14 November 2025

te kaunihera ā-rohe o
matamata-piako
district council

Waitoa Water Supply – further option information

This memo explains the estimated costs for two water supply options for Waitoa:

- Installing a community water bore
- Connecting to the town water supply from Te Aroha

The information comes from a WSP report (February 2023, attached) and a Council report (September 2024, refer to the Background Document).

Community Bore

Council decided not to proceed with this option because of high estimated costs. However, if the community wants to explore this, here are the details:

Estimated cost: About $8.5 million when adjusted for today's prices (including a 30% margin for unexpected costs).

This estimate assumes things like good groundwater quality, available land, and suitable ground conditions. Further information is on p.7-8 in the attached report.

Information has been provided on the MacKay Subdivision, Waihou (Background Document case study and inperson session on 1 November). More details about a bore supply will come from:

- Waikato Regional Council – aquifers and consent process
- Taumata Arowai – rules for medium water supplies (101–500 people)
- Brown Bros Drilling – costs and considerations

Council Supply from Te Aroha

Estimated cost: About $8.2 million (based on WSP report and adjusted for today's prices).
In the report, each option has a high level cost breakdown and for those not familiar with the terminology the following information may be helpful.

Pipes ($1.3 million)

The current water pipes in Waitoa are old and don't meet modern standards. If Council owns the supply, we must replace them to keep drinking water safe and meet legal requirements.
Old pipes can let contaminants into the water. The law requires us to reduce this risk as much as possible.

Replacing the pipes also ensures enough water pressure and flow, including for fire safety.

If the community wants to own and operate their water supply, such as a communal bore, they can spend less to upgrade the supply. But there's the risk of not complying with drinking water legal requirements.

Indirect Costs

These are extra expenses like office rent or admin costs. They usually add 10–25% to the total.

MPDC Costs

WSP costs are very conservative and we expect these to be about $125,000–$150,000. This covers things like project management and approvals.

Further information is on p.9-15 in the attached report.

Memorandum

To	Santha Agas, Aaron Toone
Copy	Jivir Viyakesparan, Michaela Howard
From	Mohit Gupta, MacGregor Chase
Office	Hamilton
Date	15 February 2023
File/Ref	2-WLASS.HL
Subject	Waitoa Water Supply High Level Cost Estimate
Status	Final

1 Introduction

Matamata-Piako District Council (MPDC) engaged WSP to carry out a high-level cost estimation for the water supply network of Waitoa. The Waitoa township consists of approximately 100 households and is located nearby the Fonterra Waitoa dairy factory. Fonterra currently provides water to the township from a chlorinated surface water supply and provides wastewater collection treatment and disposal.

Fonterra has approached MPDC to take over the water supply system. Replacement, rehabilitation and maintenance of assets as well as provision of new assets are all key to providing adequate customer service levels to Waitoa. MPDC has developed proven asset management techniques and experience in operating water distribution and collection networks and therefore require an understanding of the costs to take ownership the Waitoa water supply network.

1.1 Scope

In this assessment, WSP has developed a water supply network, based on the **Regional Infrastructure Technical Specifications (RITS)** to estimate a high-level cost for a new water supply network. Four scenarios were assessed:

- **Scenario 1**: Development of a new surface water source in Waitoa, replacement of existing Waitoa reticulation and supplying new connections to entire township.
- **Scenario 2**: Development of a new ground water source in Waitoa, replacement of existing Waitoa reticulation and providing new connections to entire township.
- **Scenario 3**: Supplying water from Te Aroha water supply via a new pipeline from Te Aroha, replacement of existing Waitoa reticulation and providing new connections to entire township.

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150 YEARS IN AOTEAROA

- **Scenario 4 and 5**: Supplying water from Te Aroha via a new main connected at the end of the Waihekau Road pipeline near the Inghams Factory, replacement of existing Waitoa reticulation and providing new connections to Waitoa.

1.2 Limitations

This report (**'Report'**) has been prepared by WSP exclusively for Matamata-Piako District Council District Council (**'Client'**) in relation to Cambridge 2022 Base Operational Model Review and Leamington Network Assessment (**'Purpose'**) and in accordance with the Instruction for Service:/ Purchase Order Number: 138621 on February 2022. WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.

In preparing the Report, WSP has relied upon data, readings and other information (**'Client Data'**) provided by or on behalf of the Client. Except as otherwise stated in the Report, WSP has not verified the accuracy or completeness of the Client Data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in this Report are based in whole or part on the Client Data, those conclusions are contingent upon the accuracy and completeness of the Client Data. WSP will not be liable in relation to incorrect conclusions or findings in the Report should any Client Data be incorrect or have been concealed, withheld, misrepresented, or otherwise not fully disclosed to WSP.

1.3 Assumptions

No data on the existing water network was available from Fonterra and the water supply network was assessed using the following assumptions:

- A Hydraulic model was built with the four scenarios to size the pipe and other assets.
- Ground levels were taken from the contour file provided by MPDC.
- Location for **Water Treatment Plant (WTP)** treated water reservoir and bore well has been assumed.
- WSP has utilised a combination of price indices, recent contracts, and professional judgement and experience to generate the unit rates used for cost estimation.
- Surface water level is assumed and confirmed from client at -2 m below the ground level near treatment works.
- Ground water level is assumed and confirmed from client at -20 m below the ground level near treatment works.

1.4 Approach

WSP has used the design criteria set out in the Regional Infrastructure Technical Specifications[1] (RITS) document.

The assessment approach used are listed below:

- Conduct a hydraulic model run to review the **Level of Service (LoS)** to confirm pipe sizing. From RITS 200 kPa (20 m).
- Run a FW2 fire flow test in the model to locate fire hydrants pipe sizing. From RITS, "Lots shall be serviced, at any point from a single ended 150mm diameter watermain (unless water modelling proves that DN100 will be sufficient)".
- Develop a high-level cost estimation using recent unit rates.

From the RITS Table 6.2, the following Standard Pipe Details have been used.

[1] Waikato Local Authority, Shared Services – Regional Infrastructure Technical Specifications (RITS), May 2018.

	Size and material Two	Internal Diameter used in model (ID mm)
Connections	Various Sizes, PE 80B MDPE	
Rider mains	63 mm OD MDPE (DN 50), PN12.5	51
Fire mains / Principal mains	DN 150 PVC or PE 100 (unless water modelling proves that DN 100 will be sufficient), DN 200, all PN12.5	DN 100 = 101.70 DN 150 = 142.65 DN 200 = 203.10
Trunk mains	DN 250, DN 300 Series 2 PVC-O or DN 315, DN 355 PE 100 (see note 2).	DN 250 = 252.90 DN 315 = 267.55 DN 355 = 301.60
Notes 1 **DN 200 may be used to provide firefighting flows and in that situation can have service connections.** 2 >DN 300 is considered a bulk main and requires specific design in consultation with council		

The standard pipe configuration used follows Table 6.3 of RITS.

Area	Configuration
Residential	Principal main on one side of the road and a rider main on the other.
Industrial, Commercial, medium high density residential and arterial or dual carriageway streets	Principal main on both sides of the road.
All other area	Principal main on one side of the road and a rider main on the other.

2 Infrastructure Assessment

2.1 Scenario 1: Development of New Water Surface Source

This Scenario consists development of a new surface water source in Waitoa, replacement of existing Waitoa reticulation and providing new connections to entire village.

Initial pipe sizes used followed the RITS criteria for Trunk, Distribution and service pipelines as shown below in Figure 2-1.

A layout plan is provided in Appendix A, detailing the nominal diameter and length of pipe.

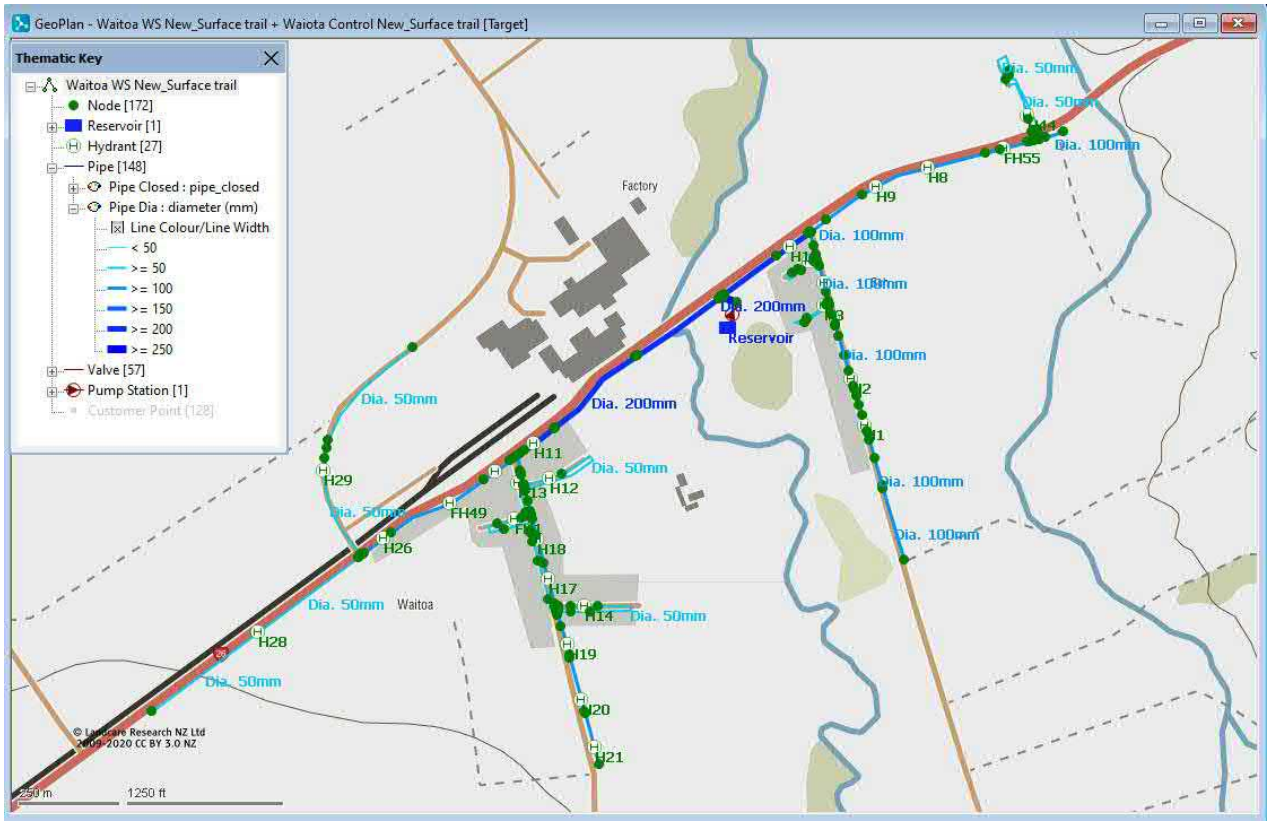

Figure 2-1 : Scenario 1 pipe layout

A new treated water Reservoir will receive flow from newly proposed source and eventually pump to the distribution network. The Reservoir capacity required is 430 m^3 is calculated based on Peak Day Demand (PDD) plus Fire Hydrant Storage. The location is as shown in Figure 2-2.

