BEFORE A PANEL OF INDEPENDENT HEARING COMMISSIONERS IN THE WAIKATO REGION

I MUA NGĀ KAIKŌMIHANA WHAKAWĀ MOTUHEKE WAIKATO

UNDER the Resource Management Act 1991 (RMA)

AND

IN THE MATTER of Proposed Variation 3 to the Waikato Proposed District Plan (PDP)

STATEMENT OF EVIDENCE OF MATHEW TELFER (Watercare)

Dated 21 June 2023

TOMPKINS | WAKE

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INTRODUCTION

1. My name is Mathew James Telfer. I have 18 years' experience as a manager in the water industry.

2. I have a Post Graduate Diploma in Business Administration.

3. I am employed by Watercare Services Limited (Watercare). Watercare is a council-controlled organisation owned by Auckland Council. I currently hold the position of Operations Manager – Waikato Contract. I have held this position since February 2021.

4. My role has responsibility for the delivery of the Watercare Three Waters servicing contract to the Waikato District Council (Council). Watercare has held this contract since October 2019. The contract includes the consenting, planning, design, and construction of Three Waters Infrastructure; the production water and wastewater treatment and network operations; and the three waters metering and billing. The contract also includes the management of trade waste customers within the district.

5. In my previous role at Watercare, I was the Head of Developer Services responsible for supporting and compliance of new developer created water and wastewater infrastructure across the Auckland region. This included providing input into the resource consent, engineering plan approval (EPA), and water and wastewater connections. I held this position for 5 years.

CODE OF CONDUCT

6. I have read the Environment Court Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023 and agree to comply with it. I confirm that the opinions expressed in this statement are within my area of expertise except where I state that I have relied on

the evidence of other persons. I have not omitted to consider materials or facts known to me that might alter or detract from the opinions I have expressed.

SCOPE OF MY EVIDENCE

7. The scope of my evidence is to:

   (a) Provide an overview of the three waters networks within the four towns subject to Variation 3, being Ngaaruawaahia, Huntly, Pookeno and Tuakau;

   (b) Provide an overview of the current risks and challenges managing the three waters infrastructure within the four towns; and

   (c) Evaluate the potential implications of Variation 3 on the three waters infrastructure within the four towns.

EXECUTIVE SUMMARY

8. I have been asked to provide evidence by Council on the impact of Variation 3 on the three waters infrastructure within the four towns and recommendations to mitigation those impacts. This includes the risks associated from a different urban form resulting from the ability to undertake medium density development across the four towns.

9. Without the ability to accurately forecast the actual uptake of the variation, including the location of the uptake, (this will be determined over time by the development market), my opinions have been based on my experience and the information available.

10. While there are no significant existing issues with the three waters infrastructure in the district, this is due to the existing controls where resource consents are required for more than one dwelling and minor unit enabling capacity assessments to be undertaken.

11. The ability to construct three dwellings on a single title as a permitted activity within the residential zones of the four towns holds a significant risk of degradation of service and negatively impacting the environment based on the volume of these developments, including

    (a) A lack of capacity and pressure within the water network;

    (b) Increase in the frequency and severity of wastewater overflows; and

    (c) Increase in the frequency and severity of flooding.

12. Currently Council can only 'model' the impact as there is no way to determine where developments of this type will occur and when. This means the demand on the networks and treatment could be utilised in areas where there is insufficient capacity. Currently the resource consent process for subdivision and land use for more than one dwelling and minor unit is focused on mitigating the impact of developments to ensure continuity of service. I recommend the Council consider alternative options to create a new control point within the building consent process to ensure three water services are not compromised. Under the current Proposed District Plan (PDP) provisions, the development of permitted residential units without an associated subdivision consent could result in a large number of developments that have not been assessed for mitigation on the three waters infrastructure.

13. I also recommend that Council consider a permitted activity rule requiring multiple dwellings constructed on a single site to be serviced as if the site was being subdivided to create separate titles for each serviced building.

OVERVIEW OF WAIKATO DISTRICT COUNCIL THREE WATER INFRASTRUCTURE IN THE FOUR TOWNS

14. This section of my evidence provides a general overview of the three waters infrastructure managed by the Council, before addressing the specific infrastructure in the four towns subject to Variation 3.

Drinking Water

15. The Council is responsible for supplying safe and clean drinking water to the communities in the district. This involves the operation and maintenance of water treatment plants, reservoirs, and a network of pipes that distribute water to households, businesses, and public facilities. The Council follows stringent guidelines and regulations to ensure the quality and safety of the drinking water supply as set by Taumata Arowai, the drinking water regulator.

Wastewater

16. The Council manages wastewater services, which involve the collection, treatment, and disposal of sewage and wastewater. The infrastructure includes sewerage networks, pumping stations, and wastewater treatment plants. These facilities help remove contaminants and pollutants from wastewater before it is released back into the environment in a safe and environmentally friendly manner as set by discharge consent conditions authorised by the Waikato Regional Council (WRC)as the consent authority.

Stormwater

17. Stormwater infrastructure manages the collection and drainage of rainwater and runoff from urban areas. The Council maintains a system of stormwater drains, pipes, culverts, and retention ponds to mitigate flooding and control the flow of stormwater. Proper stormwater management helps protect properties, public safety, and the environment by preventing waterlogging and reducing the risk of erosion

as set by discharge consent conditions authorised by the WRC as the consent authority.

