

Activity Management Plan 2021

Ohoka Rural Drainage Scheme

3 Waters | July 2021








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Contents

1	Executive Summary	4
2	Introduction.....	5
3	Related Documents	5
4	Scheme Description (What Do We Have?).....	5
5	Scheme Management Issues (What Do We Need to Consider?).....	9
5.1	Levels of Service	9
5.2	Asset Condition	11
5.3	Asset Criticality.....	14
5.4	Risk Assessment	16
5.5	Disaster Resilience Assessment	16
5.6	Growth Projections	17
5.7	Capacity & Performance	19
6	Future Works & Financial Projections (What Do We Need To Do?).....	20
6.1	Operation & Maintenance	20
6.2	Renewals Programme	22
6.3	Capital Works	25
6.4	Financial Projections	29
6.5	Valuation	30
6.6	Revenue Sources.....	30
7	Improvement Plan	31
7.1	2021 Improvement Plan	31

Tables

Table 1: Key Asset Management Components.....	4
Table 2: Scheme Statistics for 2019/2020	7
Table 3: Stormwater Pipe Data Summary	7
Table 4: Open Channel Drain Data Summary	8
Table 5: Other Stormwater Asset Data Summary	8
Table 6: Data References	8
Table 7: Elective (non-mandatory) Levels of Service Targets and Performance Measures as Assessed in 2020	10
Table 8: Pipe Condition Summary.....	13
Table 9: Number of Events per Level of Risk	16
Table 10: Risks to Assets	17
Table 11: Growth Projections	Error! Bookmark not defined.
Table 12: Summary of Capital Works (Includes Renewals)	26
Table 13: Asset Valuation	30
Table 14: 2021 AMP Improvement Plan.....	31

Figures

Figure 1: Pipe Condition Assessment Plan.....	12
Figure 2: Asset Condition Summary.....	13
Figure 3: Pipe and Facilities Criticality	15
Figure 4: Projected Operations & Maintenance 30-Year Budget.....	21
Figure 5: Annual Drainage Renewals 150 year Budget.....	22
Figure 6: Pipe Renewal Time Frames.....	24
Figure 7: Annual Projected Capital works Expenditure – 50 years.....	25
Figure 8: Projected Capital Upgrade Works (not to scale)	28
Figure 9: Projected Total Expenditure	29
Figure 10: A1 - Plan of Drainage Rating Area as of November 201	32

1 Executive Summary

The following table provides a summary of the key asset management issues of the Ohoka Rural Drainage Scheme identified through consideration of the levels of service, consents, asset condition, risk analysis, disaster resilience, growth projections, and capacity assessment:

Table 1: Key Asset Management Components

Levels of Service	The scheme meets its scheme specific service levels. Although not a scheme specific service level, with analysis now possible down to scheme level, customer satisfaction (high and very high) can be reported for this scheme at only 50%
	There is a degree of expectation about levels of service within the Mandeville community which may be difficult to meet. Further works are still planned to deal with past flooding issues, but it may also be necessary to engage with the community in the future to discuss the rates required to achieve higher levels of service
Resource Consents	There are two discharge consents associated with stormwater management areas. No non compliance reports have been received from the Regional Council over the period of the last LTP regarding these consents
Capacity & Performance	The drainage upgrade projects still under way following the effects of the June 2014 and 2017 flooding will provide additional capacity in some areas within the scheme for a 5 year storm event plus an allowance for resurgent groundwater.
Asset Condition	The majority of assets are open channels which can be maintained in perpetuity. Pipe assets in the scheme are relatively young and are assumed to be in good condition
Risk Assessment	The Whites Road drain upgrade and the Mandeville upgrades and diversion have assisted to mitigate flood risks on this scheme.
Disaster Resilience	Scheme assets are generally at low risk from natural hazards. There are 200m of reticulation mains considered to be at medium risk in an earthquake. No specific mitigation actions were identified
Growth Projections	Future growth will have some impact, but it will be mitigated by the need to control discharges to predevelopment levels.
	Given the recent flooding experienced on the scheme the impacts of future new development on the existing drainage system needs closer attention.

2 Introduction

The purpose of this Activity Management Plan (AMP) is to outline the significant issues associated with the Council's assets and to show how the Council proposes to manage the schemes in the future.

This plan summarises the various components of the Ohoka Rural Drainage Scheme, its condition and performance, and identifies future funding requirements including upgrades where necessary.

The data that has been relied upon to produce this document was taken at the end of the 19/20 financial year. i.e. 30 June 2020.

Further details of the asset management practices used by Council to manage this scheme are summarised in the District Drainage AMP Overview document.

Projects identified to improve asset management processes for this scheme will also benefit the performance of the other 3 waters schemes and are managed at a District level for efficiency.

Projects are also identified within this AMP that will maintain or improve levels of service.

All figures within this AMP exclude inflation

3 Related Documents

The following related documents have been used as reference documents or for guidance in the development of some of the sections in this Activity Management Plan.

- Waimakariri District Plan
- Population in the Waimakariri District (TRIM 170328030077)
- New Projections for LTP 2021-2031 (TRIM 200908117997)
- WDC Asset Management Policy (TRIM 180605062091)
- 2019 Customer satisfaction Survey (TRIM 200313034937)
- Development Contributions Policy 2021/22 (TRIM 200729095963)
- Flood Mitigation Works and Funding (TRIM 141009110892[v2])

4 Scheme Description (What Do We Have?)

The Ohoka Rural Drainage Scheme lies between the Cust Main Drain and Kaiapoi River and almost reaches the Wards, Two Chain and Mandeville roads.

The area contains a number of spring-fed streams running roughly in a southeast direction. These streams (the several branches of the Ohoka Stream and other waterways) eventually discharge into the Cust, Kaiapoi and Waimakariri Rivers.

The Ohoka area in pre European times was largely a swamp and since settlement a large number of drains have been constructed to drain the land for farming. The area has experienced significant development of lifestyle units and group housing clusters over former farmland in recent years.

Flooding in June 2014 impacted a number of properties within and adjacent to the scheme. A number of drain improvement projects were subsequently undertaken to address immediate flooding concerns. That programme of works is ongoing. These works have been funded through a district wide rate. The key issues in the Ohoka/Mandeville area are insufficient drain capacity for

rural residential areas and resurgent groundwater (particularly high from the winter season in June 2013 onwards through 2014, and again in 2017). This is coupled with a high level of expectation about levels of service.

The Ohoka Rural Drainage Scheme boundary was extended following the 2014 flooding event, enabling a larger rated area, and the ability to carry out works within the expanded area.

The Council operates a number of public drains in the area and is responsible for the maintenance of these and the spring fed watercourses. The majority of the drainage system within the scheme consists of open drains and road culverts.

There are three Stormwater Management Areas within the scheme, at Dawsons Rd, Wards Rd and Orbiter Drive

The currently serviced area is presented in Appendix A.

Some key statistics (end of 2019/20 year) of the scheme are shown in Table 2 to 6.

