

9.0 Appendices

Appendix A Risk Register Template

Appendix B Consequence Scoring Table

CONSEQUENCE TABLE - THREATS

Impact Description	SERVICE DELIVERY		SOCIAL / CULTURAL				ENVIRONMENT		ECONOMIC		Consequence Rating			
	Compliance with Key Performance Measures (KPIs)	Health & Wellbeing	Personal Safety & Security	Community	Cultural Partnerships	Compliance / Governance	Reputation / Perceptions of Council	Natural Environment	Built Environment	Direct Cost / Benefit		Indirect Cost / Benefit		
Extreme	Complete failure to meet performance measures	Multiple fatalities	Significant increase in recorded crime rate trends for selected crimes across the district	Extended unplanned disruption to essential/significant community services and/or structures (non-Council owned or operated)	Complete breakdown of partnership / relationship with Maori or other significant cultural group	Royal commission of Inquiry in relation to breach of compliance by Council	Negative international media coverage	Loss of, or serious irreversible damage / degradation to an area of critical importance (e.g. unique flora, fauna, biodiversity, quality of life, visitor experience etc)	Complete or long term loss of large area of built environment (i.e. loss of amenity)	>\$25M/yr	>\$250M/yr	100		
	Failure to deliver service for an extended period of time	Widespread severe illness throughout the district Significant reduction in life expectancy, permanent disability, or long term negative health effects of many people	Significant decrease in perception of safety across the district	Significant damage to multiple public properties Extremely negative effect on social quality of life (i.e. cohesion, harmony, community spirit, free cultural expression) across the district		Commissioner appointed	Sustained negative national media coverage Extremely poor districtwide perception of Council	Loss of, or significant irreversible damage to, an area of nationally significant natural / recreational / open space or productive land	Complete or long term loss a highly significant part of the built environment (i.e. loss of amenity) Universal dissatisfaction with the amenity of the built environment across the district		Significant long term negative impact on economy across the district			
Major	Failure to meet multiple significant performance measures	Multiple fatalities with reasonable defence	Increase in recorded crime rate trends for selected crimes across the district	Simultaneous unplanned disruption to numerous households or commercial premises or community services and/or structures (non-Council owned or operated)	Partnership / relationship with Maori or other significant cultural group significantly negatively affected	Ministerial Inquiry commissioned in relation to breach of compliance by Council	Negative international media coverage with reasonable defence	Long term serious damage / degradation to an area of critical importance (e.g. unique flora, fauna, biodiversity, quality of life, visitor experience etc)	Significant damage to large area of built environment	>\$2.5M/yr to \$25M/yr	>\$25M/yr to \$250M/yr	70		
	Significant negative impact on delivery of service for an extended period of time	Single fatality	Significant increase in recorded crime rate trends for selected crimes within a local community			Ministerial questions in parliament in relation to breach of compliance by Council	Sustained negative national media coverage with reasonable defence		Complete or long term loss of significant area of built environment (i.e. loss of amenity)		Significant negative impact on economy across the district			
	Failure to deliver service for a short period of time	Multiple severe illnesses spread throughout the district or widespread severe illness within a local community	Decrease in perception of safety across the district	Formal complaint by key stakeholder	Very negative effect on social quality of life (i.e. cohesion, harmony, community spirit, free cultural expression) across the district or extremely negative within any one local community	Law suit resulting in imprisonment of Management &/or Council	Heavy prosecution of Management &/or Council	Sustained negative regional media coverage Council is extremely poorly perceived by its peers	Loss of, or significant irreversible damage to, an area of regionally significant natural / recreational / open space or productive land	Significant reduction in the level of satisfaction with the amenity of the built environment across the district	Universal dissatisfaction with the amenity of the built environment within local community		Significant long term negative impact on economy of local community	
		Reduction in life expectancy, permanent disability, or long term negative health effects of many people												Significant decrease in perception of safety within a local community
Medium	Failure to meet significant performance measures	Single fatality with reasonable defence	Minor increase in recorded crime rate trends for selected crimes across the district	Simultaneous unplanned disruption to multiple households or commercial premises or community services and/or structures (non-Council owned or operated)	Partnership / relationship with Maori or other significant culturally identified group negatively affected	Ministerial questions or 3rd party investigation in relation to breach of compliance by Council	Negative national media coverage with reasonable defence	Medium to long term major but recoverable damage / degradation to an area of critical importance (e.g. unique flora, fauna, biodiversity, quality of life, visitor experience etc)	Damage to large area of built environment	>\$250K/yr to \$2.5M/yr	>\$2.5M/yr to 25M/yr	40		