Industry

18. There is minimal large scale commercial/industry operations within the Waikato District with the bulk of wet industry being dominated by two dairy factories in Pookeno and a stockyard and poultry business in Tuakau. The rest of commercial/industry activities across the district, and in the four towns subject to Variation 3, are smaller, less wet industry focussed, for example fast food, warehousing, and supermarkets.

19. As detailed in the evidence of Mr Martin, Council's Three Waters Manager, infrastructure delivery within the district can be succinctly summarised as follows:

(a) Development of infrastructure servicing strategies that informs Council's Asset Management Plan.

(b) Ensuring all resource consents are in place to enable Watercare to sustainably operate and upgrade Council's infrastructure facilities.

(c) Coordinating the preparation and updating of the Asset Management Plan; and management and updating of geospatial and records information.

(d) Managing engagement on large scale developments, to deliver the best outcomes for developers and Council.

(e) Informs Council strategies and plans with a forward view of developer activity.

(f) Planning and design for new infrastructure or renewal asset creation.

(g) Procurement and construction for the delivery of new assets across the plant and network assets for Three waters.

20. I will now provide specific detail of the three waters infrastructure within the four towns subject to variation 3.

Infrastructure in Ngaaruawaahia and Huntly

Water

21. For these two towns, the water is treated at water treatment plants at both Ngaaruawaahia and Huntly. The raw water for the plants is supplied from the Waikato River and the plants remove impurities and treats the water to ensure its quality meets the required standards, including chlorination and fluoridation. The treated water is then stored in reservoirs in both towns to maintain a constant supply.

22. Pipelines are used to distribute the water from each treatment plant or to individual households and businesses within the towns. Valves are strategically placed across the network to control the flow and pressure of water, to maintain sufficient pressure throughout the system. Water hydrants are placed across the network to provide for firefighting purposes.

23. Water meters are utilised at individual properties within the two towns to measure water usage for billing purposes and to monitor water consumption. Additionally, monitoring and control systems are employed to ensure the network operates efficiently and to detect and address any issues such as leaks or pressure fluctuations.

Wastewater

24. The wastewater network within the Ngaaruawaahia and Huntly catchments begin with a network of underground pipes usually made of concrete, PVC (polyvinyl chloride) or similar durable materials. Private connections carry the wastewater (including sewage, used water from sinks, showers, toilets, and industrial effluents) to the public network.

25. The wastewater network in Ngaaruawaahia and Huntly is aging and was constructed as early as the 1950s to service the current capacity with a margin of headroom to accommodate some future development. This available capacity has/will be quickly utilised by new developments but currently require a resource consent (excluding a minor dwelling) to create separate titles. This allows the Council to assess if the current network has sufficient capacity for the new demand from a proposed development. If there is not sufficient capacity, the development is required to upsize the infrastructure to accommodate their additional flows. Under Variation 3, the existing minor dwelling on a property could increase to three full dwellings creating a significant impact on the existing network. Unless mitigated this could result in wastewater overflows if the network does not have sufficient capacity, resulting in a negative impact to the environment.

26. Wastewater flows through the public wastewater lines by gravity, utilising the natural slope of the land. However, in some cases, where the land is flat or the wastewater needs to be lifted to a higher elevation, pumping stations are used to push the wastewater forward, these pressure pipes are known as ‘rising mains’.

27. The wastewater lines are connected to larger main sewers, which act as trunk lines to carry the wastewater from multiple sources. These main sewers are usually located beneath streets or public rights-of-way. They are designed to handle higher volumes of wastewater flow.

28. Along the sewer lines, there are access points called ‘manholes’. Manholes are vertical shafts with covers at street level. They provide entry points for maintenance and inspection activities and allow for changes in direction or pipe size. Wastewater flows into manholes and continues its journey through the network.

29. In larger cities or areas with multiple sewage sources, interceptor sewers are used to collect wastewater from various main sewers. Interceptors consolidate the wastewater flow and transport it to a central wastewater treatment plant. The largest pipe in Ngaaruawaahia is a rising main from a pump station on Lower Waikato Esplanade to the wastewater treatment plant. In Huntly, the largest pipe is from the Russell Road pumpstation to the treatment plant.

30. The wastewater collected through the network is directed to the wastewater treatment plant. The plants are located on Old Taupiri Road for Ngaaruawaahia and McVie Road for Huntly. At these plants the wastewater undergoes a series of treatment processes including screening, grit removal, sedimentation, biological treatment, and disinfection with UV and wetlands. These plants are pond-based and are a relatively simple process. The limitation is normally due to capacity constraints and the limited treatment. Advanced treatment methods depending on the required water quality standards are replacing these types of plants across the country, for example the Pukekohe and Meremere MBR treatment plants.

31. After treatment, the resulting treated wastewater, known as effluent, is discharged into the Waikato River. The effluent is required to meet regulatory standards set within their discharge consents to ensure it does not harm the environment or public health.

Stormwater

32. Stormwater is collected from various surfaces, such as rooftops, roads, parking lots, and sidewalks, through catch basins or inlets including raingardens. These collection points are strategically placed to capture the water and prevent it from pooling on the surface.

