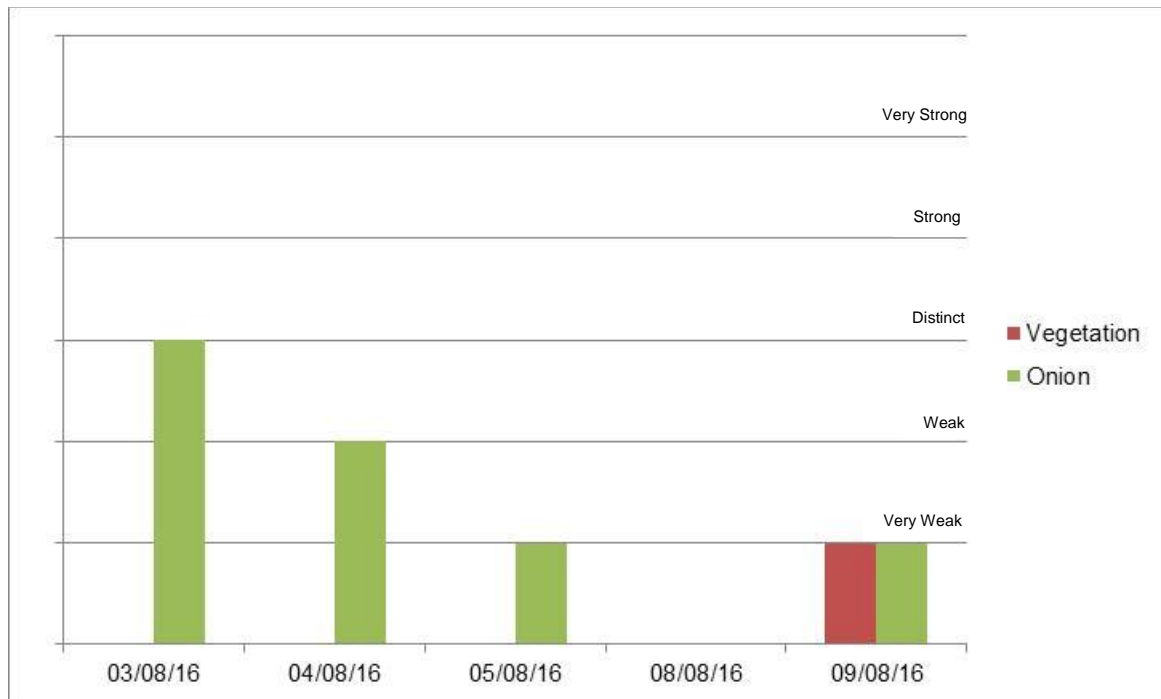


Figure 13 Site 6 Odour Observations

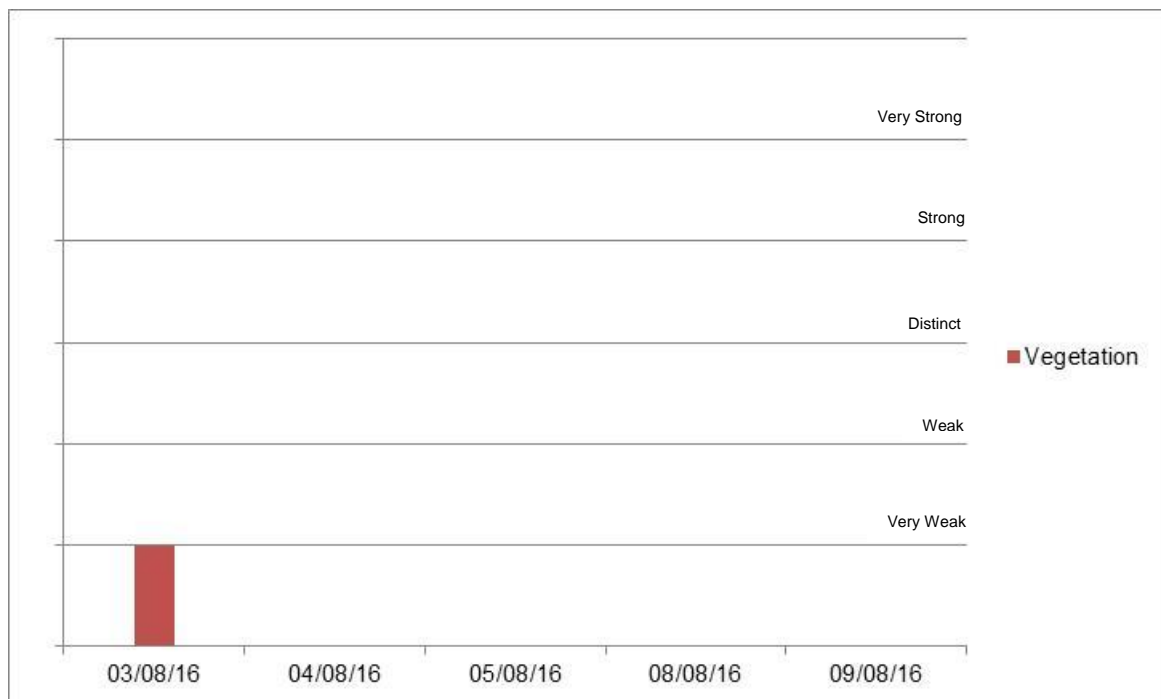


Figure 14 Site 7 Odour Observations

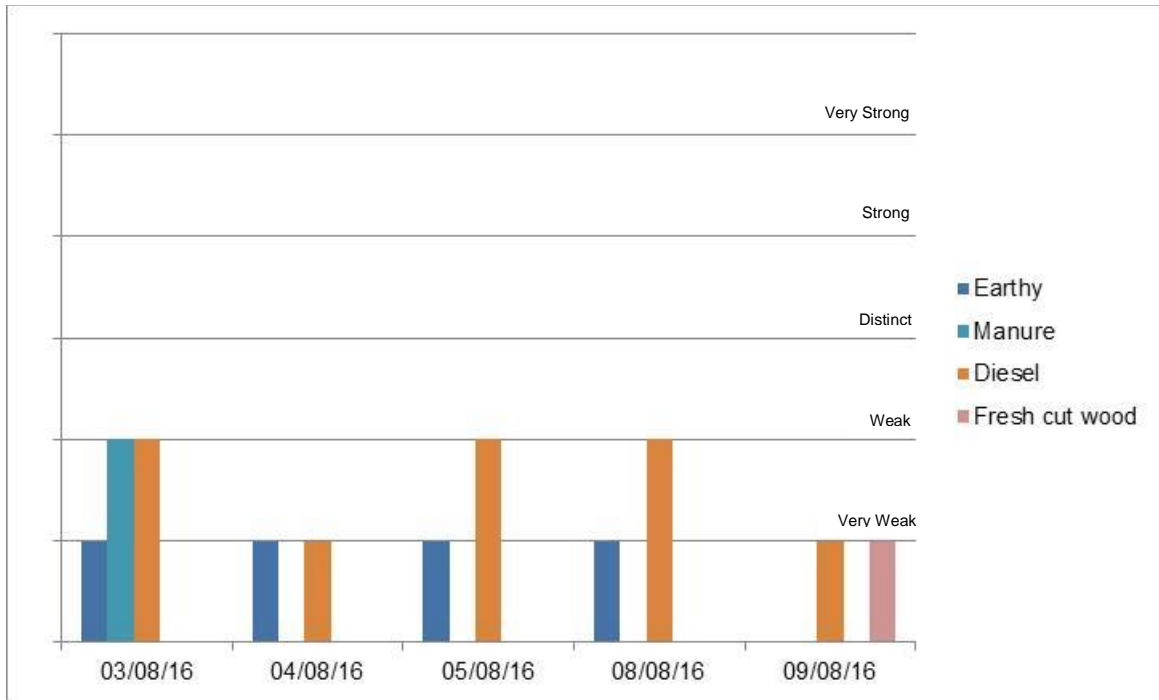


Figure 15 Site 8 Odour Observations

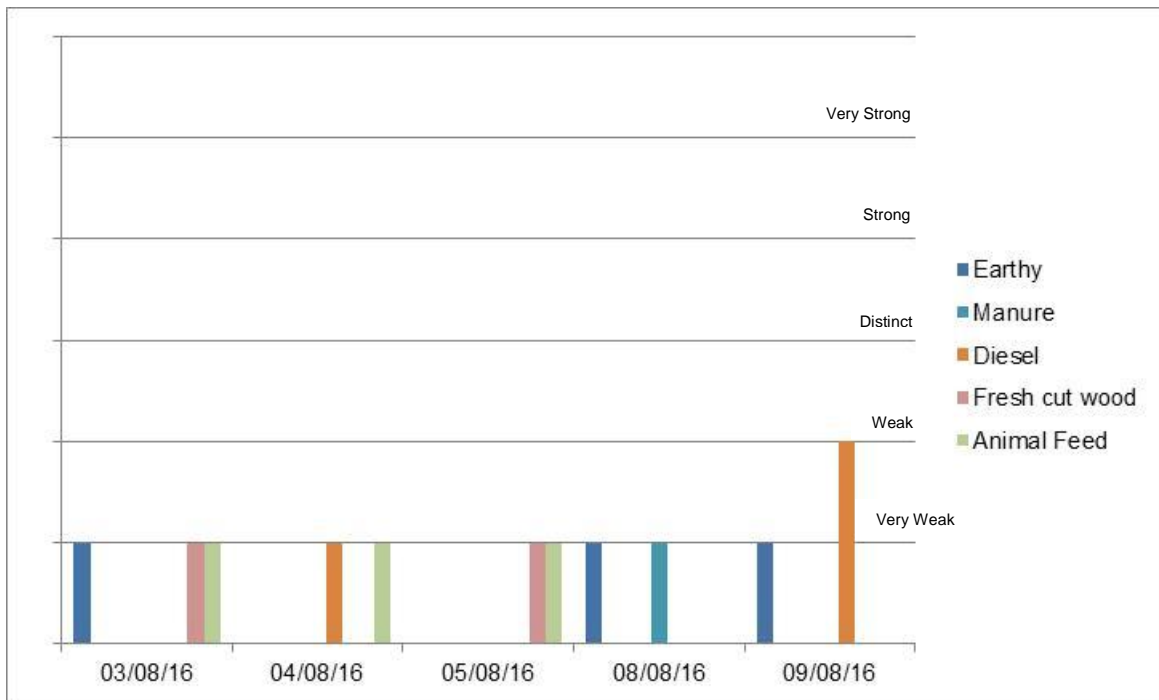


Figure 16 Site 9 Odour Observations

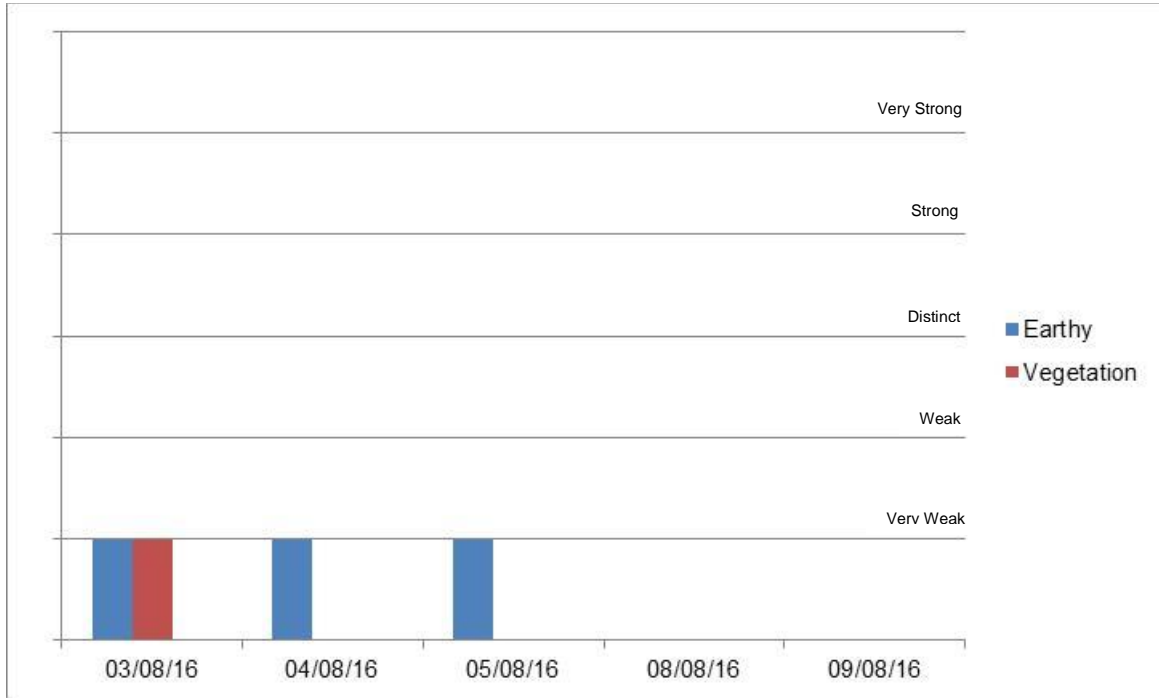
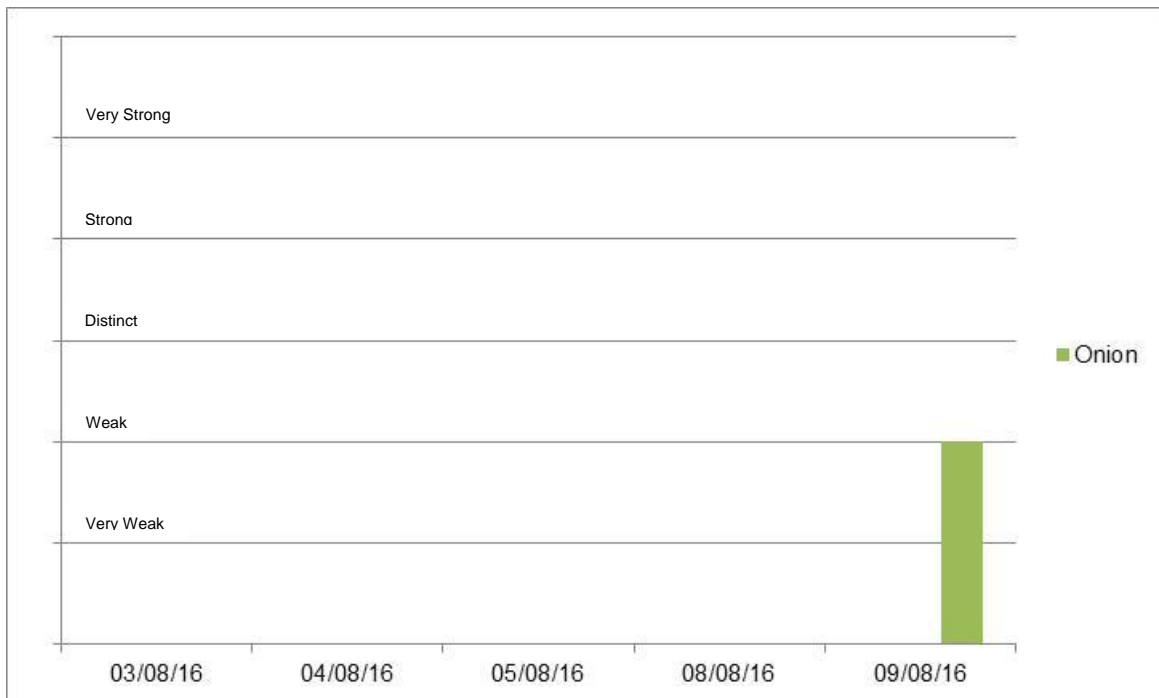


Figure 17 Site 10 Odour Observations



3.4 Summary of Odour Investigations

Based on our observations, odours that can be associated with the industrial zone, were typically described as fresh cut wood and animal feed (grain type odour). These odours can mostly likely be associated with the activity at Tuakau Grains and Tuakau Timber. When detected the odours were classified as being “very weak” and transient in nature, these odours were only observed downwind (approximately 200 m from the site), and within the industrial zone. During the odour survey, no odours were detected that might be considered offensive or objectionable.