		Multiple serious injuries throughout the district					Negative regional media coverage		Significant damage to significant area of built environment (i.e. loss of amenity)					
	Negative impact on delivery of service for extended period of time	Severe illness or illness to multiple individuals throughout the district	Increase in recorded crime rate trends for selected crimes within a local community	Formal complaint by member of the public or ratepayer		Breach of Act, consent condition or regulation with strong legal rebuke	Sustained negative regional media coverage with reasonable defence	Loss of, or significant irreversible damage to, an area of locally significant natural / recreational / open space or productive land	Medium term serious damage to an asset of significant economic, cultural or heritage value	Negative impact on economy across the district				
		Significant negative impact on delivery of service for a short period of time	Multiple severe illnesses within a local community	Minor decrease in perception of safety across the district		Formal complaint by key stakeholder with reasonable defence	Sustained negative local media coverage Council is very poorly perceived by its peers	Significant degradation or damage to, an area of regionally significant recreational / open / natural space or productive land, or loss of a significant part of such land	Reduction in the level of satisfaction with the amenity of the built environment across the district	Significant negative impact on economy of local community				
Minor	Some negative impact on service delivery for an extended period of time	Multiple serious injuries with reasonable defence	Minor increase in recorded crime rate trends for selected crimes within a local community	Unplanned disruption to households or commercial premises or community services and/or structures (non-Council owned or operated)	Partnership / relationship with multiple hapu or other local cultural group negatively affected	Information request from the ombudsman in relation to breach of compliance by Council	Limited negative national media coverage	Limited medium term recoverable damage / degradation to an area of critical importance (e.g. unique flora, fauna, biodiversity, quality of life, visitor experience etc)	Damage to significant area of built environment	>\$25K/yr to \$250K/yr	>\$250K/yr to \$2.5M/yr	10		
		Serious injury					Sustained negative local media coverage with reasonable defence		Significant damage to single building / infrastructure asset (i.e. loss of amenity)				Minor negative impact on economy across the district	
	Negative impact on delivery of service for a short period of time	Permanent disability with reasonable defence	Minor decrease in perception of safety within a local community	Community complaints		Breach of Act, consent condition or regulation with modest legal rebuke	Negative regional media coverage with reasonable defence	Degradation or damage to, an area of regionally significant recreational / open / natural space or productive land, or loss of part of such land	Short term serious damage to an asset of significant economic, cultural or heritage value	Minor reduction in the level of satisfaction with the amenity of the built environment across the district				
		Illness to several individuals throughout the district		Formal complaint by member of the public or ratepayer with reasonable defence		Negative local media coverage Council is poorly perceived by its peers		Minor reduction in the level of satisfaction with the amenity of the built environment across the district	Negative impact on economy of local community					
Negligible	Limited negative impact on delivery of service for extended period of time	Serious injury with reasonable defence		Unplanned disruption to single household, commercial premises or community service &/or structures (non-Council owned or operated)	Partnership / relationship with some hapu or other local cultural group negatively affected	Official information request in relation to breach of compliance by Council	Limited regional or local media coverage	Short term recoverable damage / degradation to an area of critical importance (e.g. unique flora, fauna, biodiversity, quality of life, visitor experience etc)	Damage to single building or infrastructure asset (i.e. loss of amenity)	<\$25K/yr	<\$250K/yr	1		
	Limited negative impact on delivery of service for a short period of time	Minor injuries throughout the district		Limited negative effect on social quality of life (i.e. cohesion, harmony, community spirit, free cultural expression) districtwide or somewhat negative within any one local community			Minor complaint		Negative local media coverage with reasonable defence				Short term minor damage to asset of significant economic, cultural or heritage value	Minor negative impact on economy of local community
		Illness to an individual					Technical breach of Act, consent condition or regulation but with little or no material effect or legal rebuke		Council is somewhat poorly perceived by its peers				Degradation or damage to, an area of locally significant recreational / open / natural space or productive land, or loss of part of such land	Minor reduction in the level of satisfaction with the amenity of the built environment within local community