33. Once the stormwater enters the collection points, it is directed into a network of underground pipes. The stormwater pipes are typically made

of concrete, plastic, or metal and are designed to transport the water away from populated areas.

34. Storm sewers are sloped to allow gravity to propel the flow of stormwater. The pipes are interconnected in a network, forming a system that ensures water moves efficiently towards a designated outlet or discharge point.

35. Along the storm sewer system, additional structures such as manholes and inspection chambers are installed at specific intervals. These structures provide access for maintenance and inspection purposes, as well as serve as points for redirecting or controlling the flow of stormwater. There can also be treatment systems to remove sediment/solids from the stormwater, but these are not currently utilised in either the Ngaaruawaahia or Huntly catchments.

36. Ngaaruawaahia and Huntly have a limited number of detention ponds designed to temporarily hold excess stormwater during heavy rainfall events, releasing it slowly to prevent overwhelming downstream areas and reduce the risk of flooding.

37. At the end of the stormwater network, there is typically an outlet or discharge point where the stormwater is released into natural water bodies, such as rivers, lakes, or the ocean. The discharge point is designed to minimize erosion and ensure proper integration with the receiving water system. Some networks, due to the topography, require pumping but this is unusual. An example is the discharge from the Hakanoa stream which at times can be lower than the Waikato River and therefore has a pump station to discharge stormwater during high flow events.

<u>Maintenance of three waters infrastructure in Huntly and Ngaaruawaahia</u>

38. Regular maintenance is crucial for the effective functioning of all three waters networks. This includes removing debris and sediment from

collection points and ensuring that the pipes are free from blockages or damage, pump inspections, water pipe flushing to remove discoloured water etc. Periodic inspections are conducted to identify and address any issues that could impede the flow of the wastewater and stormwater systems. Routine maintenance is required for reservoirs to ensure they operate correctly and ensure water quality. Routine maintenance is required to maintain the operation of the network and extend the life of the assets.

39. As described above, the local network for all three waters within Ngaaruawaahia and Huntly are not designed to have capacity for large scale growth and development. These activities are currently addressed at the time of resource consenting any development. Variation 3 removes this existing control point to assess the network capacity against the demand any new development will create. This means without this assessment of new developments proposed to be up to 3 by 3 on a single title, there is a risk of impacting the current services provided to these two communities. This includes reduced pressure, wastewater overflows, increased groundwater flooding. The current resource consenting process is designed to ensure these risks are mitigated.

40. The Water treatment plants in Ngaaruawaahia and Huntly follow a 4-log water treatment process designed to achieve a 4-log reduction in the concentration of microorganisms present in the water. A 4-log reduction means that the plant aims to remove or inactivate 99.99% of microorganisms, including bacteria, viruses, and parasites, from the water.

41. The water treatment process at Ngaaruawaahia and Huntly involves multiple stages to ensure the effective removal of contaminants. Below is a general overview of the steps involved in the water treatment process for a 4-log water plant:

(a) *Coagulation and Flocculation*: This is the initial stage where chemicals known as coagulants, such as aluminium sulphate or ferric chloride, are added to the water. These chemicals help to destabilize suspended particles and microorganisms, causing them to clump together and form larger particles called floc.

(b) *Sedimentation*: After coagulation and flocculation, the water is allowed to settle in a clarifier. The floc particles, along with other suspended solids and microorganisms, gradually settle to the bottom of the basin due to gravity. This process is called sedimentation or clarification.

(c) *Filtration*: The clarified water from the clarifiers then undergoes filtration to remove any remaining suspended particles and microorganisms. This is typically done using a dual media filter or a multimedia filter that consists of layers of sand, gravel, and anthracite coal. The filter bed traps and removes smaller particles and microorganisms.

(d) *Disinfection*: Disinfection is a crucial step to kill or inactivate any remaining microorganisms in the water. Various disinfection methods can be used, but in the case of a 4-log water plant, a highly effective disinfectant such as chlorine or chloramines is commonly employed. The disinfectant is added to the water to ensure that the desired log reduction is achieved. UV light is used to effectively eliminate various harmful pathogens, including bacteria, viruses, and parasites.

(e) *pH Adjustment:* The pH of the water is adjusted to an appropriate level to optimize the disinfection process and ensure the water is not too corrosive or alkaline. Chemicals such as lime or soda ash may be added to adjust the pH.

(f) Additional Treatment is the addition of Fluoridation, but this is not required to achieve water quality standards.

42. Once the water has undergone the treatment process, it is typically stored in a clean and secure reservoir before being distributed to consumers through a network of pipes. The primary challenge for the Huntly and Ngaaruawaahia treatment plants is the fluctuating quality of the raw water supply from the Waikato River. The plants are aging infrastructure (circa 1960's) and are due for replacement within the next 10 – 15 years. The capacity produced by the plants can vary greatly depending on the quality of the raw water. Both plants are achieving 4 log water quality with the recent addition of UV treatment at the Ngaaruawaahia plant. The two plants are connected and currently the Huntly plant can supply treated water to the Ngaaruawaahia plant. While this flow could be reversed this would be a complex change and the Huntly plant currently provides a greater volume of water.

