

Report No.	19-135
Information Only - No Decision Required	

OROUA GRAVEL RESOURCE STUDY (PRD 05 14)

1. PURPOSE

- 1.1. The purpose of this report is to inform members of the findings of an updated assessment of the gravel resource in the lower reach (from Feilding to the Manawatū River confluence) of the Ōroua River.

2. EXECUTIVE SUMMARY

- 2.1. The study concludes that the gravel resource in the Ōroua River has aggraded by approximately 94,000 cubic metres since it was last surveyed in 2012, which equates to around 23,500 cubic metres per annum.
- 2.2. The study has concluded that the river has aggraded over much of the gravel reach. It also notes that that the gravel reach from just below Kopane Bridge to a point about 1.2 km upstream of the Kiwitea Stream confluence was found to be in a degraded state when compared to the 2012 data.
- 2.3. As well as examining the gravel resource of the Ōroua River, this study also looked at the silt phase of the river from just below the Kopane Bridge to the Manawatū River confluence. It has been found that sedimentation has been occurring at a rate of approximately 47,000 cubic metres per annum. A comparison of cross section profiles shows that this deposition has mainly occurred on the berms, while the river channel has narrowed.
- 2.4. The significant sedimentation of the berms and the narrowing of the river channel could cause management challenges into the future. These findings align with those of the wider Lower Manawatu Sedimentation Study.

3. RECOMMENDATION

That the Committee recommends that Council:

- a. receives the information contained in Report No. 19-135.

4. FINANCIAL IMPACT

- 4.1. There are no financial impacts associated with this report or its recommendations.

5. COMMUNITY ENGAGEMENT

- 5.1. The findings of this report will be communicated to gravel extractors and other key stakeholders, principally Ngāti Kauwhata.

6. SIGNIFICANT BUSINESS RISK IMPACT

- 6.1. There are no significant business risks associated with this item.

7. BACKGROUND

- 7.1. As part of the fluvial programme, the gravel resource of the lower reach of the Ōroua River was last surveyed/ studied in 2012. This study builds upon those findings with information gathered by cross sectional survey carried out in the summer of 2015-16.
- 7.2. The Ōroua River cross sections have been surveyed at various times by Horizons Regional Council and its predecessors. These surveys have been undertaken for a variety of reasons including the design of flood protection and other infrastructure, as well as to inform the management of the river and its gravel resource.
- 7.3. Historically, the Ōroua River from the 43.5 km benchmark to the 0 km benchmark has been frequently surveyed. This section of the Ōroua River includes the gravel reach and silt phase of the river. Gravel extraction has necessitated the need to understand how these works have affected the physical characteristics of the river. Over the recent years, the surveying of the river has formed part of the fluvial programme and has been funded through the levies associated with gravel extraction consents.
- 7.4. Horizons' Infrastructure Strategy, as outlined in the current Long-term Plan, identifies "sedimentation effects on levels of service" as a significant issue in regards to the management of Council's flood protection assets. With this in mind, the surveyed section of the Ōroua River has been broken into the gravel reach and silt phase, as it is recognised the effects of sedimentation need to be considered separately.

8. REPORT PRECIS

- 8.1. The study examined the gravel resource and the silt phase of the lower reach of the Ōroua River based on an analysis of river cross section information and gravel extraction records. It covers the 43.5 km reach of the river between Feilding and the confluence with the Manawatū River.
- 8.2. Data comparison found that between 2012 and 2016 overall the gravel resource of the river has aggraded by approximately 94,100 cubic metres. This equates to approximately 23,525 cubic metres per annum.
- 8.3. This study has found that from 2012 to 2016 there were six consents for gravel extraction of the Ōroua River, three of which expired during this study period, with three remaining current as of 2019.
- 8.4. The One Plan (Table 17.1 – Long term average annual allocable volumes of gravel) separates the Ōroua into two reaches - upstream of Menzies Ford (reach 1) and downstream of Menzies Ford (reach 2). Gravel extraction has occurred at similar rates in reaches 1 and 2 of the One Plan, however no survey information is available for reach 1 so no quantitative conclusions are able to be drawn on the state of the resource in this reach; only reach 2 has been considered in terms of bed level change.
- 8.5. Reach 2 is within the aggrading gravel reach that has been assessed as part of this study. From this analysis, it has been concluded that the One Plan annual allocable volume of 55,000 cubic metres per annum is not considered to be appropriate for this reach and should be reduced to 45,000 cubic metres for sustainable gravel management.
- 8.6. The study recommends that the Ōroua River should be resurveyed in 2020-2021 up to the new survey extent recommended in the report. The extent of the survey should be increased to gain a better understanding as to how the gravel resource is being affected upstream of Menzies Ford.
- 8.7. The study looked at cross sectional changes in the silt phase of the river and found that generally the channel is narrowing and significant sedimentation has occurred on the berm land between the stopbanks. This is something the Lower Manawatu Scheme needs to be mindful of as these morphological changes may have management/ level of service impacts.

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- 8.8. Data comparison found that between 2012 and 2016 a net deposition of approximately 189,000 cubic metres occurred. This equates to approximately 47,000 cubic metres per annum.
- 8.9. The study looked at how recent trends compare with those observed in 2012 and found that the trend of degradation noticed within the gravel reach in 2012 has reversed and aggradation of the gravel resource is occurring from just below Kopane Bridge to a point 1.2 km upstream of the Kiwitea Stream confluence. It was also found that the aggradation that occurred in the silt phase of the 2012 study is a continuing trend in the findings of this study.

9. SIGNIFICANCE

- 9.1. This is not a significant decision according to the Council's Policy on Significance and Engagement.

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ANNEXES

There are no attachments for this report.