CONSEQUENCE TABLE - OPPORTUNITIES

Impact Description	SERVICE DELIVERY Compliance with Key Performance Measures (KPIs)	SOCIAL / CULTURAL					ENVIRONMENT		ECONOMIC		Consequence Rating			
		Health & Wellbeing	Personal Safety & Security	Community	Cultural Partnerships	Compliance / Governance	Reputation / Perceptions of Council	Natural	Built	Direct Cost / Benefit		Indirect Cost / Benefit		
Negligible	Performance measures improved by 2% - within allocated budget and resources	Prevention of minor injuries		Nil response from community / stakeholders	Partnership / relationship with some hapu or other local cultural group positively affected	Change to consent conditions in favour of the activity	Limited regional media coverage	Short-term environmental enhancement, restoration or protection of a widespread area or area of critical importance (flora, fauna, quality of life, visitor experience etc)	Improvement to, or protection of, single building or infrastructure asset (i.e. loss of amenity)	Less than \$25K benefit per year	Less than \$500K benefit per year	1		
		Prevention of illness to individual		Limited positive effects on social quality of life (i.e. cohesion, harmony, community spirit, free cultural expression)			Positive local media coverage							
							Ambivalent perception of Council in a local community						Negligible environmental enhancement to an area of nationally or regionally significant recreational / open / natural space or productive land or negligible addition to such land	Negligible improvement to amenity, or asset of significant economic, cultural or heritage value
							Ambivalent districtwide perception of Council							
Minor	Performance measures improved by 5% - within allocated budget and resources	Prevention of serious injuries	Minor decrease in recorded crime rate trends for selected crimes within a local community	Letter of support	Partnership / relationship with multiple hapu or other local cultural group positively affected	Consenting authority changes requirements in favour of the activity	Limited positive national media coverage	Minor environmental enhancement, restoration or protection of a widespread area or area of critical importance (flora, fauna, quality of life, visitor experience etc)	Improvement to, or protection of, significant area of built environment	\$25K to \$250K benefit per year	Greater than \$500K benefit per year	10		
		Prevention of illness to several individuals		Some positive effects on social quality of life (i.e. cohesion, harmony, community spirit, free cultural expression)			Positive regional media coverage						Minor environmental enhancement to an area of nationally significant recreational / open / natural space or productive land or minor addition to such land	Minor improvement to amenity, critical asset / lifeline or asset of significant economic, cultural or heritage value
				Minor increase in perception of safety within a local community			Sustained positive local media coverage							
							Council is positively perceived by its peers						Moderate environmental enhancement to an area of regionally significant recreational / open / natural space or productive land or moderately significant addition to such land	Minor increase in the level of satisfaction with the amenity of the built environment within local community
							Positive perception of Council in a local community							
Medium	Performance measures improved by 10% - within allocated budget and resources	Prevention of permanent disability	Minor decrease in recorded crime rate trends for selected crimes across the district	Submission in support of Council's RMA application or Local Authority consent	Partnership / relationship with Maori or other cultural group positively affected	Consenting authority permanently changes requirements in favour of future activities	Positive national media coverage	Moderate environmental enhancement, restoration or protection of a widespread area or area of critical importance (flora, fauna, quality of life, visitor experience etc)	Improvement to, or protection of, large area of built environment	>\$250K to \$2.5M benefit per year	Greater than \$5M benefit per year	40		
		Prevention of severe illness or illness to multiple individuals		Decrease in recorded crime rate trends for selected crimes within a local community			Council seen as champions for the community						Sustained positive regional media coverage	Moderate environmental enhancement to an area of nationally significant recreational / open / natural space or productive land or moderate significant addition to such land
		Some reduction in road toll trend		Positive effect on social quality of life (i.e. cohesion, harmony, community spirit, free cultural expression)			Very positive perception of Council in a local community							
		Increase in life expectancy, prevention of permanent disability, or long term positive health effects to several people		Minor increase in perception of safety across the district			Increase in perception of safety within a local community						Positive districtwide perception of Council	Minor increase in the level of satisfaction with the amenity of the built environment across the district
Major	Performance measures improved by 20% - within allocated budget and resources	Prevention of single fatality	Decrease in recorded crime rate trends for selected crimes across the district	Very positive effect on social quality of life (i.e. cohesion, harmony, community spirit, free cultural expression)	Partnership / relationship with Maori or other significant cultural group significantly positively affected	National change to the interpretation of the law in favour of future activities	Positive international media coverage	Major significant environmental enhancement, restoration, creation or protection of a widespread area or area of critical importance (flora, fauna, quality of life, visitor experience etc)	Significant improvement to, or high level of protection of, large area of built environment	>\$2.5M to \$25M benefit per year	Greater than \$25M benefit per year	70		
		Prevention of multiple severe illness					Highly significant improvement to, or highest level of protection of, significant area of built environment (i.e. loss of amenity)							
		Reduction in road toll trend					Significant decrease in recorded crime rate trends for selected crimes within a local community						Very positive perception of Council	Major significant environmental enhancement or creation of an area of nationally significant recreational / open / natural space or productive land or significant addition to such land
		Increase in life expectancy, prevention of permanent disability, or long term positive health effects to many people					Perception of safety increases across district						Council is extremely well perceived by its peers	
							Significant increase in perception of safety within a local community						Extremely positive perception of Council in a local community	Highly significant environmental enhancement of an area of regionally significant recreational / open / natural space or productive land or significant addition to such land
													Very positive districtwide perception of Council	
			Significant increase in the level of satisfaction with the amenity of the built environment within local community											
Extreme	Performance measures improved by 30% - within allocated budget and resources	Prevention of multiple fatalities	Significant decrease in recorded crime rate trends for selected crimes across the district	Extremely positive effect on social quality of life (i.e. cohesion, harmony, community spirit, free cultural expression)	Extremely positive improvement in partnership / relationship with Maori or other significant cultural group	Law change in favour of future activities	Sustained positive national media coverage	Extreme significant environmental enhancement, restoration, creation or protection of a widespread area or area of critical importance (flora, fauna, quality of life, visitor experience etc)	Highly significant improvement to, or highest level of protection of, large area of built environment (i.e. loss of amenity)	>\$25M benefit	Greater than \$250M benefit per year	100		
		Prevention of widespread severe illness					Benefit Cost Ratio of 80:1							
		Significant reduction in road toll trend					Significant sustained economic growth across the district							
		Significant increase in life expectancy, prevention of permanent disability, or long term positive health effects to many people											Extremely positive districtwide perception of Council	Highly significant improvement to amenity, critical asset / lifeline or asset of highly significant economic, cultural or heritage value