Table 2: Scheme Statistics for 2019/2020

Scheme Parameter	Statistics	Source
Drainage System	Gravity	
Drainage Area	4624 hectares	Source - GIS Layer
Reticulation & Treatment	Open drains, waterways and three stormwater management areas.	
Length of Reticulation and Open Channel Network	2.7 km Mains 68.8 km Channel	Drainage Asset Valuation Tables 9-4 and 9-5, pages 66 to 68.
Total Replacement Value	\$3,674,215	
Depreciated Replacement Value	\$3,419,410	
Properties rated	1229	Source 2019/20 Rating Query

Table 3: Stormwater Pipe Data Summary

Stormwater pipe length (m) by diameter and pipe material													
Pipe Material	Pipe Diameter (mm)												Total
	100	150	225	300	375	450	525	600	750	900	1050	>1200	
Concrete	0m	0m	1,083m	87m	199m	14m	0m	228m	0m	0m	0m	0m	1,611m
Perforated HDPE	155m	0m	0m	0m	0m	0m	0m	0m	0m	0m	0m	0m	155m
PVC	0m	0m	192m	326m	152m	0m	0m	0m	0m	0m	0m	0m	670m
Total	155m	0m	1,275m	413m	351m	14m	0m	228m	0m	0m	0m	0m	2,436m

Table 4: Open Channel Drain Data Summary

Open Channel Drains	
Material	Length (m)
Unlined Drain	68,759
Lined Drain	0
Total	68,759

Table 5: Other Stormwater Asset Data Summary

Stormwater Assets	
Asset Type	Count
Inlet (Sump)	0
Manhole	15
Node	15
Valve	0
Total	30

Table 6: Data References

Data Reference	Trim Reference
2020 3 Waters Asset Valuation	200824109857
Flood Mitigation Works and Funding	141009110892
2020 50 Year Water and Sewer Growth Forecast	200224024348
3 Waters Consents Database	180511051873

5 Scheme Management Issues (What Do We Need to Consider?)

There are a number of key aspects to consider when managing a drainage scheme; these include:

- Desired & actual levels of service
- Asset condition & criticality
- Capacity & Performance
- Risks
- Growth predictions for the scheme

These issues have been assessed in detail and are summarised in the following sections.

5.1 Levels of Service

Table 7 sets out the performance measures and targets for the scheme, and performance achievement against targets since 2008.

Mandatory performance measures are measured at the district wide level and are not included in the individual drainage scheme AMPs. They are located in the District Overview Drainage Activity Management Plan. However, there is considerable overlap between the measures at Scheme and District levels. Mandatory measures cover flooding, consent compliance, time to respond to faults, and complaints. The scheme LOS measures include more detail, and cover complaints, consent compliance, flooding, but not response times, which are only measured at scheme level

None of the WDC targets are planned to change over the 10 year LTP period, so only the one target value has been shown in this document.

Performance in Table 7 is measured against the performance measures set in 2018, as part of the 2018-28 Long Term Plan process. Going forward from 2021 onwards, performance will be against the modified set of performance measures that were presented to the Council's Utilities and Roding Committee in 2020 (refer report 200406043184[v2]), and subsequently approved by Council. These revised levels and targets are detailed in the District Overview Water Supply Activity Management Plan.

While the level of customer satisfaction with the service, as measured by the three yearly survey, is not a level of service at scheme level, the latest survey has enabled that measurement. Only 50% of those surveyed reported a high or very high level of satisfaction. This is quite low, and whether further initiatives are warranted to improve this figure, will need to be assessed after the current planned capital works have been completed.

Table 7: Elective (non-mandatory) Levels of Service Targets and Performance Measures as Assessed in 2020

* Note “Y” indicates that the LOS has been met, and “N” indicates it has not been met

Details of performance measures may have been modified between various revisions of the AMP. The Previous Results reported are as assessed against the most relevant performance measure at the time of assessment.

Section	Level of Service	2018 – 2021 Performance Measure	2018 – 2021 Target	2020				Previous Results*			
				Result	Commentary	Status	Action to Address	2017	2014	2011	2008
Resource Consent	Consent Breach	Number breaches of consent conditions that result in an ECan report that identifies compliance issues.	Nil per year	0%	There were no consent breaches that resulted in non-compliance reports being received from Environment Canterbury for FY 19/20.	Achieved	N/A	Y	-	-	-

5.2 Asset Condition

The current assessment of asset condition is based on theoretical remaining useful life derived from component age and adopted useful life. Adjustments to the remaining life are made to individual components where information is available to suggest the theoretical remaining life is inappropriate.

Figure 1 below, shows the assessed pipe condition for all pipes within the scheme. Figure 2 summarises the theoretical asset condition for both the network and headworks in a graph, while Table 8 provides more detail about the value of the assets within different asset condition categories.