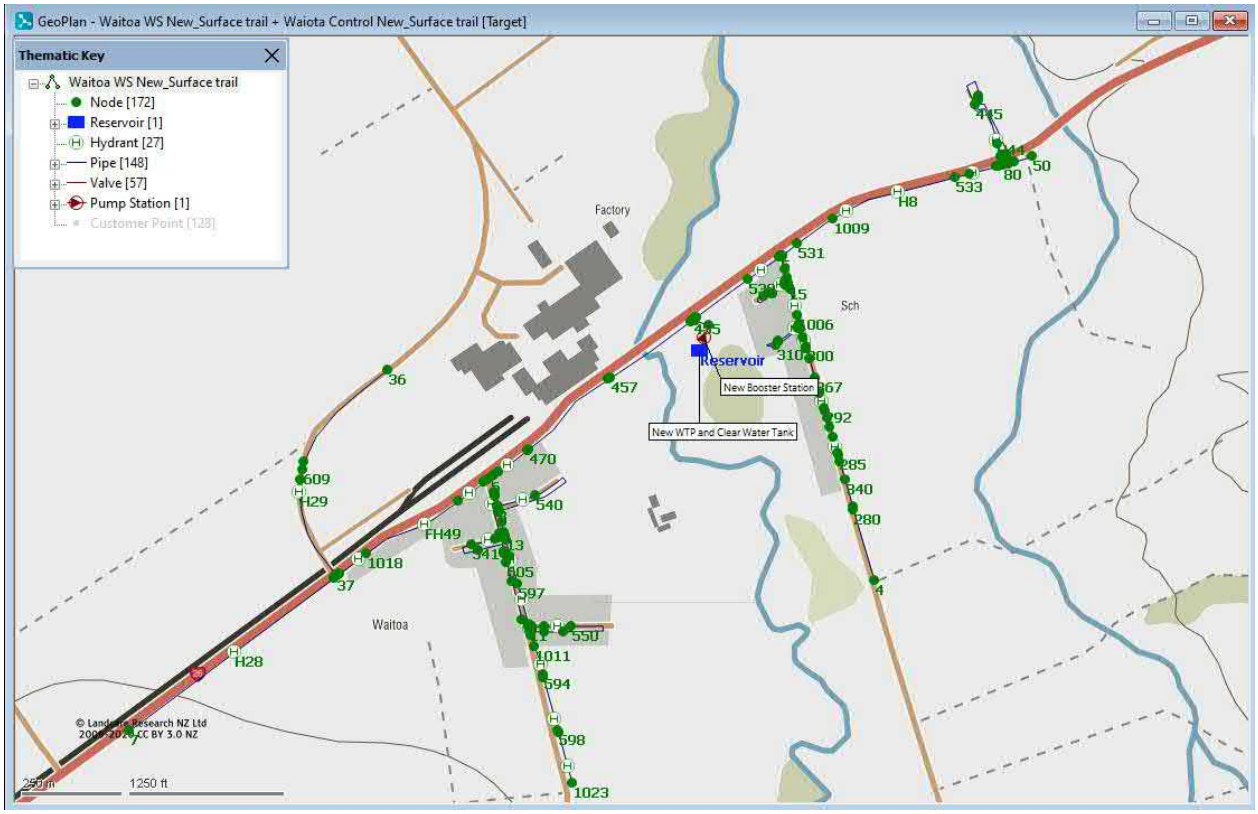

Figure 2-2 : Assumed new surface water source location plan

To determine the pumping requirements assumptions were made as illustrated below in Figure 2-3.

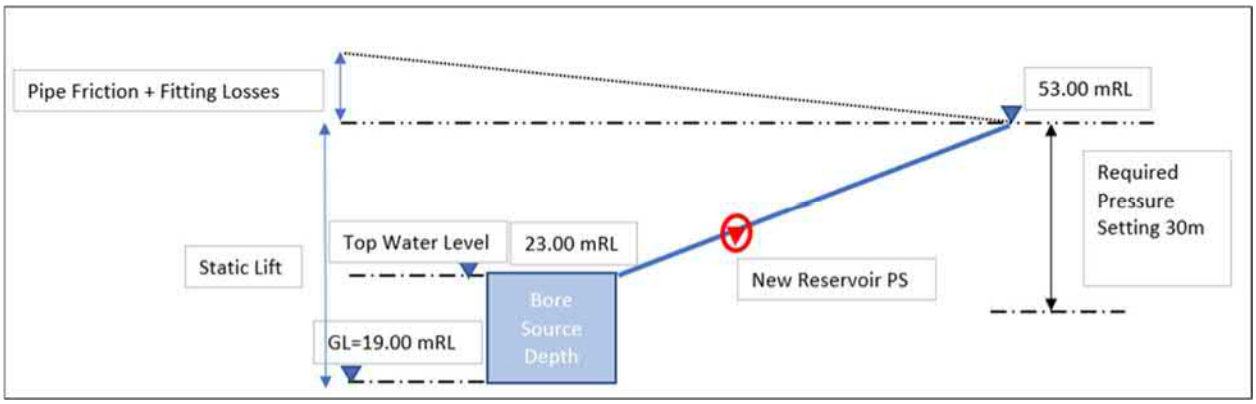

Figure 2-3 : Assumed reservoir details used for Modelling for Scenario 1

A pump duty of duty flow 20 l/s and duty head of 30m was used.

2.1.1 Results

The following details the results for scenario 1.

2.1.1.1 Minimum Pressure

Based on the model simulations, all minimum level of service (LoS) pressure meets the minimum pressure requirement of 20 m.

More than half of the pressure nodes can achieve the desired pressure of 30 m. Therefore, there are no LoS pressure issues in the existing network.

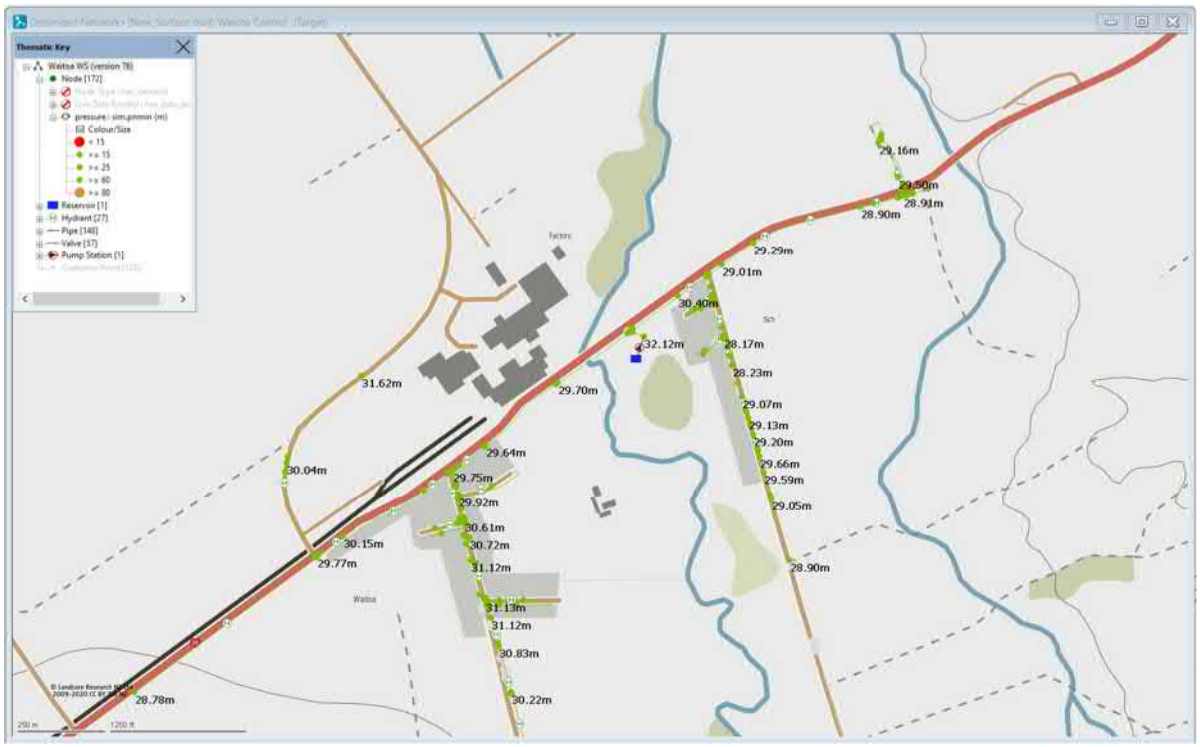

Figure 2-4 : Minimum pressure Scenario 1

2.1.1.2 Fire Flow Results

Hydrant fire flow test was carried out for FW2 hydrants and the results are summarised below, in Table 2-1.

Table 2-1 : Scenario 1 hydrant test summary

Scenario:	No. Hydrants:	No. of Hydrants Passed:	Minimum Residual Pressure(m)	Minimum Fire Flow (l/s)
New Surface Water	27 (100%)	27 (100%)	10	12.5

Figure 2-5 illustrates the FW2 hydrant test results. All the hydrants meet the minimum residual pressure.

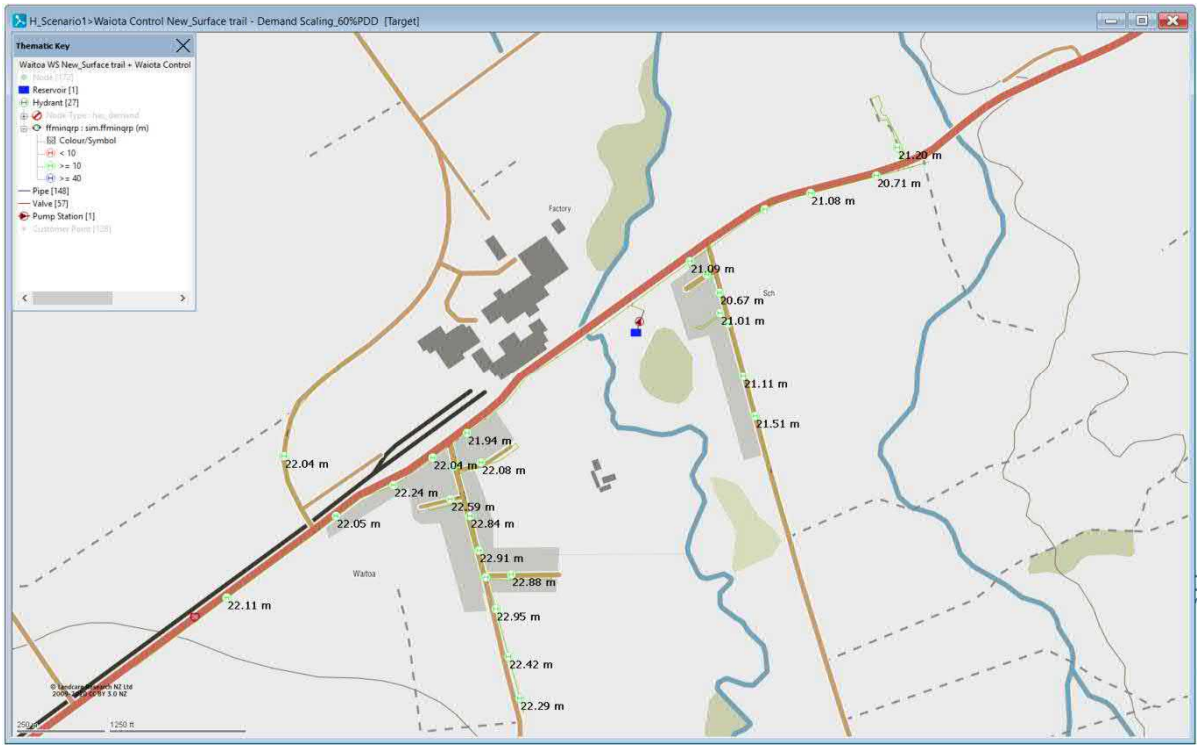

Figure 2-5 : Scenario 1 hydrant test minimum residual pressure results

2.1.1.3 Cost Estimation

A high-level cost estimation was conducted to outline the cost for:

- New Pipelines
- Hydrant
- Valves
- Water supply Treatment Works
- Reservoir
- Pumping Station
- Source works.

WSP has utilised a combination of price indices, recent contracts, and professional judgement and experience to generate the unit rates used in this valuation process.

The high-level cost estimations are tabulated in Table 2-2.

Table 2-2 : Scenario 1 cost estimate summary

Item	Description	Cost Estimate
1	Pipes	$1,310,000.00
2	Hydrants	$100,000.00
3	Greenfield Water intake and Storage Reservoir	$500,000.00
4	Bore Well, Access Road and SCADA	
5	Valves	$185,000.00
6	Treatment Works, Access Road and SCADA	$1,800,000.00
7	Pump Station	$110,000.00
	Total Direct Costs	$4,005,000.00
	Total Indirect Costs	$2,780,000.00
	MPDC Costs	$300,000.00
	TOTAL	$7,085,000.00

Total cost for Scenario is estimated to be **$ 7.09m**

2.2 Scenario 2: Development of New Ground Water Source

This Scenario consists development of a new Ground water source in Waitoa, replacement of existing Waitoa reticulation and supplying new connections to entire village.

The new bore will supply raw water to the WTP and then onto a clear water reservoir, and a pumped supply into the distribution network. The bore water table depth has been assumed to be -20 m below Ground Level.

To determine the pumping requirements assumptions were made as illustrated below in Figure 2-6.