Odours detected at the sites were generally described as earthy, vegetation, manure and smoke. The earthy, vegetation and manure type odours can be associated with the agricultural activities on the sites. The smoke odours can be attributed to the domestic home heating from residential properties on Dominion Road and Armitage Place. Other odours of interest that were experience during the survey were diesel and onion odours. The diesel odours were from passing traffic, mainly large trucks. Onions type odours were observed at the sites once, and routinely at Site 5. The origin of the onion type odour at the sites could not be identified, but a likely source could be onion weed. The onion odour at Site 5 can be attributed to the NZ Growers Ltd pack house on Tuakau Saleyards Road.

Even though no odours from the Bollard Road Industrial Zone were observed at the sites, this is due to unfavourable wind direction during the field visits. Observations downwind of the Bollard Road Industrial Zone at similar distances to that of the sites, had either no discernible odours or very weak and intermitted odours. Based on the field observation and considering the topography and the large stand of tree between the Bollard Road Industrial Zone and sites, it is highly unlikely any offensive or objectionable odour would be detected on the sites.

3.5 Dust Emissions

AECOM has reviewed existing industries and undertook site investigations of activities at the Bollard Road Industrial Zone, and consider the most significant source of dust is generated from vehicle movements on unsealed yards around the Tuakau Timber site. From the site investigations dust was observed within the site on dry days.

There are four main factors that are important to understand when determining whether any nuisance is caused by dust emissions from unsealed yards.

These are:

- Particle size;
- Particle density;
- Wind speed; and
- Wind direction.

These factors are all interrelated, and it is how they combine that determines the potential for an effect to occur.

In general, however, it is possible to make the following statements:

- Heavier and larger particles require more wind (speed) to become airborne;
- Large particles will deposit faster than small particles (of a similar density);
- More dense particles will deposit more rapidly than less dense particles (of a similar size); and
- Particles will travel further before depositing with a strong wind blowing than with a light wind blowing.

Despite this range of variables, the MfE Good Practice Guide¹ states that dust nuisance effects are generally only experienced within 300 m of unmitigated dust sources. As operations at Tuakau Timbers must comply with Waikato Regional Council’s Permitted Activity Rule it is not considered to have unmitigated dust discharges.

AECOM considers that the most common type of materials that has the potential to generate dust emissions from the Tuakau Timber site are soil, clay and gravel from unpaved surfaces. Figure 18 depicts the distance travelled by dust particles of these types of materials for a range of wind speeds.

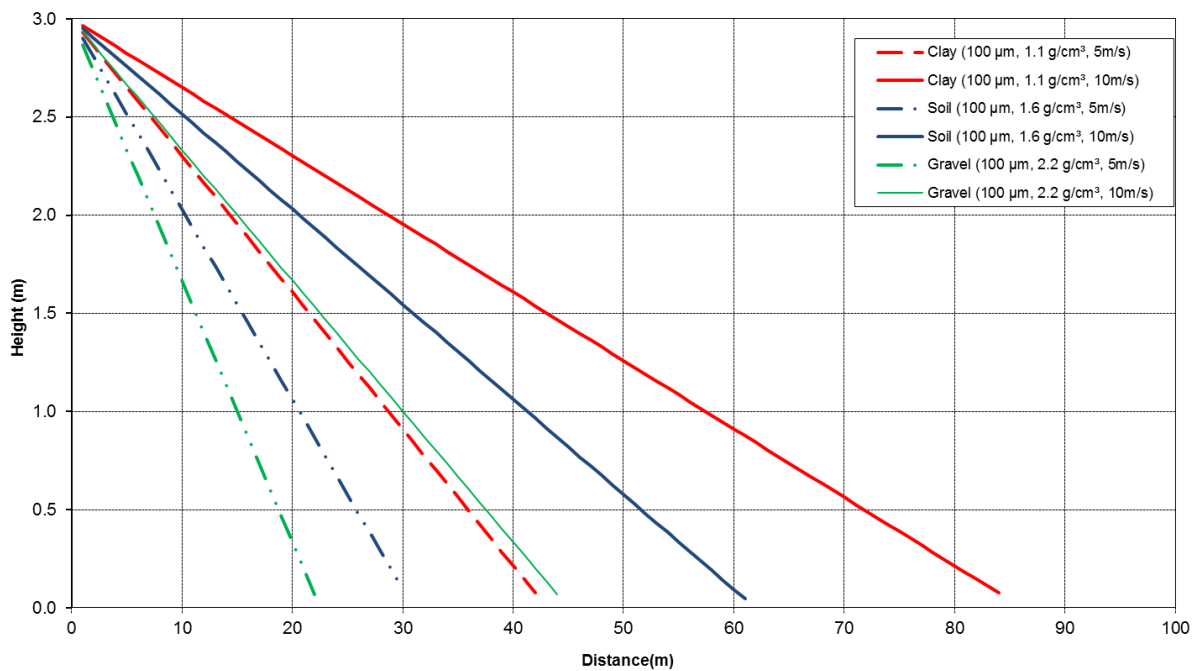
¹ MfE Good Practice Guide for Assessing and managing the environmental effects of dust emissions, September 2001.

Figure 18 shows that the density of the particle affects the distance it travels, with lighter particles travelling further than heavier ones. The density of clay, soil and gravel is 1.12, 1.6 and 2.2 g/cm³, respectively.

Typically nuisance dusts have a diameter of between 20 µm and 250 µm. In Figure 18 it has been assumed that the average particle diameter is 100 µm.

AECOM considers that there is some potential for dust affects within 84 m of Tuakau Timber during normal meteorological conditions (wind speeds ~5 m/s), if no form of mitigation is used. This value is based on flat land with no obstructions. However the sites are elevated by a gully and separated by a large stand of trees, therefore it is unlikely that the dust could travel this distance. Additionally metrological data indicates that there are typically very low wind speeds from the south-southeast and south direction that are strong enough to carry dust towards the sites, that exceed the required 5 m/s to carry dust. Coupled with the fact that the metrological data is at 10 m, wind speed would have to be between 9-10 m/s to reach 5 m/s at ground level. Also based on guidance provided in US EPA technical documents³, with mitigation in place it is likely that effects will only occur within 50 m of sources that are located at ground level.

Figure 18 Difference in Particle Travel with Wind Speed



² <http://www.aqua-calc.com/page/density-table/substance/Clay-coma-and-blank-dry-blank-excavated>

³ AP 42, Fifth Edition, Volume I Chapter 13 Miscellaneous Sources, Section 2.4 - Aggregate Handling and Storage Piles

4.0 Separation Distances

4.1 Reasons for Separation Distances

Separation distances, also known as buffer zones, are a management tool to avoid conflict between industrial and sensitive land uses. These buffer zones are used to shield existing industrial activities from encroachment of sensitive activities and reverse sensitivity effects, and to reduce potential effects on sensitive activities from the encroachment of industry.

Separation distances are typically based on the consideration of typical emissions that may affect nearby sensitive land uses. These include:

- Dust;
- Odour;
- Combustion emissions; and,
- Other pollutants.

4.1.1 Dust

Particulate matter in the environment generally falls into two categories: suspended and deposited particulate.

Suspended particulate matter is dust or aerosol which stays suspended in the atmosphere for significant periods of time. Its exact definition is dependent on the monitoring procedure adopted. The term Total Suspended Particulate is commonly used to describe the total amount of suspended particulate in the atmosphere at any one time.

Deposited particulate matter is dust or aerosol which because of its aerodynamic diameter and density, falls from the air. In general terms deposited particulate has a diameter of greater than about 10 or 20 μm . It is generally associated with nuisance effects such as soiling.

