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October 28, 2015
1411-Final Report

City of Port Alberni
4850 Argyle Street
Port Alberni, B.C. V9Y 1V8

Attention: **Mr. Guy Cicon, PEng**
City Engineer/Director of Public Works

Re: City of Port Alberni Water Study Update - Final Report

We are pleased to submit four (4) bound and one digital (pdf) copy of the "City of Port Alberni Water System Study, October 2015".

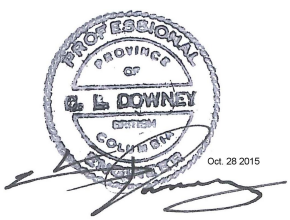
The report outlines the results of the computer network analysis of the water system and the improvements required to meet the pressure and flow requirements for a future water system service population of 22,509; consisting of 18,621 in the City of Port Alberni, 1,008 in the Tseshaht First Nations and 2,880 serviced by the Alberni Clayoquot Regional District Beaver Creek water system to Year 2034.

The majority of the upgrading projects identified in the 2003 water study for the City have been implemented. Population growth has been slower than anticipated in the 2003 study. Per capita demands have been decreasing and the projected population rate of growth is lower than the 2003 study. Upgrades are required to meet the City's minimum fire flow requirements and to service future development. Expansion of the storage capacity of the Arrowsmith Reservoir will be required a development in pressure zone 173 increases.

We thank you for the opportunity to be of service to the City on this project. Please do not hesitate to contact us to discuss any matter in greater detail and we would be pleased to assist the City in the implementation of the recommendations.

Yours truly,

KOERS & ASSOCIATES ENGINEERING LTD.



Mitchell Brook, PEng
Project Engineer

Chris Downey, PEng
Project Manager

City of Port Alberni

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City of Port Alberni

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1 INTRODUCTION

1.1 AUTHORIZATION

In March 2014, the City of Port Alberni authorized Koers & Associates to carry out an update of the City's 2005 Water Study. The work was to be carried out in accordance with Koers & Associates proposal dated March 4, 2014.

1.2 BACKGROUND

The City is supplied with water from two main sources, China Creek and Bainbridge Lake. A third source, used only in emergencies, is located on the Somass River. In addition to serving all properties within City limits, the City also supplies bulk water to the Tseshat First Nations Reserve.

The City water system consists of dams, intake structures, storage reservoirs, distribution mains, service connections, fire hydrants and miscellaneous appurtenances. Details of the system are described in previous reports.

The last water study, which considered the distribution system, was carried out by Koers & Associates in 2005. Since then the City has worked towards implementing the recommendations noted in the report and have completed the majority of the distribution system improvements and several of the supply system improvements included the construction of the new supply main from China Creek.

1.3 REGIONAL WATER SYSTEM

In addition to the previous report completed for the City, Koers & Associates carried out a regional water study for the City and the Regional District of Alberni-Clayoquot in 2010. The study considered a future regional supply and distribution system, incorporating the Cherry Creek Improvement District and Beaver Creek water system, including various water supply options.

The City is moving forward with the regional approach and now provides water to the Beaver Creek through the Strick Road pump station that was commissioned in 2014. In addition the City has recently constructed a new water treatment plant at the Bainbridge pump station site, with UV and sodium hypochlorite disinfection, satisfying three of the four requirements for the Vancouver Island Health Authority's (VIHA) 4-3-2-1 water treatment guidelines. The City is currently in the process of applying for a filtration deferral from VIHA to delay the requirement of the filtration component of the treatment plant.

1.4 STUDY OBJECTIVES

The objectives of this study are to:

1) Analyze the water distribution system and identify what upgrading works are required, if any, works required to meet current demands and to meet future demands upon build-out in accordance with the Official Community Plan.

2) Review the impact a Tsunami could have on the ability to supply water to the City residences and businesses north of Rogers Creek and to the Beaver Creek Water System if the water mains crossings Rogers Creek on Victoria Quay and

Gertrude Street are damaged, and identify options for strengthening the water system to mitigate the effects of a Tsunami.

1.5 SCOPE OF WORK

To meet the study objective, the following work plan was adopted:

Project Start-up Meeting, Data Collection & Review

- Meet with City staff to review the project scope and work plan.
- Obtain and review the following documents:
  - Digital copy of City's water system drawing in AutoCAD format.
  - Record drawings of system improvements since completion of the 2005 water study.
  - Land-use maps. Digital in pdf and AutoCAD format, if available.
  - OCP document and maps (if different than available on City website).
  - Water supply agreement between the City and the Alberni Clayoquot Regional District of the Beaver Creek Water System.

Model Development

- Update the City water model to reflect current conditions.
- Re-confirm PRV settings, reservoir control settings (top water level, control valve open and close), booster pump stations and Somass River intake pump station information. Enter information into water model.

  The City's water system will be modelled using the computer program WaterGems by Bentley Systems Inc. This is a powerful, easy-to-use program to analyse, design, and optimize water distribution systems. Koers utilizes this program for all of the water modelling projects because of its reliability, versatility, AutoCAD and GIS interface, and support by its creator Bentley Systems Inc.

Population and Demand Projections

- Review population figures from the 2011 Census, BC Stats, anticipated growth rate from the City's Planning Department and OCP build-out population projection and timeframe.
- Review growth projections for the ACRD Beaver Creek Water System.
- Obtain from the City a breakdown of water consumption, in thousands of cubic meters per year, for the past three years for six user groups (residential; multi-family; industrial; commercial; city; and outside city).
- Obtain water consumption records and demand projections for Beaver Creek to the City's OCP build-out timeline.
- Develop existing average day, maximum day and peak hour demands for the entire system. Apply these to each of the eight user groups based on their percentage of annual demand.
- Develop demands at OCP build-out based on project population growth projections.
- Based on shape files provided from the City GIS, spatially add most recent demands to water model corresponding with annual metered demand records provided by the City. If shape files are not available the residential demands will be spread throughout the City System and the top 20 commercial users by volume will be added individually. It is understood the City will be able to identify the large users and provide their demands.

- Present population and demand findings in a brief technical report to City staff to obtain approval before advancing the water modelling.

Modelling Analysis Criteria

- Establish modelling analysis criteria for distribution system (minimum system residual pressures during peak hour and fire flow demands, maximum static pressures, maximum velocities in mains, pipe friction factors) and reservoir storage requirements.
- Present results in technical report to City staff to obtain approval before advancing the water modelling.

System Analysis

Existing Conditions

- Run model for existing conditions for three demand conditions: average day: maximum day plus fire flow; and peak hour.
- Check results of each against design criteria.
- Identify system shortcomings (inadequate pressures or fire flows, velocities that exceed design guidelines, dead-end mains) if any.
- Adjust model, re-run as needed to establish extent of required works. Investigate if other upgrading options are possible.
- Model other scenarios and compare findings. Confirm pipe sizes, looping and/or main twinning(s) necessary to supply peak hour residual pressures and design fire flows.
- Using 24 hour extended time modelling feature, confirm system's ability to refill the reservoirs.
- Check reservoir storage capacity against design requirements.
- Develop phasing plan of works.
- Prepare cost estimate (Class D – order of magnitude) of proposed works.

OCP Build-Out

- Expand system model to reflect land-use changes and development patterns in accordance with the OCP by adding trunk mains in the future development areas.
- Assign average, maximum day, peak hour and fire flow demands to new areas based on land-use densities.
- Run model under average day, maximum day plus fire flow and peak hour demands. Analyse the results. Identify upgrading options to meet design standards and re-run the model to confirm.
- Using 24 hour extended time modelling feature, confirm the system's ability to refill the reservoirs.
- Check reservoir storage capacity against design requirements at OCP Build-Out.
- Develop phasing plan of works and prepare cost estimates (Class D).

Tsunami

- Review the impact on the trunk system and its ability to supply water to the City north of Rogers Creek and to Beaver Creek if the water mains crossings the bridges over Rogers Creek on Victoria Quay and Gertrude Street are damaged.
- Identify options for strengthening system.

Draft Report

- Present findings in a bound draft report, complete with plans, illustrations, graphs, tables, discussion, cost estimates, conclusions, and recommendations. A coloured plan drawing showing the City's water system and proposed works will be included.
- A digital (pdf) copy of the draft report will be submitted to the City for review. Upon review, a meeting will be arranged with staff to discuss the report, and agree on modifications or additions.

Final Report

- Submit final report upon receipt of City comments. A digital (pdf) and four bound copies of the report will be provided.

1.6 ACKNOWLEDGEMENTS

Koers & Associates Engineering Ltd. acknowledges with thanks, the assistance provided by Mr. Guy Cicon, PEng, City Engineer, Brian Mousley, Utilities Superintendent and Amar Giri, Waterworks Chargehand, during the data collection, analysis and preparation of the report.

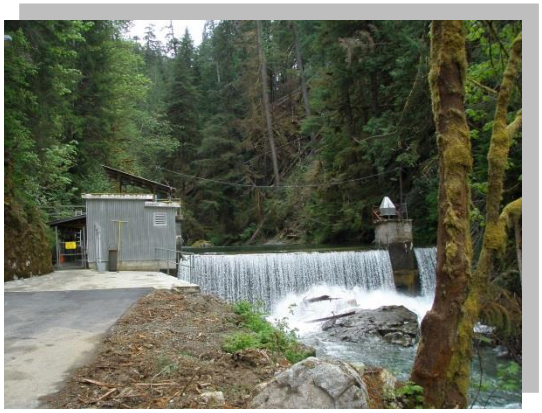
2 WATER SYSTEM

2.1 EXISTING SYSTEM

The City of Port Alberni's main water supply source is China Creek with supplemental supply provided from Bainbridge Lake. The City also maintains an emergency supply connection to the Somass River. A brief discussion of each supply source, water treatment and the City's distribution system is presented below.

2.1.1 Supply & Treatment

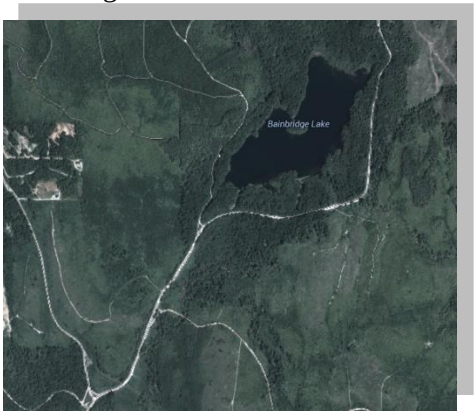
China Creek



China Creek is the City's oldest licenced water supply source, with authorization granted by conditional water licence C018903 dated July 24, 1912; before the start of World War 1. Water is withdrawn from China Creek from an intake (el. 184 m) at the dam located approximately 7.5 kms upstream from the mouth of the river. At the intake, water passes through a travelling screen and into a 3.5 km long, 500 mm diameter HDPE supply main that conveys the water to the Bainbridge Pump Station. This main was originally a 400 mm dia. above ground steel pipe constructed in 1931. It was replaced in two phases, between the years 2006 and 2009, with a buried 500 mm dia HDPE pipe.

The China Creek watershed at the dam encompasses 57 km^2 and includes Lizard Lake. The lake was enlarged with the construction of an earthern dam at its outlet. It has a licenced live storage volume of 545,000 m^3 with an operating range between 728 m and 732 m geodetic. The use of lizard lake as a storage source is governed by conditional water licence C061373 as of December 28, 1983.

Bainbridge Lake



Bainbridge Lake is situated about halfway between the China Creek intake and the City boundary. Its use as a water supply source is governed by conditional water licence C0120136 and C0120137as of November 25, 1961. Water flows from Bainbridge Lake (elev. 153 m) through a 1.5 km long, 500 mm diameter supply main to the Bainbridge Pump Station where it is pumped into the China Creek supply main (184 m HGL). In 1992, the original steel supply main was replaced due to severe corrosion with a PVC main.

The lake has a catchment area of 13 km^2 and a licenced live storage volume of 1,036,125 m^3. Outflow from the lake is controlled by a small (3 m high) earthfill dam. At the City's intake, water passes through a course screen before entering the supply main.

Somass River

In the event that daily demand could not be met from the China Creek/Bainbridge supply, the City has the ability to activate the Somass River pumping station. The station in located in the northern end of the City, approximately 1 km upstream from the crossing of Highway 4. It consists of a fixed inlet screen, water pumps and a gas chlorination system.

The Somass River is used only as a last resort because of the marginal water quality in the summer months from fish runs, agricultural runoff, and sediment loading during heavy rainfall events. Its use is governed by conditional water licence C025492 as of February 20, 1959. It is recommended that this intake be maintained to provide water to the City in the event that the Franklin River Road supply main is out of service.

Water Treatment

Water treatment for China Creek and Bainbridge Lake occurs at the new Bainbridge Water Treatment Plant with UV and sodium hypochlorite disinfection. From the station, treated water is conveyed approximately 4.5 kms through a 600 mm dia. steel supply main (constructed in 1963) that discharges into the Lower and Upper Cowichan Reservoirs.

During periods of high turbidity, which are associated with heavy rainfall events, the China Creek supply is shut off and Bainbridge Lake is activated.

Water treatment for the Somass River consists of a fixed screen and gas chlorination.

Water Licences

As noted, the City holds water diversion licences on China Creek, Bainbridge Lake and Somass River and water storage licences on Bainbridge Lake and Lizard Lake. These licences are summarized in **Table 1** and **Table 2**. Copies of these licences are located in **Appendix A** at the end of the report.

Table 1: Water Diversion Licences

Licence No.	Source	Priority Date	Amount (m^3/day)	Amount (L/s)
C018903	China Creek	July 24, 1912	24,466	(283)
C120137	Bainbridge Lake	Oct 25, 1961	9,790	(113)
Maximum Daily Withdrawal (excluding Somass R):			**34,256**	**(396)**
C025492	Somass River	Feb 20, 1959	13,638	(158)

Table 2: Water Storage Licences

Licence No.	Source	Priority Date	Amount (m^3)
C061373	Lizard Lake	Dec 28, 1983	645,111
C120136	Bainbridge Lake	Oct 25, 1961	1,036,125
		Total Storage (m^3)	1,681,236

2.1.2 Distribution System

The City water distribution system is divided into numerous pressure zones, controlled by the main distribution reservoirs, namely upper and lower Cowichan, Burde Street, and Johnston Street, most of which are interconnected by pressure reducing valves.

Listed below in **Table 3** is a summary of the existing pressure zones and the approximately service pressure ranges.