Figure 1: Pipe Condition Assessment Plan

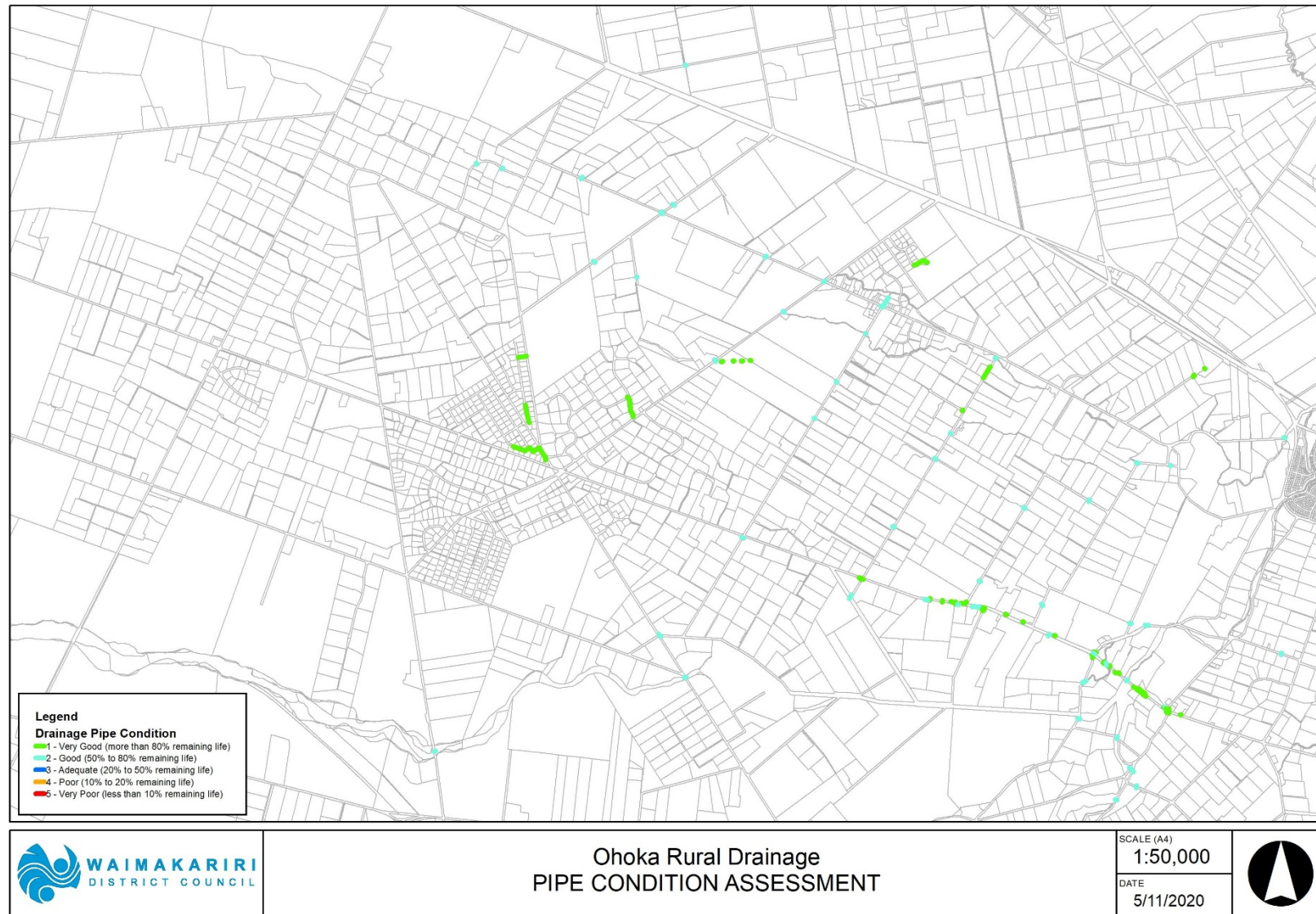
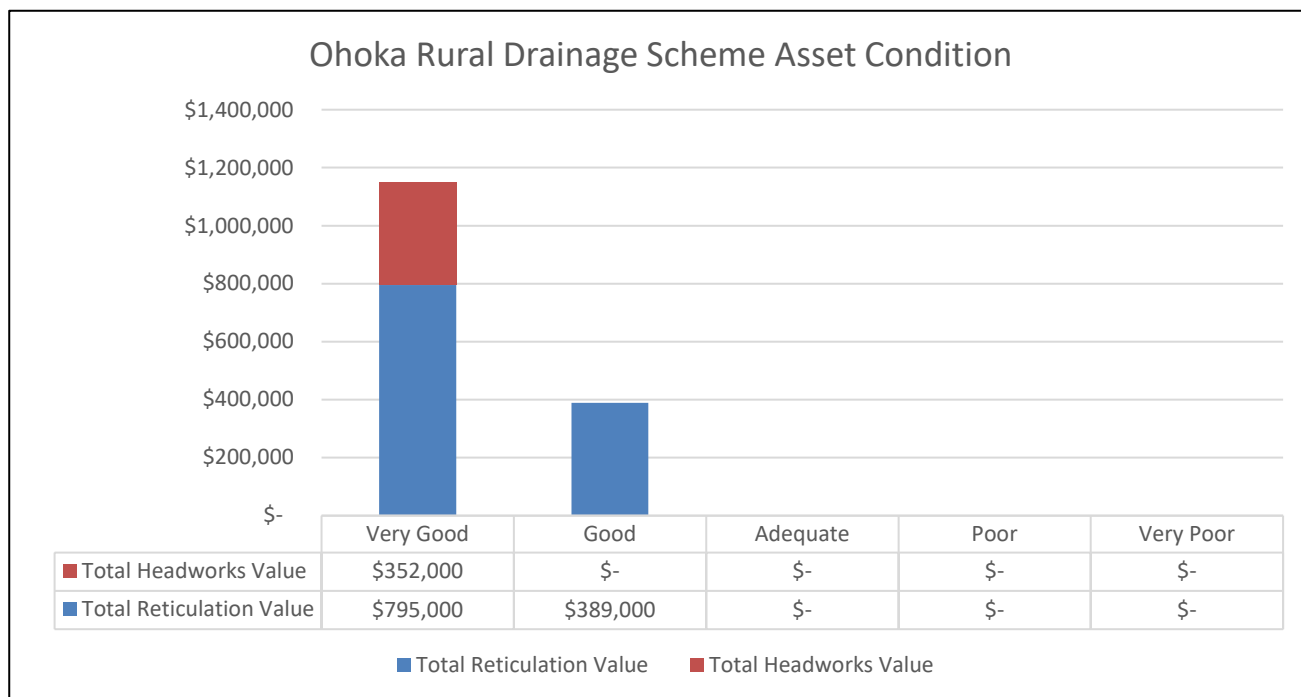


Figure 2: Asset Condition Summary



“Headworks” is inclusive of all above ground assets associated with the scheme

Table 8: Pipe Condition Summary

Condition Grade	Definition	Pipeline Quantity	Total Reticulation Value	Total Headworks Value	Total Value
1	Very Good <i>More than 80% of life remaining</i>	2.0 km 61%	\$ 795,000 67%	\$ 352,000 100%	\$ 1,147,000 75%
2	Good <i>Between 50% and 80% of life remaining</i>	1.3 km 39%	\$ 389,000 33%	\$ - 0%	\$ 389,000 25%
3	Adequate <i>Between 20% and 50% of life remaining</i>	0.0 km 0%	\$ - 0%	\$ - 0%	\$ - 0%
4	Poor <i>Between 10% and 20% of life remaining</i>	0.0 km 0%	\$ - 0%	\$ - 0%	\$ - 0%
5	Very Poor <i>Less than 10% of life remaining</i>	0.0 km 0%	\$ - 0%	\$ - 0%	\$ - 0%
Total		3.2 km	\$ 1,184,000	\$ 352,000	\$ 1,536,000

5.3 Asset Criticality

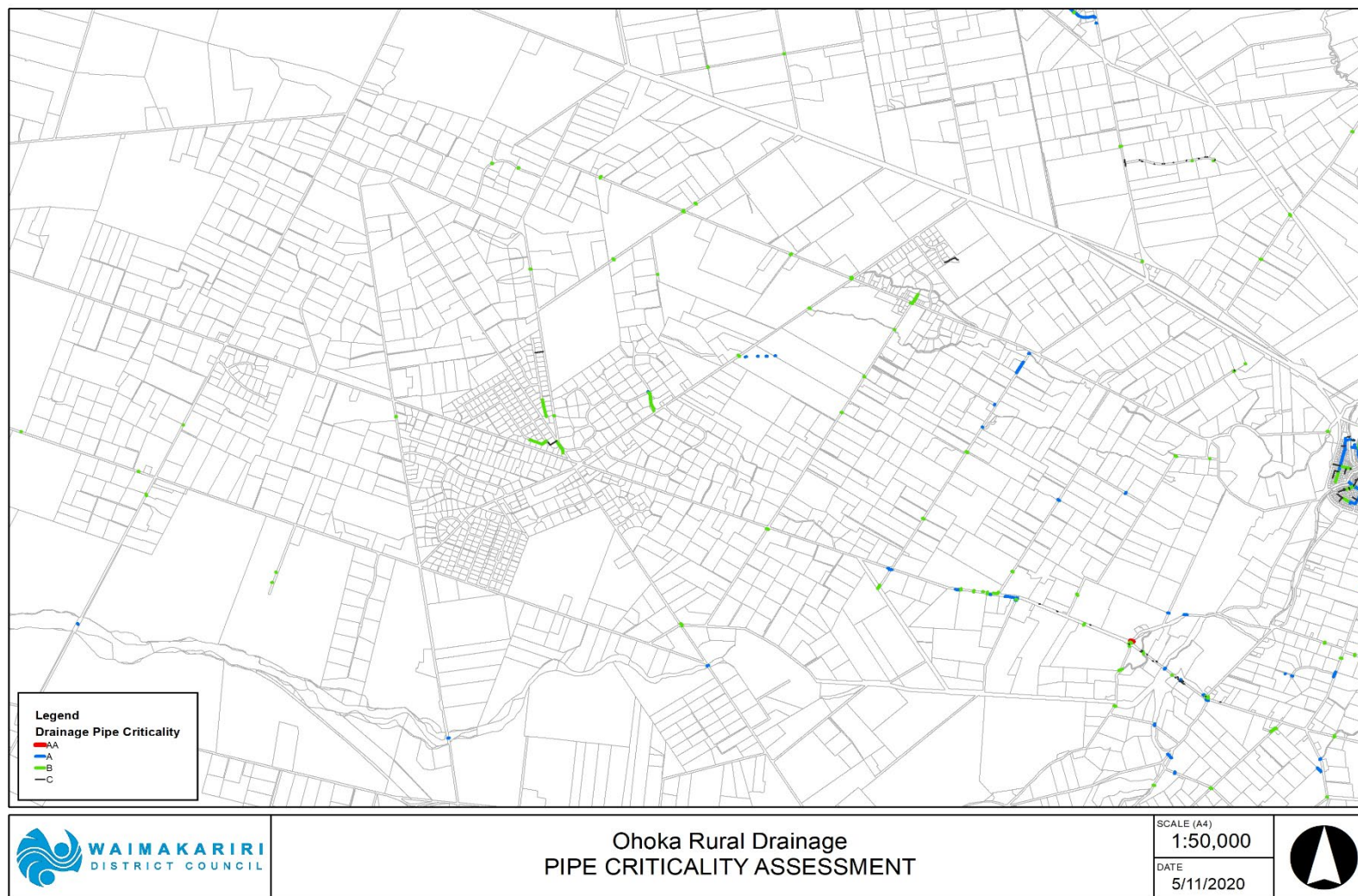
Asset criticality provides an indication of the importance of an individual asset and the corresponding impact on the service delivery should the asset fail for any reason. Criticality is used in risk based investment decisions to help decide when an asset should be replaced to avoid the consequences of failure. For 3 Waters Council has developed an assessment process which scores assets from most critical 'AA' to least critical 'C'. Further details of the criticality assessment methodology is covered in the Drainage Overview AMP. Note that it does not apply to the majority of rural drainage scheme assets, which are open drains and channels which can be maintained effectively in perpetuity.

