IN THE MATTER **of the Resource Management Act 1991 (RMA)**

AND

IN THE MATTER **of Private Plan Change 78 by Mangawhai Central Limited to the Operative Kaipara District Plan 2013.**

26 January 2021

MEMORANDUM 2 OF SUBMITTER CLIVE BOONHAM TO THE HEARING PANEL

1. I refer to the Memorandum of the Hearing Panel of 20 January 2021 responding to my Memo of 15 January 2021.

Section 41C (4) RMA

2. Paragraph 6 of the Hearing Panel's Memorandum refers to section 41C(4) of the RMA to support its decision on the request for further information. I suggest that the section does not apply to this situation. The KDC is not *"a consultant or any other person employed for the purpose".* Section 41C(4) only applies where a consultant or similar is "*commissioned to provide a report*" on a specific matter. I also suggest that the matter which is the subject of the report must be a matter that is part of the evidence and submissions of the applicant. The authority cannot commission a report, for example, on alternative mitigation matters that were not included in the original application.

3. In addition the authority did not comply with subsections 41C(4)(b) and (c).

4. If the Panel was concerned about the evidence advanced by the applicant to establish that the MCWWS has adequate capacity at present it could have requested a consultant's report on current capacity under section 41C(4) or, alternatively, it could have requested the applicant to provide further information on current capacity pursuant to section 41C(3).

Section 41(4) RMA

5. I acknowledge that I overlooked section 41(4) off the RMA which entitles the authority to request further information from the KDC. However, section 41(4) states that the information requested must be:

> *"…relevant and reasonably necessary to determine the application."*

6. In other words the information requested must be "*relevant*" to an issue raised in the original application. In this case the issue was the mitigation of the adverse effects arising from wastewater discharge. As stated in my earlier Memo in paragraph 6, the applicant advanced only a single proposal as a mitigation measure in respect of wastewater, namely that the MCWWS has the capacity at present to accommodate the anticipated loading from Mangawhai Central. All the evidence of the applicant and the KDC in the PC78 process related solely to establishing the validity of that proposition. Any further information requested under section 41(4) must therefore be "*relevant*" to that issue.

7. Likewise, any further information must be "*necessary to determine the application*". That means that it must be necessary to determine the issues and proposals as presented in the original PC78 application. It is not open to the Panel to request information on alternative mitigation measures which were not included in the original application.

8. It is therefore suggested that pursuant to the provision of the RMA the panel was only entitled to seek further information on the current capacity of the MCWWS.

Rights of the submitters and the current capacity of the MCWWS

9. PC78 included a single mitigation measure in respect of wastewater effects, namely that the MCWWS has the current capacity to accept the loading from Mangawhai Central.

10. In its Memorandum of 20 January 2021 the Panel requested further information on the current capacity of the MCWWS. It sought that information, not from the applicant but from the KDC.

11. The request appears to be compliant with section 41(4) of the RMA in that it relates to a mitigation measure included in the application. However, the Panel has not extended to submitters the equal opportunity and right to provide further information on the issue, or to make submissions on the further information provided by the KDC. This means that the further information provided by the KDC goes unchallenged and any further information that submitters could provide

is excluded from consideration by the Panel. I suggest that this is a breach of fair process and a denial of natural justice because it denies the submitters their right to make submissions on all issues being considered by the Panel under PC78.

Validity of the KDC's factual assertions

12. I also draw the Panel's attention to what I term "the elephant in the room". It is clear that in the PC78 process the factual assertions made by the KDC, MCL and the expert witnesses of both parties in respect of the MCWWS capacity were at variance with the actual facts. Those parties asserted that the MCWWS has capacity at present to accommodate Mangawhai Central.

13. During the hearing of PC78 evidence was adduced by submitters in the form of the 2019 WSP report, and various KDC reports to elected members. Those documents established beyond any doubt that the capacity of the MCWWS plant and disposal field are seriously limited at the present time. That is without any consideration of any extra loading required if PC78 is successful. In addition the information provided on the immediate need for the installation of a $2.1 million balance tank established that the MCWWS plant cannot at present cope with current demand at peak times. As a consequence of the rebuttal of the evidence on current capacity presented by MCL and the KDC, the Panel has sought further information from the KDC on the current capacity of the MCWWS.

14. The concern is that the only further information that will be provided to the Panel will be that provided by the KDC. Given the failure of the KDC in the PC78 process so far to provide any reliable information on the current capacity of the MCWWS, it seems inappropriate, to say the least, that the Panel should rely solely on further information provided by the KDC. That is exceptionally questionable because as there is no right of rebuttal for submitters.

15. During the hearing the Panel stated that it can only make its decision based on the information before it at the hearing. It is therefore important that any party taking part in the hearing should be permitted, through the provisions of the RMA, to adduce further information of relevance to the issues before the Panel. This should be especially so in a case where the local authority had previously supplied information on the issue that was incorrect and this had been relied on by the applicant.

16. We need to avoid the outcome In the MCL/KDC consent process for the Mangawhai Central supermarket. The KDC presented similar information on the adequacy of the current capacity of the MCWWS. This information was relied on

by the applicant. In the absence of any information to the contrary, the Hearing Panel relied on the expert reports of the KDC and MCL and accepted the adequacy of capacity and granted the consent.

17. The problem is that all the information relating to the capacity of the MCWWS is under the control of the KDC. Ratepayers, elected members, and submitters to PC78, have no access to that information. The information relating to capacity of the plant has been a kept secret and all attempts by ratepayers to obtain any details have been rebuffed by the KDC.

18. The chink in that armour was the discovery of the WSP report of 28 November 2019, Mangawhai Community Wastewater Treatment Plant. *Future Options Development,* hidden away in a list of documents relating to PC78 on the KDC's website. That report formed the basis of the statement of evidence that I presented at the hearing. Mr Sephton states in paragraph 3.5 of his further information that "*prior to the hearing, KDC made publicly available*" the WSP report. That is not true. The report was one of many included on the PC78 page of the KDC's website. It was incredibly difficult to locate and was only discovered by one person. The fact that prior to the PC78 hearing the report had not been disclosed to the elected members suggests that it was included on the KDC's website in error.