Table 3: Pressure Zone Summary

ZONE	HGL (m)	Maximum Elevation (m)	Minimum Static Pressure kPa (psi)	Minimum Elevation (m)	Maximum Static Pressure kPa (psi)
Cowichan Pump Station	180	142	373 (54)	109	697 (101)
Arrowsmith Reservoir	173	132	402 (58)	86	853 (124)
Upper Cowichan Reservoir	158	126	314 (46)	53	1,030 (149)
Lower Cowichan Reservoir	144	110	334 (48)	82	608 (88)
Anderson PRV (122.1)	122	90	314 (46)	27	932 (135)
Huff PRV (122.2)	122	87	343 (50)	42	784 (114)
Johnston PRV	100	50	491 (71)	25	736 (107)
Argyle PRV (86.1)	86	54	314 (46)	3	814 (118)
Burde Reservoir (86.2)	86	55	304 (44)	5	795 (115)
Johnston Reservoir	66	31	343 (50)	1	637 (92)

The distribution system consists of more than 156 kms of piping ranging in age, material and diameter. A breakdown of the pipe type by diameter is presented in **Table 4** below.

Table 4: Pipe Diameters, Materials and Lengths

Diameter (mm)	Length (m)						
	PVC	Asbestos Cement	Ductile Iron	Cast Iron	HDPE	Steel	Total
100	425	1,180	0	360	0	0	1,965
150	24,030	48,455	2,150	16,065	0	0	90,700
200	11,080	18,710	1,810	3,110	0	0	34,710
250	580	2,045	0	800	0	0	3,425
300	3,780	2,485	2,975	4,810	280	555	14,885
350	365	4,990	250	0	0	0	5,605
400	520	0	565	0	0	105	1,190
425	0	0	1,965	0	0	0	1,965
450	640	255	950	0	0	380	2,225
Total	41,420	78,120	10,665	25,145	280	1,040	**156,670**

The City of Port Alberni established a universal metering program in 2000 and has a total of 6,547 metered connections. The service meters are read three times a year in April, August and December.

3 DESIGN POPULATION & DEMANDS

3.1 HISTORIC & FUTURE POPULATION PROJECTION

The 2011 Census population for the City of Port Alberni is 17,743. Based on current BC Stats data the 2013 population for the City is 16,769. The City of Port Alberni also supplies water to the ACRD's Beaver Creek Water System through the newly constructed Strick Road Pump Station. The current population of the Beaver Creek Water System is approximately 2,337.

For the purposes of infrastructure planning this report assumes that the population growth for the City of Port Alberni will be 0.5%. Population projections for the Beaver Creek Water System are based on assumed growth rates as identified in the 2009 Alberni Valley Regional Water Study Update completed by Koers & Associates Engineering Ltd. As identified in the report the growth rates are 1.0% for Beaver Creek.

The population projections have been calculated for a 20 year period as defined by the City's current Official Community Plan. The population projections to 2034 are detailed in **Table 5** below:

Table 5: Population Projections, 2013 - 2034

Year	Population			
	City of Port Alberni	Beaver Creek	Tseshaht First Nations	Combined Total
2013	16,769	2,337	600	19,706
2014	16,850	2,360	615	19,825
2024	17,715	2,607	787	21,109
2034	18,621	2,880	1008	22,509
20 Year Increase	1,771 11%	520 22%	393 64%	2,684 14%

3.2 WATER DEMANDS

A detailed description on the calculation of the current and future demands for the City of Port Alberni Water System is outlined in Technical Memorandum No. 1. A copy of this report is included in **Appendix B**.

As the Tseshaht First Nations is supplied by the City, through of metered connection, the growth in the First Nations demand has been accounted for in the overall demand projections.

3.2.1 Demand Projections

The water demand projections for the City of Port Alberni are shown in **Table 6** below. A detailed breakdown of the demand calculations is included in Technical Memorandum No. 1.

The MDD was for future demands factored by 115% to provide a factor of safety for the computer modelling to account for uncertainties with regards to climate change and future irrigation rates, and changes in existing water use and land zoning.

Table 6: Demand Projections

Year	Population	ADD	MDD	
		Total	Total	Factored
2014	19,825	**136.8**	**286.5**	**329.5**
2024	21,109	**145.6**	**303.8**	**349.4**
2034	22,509	**155.2**	**322.4**	**370.8**

3.2.3 Fire Flow Requirements

The ability to provide adequate fire flow is an important feature of a properly designed water distribution system. Fire flow requirements vary, depending on building design, floor area, number of stories, construction materials, if a fire sprinkler system is installed, fire break walls, and spacing from adjacent buildings (exposure).

The City's design standards specify fire flow demands are to be calculated in accordance with the most recent version of the "Water Supply for Public Fire Protection" by the Fire Underwriters Survey (FUS), for existing and anticipated land use. In no case is it to be less than 60 l/s and it shall not exceed 300 l/s except in the case of an unusual risk. The FUS design duration for these flows range from 1.75 to 4 hours; respectively.

Table 7 shows estimated design fire flows for each land-use (zoning) within the City.

Table 7: Estimated Design Fire Flows by Zoning

Land-Use (Zoning) Classification	Design Fire Flow (lps)
Multi-Family Residential	150
Residential	67
General Commercial	150 - 250
Neighbourhood Commercial	175
Institutional	150 - 200
Industrial	250 - 300
Urban Agriculture	67
Highway Commercial	200
Future Residential	150

3.2 WATER CONSERVATION

In 2008, the provincial government launched the Living Water Smart program emphasizing water conservation. This program requires 50% of new municipal water needs to be acquired through conservation by Year 2020. However, for the purposes of this report water conservation has not been included in the demand projections to provide a more conservative approach for the purposes of infrastructure sizing.

4 WATER MODEL UPDATE

4.1 COMPUTER PROGRAM

Modelling of the City's water distribution system was carried out utilizing the computer software program WaterGems, an enhanced version of WaterCAD. This water distribution modelling and management software is in use throughout North America by engineering consultants, municipalities, and utility companies and is used by Koers because of its reliability, versatility, AutoCAD and GIS interface, and support by its creator Bentley Systems Inc.

WaterGems is a powerful, easy-to-use program to analyse, design, and optimize water distribution systems. The programs many features include; steady state and extended time modelling, fire flow event modelling while evaluating flows and pressures across the entire system, peak hour pressure analyses, optimization of fixed and variable speed pumps and reservoir storage to minimize energy usage and cost, and automated model calibration. Other analyses features include; system leakage, water loss and unaccounted for water, reservoir mixing, and water-age. The modelling results are presented in tabular and graphical form.

4.2 MODEL UPDATE

4.2.1 Supply & Distribution System

The 2005 WaterCAD water model was updated incorporating water supply and distribution system operational changes, upgrades and expansions since the 2005 water study. System upgrades listed in the 2005 water study that have been carried out are listed in **Table 8**.

Table 8: Completed 2005 Study Improvements

Item	Project Description
S 1	New main from China Creek to Bainbridge Pump Station
S 3	New Check Valve in Bainbridge Pump Station
S 4	Two New Bainbridge Pumps
CP 1	Check Valve at Scott St and 14th Ave
CP2	New main on Alberni St from 14th Ave to 15th Ave
CP 3	Check Valve at Alberni St and 14th Ave
UC 2	New main from Barkley Cres to 21st Ave through future R/W
UC 3	New main on 21st Ave from Port Alberni Hwy to Wallace St
LC 1	New altitude valve at Lower Cowichan
LC 2	New main on 11th Ave from Clegg Crescent South to Ship Creek Road (200 mm dia.)
AP 1	Adjust System PRVs downstream settings
AP 4	Modify Pressure Zone Boundary at Bruce St and 5th Ave with New Closed Valve
AP 5	New main on Bruce Street from 5th Ave to 6th Ave

Item	Project Description
H 1	Adjust System PRVs downstream settings
H 2	New main on Wood Ave from Wallace St to Waterhouse St
H 3	New main on Redford St from 17th Ave to San Mateo Drive
H 4	New main on Steede Ave from Wallace St to R/W north of Wallace St
H 5	New main on 21st Ave from Whittlestone Ave to Wallace St
H 6	Replace exist PRV at Wallace St and Warnock Ave with a new 200 mm dia. main
H 7	Open exist closed valve at King St and Kendall Ave
H 8	Open exist closed valve at King St and Wood Ave
H 9	Open exist closed valve at Maitland St and Kendall Ave
H 10	Close exist valve at Morton St and 14th Ave
H 11	Install new closed valve at Redford St and 16th Ave
H 12	Open exist closed valve at Redford St and 16th Ave
H 13	Open exist closed valve at Bute St and 17th Ave
H 14	Open exist closed valve at Bute St and 16th Ave
H 15	Close exist valve at Bute St and 16th Ave
H 16	Install new closed valve at Wallace St and Wood Ave
H 17	Install new closed valve at Exton St and Wood Ave
H 18	Install new closed valve at Maitland St and Wood Ave
H 19	Install new closed valve at Waterhouse St and Wood Ave
H 21	New main on North Park Dr from 16th Ave to 17th Ave
H 22	New fire hydrant and 150 lead connected to the 450 PVC main on the south side of Rogers Creek
JP 1	Adjust System PRVs downstream settings
AR 1	Adjust System PRVs downstream settings
AR 2	Replace ex Cameron Dr PRV with a 150 mm dia.
AR 3	Replace ex Bruce St PRV with 200 mm dia. Main
AR 4	Replace ex Melrose St PRV with a 250 mm dia.
AR 7	New main on North Cres from 6th Ave to 7th Ave
B 1	Adjust System PRVs downstream settings
B 2	Install second pilot and communications on North Park PRV
B 3	New main on Burde St from Estevan Dr to Burde Reservoir fill main
J 1	Adjust System PRVs downstream settings
J 2	New main at the intersection of Redford St and 7th Ave
J 3	New main at the intersection of Maitland St and 6th Ave
J 4	New main on Beaver Creek Rd from Compton Rd to Pierce Rd
J 5	New main on Pierce Rd from Beaver Creek Rd to Golden Rd

In addition the reservoir set points were updated to reflect the optimization review recently completed for the City. A copy of the technical memorandum is included in **Appendix B**. Listed below in **Table 9** is a summary of the proposed reservoir set points:

Table 9: Proposed Reservoir Set Points

Reservoir	TWL		1st Call		2nd Call		3rd Call	
	HGL (m)	Depth (m)	HGL (m)	Depth (m)	HGL (m)	Depth (m)	HGL (m)	Depth (m)
Arrowsmith	173	4.2	172.3	3.5	171.74	2.94	-	-
Burde	88.4	2.8	88.1	2.5	87.9	2.3	87.45	1.85
Johnston	66	4.7	64.83	3.53	64.59	3.29	-	-
Lower Cowichan	144.8	5.14	143.99	4.33	143.18	3.52	142.91	3.25
Upper Cowichan	158.4	4.36	157.71	3.67	156.97	2.93	156.79	2.75

4.2 Pipe Friction Factors

A Hazen Williams friction factor was entered in the model for varying pipe materials, as listed in **Table 10**.

Table 10: Pipe Friction Factors

Pipe Material	Friction Factor, "C" (Hazen Williams formula)
High Density PolyEthylene, HDPE	145
PolyVinyl Chloride, PVC	140
Asbestos Cement, AC	130
Ductile Iron, DI	130
Steel with Coating, SC	130
Prestressed Concrete, PConc	120
Cast Iron, CI	110

The modeled friction factors are slightly less than those included in the City's design standards. This takes into account the reduction in capacity that occurs in the distribution system where fittings and service connection points are present and sliming on pipe walls occurs with age.

To better calibrate the friction factors in the City system, controlled field testing would be required during times of peak hour flows, where pressure losses in the various pipe types and sizes could be determined. Flow testing was not included in the scope of work for this study. Due to the significant system operators' time required to conduct flow tests, no specific flow testing was carried out. Flow rate and pressure loss determinations along typical sections of the larger supply mains should be carried out when possible, for comparison with the assumed values used in this analysis. In general, except for the oldest pipe sections, the values listed are believed to be conservative

4.2.3 PRV Settings

The PRV settings in the water model were updated to reflect the current station settings provided by the City. In addition pressure sustaining features were included in the model at the applicable locations based on the information and settings provided by the City. **Table 11** presents a summary of the setting for each PRV station.

Table 11: Existing PRV Settings

Location	PRV Diameter (mm)	Assumed Elevation (m)	Inlet Pressure (psi)	Outlet Pressure (psi)	HGL (m)	From Zone to Zone
Roger St/Kendall Ave	150	55.0	90	42	84.5	122 to 86
21st/Sahara Heights/King	250 100	74.8	94	62 68	118.4 122.6	158 to 122
21st/Burde	150 50	84.3	86	50 55	119.4 123.0	158 to 122
11th/North Park	150	44.3	120	55 71	83.0 94.0	122 to 86 122 to Res Fill
Burde/7th	150	20.4	100	54	58.4	86 to 65
Argyle/5th&6th	200	48.5	100	51	84.3	122 to 86
Melrose/6th	250	45.5	102	60	87.7	122 to 86
Neill/4th	250	41.3	100	58	82.1	122 to 86
Cameron/Motion	150	48.3	102	56	87.7	122 to 86
Cameron/Ship Cr	150 50	84.5	82	50 53	119.6 121.8	144 to 122
Anderson/Bruce	300	88.9	80	46	121.2	144 to 122
Neill/11th/12th	150	79.5	100	68	127.3	144 to 122
11th/Scott	250	84.8	90	48	118.5	144 to 122
Montrose/Anderson	200	81.7	100	48	115.4	158 to 122
3rd/Dunbar	150	8.5	115	80 95	64.7 75.0	86 to 65 86 to Res Fill
Roger's St	150	8.3	102	68	56.1	86 to 65
Johnston Road	200	43.2	104	76	96.6	122 to 100
Michigan/Ian	150	44.6	90	76	98.0	122 to 100
Anderson/Ravenhill	300	122.5	90	31	144.3	184 to 144

4.2.4 Allocation of Demands

Water demands were distributed evenly throughout the model at nodal points (pipe intersections, end of mains and pipe diameter changes). The average day demand was used as the base. Maximum day demands were modelled by multiplying each individual demand by the appropriate ratio (maximum day to average day).

For OCP Build-Out, the future demands were added to the model to the various future development areas in accordance with the City's OCP. This permitted identifying improvements required to service the additional population growth where it is designated to occur. The demands for each area were calculated based on the land-use designation and the associated population density.

4.3 ANALYSIS CRITERIA

4.3.1 Reservoir Sizing

Storage volumes for the distribution reservoirs can calculated using following formula as listed in the Master Municipal Contract Document (MMCD) Association Design Guideline Manual:

Storage Volume = A + B + C

Where:

A = Fire Storage	(from Fire Underwriters Survey Guide)
B = Equalization (Peaking) Storage	(25% of Maximum Day Demands)
C = Emergency Storage	(25% of A + B)

Given the interconnection of several of the City's pressure zones through PRVs, the existing reservoir storage in the higher pressure zones is available to the lower pressure zone under heavy demand conditions such as fire flow. In these areas the combined storage can be applied to meet the peaking and fire flow demands.

4.3.2 Distribution System

The adequacy of the distribution system for various demand conditions is judged by the residual pressure available throughout the system and by the maximum velocity in the mains. The criteria applied to assess the City's distribution system are as shown in **Table 12**.