Suspended and deposited particulate arise from many natural and man-made sources. The most important sources globally are volcanoes and wind-blown dust, whilst on a local level, stationary and mobile combustion sources, road dust, wind-blown soil, pollen, and emissions from industrial processes are important.

Section 15(1)(c) of the Resource Management Act 1991 (RMA) states that any discharge from an industrial or trade premise into air requires a Resource Consent unless that discharge is expressly allowed by a rule in a Proposed Regional Plan, Regional Plan, or a regulation.

Industries located within the Bollard Road Industrial Zone fall within the jurisdiction Waikato Regional Council and Waikato District Council. Some of the industries bordering the sites do not hold an air discharge consent, therefore onsite activities are covered by the Permitted Activity Rule 6.1.8(c), which for dust states:

There shall be no discharge of particulate matter that is objectionable to the extent that it causes an adverse effect at or beyond the boundary of the subject property.

For industries to comply with Regional and District rules, emission control equipment might need to be installed. During the site investigations, it was observed that Tuakau Timber, Tuakau Grains and Dricon used baghouses and cyclones to control dust emissions. AECOM does not have information regarding specifically to these sites, but based on past experience resource consents have specific conditions regarding the operation of emission control equipment. These conditions usually relate to regular maintenance schedules to avoid failures, and continual monitoring of these devices, so any failure is identified and appropriate action can be undertaken.

The rule of no objectionable dust at or beyond the property, applies to activities within the Bollard Road Industrial Zone regardless of the zoning of the adjoining land. Therefore any future industrial activities within the Bollard Road Industrial Zone, whether on an existing site or a new activity will also have to comply with this rule.

4.1.2 Odour

Odour is defined by The Ministry for the Environment (MfE) as:

“Odour is perceived by our brains in response to chemicals present in the air we breathe. Odour is the effect that those chemicals have upon us. Humans have sensitive senses of smell and they can detect odour even when chemicals are present in very low concentrations.

Most odours are a mixture of many chemicals that interact to produce what we detect as an odour. Fresh air is usually perceived as being air that contains no chemicals or contaminants that could cause harm, or air that smells “clean”. Fresh air may contain some odour, but these odours will usually be pleasant in character or below the human detection limit.

Different life experiences and natural variation in the population can result in different sensations and emotional responses by individuals to the same odorous compounds. Because the response to odour is synthesised in our brains, other senses such as sight and taste, and even our upbringing, can influence our perception of odour and whether we find it acceptable, objectionable or offensive.”

The difficulty when assessing odours is the fact that the same odour has the potential to cause an effect that may be considered “acceptable”, “objectionable” or “offensive” depending on the context, of the sensitivity of the receiving environment and the person carrying out the assessment. An “objectionable” or “offensive” effect may occur where an odorous compound is present in a sample of air in very low concentrations, usually far less than the concentration that could cause adverse effects on the physical health of humans or impacts on any other part of the environment.

Typical odour effects reported by people include the following: nausea; headaches; retching; difficulty breathing; frustration; annoyance; depression, stress; tearfulness; reduced appetite; sleep deprivation; and embarrassment in front of visitors. Odour effects, such as those described above, contribute to a reduced quality of life for the individuals who are exposed to the odour.

Under the RMA, the main concern with odour is its ability to cause an effect that could be considered “objectionable” or “offensive” beyond the boundary of the sites. Whether an odour has an objectionable or offensive effect will depend on the factors described below and the decision as to whether an odour nuisance has occurred will depend on the judgement of the local authority who will investigate the potential for nuisance in response to complaints from the public.

Industries located within the Bollard Road Industrial Zone fall within the jurisdiction Waikato Regional Council and Waikato District Council. Even if industries operating within the Bollard Road Industrial Zone do not hold an air discharge consent, therefore onsite activities are covered by the ‘Permitted Activity Rule 6.1.8(b), which for odour states:

There shall be no discharge of odour that is objectionable to the extent that it causes an adverse effect at or beyond the boundary of the subject property.

Any future industrial activity to the Bollard Road Industrial Zone will also have to comply with this rule.

4.1.3 Combustion emissions

Combustion products are those compounds that arise as a result of combustion processes. The most common combustion products are particulate matter with an aerodynamic diameter <10 µm (PM₁₀), nitrogen oxides (NO_x)⁴, carbon monoxide (CO), and sulphur dioxide (SO₂). NO_x and CO arise from virtually all combustion processes. SO₂ only occurs from those combustion processes where the fuel (e.g. diesel and coal) contains sulphur.

Combustion emissions are regulated through resource consents, and the National Environmental Standards (NES)⁵. The MfE promulgated the NES on 6 September 2004 as regulations under the Resource Management Act 1991. The NES standards apply to five air pollutants: nitrogen dioxide (NO₂); CO; PM₁₀; SO₂; and ozone (O₃). The MfE has also produced ambient air quality guidelines (NZAAQG)⁶ for a similar list of contaminants for other averaging periods.

The NES standards for pollutants were primarily designed to ensure that air quality within a defined airshed is maintained at acceptable levels. AECOM has assessed the different industries within the Bollard Road Industrial Zone, and has identified a small number of sources, used on a small scale and relatively long distance away from the sites. Tuakau Timber operates a small boiler used to steam logs, this located approximately 350 m from the sites. AECOM has therefore concluded that emissions from combustion source to be insignificant and no further investigation is required.

Industries that produce emissions from combustion source within the Bollard Road Industrial Zone would have to comply with the Waikato Regional Council's air discharge rules 6.1.8(a) and 6.1.8(d):

There shall be no discharge of contaminants beyond the boundary of the subject property that has adverse effects on human health, or the health of flora and fauna.

The discharge shall not significantly impair visibility beyond the boundary of the subject property.

Any combustion process that does not comply with the Permitted Activity Rules would require consent, and further conditions would be imposed.

4.1.4 Other Pollutants

There is a range of industrial processes that have the potential to be discharge into the air. These can include, but not limited to; volatile organic compounds (VOC), polycyclic aromatic hydrocarbon (PAH), dioxins, silica, acidic gases, ozone and asbestos. These substances have the potential to cause adverse health effects if not managed properly. Any future industry to the Bollard Road Industrial Zone will have to comply with the Waikato Regional Council's air discharge rule 6.1.8(a):

There shall be no discharge of contaminants beyond the boundary of the subject property that has adverse effects on human health, or the health of flora and fauna.

Most of the compounds list above would not comply with the Permitted Activity Rules and therefore would require consent with strict conditions.

4.2 Complaints from Existing Industry

AECOM contacted the Waikato Regional Council regarding any past air quality complaints that have arisen from the existing industrial activities at the Bollard Road Industrial Zone and the surrounding area. AECOM has found no evidence of complaints made to the Waikato Regional Council; therefore it can be assumed that there are minimal effects on air quality around the existing residential properties.

⁴ Primarily a mixture of nitrogen oxide (NO) and nitrogen dioxide (NO₂).

⁵ Ministry for the Environment, Resource Management (National Environmental Standards for Air Quality) Regulations, 2004

⁶ Ministry for the Environment, Ambient Air Quality Guidelines (2002 update)

4.3 Separation Distances from other Jurisdictions

There is no buffer distance criteria promulgated by New Zealand regulatory authorities, other than the general requirements under the RMA. However some regulatory authorities and air quality consultants in New Zealand have adopted buffer distances set out by the South Australia Environmental Protection Authority (SA EPA), Environmental Protection Authority Victoria (EPA Vic), Western Australia Environmental Protection Authority (WA EPA) and the Tasmania EPA in the following documents:

- Guidelines for Separation Distances (SA EPA 2007)
- Environmental Protection Authority Victoria, Guideline, Recommended Separation Distances for Industrial Residual Air Emissions (EPA Victoria 2013)
- Guidance for the Assessment of Environmental Factors, Separation Distances between Industrial and Sensitive Land Uses (WA EPA, 2005)
- Attenuation Distances and Air Quality Code (Tasmania EPA, 2011)

Based on the industries in the Bollard Road Industrial Zone, AECOM has reviewed the above documents and considers the SA EPA and the EPA Vic guidelines to be the most appropriate for this situation. The SA EPA and the EPA Vic guidelines are summarised them in Table 3.