19. The WSP report contradicts much of the expert evidence presented by the expert witnesses of MCL and the KDC and the hearsay evidence of unnamed KDC staff members and MCWWS staff that was relied on by the experts. It also triggered a LGOIMA request which I made to the KDC after the hearing to obtain all relevant historic reports relating to the MCWWS. The KDC provided me with 16 reports, many of which are very relevant to the current capacity of the MCWWS.

20. None of those reports are referred to in the Statement of 16 December 2020 provided by Mr Sephton following the request for further information. In respect of the current capacity of the MCWWS Mr Sephton states in paragraph 1.2(a) that the MCWWS plant currently has capacity for a further 389 connections. That is the only statement that provides factual evidence on the current capacity of the plant.

21. If I am correct in the view that the RMA does not permit the Panel to request further information that relates to additional mitigation measures that are not included in the PC78 application, then the only issue before the Panel is the current capacity of the MCWWS. I am therefore providing that information later

in this Memorandum as it confirms the lack of capacity of the MCWWS and is relevant information for the Panel in reaching a decision on that particular issue.

Alternative mitigation measures

22. The Panel also sought from the KDC further information on alternative mitigation measures that were not included in the original PC78 application These were the *"the potential capacity in the existing scheme, or an alternative scheme, including the additional capacity that would be enabled should PC 78 be approved as notified".*

23. As argued in paragraphs 2 to 6 above, I maintain that such a request is outside the scope of the provisions of the RMA.

24. If my view is correct then the information provided by Mr Sephton should be disregarded.

National Policy Statement on Urban Development 2020 (NPUSD

25. I also argue that that the reference to Objective 6 of the NPSUD requirements in paragraph 8 of the Panel's Memorandum is not relevant to the issue of wastewater capacity in the form in which it was presented in PC 78. PC78 stated that the effects of wastewater discharge were mitigated by the proposed connection to the MCWWS which already has the adequate capacity to cope with the extra loading. No future planning of infrastructure was involved, so there was no need to establish that there had been compliance with the NPSUD.

26. There was the same situation in MCL's application for consent for the supermarket. In that instance the Hearing Panel accepted that there was adequate existing capacity in the MCWWS for the new loading, so the NPSUD provisions or any consideration of future infrastructure and planning did not apply.

27. It is common ground that the NPSUD would apply if the application for PC78 had stated that the effects of wastewater were to be mitigated by future infrastructure which necessitated planning and funding decisions.

28. Despite these arguments, if the Panel decides that the further information requested complies with the provisions of the RMA then I take the position, on

the grounds stated in paragraphs 9 to 20 above, that all submitters should be given the opportunity to respond to the further information from Mr Sephton and to provide further information of their own on the issues outlined by the Panel.

29. Again, because of time constraints I include that information later this Memorandum.

Panel's invitation

30. As a final point I wish to question the Panel's decision in paragraph 11 of its Memorandum to "*invite the views of the Council, the Applicant and Mangawhai Matters via their legal counsel*". It is unclear what this invitation refers to. It may refer to the Panel's decision on the validity of my earlier challenge, or it may be an invitation to provide further information on the capacity of the MCWWS. If the former, then I cannot see any valid argument for the parties to PC78 having the right to comment on such a legal issue. I also maintain that I should have the right to respond to the Panel's decision (through this Memorandum) to reply to the Panel's decision. If the latter, the right of all parties to provide further information, then all submitters should have the opportunity to provide further information.

FURTHER INFORMATION OF CLIVE BOONHAM RELATING TO THE CURRENT CAPACITY OF THE MCWWS

Current capacity of the MCWWS

31. The various assertions of adequate capacity of the MCWWS by the applicant and the KDC were, I suggest, deliberately vague and ambiguous. They were intended to convince the Panel that the MCWWS has capacity at present to cope with the current loading, the normal annual increase in connections, and the extraordinary loading required for Mangawhai Central. That extraordinary loading has never been defined, even though it is of pivotal importance.

32. The Information from the 2019 WSP report that was revealed at the hearing rebutted the adequate capacity assertions of the applicant and the KDC. It highlighted the shortcomings of the plant and the disposal field and warned of a crisis in capacity in the near future. That was no doubt the reason why the Panel sought further information from the KDC on the issue of capacity.

33. Despite the clear evidence of limited capacity before the Panel, In his further information Mr Sephton reiterates the KDC's position:

3.9 Technical reviews by Mr James Dufty on behalf of Mangawhai Central Limited and Mr Steve Rankin on behalf of KDC, have confirmed that there is additional capacity within the CWWTP and that there is the ability to upgrade the facility in the future

34. The reviews referred to were not technical reviews. The conclusions drawn in those reviews were based on hearsay, the comments of KDC and plant staff, with reliance on the conclusions of other experts. The confirmations in 3.9 are meaningless. There is "additional" capacity, but it is, according to Mr Sephton (paragraph 3.4), for 389 connections only. Clearly, there is no capacity <u>at present</u> for Mangawhai Central. There is also the "ability" to upgrade in future. But there is no actual planning in place at present for any upgrades, or any financial planning for the enormous cost of those upgrades.

35. Fortunately, following the November 2020 hearing for PC78 I obtained, pursuant to a LGOIMA request, copies of a number of documents and reports from the KDC relating to the capacity of the MCWWS. Those documents also refer to other documents and reports which were not provided to me. I have set out the details of the documents and the reports in Appendix 1 of this Memorandum. They are for convenience in chronological order.

36. These documents and reports establish beyond any doubt the limited capacity of the plant, and its current defects and issues. It is clear that from the outset in 2009 that the MCWWS plant had only a limited lifespan and would need substantial upgrading over the years as the demand for capacity increased with the growth of Mangawhai. It was also clear that the disposal field at Browns Road was chosen because there were no better options at the time. It also has a very limited lifespan.

Current capacity of the MCWWS – information from documents and reports

37. The KDC Expression of Interest document of September 2013 acknowledges the limited capacity of the disposal field with the KDC seeking expressions of interest to review options for disposal.

38. The Harrison Grierson report *Potential Effluent disposal options* of 15 September 2014 is an independent review of effluent disposal options –"a fresh look"- including the estuary, the harbour, the sea, Lincoln Downs, Hakaru Creek and the golf course.