The criticality assessment is used as an input to the renewals model. Further details of the methodology is covered in the Drainage Overview AMP.

The criticality scoring process, has been significantly improved through automation and dynamic links to GIS data layers for this AMP.

Figure 3 provides a spatial view of asset criticality for the scheme.

Figure 3: Pipe and Facilities Criticality



5.4 Risk Assessment

An Operational Risk Assessment was first undertaken for the components of the Drainage Scheme in 2004, and it has been regularly updated since that time. It was last updated for the 2015 AMP review. At the last review only one high risk remained for the Ohoka drainage scheme.

The District Wide Overview details the risk events considered and includes a summary of the risk assessment results for all the drainage supply schemes and is useful in indicating overall drainage network priorities.

Table 9 summarises the risks for the Ohoka Rural Drainage scheme.

Table 9: Number of Events per Level of Risk

Risk Level	2004	2008	2011	2014
Extreme risks	0	0	0	0
High risks	0	0	0	1
Moderate risks	8	8	11	10
Low risks	7	7	5	5
Not applicable	12	12	12	12
Total	27	27	28	28

The one risk identified in the 2014 assessment related to flooding due to insufficient capacity in the network. The works identified as being needed to resolve the flooding problems are ongoing with completion planned for 2025/26. These works are being funded by the district wide flood response rate.

District wide, moderate risks are being deferred until extreme and high risks have been addressed.

5.5 Disaster Resilience Assessment

The 2009 Disaster Resilience Assessment (DRA) is a desk top study that primarily considered the risks to above ground structures presented by natural hazard events across all Council operated 3 Waters schemes. The original assessment was updated in 2012 using revised hazard and asset behaviour information captured during the 2010-11 Canterbury earthquake sequence.

The Ohoka scheme area is not susceptible to liquefaction, so the pipeline vulnerability assessment process carried out within other scheme boundaries is not relevant. However reticulation mains were assessed for earthquake risk, and 200m were concluded to be moderate low risk. No specific mitigation actions were identified.

Above Ground Assets

There are no above ground drainage assets in this rural scheme

Table 10 details the hazard impacts that the scheme is exposed to.

Table 10: Risks to Assets

Threat	Hazard Impact
Flooding	Up to 3 metres of flooding from local sources. Flood waters ponding in the north eastern parts of the scheme.
Earthquake	Vulnerable to shaking effects
Liquefaction	None
Slope Hazard	Low to very low threat
Tsunami	None
Wildfire	Medium to very high threat
Snow	30-40cm could be expected
Wind	Low to high threat
Lightning	District wide hazard
Terrorism	District wide hazard

The Councils response to these risks is being managed at a district level via the DRA Action Plan and related projects. Refer to the District level AMPs for details.

5.6 Growth Projections

There are a number of factors that are likely to influence future demand on land drainage systems. These may include:

- Population trends
- Changes in land use
- Climate change
- Changes in legislation
- Advancements in drain management

Until recently the Ohoka Rural Drainage Scheme was substantially rural farmland. However a number of farms have been subdivided into four-hectare rural lifestyle blocks or smaller rural residential clusters. There has also been some further residential style development in Ohoka Village. This growth of lifestyle blocks and rural residential clusters in Ohoka and Mandeville is expected to continue.

With a policy of runoff being held to predevelopment levels, any new development should not adversely impact on land drainage in the area. However given recent flooding experienced on the scheme the impacts of new development on the existing area will be monitored.

The overall district population growth scenario used for the 2021 AMP update was supplied by Council's Development Planning Unit, broken into towns and rural areas. Stormwater growth projections were calculated using the New Projections for LTP 2021-2031 (TRIM200908117997), which was the basis for infrastructure planning.

Due to issues that have occurred with the Census 2018, the population projections that would normally be used as a basis for updating the work previously developed by the Council's Development Planning Unit have not been released by Stats NZ in time for the development of this assessment.

However, based on the historical growth patterns of new dwelling Building Consents over the last three years (636 in 2017/18, 661 in 2018/19 and 615 in 2019/20), the projections used for the previous LTP/infrastructure strategy remain valid to be used for infrastructure planning. As the timeframe for this infrastructure planning is for the thirty years between 2021 to 2051, the previous population projections have been extended out a further three years, as documented in New Projections for LTP 2021-2031 (TRIM200908117997).

It is important to provide a brief comment on COVID19 and the impact it could have on population projections. At the time of writing this paragraph (August 2020), New Zealand is currently in Level 3 restrictions in Auckland and Level 2 restrictions in the remainder of the country. While international migration is currently low arising from the COVID19 travel restrictions, a significant number of New Zealanders are returning home due to the impact of COVID19 on overseas countries. This has contributed to a high level of population growth nationally over the last six months, which has had a flow on effect to growth in the Greater Christchurch and Waimakariri Districts. How long this might continue for and when international migration (from other countries) might return to pre COVID levels is still to be determined. However the existing population projections remained the most appropriate to use for infrastructure planning at this time.

Growth for the Stormwater schemes was calculated using the WDC population projections (TRIM200908117997). Growth in the number of properties expected to be included within the whole drainage scheme are included in Table 11 below.

Table 11: Growth Projections

Ohoka Rural	Rates Strike	Years 1 - 3	Years 4 - 10	Years 11 - 20	Years 21 - 30
	2019/20	2021/22 to 2023/24	2024/25 to 2030/31	2031/32 to 2040/41	2041-42 to 2050/51
Projected Properties	1299	1400	1539	1727	1890

Note that the time frames have been chosen to reflect the periods 3, 10, 20, 30 and 50 years from the AMP release date, however due to the time it takes to complete the analysis the base rates strike data used was from 2019/20.