Relevant resource consents in Huntly and Ngaaruawaahia

Wastewater

43. The Huntly and Ngaaruawaahia wastewater plants are currently not fully compliant with their discharge consents which will constrain future development until this can be addressed. Additional connections to the wastewater network arising from permitted development under Variation 3 will increase the nature of these non-compliances until a temporary solution is found or the plants are replaced. The consents for both plants expire within the next 10 years which will require the plants to be replaced to meet the new treatment standards for treatment effluent discharge.

44. The Huntly WWTP (RC 119647, expiry 2029) allows a discharge of 11,500m^3 per day. Discharge volumes from the Huntly WWTP were compliant with resource consent limits for 2021-22 compliance period. Huntly WWTP has achieved the consented discharge quality limits for pH,

Total Phosphorous (TP), Total Nitrogen (TN), cBOD5, Total Suspended Solids (TSS) and E-coli for the complete reporting period (Jul21-Jun22). During this period the plant was non-compliant with the ammoniacal nitrogen with 5 out of 11 monthly samples exceeding the consented median limit; and 2 out of 11 monthly samples exceeding the consented 90th percentile limit.

45. This non-compliance is considered marginal, and planning is now underway for an interim treatment solution that will relieve non-compliance until a standalone upgrade solution is arrived at for Huntly and the future development at Ohinewai. Asset Planning is currently underway in accordance with the Draft AMP timing.

46. The Ngaaruawaahia WWTP (RC 119642, expiry 2029) has compliance issues. The consent allows up to 11,200 cubic metres per day and it discharges to the Waikato River. The discharge volumes were compliant in 2021 -22, and the plant has achieved the consented discharge quality limits for pH, Total Phosphorous (TP), cBOD5, TSS and E-coli for the complete reporting period (July 2021-June 2022). Non-compliances were recorded for Ammoniacal Nitrogen and Total Nitrogen for this compliance period.

47. A temporary solution will be developed to achieve compliance prior to the ultimate solution being implemented, being the Northern Metro WWTP. Operational planning to manage the non-compliances includes working with a wastewater consultant to improve pond performance, planned upgrades of aeration to improve ammoniacal nitrogen management and planned upgrades of headworks and the replacement of the gravel bed.

48. In this way, the existing growth is being managed. Long-term growth (up to 2050) will be accommodated via a new plant. The preferred option is an upgrade of the Pukete WWTP in Hamilton City Council's jurisdiction so that it can treat wastewater from Ngaaruawaahia.

Water supply

49. The Huntly and Ngaaruawaahia WTP has a consent expiry of 2045 (RC 136806) and the capacity is 8MLD (i.e. 8000 m^3/d). The maximum daily take exceeds the plant capacity at 11,800m^3. A feasibility study is underway to develop options for an increased take to cater for growth. The consent has requirements for a Drought Management Plan, peak demand management and water savings targets.

50. The maps below (Figures 1 and 2) show the infrastructure in Ngaaruawaahia and Huntly, with the water network shown in blue, wastewater in red and stormwater in green.