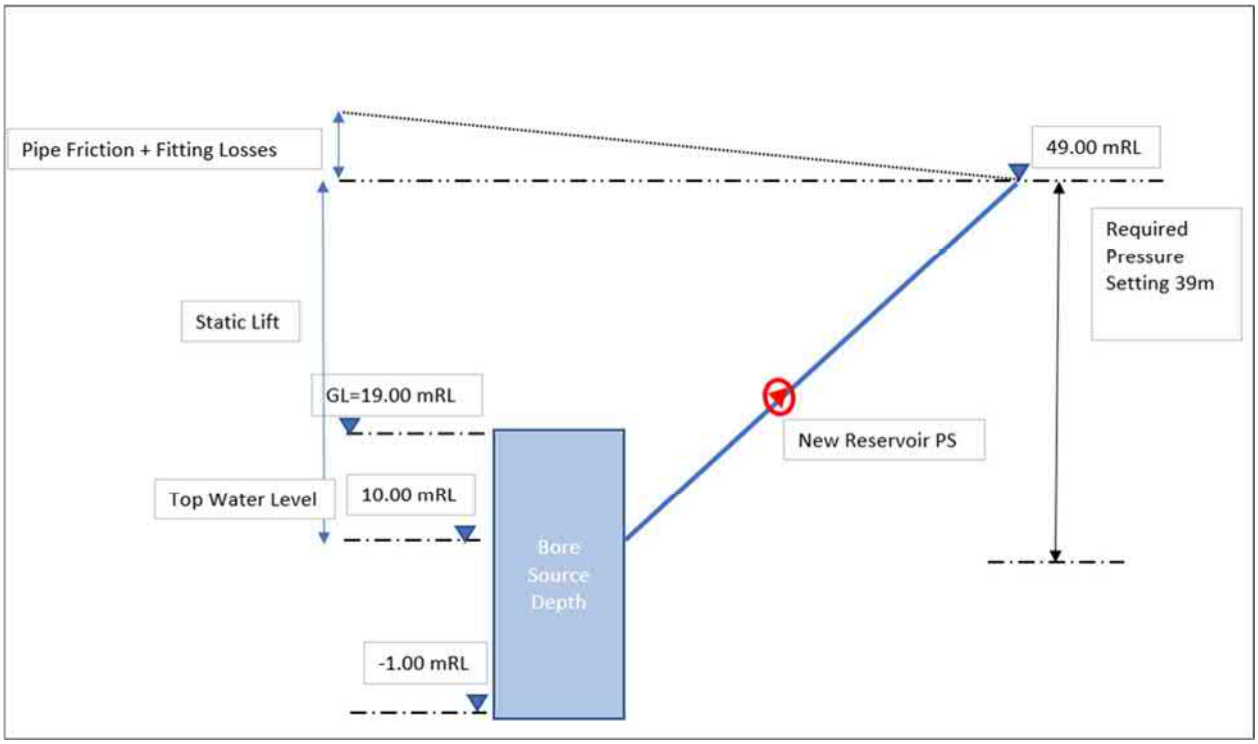

Figure 2-6 : Assumed reservoir details used for Modelling for Scenario 2

A pump duty of duty flow 20 l/s and duty head of 30m was used.

2.2.1 Results

The following details the results for scenario 2.

2.2.1.1 Minimum Pressure

Based on the model simulations, all minimum level of service (LoS) pressure meets the minimum pressure requirement of 20 m (Figure 2-7).

All nodes can achieve the desired pressure of 20 m. Therefore, there are no level of service pressure issues in the existing network.

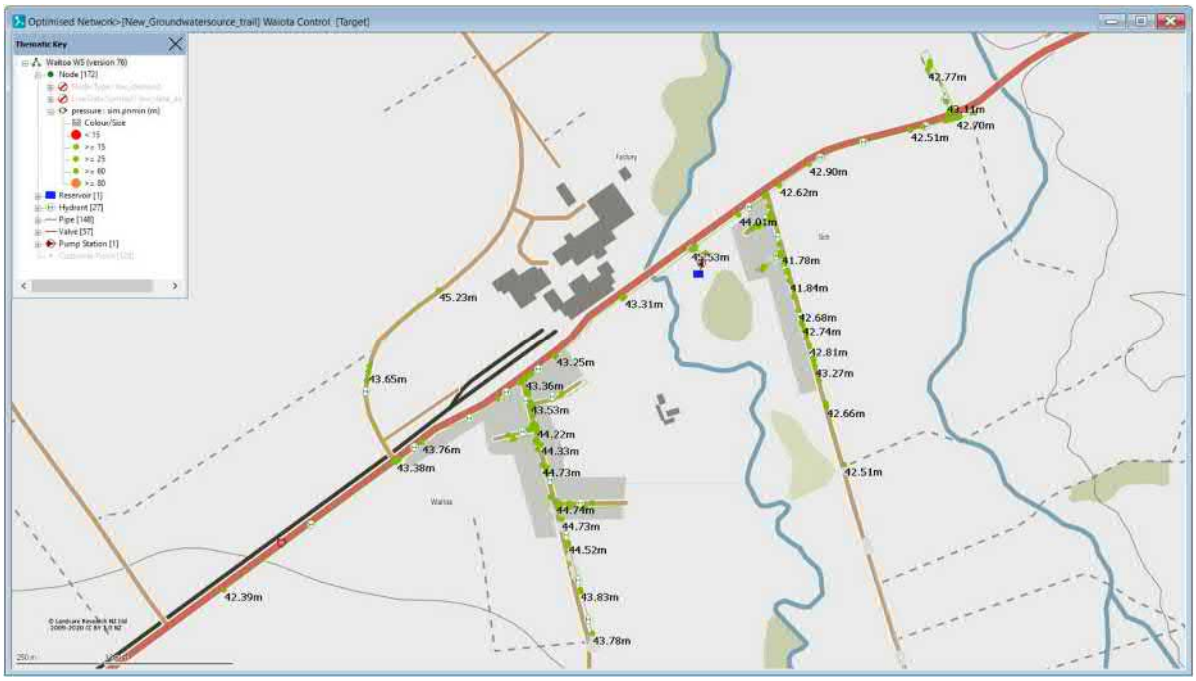

Figure 2-7 : Minimum pressure Scenario 2

2.2.1.2 Fire Flow Results

Hydrant fire flow test was carried out for FW2 hydrants and the results are summarised above, in Table 2-1.

Figure 2-8 illustrates the FW2 hydrant test results. All the hydrants meet the minimum residual pressure.

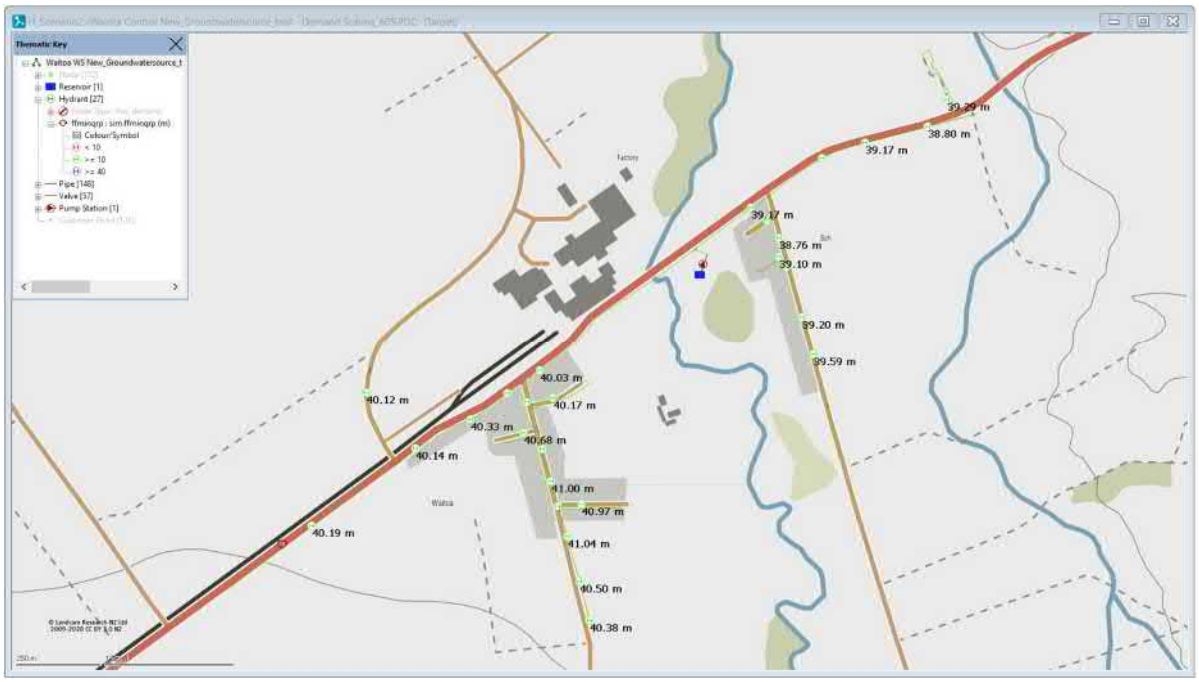

Figure 2-8 : Scenario 2 hydrant test residual pressure results

2.2.1.3 Cost Estimation

The same approach was used for high level cost estimations as detailed in Section 2.1.1.3, Table 2-3 summarises Scenario 2 cost estimates.

Table 2-3 : Scenario 2 cost estimate summary

Item	Description	Cost Estimate
1	Pipes	$1,310,000.00
2	Hydrants	$100,000.00
3	Greenfield Water intake and Storage Reservoir	$300,000.00
4	Bore Well, Access Road and SCADA	$200,000.00
5	Valves	$185,000.00
6	Treatment Works, Access Road and SCADA	$1,800,000.00
7	Pump Station	$170,000.00
	Total Direct Costs	$4,065,000.00
	Total Indirect Costs	$2,510,000
	MPDC Costs	$300,000
	TOTAL	$6,875,000.00

Total cost for Scenario is estimated to be $ **6.88m**.

2.3 Scenario 3: Connection via SH26 at Te Aroha

This Scenario consists of supplying Waitoa from Te Aroha (off the DN300 on Stanley Street) via a new pipeline to Waitoa reticulation following SH26, as shown below in Figure 2-9.

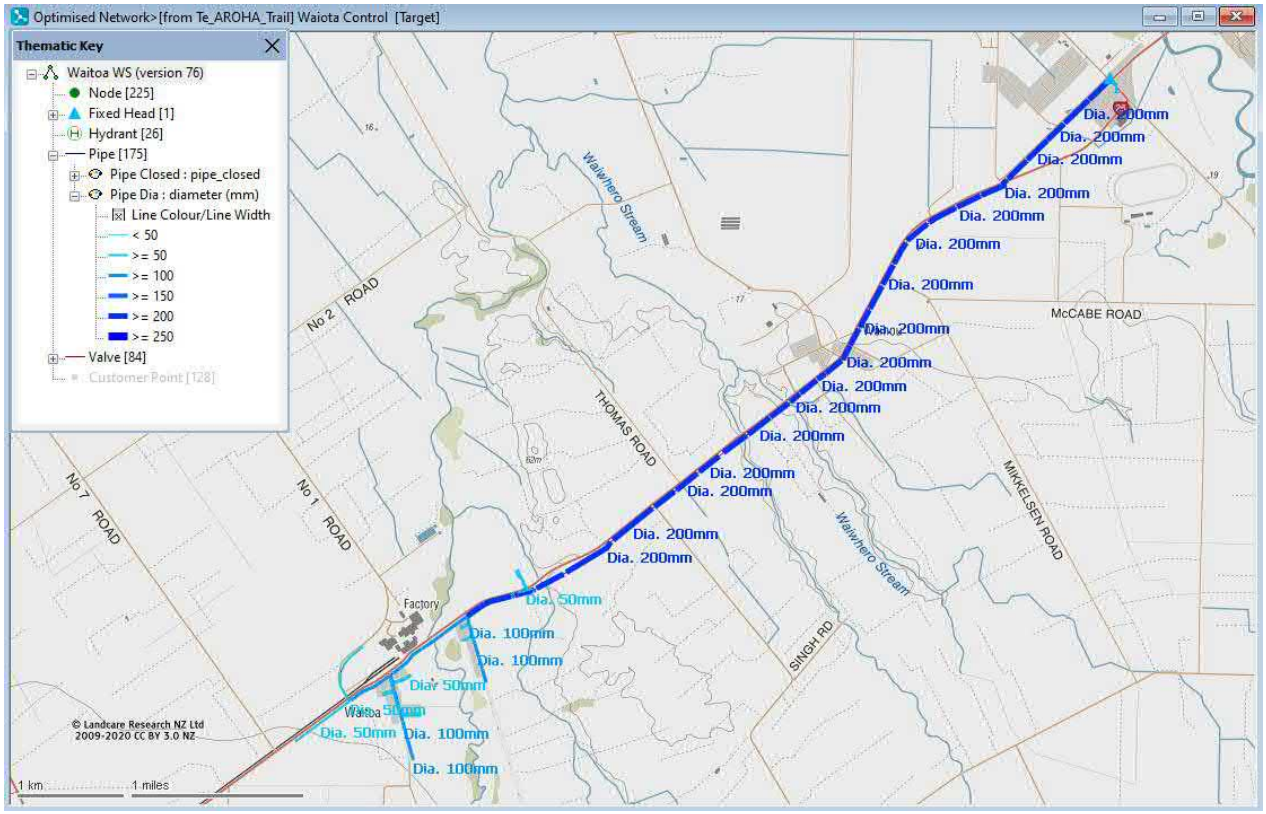

Figure 2-9 : Scenario 3 connection layout plan

Pressure from the connection point at Te Aroha was logged by MPDC using pressure loggers. The results indicate the average pressures at this connection is 600 KPa (61.2 m). This was used as the boundary condition to assess the feasibility of this option.