Table 3 Separation Distances

Industry	South Australia EPA	Victoria EPA
Cement Bagging	100 m	100 m
Grain Storage/Drying	100 m	250 m
Manufacture of Fibreglass Products	300 m	250 m
Sawmill	100 m	250 m
Timber Treatment	100 m	100 m

Based on the on the separation distance proposed by the SA EPA and the EPA Vic the sites is beyond the guidelines, with the exception of the EPA Vic sawmill distance of 250 m. The closest distance between the sites and Tuakau Timber is approximately 200 m, however the sawmill itself is approximately 350 m from the sites.

Future industries that operate out of the Bollard Road Industrial Zone might fall under difference categories, therefore have different separation distances from the above guidelines. AECOM has considered the potential type of industries that might occupy the Bollard Road Industrial Zone in the future, and have summarised them in Table 4 based on the above guidelines.

Table 4 Separation Distance of Potential Industry in Tuakau

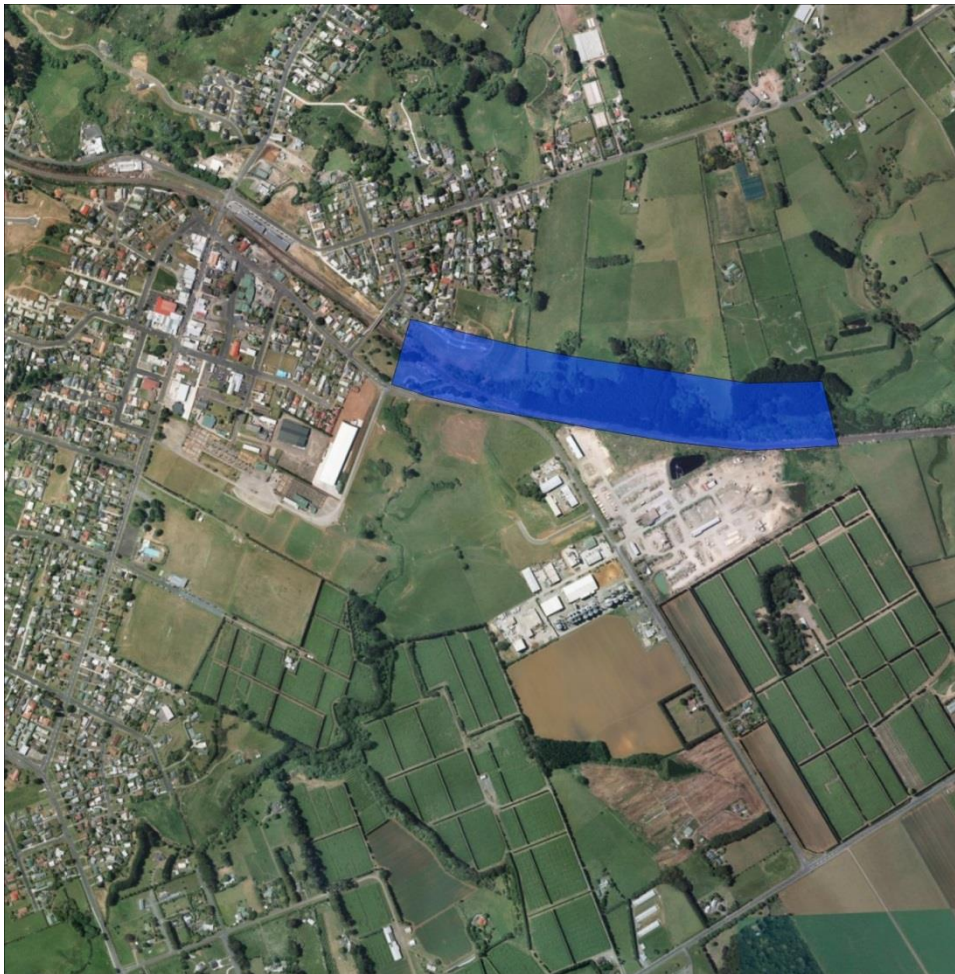
Industry	Typical Separation Distance
Food Manufacturing	100 – 300 m
Galvanising	100 m
Automotive spray painting	200 m
Chemical Processes	500 m
Fibre reinforced plastics manufacturing	300 m

The above are only guidelines, and in some instance the appropriate separation distance may vary from that recommended as a result of site specific operational or environmental conditions. These guidelines are based on the worst case emission, and don't take into account the use of good control measures. Even though New Zealand doesn't have guidelines specific to separation distances, the underlying requirements of the RMA, Regional and District Plans require that no discharge whether odour, dust or gaseous pollutant is objectionable to the extent that it causes an adverse effect at or beyond the boundary. This in effect protects the surrounding environments whether is sensitive or industrial. The above industrial activities would likely require a resource consent, which would limit any air pollutants to the site boundary, which would mean minimal off site effects.

4.4 Recommend Separation Distance

AECOM considers that separation distances are an important tool to manager the future effects of industry on sensitive land uses, and control the potential for reverse sensitivity effects. Based on observations, investigations, and the potential for an uncontrolled discharge, AECOM considers a separation distance of 150 m distance, would protect future growth within the two proposed zones, and the effect of new housing on the current industrial clients of the Bollard Road Industrial Zone. AECOM's recommended separation distance is shown in Figure 19.

Figure 19 AECOM's Recommended Air Quality Buffer Zone



5.0 Summary

AECOM has investigated existing odour and dust at and around the sites to observe any effects from the Bollard Road Industrial Zone. AECOM has also assessed the potential for odour, dust and other air quality pollutants, current zoning and separation distances, other jurisdictions separation distance and what could the future industrial make of the Bollard Road Industrial Zone.

Odour Observations

There was no objectionable or offensive odour detected at any stage of the odour survey. During the odour investigation the sites was never down wind of the sites, however sites downwind of the Bollard Road Industrial Zone that would be of a comparable distance to that of the sites either had no detectable odour or a very weak fresh cut wood or animal feed odour that was very transient in nature. The sites down wind of the Bollard Road Industrial Zone where odour was detect, had no obstruction in anyway, therefore it would highly likely that the sites would experience similar odours, possibly a reduction in odour as the mature stand of trees and natural gully would impede air flow to the sites.

Dust Investigations

There was no objectionable dust observed at the sites during the site visits. During the site visits it was observed that the vehicles at Tuakau Timber created dust onsite during dry days due to unpaved surfaces. No other dust was observed on any other site. AECOM also undertook a desktop study of all the industries and deem dust from the unpaved surfaces at Tuakau Timber to be the only significant source of dust that had the potential to affect the sites. Based on the assumed make-up of the substrate, with wind speeds of 5 m/s there is a possibility that the dust could travel 84 m based on particle settling velocities. This is a conservative figure as the calculation is based on flat terrain; it does not take into account that the sites are elevated above the Bollard Road Industrial Zone and the stand of mature trees which would impede air flow.

Metrological Data

Winds coming from the south-southeast and south would place the sites in a downwind location of the Bollard Road Industrial Zone. From the meteorological data, 6.2% of the wind comes from this direction, with no wind from that direction is greater than 5 m/s. Due to the low frequency of winds from this direction, coupled with low wind speeds from this direction, the likely hood of dust and odour reaching the site is low.

Future use of Industrial Land

As well as assessing the current situation in and around the Bollard Road Industrial Zone, AECOM has also considered the future growth within the Bollard Road Industrial Zone. Even though it is hard to predict what industries might occupy the Bollard Road Industrial Zone in the future, any future industries will need to comply with the underlying requirements of the RMA, Regional and District Plans that no discharge whether odour, dust or gaseous is objectionable to the extent that it causes an adverse effect at or beyond the boundary. .