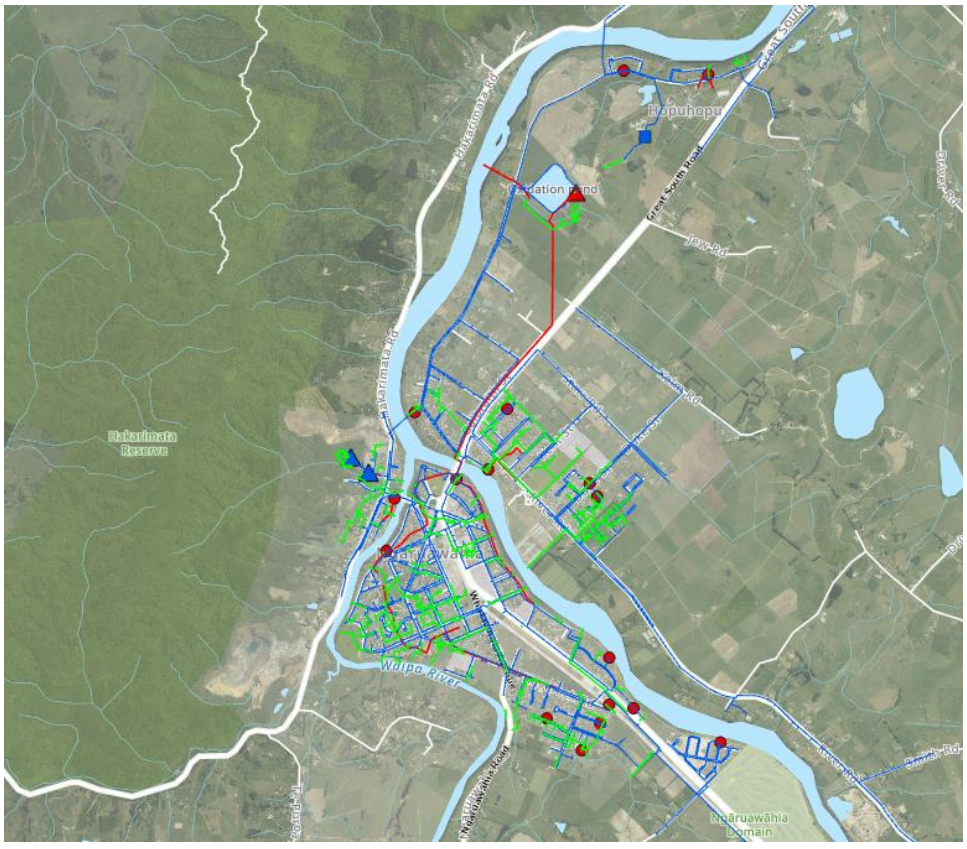

Figure 1: Ngaaruawaahia geographic information system (GIS) view

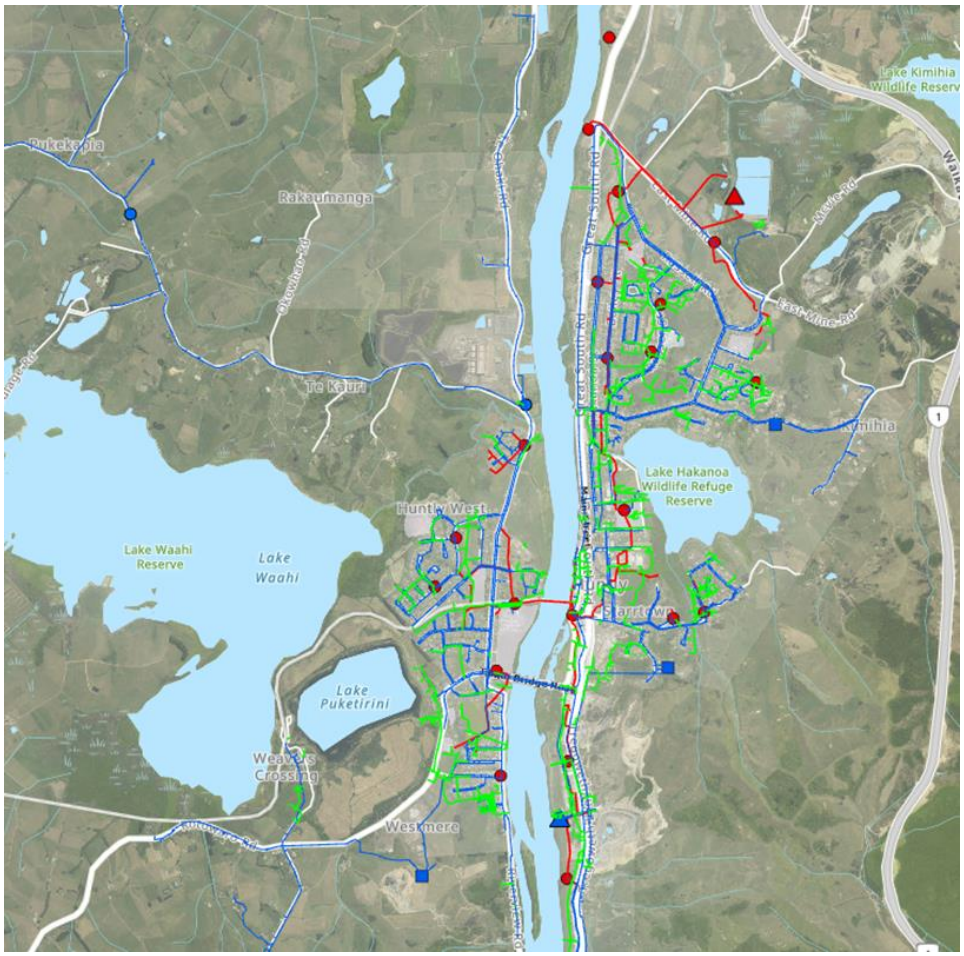

Figure 2: Huntly geographic information system (GIS) view

Pookeno and Tuakau

Water

51. The treated water supplied to the towns of Pookeno and Tuakau is treated at the Watercare Tuakau Water Treatment plant (Tuakau WTP). The raw water for the Tuakau WTP is supplied from the Waikato River and the plant removes impurities and treats the water to ensure its quality meets the required standards, including chlorination and fluoridation. The treated water is then stored in reservoirs to maintain a constant supply.

52. Pipelines are used to distribute the water from the Tuakau WTP to individual households and businesses within the two towns. Valves are strategically placed across the network to control the flow and pressure of water, to maintain sufficient pressure throughout the system. Water

hydrants are placed across the network to provide for firefighting purposes.

53. Water meters are utilised at individual properties within the towns to measure water usage for billing purposes and to monitor water consumption. Additionally, monitoring and control systems are employed to ensure the network operates efficiently and to detect and address any issues such as leaks or pressure fluctuations.

Wastewater

54. The wastewater network within the towns of Pookeno and Tuakau begin with a network of underground pipes usually made of concrete, PVC (polyvinyl chloride) or similar durable materials. Private connections carry the wastewater to the public network.

55. The wastewater network in Tuakau is also aging infrastructure, some of which was installed in the 1950s; whereas the Pookeno area is a much newer development, but both networks were constructed to service the current capacity with a margin of headroom to accommodate some future development. This available capacity has/will be quickly utilised by new developments, but these developments currently require a resource consent (excluding minor dwellings) to create separate titles. This allows Council to assess if the current network has sufficient capacity for the new demand from a development. If there is not capacity the development is required to upsize the infrastructure to accommodate their additional flows. Under Variation 3, the existing minor dwelling could increase to three full dwellings creating a significant impact on the existing network. Unless mitigated this could result in overflows if the network does not have sufficient capacity, resulting in a negative impact to the environment.