Table 12: Distribution System Design Criteria

Under Peak Hour Demand Conditions		
Minimum residual pressure at property line	305 kPa	(44 psi)
Maximum velocity in mains	1.5 m/s (1)	
Under Fire Flow Demand Conditions (during Maximum Day Demands)		
Minimum residual pressure at hydrant	138 kPa	(20 psi)
Minimum residual pressure at property line	105 kPa	(15 psi)
Under Static Conditions		
Maximum service pressure – ideal	700 kPa	(101 psi)
Maximum service pressure – absolute	770 kPa	(112 psi)

(1) The City's design standards state velocity in supply mains should not normally exceed 3 m/s. The standards state there is no maximum velocity limit for distribution mains. The 3 m/s is considered too high for both supply and distribution mains, considering the potential transient pressure conditions, and hydraulic head losses. A maximum design velocity of 1.5 m /s is recommended.

5 SYSTEM ANALYSIS

5.1 DISTRIBUTION SYSTEM

The water system was evaluated under steady state conditions to determine the available fire flows in the system for existing and future conditions. The model was also evaluated under steady state conditions to review the performance of the supply system and reservoirs and to determine the minimum available pressure under peak hour conditions. The existing water system and pressure zones are shown on **Figure 1** - Existing Pipe Network. A larger scaled copy of the pipe network is shown on Drawing 1411-01 located in the pocket at the end of this report.

5.1.1 Peak Hour Pressures

The reservoir and flow meter data for the maximum day demand periods from 2011 to 2013 was provided by the City. The data was reviewed to determine the peak hour flows in the system during maximum day demands by the following formula:

Hourly Flow = Bulk Meter Data + Reservoir Outflow – Reservoir Inflow

Once the hourly system flows were determined for the maximum day a diurnal curve detailing the ratio of flows on an hourly basis to the overall maximum day was produced. A copy of the diurnal curve information is provided in **Appendix D**. The diurnal curve information was added to the model and the water model was evaluated under extended time conditions to review the performance of the PRVs, pump stations, reservoirs and to determine the minimum pressures in distribution system. The peak hour pressures for the distribution system are shown on **Figure 2** – Existing Peak Hour Pressures.

5.1.2 Available Fire Flows

The available fire flows under existing maximum day demand conditions are shown on **Figure 3** – Existing Available Fire Flows. The areas with inadequate fire flows are listed below

Fire flows are modelled coincidental with maximum day demands. **Table 13** shows the maximum fire flows obtainable at critical nodes throughout the system. A minimum residual pressure of 138 kPa (20 psi) is required at the hydrant during fire conditions, in conjunction with a minimum pressure of 34 kPa (5 psi) at any service connection. Figures highlighted in bold indicate where available fire flows are less than the recommended design flows.

JOHNSTON RESERVOIR AND PUMP STATION

ARROWVIEW RESERVOIR

ARROWVIEW PUMP STATION

BURDE RESERVOIR

CONNECTION TO ACRD BEAVER CREEK SYSTEM

UPPER COWICHAN AND LOWER COWICHAN RESERVOIRS AND COWICHAN PUMP STATION

PZ122

PZ158

PZ173

PZ100

PZ122

PZ86(b)

PZ158

PZ265

PZ180

PZ122(a)

PZ144

PZ86(a)

ALBERNI IR No. 2

LEGEND

- 100 mm DIA. WATERMAIN
- 150 mm DIA. WATERMAIN
- 200 mm DIA. WATERMAIN
- 250 mm DIA. WATERMAIN
- 300 mm DIA. WATERMAIN
- >300 mm DIA. WATERMAIN
- EXISTING PUMP STATION
- EXISTING RESERVOIR
- PRESSURE ZONE BOUNDARY
- CITY BOUNDARY
- PZ86 PRESSURE ZONE

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TITLE: EXISITING PIPE NETWORK

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DWG No.	Figure 1

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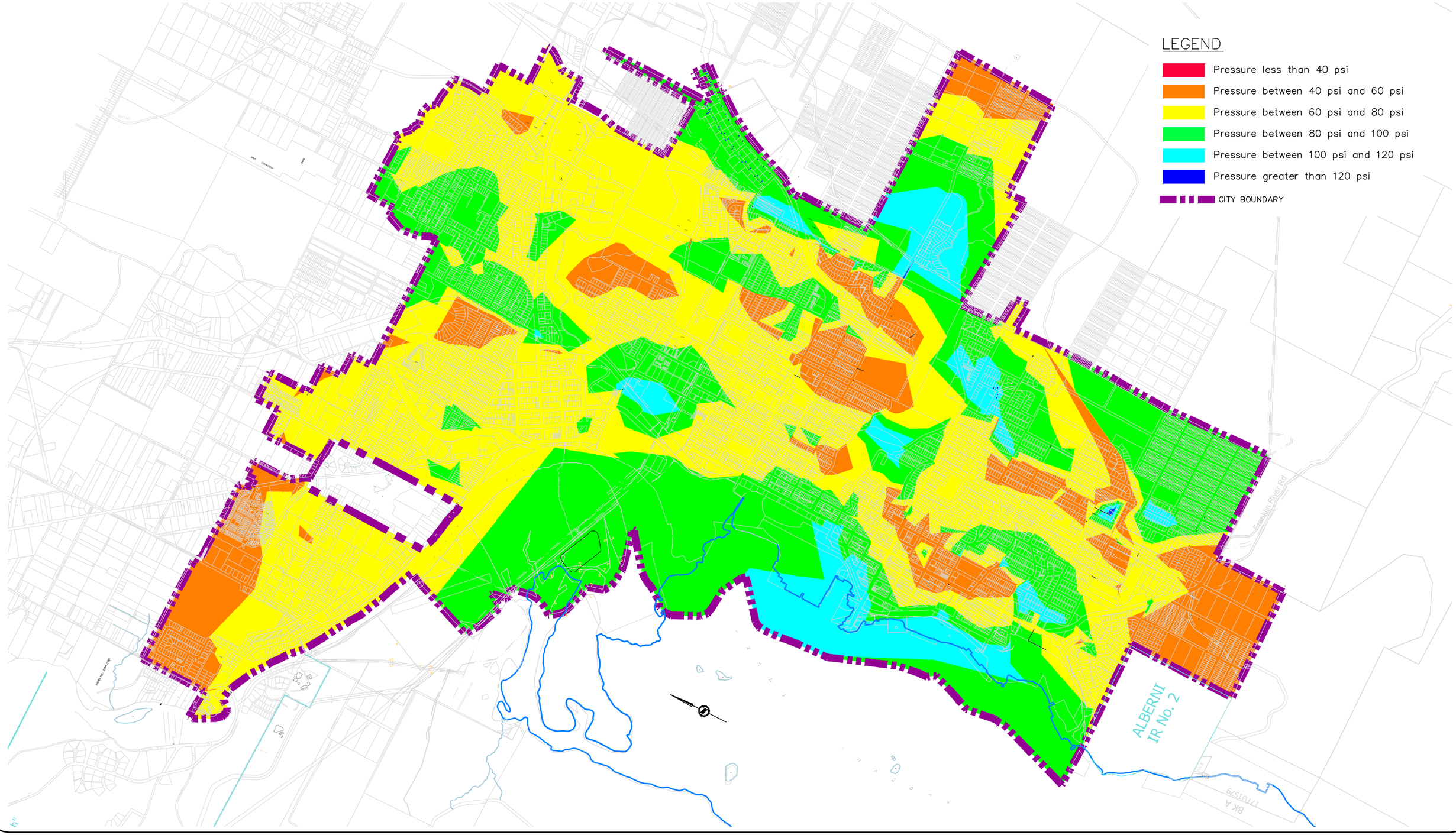

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EXISITING PEAK HOUR PRESSURES

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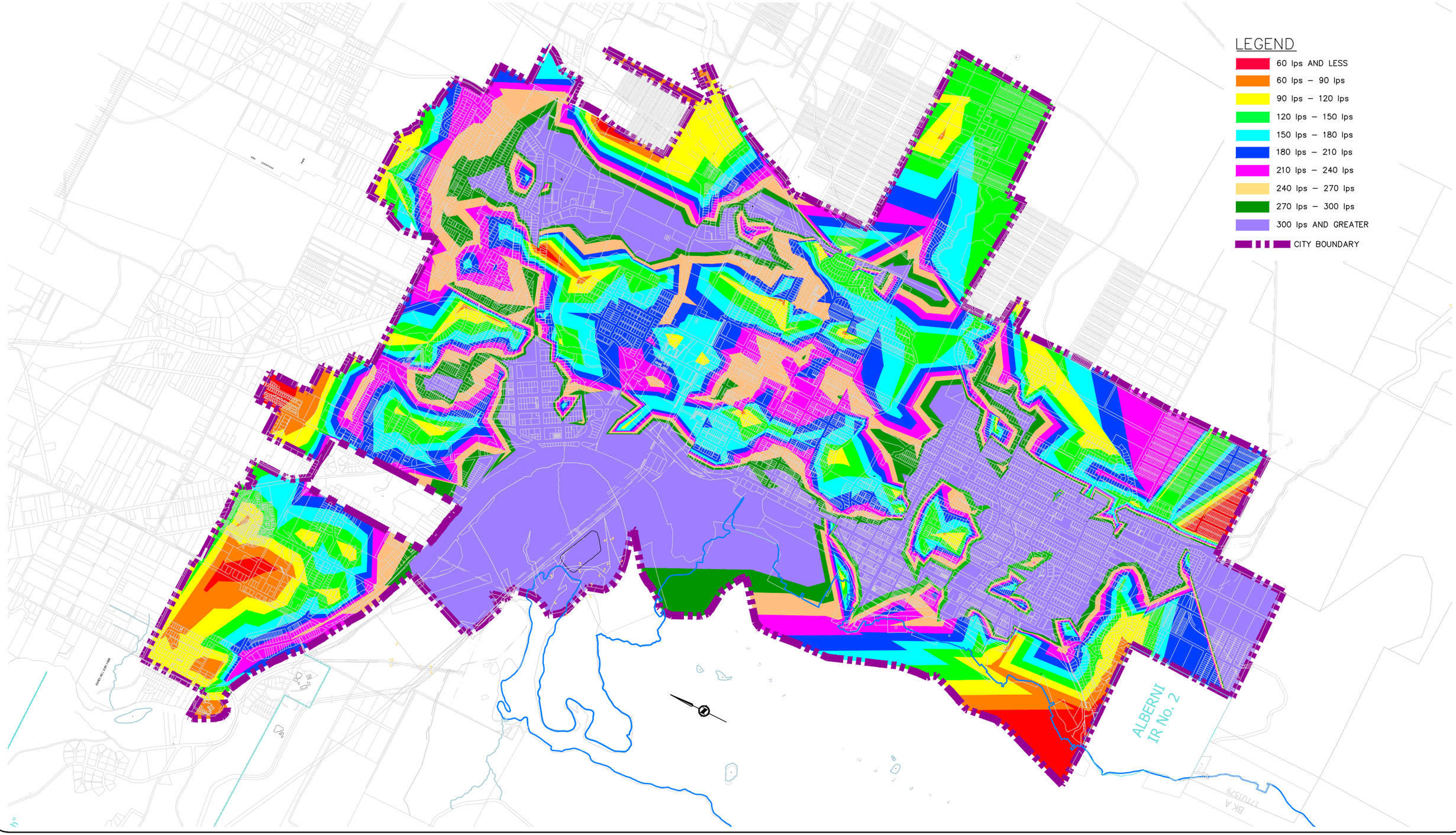
PROJECT No.	1411		



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EXISITING AVAILABLE FIRE FLOWS

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PROJECT No.	1411		

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Table 13: Available Fire Flows

Location	Fire Flow	
	Design (lps)	Available (lps)
Stamp (Norske Entrance)	300	300
Argyle & Harbour	300	300
Johnston & Helen	300	300
21st & Port Alberni Hwy	300	300
Cherry Crk & Maple	300	300
3rd & Argyle	300	300
Johnston & Gertrude	300	300
Neill & 3rd	300	300
Nicholls & Compton	300	**253**
Burde & 15th	300	**221**
2nd & Dunbar	300	**223**
Bruce & 1st	300	**194**
Montrose & 1st	250	300
Southgate & Margerat	200	300
Cherry Crk (South end)	200	300
Dunbar & 9th	200	273
Wallace & 6th	200	236
Wood & Redford	200	215
Anderson & Hollywood	200	**128**
Elizabeth & Burke	150	300
Roger & Kendall	150	300
Montrose & 3rd	150	298
Maitland & 10th	150	270
Beaver Crk & Alexander	150	258
Ships Point (South end)	150	209
Napier & Quadrant	150	164
Westport & Russell	150	**123**
Mar & 1st	120	265
Neill & 4th	90	300
River & Mary	90	264
Grandview (North end)	67	**58**
14th (South End)	67	**58**
Compton (East of Golden)	67	**51**
Pierce & Golden	67	**47**
Mallory (South End)	67	**48**

5.2 RESERVOIR STORAGE

Listed below is a summary of the existing reservoirs in the distribution system including the storage volume, top water level and the pressure zones serviced.

Table 14: Reservoir Storage Summary

Reservoir	Storage Volume (m^3)	Top Water Level (m)	Pressure Zones Serviced
Arrowsmith	250	173.0	Arrowsmith Reservoir
Burde	6,813	88.4	Burde Reservoir Johnston Reservoir
Johnston	9,084	66.0	Johnston Reservoir Huff PRV (122.2) Johnston PRV
Lower Cowichan	6,813	144.8	Lower Cowichan Reservoir Anderson PRV (122.1) Argyle PRV (86.1) Johnston Reservoir
Upper Cowichan	11,355	158.4	Cowichan Pump Station Arrowsmith Reservoir Upper Cowichan Reservoir Anderson PRV (122.1) Huff PRV (122.2) Johnston PRV

The projected volume for required system storage was calculated using the following formula as listed in Section 4.3.1:

Storage Volume = A + B + C

Where:

A = Fire Storage	(from Fire Underwriters Survey Guide)
B = Equalization (Peaking) Storage	(25% of Maximum Day Demands)
C = Emergency Storage	(25% of A + B)

Given the reliability of the source and the presence of other reservoirs in the system the emergency volume (C) can be eliminated from the formula.

The required fire flow storage for each reservoir, using the MMCD formula, is shown in **Table 15**.

Table 15: Required Fire Storage

Reservoir	Fire Flow (lps)	Duration (Hours)	Storage (m^3)
Arrowsmith	150	2.0	1,080
Upper Cowichan	300	4.0	4,320
Lower Cowichan	300	4.0	4,320
Burde	300	4.0	4,320
Johnston	300	4.0	4,320

As the Upper Cowichan Reservoir can provide fire flow to the Arrowsmith Pressure Zone though the pump station on Burde Road, the fire storage component of the Arrowsmith Reservoir can be reduced with the installation of a genset at the Arrowsmith Pump Station to ensure continuous operation under power failure. The existing pump station is designed for a maximum flow rate of 75 lps. In order to satisfy the design fire flow of 150 lps for 2 hours the Arrowsmith Reservoir will need to provide 75 lps for 2 hours to supplement the pump station. This results in a fire flow storage volume of 540 m^3

In order to determine the equalization storage requirements for each reservoir, the 2034 maximum day flows from each reservoir were modeled and are shown in **Table 16**:

Table 16: Required Equalization (Peaking) Storage

Reservoir	Max Day Flow (lps)	Storage (m^3)
Arrowsmith	15.8	342
Upper Cowichan	78.1	1687
Lower Cowichan	127.1	2745
Burde	55.8	1205
Johnston	92.9	2007

Based on the MMCD formula, the required fire flows, the equalization storage requirements, and existing reservoir volumes, the required additional storage volumes at each reservoir site are derived in **Table 17**.