39. A Harrison Grierson report of 4 May 2015 proposed an estuary discharge with enhanced effluent quality via conversion from SBR to MBR with new plant and new inlet screen with grit removal system. A follow up report on 4 June 2015 looked at other disposal options.

40. A letter from BMT WBM of 3 June 2015 looked at disposal options for the golf course including creating a wetland.

41. An Opus report of 22 December 2016 - Capacity Assessment of the treatment plant - included analysis and suggestions for increasing the capacity of the plant and the disposal system. It noted that the capacity of the plant was 2,153 connections with only 162 connections available. It also stated that the plant and disposal field were reported to be close to its design capacity.

42. An Opus report of 25 March 2017 reported on investigations to increase capacity of the MCWWS, and a further Opus report on 5 June 2017 answered queries on the two earlier Opus reports.

43. The KDC Advisory Panel report Strategy and Options of August 2017 recommended the upgrade and extension of the current disposal system, a new disposal system and the augmentation of the plant.

44. The WSP Opus report of 20 June 2018 took a completely new look at the upgrade needed for the MCWWS plant. There were to be four stages:

Stage 1: Needs Assessment
Stage 2: Develop Solutions
Stage 3: Procurement
Stage 4: Delivery

45. The WSP Opus report of 10 September 2018 was the Stage I report that set out the needs and defects of the plant. It is relevant to include some comments from the report

Issues, Root Causes and Effects

The strategy for identifying the needs of the plant, included evaluating the existing performance data and inspection of the site. In this way, all the information on the existing condition of the plant and its performance could be assessed. To ensure that no issues would be missed, the assessment was conducted in the form of a workshop where all stakeholders could contribute to the identification of issues.

Prioritisation

The issues have been listed below in their order of prioritisation from most important to least important as determined by the associated risk of each issue. The issues are labelled according to the number that each issue was recorded under during the Root Cause Workshop.

5 The decanter drives are wearing out and there is a long lead time for these to be replaced. This means that in the event of a drive wearing out, the process would be restricted to one tank for approximately 6 weeks or more while waiting for the replacement drive to arrive to site. The quality of the effluent would be compromised during the time that the plant would run on one tank.

6 The capacity of the existing aeration system is insufficient for consistently meeting the DO setpoint. This issue will continue to get worse as the population in the catchment increases.

12 The existing blowers sometimes run at peak demand. The forecasted continued growth in the catchment will increase the demand on the blowers and result in prolonged periods of peak demand and there is currently no standby blower provided.

9 The odour motor cover has corroded and left the moving machinery unguarded which is a serious safety concern.

14 There has been an increase in flow from the pump station TPS which has resulted in more flow being pumped to the WWTP. This increase exceeds the screen capacity and may also exceed the intermediate pump and transfer pump capacity and result in overspill of effluent. (Balance tank)

2 Seasonal settlement problems have been leading to solids loss from the reactor.

*10 There have been TDS exceedances recorded in some samples. (*Screen capacity)

11 There is no RAS flow meter and therefore no method to control RAS flow rates if required.

4 There is no control of aeration in the anoxic zone. There is a need to both prevent solids build up in the tank and also establish anoxic conditions for nitrate removal.

13 High flow mode leads to short cycle and poor treatment. These incidences will increase in frequency with the expected 35% growth over the next ten years.

7 There is settlement occurring in the intermediate tank.

5 Conclusion

The needs assessment (Stage 1) has been completed and has resulted in the definition and prioritisation of existing issues with the Mangawhai WWTP as well as issues that are expected to occur within the next 10 years. The next stage of this project is to develop solutions that will meet these needs. The developed solutions will form the basis for supplier enquiry.

After meeting correspondence

18 DM in discussion with Curt Martin (KDC) raised another potential issue that may need addressing. The issue relates to the possibility of overflows at the inlet works due to increased peak flows to the treatment plant.

46. The WSP Opus Stage 2 report 18 December 2018 set out the solutions for the issues and defects in the plant outlined in the Stage 1 report.

47. The WSP Opus report of 11 February 2019 assessed additional land at Browns Road for extending the irrigation. This was followed up with a WSP Opus report on 26 February 2019 responding to queries on the above report.

48. The WSP Opus report of 21 May 2019 included the design methodology for all the upgrade items which were set out in the report of 18 December 2018. The report states:

At the meeting held at WSP Opus Office Whangarei on 30th November 2018, KDC confirmed which items should be progressed at this time with the remaining upgrade items from the Stage 2 Report being put on hold.

49. Clearly the KDC decided at this stage that it would put on hold fixing the issues with the plant and only attend to those that were necessary. The issues being progressed in 2019 from the list of defects were listed:

- *Aeration upgrades including a new diffuser system, two additional blowers and upsizing of the air header for Zone 3 from DN150 to DN250 to accommodate the additional airflow;*

- *Air pipework modifications for improved accessibility for the air valves in Zones 1 and 2 and retrofitting of actuators for automatic control of those valves; and*

- *RAS pipework modifications including addition of flowmeters and control valves.*

50. The WSP report of 28 November 2019, *Mangawhai Community Wastewater Treatment Plant. Future Options Development,* is the report that I referred to at length in my statement of evidence at the hearing. It warns of capacity issues with the plant and with the need to find a replacement disposal option in the next few years.

51. The KDC workshop document of 22 May 2020 sets out many concerns in respect of capacity in the 2019 WSP report. It includes the timeline for irrigation upgrades on the Browns Road property:

> *Irrigation Upgrades*
> *2009 25 ha original at 350 mm/yr*
> *2012 32 ha*
> *2013 Consent to deficit irrigation 500 mm/yr*
> *2016? 47 ha*
> *2019 65.5 ha*
> *Full Capacity reached before 3000 connections*
> *Wet years may exceed capacity before this point.*

It also highlights issues with meeting consents limits for the plant:

> *By 2026 the CWWTP will struggle to meet the consent limits, specifically on Nitrogen removal as the plant becomes overloaded in summer.*

There are also issues with the plant:

> *Growth Timeline at 100 connections per year:*
>
> *•By 2028 additional treatment capacity will be required as the plant will be hydraulically limited at about 3,000 connections.*
>
> *•Treated water pumps and rising mains will be at hydraulic capacity*
>
> *•By 2028 the disposal field will have reached capacity. Additional disposal option will be required.*

52. The workshop document also sets out the cost estimates for the upgrades:

Discharge Options	***5000 connections***	***7000 connections***
Disposal Field	*$38m*	*$47m*
Sea Outfall	*$47m*	*$56m*
Estuary	*$26m*	*$38m*

53. It is clear from this information that the capacity of the MCWWS plant is currently challenged and that KDC has understood that situation for many years. Mr Sephton states in his further information that there is currently capacity for an additional 389 connections to the scheme. That is insufficient to meet the KDC's previous assertions that there is current capacity in the plant for Mangawhai Central. The normal annual increase in connections of 100 per year would mean that capacity would be reached in 4 years without a single connection being available for Mangawhai Central.