Appendix C Likelihood Scoring Table

LIKELIHOOD TABLE					
	Consequence Description	Annual Probability	Frequency	Description	Rating
Threat	Almost Certain	50%-100%	Greater than every two years	The threat can be expected to occur or a very poor state of knowledge has been established on the threat	5
	Likely	20 - 50%	Once per 2-5 years	The threat will quite commonly occur or a poor state of knowledge has been established on the threat	4
	Possible	10 - 20%	Once per 5-10 years	The threat may occur occasionally or a moderate state of knowledge has been established on the threat	3
	Unlikely	2 - 10%	Once per 10-50 years	The threat could infrequently occur or a good state of knowledge has been established on the threat	2
	Very Unlikely	0-2%	Less than once per 50 years	The threat may occur in exceptional circumstances or a very good state of knowledge has been established on the threat	1
Opportunity	Very Unlikely	0%-25%		The opportunity is very unlikely to be realised or a very low degree of confidence in delivering the gains has been established for the opportunity	1
	Unlikely	25 - 50%		The opportunity is unlikely to be realised or a low degree of confidence in delivering the gains has been established for the opportunity	2
	Possible	50 - 75%		The opportunity will probably be realised or or a moderate degree of confidence in delivering the gains has been established for the opportunity	3
	Likely	75 - 90%		The opportunity is expected to be realised in most circumstances or a high degree of confidence in delivering the gains has been established for the opportunity	4
	Almost Certain	90%-100%		The opportunity is almost certain to be realised or a very high degree of confidence in delivering the gains has been established for the opportunity	5

Appendix D Risk Matrix

RISK MATRIX							
		CONSEQUENCE					
		Negligible (+/-1)	Minor (+/-10)	Medium (+/-40)	Major (+/-70)	Extreme (+/-100)	
Threat	LIKELIHOOD	Almost Certain (5)	Low (5)	Moderate (50)	Very High (200)	Extreme (350)	Extreme (500)
		Likely (4)	Low (4)	Moderate (40)	Very High (160)	Very High (280)	Extreme (400)
		Possible (3)	Negligible (3)	Moderate (30)	High (120)	Very High (210)	Very High (300)
		Unlikely (2)	Negligible (2)	Low (20)	High (80)	High (140)	Very High (200)
		Very Unlikely (1)	Negligible (1)	Low (10)	Moderate (40)	High (70)	High (100)
Opportunity		Very Unlikely (1)	Negligible (-1)	Low (-10)	Moderate (-40)	High (-70)	High (-100)
		Unlikely (2)	Negligible (-2)	Low (-20)	High (-80)	High (-140)	Very High (-200)
		Possible (3)	Negligible (-3)	Moderate (-30)	High (-120)	Very High (-210)	Very High (-300)
		Likely (4)	Low (-4)	Moderate (-40)	Very High (-160)	Very High (-280)	Extreme (-400)
		Almost Certain (5)	Low (-5)	Moderate (-50)	Very High (-200)	Extreme (-350)	Extreme (-500)

RISK TREATMENTS		
Risk Level	Minimum Acceptable Treatment Strategy	
Consider All	Avoid	
>50 - 500	High, Very High, Extreme	Manage Actively
4 to 50	Low to Moderate	Manage Passively
1 to 3	Negligible	Accept

Note: In all cases the option of avoiding the threat should be considered first

Appendix E Risk Assessments

Completed risk assessments for the water supply activity have been stored separately in the Council's document management system (TRIM Context). The risk assessments have been completed at an activity wide level and scheme grouping level as follows:

TRIM Record Number	Title	Contents
R/10/3/2728	Water Supply Activity Plan Risk Assessment 2009 2019 - Activity Wide - 14 Nov 08	Activity Wide Risk Assessment
R/10/3/2729	Water Supply Activity Plan Risk Assessment 2009 2019 - UrbanA - Final	Scheme Risk Assessments including: <ul style="list-style-type: none"> • Edendale • Lumsden • Manapouri • Mossburn • Ohai / Nightcaps / Wairio • Orawia
R/10/3/2730	Water Supply Activity Plan Risk Assessment 2009 2019 - UrbanB - Final	Scheme Risk Assessments including: <ul style="list-style-type: none"> • Otautau • Riverton • Te Anau • Tuatapere • Winton
R/10/3/2731	Water Supply Activity Plan Risk Assessment 2009 2019 - Other RWS - Final	Scheme Risk Assessments including: <ul style="list-style-type: none"> • Five Rivers • Eastern Bush / Otahu Flat • Lumsden / Balfour • Matuku
R/10/3/2732	Water Supply Activity Plan Risk Assessment 2009 2019 - Te A RWS - Final	Scheme Risk Assessments including: <ul style="list-style-type: none"> • Duncraigen • Homestead • Kakapo • Mount York • Princhester • Ramparts • Takitimu

Appendix F Reticulation Information

28 July 08

WATER INFORMATION
DISTRICT WIDE

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Valves 1,417
Hydrants 1,087
Reticulation 631,741 metres 2,382 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
0	1,096	10	0%
15	4,073	24	1%
20	62,285	268	10%
25	59,157	219	10%
32	70,267	124	12%
40	55,675	170	9%
50	84,139	237	14%
63	4,530	10	1%
65	709	4	0%
75	774	2	0%
80	53,480	115	9%
100	130,524	761	22%
110	4,196	1	1%
150	53,999	301	9%
200	7,144	35	1%
300	2,224	16	0%
Total Length (excluding Rising Main):	594,273	2,297	