Table 17: Future Storage Requirements

Reservoir	Equalization Storage (m^3)	Fire Flow Storage (m^3)	Total Future Storage (m^3)	Existing Storage (m^3)	Additional Storage (m^3)
Arrowsmith	342	540	882	**250**	**632**
Upper Cowichan	1687	4,320	6,007	11,355	N/A
Lower Cowichan	2745	4,320	7,065	**6,813**	**252**
Burde	1205	4,320	5,525	6,813	N/A
Johnston	2007	4,320	6,327	9,084	N/A

As the development in the Arrowsmith Pressure zone increases and the demands in the area exceed 9.5 lps (80% of the current reservoir peaking storage volume) additional storage will be required at the Arrowsmith Reservoir site to accommodate peak flows in the pressure zone.

Also given the interconnection between the Upper and Lower Cowichan Reservoirs through PRVs in the distribution system, the additional storage at the Lower Cowichan Reservoir site is not required.

5.3 CAST IRON MAINS

There are approximately 25 kms of Cast Iron piping in the City's water distribution system. Based on discussions with City operations staff there have been a high number of Cast Iron watermain breaks in recent years which indicates that the Cast Iron piping is

reaching the end of its service life. It is recommended that the City prepare a Cast Iron replacement program to replace the aging infrastructure.

5.4 AC MAINS

There are approximately 157 kilometers of watermain in the City, of which nearly one half (78 kilometers) are Asbestos Cement (AC) piping. The majority of these mains are more than 35 years old. The life span of AC mains ranges from 30 to 90 years, depending on many factors, such as water quality, type of soils, groundwater levels, pipe manufacturer, quality of installation, depth of bury, and traffic loading. The major problem experienced with AC pipe, other than wall fractures, is the leaching of the cement mortar binder out of the pipe. This can occur on the internal and the external surfaces, severely weakening the pipe strength. The rate of leaching depends on the aggressiveness of the groundwater and potable water in contact with the AC pipe. Leaching can be highly localized, and vary from pipe to pipe.

The remaining service life in an AC main can be estimated by a series of laboratory tests, requiring removal of a section of the watermain. Records of main and service connection repairs would aide in identifying known problem areas.

5.5 TSUNAMI ANALYSIS

The tsunami inundation zone is expected to occur in the areas below the 20 m contour as shown on the enclosed City of Port Alberni Map from the OCP.

In order to determine the effects on the City's ability to supply water north of Roger's Creek and to the Beaver Creek Water System the water model was evaluated under future maximum day demands with the assumption that the 400 mm dia. watermain on Victoria Quay and the 200 mm dia. watermain on Gertrude Street that are attached to the bridge crossing of Roger's Creek would be lost during a tsunami event.

With the loss of the two crossings the area north of Roger's Creek will be supplied completely by the Johnston Reservoir. The main supply to the Johnston Reservoir will be limited to the 450 mm dia. Roger Creek crossing at Tebo Ave which is supplied from the Upper Cowichan Reservoir through the 21st and King PRV. The zone will no longer be supplied from the Lower Cowichan Reservoir (3rd and Dunbar) or the Burde Reservoir (Roger and Stamp PRV and Burde and 7th PRV)

It should also be noted that the Johnston Reservoir does not recover during the extended time modeling as the 21st and King PRV station is limited to 120 lps supply to the reservoir that has an average outflow of 130 lps.

In order to provide the required flow to the area north of Roger's Creek a second creek crossing is required. Listed below are two options for the proposed crossing:

Option 1: Railway Bridge Crossing

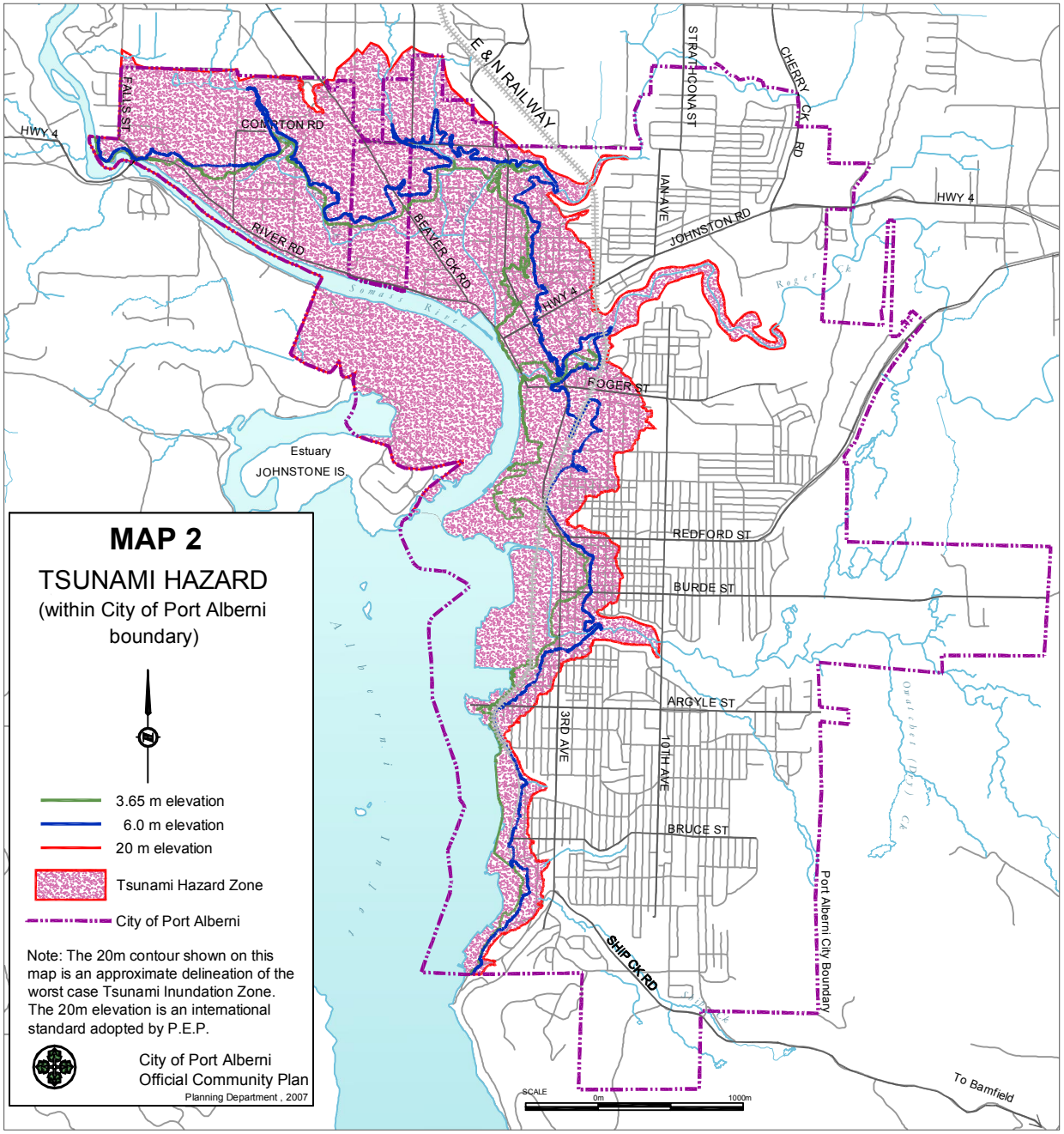
1) Construct a new 250 mm dia. creek crossing at the railway bridge from the intersection of Hollywood St and Glenwood Drive to Merrifield Drive. The crossing should buried or a pipe bridge with a minimum invert elevation of 20.6 m.
2) Upgrade the existing 150 mm dia. AC main on Merrifield Drive to 250 mm dia.
3) Install a PRV connection at the intersection of Merrifield Drive and Southgate Road with controls connected to the Johnston Reservoir TWL.

Option 2: 10th Avenue Crossing

1) Construct a new 250 mm dia. creek crossing at 10th Ave from Alderwood Drive to Johnston Road. The crossing should buried or a pipe bridge with a minimum invert elevation of 20.6 m.
2) Upgrade the existing 150 mm dia. watermain on 10th Ave to 200 mm dia. from Hollywood Street to Alderwood Drive.
3) Install a PRV connection at Johnston Road with controls connected to the Johnston Reservoir TWL.

An alternative to the new crossing would be to upgrade the existing 300 mm dia. watermain from Wallace and 21st to Kendall and Roger with a 450 mm dia. watermain.

Map 2: Tsunami Inundation



6 PROPOSED IMPROVEMENTS

The existing water model was updated to reflect the 2034 demand conditions. The model was evaluated under maximum day demands to determine the available fire flows. The model was also evaluated under extended time modelling to determine the peak hour pressures and to evaluate the reservoir and supply system performance. Listed below are the improvements that have been identified to service the City to 2034. The improvements have been divided into three categories: supply system improvements, fire flow improvements and improvements required to service future development. A detailed description of each category is included below. The project locations are shown on **Figure 4** – Proposed Improvements.

6.1 SYSTEM SUPPLY IMPROVEMENTS

The supply system improvements include the upgrade requirements to the City's primary transmission mains in the distribution systems, pressure reducing valve stations, reservoirs and pump stations. Listed below are the required supply system improvements required to service the City at the 2034 demands:

Improvement S-1 – Upgrade the 4th and Neill PRV Station

S-1 The existing PRV station has been identified for replacement and is schedule for construction in the fall/winter of 2014. Based on the model results the PRV should be replaced with a 200 mm dia. installation.

Improvement S-2 to S-6 –Burde Reservoir Improvements

Based on the review of the water model it was noted that under future demand conditions the Johnston Reservoir did not fully recover under in a 24 hour period. As an alternative to provide additional flow to the reservoir while limiting the flow through the Huff PRV station it is recommended that the settings of the Burde and 7th PRV station be modified to provide an additional supply to the Johnston Reservoir. Listed below are the required improvements:

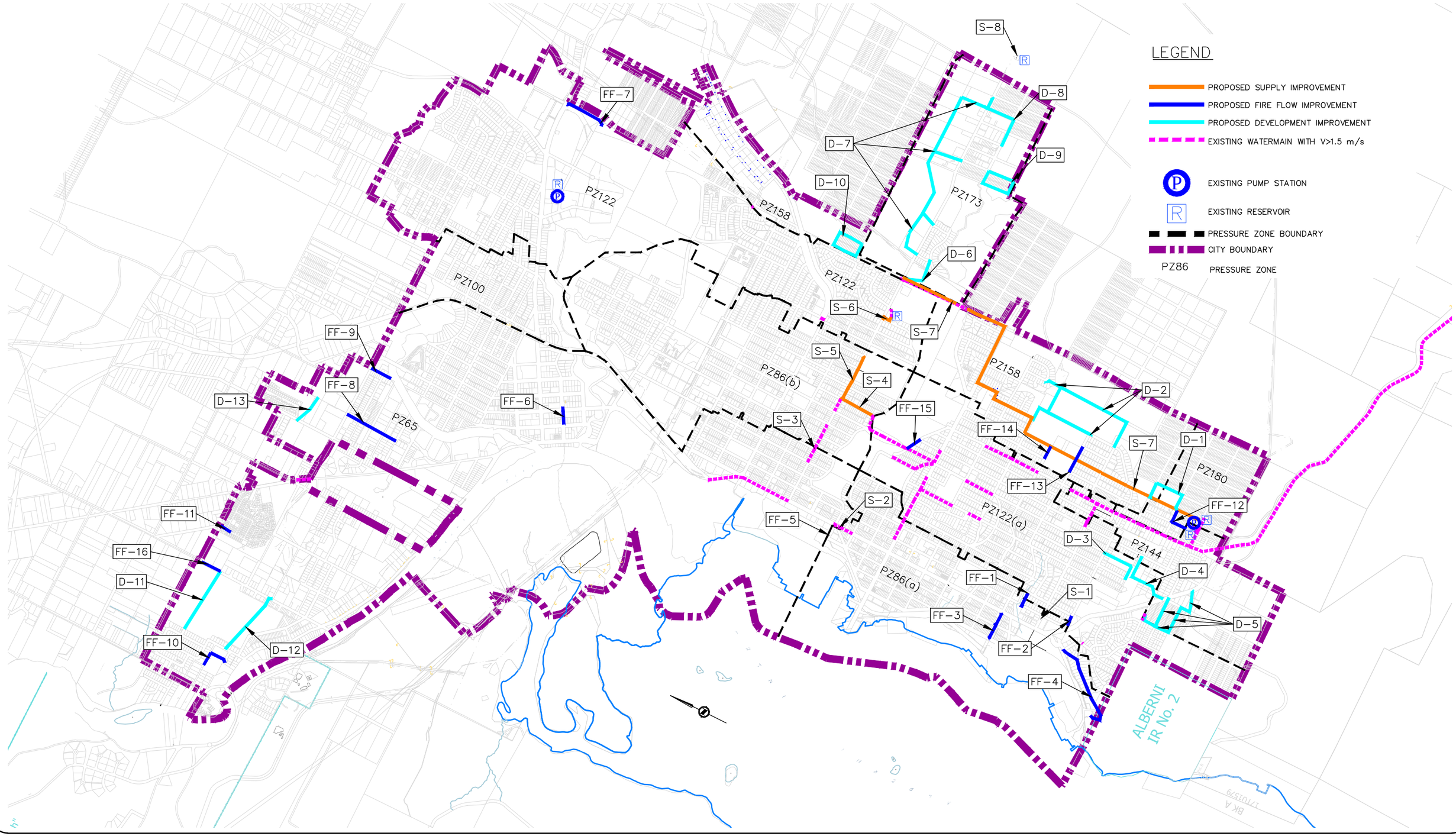
S-2 Upgrade the existing 3rd and Dunbar PRV to a 250 mm dia. PRV station to provide the required flow to the Johnston Reservoir.

S-3 Upgrade the Burde and 7th PRV to include solenoid controls and SCADA communication. The PRV would be set to open based on the top water level of the Johnston Reservoir and would supplement the 3rd and Dunbar PRV station.

S-4 Upgrade the existing 200 mm dia. main on 11th Ave to 250 mm dia. from the 11th and North Park PRV to Burde St. to increase flow to the Burde St Reservoir while minimizing the increase in flow from the 300 mm dia. Dry Creek Crossing.