Is there any current planning to accommodate Mangawhai Central?

54. Much of the further information provided by the Mr Sephton on this topic is contradictory. In paragraph 38 Mr Sephton states:

> *3.8 There is currently planned capacity available for the Mangawhai Estuary Estates and if approved, PC78.*

However, he provides no information to support this proposition.

55. The Council meeting of 23 May 2018 considered a staff report on deliberations for the 2018/2028 LTP. It included important information about the 2018/2028 LTP. It recommended the inclusion of $20.05 million in the LTP to upgrade and extend the MCWWS to accommodate new connections (70 to 100 per year) and that it would be funded by debt. The monies were to upgrade the treatment plant and to extend the disposal system. The $20.05 million dollars was to extend the capacity of the plant to 4,700 connections over the following 10 years "*with a view to spending $34.8 million in the next 27 years to keep pace with future growth"*. That larger figure included the cost of a new disposal field which would be needed beyond the 10 year period of the LTP. The budget included $2.23 million for disposal to the golf course or $8.6 million for an ocean outfall.

56. At the hearing the Panel questioned whether the 2018/2028 LTP provided for Mangawhai Central. The response obtained from Mr Sephton stated that it did. In fact that is not correct. That LTP provided for annual growth and did not provide for Estuary Estates or Mangawhai Central, and there has been no subsequent provision.

57. This is confirmed by Mr Sephton in his further information:

> *3.8 There have been no applications for residential building consent within the current plan change area and as PC78 has not been approved, the timing of capacity improvements has not been altered from the LTP 2018/2028.*

58. In summary, the 2018/2028 LTP does not contain any provision for wastewater for Estuary Estates or Mangawhai Central outside the normal annual increase in connections.

Importance of planning infrastructure

59. The various reports of KDC presented to KDC Council meetings have also emphasised the need to plan infrastructure for the future because of capacity issues. The report of 23 May 2018 advised that investigation of future disposal options would be undertaken and the preferred option recommended to Council for approval.

> "*This is to ensure that a future disposal facility is identified well before it is required and any associated resource consents can be acquired to authorise the preferred disposal."*

60. The 2019 WSP report and the associated timeline (reproduced in the Mangawhai Spatial Plan) warned that the major capacity upgrades of the MCWWS required 6 years for planning, consultation, consenting, procuring and building if the capacity was to be available when it was needed.

Need for future infrastructure

61. The documents and reports in Appendix 1 show that for many years there have been issues with capacity in respect of the MCWWS plant and in respect of the disposal field. Harrison Grierson have provided reports over the years setting out the shortcomings of the MCWWS.

62. That has been followed up with reports from Opus, WSP Opus and WSP which assessed the capacity of the plant and disposal field and emphasised the need for the planning of upgrades and an alternative disposal system by 2020. With the planning consultation, consenting and building this would allow sufficient time for the new infrastructure to up and running in 2026 when capacity is reached, on the basis that there are 100 new connections per year. This time scale is reflected in the Mangawhai Spatial Plan which was recently adopted. Note that in paragraph 1.2(a) of his further information Mr Sephton states that only 389 connections are available before capacity is reached. That means capacity will be reached by the end of 2024. This is in stark contrast to the aim of the Spatial Plan "*to develop a long-term sustainable mechanism for the treatment and disposal of wastewater".*

63. In June 2018 WSP Opus provided a report on the defects in the treatment plant with proposals for upgrades. In May 2019 the KDC decided to upgrade some items but the rest would be put on hold. In February 2009 WSP Opus reported on the use of additional land at Browns Road for irrigation.

64. In a report to Council of 4 December 2019 Mr Sephton reported that WSP had been engaged "to provide a complete picture of the entire system". The report warned "*that the growth experienced to date will require earlier intervention than was anticipated".* The report referred to the "*network being under pressure*" and "*some pump stations and rising mains need upsizing*". "T*he treatment facility is nearing its capacity to manage peak flow*s". In respect of Browns Road, "*we are now at 100% coverage of land that can be discharged to*."

65. The WSP report referred to was actually released on 28 November 2019. It painted a grim picture of the capacity of the MCWWS and emphasised the need to take urgent action to ensure that new infrastructure was available in time to meet the demand for capacity. The WSP report findings played a large part in the Wastewater strategy workshop of 22 May 2020. It also highlighted that the costs of a new disposal field were way beyond the budgeted amounts in the 2018/2028 LTP in paragraph 55 above. The sea outfall option had risen from $8.6 million to $47 million and a new disposal field (farm) would be $38 million

66. At the Council meeting of 25 November 2020 the outstanding Resolutions Register was considered. This included the resolution 5.1.7 of 23 May 2018, referred to in paragraph 55 above, stating that investigation of future disposal options would be undertaken and the preferred option recommended to Council for approval. Two and a half years after the resolution was made it was stated to be "in progress" and that it had been assigned to the General Manager infrastructure Services, Jim Sephton.

Are there any planning proposals to accommodate Mangawhai Central?

67. Despite the warnings in the WSP reports, and in the reports to Council meetings, little appears to have been done to resolve the looming capacity issues. The 2021/2031 LTP would have been the perfect vehicle to plan the necessary infrastructure. Mr Sephton suggests that such planning is afoot but provides very little substance to support that position.

68. In paragraphs 3.1 and 3.2 of his further information Mr Sephton states that the 2021/2031 LTP and the Infrastructure Strategy are still in draft form and no details can be revealed. However there is sufficient information already available to give some idea of what will be included when the documents are adopted in their final form.