56. The largest pipe in Pookeno is a rising main from the Market Street pump station which sends the untreated effluent to the Tuakau pump station

on Kowhai St which in turn sends the combined flow from both towns to the Pukekohe Wastewater Treatment Plant (Pukekohe WWTP).

57. The wastewater collected through the network is directed to the Pukekohe WWTP on Parker Road in Tuakau. At the Pukekohe WWTP the wastewater undergoes a series of treatment processes including screening, grit removal, sedimentation, biological treatment and disinfection with UV and wetlands. The Pukekohe WWTP is a Membrane bioreactor (MBR) technology plant that has emerged as a wastewater treatment technology of choice over the activated sludge process (ASP), which has been the conventional wastewater technology over the last century. The limitation of the plant is the consented capacity and plans to upgrade the plant to its fully consented capacity. This limitation could impact the ability to consent future development in the Tuakau/Pookeno areas.

58. After treatment, the resulting treated wastewater, known as effluent, is discharged into the Waikato River. The effluent meets regulatory standards set within their discharge consents to ensure it does not harm the environment or public health.

<u>Stormwater</u>

59. The process described above for Huntly and Ngaaruawaahia applies to the stormwater network in Pookeno.

60. The systems to remove sediment/solids from the stormwater are not currently utilised in either the Pookeno and Tuakau catchments. They do contain a limited number of detention ponds designed to temporarily hold excess stormwater during heavy rainfall events, releasing it slowly to prevent overwhelming downstream areas and reduce the risk of flooding.

Maintenance of 3 waters infrastructure in Pookeno and Tuakau

61. The Pookeno infrastructure network is significantly newer than Tuakau, but asset information is incomplete. The focus for Tuakau is the maintenance and renewal of aging pipe whereas the focus for Pookeno is on maintenance of the assets to ensure they continue to operate and extend their useful lifespan. Currently there is limited growth in Tuakau while Pookeno has expanded significantly over the last 15 years. Pookeno is the area with the most growth within the Waikato District.

62. Pokeno and Tuakau are serviced by the Pukekohe WWTP via an agreement between Council and Watercare (Auckland). Watercare hold the relevant resource consents and are responsible for compliance with those consents.

63. Pookeno and Tuakau are serviced by the Pokeno water treatment plant (Pokeno WTP) and this water is supplied via an agreement between Council and Watercare (Auckland), who also hold the relevant resource consents and are responsible for compliance with those consents.

64. The maps below (Figures 3 and 4) give an understanding of the network in the two towns and the information available within the geographic information system (GIS).