S-5 Upgrade the existing 200 mm dia. main on Burde from 11th Ave to 15th Ave to 250 mm dia.

S-6 Upgrade the existing 200 mm dia. outlet main at Burde Reservoir to 300 mm dia.



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TITLE: PROPOSED IMPROVEMENTS

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Improvement S-7 – Upgrade the Existing 300 mm dia. Cast Iron Main from Upper Cowichan Reservoir to Burde Street

In order to maintain the required HGL at the inlet of the Huff PRV station the existing 300 mm dia. Cast Iron watermain will need to be replaced from the Upper Cowichan Reservoir to Burde Street. It is recommended that the new watermain be installed along the existing alignment to Argyle Street and then follow the 21st Ave road right of way to the creek crossing north of Sweet Ave. This alignment will allow the existing 300 mm dia. watermain that is installed behind the eastern properties on Sweet Ave to be abandoned. Based on our discussions with the City this section of 300 mm dia. watermain is in a registered right-of-way however it is located underneath extensive landscaping and out buildings. The Dry Creek crossing will be maintained and the 300 mm dia. watermain north of Dry Creek will be replaced to Burde Street.

S-7 Install new 450 mm dia. watermain from the Upper Cowichan Reservoir to Burde Street along 15th Ave, 16th Ave and Argyle St.

Improvement S-8 – Additional Storage at the Arrowsmith Reservoir Site.

As the development in the Arrowsmith Reservoir service area increases and the demand in the pressure zone exceeds 80% of the current peaking storage (9.5 lps) additional storage will be required.

S-8 Install duplicate reservoir at Arrowsmith (632 m^3 additional storage volume required) and a backup genest at the Arrowsmith Pump Station.

6.2 FIRE FLOW IMPROVEMENTS

In order to provide the required fire flow under 2034 demand conditions the following improvements are required:

FF-1 Install a new 150 mm dia. watermain loop through right of way near 2571 4th Ave from 4th Ave to 5th Ave

FF-2 Install a new 150 mm dia. watermain loop on Scott St.from 4th Ave to 5th Ave

FF-3 Upgrade the existing 150 mm dia. watermain on Bruce St from 1st Ave to 3rd Ave to 250 mm dia.

FF-4 Upgrade the existing 150 mm dia. main watermain on Mallory Drive from Cameron Drive to south end to 200 mm dia.

FF-5 Install a new 150 mm dia. watermain loop on Southgate Road from Margaret St to Gertrude St

FF-6 Upgrade the existing 100 mm dia. watermain on Broughton Road from Johnston Road south to 200 mm dia.

FF-7 Install new 150 mm dia. watermain on Nicholas St. from Forrest Road to Compton Road with connections to Wilkinson Road and Pleasant Road

FF-8 Upgrade the existing 150 mm dia. watermain on Margaret St from Compton Road to Kitsuksis Creek to 200 mm dia.

FF-9 Install a new 150 mm dia watermain loop through 6151 Rush Place and connect to the existing 150 mm dia watermain on Compton Road

FF-10 Install a 200 mm dia. watermain loop from Pierce Road to existing 200 mm dia. watermain in Sunrise Estates Mobile Home Park on Beaver Creek Road

FF-11 Upgrade the existing 150 mm dia. watermain on 14th Ave and Comox St from City Hydrant 945 to 15th Ave. to 200 mm dia.

FF-12 Install a new 200 mm dia. watermain loop on Bruce St from 16th Ave to 14th Ave

FF-13 Install a new 200 mm dia. watermain loop on Melrose St from 15th Ave to 14th Ave and install a new closed valve at Melrose St and 14th Ave and open existing valve at 14th Ave and Melrose St and 15th Ave and Melrose St

FF-14 Install a new 200 mm dia. watermain on Dunbar St from 10th Ave to 11th Ave

FF-15 Install a new 200 mm dia. watermain on Golden Rd from Pierce Rd to the existing 150 mm dia. main

6.3 IMPROVEMENTS FOR FUTURE DEVELOPMENT

In order to provide service for future development under the 2034 demand conditions the following improvements are noted:

D-1 Install new 200 mm dia watermain loop on Alberni St, 15th Ave and Comox St

D-2 Install new 200 mm dia. watermain loop on 17th Ave and 19th Ave with connections to Montrose St, Niell St and Carmichael Cres.

D-3 Install new 200 mm dia. watermain loop on 10th Ave from Scott St to 9th Ave

D-4 Install new 200 mm dia. watermain loop from Ravenhill Ave to 11th Ave

D-5 Install new 200 mm dia. watermains on Claremont Ave, Vancouver St and Seizai Road with connections to Cameron Drive and Ship Creek Road.

D-6 Install new 150 mm dia. watermain loop from Burde Street to the existing 150 mm dia. watermain on Waterfern Drive

D-7 Install 200 mm dia. watermains for development North of Burde Street from 21st Ave to Loewen Road

D-8 Install 200 mm dia. watermain loop from Burde St to 32nd Ave

D-9 Install 200 mm dia. watermain loop on Carriere Road to Morris St.

D-10 Install 150 mm dia. watermain loop east of Hydrant 605 (Whitlestone Road)

D-11 Install 200 mm dia. watermain loop through future development from Oxford St to Golden St

D-12 Install 200 mm dia. watermain loop though future development from Robson St to Golden St.

D-13 Install 150 mm dia. watermain loop through future development from Grandview St to Hydrant 1018

As the exact location of future development is unknown at this time it is recommended that the City continues with the practice of examining water demands for new development, redevelopment, and future expansion areas, on a site specific basis as development proposals are received, to ensure that the City's standards are met.

6.4 WATERMAINS WITH HIGH VELOCITY

Mains with velocities greater than or equal to 1.5 m/s are to be monitored and reviewed for potential upsizing when the main has reached its design life and is scheduled for replacement. Listed below are the watermains with high velocities under the 2034 demand conditions:

V-1 600 mm dia. steel main from the Bainbridge Pump Station to Anderson PRV

V-2 450 mm dia. AC main on Anderson from PRV station to Melrose Street

V-3 350 mm dia. Ductile Iron main on Stamp from Redford to Morton

V-4 300 mm dia. AC main on Anderson from Melrose Street to China Creek Road

V-5 300 mm dia. AC main on Argyle from 10th to 11th

V-6 300 mm dia. Ductile Iron main on 3rd Ave from Strahern to Dunbar

V-7 300 mm dia. Ductile Iron main on 3rd from Burde to Redford

V-8 300 mm dia. HDPE Creek Crossing at 11th and North Park

V-9 250 mm dia. Cast Iron main on Argyle from 4th to 9th

V-10 200 mm dia. AC main on 10th from Montrose to China Creek

V-11 200 mm dia. Cast Iron main on Neill Street from Anderson to 11th Ave

V-12 200 mm dia. Cast Iron main on 10th from Argyle to Dunbar

V-13 150 mm dia. AC main on Wood Ave from Redford to McIntyre

V-14 150 mm dia. Cast Iron main on Burde from 6th to 11th

V-15 150 mm dia. Cast Iron main on North Cres from Argyle to Dunbar

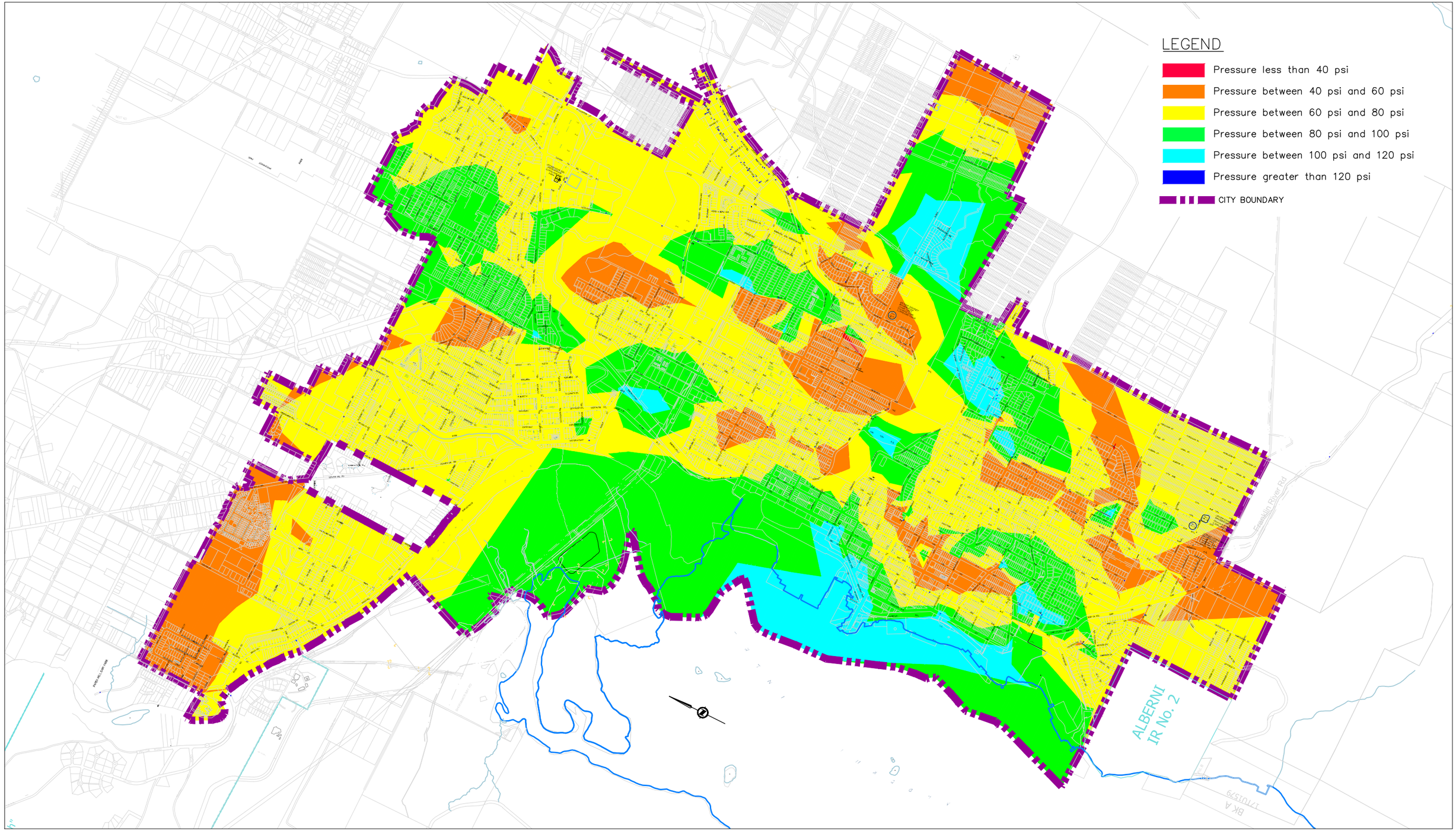
V-16 150 mm dia. Cast Iron inlet at the Burde Reservoir

V-17 150 mm dia. PVC main on 9th from Montrose to 7th

V-18 150 mm dia. PVC main on 8th from China Creek to Argyle

The peak hour residual pressures for the 2034 conditions with the proposed improvements are shown on **Figure 5** – Future Peak Hour Pressures with Improvements. These results meet City standards for residual pressures at the property line.

The available fire flows under 2034 maximum day demand conditions with the proposed improvements are shown on **Figure 6** – Future Available Fire Flows with Improvements.



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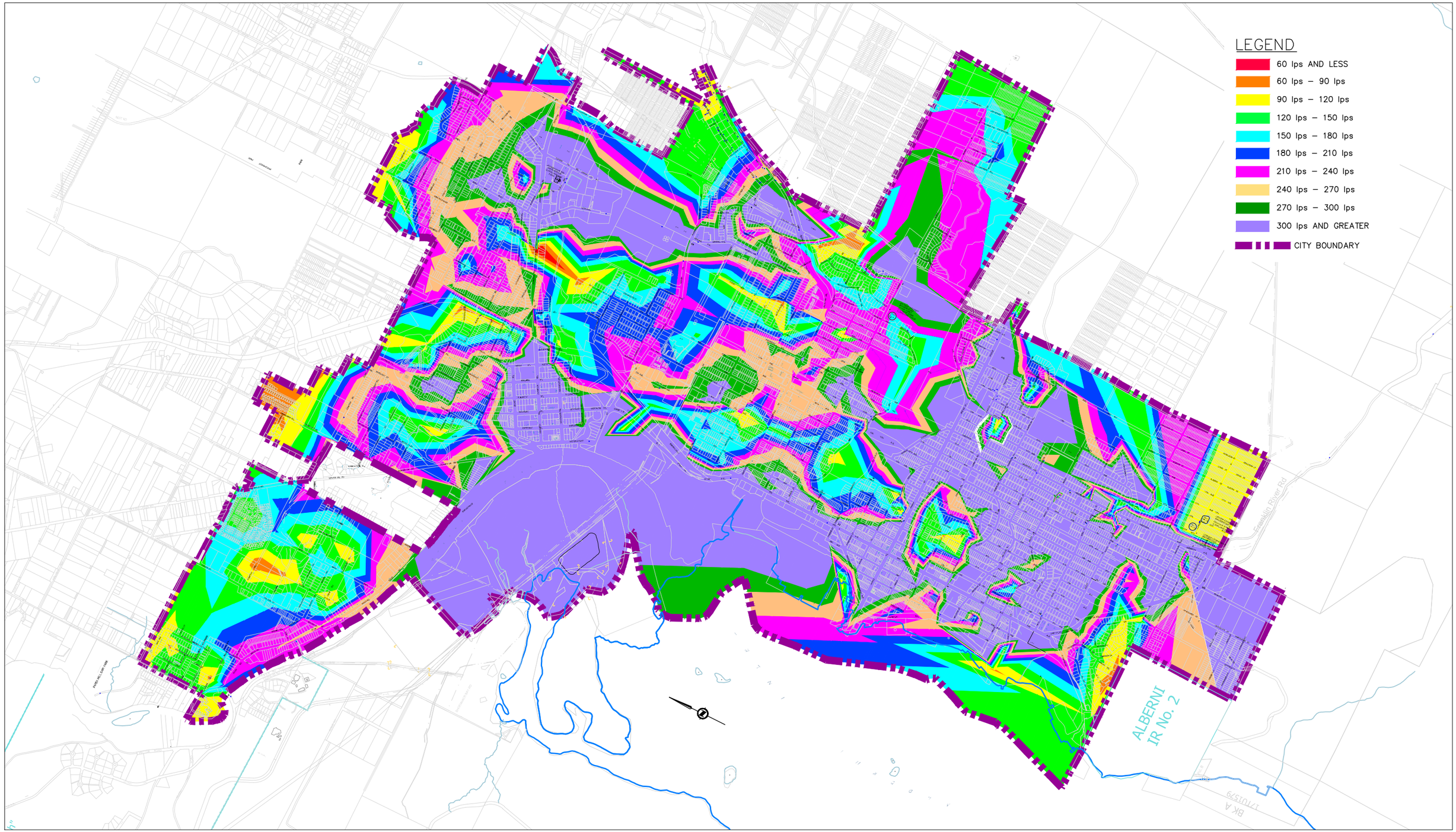

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FUTURE AVAILABLE FIRE FLOWS

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7 COST ESTIMATES

Tables 18a, 18b and 18c present the estimated cost for each of the projects discussed under the three categories in Section 5:

- supply system improvements,
- fire flow improvements, and
- improvements required to service future development.