Pipes (excluding Rising Mains):

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	91,692	574	15%
ASBESTOS CEMENT EVERITE	552	3	0%
ASBESTOS CEMENT FIBROLITE	7,121	35	1%
CONCRETE SPUN REINFORCED	432	2	0%
COPPER	681	6	0%
DUCTILE IRON	32	1	0%
M PVC	11,474	119	2%
POLYETHYLENE (GENERIC)	218,537	642	37%
POLYETHYLENE HIGH DENSITY	10,602	73	2%
POLYETHYLENE LOW DENSITY	13,936	43	2%
POLYETHYLENE MEDIUM DENSITY	7,504	49	1%
PVC (GENERIC)	117,171	327	20%
STEEL (GENERIC)	680	7	0%
STEEL CONCRETE LINED	2,546	5	0%
STEEL GALVANISED	2,344	10	0%
U PVC	107,762	393	18%
UNKNOWN	955	6	0%
UNKNOWN PIPE TYPE	250	2	0%
594,273	2,297		

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WATER INFORMATION FOR DUNCRAIGEN

Valves 1
Hydrants
Reticulation 2,229 metres 4 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
32	1,482	3	100%
Total Length (excluding Rising Main):	1,482	3	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
PVC (GENERIC)	1,482	3	100%
	1,482	3	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
50.00mm PVC (GENERIC)	DUNCRAIGEN RD	747	1
Total Length:		747	1

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WATER INFORMATION FOR EAST BUSH

Valves 21
 Hydrants
 Reticulation 34,977 metres 76 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
0	707	2	2%
20	7,238	23	22%
25	1,111	3	3%
32	8,472	18	25%
40	1,715	3	5%
50	4,990	7	15%
80	5,317	13	16%
100	4,012	6	12%
Total Length (excluding Rising Main):	33,562	75	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	21,242	47	63%
PVC (GENERIC)	11,068	24	33%
U PVC	534	1	2%
UNKNOWN	717	3	2%
	33,562	75	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm PVC (GENERIC)	OTAHU EASTERN BUSH RD	1,415	1
Total Length:		1,415	1

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WATER INFORMATION FOR OTAHU FLAT

Valves 51
 Hydrants 1
 Reticulation 31,613 metres 100 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
20	5,292	17	18%
25	6,187	22	21%
40	1,755	7	6%
50	5,358	24	18%
80	4,306	10	14%
100	6,906	18	23%
Total Length (excluding Rising Main):	29,804	98	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	11,583	39	39%
PVC (GENERIC)	17,965	58	60%
STEEL GALVANISED	256	1	1%
	29,804	98	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm ASBESTOS CEMENT (GENERIC)	OTAHU EASTERN BUSH RD	1,809	2
Total Length:		1,809	2

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WATER INFORMATION FOR EDENDALE

Valves 7
 Hydrants 9
 Reticulation 1,183 metres 14 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
0	90	3	8%
20	149	1	13%
25	471	3	40%
40	15	1	1%
50	393	5	33%
80	64	1	5%
Total Length (excluding Rising Main):	1,183	14	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	621	4	52%
STEEL (GENERIC)	262	4	22%
STEEL GALVANISED	255	4	22%
UNKNOWN	45	2	4%
	1,183	14	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
Total Length:			

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WATER INFORMATION FOR FIVE RIVER

Valves 6
 Hydrants
 Reticulation 6,600 metres 7 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
40	1,409	4	21%
50	5,191	3	79%
Total Length (excluding Rising Main):	6,600	7	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	1,409	4	21%
PVC (GENERIC)	5,191	3	79%
	6,600	7	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
Total Length:			

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WATER INFORMATION FOR HOMESTEAD

Valves 9
 Hydrants
 Reticulation 25,206 metres 38 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
25	5,043	12	20%
32	4,929	7	20%
40	4,376	3	17%
50	4,256	4	17%
80	2,030	4	8%
100	4,572	8	18%
Total Length (excluding Rising Main):	25,206	38	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	3,016	6	12%
POLYETHYLENE (GENERIC)	17,310	25	69%
PVC (GENERIC)	4,880	7	19%
	25,206	38	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
Total Length:			

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WATER INFORMATION FOR KAKAPO

Valves 21
 Hydrants
 Reticulation 45,731 metres 94 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
0	14	1	0%
20	4,403	11	10%
25	8,998	24	20%
32	6,285	10	14%
40	8,425	19	19%
50	7,195	8	16%
80	4,069	10	9%
100	5,916	10	13%
Total Length (excluding Rising Main):	45,304	93	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	582	1	1%
POLYETHYLENE (GENERIC)	26,917	54	59%
POLYETHYLENE HIGH DENSITY	1,937	1	4%
POLYETHYLENE LOW DENSITY	475	1	1%
PVC (GENERIC)	15,392	36	34%
	45,304	93	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm PVC (GENERIC)	KAKAPO RD	427	1
Total Length:		427	1

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WATER INFORMATION FOR LUMSDEN