69. The Draft Infrastructure Strategy, which will be part of the 2021/2031 LTP once it is finalised and adopted, was included in a Council LTP briefing of 9 September 2020. The Draft Strategy contains many warnings about the short comings of the MCWWS. There is concern about the state of the reticulation network and the possible infiltration of stormwater. It states that "*the MCWWS is reaching the end of its consentable limits*" and that "*Council could exceed their consenting limit for nitrogen removal as early as the summer of 20026".* However, there is no strategy planned for the future. Instead there is a Significant Intention Statement:

> *Council will investigate the MCWWS discharge solution via an irrigation to field disposal option for environment, cultural, community and economic reasons.*

There seems, so far, little indication that the infrastructure Strategy will include any wastewater planning to resolve the capacity issues with the MCWWS.

70. The Road Map referred to by Mr Sephton in paragraph 3.6(e) of his further information is a non-statutory, flimsy document and has not been formally presented to the community. It outlines a process of consenting, designing and construction, but is incredibly light on detail.

71. For the year 2021 the Road Map sets out the proposed agenda including the balance tank, a catchment study reticulation strategy, water reuse "optioneering", and community engagement. It suggests that by 2028 we will have an upgraded network, increased treatment capacity and increased disposal capacity. But there are no actual plans, just an expressed intention to examine,

yet again, options for the future. With respect, that is what the KDC has doing for many years but without any options being finalised.

72. The dire situation in respect of KDC's future infrastructural planning is illustrated by paragraph 1.2(h) of Mr Sephton's further comments on the Roadmap:

> *KDC have commissioned modelling work which will inform the development of a more detailed 'Road Map' for the Wastewater System and clarify the timing and costs associated with further improvements including the replacement of sand filters and development of options to reuse water in the local area.* ***It is anticipated that these recommendations will be accommodated in the 2024/2034 version of the Long Term Plan.*** (Emphasis added)

While Mangawhai Central is knocking on the door, and capacity of the MCWWS is at crisis point, the KDC is hoping to address replacing sand filters and reuse water in 2024.

73. I attended the Council LTP 2021 briefing on 20 January 2021. I was interested to see what planning was to be included in respect of the MCWWS.
https://pub-kaipara.escribemeetings.com/filestream.ashx?DocumentId=2792
The report from Mr Sephton refers to the Roadmap for the future:

> *MCWWS*
> *The 2018 LTP included $7.6m for the enhancement of the MCWWS plant. In preparation for the 2021 LTP, WSP were engaged to assist in the development of a road map. The Infrastructure Strategy provides a direction which is to focus on a circular economy and reduce waste. This has assisted in the development of a preferred way forward for the purpose of this LTP.*

It appears that the Road Map direction involves the transition from a sand filter to a membrane filter which will mean that the waste water will be more useable in different options. The report also notes:

> *Mangawhai WWTP upgrade - $10m pushed out beyond 10 years to achieve an affordable rate increase.*

The imperative to keep rates increases at reasonable levels is going to restrict expenditure on the MCWWS. Only essential work will be attended to:

> *Projects continuing from this year ♣ Mangawhai Wastewater Treatment Plant Balance Tank - $619k*

74. In summary, it looks very unlikely that there will any planning for wastewater infrastructure to increase capacity in the MCWWS disposal system in the 2021/2031 LTP. It seems clear that the Road Map will be a project under the new LTP, but its findings and any planning on future wastewater infrastructure will be deferred until the 2024 LTP. The Infrastructure Strategy for the next 30 years will include proposals to consider options for the future but no actual planning.

A different approach – an ad hoc approach based on demand

75. It is apparent from the comments of Mr Sephton that while the KDC is still considering the options for the future, it has shifted its position and is deferring any planning and simply responding to demands for capacity. The Road Map in 3.6(e), which will be finalised in time for the 2024 LTP, "*outlines the process by which and when the proposed upgrades to the CWWTP will be consented, designed and constructed prior to the anticipated existing capacity limit being reached*". But it goes on to add:

> *This is based on growth triggers and is not a hard timeline for when the upgrade will occur.*

Further:

> *3.7 Connections to the CWWTP are provided on a first come first served availability for development basis. The KDC Infrastructure Department bases its responses to growth and demand at the CWWTP on growth projections utilised by Council.*

76. Mr Sephton even suggests waiting for building consents to be lodged before extending capacity:

> *3.8 The rate of growth and take up is monitored as building consents are lodged and where necessary, work brought forward to align capacity with growth. Increases in capacity are aligned with actual demand to avoid over investment in the system.*

77. The fallacy of such an approach is obvious. Work to increase capacity can only be brought forward if that work has already been planned, consulted, and consented. There is then the actual construction time-lapse. That applies to works such as the balance tank which has been planned and consented but its timing is advanced to meet capacity issues. However the infrastructure needed for the capacity increase in the plant and the disposal field are major upgrades. According to the 2019 WSP report and the Mangawhai Spatial Plan there is a time lapse of 6 years between decision-making and having the new structure or proposal operational.

78. The KDC's ad hoc approach to capacity appears to be driven by finances:

> *1.2(d) Increases in capacity are aligned with actual demand to avoid over investment in the system. There have been no applications for residential building consent within the current plan change area and as PC78 has not been approved, the timing of capacity improvements has not been altered from the LTP 2018/2028.*

79. The financial pressures became obvious as far back as 2018. The WSP Opus report of 10 September 2018 listed all the issues and defects with the treatment plant with a view to them being resolved. However, following a meeting on 30 November 2018 between WSP Opus and the KDC only three items were scheduled for 2019 and the others were deferred. As far as I know the only other issue that has been attended to subsequently is the balance tank.

80. It is clear that the KDC is trying to eke out capacity and defer any major upgrades. At the Council meeting of 25 November 2021 the resolution of 23 May 2018 to investigate future disposal options was given the status of "in progress" (Paragraph xx above). The report to the Council stated:

> *Staff are looking to amend existing consent to increase capacity for future disposal as an initial option (estimate existing farm has 8-10 years capacity).*

It appears that the KDC is ignoring the timeline in the 2019 WSP report, which was reproduced in the Mangawhai Spatial Plan, and that the initial option was now to try and squeeze out more capacity from the Browns Road farm:

> *The preferred long term disposal option in the Draft infrastructure Strategy is to continue disposal to land through increased efficiencies and disposal to land options.*

The report added:

> *Council has approved the development of the retention/CASS tank. This will be taken as part of the <u>Do Minimum</u> assumption for disposal options*. (Underlining added)

The KDC has adopted a Do Minimum, ad hoc approach, extracting efficiencies from the present set-up and only doing upgrades such as the balance tank if they prove necessary. In addition, it would look at future options with an 8-10 time-frame:

Disposal options to adjacent land, including the golf course will now be developed and costed for inclusion in the LTP. The [MCWWS} Asset management plan will be presented to council in early 2022.