2.3.1 Results

The following details the results for scenario 3.

2.3.1.1 Minimum Pressure

Based on the model simulations, all minimum LoS pressure meets the minimum pressure requirement of 20 m (Figure 2-10).

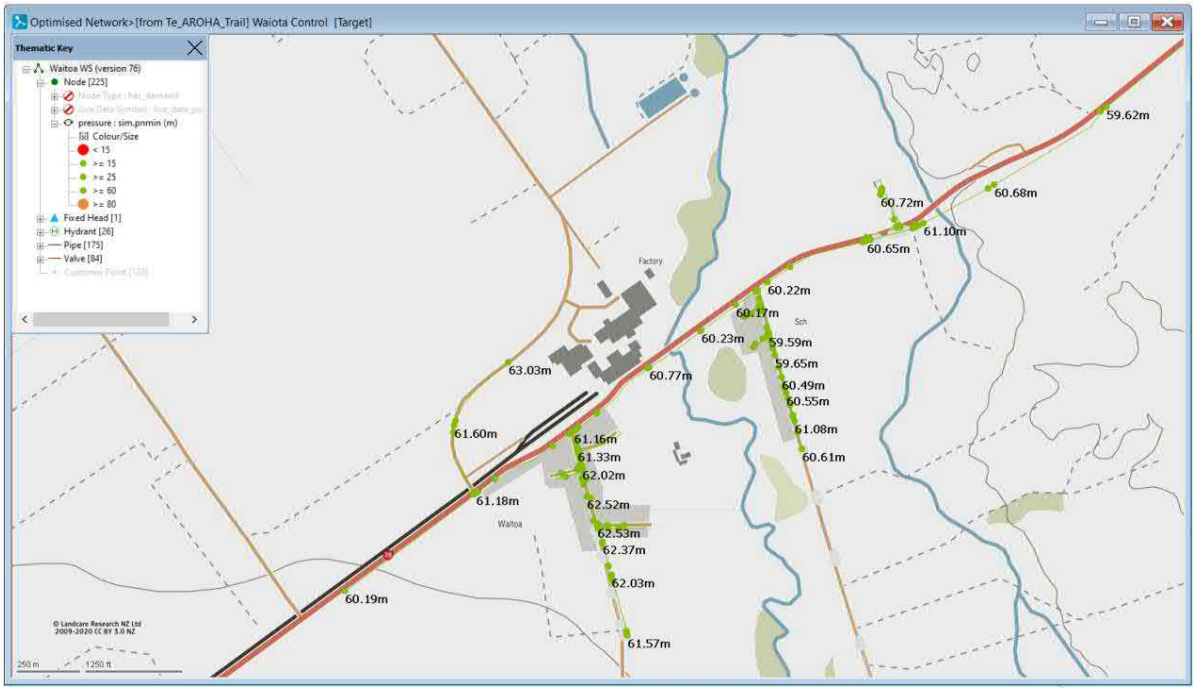

Figure 2-10 : Minimum pressure Scenario 3

The minimum pressures exceed 40 m; thus this scenario could be further optimised by use of a PRV to regulate pressure below 40 m.

2.3.1.2 Fire Flow Results

Hydrant fire flow test was carried out for FW2 hydrants and the results are summarised above, in Table 2-1.

Figure 2-11 illustrates the FW2 hydrant test results. All the hydrants meet the minimum residual pressure.

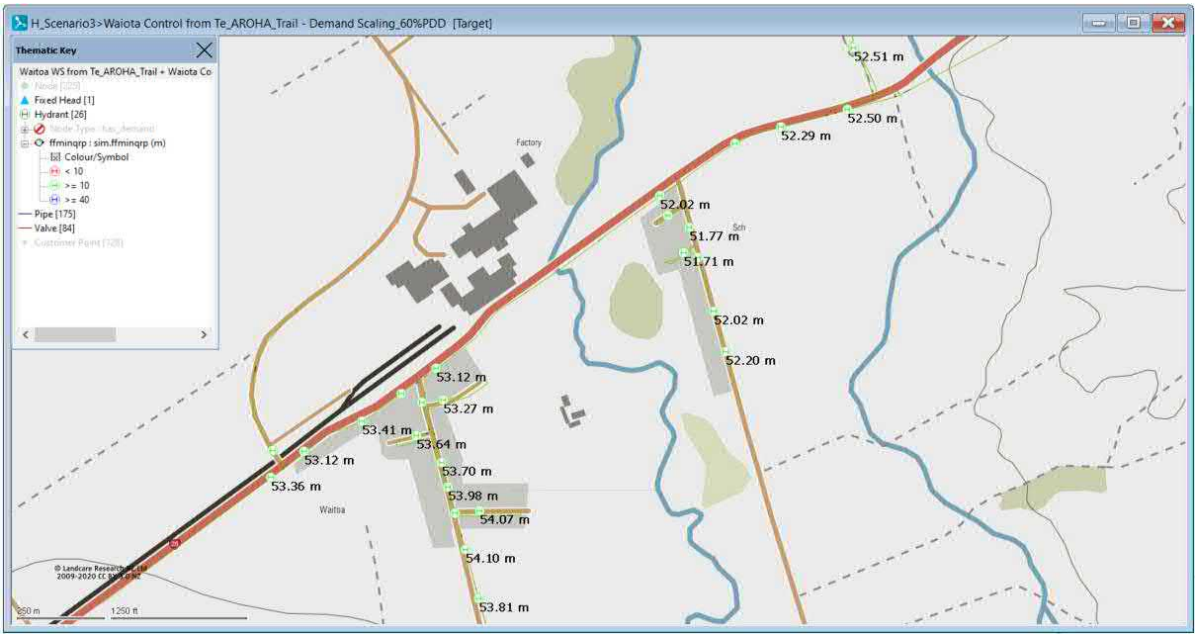

Figure 2-11 : Scenario 3 hydrant test residual pressure results

2.3.1.3 Cost Estimation

The same approach was used for high level cost estimations as detailed in Section 2.1.1.3, Table 2-4 summarises Scenario 2 cost estimates.

Table 2-4 : Scenario 3 cost estimate summary

Item	Description	Cost Estimate
1	Pipes	$3,790,000.00
2	Hydrants	$100,000.00
3	Greenfield Water intake and Storage Reservoir	
4	Bore Well, Access Road and SCADA	
5	Valves	$275,000.00
6	Treatment Works, Access Road and SCADA	
7	Pump Station	
	Total Direct Costs	$4,165,000.00
	Total Indirect Costs	$2,900,000.00
	MPDC Costs	$300,000.00
	TOTAL	$7,365,000.00

Total cost for Scenario is estimated to be **$ 7.37m**.

2.4 Scenario 4: Connection via junction of Waihekau Road and Seddon Road – Option 1

This Scenario consists of supplying Waitoa from Te Aroha (off the DN250 on Seddon Road) via a new pipeline to Waitoa reticulation following Waihekau Road and Ngarua Road, as shown below in Figure 2-12.

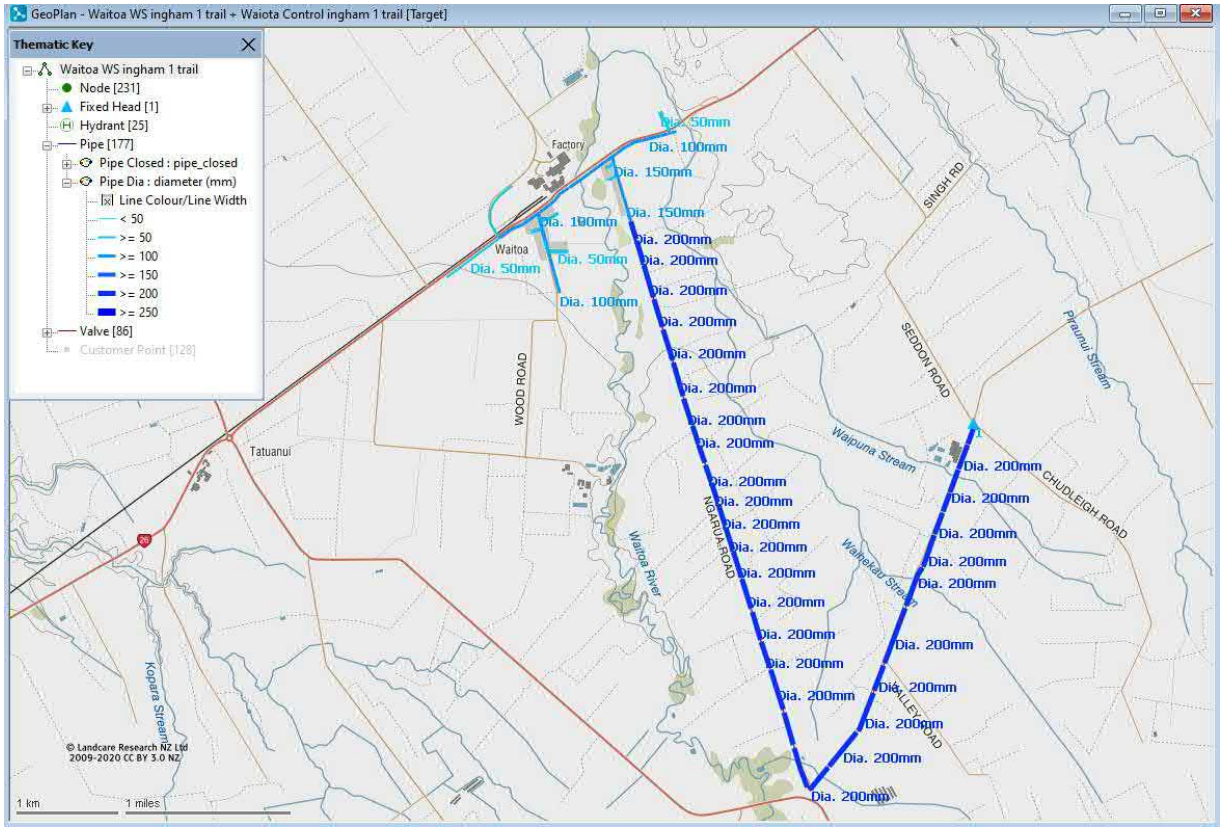

Figure 2-12 : Scenario 4 connection layout plan

Pressure from the connection point at Te Aroha was logged by MPDC using pressure loggers. The results indicate the average pressures at this connection is 310 kPa (31.6 m). This was used as the boundary condition to assess the feasibility of this option.

2.4.1 Results

The following details the results for scenario 4.

2.4.1.1 Minimum Pressure

Based on the model simulations, all minimum LoS pressure meets the minimum pressure requirement of 20 m (Figure 2-13).