Valves 37
 Hydrants 42
 Reticulation 9,595 metres 125 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
15	9	1	0%
20	3,422	60	36%
25	235	4	2%
50	141	2	1%
65	209	1	2%
100	4,499	44	47%
150	1,079	13	11%
Total Length (excluding Rising Main):	9,595	125	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	5,596	58	58%
POLYETHYLENE (GENERIC)	3,693	64	38%
POLYETHYLENE MEDIUM DENSITY	96	2	1%
PVC (GENERIC)	209	1	2%
	9,595	125	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
Total Length:			

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WATER INFORMATION FOR LUMS-BALF

Valves 73
 Hydrants 1
 Reticulation 139,257 metres 290 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
15	3,988	20	3%
20	28,385	85	21%
25	16,217	36	12%
32	21,273	22	15%
40	14,143	26	10%
50	10,879	24	8%
63	4,094	9	3%
80	3,098	5	2%
100	9,357	20	7%
110	4,196	1	3%
150	17,575	28	13%
200	4,233	11	3%
Total Length (excluding Rising Main):	137,437	287	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	774	2	1%
POLYETHYLENE (GENERIC)	66,241	149	48%
POLYETHYLENE HIGH DENSITY	460	1	0%
POLYETHYLENE MEDIUM DENSITY	1,436	6	1%
PVC (GENERIC)	5,688	12	4%
STEEL (GENERIC)	226	1	0%
U PVC	62,612	116	46%
	137,437	287	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
200.00mm U PVC	FLORA RD	1,587	2
50.00mm U PVC	LONGRIDGE RD	232	1
Total Length:		1,820	3

28 July 08

WATER INFORMATION FOR BALFOUR

Valves 16
 Hydrants 13
 Reticulation 7,078 metres 50 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
15	14	1	0%
20	1,600	17	23%
50	507	1	7%
100	711	6	10%
150	4,247	25	60%
Total Length (excluding Rising Main):	7,078	50	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	1,564	15	22%
POLYETHYLENE MEDIUM DENSITY	217	1	3%
U PVC	5,298	34	75%
	7,078	50	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
Total Length:			

28 July 08

WATER INFORMATION FOR MANAPOURI

Valves 59
 Hydrants 37
 Reticulation 8,843 metres 95 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
20	283	3	3%
25	964	9	11%
40	1,519	14	18%
50	636	8	7%
100	5,043	55	59%
150	130	3	2%
Total Length (excluding Rising Main):	8,575	92	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	913	15	11%
POLYETHYLENE (GENERIC)	2,328	25	27%
POLYETHYLENE HIGH DENSITY	141	1	2%
PVC (GENERIC)	1,243	19	14%
STEEL (GENERIC)	62	1	1%
STEEL GALVANISED	123	2	1%
U PVC	3,765	29	44%
	8,575	92	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm ASBESTOS CEMENT (GENERIC)	FRASERS BEACH RD	151	1
50.00mm POLYETHYLENE (GENERIC)	FRASERS BEACH RD	117	2
Total Length:		268	3

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WATER INFORMATION FOR MATUKU

Valves 9
 Hydrants 1
 Reticulation 7,935 metres 10 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
25	665	1	9%
40	2,659	2	35%
50	2,376	2	31%
63	436	1	6%
80	1,471	3	19%
Total Length (excluding Rising Main):	7,607	9	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	5,700	5	75%
PVC (GENERIC)	1,907	4	25%
	7,607	9	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
80.00mm PVC (GENERIC)	DUNROBIN VALLEY RD	328	1
Total Length:		328	1

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WATER INFORMATION FOR MOSSBURN

Valves 47
 Hydrants 26
 Reticulation 9,075 metres 69 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
20	2,258	10	27%
25	415	5	5%
40	1,025	9	12%
50	1,007	5	12%
100	1,638	19	20%
150	1,932	16	23%
Total Length (excluding Rising Main):	8,275	64	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	4,541	29	55%
PVC (GENERIC)	1,356	10	16%
U PVC	2,378	25	29%
	8,275	64	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm U PVC	CUMBERLAND ST	83	1
100.00mm U PVC	TE ANAU MOSSBURN HW	717	4
Total Length:		800	5

28 July 08

WATER INFORMATION FOR MT YORK

Valves 17
 Hydrants
 Reticulation 28,421 metres 47 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
20	1,775	4	6%
25	3,518	9	13%
32	4,351	12	16%
40	1,441	1	5%
50	11,554	13	42%
75	563	1	2%
80	3,216	5	12%
100	1,350	1	5%
Total Length (excluding Rising Main):	27,768	46	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	2,086	3	8%
POLYETHYLENE LOW DENSITY	8,418	21	30%
PVC (GENERIC)	1,547	1	6%
U PVC	15,524	20	56%
UNKNOWN	193	1	1%
	27,768	46	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm U PVC	HILLSIDE MANAPOURI RD	653	1
Total Length:		653	1

28 July 08

WATER INFORMATION FOR OHAI

Valves 49
 Hydrants 62
 Reticulation 9,974 metres 52 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
32	549	2	6%
40	192	5	2%
80	6	1	0%
100	1,438	10	15%
150	7,202	33	77%
Total Length (excluding Rising Main):	9,386	51	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	8,646	44	92%
COPPER	681	6	7%
STEEL GALVANISED	60	1	1%
	9,386	51	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
150.00mm STEEL CONCRETE LINED	NIGHTCAPS OHAI HW	588	1
Total Length:		588	1