The projects are required in order to meet the existing and Year 2034 projected demands when the service population is projected to reach 21,501; consisting of 18,621 in the City of Port Alberni and 2,880 serviced by the Alberni Clayoquot Regional District Beaver Creek water system. The population projections are based on development in accordance with the Official Community Plans for each area.

The cost estimates are based on Class 'D' (feasibility study) estimates, made without preliminary design input. The estimates include a 30% allowance for construction and engineering costs. No allowance has been made for interim financing or administrative costs. The estimates are exclusive of GST.

Cost estimates are derived from our in-house construction cost data of watermain construction projects in the mid-Vancouver Island area. All costs area as of September 2014 when the ENR Construction Cost Index was 9870.

Table 18a: Water Supply System Improvement Cost Estimates

Project Number	Description	Diameter (mm)	Length (m)	Unit Cost ($)	Total Cost ($)
S-1	Upgrade the 4th and Neill PRV				$70,000
S-2	Upgrade the 3rd and Dubar PRV				$100,000
S-3	Upgrade the Burde and 7th PRV				$85,000
S-4	Upgrade watermain on 11th Ave from the 11th and North Park PRV to Burde St.	250	250	750	$187,500
S-5	Upgrade 200 mm dia. main on Burde from 11th Ave to 15th Ave	250	330	600	$198,000
S-6	Upgrade 200 mm dia. outlet main at Burde Reservoir	250	75	750	$56,250
S-7	Watermain from the Upper Cowichan Reservoir to Burde Street along 15th Ave, 16th Ave and Argyle Street.	400	3,135	1,200	$3,762,000
S-8	Duplicate reservoir at Arrowsmith (632 m^3 additional storage volume required)				$800,000
				Supply Improvements Subtotal	**$5,258,750**

Table 18b: Fire Flow Improvement Cost Estimates

Project Number	Description	Diameter (mm)	Length (m)	Unit Cost ($)	Total Cost ($)
FF-1	Watermain loop through right of way near 2571 4th Ave from 4th Ave to 5th Ave	150	115	450	$51,750
FF-2	Watermain loop on Scott St.from 4th Ave to 5th Ave	150	75	450	$33,750
FF-3	Upgrade watermain on Bruce St from 1st Ave to 3rd Ave	250	200	600	$120,000
FF-4	Upgrade watermain on Mallory Drive from Cameron Drive to south end	200	370	500	$185,000
FF-5	Watermain loop on Southgate Road from Margaret St to Gertrude St	150	120	450	$54,000
FF-6	Upgrade watermain on Broughton Road from Johnston Road south	200	305	500	$152,500
FF-7	Watermain on Nicholas St. from Forrest Road to Compton Road with connections to Wilkinson Road and Pleasant Road	150	385	450	$173,250
FF-8	Upgrade watermain on Margaret St from Compton Road to Kitsuksis Creek	200	155	500	$77,500
FF-9	New watermain loop through 6151 Rush Place to Compton Road	150	210	450	$94,500
FF-10	Watermain loop from Pierce Road to Sunrise Estates Mobile Home Park on Beaver Creek Road	200	85	500	$42,500
FF-11	Upgrade watermain on 14th Ave and Comox St from City Hydrant 945 to 15th Ave.	200	220	500	$110,000
FF-12	Watermain loop on Bruce St from 16th Ave to 14th Ave	200	205	500	$102,500
FF-13	Watermain loop on Melrose St from 15th Ave to 14th Ave	200	100	500	$50,000
FF-14	Watermain on Dunbar St from 10th Ave to 11th Ave	200	115	500	$57,500
FF-15	Watermain on Golden Rd from Pierce Rd to the existing 150 mm dia. main	200	150	500	$75,000
				Fire Flow Improvements Subtotal	**$1,379,750**

Table 18c: Future Development Improvement Cost Estimates

Project Number	Description	Diameter (mm)	Length (m)	Unit Cost ($)	Total Cost ($)
D-1	Watermains on Alberni St, 15th Ave and Comox St	200	420	500	$210,000
D-2	Watermains on 17th Ave and 19th Ave	200	1520	500	$760,000
D-3	Watermains on 10th Ave from Scott St to 9th Ave	200	330	500	$165,000
D-4	Watermains from Ravenhill Ave to 11th Ave	200	380	500	$190,000
D-5	Watermains on Claremont Ave, Vancouver St and Seizai Road with connections to Cameron Drive and Ship Creek Road.	200	890	500	$445,000
D-6	Watermain from Burde Street to Waterfern Dr	200	290	500	$145,000
D-7	Watermains for development North of Burde Street from 21st Ave to Loewen Road	200	1800	500	$900,000
D-8	Watermain loop from Burde St to 32nd Ave	200	510	500	$255,000
D-9	Watermain loop on Carriere Rd to Morris St.	200	625	500	$312,500
D-10	Watermain loop east of Hydrant 605 (Whitlestone Road)	150	455	450	$204,750
D-11	Watermain loop through future development from Oxford St to Golden St	200	480	500	$240,000
D-12	Watermain loop though future development from Robson St to Golden St.	200	500	500	$250,000
D-13	Watermain loop through future development from Grandview St to Hydrant 1018	150	230	450	$103,500
				Development Improvements Subtotal	**$4,180,750**

8 CONCLUSIONS

Based on the findings of this study, the following conclusions are made:

1. The City's treated water is supplied from Bainbridge Lake and China Creek. The supply mains from the two sources are connected at the Bainbridge Pump Station where the water is treated prior to delivery to the City.

2. The City maintains an emergency water supply intake at the Somass River.

3. The City operates 10 pressure zones including 5 reservoirs, 19 PRV stations, and 3 pump stations.

4. The City's bulk water meter data is recorded daily and recorded through SCADA.

5. The City's universal metering readings are recorded quarterly.

6. The majority of the water projects from the 2005 Water Study Update have been implemented.

7. The City's population to is estimated to reach approximately 18,621 by Year 2034; an increase of 1,852 people (11%) from the 2013 Stats BC population count of 16,769.

8. The City supplies the Beaver Creek Water System through the Strick Road Pump Station. The Beaver Creek Water System service population is estimated to reach approximately 2,880 by 2034.

9. The City supplies the Tseshaht First Nations through a meter connection off River Road. The Tseshaht water system service population is estimated to reach 1008 by 2034.

10. The City's average day, and maximum day demands are projected to increase to 155.2 l/s, and 370.8 l/s respectively by Year 2034.

11. Improvements to the supply system tare required in order to ensure that the Johnston Reservoir fully recovers if the Roger Creek watermain crossings at Victoria Quay and Gertrude Street are lost during a tsunami.

12. Additional storage is required at the Arrowsmith Reservoir site when the demand in the Arrowsmith service area exceeds 9.5 lps.

13. Nearly one half of the City's watermains are Asbestos Cement. The majority are over 40 years old. The life span of AC mains ranges from 30 to 90 years.

14. The City has approximately 25 kms of cast iron watermain in the distribution system. Based on discussions with the City operations staff the cast iron watermain is reaching its design life span.

9 RECOMMENDATIONS

Based on the conclusions listed in this report, it is recommended that:

1. The City adopts the system improvement projects listed in outlined in section 6.

2. The City continues with the practice of examining water demands for new development, redevelopment, and future expansion areas, on a site specific basis as development proposals are received.

3. The City develops an annual Cast Iron watermain replacement program to replace the existing 25 kms of watermain in the distribution system.

4. The City develops an annual Asbestos Cement watermain replacement program. Laboratory testing of mains should be carried out to determine remaining service life and then used to establish the yearly replacement rate of the approximately 78 kms of mains.

5. The water study be updated every 5 to 10 years, subject to the rate of growth, to review capital project needs based on changes in water demands (per capita, maximum day, peak hour) resulting from population growth and conservation efforts.

6. The City uses the proposed system improvement projects presented in this report to update the water Development Cost Charge (DCC) for the various land use categories in the DCC Bylaw.

7. The City continues to maintain the Somass River intake as an operational emergency source of water should the City have maintenance concerns with the Franklin River Road supply main.

Appendix A

Water Diversion & Storage Licences

China Creek
Bainbridge Lake
Somass River
Lizard Lake

PROVINCE OF BRITISH COLUMBIA

Water Rights Branch

DEPARTMENT OF LANDS AND FORESTS

CONDITIONAL WATER LICENCE

THE CORPORATION OF THE CITY OF PORT ALBERNI of Port Alberni, B.C., is

hereby authorized to divert and use water as follows:—

(a) The source of the water-supply is China Creek.

(b) The point of diversion is located as shown on the attached plan.

(c) The date from which this licence shall have precedence is 24th July, 1912.

(d) The purpose for which the water is to be used is waterworks.

(e) The maximum quantity of water which may be diverted is 10 cubic feet per second and such additional quantity as the Engineer may from time to time determine should be allowed for losses.

(f) The period of the year during which the water may be used is the whole year.

(g) ~~The land upon which the water is to be used and to which~~ This licence is appurtenant ~~is~~ to the waterworks undertaking of the licensee.

(h) The works authorized to be constructed are dam and pipe lines

and they shall be located approximately as shown on the attached plan.

(i) The construction of the said works ~~shall be~~ has already been commenced ~~on or before the~~ ~~day~~ ~~of~~ ~~19~~ and shall be completed and the water beneficially used on or before the 31st day of December 1960.

(j) This licence is issued in substitution of Conditional Water Licence No. 2749 hereby surrendered and cancelled.

ENTERED ON
Map No. 21
By AWL

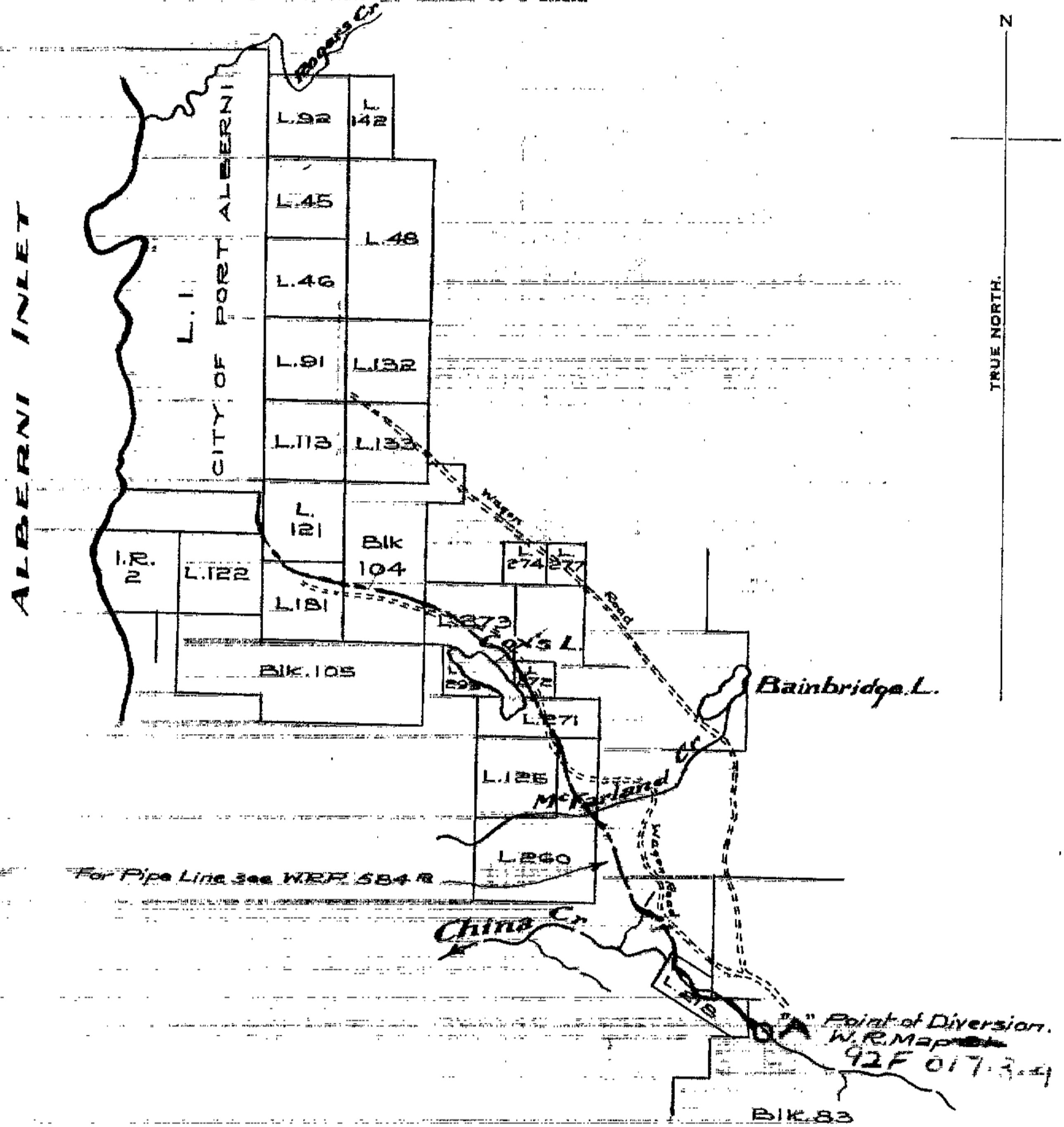
Deputy *Comptroller of Water Rights*

British Columbia

To accompany Conditional Licence No. 18903

ALBERNI WATER DISTRICT

Scale: 20 Chains to 1 Inch.



LEGEND

Point of Diversion O

Pipe Line

The boundaries of the land to which this licence is appurtenant are shown thus:

Signature [signature]

CONDITIONAL WATER LICENCE

The City of Port Alberni is hereby authorized as follows:

a) The stream on which the rights are granted is Bainbridge Lake.

b) The point of diversion is located as shown on the attached plan.

c) The date from which this licence shall have precedence is 25th October, 1961.

d) The purpose for which this licence is issued is waterworks.

e) The maximum quantity of water which may be diverted is 0.1133 cubic meters (4 cubic feet) per second (9790 cubic meters [2,153,816 gallons] a day).

f) The period of the year during which the water may be used is the whole year.

g) The land upon which the water is to be used and to which this licence is appurtenant is all those lands within the boundaries of the City of Port Alberni.