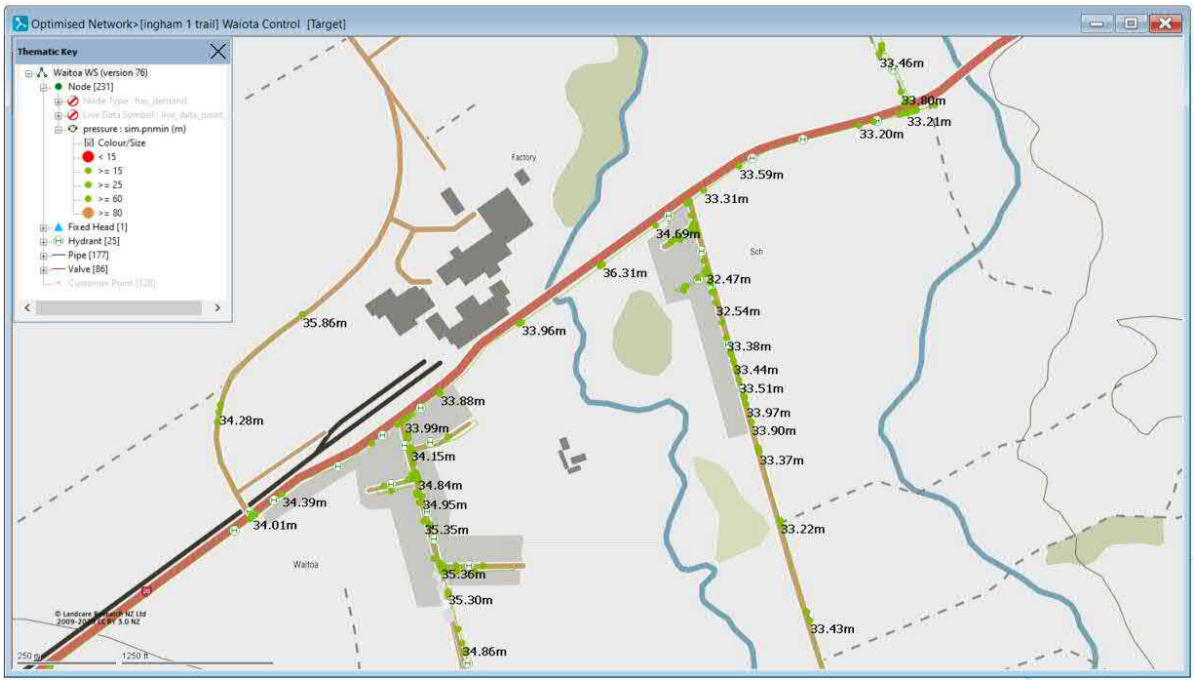

Figure 2-13 : Minimum pressure Scenario 4

The minimum pressures exceed 20 m, thus this scenario meets LoS minimum pressure requirements.

2.4.1.2 Fire Flow Results

Hydrant fire flow test was carried out for FW2 hydrants and the results are summarised below, in Table 2-1.

Figure 2-14 illustrates the FW2 hydrant test results. All the hydrants meet the minimum residual pressure.

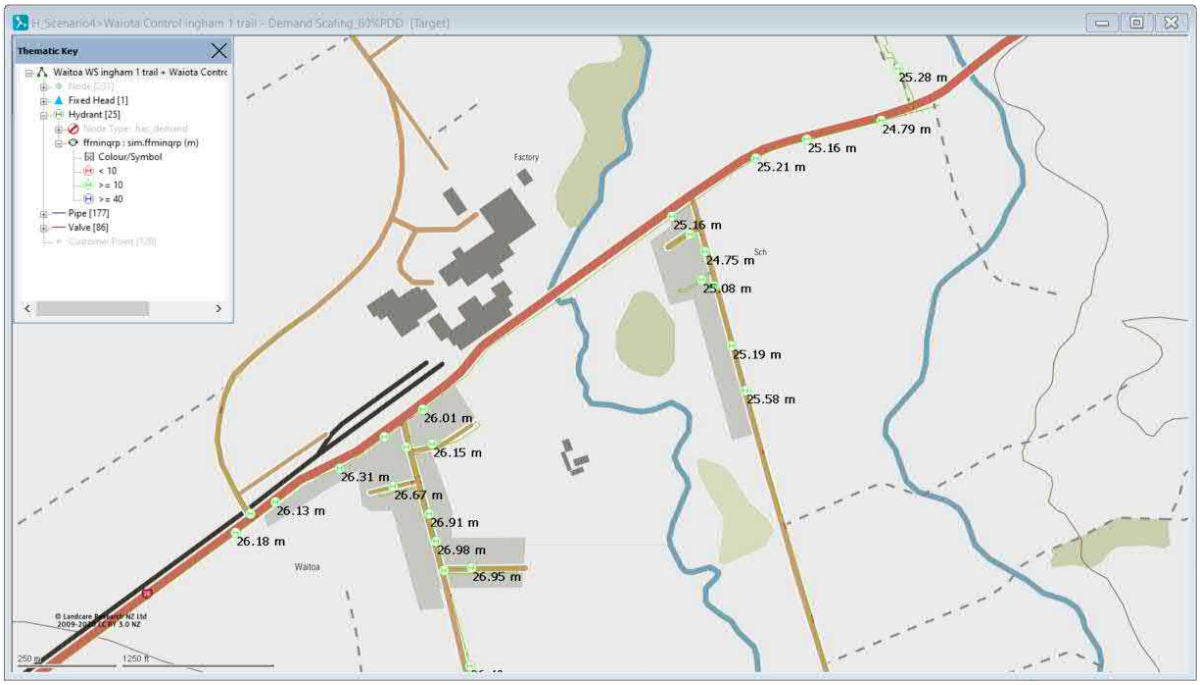

Figure 2-14 : Scenario 4 hydrant test residual pressure results

2.4.1.3 Cost Estimation

The same approach was used for high level cost estimations as detailed in Section 2.1.1.3, Table 2-3 summarises Scenario 2 cost estimates.

2.4.2 Fire Flow Results

Table 2-5 : Scenario 3 cost estimate summary

Item	Description	Cost Estimate
1	Pipes	$4,160,000.00
2	Hydrants	$90,000.00
3	Greenfield Water intake and Storage Reservoir	
4	Bore Well, Access Road and SCADA	
5	Valves	$295,000.00
6	Treatment Works, Access Road and SCADA	
7	Pump Station	
	Total Direct Costs	$4,545,000.00
	Total Indirect Costs	$3,160,000.00
	MPDC Costs	$300,000.00
	TOTAL	$8,005,000.00

Total cost for Scenario is estimated to be **$ 8.01m**.

2.5 Scenario 5: Connection via junction of Waihekau Road and Seddon Road – Option 2

This Scenario consists of supplying Waitoa from Te Aroha (off the DN250 on Seddon Road) via a new pipeline to Waitoa reticulation following Sheddon Road and SH26, as shown below in Figure 2-15.

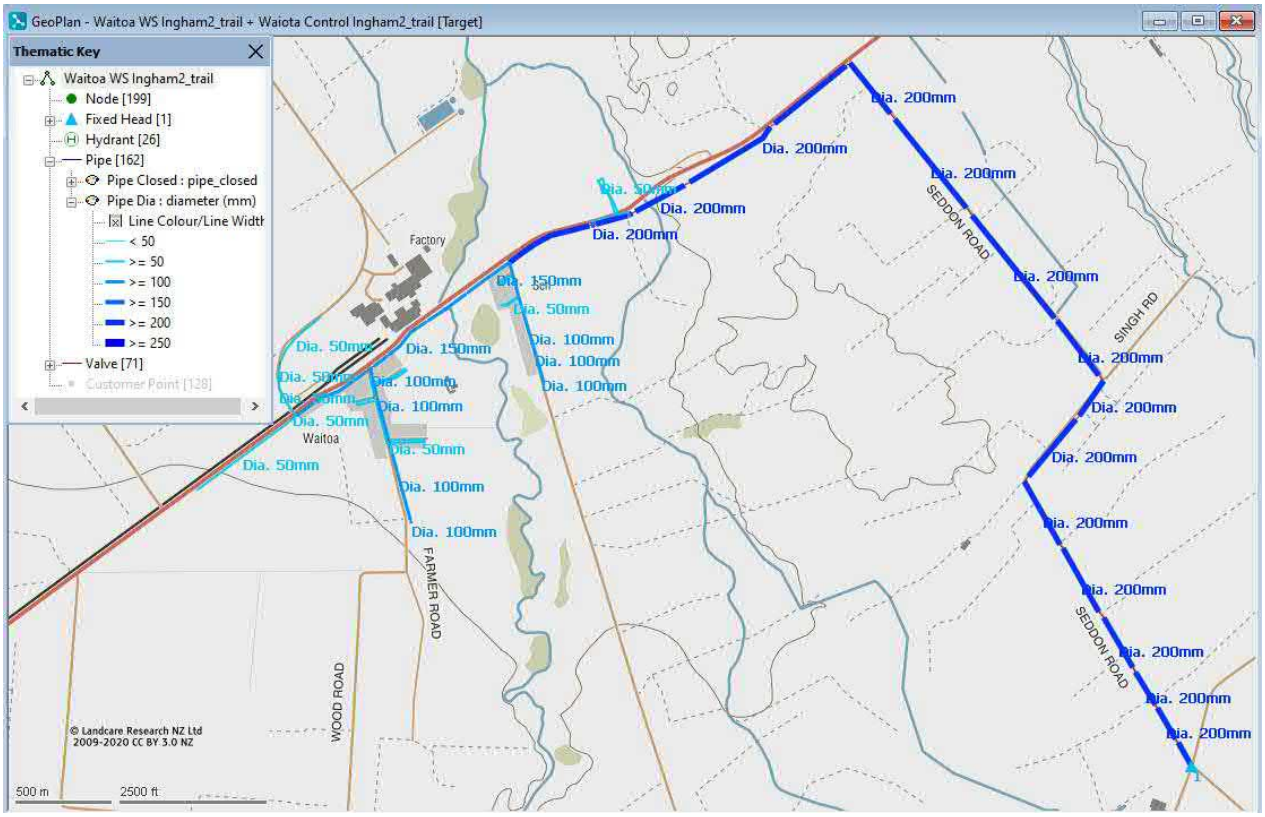

Figure 2-15 : Scenario 5 connection layout plan

Pressure from the connection point at Te Aroha was logged by MPDC using pressure loggers as detailed in Option 4. This was used as the boundary condition to assess the feasibility of this option.

2.5.1 Results

The following details the results for scenario 5.

2.5.1.1 Minimum Pressure

Based on the model simulations, all minimum level of service (LoS) pressure meets the minimum pressure requirement of 20 m (Figure 2-16).

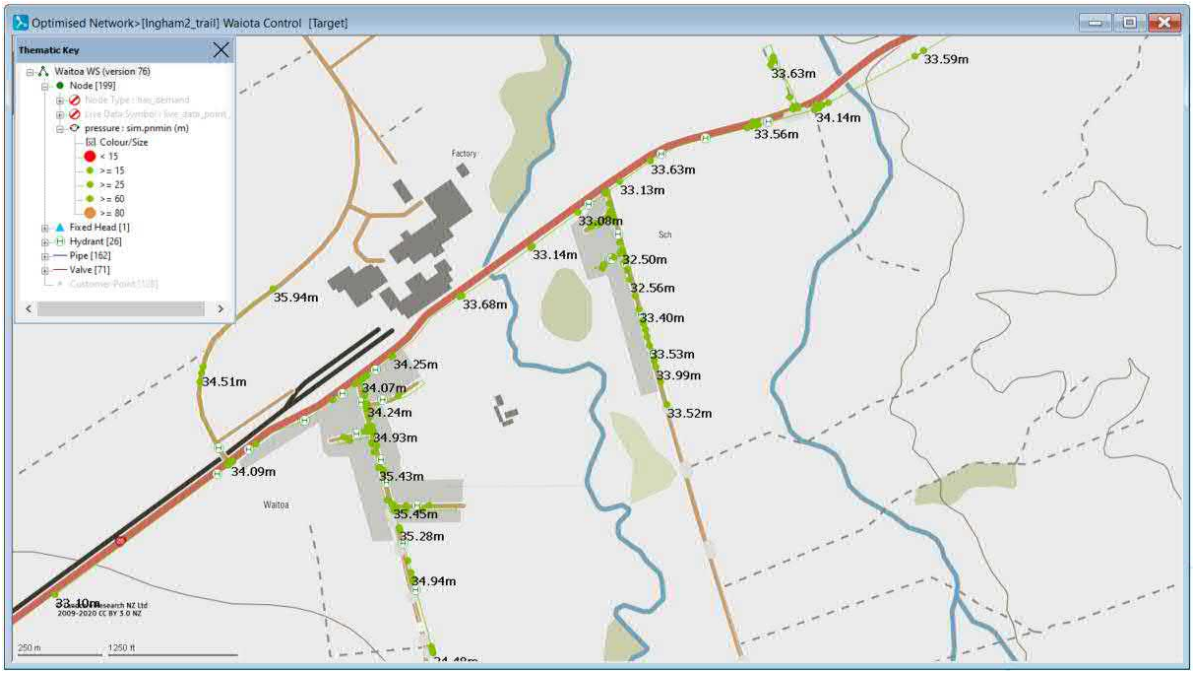

Figure 2-16 : Minimum pressure Scenario 5

The minimum pressures exceed 30 m; thus this scenario meets LoS minimum pressure requirements.