As we have seen (xx), there will be no proposals for disposal options in the 2021/2031 LTP. The Road Map for the future will be finalised during the plan period and options for the future will be included in the 2024/2034 LTP.

81. The ad hoc approach is evidenced by the balance tank issue. The overflow at peak times was noted in the WSP Opus report of 10 September 2018 but over two years later, during which there have been overflows at peak capacity, Mr Sephton states:

2.1(g) The construction of a Balancing Tank in 2021 has been approved by Council which will allow for peak flows in the summer to be accommodated. This has been designed so that it can be upgraded to a Cycle Activated Sludge System (CASS) tank in the longer term when required which will provide further increases in capacity.

82. In short, the KDC has no planning proposals for increasing wastewater infrastructure in Mangawhai.

National Policy Statement on Urban Development 2020

83. Regardless of whether Objective 6 applies to PC78, there is no infrastructure planning or strategy in respect of the MCWWS.

Final assessment in respect of future capacity of the MCWWS

84. The KDC asserted in both the supermarket consent hearing and in the PC78 process that there is adequate capacity in the MCWWS to accommodate the proposals of Mangawhai Central. However the facts are clear that the scheme has serious challenges in respect of capacity even with normal annual growth and without any consideration of the extra loading that Mangawhai Central would require. It is also clear that there is no current planning for future infrastructure to increase capacity and there will no future capacity planning in the 2021/2031 LTP.

85. The simple reality is that the MCWWS has only 389 connections available. Once they are taken there can be no more development in Mangawhai. When the KDC finally stops looking at options and decides to plan for future capacity it will take 6 year before additional capacity is available.

Alternative wastewater capacity

86. The Panel requested further information on any alternative wastewater system. There is no alternative to the MCWWS in Mangawhai

FUNDING DECISIONS IN RESPECT OF THE INFRASTRUCTURE

Current funding decisions

87. The only funding decisions of the KDC in respect of the MCWWS are included in the 2018/2028 LTP. The $20.05 million was allocated to provide for annual increased in connections of about 100 per year. There is no provision in the Plan for any specific loading in respect of Estuary Estates or Mangawhai Central.

88. The 23 May 2018 LTP deliberations states in respect of MCWWS funding:

> *"The proposed approach by Council is that 95% of the costs of the LTP will be financed by debt which is repaid from targeted rates (and) through development contributions from Mangawhai developers and residents.*

89. The problem is that development contributions are only paid as growth occurs and connections are made. The debt to fund the infrastructure is in place from day one, and interest is incurred annually. The elephant in the room (another one) is that the original debt to fund the construction of the MCWWS in 2009 is still of massive proportions. It is being repaid by those connected or connectable through targeted rates ($13.4 million), rates across the district ($18.4 million), and $26.2 million is attributed to "future communities" to be paid through development contributions. The first two are to be repaid over 30 years and the future communities' debt is to be repaid over 40 years, presumably calculated from 2009. That means that the original debt will be paid by users of the MCWWS for generations, and long after the current capacity has been reached.

Future funding decisions

90. The concern of ratepayers is that any future users who connect to the MCWWS must bear their fair share of the original costs, and capital expenses since 2009. The problem arises once capacity is reached and massive additional funding is needed to add capacity to accommodate a new development like Mangawhai Central. It is vital that there is equity between current users and future users in respect of capital charges.

91. Mr Sephton suggests in paragraphs 3.10 to 3.14 that development contributions are to fund all capital expenses incurred in the future. Each development contribution is $22,113 and there are 100 connections a year. That makes just over $2 million a year. That has to meet the ongoing capital costs, plus the repayment of the original debt attributed to future communities, plus interest on the outstanding debt.

92. What happens when the KDC finally considers its options, makes firm plans for the future and goes through the consultation and consenting process? How is the funding to be arranged, and how are the old costs and the new costs going to be shared fairly between the current community and the new community?

93. Those costs are not cheap. The 2019 WSP report suggests that a new disposal field will cost $38 million, disposal to the estuary $26 million, and sea outfall $47 million. By the time the KDC decides to take any action the costs will be substantially more. Current ratepayers have not forgiven the KDC for the massive overrun on the original costs of the MCWWS. They have that debt to bear for 40 years. They are not prepared to accept that they may have to bear a further debt of, say, $40 to $50 million, to enable Mangawhai Central to proceed.

94. Fortunately, the situation has not reached that stage – yet. There is no wastewater capacity for Mangawhai Central and there is no planning for future capacity. That means that no funding decisions have been made.

95. Mr Sephton states in 3.14 and 3.15 that funding details for future infrastructure will be included in the 2021/2031 LTP and the 2021 infrastructure Strategy, and that they will be subject to consultation with the community. That will not happen. As we have seen from the drafts, the Infrastructure Strategy will consider the options for the future but without making any decisions, any plans, or any funding decisions. The LTP will simply advance the Roadmap and consider what options there are for increasing capacity so that they can be included in the 2014/2024 LTP.

INFRASTRUCTURE PLANNING AND FUNDING FOR WATER SUPPLY

96. Mr Sephton refers to the KDC briefing of 11 November 2020 and confirms that there will be no consideration of water supply for Mangawhai in the 2021/2031 LTP. It will be deferred to the 2014 LTP.

97. The Council LTP briefing of 20 January 2021 states:

Mangawhai Water supply design and construction – removed $6.35 million

98. Mangawhai does not have a residential reticulated water supply. Residents are obliged to provide their own water through rainwater tanks. Whilst that has been adequate in the past, the change in climate has made it very difficult in the last few years to harvest sufficient water to meet domestic needs. Residents are regularly running out of stored water and are sourcing water deliveries from two water suppliers who extract bore water. Evidence was presented to the hearing that local bores are also running short of water. Last year extra water had to be brought in from Auckland and Whangarei.