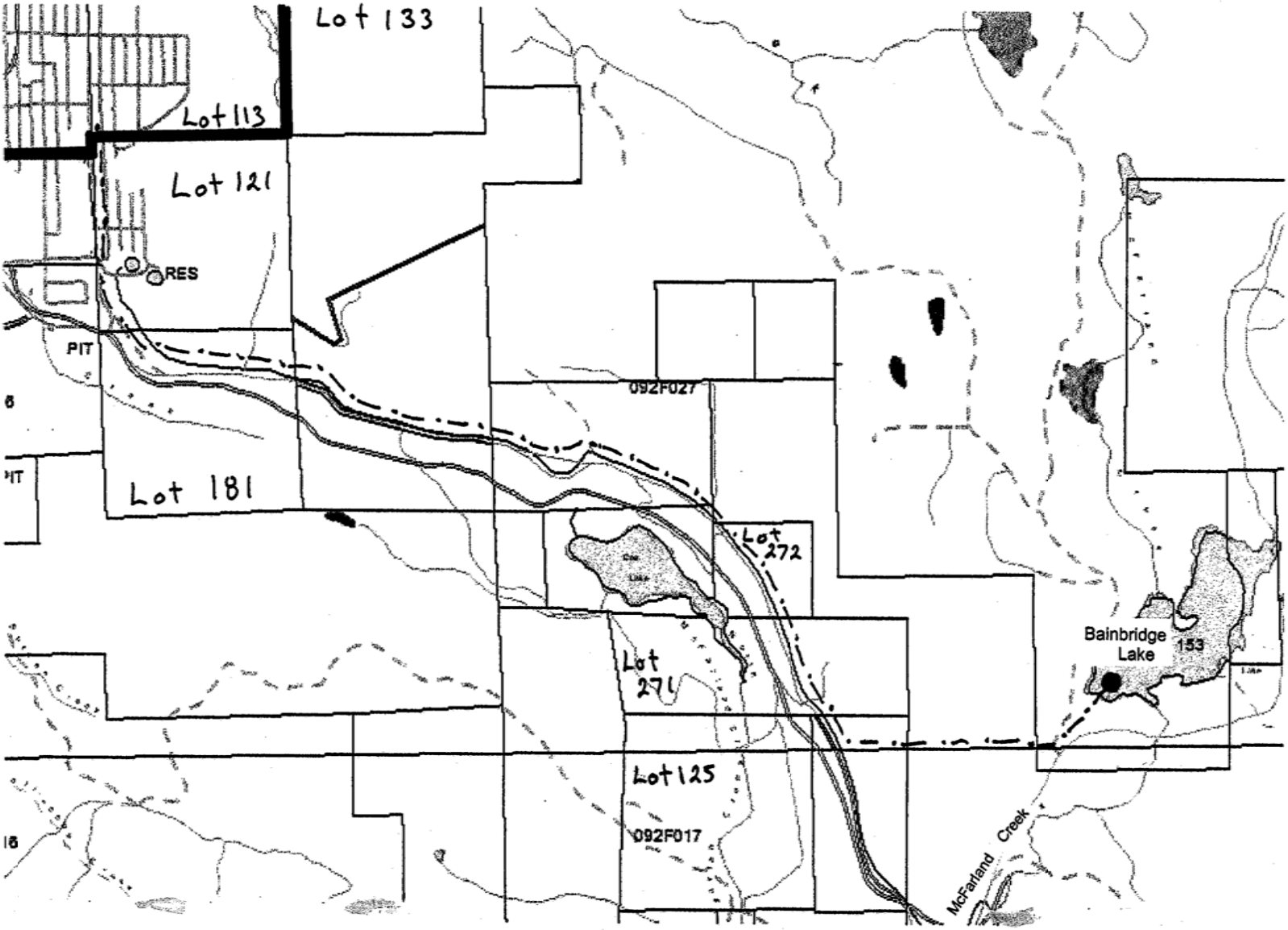
h) The works authorized to be constructed are pump, pipe and distribution system, which shall be located approximately as shown on the attached plan.

i) The construction of the said works has been completed and the water is being used. The licensee shall continue to make a regular, beneficial use of the water in the manner authorized herein.

j) This licence is issued in substitution of Conditional Water Licence No. 27216, under Section 18, Water Act, RSBC 1996, Chapter 483.

Ron Creber
Regional Water Manager

BRITISH COLUMBIA



WATER DISTRICT : Alberni
PRECINCT : Alberni
LAND DISTRICT : Alberni

CL 120137 for CL 27216
File: 0239010

CONDITIONAL WATER LICENCE

The City of Port Alberni is hereby authorized as follows:

a) The stream on which the rights are granted is Bainbridge Lake, and the reservoir is the lake.

b) The point of storage is located as shown on the attached plan.

c) The date from which this licence shall have precedence is 25th October, 1961.

d) The purpose for which this licence is issued is storage in support of waterworks as set out in Conditional Water Licence No. 120137.

e) The maximum quantity of water which may be held in storage is 1,036,125 cubic meters (840 acre feet) per annum.

f) The period of the year during which the water may be held in storage is the whole year.

g) The land upon which the water is to be used and to which this licence is appurtenant is all those lands within the boundaries of the City of Port Alberni.

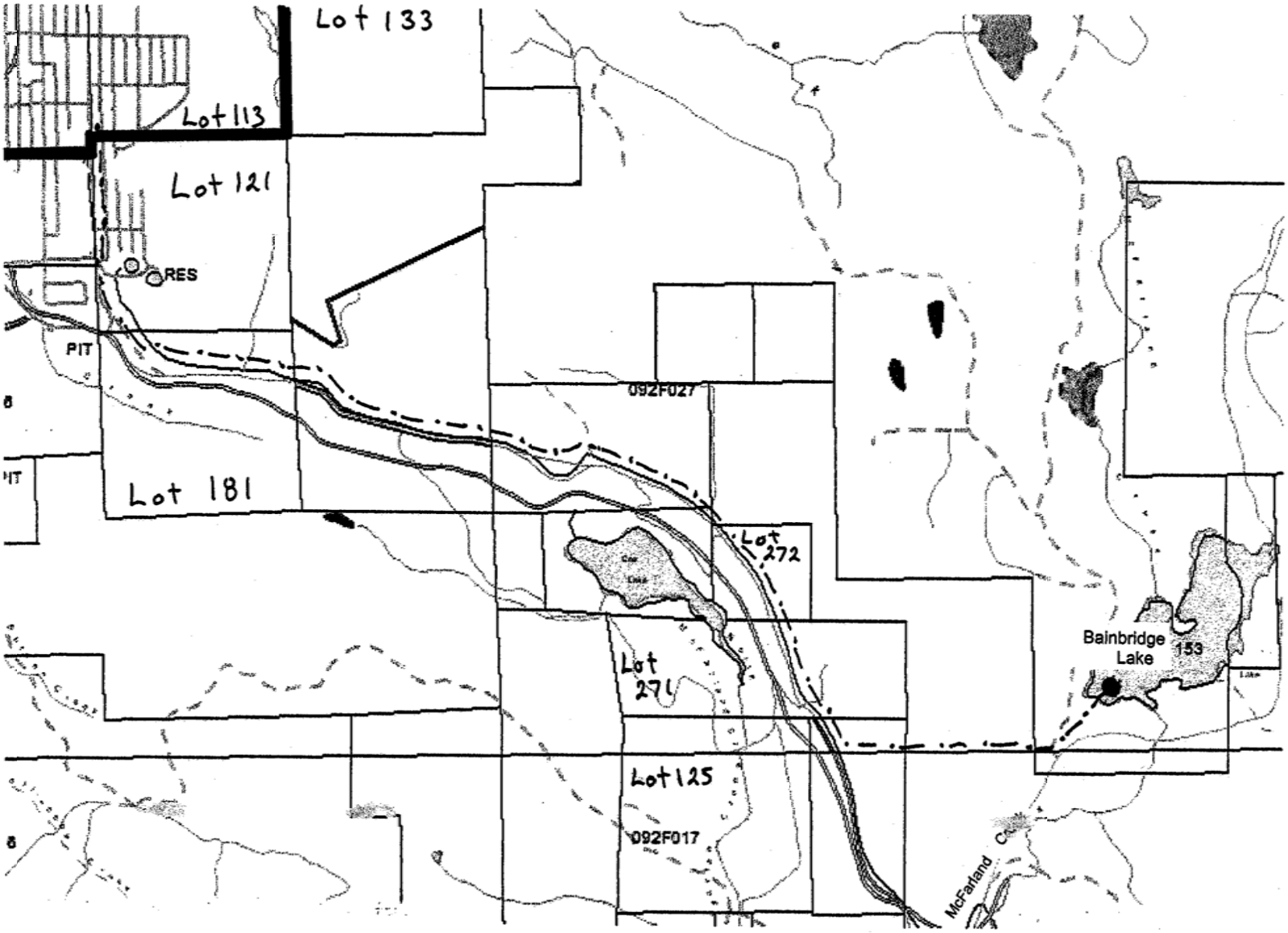
h) The works authorized to be constructed are dam (3.048 meters [10 feet] high), which shall be located approximately as shown on the attached plan.

i) The construction of the said works has been completed and the water is being used. The licensee shall continue to make a regular, beneficial use of the water in the manner authorized herein.

j) This licence is issued in substitution of Conditional Water Licence No. 27217, under Section 18, Water Act, RSBC 1996, Chapter 483.

Ron Creber
Regional Water Manager

BRITISH COLUMBIA



WATER DISTRICT : Alberni
PRECINCT : Alberni
LAND DISTRICT : Alberni

CL 120136 for CL 27217
File: 0239010

CONDITIONAL WATER LICENCE

Corporation of the City of Alberni, of P. O. Box 460, Alberni, B. C.,

is/are hereby authorized to divert and use water as follows:—

(*a*) The source (s) of the water-supply is/are Somass River.

(*b*) The point (s) of diversion is/are located as shown on the attached plan.

(*c*) The date from which this licence shall have precedence is 20th February, 1959.

(*d*) The purpose for which the water is to be used is waterworks.

(*e*) The maximum quantity of water which may be diverted is 3,000,000 gallons a day and such additional quantity as the Engineer may from time to time determine should be allowed for losses.

(*f*) The period of the year during which the water may be used is the whole year.

(*g*) The land upon which the water is to be used and to which this licence is appurtenant is the lands within the boundaries of the Corporation of the City of Alberni

(*h*) The works authorized to be constructed are intake, pump, pipe, tank and reservoirs to existing distribution system, and they shall be located approximately as shown on the attached plan.

(*i*) The construction of the said works has been commenced , and shall be completed and the water beneficially used on or before the 31st day of December , 1964 .

ENTERED ON
Map No. 23D
By A=L

A. F. Paget,
Comptroller of Water Rights.

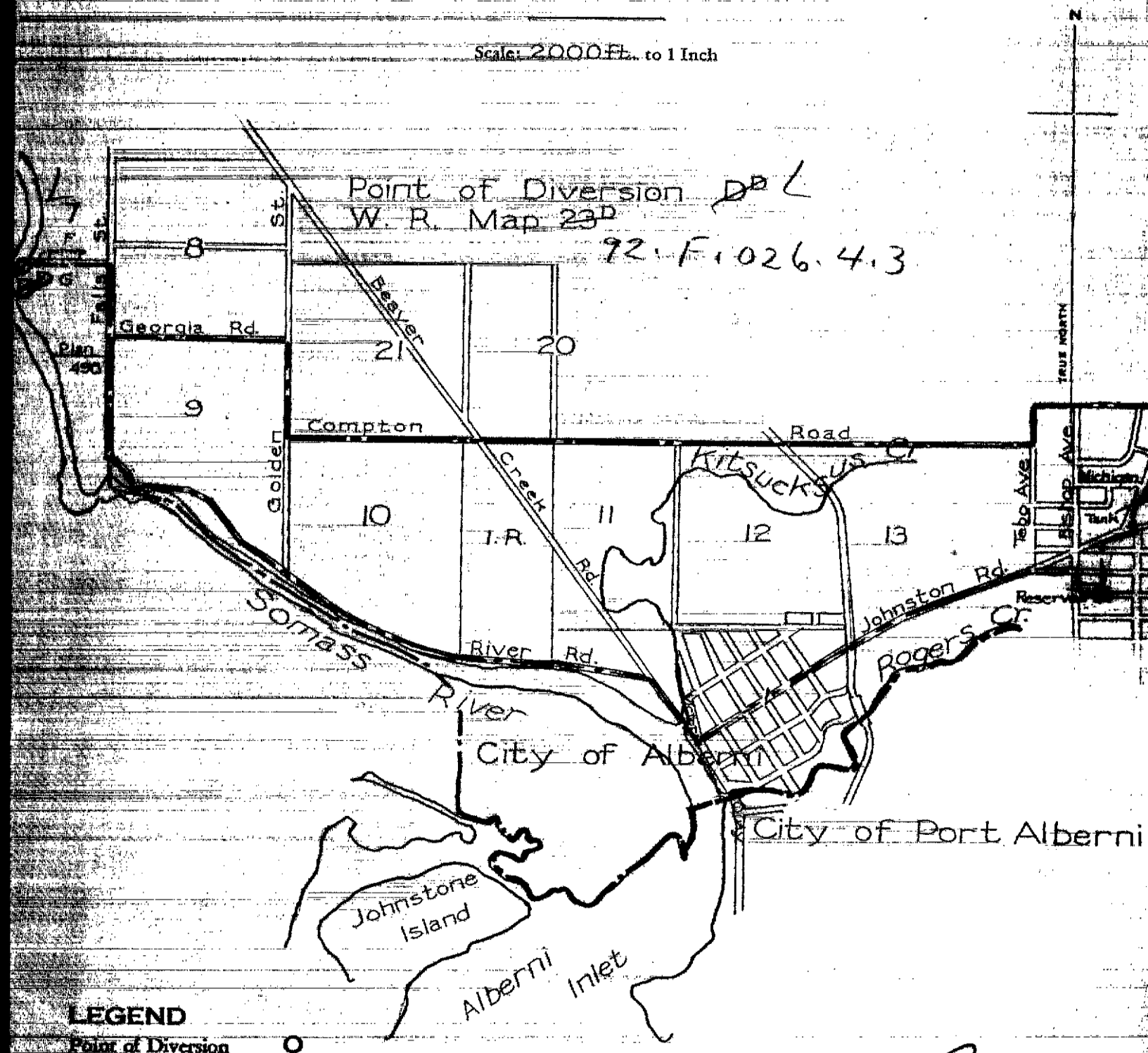
British Columbia

ALBERNI WATER DISTRICT

ALBERNI LAND DISTRICT

VICTORIA LAND REGISTRATION DISTRICT

Scale: 2000 Ft. to 1 Inch



LEGEND

Point of Diversion O

Pipe

The boundaries of the Corporation of the City of Alberni are shown thus:

Signature

Date 21st Feb. 1960

EXHIBIT "A"

CL 25492

CONDITIONAL WATER LICENCE

City of Port Alberni of 4850 Argyle Street, Port Alberni, British Columbia V9Y 1V8 is hereby authorized to store water as follows:

(a) The source of the water-supply is Lizard Lake and the reservoir is the lake.