2.5.1.2 Fire Flow Results

Hydrant fire flow test was carried out for FW2 hydrants and the results are summarised below, in Table 2-1.

Figure 2-17 illustrates the FW2 hydrant test results. All the hydrants meet the minimum residual pressure.

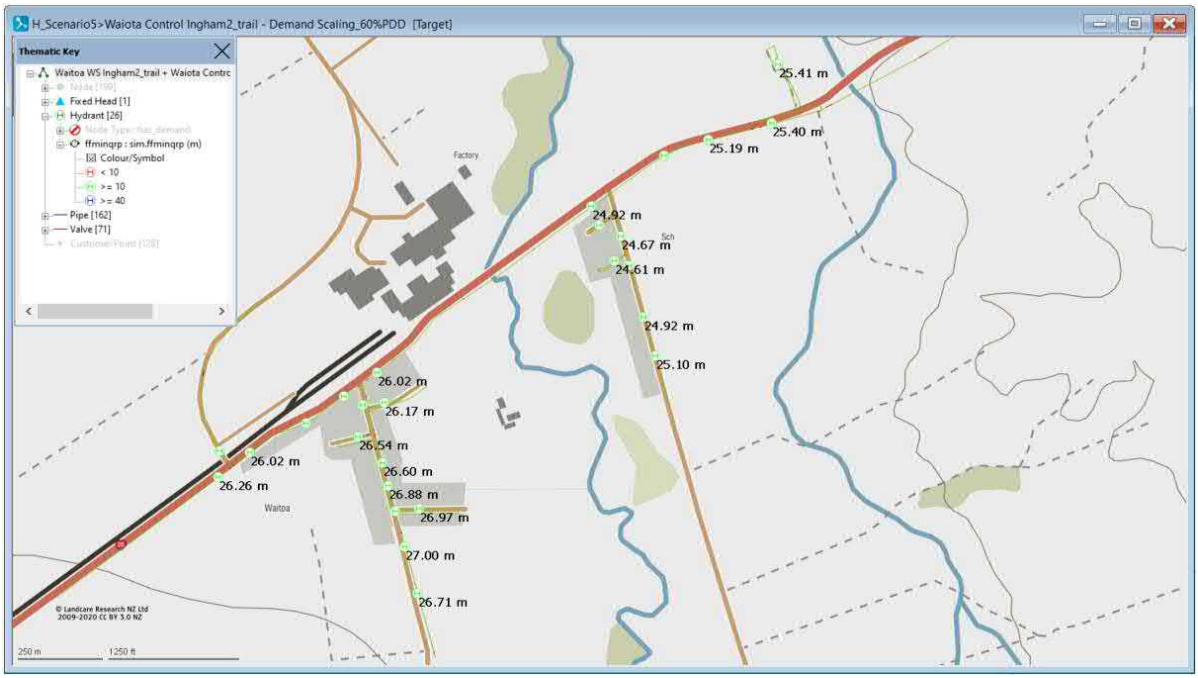

Figure 2-17 : Scenario 5 hydrant test residual pressure results

2.5.1.3 Cost Estimation

The same approach was used for high level cost estimations as detailed in Section 2.1.1.3, Table 2-6 summarises Scenario 2 cost estimates.

Table 2-6 : Scenario 5 cost estimate summary

Item	Description	Cost Estimate
1	Pipes	$3,170,000.00
2	Hydrants	$100,000.00
3	Greenfield Water intake and Storage Reservoir	
4	Bore Well, Access Road and SCADA	
5	Valves	$195,000.00
6	Treatment Works, Access Road and SCADA	
7	Pump Station	
	Total Direct Costs	$3,465,000.00
	Total Indirect Costs	$2,380,000.00
	MPDC Costs	$300,000.00
	TOTAL	$6,145,000.00

Total cost for Scenario is estimated to be **$ 6.15m**

3 Conclusion

This document outlines the assumptions upon which the cost estimates are based. The primary need for these cost estimates is to provide a comparison with other options under consideration, to provide an indication of anticipated costs for MPDC. It is not considered to be a detailed cost estimate that MPDC should seek project funding off.

We have based the pipe laying estimate on open trenching as the main construction methodology, with directional drilling for road crossings at State highways. This is the traditional construction approach which provides the most accurate form of construction.

New pumping stations are required to supply new reservoirs required to service the township.

The costs developed are conservative at this early stage of project planning.

indirect contingency amount has been allowed for on top of the direct cost, with an additional MPDC Client Costs on top of the contingency sum to derive a funding cost.

The main pipelines risks that will impact construction costs are:

- Ground conditions and how these impact pipeline construction cost and reservoir foundations. Groundwater levels, and the impacts that this has on dewatering and temporary works to support the trenches can be a significant proportion of the cost.
- Existing services and the depth that pipelines will need to be installed at to pass under or over these services, and or relocation of services where there is difficulty in finding a route through.
- Traffic and community disruption mitigation.

These items have the ability to add significant extra cost to the project. Conversely innovative construction methods of dewatering and installing temporary works have the potential to save significant amounts and will need to be investigated during detailed design.

Costs not included in the estimates are:

- Land acquisition
- Operational costs.

Based on Latest price indices, unit rates are generated. Total cost in all the scenarios is listed below: -

Table 3-1 : Scenario summary cost estimate

Scenario	Description	Cost Estimate ($m)
1	Development of New Water Surface Source	7.09
2	Development of New Ground Water Source	6.88
3	Connection via SH26 at Te Aroha	7.37
4	Connection via junction of Waihekau Road and Seddon Road – Option 1	8.01
5	Connection via junction of Waihekau Road and Seddon Road – Option 2	6.15

For detailed breakdown of the values indicated, refer to the details in Appendix B of this Report.

Appendix A

Potable water reticulation plans

PLAN 1

PLAN 2

PLAN 3

PLAN 4

PLAN 5

PLAN 6

Factory

FARMER RD

Matamata Piako District Council
Potable Water System
Waitoa

PLAN INDEX SHEET

Legend

- Valve Point
- Hydrant

diameter

- DN50
- DN100
- DN200
- DN250

Coordinate system: NZGD 2000 New Zealand Transverse Mercator

Scale ratio correct when printed at A3

1:7,445 Date: 14/02/2023

Data sources: - DNRME, TMR, Translink, Geoscience Australia

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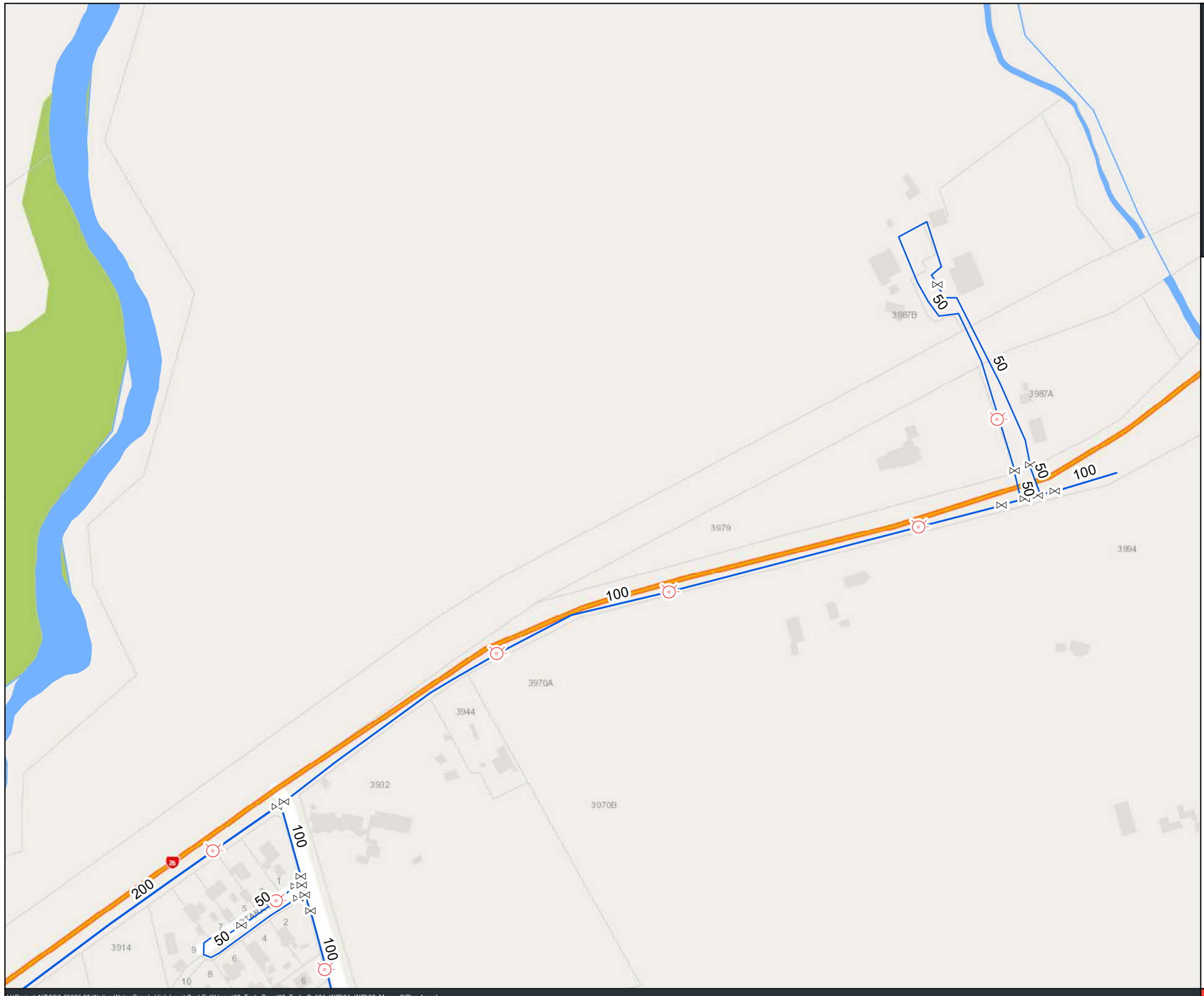

Matamata Piako District Council
Potable Water System
Waitoa

PLAN 1

Legend

- Valve Point
- Hydrant

diameter

- DN50
- DN100
- DN200
- DN250

Coordinate system: NZGD 2000 New Zealand Transverse Mercator

Scale ratio correct when printed at A3

1:2,695 Date: 14/02/2023

Data sources: - DNRME, TMR, Translink, Geoscience Australia

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Matamata Piako District Council
Potable Water System
Waitoa

PLAN 2

Legend

- Valve Point
- Hydrant

diameter

- DN50
- DN100
- DN200
- DN250

Coordinate system: NZGD 2000 New Zealand Transverse Mercator

Scale ratio correct when printed at A3

1:2,703 Date: 14/02/2023

Data sources: - DNRME, TMR, Translink, Geoscience Australia

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Matamata Piako District Council
Potable Water System
Waitoa