Recommended Separation Zone

Following the review of all the information AECOM considers 150 m separation distance between the sites and the Bollard Road Industrial Zone appropriate, rather than the 300 m proposed in PC16. AECOM's proposed separation distance is also consistent with the current separation distances between existing residences. Considering that under PC16 there is no separation distance between the proposed residential properties and the western boundary of the Bollard Road Industrial Zone, this proposed zoning seems to contradict the separation distance planned for the sites.

6.0 Limitations

AECOM New Zealand Limited (AECOM) has prepared this Assessment of Environmental Effects Report in accordance with the usual care and thoroughness of the consulting profession for Pacific Engineering Projects Limited for use in submission on the proposed Tuakau Structure Plan Change undertaken at 48 and 52 Dominion Road Tuakau.

Except as specifically stated in this section, AECOM does not authorise the use of this Report by any third party except as provided for by the Resource Management Act 1991.

It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Report.

It is prepared in accordance with the scope of work and for the purpose outlined in the contract dated July 2016.

Where this Report indicates that information has been provided to AECOM by third parties, AECOM has made no independent verification of this information except as expressly stated in this Report. AECOM assumes no liability for any inaccuracies in or omissions to that information.

This Report was prepared during August 2016 and is based on the conditions encountered and information reviewed at the time of preparation. AECOM disclaims responsibility for any changes that may have occurred after this time.

This Report should be read in full. No responsibility is accepted for use of any part of this Report in any other context or for any other purpose than that stated above. This Report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

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Appendix A

Odour Character Descriptors			
1	Fragrant	21	Like blood, raw meat
2	Perfumy	22	Rubbish
3	Sweet	23	Compost
4	Fruity	24	Silage
5	Bakery (fresh bread)	25	Sickening
6	Coffee-like	26	Musty, earthy, mouldy
7	Spicy	27	Sharp, pungent, acid
8	Meaty (cooked, good)	28	Metallic
9	Sea/marine	29	Tar-like
10	Herbal, green, cut grass	30	Oily, fatty
11	Bark-like, birch bark	31	Like gasoline, solvent
12	Woody, resinous	32	Fishy
13	Medicinal	33	Putrid, foul, decayed
14	Burnt, smoky	34	Paint-like
15	Soapy	35	Rancid
16	Garlic, onion	36	Sulphidic
17	Cooked vegetables	37	Dead animal
18	Chemical	38	Faecal (like manure)
19	Etherish, anaesthetic	39	Sewer odour
20	Sour, acrid, vinegar	40	Other

Intensity Level	Odour Intensity
0	No odour
1	Very Weak
2	Weak
3	Distinct
4	Strong
5	Very strong
6	Extremely Strong

PROPOSED RESIDENTIAL DEVELOPMENT

48 & 52 DOMINION ROAD, TUAKAU

ASSESSMENT OF NOISE EFFECTS

Report No 16204

Prepared for:

*Pacific Engineering Projects Ltd
Auckland
August 2016*

Prepared by:



Nevil Hegley

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1 INTRODUCTION

It is proposed to subdivide two existing rural sites at 48 and 52 Dominion Road, Tuakau as shown on Figure 1, to a housing area.

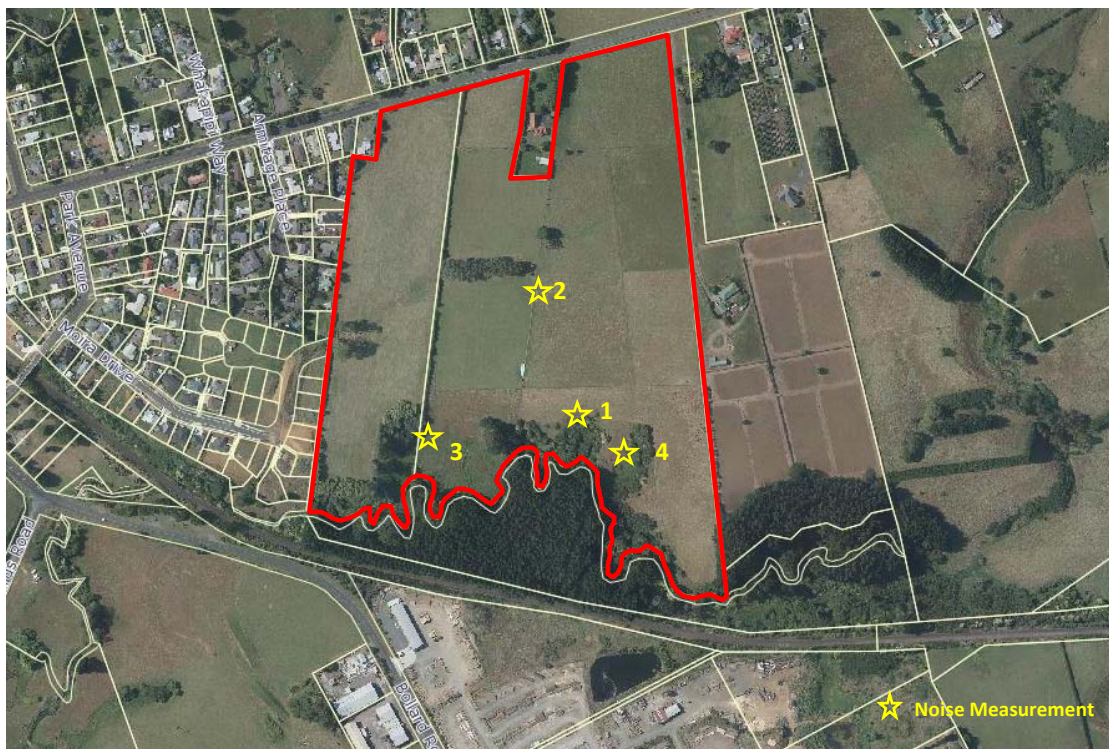


Figure 1. Location of Area to be Developed

This report addresses the current noise requirements for the area and the noise effects of the proposal and how any potential reverse sensitivity effects of the development will be controlled.

2 DISTRICT PLAN REQUIREMENTS

As shown on Figure 2 the site is currently zoned Rural in the Operative Waikato District Plan, Franklin Section (District Plan). To the east there is a continuation of the Rural Zone to the west there is a residential zone with a Business Zone to the south across the North Island Main Trunk Railway.

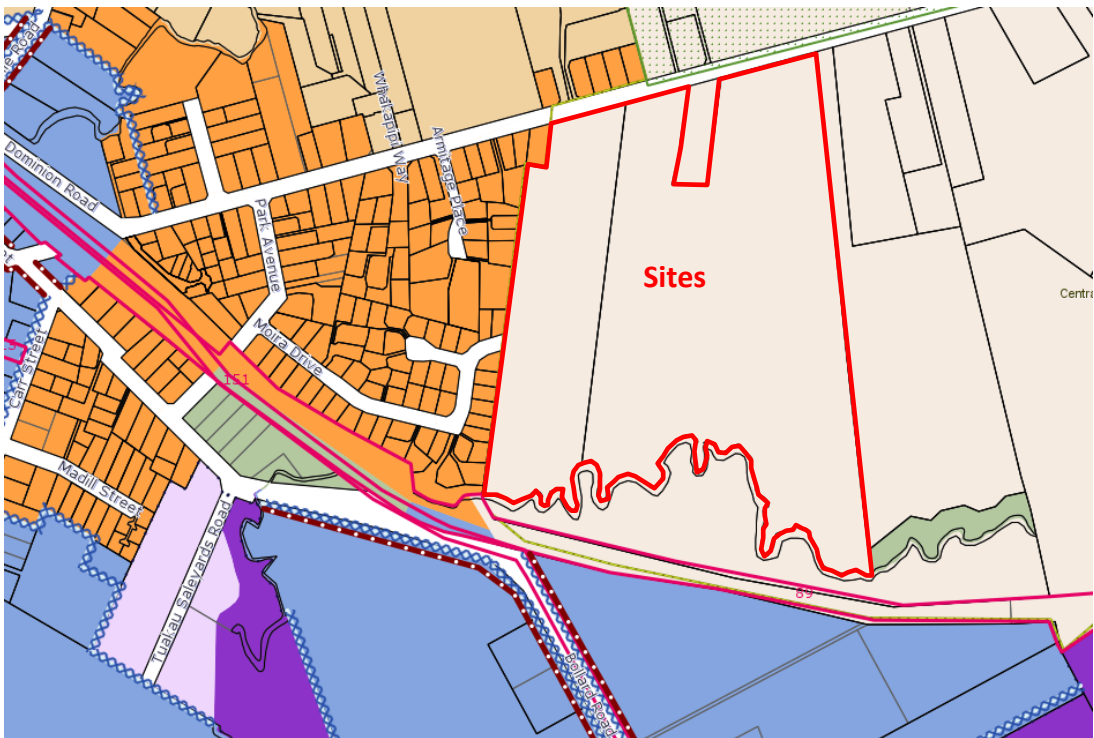


Figure 2. Site Zoning

There are no specific noise rules in the Waikato District Plan (Franklin Section) for a rural zone. For the residential zone rule 27.6.1.15, Noise Levels states:

No activity in the Residential Zone shall cause the following sound levels L_{10} to be exceeded at or within the boundary of any other (affected) site, for the specified times:

Time/hours	L_{10}	L_{max}
0700 to 2200	45dBA	75dBA
2200 to 0700	35dBA	65dBA

For the adjacent business zone rule 29.6.1 Noise states:

No activity within the Zone shall cause the following sound levels to be exceeded, for the stated times, at or within the boundary of any other site, where that other site is:-

1. Not Zoned Business Zone:

Time/hours	L_{10}	L_{max}
0700 to 1900	50dBA	75dBA
1900 to 2200	45dBA	75dBA
At all other times	40dBA	65dBA

Part C: Plan Change 16 Provisions rezones the northern part of the subject sites to residential as shown on Figure 3

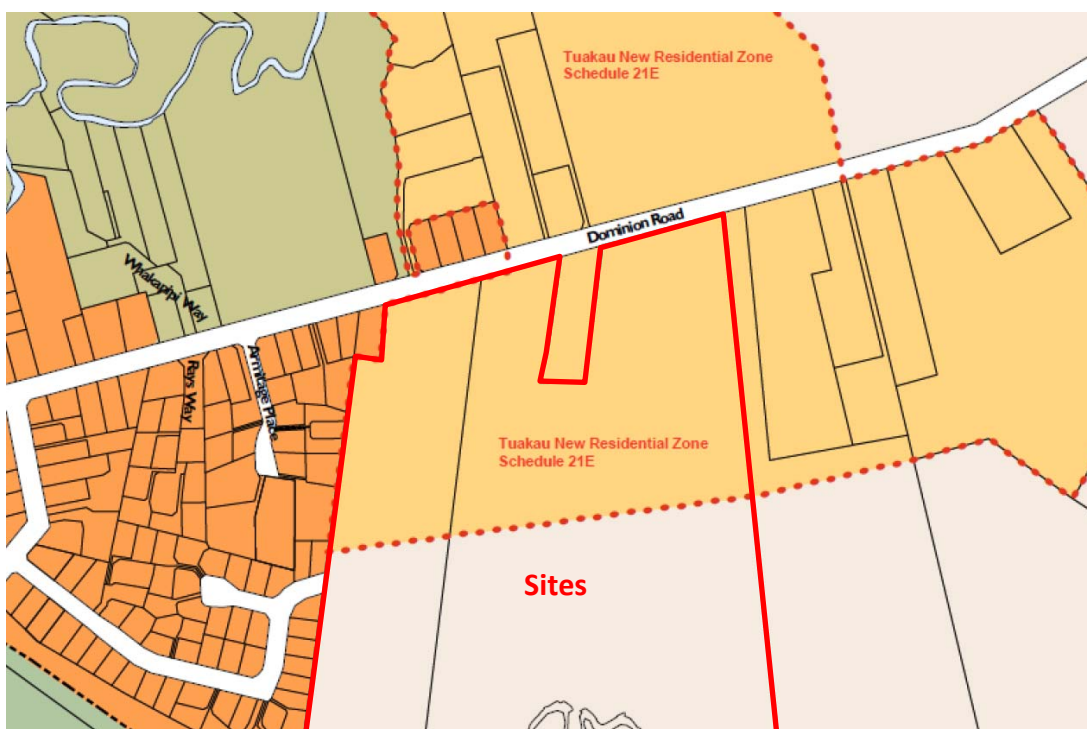


Figure 3. Proposed Rezoning by Plan Change 16

Plan Change 16 sets the following noise limits for the Tuakau Living Zone Rules (New Residential)

Rule 21E.18.1

Any activity is a permitted activity if it is designed and conducted so that noise from the activity measured at any other site does not exceed:

- (a) 50dBA (L_{10}), 7am to 7pm, Monday to Saturday, and

- (b) 45dBA (L_{10}), 7pm to 10pm, Monday to Saturday, and
- (c) 40dBA (L_{10}), and 65dBA (L_{max}) all other times and public holidays.

Despite the above, construction noise and emergency sirens are not subject to this rule.

For the Tuakau Industrial Zone, Plan Change 16 sets

Rule 24G.18.1

Any activity in the Tuakau Industrial Zone is a permitted activity if it is designed and conducted so that noise from the activity measured at any other site:

(d) *in the Tuakau Industrial Zone, does not exceed:*

- (i) 75dBA (L_{10}), 7am to 10pm
- (ii) 45dBA (L_{10}), 10pm to 7am the following day
- (iii) 75dBA (L_{max}), 10pm to 7am the following day, and

(e) *in another zone, does not exceed*

- (i) 55dBA (L_{10}), 7am to 10pm
- (ii) 40dBA (L_{10}), 10pm to 7am the following day
- (iii) 70dBA (L_{max}), 10pm to 7am the following day.

Despite the above, construction noise and emergency sirens are not subject to this rule.

Based on the Operative District Plan the industrial activities located to the south of the proposed subdivision must comply with a level of 50dBA L_{10} during the daytime (7am – 7pm) and 45dBA L_{10} plus 75dBA L_{max} at night time (7pm – 7am). As set out in the rule, these levels must be complied with at or within the Rural Zone boundary.

For Plan Change 16 the industrial activities located to the south of the proposed subdivision must comply with a level of 55dBA L_{10} during the daytime (7am – 10pm) and 40dBA L_{10} plus 70dBA L_{max} at night time (10pm – 7am)

The report prepared by Marshall Day Acoustics entitled “Tuakau Structure Plan Acoustic Assessment” dated 1 September 2015 recommends the following noise levels for an Industrial Zone 2, which would be the zoning of the current Business Zone to the south of the subject sites.

1 Activities on a site within the zone shall not exceed the following noise limits within the boundary of any other site is:

a) Industrial 2 Zone

70 dB L_{Aeq}

b) Residential, Residential 2, Rural-Residential, Village or within the notional boundary of any existing dwelling house as of 18 December 2008 in the Rural Zone (Note: the notional boundary is defined as 20 metres from any side of a dwelling house or the legal boundary where this is closer to the dwelling):

Area	The noise level measured within the boundary of a site within the area described in column 1 of this table shall not exceed the following limits:		
	0700 – 2200hrs	2200 – 0700hrs	
	dB L_{Aeq}	dB L_{Aeq}	dB L_{Amax}
High Background Noise Area (refer to planning maps)	55	45	75
All other areas	50	40	70

c) Business Zone:

0700 – 2200hrs	2200 – 0700hrs	
dB L_{Aeq}	dB L_{Aeq}	dB L_{Amax}
60	50	75

d) Light Industrial Zone

65dB L_{Aeq}

2. Clause 1. Above does not apply to construction noise.
3. The noise levels shall be measured and assessed in accordance with the requirements of NZS 6801:2008 Measurement of Environmental Sound and NZS 6802:2008 Environmental Noise respectively,

In the Summary Statutory Report Plan Change 16 to the Waikato District Plan, Tuakau Structure Plan - Stage 1 (Residential and Industrial Rezoning) Notified 16 July 2016 it states”

In determining the southern extent of the proposed New Residential Zone, Council has considered the recommended acoustic and air discharge buffer of approximately 250 - 300 metres measured from the northern boundary of the existing Business-zoned property owned by Fellrock Developments Limited and occupied by Tuakau Timber Treatment. However, as a result of community consultation which informed the adopted Tuakau Structure Plan, Council has determined that the buffer needs to be more extensive than that recommended in the expert reports.