To calculate connection growth numbers from the population projections, existing Ohoka Rural drainage connections were counted in Mandeville, Ohoka and Rural population growth areas, from New Projections for LTP 2021-2031 (TRIM200908117997). The population growth rate from these areas was proportioned and combined to produce a growth rate for Ohoka Rural connections, for the development horizons in Table 11.

5.7 Capacity & Performance

Following drainage problems that occurred in the June 2014 rainfall event, investigations into land drainage improvements were initiated, and a subsequent programme of works has been initiated. These were designed to address the insufficient drain capacity and resurgent groundwater, and have mostly been completed. (TRIM 141009110892). The 2017 events identified some other issues in the Mandeville area, for which resolution is expected from the remaining programme of works

Remaining to be completed are:

- Drainage improvement works in the Wetherfield Lane / Roscrea Place / McHugh's Road area
- Long term solution for managing resurgence flows through the Mandeville area. Stage 1 (2023/25) upgrade of existing network. Stage 2 (2025/26) diversion of flow to Old Eyre River Bed

6 Future Works & Financial Projections (What Do We Need To Do?)

This section covers the future works required to meet the target levels of service, maintain the asset in an acceptable condition, reduce the risks to an acceptable level and accommodate growth.

6.1 Operation & Maintenance

Maintenance of the open drains is a combination of proactive and reactive work. Drains known to require clean out are completed on an annual basis, with other drains being cleaned when notification is given by adjacent landowners. Much of the routine work is done in the summer months when weed growth is at its peak. In some locations only hand cleaning and or spraying is possible given the limited access available.

Depending on weed growth, some areas may be cleaned more than once a year. This is particularly so where drains are in highly visual areas such as retention ponds. In addition to weed-spraying, drains are cleaned out generally with a weed rake attached to a digger arm.

The new district wide consent for drainage maintenance, will change the emphasis of waterway maintenance practices so that environmental and ecological outcomes are ranked equally with drainage outcomes. A comprehensive management plan has been developed to guide this change (TRIM 201203164171) and which forms part of the consent.

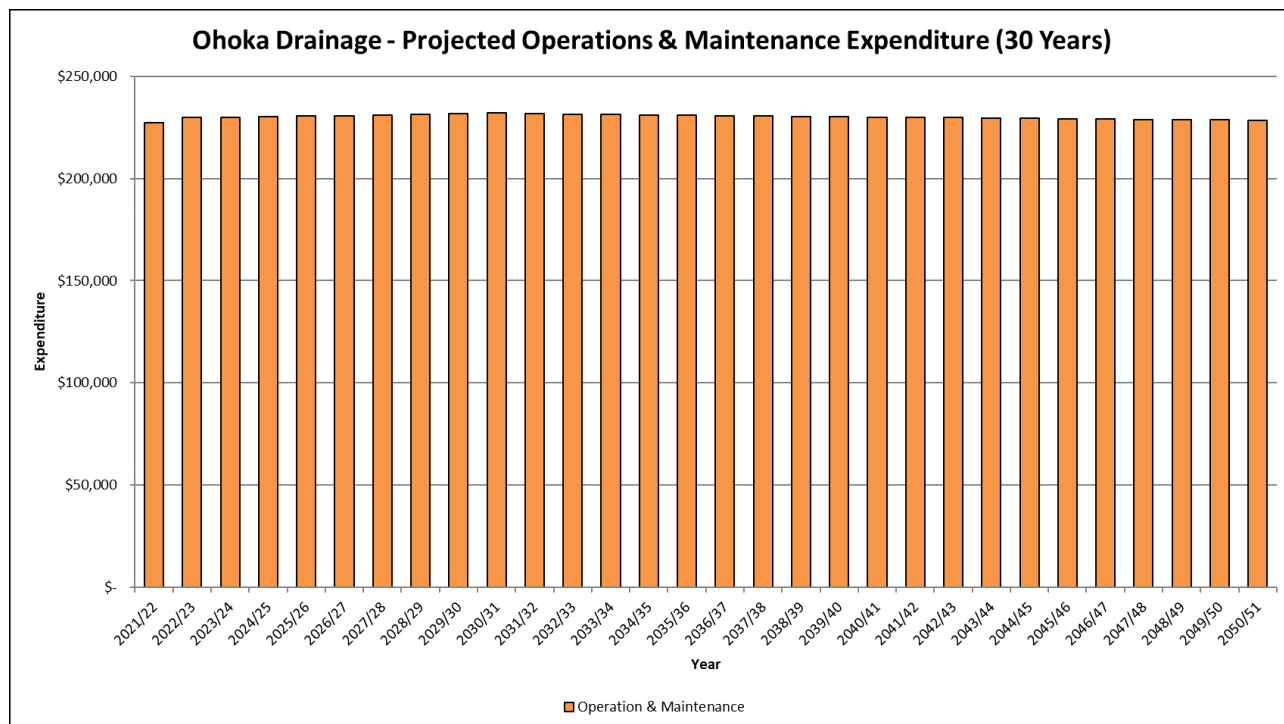
There are no pump stations in the Ohoka Rural Drainage Scheme, so Council's Water Unit are not involved in maintenance. Inlet grills and rural drains are maintained by the WDC Drainage Maintenance Contractor.

Little active maintenance is carried out on the reticulated network. The CCTV programme now under way will provide information as to whether more active maintenance is required.

Figure 4 shows the projected Operations and Maintenance budget over the next 30 years.

Systems are not yet in place to capture the cost distinction between planned and unplanned maintenance.

Figure 4: Projected Operations & Maintenance 30-Year Budget



6.2 Renewals Programme

Renewal expenditure is work that does not increase the capacity of the existing asset, rather it restores the system to its original capacity. Renewal work is funded from a budget generated by the depreciation component of the rates. The annual funding required to ensure long term funding is available to replace assets in the future is shown in Figure 5.