PLAN 3

Legend

- Valve Point
- Hydrant

diameter

- DN50
- DN100
- DN200
- DN250

Coordinate system: NZGD 2000 New Zealand Transverse Mercator

Scale ratio correct when printed at A3

1:2,703 Date: 14/02/2023

Data sources: - DNRME, TMR, Translink, Geoscience Australia

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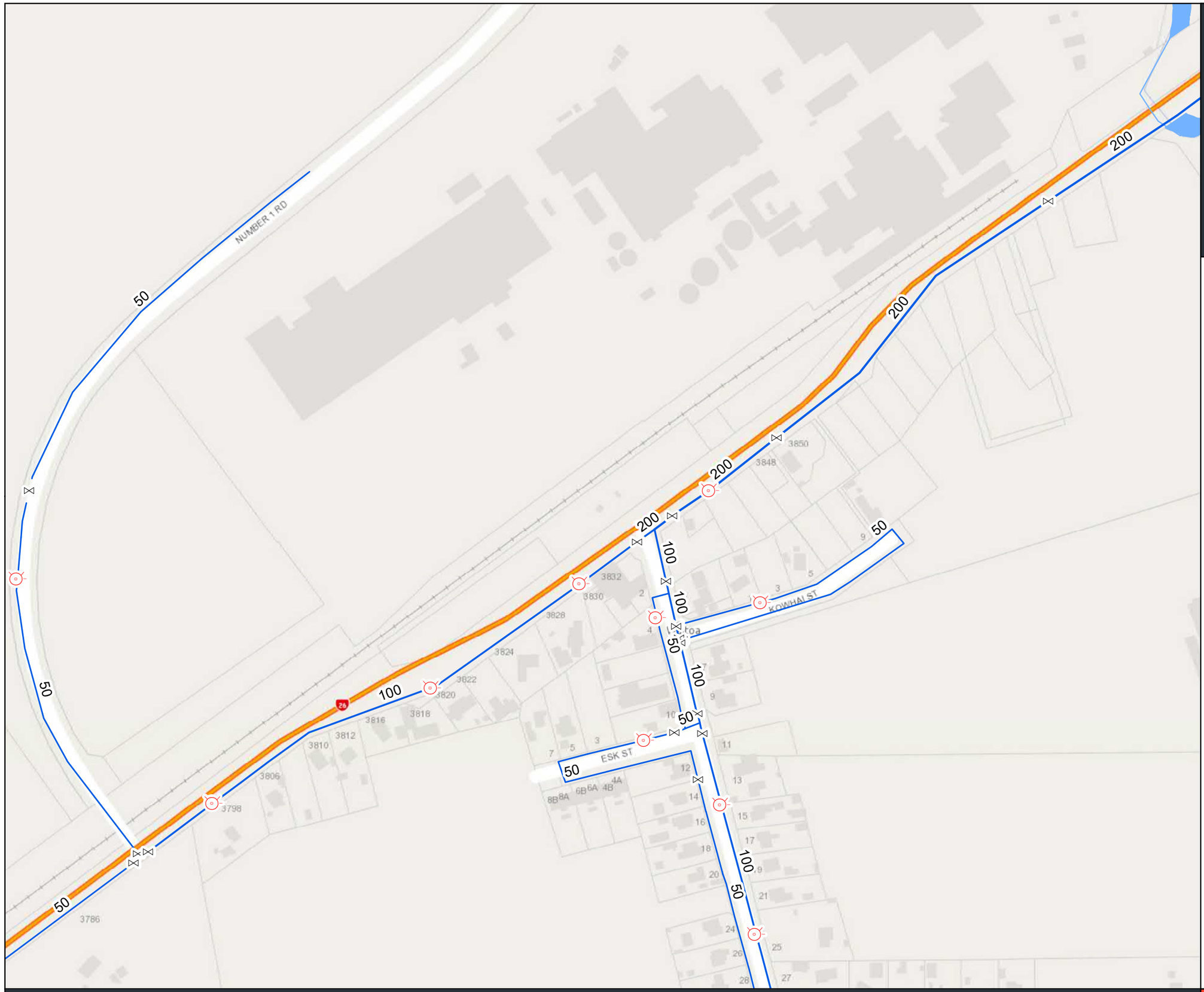

Matamata Piako District Council
Potable Water System
Waitoa

PLAN 4

Legend

- Valve Point
- Hydrant

diameter

- DN50
- DN100
- DN200
- DN250

Coordinate system: NZGD 2000 New Zealand Transverse Mercator

Scale ratio correct when printed at A3

1:2,695 Date: 14/02/2023

Data sources: - DNRME, TMR, Translink, Geoscience Australia

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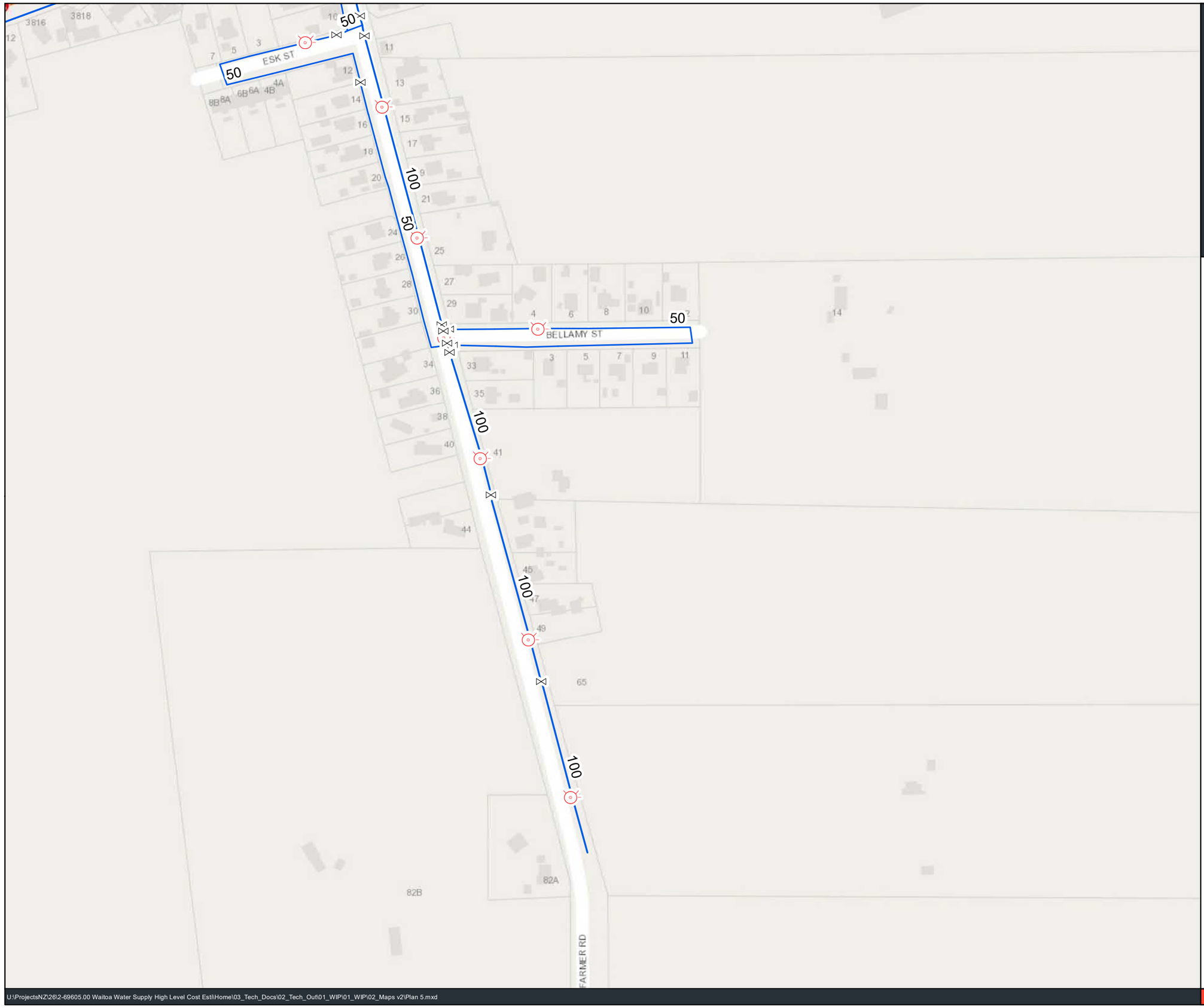

Matamata Piako District Council
Potable Water System
Waitoa

PLAN 5

Legend

- Valve Point
- Hydrant

diameter

- DN50
- DN100
- DN200
- DN250

Coordinate system: NZGD 2000 New Zealand Transverse Mercator

Scale ratio correct when printed at A3

1:2,679 Date: 14/02/2023

Data sources: - DNRME, TMR, Translink, Geoscience Australia

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Matamata Piako District Council
Potable Water System
Waitoa

PLAN 6

Legend

- Valve Point
- Hydrant

diameter

- DN50
- DN100
- DN200
- DN250

Coordinate system: NZGD 2000 New Zealand Transverse Mercator

Scale ratio correct when printed at A3

1:2,703 Date: 14/02/2023

Data sources: - DNRME, TMR, Translink, Geoscience Australia

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Appendix B
Scenario Cost Breakdown

Option 1	New Surface Water Source						
Item	Size	Unit (size)	Description	Unit	Quantity	Rate	Cost
1	Dia	Unit	Pipes				
	50	mm	50mm HDPE pipe - in LV road berm	m	2715	$ 141.05	$ 390,000.00
	50	mm	50mm HDPE pipe - in SH26 berm	m	620	$ 175.12	$ 110,000.00
	100	mm	100mm HDPE pipe - in LV road berm	m	1286	$ 156.10	$ 210,000.00
	100	mm	100mm HDPE pipe - in SH26 berm	m	1300	$ 190.17	$ 250,000.00
	150	mm	150mm HDPE pipe - in LV road berm	m	0	$ 171.14	$ -
	150	mm	150mm HDPE pipe - in SH26 berm	m	0	$ 205.22	$ -
	200	mm	200mm HDPE pipe - in LV road berm	m	0	$ 324.00	$ -
	200	mm	200mm HDPE pipe - in SH26 berm	m	860	$ 381.00	$ 330,000.00
	250	mm	250mm HDPE pipe - in LV road berm	m	0	$ 488.45	$ -
	250	mm	250mm HDPE pipe - in SH26 berm	m	36	$ 522.52	$ 20,000.00
2	Dia	Unit	Hydrants				
	50	mm	Hydrant - in berm	ea	27	$ 3,473.00	$ 100,000.00
3	Volume	Unit	Greenfield storage reservoir and intake structure				
	400	m3	Steel reservoir and intake structure	m3	1	$ 500,000.00	$ 500,000.00
4	Dia	Unit	Valves				
	50	mm	50mm Isolation valve - in berm	ea	18	$ 2,252.29	$ 50,000.00
	100	mm	100mm Isolation valve - in berm	ea	32	$ 2,954.43	$ 100,000.00
	150	mm	150mm Isolation valve - in berm	ea	0	$ 3,460.09	$ -
	200	mm	200mm Isolation valve - in berm	ea	6	$ 3,460.09	$ 30,000.00
	250	mm	250mm Isolation valve - in berm	ea	1	$ 3,460.09	$ 5,000.00
5	Rate	Unit	Treatment works				
	430	m3/day	Water treatment plant, Access Road and SCADA	ea	1	$ 1,800,000.00	$ 1,800,000.00
6	Length	Width	Pump station				
	3	2	Pump station plant and equipment	m2	6	$ 18,177.83	$ 110,000.00

Sub Total Direct Costs					$ 4,005,000.00
Indirect Costs			%		
7	Contractor Design Costs (% of Direct Costs)		5%	$ 197,404.31	$ 200,000.00
8	Contractor Indirect Costs (% of Direct Costs)		20%	$ 789,617.25	$ 790,000.00
9	Contractor Margin (% of DC+Indirect Costs)		15%	$ 592,212.93	$ 600,000.00
10	Risk Contingency (% of (Direct Costs+Indirect Costs+Margin))		30%	$ 1,184,425.87	$ 1,190,000.00
Sub Total Direct Costs + Indirect Costs					$ 6,785,000.00
MPDC Client Costs			%		
11	MPDC Costs to Date	Current as at:			
12	MPDC Internal Costs		2.9%	$ 194,640.65	$ 200,000.00
13	MPDC Land Acquisition/Easement Costs				
14	MPDC Consenting		-	$ 100,000.00	$ 100,000.00
Sub Total Direct Costs + Indirect Costs + MPDC Client Costs					$ 7,085,000.00