It is noted there is no evidence that a noise buffer is required. An earlier acoustic report adopted an air discharge recommendation of a 300m buffer but did not recommend any such buffer. The report from Marshal Day Acoustics (as set out above) has not recommended a buffer in the proposed noise limits. MDA have adopted a control that recommends residential sites and notional boundaries existing at 18 December 2008 although there is no indication where these sites are. It appears this may provide some relatively minor relief for the industrial zoned sites should this option be accepted although until a decision is made on the Proposed Plan Change the requirements of the Operative District Plan is also required to be adopted. That is, the control is at the boundary of the current rural zoning.

It is also noted the Tuakau Borough Council approved an application by Hicksons Timber Protection (N.Z.) Ltd to erect and operate a facility for the manufacture of timber treatment concentrate on a site at Bollard Road, Tuakau on 7th June 1988. That decision set the following noise condition:

CORRECTED NOISE LEVELS AT THE BOUNDARY OF THE NEAREST AFFECTED SITES ZONED RESIDENTIAL OR RURAL

Monday to Friday between the hours of 6.00am and 10.00pm and Saturday 6.00am to 12noon - 45dBA, or the background noise level plus 5dBA whichever is the greater.

At all other times including public holidays - 40dBA, or the background noise level plus 5dBA whichever is the greater.

Notwithstanding the noise standards referred to above, the Council reserves the powers conferred on it under the relevant sections of the Town and Country Planning Act 1977 and the Health Act 1956 to control any noise which has become an objectionable element.

3 EXISTING NOISE ENVIRONMENT

To determine the existing noise environment field measurements were undertaken. The results of unattended measurements undertaken at the rear boundary of 52 Dominion Road (Site 1, Figure 1) in December 2008 are shown on Figure 4. The weather varied during the measurement period but was generally fine, cool and overcast. There were some showers during the final 3 – 4 hours of the measurements.

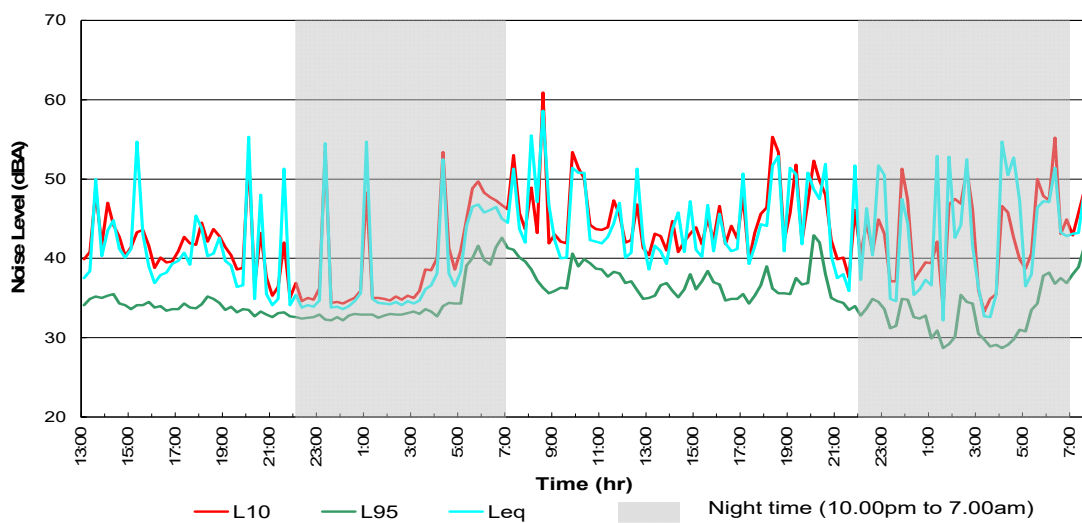


Figure 4. Ambient Sound Measurements. Site 1

From Figure 4 the background sound (L_{95}) is typically in the mid 30dBA range during the night time (10.00pm to 7.00am) and in the low to mid 40dBA range during the day time. These levels suggest a moderate to low noise environment.

The higher L_{10} and L_{eq} spikes on the noise trace shown in Figure 4 correspond to noise from the passing trains as the measurement site is in the close proximity of the NIMT Railway. When excluding these spikes from the analysis it shows that during the day time the L_{10} level is typically in the mid 40dBA range and therefore similar to the 45dBA L_{10} criterion of the District Plan for residential zones (Rule 27.6.1.15). Based on the measurements, noise from the business zone to the south would comply with the 50dBA L_{10} criterion that the District Plan (Rule 29.6.1) would require if the site were zoned residential.

During the night time, the L_{10} level is typically in the mid 30dBA range. Again, this is consistent with a level of 35dBA L_{10} that the District Plan expects for residential zones and shows that the southern adjacent business sites would not result in a noise nuisance to the development.

In August 2016 further unattended field measurements were undertaken at site 2 (Figure 1) over a 36 hour period. These measurements gave a similar result as the 2008 survey.

Attended measurements were undertaken at sites 3 and 4 in fine, mild and calm conditions with the industrial sites operating. As for the monitoring at site 1, these sites were near the top of the bank and representative of the rear boundary of any potential residential site. The measured level with the mill operating was similar at both sites 3 and 4 with a L_{10} of 43 – 44dBA and the L_{eq} being within 1dBA of the L_{10} value at 42 – 43dBA. The background sound (L_{95}) was typically 41dBA. There was a 500Hz tonal component to the mill noise that would attract a 5dBA penalty to the assessed noise although the noise was not present all of the time, such as a 30 minute break at the mill from around 10am. Taking this into account and as the mill stops work well before 10pm there would be a minimum of 2dBA adjustment for the averaging of the noise. Thus, the assessed noise from the mill would be typically 47dBA L_{10} .

The measured background level without the mill operating was 40dBA with the L_{10} at 42dBA, which was controlled by distant traffic noise. That is, the noise from the mill has little effect on the existing noise environment although due to the tonal component the noise from the mill can be clearly heard.

From these measurements the mill is complying with all of the various noise limits at the rear boundary of the proposed subdivision.

4 EFFECTS OF INDUSTRIAL NOISE

As set out in the operative District Plan, Tuakau Industrial Zone Plan Change 16 and the recommendations from Marshall Day Acoustics, a level of 50 – 55dBA L_{10} / L_{eq} is considered to be a reasonable level for any residential activity during the daytime. Based on field measurements the noise from the mill is well within these levels so it is not expected there would be adverse noise effects for any residential development in the area.

It would seem the mill does not operate at night time so noise is not a concern during this time. If the mill did start to operate at night time the original consent for the mill and all subsequent rules and recommendations are such that the level would be within a limit that would allow undisturbed sleep for any residential activities that may be developed at 48 and 52 Dominion Road.

From the above findings there would not be any reverse sensitivity effect should 48 and 52 Dominion Road be developed for residential purposes.

5 CONCLUSIONS

Based on field measurements the noise from the industrial site to the south of 48 and 52 Dominion Road is within the levels anticipated for residential zones by the existing and proposed District Plan noise rules. At the current noise level any residential development at 48 and 52 Dominion Road would not result in any reverse sensitivity effects. The noise received at 48 and 52 Dominion Road would be within a reasonable level for residential development without any special treatment to control the noise. As there will not be any adverse effects of noise at 48 and 52 Dominion Road, there is no reason why the proposed residential development should not be approved.

* * *