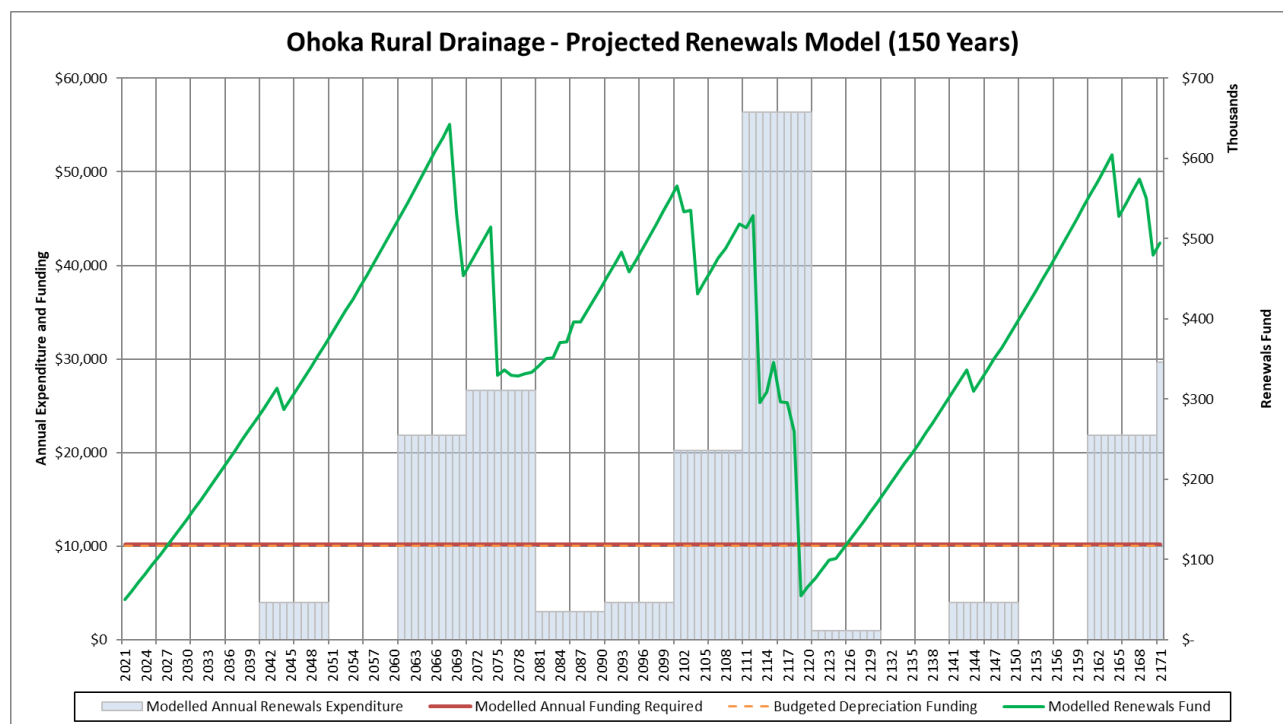
The renewals programme is determined in two stages. The renewals model, details of which are provided in the overview document, provides a long term view of the required funding.

The model prioritises candidates for consideration by Asset Managers for renewal based on criticality, risk, and expected asset life. Renewal of pipework assets are then programmed on an annual basis, taking into account the outputs from the renewals model, but also being informed by other works that may be planned in the area, as well as local asset history for the cases where a particular asset may be performing differently than its base life suggests.

The figure only shows the output from the model, so expenditure shown in the graph for the first three years may be different from the expenditure shown in the LTP

For the Ohoka scheme, since the average condition of the assets is assumed to be good, and the assets are relatively young, no actual renewals are expected to be needed until at least 2067.

Figure 5: Annual Drainage Renewals 150 year Budget



The key parameters in the figure above are explained below:

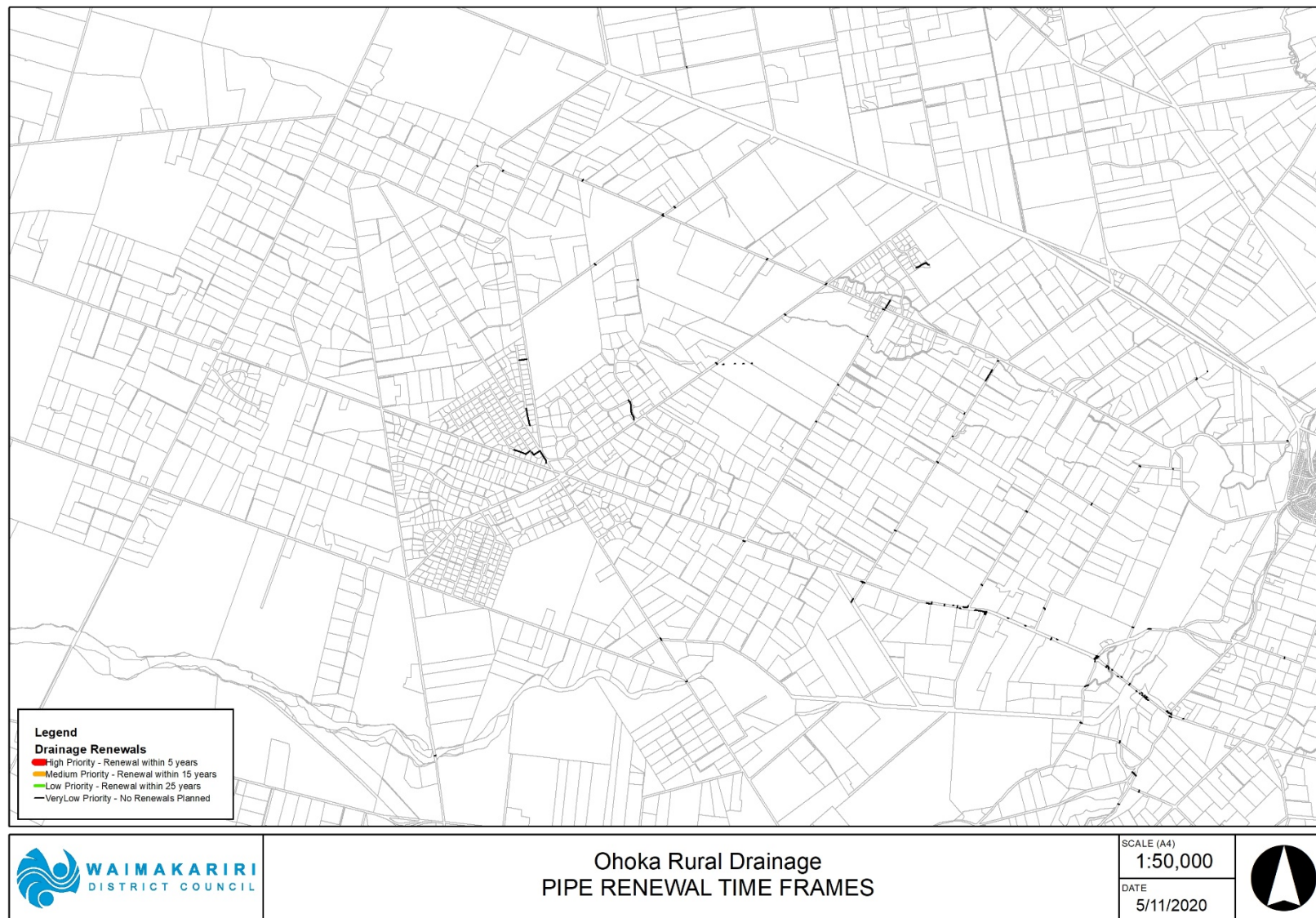
- **Modelled Annual Renewals Expenditure:** This is the direct output from the renewals model, recommending the annual investment to be made in renewals each year.
- **Modelled Annual Funding Required:** This is the amount of annual renewals funding required, to ensure there are sufficient funds available to carry out the recommended annual renewals each year.
- **Budgeted Depreciation Funding:** This is the actual amount of depreciation being collected, which is extracted from the Council's budgets.

- **Modelled Renewals Fund:** This is the modelled balance in the renewals account, assuming the annual funding and annual expenditure is completed as per the recommendations from the renewals model. As can be seen, this account is maintained as a surplus, peaking later this century, before being drawn down as the first lifecycle of current assets is completed.

The key point to note is that the Budgeted Depreciation Funding matches the Modelled Annual Funding Required. Depreciation is fully funded and there are no issues with deferred renewals.

The planned renewals for this scheme, which are the outcome from the described process, are shown spatially and temporally in Figure 6 below

Figure 6: Pipe Renewal Time Frames



6.3 Capital Works

The Ohoka Rural Drainage Scheme and surrounds were significantly affected by the June 2014 flood event. As a result of this flooding a programme of new works was been initiated, and is not yet completed

Projects remaining are:

- Drainage improvement works in the Wetherfield Lane / Roscrea Place / McHughs Road areaWhites Road upgrade Stage 2
- Long term solution for managing resurgence flows through the Mandeville area. Stage 1 (2023/25) upgrade of existing network. Stage 2 (2025/26) diversion of flow to Old Eyre River Bed.