28 July 08

WATER INFORMATION FOR NIGHTCAPS

Valves 56
 Hydrants 52
 Reticulation 13,041 metres 40 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
32	328	2	4%
50	445	1	6%
75	211	1	3%
80	441	1	6%
100	5,174	31	68%
150	983	1	13%
Total Length (excluding Rising Main):	7,582	37	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT FIBROLITE	7,121	35	94%
POLYETHYLENE LOW DENSITY	270	1	4%
PVC (GENERIC)	190	1	3%
	7,582	37	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
150.00mm U PVC	NIGHTCAPS OHAI HW	2,066	1
80.00mm U PVC	NIGHTCAPS OHAI HW	3,394	2
Total Length:		5,459	3

28 July 08

WATER INFORMATION FOR WAIRIO

Valves 14
 Hydrants 5
 Reticulation 4,096 metres 13 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
32	1,248	2	30%
65	500	3	12%
80	2,349	8	57%
Total Length (excluding Rising Main):	4,096	13	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	1,248	2	30%
PVC (GENERIC)	2,848	11	70%
	4,096	13	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
Total Length:			

28 July 08

WATER INFORMATION FOR ORAWIA

Valves 7
 Hydrants 3
 Reticulation 2,086 metres 9 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
40	93	1	4%
50	1,029	4	49%
100	964	4	46%
Total Length (excluding Rising Main):	2,086	9	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	1,122	5	54%
PVC (GENERIC)	964	4	46%
	2,086	9	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
Total Length:			

28 July 08

WATER INFORMATION FOR OTAUTAU

Valves 58
 Hydrants 96
 Reticulation 18,175 metres 90 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
20	254	2	2%
25	572	3	4%
32	1,207	4	9%
40	558	6	4%
50	1,349	3	9%
100	10,262	58	72%
Total Length (excluding Rising Main):	14,202	76	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	12,182	64	86%
POLYETHYLENE (GENERIC)	1,075	9	8%
POLYETHYLENE HIGH DENSITY	415	2	3%
POLYETHYLENE LOW DENSITY	530	1	4%
	14,202	76	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
150.00mm ASBESTOS CEMENT (GENERIC)	KNUTSFORD RD	1,914	4
150.00mm ASBESTOS CEMENT (GENERIC)	LIEMEN ST	512	3
150.00mm ASBESTOS CEMENT (GENERIC)	MAIN ST	1,428	6
150.00mm ASBESTOS CEMENT (GENERIC)	ROCHDALE ST	119	1
Total Length:		3,974	14

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WATER INFORMATION FOR RAMPARTS

Valves	44	
Hydrants		
Reticulation	57,927 metres	154 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
20	4,640	20	8%
25	7,335	50	13%
32	6,786	11	12%
40	7,713	29	14%
50	4,907	7	9%
80	20,552	27	37%
100	4,340	9	8%
Total Length (excluding Rising Main):	56,273	153	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
POLYETHYLENE (GENERIC)	20,192	57	36%
POLYETHYLENE HIGH DENSITY	2,459	30	4%
POLYETHYLENE MEDIUM DENSITY	1,317	14	2%
PVC (GENERIC)	32,305	52	57%
	56,273	153	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm PVC (GENERIC)	RAMPARTS RD	1,653	1
Total Length:		1,653	1

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WATER INFORMATION FOR RIVERTON

Valves 118
 Hydrants 207
 Reticulation 34,753 metres 156 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
0	285	4	1%
20	518	5	2%
25	900	8	4%
40	837	4	3%
50	187	4	1%
100	18,282	89	74%
150	3,827	26	15%
Total Length (excluding Rising Main):	24,836	140	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	21,854	115	88%
M PVC	435	4	2%
POLYETHYLENE (GENERIC)	1,392	9	6%
POLYETHYLENE HIGH DENSITY	533	4	2%
POLYETHYLENE LOW DENSITY	185	2	1%
POLYETHYLENE MEDIUM DENSITY	79	3	0%
PVC (GENERIC)	108	1	0%
UNKNOWN PIPE TYPE	250	2	1%
Total Length	24,836	140	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
150.00mm ASBESTOS CEMENT (GENERIC)	CARMICHEAL RD	5,970	2
150.00mm ASBESTOS CEMENT (GENERIC)	DOWNING ST	111	1
150.00mm ASBESTOS CEMENT (GENERIC)	PALMERSTON ST	1,355	3
200.00mm ASBESTOS CEMENT (GENERIC)	BAY RD	474	3
200.00mm ASBESTOS CEMENT (GENERIC)	DOWNING ST	558	2
200.00mm ASBESTOS CEMENT (GENERIC)	PALMERSTON ST	216	1
200.00mm ASBESTOS CEMENT (GENERIC)	RICHARD ST	1,233	4
Total Length:		9,917	16

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WATER INFORMATION FOR TAKITIMU