99. There is a water crisis in Northland and in Mangawhai in particular. It is general agreed by most residents that every residential property should now be obliged to have two 45,000 litre water tanks for domestic use, so that each property can be self-sufficient in respect of water. It makes no sense to have small sections which do not have the space for water storage tanks with the result that the local authority is obliged to provide infrastructure. It would also mean that water would have to be provided from streams or aquifers which may not have the capacity to cope with the demand.

100. The KDC briefing of 11 November 2020 should be compulsory reading for anyone proposing a large development in Mangawhai without adequate infrastructure for water supply. The KDC is not going to help, and the need to cut capital costs to deliver affordable rates means that a water supply for Mangawhai cannot be considered. Extracting water from streams and rivers is becoming more problematic with the National Policy statement saying that the health of water bodies is more important than the supply of drinking water.

101. In short, there is no KDC infrastructure planning for a water supply in Mangawhai. It follows that no funding decisions have been made or are contemplated by the KDC. It is also clear that there has been no compliance with Objective 6 of the NPSUD. On that basis, no decisions on significant development in Mangawhai can

be made until they are "i*ntegrated with infrastructure planning and funding decisions* in respect of water supply, and, of course, wastewater.

Clive Boonham

Mangawhai

26 January 2021

See Appendix 1 below.

APPENDIX 1

MCWWS DOCUMENTS AND REPORTS

Copies not available

March 2006
Mangawhai Treated Effluent disposal – assessment of land disposal Options URS NZ LTD

May 2006
Disposal Options Report Earth Tech Ltd.

August 2006
Mangawhai Golf Course Site Investigation – URS NZ LTD

September 2006
Mangawhai EcoCare project Hydrogeological Investigation - Water Reuse Area. Tonkin & Taylor

March 2007
Mangawhai EcoCare project – Assessment of Treatment and Disposal Options. Earth Tech Engineering Pty Ltd

April 2009
Mangawhai EcoCare WWTP Design Report. Water infrastructure Group

6 December 2009
EcoCare Irrigation Scheme Operator's Manual. Stage 1 Works, Water Force

April 2010.
KDC Mangawhai EcoCare project environmental management Plan – Lincoln Downs. Amended report. RMCG consultants, Bendigo, Victoria.

November 2011
Resource Consent 20121496901 NRC

14 December 2011
Soil analysis for Browns Road Irrigation Plan.

Documents made available by KDC in December 2020

September 2013

KDC: Expression of Interest document

The limited capacity of disposal field was acknowledged in 2013:

Page 4

> ***1 Background***
>
> *The Mangawhai Community Wastewater Scheme (MCWS) currently disposes of the treated effluent by spray irrigation onto a council owned farm at Brown Road Mangawhai. Currently approximately 30 ha Is under irrigation. With increasing numbers of connected properties the current irrigated area is insufficient to dispose of all the treated effluent in a typical year. Before proceeding to increase the irrigated area council has decided to review the options for water disposal to determine if there are more cost effective options for disposal of all or a proportion of the effluent. Council also recognises that in the medium term the farm simply does not have sufficient irrigable area to handle all the effluent and therefore desires to establish a long term strategy that takes account of this. Council therefore invites expressions of interest from consulting firms to conduct a study to review options for disposal.*

Page 3

> ***MCWWS Information Pack***
>
> *1.BACKGROUND*
>
> *The Mangawhai Community Wastewater Scheme (MCWS) currently disposes of the treated effluent by spray irrigation onto a council owned farm at Brown Road Mangawhai. Currently approximately 30 ha Is under irrigation. With increasing numbers of connected properties the current irrigated area is insufficient to dispose of all the treated effluent in a typical year. Before proceeding to increase the irrigated area council has decided to review the options for water disposal to determine if there are more cost effective options for disposal of all or a proportion of the effluent. Council also recognises that in the medium term the farm simply does not have sufficient irrigable area to handle all the effluent and therefore desires to establish a long term strategy that takes account of this. Council therefore invites expressions of interest from consulting firms to conduct a study to review options for disposal.*

15 September 2014

Harrison Grierson: Potential Effluent disposal options.

H G engaged to carry out an independent review of effluent disposal options – "a fresh look". Optimal expansion with minimal expenditure.
Examined estuary, harbour or sea, Lincoln Downs, Hakaru Creek, Golf course

11 December 2014

KDC Report: Wastewater Network Extension: Connections in Mangawhai. States: "Potential to connect 850 properties."

04 May 2015

Harrison Grierson: ADDENDUM 2 WWTP capacity and upgrade costs -. Proposed an estuary discharge with enhanced effluent quality via conversion from SBR to MBR with new plant and new inlet screen with grit removal system (Capital costs $8.4 million.)

04 June 2015

Harrison Grierson: Technical Memo – ADDENDUM 1
Additional Options (Revision 2 Final Draft)
Follow up top to Sept 2014 HG report and looked at different disposal options.

03 June 2013

Letter from BMT WBM: Golf Course Modelling and Wetland Disposal
Pages 4-6:

1.1.4 Modelling Results

As can be seen irrigation to the golf course fairways and grass areas needs to be reduced during the winter to ensure the site is not over irrigated and the golf course surface is suitable for use. Plant water demand over the 30 ha irrigation area simply does not have the capacity to irrigate all of the design flow even during summer (mainly due to the peak holiday loading) and therefore not in winter under ultimate flow conditions. It can be seen that there are approximately 5 months per year where current design flows cannot be managed by irrigation.

Page 8:

1.4 Outcomes

A key constraint for the proposed irrigation scheme is the mounding of groundwater beneath the irrigation area, wetland discharge point and raising of the high groundwater across the site. The potential impacts have been tested at a screening level using a steady state groundwater model developed by Bob Seigrist from the Colorado School of Mines (keynote from SWWS 2012). The irrigation rates are predicted to increase the winter water table by 0.4-0.8 m. More information on hydrogeology, surface topography and drainage will be required to confirm if this is a

constraint. It is important to note the need for more refined understanding of groundwater dynamics and quality across the site given the implications for the irrigation scheme.