Figure 6 shows the budget for all planned growth, levels of service works and renewals on the Ohoka drainage scheme that are funded by scheme residents. It does not the show flood improvement works expenditure funded by the district flood response rate noted above. The expenditure shown in 2021/22 is for development of a new stormwater management area to cater for growth.

Figure 7: Annual Projected Capital works Expenditure – 50 years

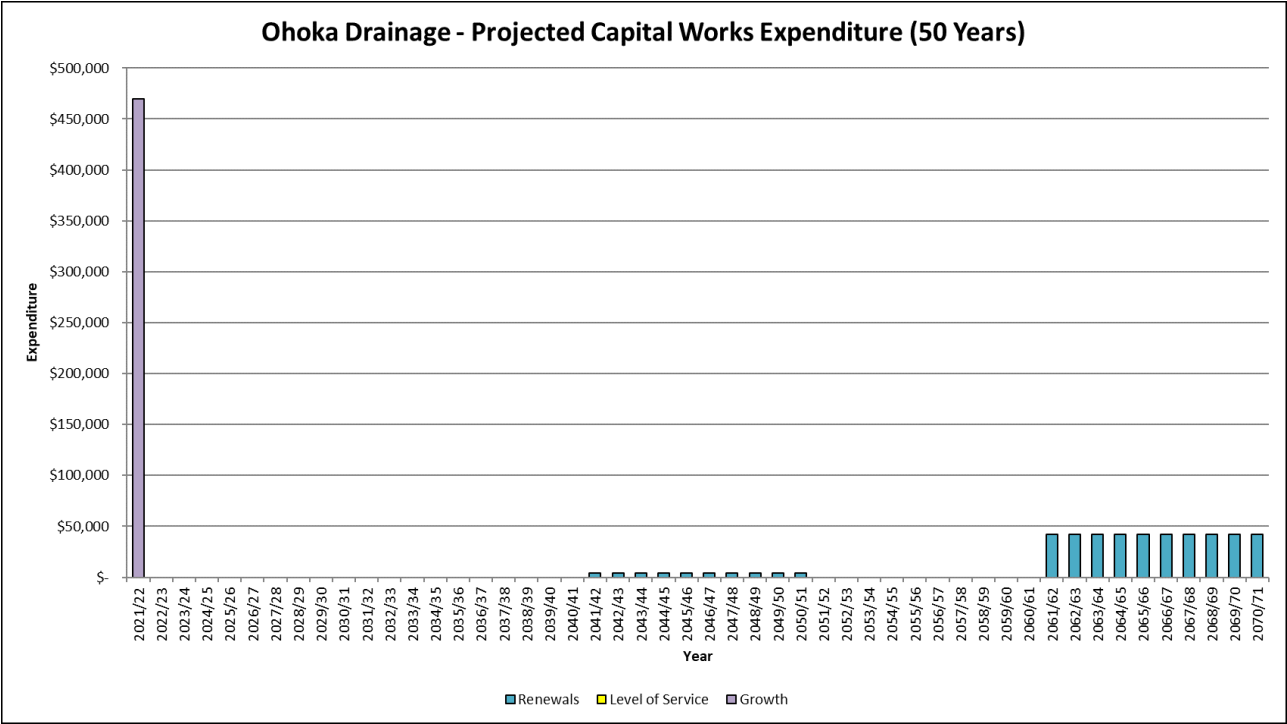


Table 12 summarises the projected capital works for the next 50 years, including renewals, but excluding flood response work.

The level of confidence in the budget for the works (High / Medium / Low) is presented in the table. For a more complete discussion on the level of optimisation, refer to the introductory chapter of the AMP. The figures in the table are not adjusted for inflation.

Any programme or project that occurs over a number of years is only shown within the table for the first year in which it occurs. The Project Value indicates the projected total cost of the project over the number of years it occurs.

Table 12: Summary of Capital Works (Includes Renewals)

Year	Project ID	Project Name	Level of Confidence	Project Value	LOS Component	Renewals Component	Growth Component
Year 1 - 10							
2022	URD0077	Mill Road SMAs	0	\$ 470,000	\$ -	\$ -	\$ 470,000
Year 21 - 30							
2042	URD0138	Ohoka Rural Drainage Long Term Headworks Renewals	3 - Low	\$ 156,398	\$ -	\$ 156,399	\$ -
Year 31 - 50							
2062	URD0085	Ohoka Rural Drainage Long Term Reticulation Renewals	3 - Low	\$ 301,432	\$ -	\$ 301,433	\$ -
Grand Total				\$ 927,830	\$ -	\$ 457,831	\$ 470,000

Note: the Ohoka Rural Drainage Scheme renewals item indicates the total renewals programme value for the 50 years beginning 2025/26.