Option 2 New Ground Water Source							
Item	Size	Unit (size)	Description	Unit	Quantity	Rate	Rounded cost
1	Dia	Unit	Pipes				
	50	mm	50mm HDPE pipe - in LV road berm	m	2715	$ 141.05	$ 390,000.00
	50	mm	50mm HDPE pipe - in SH26 berm	m	620	$ 175.12	$ 110,000.00
	100	mm	100mm HDPE pipe - in LV road berm	m	1286	$ 156.10	$ 210,000.00
	100	mm	100mm HDPE pipe - in SH26 berm	m	1300	$ 190.17	$ 250,000.00
	150	mm	150mm HDPE pipe - in LV road berm	m	0	$ 171.14	$ -
	150	mm	150mm HDPE pipe - in SH26 berm	m	0	$ 205.22	$ -
	200	mm	200mm HDPE pipe - in LV road berm	m	0	$ 324.00	$ -
	200	mm	200mm HDPE pipe - in SH26 berm	m	860	$ 381.00	$ 330,000.00
	250	mm	250mm HDPE pipe - in LV road berm	m	0	$ 488.45	$ -
	250	mm	250mm HDPE pipe - in SH26 berm	m	36	$ 522.52	$ 20,000.00
2	Dia	Unit	Hydrants				
	50	mm	Hydrant - in berm	ea	27	$ 3,473.00	$ 100,000.00
3	Volume	Unit	Greenfield storage reservoir				
	400	m3	Steel reservoir	ea	1	$ 300,000.00	$ 300,000.00
3	Depth	unit	Bore well				
	20	m	Bore well	ea	1	$ 200,000.00	$ 200,000.00
4	Dia	Unit	Valves				
	50	mm	50mm Isolation valve - in berm	ea	18	$ 2,252.29	$ 50,000.00
	100	mm	100mm Isolation valve - in berm	ea	32	$ 2,954.43	$ 100,000.00
	150	mm	150mm Isolation valve - in berm	ea	0	$ 3,460.09	$ -
	200	mm	200mm Isolation valve - in berm	ea	6	$ 3,460.09	$ 30,000.00
	250	mm	250mm Isolation valve - in berm	ea	1	$ 3,460.09	$ 5,000.00
5	Rate	Unit	Treatment works				
	430	m3/day	Water treatment plant, Access Road and SCADA	ea	1	$1,800,000.00	$ 1,800,000.00
6	Length	Width	Pump station				
	3	3	Pump station plant and equipment	m2	9	$ 18,177.83	$ 170,000.00
Sub Total Direct Costs							$ 4,065,000.00
Indirect Costs					%		
7			Contractor Design Costs (% of Direct Costs)		5%	$ 200,130.99	$ 210,000.00
8			Contractor Indirect Costs (% of Direct Costs)		20%	$ 800,523.94	$ 810,000.00
9			Contractor Margin (% of DC+Indirect Costs)		15%	$ 600,392.96	$ 610,000.00
10			Risk Contingency (% of (Direct Costs+Indirect Costs+Margin))		30%	$1,200,785.92	$ 1,210,000.00
Sub Total Direct Costs + Indirect Costs							$ 6,905,000.00
MPDC Client Costs					%		
11			MPDC Costs to Date	Current as at:			
12			MPDC Internal Costs		24.0%	$ 192,125.75	$ 200,000.00
13			MPDC Land Acquisition/Easement Costs				
14			MPDC Consenting		-	$ 100,000.00	$ 100,000.00
Sub Total Direct Costs + Indirect Costs + MPDC Client Costs							$ 7,205,000.00

Option 3 Connection to SH26 at Te Aroha (Stanley Street)							
Item	Size	Unit (size)	Description	Unit	Quantity	Rate	Rounded cost
1	Dia	Unit	Pipes				
	50	mm	50mm HDPE pipe - in LV road berm	m	2885	$ 141.05	$ 410,000.00
	50	mm	50mm HDPE pipe - in SH26 berm	m	630	$ 175.12	$ 120,000.00
	100	mm	100mm HDPE pipe - in LV road berm	m	1370	$ 156.10	$ 220,000.00
	100	mm	100mm HDPE pipe - in SH26 berm	m	430	$ 190.17	$ 90,000.00
	150	mm	150mm HDPE pipe - in LV road berm	m	0	$ 171.14	$ -
	150	mm	150mm HDPE pipe - in SH26 berm	m	0	$ 205.22	$ -
	200	mm	200mm HDPE pipe - in LV road berm	m	0	$ 324.00	$ -
	200	mm	200mm HDPE pipe - in SH26 berm	m	7734	$ 381.00	$ 2,950,000.00
	250	mm	250mm HDPE pipe - in LV road berm	m	0	$ 488.45	$ -
	250	mm	250mm HDPE pipe - in SH26 berm	m	0	$ 522.52	$ -
2	Dia	Unit	Hydrants				
	50	mm	Hydrant - in berm	ea	26	$ 3,473.00	$ 100,000.00
3	Dia	Unit	Valves				
	50	mm	50mm Isolation valve - in berm	ea	21	$ 2,252.29	$ 50,000.00
	100	mm	100mm Isolation valve - in berm	ea	26	$ 2,954.43	$ 80,000.00
	150	mm	150mm Isolation valve - in berm	ea	5	$ 3,460.09	$ 20,000.00
	200	mm	200mm Isolation valve - in berm	ea	32	$ 3,460.09	$ 120,000.00
	250	mm	250mm Isolation valve - in berm	ea	0	$ 3,460.09	$ 5,000.00

Sub Total Direct Costs						$ 4,165,000.00
Indirect Costs				%		
4	Contractor Design Costs (% of Direct Costs)			5%	$ 205,097.82	$ 210,000.00
5	Contractor Indirect Costs (% of Direct Costs)			20%	$ 820,391.28	$ 830,000.00
6	Contractor Margin (% of DC+Indirect Costs)			15%	$ 615,293.46	$ 620,000.00
7	Risk Contingency (% of (Direct Costs+Indirect Costs+Margin))			30%	$ 1,230,586.92	$ 1,240,000.00
Sub Total Direct Costs + Indirect Costs						$ 7,065,000.00
MPDC Client Costs				%		
8	MPDC Costs to Date		Current as at:			
9	MPDC Internal Costs			2.8%	$ 195,253.12	$ 200,000.00
14	MPDC Land Acquisition/Easement Costs					
16	MPDC Consenting			-	$ 100,000.00	$ 100,000.00
Sub Total Direct Costs + Indirect Costs + MPDC Client Costs						$ 7,365,000.00

Option 4 Connection via junction of Waihekau Road and Seddon Road – Option 1							
Item	Size	Unit (size)	Description	Unit	Quantity	Rate	Rounded cost
1	Dia	Unit	Pipes				
	50	mm	50mm HDPE pipe - in LV road berm	m	2708	$ 141.05	$ 390,000.00
	50	mm	50mm HDPE pipe - in SH26 berm	m	620	$ 175.12	$ 110,000.00
	100	mm	100mm HDPE pipe - in LV road berm	m	685	$ 156.10	$ 110,000.00
	100	mm	100mm HDPE pipe - in SH26 berm	m	2015	$ 190.17	$ 390,000.00
	150	mm	150mm HDPE pipe - in LV road berm	m	605	$ 171.14	$ 110,000.00
	150	mm	150mm HDPE pipe - in SH26 berm	m	0	$ 205.22	$ -
	200	mm	200mm HDPE pipe - in LV road berm	m	9400	$ 324.00	$ 3,050,000.00
	200	mm	200mm HDPE pipe - in SH26 berm	m	0	$ 381.00	$ -
	250	mm	250mm HDPE pipe - in LV road berm	m	0	$ 488.45	$ -
	250	mm	250mm HDPE pipe - in SH26 berm	m	0	$ 522.52	$ -
2	Dia	Unit	Hydrants				
	50	mm	Hydrant - in berm	ea	25	$ 3,473.00	$ 90,000.00
3	Dia	Unit	Valves				
	50	mm	50mm Isolation valve - in berm	ea	19	$ 2,252.29	$ 50,000.00
	100	mm	100mm Isolation valve - in berm	ea	25	$ 2,954.43	$ 80,000.00
	150	mm	150mm Isolation valve - in berm	ea	10	$ 3,460.09	$ 40,000.00
	200	mm	200mm Isolation valve - in berm	ea	32	$ 3,460.09	$ 120,000.00
	250	mm	250mm Isolation valve - in berm	ea	0	$ 3,460.09	$ 5,000.00

Sub Total Direct Costs					$ 4,545,000.00
Indirect Costs			%		
4	Contractor Design Costs (% of Direct Costs)		5%	$ 223,929.47	$ 230,000.00
5	Contractor Indirect Costs (% of Direct Costs)		20%	$ 895,717.86	$ 900,000.00
6	Contractor Margin (% of DC+Indirect Costs)		15%	$ 671,788.40	$ 680,000.00
7	Risk Contingency (% of (Direct Costs+Indirect Costs+Margin))		30%	$ 1,343,576.79	$ 1,350,000.00
Sub Total Direct Costs + Indirect Costs					$ 7,705,000.00
MPDC Client Costs			%		
8	MPDC Costs to Date	Current as at:			
9	MPDC Internal Costs		2.6%	$ 197,953.65	$ 200,000.00
10	MPDC Land Acquisition/Easement Costs				
11	MPDC Consenting	-		$ 100,000.00	$ 100,000.00
Sub Total Direct Costs + Indirect Costs + MPDC Client Costs					$ 8,005,000.00

Option 5 Connection via junction of Waihekau Road and Seddon Road – Option 2							
Item	Size	Unit (size)	Description	Unit	Quantity	Rate	Rounded cost
1	Dia	Unit	Pipes				
	50	mm	50mm HDPE pipe - in LV road berm	m	2893	$ 141.05	$ 410,000.00
	50	mm	50mm HDPE pipe - in SH26 berm	m	620	$ 175.12	$ 110,000.00
	100	mm	100mm HDPE pipe - in LV road berm	m	1350	$ 156.10	$ 220,000.00
	100	mm	100mm HDPE pipe - in SH26 berm	m	450	$ 190.17	$ 90,000.00
	150	mm	150mm HDPE pipe - in LV road berm	m	0	$ 171.14	$ -
	150	mm	150mm HDPE pipe - in SH26 berm	m	890	$ 205.22	$ 190,000.00
	200	mm	200mm HDPE pipe - in LV road berm	m	4401	$ 324.00	$ 1,430,000.00
	200	mm	200mm HDPE pipe - in SH26 berm	m	1865	$ 381.00	$ 720,000.00
	250	mm	250mm HDPE pipe - in LV road berm	m	0	$ 488.45	$ -
	250	mm	250mm HDPE pipe - in SH26 berm	m	0	$ 522.52	$ -
2	Dia	Unit	Hydrants				
	50	mm	Hydrant - in berm	ea	26	$ 3,473.00	$ 100,000.00
3	Dia	Unit	Valves				
	50	mm	50mm Isolation valve - in berm	ea	21	$ 2,252.29	$ 50,000.00
	100	mm	100mm Isolation valve - in berm	ea	26	$ 2,954.43	$ 80,000.00
	150	mm	150mm Isolation valve - in berm	ea	5	$ 3,460.09	$ 20,000.00
	200	mm	200mm Isolation valve - in berm	ea	10	$ 3,460.09	$ 40,000.00
	250	mm	250mm Isolation valve - in berm	ea	0	$ 3,460.09	$ 5,000.00
Sub Total Direct Costs							$ 3,465,000.00
Indirect Costs					%		
4			Contractor Design Costs (% of Direct Costs)		5%	$ 169,918.61	$ 170,000.00
5			Contractor Indirect Costs (% of Direct Costs)		20%	$ 679,674.42	$ 680,000.00
6			Contractor Margin (% of DC+Indirect Costs)		15%	$ 509,755.82	$ 510,000.00
7			Risk Contingency (% of (Direct Costs+Indirect Costs+Margin))		30%	$ 1,019,511.64	$ 1,020,000.00
Sub Total Direct Costs + Indirect Costs							$ 5,845,000.00
MPDC Client Costs					%		
8			MPDC Costs to Date	Current as at:			
9			MPDC Internal Costs		3.4%	$ 196,425.91	$ 200,000.00
10			MPDC Land Acquisition/Easement Costs				
11			MPDC Consenting		-	$ 100,000.00	$ 100,000.00
Sub Total Direct Costs + Indirect Costs + MPDC Client Costs							$ 6,145,000.00