22 December 2016

Opus: Mangawhai Wastewater Treatment Plant – Capacity Assessment
Analysis and suggestions for increasing capacity of the plant and the disposal system

Plant limits:

The estimated number of connections that can be introduced into the existing Mangawhai WWTP is 2,153. This number of connections is 162 connections higher (8%) than the estimated current number of connections of 1,991.

Disposal field limits

Currently, the Mangawhai WWTP and disposal field are reported to be close to its design capacity.

23 March 2017

Opus: Option Investigation for an Increase Capacity

06 June 2017

Opus: Memorandum answering queries on two earlier Opus reports (above).

August 2017

KDC Advisory Panel Report: Mangawhai Wastewater Scheme: Strategy and Options Report:

Recommendation: Option 4 being additional disposal - extend (existing) disposal system, plus new disposal system (e.g. Mangawhai Community Park or golf course) upgrade existing reticulation, extend reticulation (13 years), augment treatment plant, capacity 4,700 connections.

20 June 2018

WSP opus: Offer of Service for Upgrade of Mangawhai WWTP
The technical support that WSP Opus will provide shall be broken into four stages;
· Stage 1: Needs Assessment
· Stage 2: Develop Solutions
· Stage 3: Procurement
· Stage 4: Delivery

10 September 2018

WSP Opus: Stage 1 Summary report. Needs Assessment. Sets out defects in MCWWS plant

Issues, Root Causes and Effects

The strategy for identifying the needs of the plant, included evaluating the existing performance data and inspection of the site. In this way, all the information on the existing condition of the plant and its performance could be assessed. To ensure that no issues would be missed, the assessment was conducted in the form of a workshop where all stakeholders could contribute to the identification of issues.

Prioritisation

The issues have been listed below in their order of prioritisation from most important to least important as determined by the associated risk of each issue. The issues are labelled according to the number that each issue was recorded under during the Root Cause Workshop.

5 The decanter drives are wearing out and there is a long lead time for these to be replaced. This means that in the event of a drive wearing out, the process would be restricted to one tank for approximately 6 weeks or more while waiting for the replacement drive to arrive to site. The quality of the effluent would be compromised during the time that the plant would run on one tank.

6 The capacity of the existing aeration system is insufficient for consistently meeting the DO setpoint. This issue will continue to get worse as the population in the catchment increases.

12 The existing blowers sometimes run at peak demand. The forecasted continued growth in the catchment will increase the demand on the blowers and result in prolonged periods of peak demand and there is currently no standby blower provided.

9 The odour motor cover has corroded and left the moving machinery unguarded which is a serious safety concern.

14 There has been an increase in flow from the pump station TPS which has resulted in more flow being pumped to the WWTP. This increase exceeds the screen capacity and may also exceed the intermediate pump and transfer pump capacity and result in overspill of effluent. (Balance tank)

2 Seasonal settlement problems have been leading to solids loss from the reactor.

*10 There have been TDS exceedances recorded in some samples. (*Screen capacity)

11 There is no RAS flow meter and therefore no method to control RAS flow rates if required.

4 There is no control of aeration in the anoxic zone. There is a need to both prevent solids build up in the tank and also establish anoxic conditions for nitrate removal.

13 High flow mode leads to short cycle and poor treatment. These incidences will increase in frequency with the expected 35% growth over the next ten years.

7 There is settlement occurring in the intermediate tank.

5 Conclusion

The needs assessment (Stage 1) has been completed and has resulted in the definition and prioritisation of existing issues with the Mangawhai WWTP as well as issues that are expected to occur within the next 10 years. The next stage of this project is to develop solutions that will meet these needs. The developed solutions will form the basis for supplier enquiry.

After meeting correspondence

18 DM in discussion with Curt Martin (KDC) raised another potential issue that may need addressing. The issue relates to the possibility of overflows at the inlet works due to increased peak flows to the treatment plant.

18 December 2018

Opus Mangawhai Wastewater Treatment: Plant Upgrade. Stage 2: Solutions

Sets out the issues for the Needs (defects and upgrades in the plant) as set out in Stage 1.

11 February 2019

WSP Opus: Mangawhai Wastewater Treatment – Disposal field: Irrigation Assessment for additional land at Browns Road.

26 February 2015

WSP Opus: Addendum - Mangawhai WWTP - Irrigation Field Assessment. Answer to queries on above report

21 May 2019

WSP Opus: design report for 2019 upgrades

The upgrades identified were outlined in the Mangawhai Wastewater Treatment Plant Upgrade – Stage 2 Summary report by WSP Opus dated 18th December 2018.

At the meeting held at WSP Opus Office Whangarei on 30th November 2018, KDC confirmed which items should be progressed at this time with the remaining upgrade items from the Stage 2 Report being put on hold.

This report provides the design methodology for all upgrade items which are being progressed currently.

The scheduled 2019 upgrades to the WWTP include;

- *Aeration upgrades including a new diffuser system, two additional blowers and upsizing of the air header for Zone 3 from DN150 to DN250 to accommodate the additional airflow;*

- *Air pipework modifications for improved accessibility for the air valves in Zones 1 and 2 and retrofitting of actuators for automatic control of those valves; and*

- *RAS pipework modifications including addition of flowmeters and control valves.*

28 November 2019

WSP: Mangawhai Community Wastewater Treatment Plant. Future Options Development

Referred to in submissions to Hearing

22 May 2020

Mangawhai Community Wastewater Scheme: Wastewater strategy workshop

Irrigation Upgrades
2009 25 ha original at 350 mm/yr
2012 32 ha
2013 Consent to deficit irrigation 500 mm/yr
2016? 47 ha
2019 65.5 ha
Full Capacity reached before 3000 connections
Wet years may exceed capacity before this point.

By 2026 the CWWTP will struggle to meet the consent limits, specifically on Nitrogen Removal as the plant becomes overloaded in Summer.

Growth Timeline at 100 connections per year:

•By 2028 additional treatment capacity will be required as the plant will be

hydraulically limited at about 3,000 connections.

•Treated water pumps and rising mains will be at hydraulic capacity

•By 2028 the disposal field will have reached capacity. Additional disposal option will be required.

Mangawhai Community Wastewater Scheme: *Cost Estimates*

Discharge Options	***5000 connections***	***7000 connections***
Disposal Field	*$38m*	*$47m*
Sea Outfall	*$47m*	*$56m*
Estuary	*$26m*	*$38m*

_____