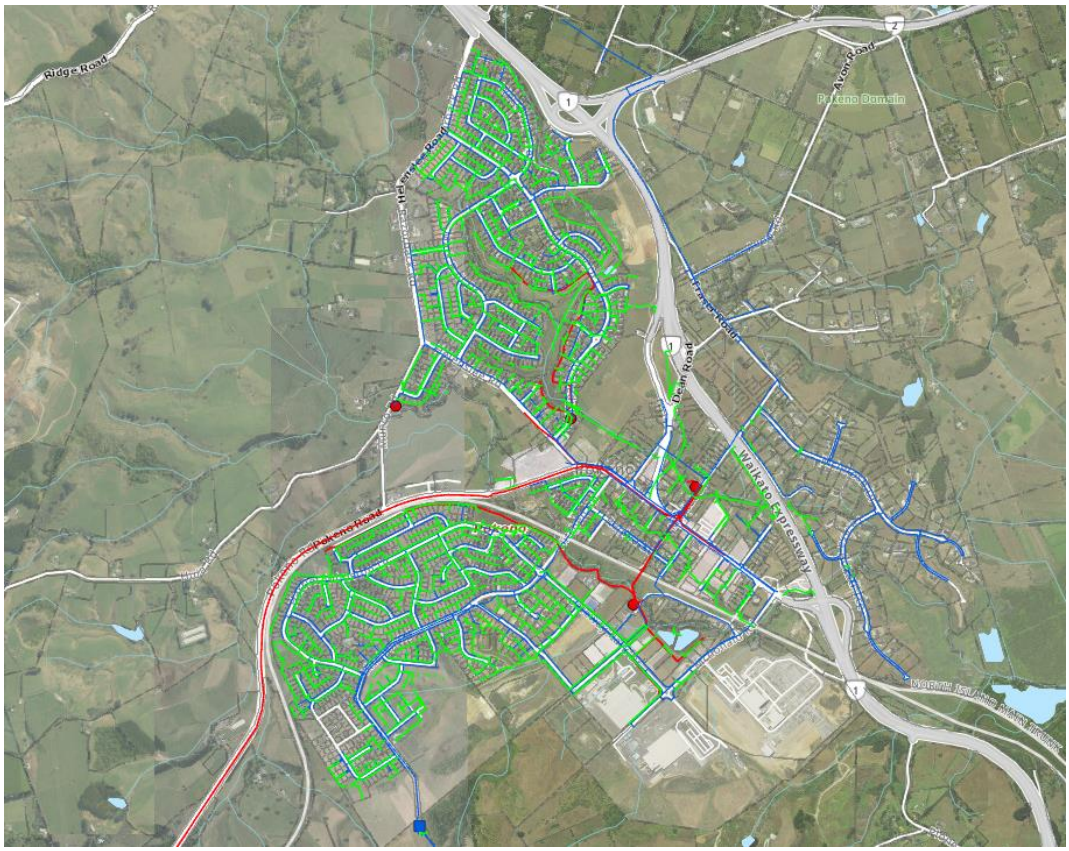

Figure 3: Pookeno geographic information system (GIS) view

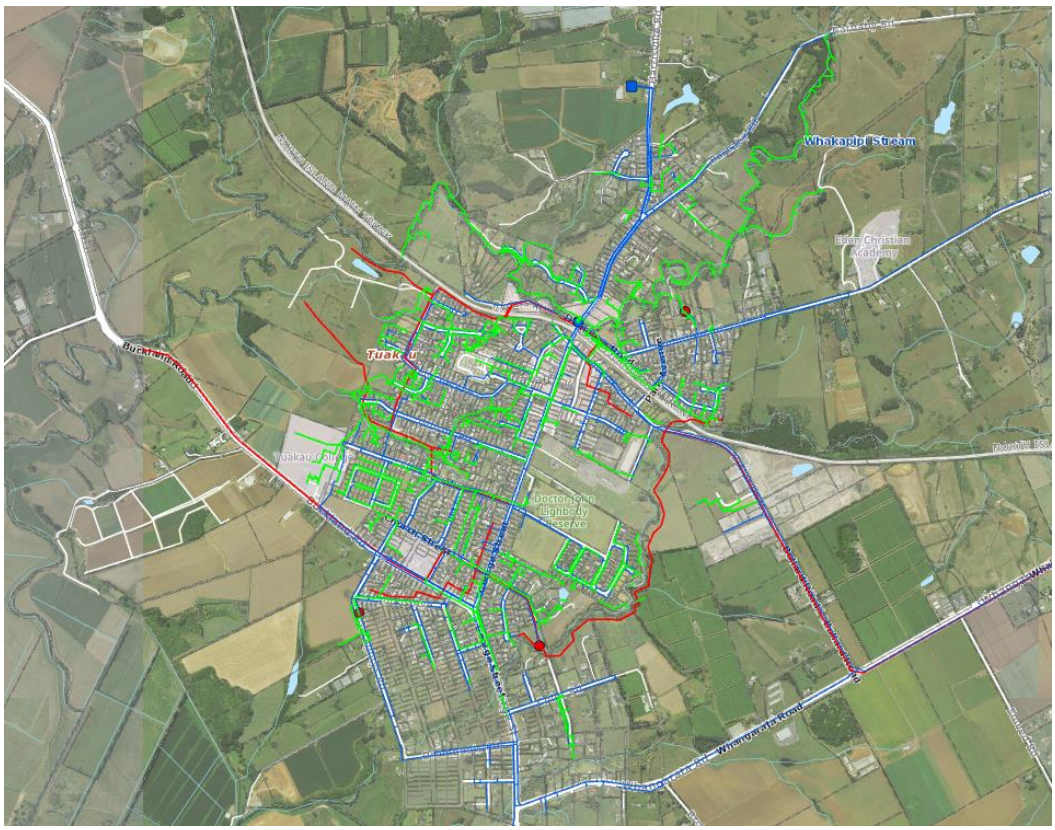

Figure 4: Tuakau geographic information system (GIS) view

CURRENT RISKS AND CHALLENGES IN THE WAIKATO DISTRICT

Risks and issues with three waters infrastructure

65. While there are no significant existing issues with the three waters infrastructure in the district, this is due to the existing controls where resource consents are required for more than one dwelling and minor unit enabling capacity assessments to be undertaken. Water, wastewater and stormwater connections are assessed during the resource consent process to ensure suitable capacity is in place to maintain existing levels of service and to mitigate the impact on the receiving environments. I note that minor dwellings have historically not generated additional demand of any significance. The impact of uncontrolled growth via increased levels of permitted development would result in reduced water pressure, increased risk of wastewater overflows and surface flooding that can impact habitable rooms.

66. The existing controls within the resource consent process largely mitigate the risk from growth through assessing the impact on demand created by the development. As a permitted activity under Variation 3, the ability to construct three dwellings on a single site without an assessment of the impact on demand could result in:

(a) A lack of capacity and pressure within the water network;

(b) Increase in the frequency and severity of wastewater overflows; and

(c) Increase in the frequency and severity of flooding.

67. This would only occur if houses were built without a corresponding resource consent application. To address these risks Council proposes to tighten internal controls during the building consent process to ensure that these developments are also assessed for pipe capacity.

68. The Council is required to maintain levels of three waters service including water pressure suitable for firefighting purposes, and to not discharge untreated wastewater to the receiving environment and flood mitigation. If new development does not include an assessment of the demand created, it could result in a reduced level of service. Typically, upgrades are planned to maintain critical levels of service, and new development is required to meet current levels of service.

Efficiency Measures in Place

69. There are several measures in place to ensure the levels of service are achieved and maintained and to account for the operation and renewal or upgrade of the infrastructure and increased demand due to growth and development. This includes:

(a) Efficiency measures to ensure water metering, user charges, education programmes and standard operating procedures (SOP) to address water shortages. Other activities are to mitigate the impact of leakage, Inflow and infiltration (I&I) and blockages in the network.