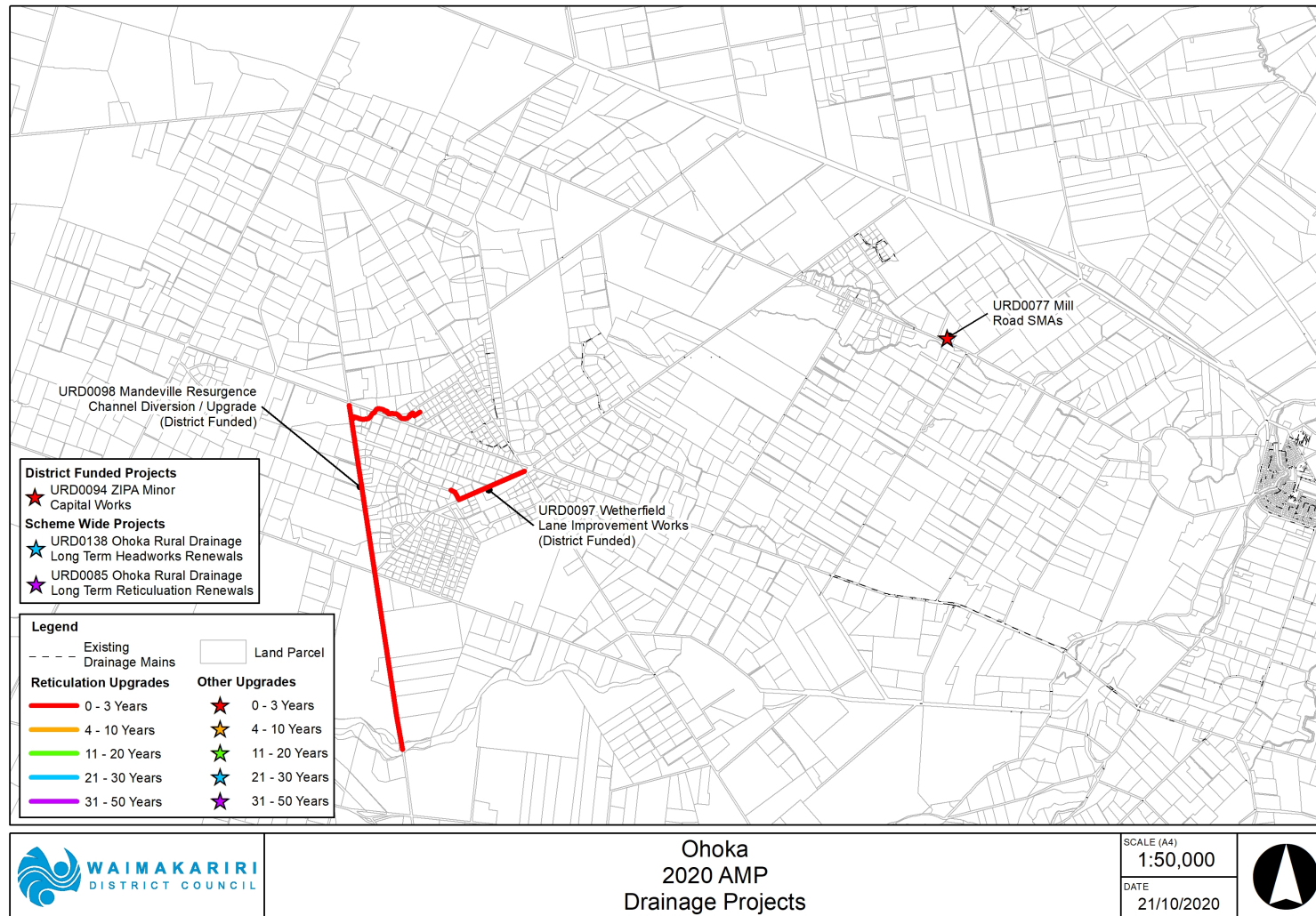
Flood Response Programme

The following additional works, planned within the Ohoka Drainage Scheme geographical boundary, are to be funded by the district wide flood response rate

Year	Project ID	Project Name	Level of Confidence	Project Value	LOS Component	Renewals Component	Growth Component
Year 1 - 10							
2022	URD0097	Wetherfield Lane Improvement Works	5 - Medium	\$ 160,000	\$ 160,000	\$ -	\$ -
2022-26	URD0098	Mandeville Resurgence Channel Diversion / Upgrade	3 - Low	\$ 1,350,000	\$ 1,350,000	\$ -	\$ -
Grand Total				\$ 1,510,000	\$ 1,510,000	\$ -	\$ -

Figure 8: Projected Capital Upgrade Works (not to scale)

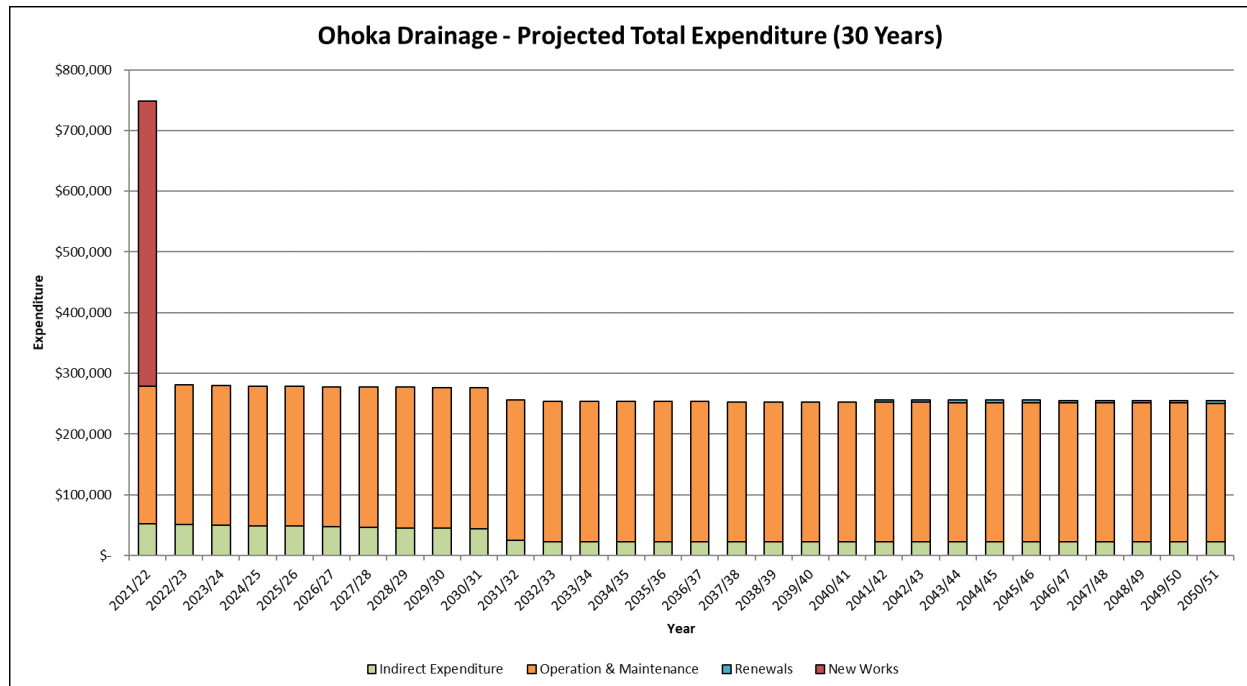
Includes works funded through the flood response works



6.4 Financial Projections

The following graph summarises the breakdown of projected total expenditure over a 30 year time horizon. It includes both operational and capital expenditure (with the exception of the flood response work). Operational costs include operations and maintenance, and indirect expenditure. Indirect expenditure includes interest, rating collection costs, costs associated with maintaining the Asset Register, and internal overhead costs. Capital includes expenditure for growth, levels of service and renewals (including carry forwards), but excludes projects funded by the district wide drainage rate.

Figure 9: Projected Total Expenditure



6.5 Valuation

A full peer reviewed valuation of assets is carried out on a three yearly cycle, using the asset data in our asset management information system. Table 13 below provides a summary of the replacement cost, depreciated replacement cost and annual depreciation for this scheme

Table 13: Asset Valuation

Asset Type	Unit	Quantity	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
Manhole	No.	15	\$144,903	\$133,223	\$1,449
Sump	No.	0	\$-	\$-	\$-
Valve	No.	0	\$-	\$-	\$-
Network Main	m	2,653	\$1,051,852	\$814,830	\$10,856
Open Channel	m	68,759	\$2,125,491	\$2,125,491	\$-
Facilities			\$351,969	\$345,866	\$2,157
Total			\$3,674,215	\$3,419,410	\$14,462

6.6 Revenue Sources

Revenue is provided from two key sources; targeted rates and Development Contributions. Development contributions are calculated in accordance with Council's Development Contributions Policy (TRIM [191129168016](#)), while targeted rates are charged in accordance with Council's Revenue and Financing Policy (TRIM 180522056008).

Generally rates are targeted rates charged to homeowners within the schemes geographical boundaries. There is also a district wide Flood Response rate which is used to fund flood improvement works anywhere within the district.

7 Improvement Plan

7.1 2021 Improvement Plan

Table 14 details the scheme specific improvements recommended to address the management issues identified in Section 3. Each improvement item has been tagged to either a capital project or, a process improvement project to help manage and track Councils response. Short term indicates within the first three years of the LTP, long term, out beyond 2021.

If the table is empty, this indicates that all improvements required are either district wide improvements (covered by the Overview AMP), or covered by a capital project or projects, covered in the Capital Works section.

Table 14: 2021 AMP Improvement Plan

Project Ref	AMP Section	Project Description	Priority	Status	Estimated Cost
NA	NA	NA	NA	NA	NA

APPENDIX 'A'. PLANS

Figure 10: A1 - Plan of Drainage Rating Area as of November 2017