Valves 26
 Hydrants
 Reticulation 32,658 metres 64 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
15	18	1	0%
20	1,446	4	4%
25	4,388	12	13%
32	11,268	23	35%
40	2,495	6	8%
50	7,802	8	24%
80	3,923	7	12%
100	1,317	3	4%
Total Length (excluding Rising Main):	32,658	64	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	1,197	1	4%
POLYETHYLENE (GENERIC)	22,800	48	70%
POLYETHYLENE HIGH DENSITY	695	1	2%
POLYETHYLENE LOW DENSITY	191	1	1%
PVC (GENERIC)	7,710	12	24%
U PVC	66	1	0%
Total Length	32,658	64	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
Total Length:			

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WATER INFORMATION FOR TE ANAU

Valves 417
 Hydrants 261
 Reticulation 55,718 metres 511 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
15	45	1	0%
25	269	2	0%
32	599	3	1%
40	3,724	20	7%
50	9,226	87	17%
80	2,639	20	5%
100	22,270	201	41%
150	10,217	123	19%
200	2,901	23	5%
300	2,224	16	4%
Total Length (excluding Rising Main):	54,115	496	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	14,554	102	27%
DUCTILE IRON	32	1	0%
M PVC	11,040	115	20%
POLYETHYLENE (GENERIC)	2,777	26	5%
POLYETHYLENE HIGH DENSITY	3,734	31	7%
POLYETHYLENE LOW DENSITY	157	2	0%
POLYETHYLENE MEDIUM DENSITY	4,361	23	8%
PVC (GENERIC)	4,340	64	8%
U PVC	13,121	132	24%
	54,115	496	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm M PVC	RODEO DR	122	1
150.00mm M PVC	DUSKY ST	217	4
150.00mm U PVC	RALPH MOIR DR	34	1
200.00mm M PVC	DUSKY ST	9	1
300.00mm M PVC	BLIGH ST	453	1
300.00mm M PVC	DUSKY ST	447	6
300.00mm PVC (GENERIC)	BLIGH ST	322	1
Total Length:		1,603	15

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WATER INFORMATION FOR TUATAPERE

Valves 49
 Hydrants 59
 Reticulation 12,652 metres 73 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
20	384	3	4%
25	756	2	8%
32	202	3	2%
50	340	3	4%
100	4,945	31	51%
150	3,035	18	31%
200	11	1	0%
Total Length (excluding Rising Main):	9,673	61	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	7,535	49	78%
POLYETHYLENE (GENERIC)	369	6	4%
POLYETHYLENE LOW DENSITY	1,151	3	12%
PVC (GENERIC)	607	2	6%
U PVC	11	1	0%
	9,673	61	

RISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm ASBESTOS CEMENT (GENERIC)	ELDER DR	28	1
100.00mm ASBESTOS CEMENT (GENERIC)	ERSKINE ST	120	1
100.00mm ASBESTOS CEMENT (GENERIC)	HALF MILE RD	259	1
100.00mm U PVC	ELDER DR	97	1
100.00mm U PVC	HALF MILE RD	368	1
150.00mm ASBESTOS CEMENT (GENERIC)	BRIDGE ST	394	1
150.00mm ASBESTOS CEMENT (GENERIC)	HALF MILE RD	512	2
150.00mm ASBESTOS CEMENT (GENERIC)	KING ST	357	1
150.00mm ASBESTOS CEMENT (GENERIC)	MCVICAR ST	801	1
150.00mm ASBESTOS CEMENT (GENERIC)	ORAWIA RD	42	2
Total Length:		2,979	12

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WATER INFORMATION FOR WINTON

Valves 149
 Hydrants 165
 Reticulation 28,789 metres 191 pipes

Pipes (excluding Rising Mains):

<u>Diameter</u>	<u>Length</u>	<u>No. of Pipes</u>	
20	239	3	1%
25	1,056	11	4%
40	984	8	4%
50	2,184	11	8%
100	17,527	138	68%
150	3,771	15	15%
Total Length (excluding Rising Main):	25,761	186	

<u>Pipe Type</u>	<u>Length</u>	<u>No. of Pipes</u>	
ASBESTOS CEMENT (GENERIC)	14,844	117	58%
ASBESTOS CEMENT EVERITE	552	3	2%
CONCRETE SPUN REINFORCED	432	2	2%
POLYETHYLENE (GENERIC)	1,875	16	7%
POLYETHYLENE HIGH DENSITY	229	2	1%
POLYETHYLENE LOW DENSITY	659	5	3%
PVC (GENERIC)	172	2	1%
STEEL CONCRETE LINED	2,546	5	10%
U PVC	4,453	34	17%
	25,761	186	

RIISING MAINS

<u>Pipetype</u>	<u>Address</u>	<u>Length</u>	<u>No. of Pipes</u>
100.00mm ASBESTOS CEMENT (GENERIC)	WEMYSS ST	100	1
150.00mm ASBESTOS CEMENT (GENERIC)	WEMYSS ST	18	1
200.00mm ASBESTOS CEMENT (GENERIC)	GREAT NORTH RD	263	2
200.00mm ASBESTOS CEMENT FIBROLITE	GREAT NORTH RD	2,647	1
Total Length:		3,028	5