(b) An extensive schedule of planned activities to address issues within the network or treatment plants before they impact service delivery.

70. Reactive responses are based on customer notifications of urgent/emergency issues such as leaks, overflow (dry/wet weather), network blockages etc. The goal is to identify and repair/resolve these issues to reduce the impact on the levels of service as quickly as possible.

Challenges with planning for renewals and upgrades

71. The main challenge to planning is the inability to know where and when development will occur. The MDRS may promote infill development, which has not been a typical development form in the Waikato district to

date. This means modelling, studies, catchment management plans, and population growth estimations are all utilised to plan for growth as much as practical. As set out in the economic evidence of Ms Fairgray, Variation 3 is not likely to increase growth itself but will result in a different urban pattern, with medium density housing being able to locate in the outer suburbs of the towns as well as closer to the town centres.

72. The expectation is that a person who creates an increase in demand incurs any costs associated with mitigating the risk. This could be increasing the size of the water or wastewater pipes to create capacity or creating a detention pond to mitigate increased flows.

73. For treatment plants, any planning for replacement/upgrade of the plants is based on the consent requirements to achieve compliance and capacity limits on the plant. Consents are normally approved for a period of up to 25 years. A treatment plant is designed to ensure the plant can treat the volume of water or wastewater to the standard required during that time. At the point of renewing the consent, the plant capability would need to meet the current accepted standards, which will have evolved from when the existing consent was approved. This means the planning for new plants is based on current compliance standards and the growth created demand. The standards have increased significantly to the point where the Ngaaruawaahia and Huntly treatment plants are unlikely to be acceptable to achieve a renewal of the consent.

74. The three waters network renewals and replacement of aging pipe is usually based on the age or degradation of the assets. While it can include increasing the capacity if demand is known, it is normally a ‘like for like’ change. Growth in the network must consider the operational constraints of the network. An example of this is a large water pipe installed to meet future demand but there would be insufficient ‘turn-over’/use of the water before the demand of new developments is realised. This would impact water quality in the short-term.

75. Another example is installing a large pump station to meet the total demand of a catchment in advance. This would require supplemental flow (normally water) if the current flow is too low, prior to development. This can result in issues like:

(a) Difficulty achieving the required velocity for self-cleansing;

(b) Waste of water due to supplemental flow;

(c) Additional flow to the treatment plant requiring treating and unnecessarily utilising capacity at the plant;

(d) Septicity of the waste requiring additional chemical treatment incurring additional operational costs.

IMPLICATIONS OF VARIATION 3

76. The risk associated with Variation 3 is the ability to construct up to three residential units without undertaking a subdivision at the same time. Under the PDP the assessment of the three waters infrastructure capacity occurs at the subdivision stage. Commercially driven developers will want to subdivide but may do so at later time after the units are constructed. While this is expected to a degree, this permitted activity could become a preference to avoid the time to get controlled subdivision consent and follow a simplified process to retrospectively subdivide.

77. The permitted activity option for three residential units without a subdivision consent may be seen as a 'fast track' which can enable the avoidance of mitigation for the impacts of development on infrastructure. This would be a significant risk to the management of the network due to the resulting difficulty in managing connections and requiring multiple homeowners to bring private infrastructure up to public standards. If there is one house per site, and one connection per site, compliance is more readily resolved because it avoids disputes

between neighbours, hindering repairs and increasing the likelihood that the network operator Watercare, will step in and need to fund the upgrades as the supplier of last resort.,

78. The measures below should be implemented or investigated to ensure developments provided for in Variation 3 as a permitted activity are able to be serviced appropriately.

Changes to Council's building consents processes

79. An approved capacity assessment is included with any building consent applied for under Variation 3. This would require the applicant to seek approval to connect prior to applying for building consent. This would mean a capacity and mitigation assessment is completed on the impact of a development to the existing three waters infrastructure.

Permitted activity rule related to servicing

80. That when more than one dwelling is to be erected on a site, that all services be provided to each building as if the site was being subdivided to create separate titles for each serviced building. This is because new homes require services which are built to public standards, and subdivision around new homes is enabled by Variation 3 as a controlled activity which cannot be declined. If a second dwelling is connected to the public network, subdivision consent could be granted without any necessary mitigation for effects on infrastructure capacity.

81. The assessment at the time of building consent does not have the ability to take into account the need for individual service connections, it simply requires a connection. This may lead to private communal infrastructure which has compliance issues associated with it. Waipā District Council has a rule, as shown below. that could be considered by the Council.

Rule - Design, location and maintenance of services in infill development

15.4.2.17 Where more than one serviced building (excluding accessory buildings) is erected on a site, all services shall be provided to each building as if the site was being subdivided to create separate titles for each serviced building.

Activities that fail to comply with this rule will require a resource consent for a non-complying activity.

Engagement with greenfield developers

82. In greenfield areas there will need to be early conversations with developers as to the intended use of the development and what the associated infrastructure requirements are. In some situations, because of plant capacity and other constraints, it will not be possible for three residential units per site to be provided. Additionally, developers may not want to pay the upfront cost of providing infrastructure for three residential units per site. In my opinion these situations will need to be worked through at the time of subdivision consent and will need to be aligned with Council's connection policy.

Mat Telfer
21 June 2023