(b) The point of storage is located as shown on the attached plan.

(c) The date from which this licence shall have precedence is 28th December, 1983.

(d) The purpose for which the water is to be used is as set out in Conditional Water Licence 18903.

(e) The maximum quantity of water which may be stored is 523 acre feet per annum and such additional quantity as the Engineer may from time to time determine should be allowed for losses.

(f) The period of the year during which the water may be stored is the whole year.

(g) The land upon which the water is to be used and to which this licence is appurtenant is as set out in Conditional Water Licence 18903.

(h) The works authorized to be constructed are dam, which shall be located approximately as shown on the attached plan.

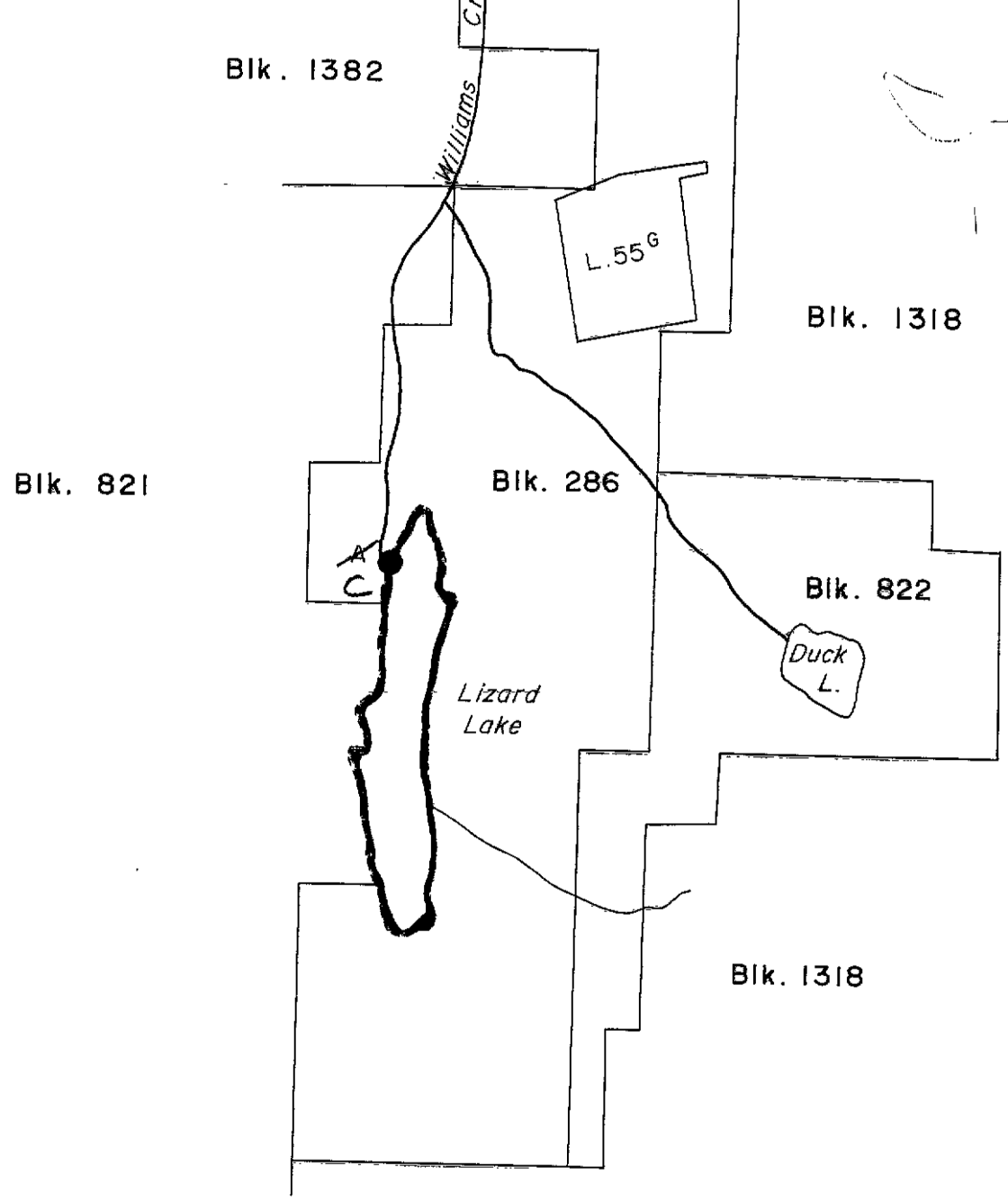
(i) The construction of the said works has been commenced and shall be completed and the water beneficially used on or before the 31st day of December, 1987.

(j) Construction of the dam authorized under this licence shall not begin until plans of same have been submitted to and accepted by the Engineer under the Water Act.

(k) The quantity of water authorized to be stored shall be stored between the elevations 2,388 feet and 2,401 feet G.S.C.

B. Hollingshead
Regional Water Manager

File No. 1000242 Date issued 14th June 1985 Conditional Licence 61870



WATER DISTRICT : ALBERNI
PRECINCT : ALBERNI
LAND DISTRICT : ALBERNI

LEGEND

Scale : 1:20,000
Dam : ●
Map Number : WR ~~20~~ 92F/2(9)
Permit over Crown Land :

Signature B. Gillespie
Date 14 JUNE 1985

C.L. 61373
File 1000243
P.C.L. 14737

Appendix B

Technical Memorandum No. 1 – Water Demand Projections
Technical Memorandum – Reservoir Optimization

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

P.O. BOX 790
194 MEMORIAL AVENUE
PARKSVILLE, B.C. V9P 2G8
Phone: (250) 248-3151
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TECHNICAL MEMORANDUM No. 1411-01

City of Port Alberni
Water Study Update – Water Demand Projection Technical Memorandum

Issued: July 8, 2014
Previous Issue: June 9, 2014

1 INTRODUCTION

1.1 Background

The purpose of this technical memorandum is to determine the existing water system demands for the City of Port Alberni and identify population and water demand projections to 2034 for the 2014 Water Study Update.

The following items are detailed in the technical memorandum:

- Existing residential and ICI water demands
- Existing non billable water usage
- Existing service population
- Future population projections to 2034
- Future water demands.

1.2 List of Abbreviations and Definitions

The following abbreviations are used in this technical memorandum:

Bulk Meter: The master meter that measures water withdrawn from the source.

ADD: Average Day Demand: $\frac{\text{Total system demand}}{365 \text{ days}}$

BD: Base Demand: Basic indoor residential water usage that is calculated based on the meter readings during the fall/winter months (September to December).

SD: Seasonal Demand: Water usage during the summer months, generally for irrigation. SD is calculated as the difference between the bulk meter MDD and BD.

HGL: Hydraulic Grade Line

ICI: Industrial, Commercial, Institutional

MDD: Maximum Day Demand (24 hour average): Comprised of BD and PSD

PSD: Peak Seasonal Demand: Seasonal Demand on MDD.

2 WATER SOURCE

The City of Port Alberni is supplied by two sources located southeast of the City. The primary source is China Creek, which is supplied from a small concrete dam with a submerged intake and a spillway elevation of 184 m located approximately 7.5 kms upstream of the Alberni Inlet. The City operates this source under conditional water licence C018903 dated July 24, 1912 issued by the provincial government. The creek is subject to rises in turbidity levels during heavier rainfall events.

During turbidity events on China Creek, water is withdrawn from the City's second source, Bainbridge Lake, which drains into Macfarland Creek and ultimately China Creek. Water is withdrawn from a submerged intake. A small (3 m high) earth filled dam controls the water level in the lake, which has a top water level of 153 m. The City operates this source under conditional water licence C0120136 and C0120137 dated November 25, 1961. Water withdrawn from Bainbridge Lake (153 m HGL) flows through a 1.5 km long, 500 mm diameter supply main to the Bainbridge Pump Station where it is pumped into the China Creek supply main (184 m HGL).

The supply mains from the two sources are individually metered prior to the interconnection of the mains at the Bainbridge Pump Station on Franklin River Road

The City also maintains an emergency water supply connection to Somass River. This is a back-up source that would only be used if necessary because of the marginal water quality in the summer months from fish runs, agricultural runoff, and sediment loading during heavy rainfall events. Its use is governed by conditional water licence C025492 as of February 20, 1959.

3 EXISTING WATER DEMANDS

2.1 Monthly Demand

Bulk meter readings were provided by the City from the Bainbridge Lake and China Creek sources for the years 2008 to 2013; however there are gaps in the data from 2008 to 2010. Presented below in **Table 1** is the City's total month and annual demand along with the average monthly demand for the last three years. This data is presented graphically in the attached **Figure 1**, which highlights that demands significantly increase in the months of July and August.

Figure 2 presents a graph of monthly demand versus monthly rainfall for years 2011, 2012 and 2013. The graph shows the water that is being supplied by either China Creek or Bainbridge Lake, or both, for each month. In 2013, 89% of the City's demand was supplied by China Creek compared to 74% in 2012 and 73% in 2011.

Figure 3 presents a graph of daily demand withdrawn from each source versus rainfall for years 2011, 2012 and 2013.

Table 1 – Monthly Demand, 2011 to 2013

Month	Total Consumption (m^3)			3 Year Ave (2011 – 2013)	
	2011	2012	2013	(m^3)	lps
January	351,527	318,571	300,672	323,590	120.8
February	290,938	293,031	237,172	273,714	113.1
March	303,133	257,366	260,334	273,611	102.2
April	304,369	232,488	253,773	263,543	101.7
May	314,593	361,312	307,152	327,686	122.3
June	371,275	355,140	326,894	351,103	135.5
July	413,233	402,835	468,013	428,027	159.8
August	462,089	472,567	374,668	436,441	168.4
September	371,507	384,345	267,156	341,003	131.6
October	265,608	286,691	270,527	274,275	102.4
November	238,372	266,548	245,768	250,229	96.5
December	298,541	254,398	305,095	286,011	106.8
Total	**3,985,186**	**3,885,291**	**3,617,224**	**3,829,234**	**121.4**

2.2 Daily Demands

Base Demand (BD)

The BD for the City of Port Alberni is 102.0 lps based on the average winter bulk meter usage from October to December over the 3 year period of 2011 to 2013.

Average Day Demand (ADD)

The average ADD for the 3 year period of 2011 to 2013 was 121.4 lps. The highest ADD was 126.3 lps recorded in 2011.

Maximum Day Demand (MDD)

The average MDD from 2011 to 2013 was 208.2 lps with the highest MDD recorded on July 15, 2012 with a demand of 212.5 lps.

2.3 Universal Meter Flows

The City of Port Alberni established a universal metering program in 2000. The service meters are read three times a year in April, August and December. The water usage for the City from the service meters has been separated into residential and ICI usage and is summarized in Table 2 below.

Table 2 – Universal Metering Data

Zoning	Number of Meters	Annual Usage (m^3)			ADD (lps)		
		2011	2012	2013	2011	2012	2013
Residential	6,242	1,486,875	1,475,249	1,422,406	47.1	46.8	45.1
ICI	300	1,668,604	1,627,936	1,487,454	52.9	51.6	47.2
Total	**6,547**	**3,155,479**	**3,103,185**	**2,909,860**	**100.0**	**98.4**	**92.6**

4 EXISTING DEMANDS & USER RATES

4.1 Population

The 2011 Census population for the City of Port Alberni is 17,743. Based on current BC Stats data the 2013 population for the City is 16,769.

The City of Port Alberni also supplies water to the ACRD's Beaver Creek Water System through the newly constructed Strick Road Pump Station. The current population of the Beaver Creek Water System is approximately 2,337.

4.2 User Rates

Non-Revenue Water (NRW)

The non-revenue water is the difference in the volume of water measured by the Bulk Meters and the amount measured under the universal metering. The water meter data from 2011 to 2013 was reviewed and the NRW for the City is summarized in Table 3 below.

Table 3 – Non Revenue Water Estimates

Flow Data	Annual Usage (m^3)			Average
	2011	2012	2013	
Bulk Meter	3,985,186	3,885,291	3,617,224	**3,829,234**
Service Meters	3,157,490	3,105,197	2,920,550	**3,056,175**
Non-Revenue Water (NRW)	827,696	780,094	696,674	**773,059**
NRW (% of Bulk Meter Usage)	20.7%	20.1%	19.2%	**20.0%**
NRW (% of Base Demand)	26.1%	24.4%	21.7%	**24.1%**

Environment Canada's 2011 Municipal Water Use Report states that the average water loss rate in 2009 across Canada was 13.3%. The high amount of NRW calculated for the system indicates that the City may have a problem with leakage in the system.

4.3 Base and Seasonal Demands

The residential BD was calculated based on the average residential metered usage for the months of October to December for the period of 2011 to 2013. In order to provide an estimate of the residential flows during this period the universal meter data for the period of September to December was scaled

based on the equivalent ratio of the bulk meter BD for the period of October to December. The meter data is listed in Table 4 below.

Table 4 – Residential Base Demands

Year	Population	Residential Metered Consumption	
		Sept – Dec (m^3)	Oct – Dec (m^3)
2011	17,782	502,441	353,655
2012	17,340	480,056	337,899
2013	16,769	400,641	282,001
Average		**461,046**	**324,519**

For the purposes of this report the residential BD was calculated to be 210 lpcd based on the three year average residential meter data for the months of October to December and the current 2013 population. For comparison the residential BD for Richmond and Saanich are 208 lpcd and 203 lpcd respectively.

The seasonal demands for the system are based on the difference between the Bulk Meter readings for MDD and BD and the available area for irrigation. Based on available zoning information in the City the available residential area is approximately 600 ha and the available ICI area is approximately 360 ha. It has been assumed that the irrigated land area is 65% of the total lot area for residential and 45% of the total lot area for ICI. The calculated SD for the system are shown in Table 5 below:

Table 5 – Seasonal Demand Estimate

Year	SD (lps) (MDD-BD)	Irrigation Area (ha)		SD (l/ha/day)
		Residential	ICI	
2011	103.9	390	163	16,226
2012	110.9	390	163	17,326
2013	103.8	390	163	16,223
Average	**106.2**			**16,591**

To provide a more conservative estimate it is recommended that the SD for 2009, which had the highest MDD (242.5 lps) over the past 5 years be used for this report. Based on this higher MDD demand the calculated SD is 21,950 l/ha/day. This value is similar to the BC Design Guidelines for Rural Water Systems, which identifies a design irrigation rate of 20,000 l/ha/day for wet coastal communities that implement universal metering.

5 FUTURE DEMAND PROJECTIONS

5.1 Population

The City has contracted Econics to update the current water rate structure for the City's universal metering program. As part of the update, Econics has prepared population projections for the City based

on an assumed growth rates between 0.2 and 0.5%. For the purposes of infrastructure planning this technical memorandum assumes that the population growth for the City of Port Alberni will be 0.5%.

Population projections for the Beaver Creek Water System are based on assumed growth rates as identified in the 2009 Alberni Valley Regional Water Study Update completed by Koers & Associates Engineering Ltd. As identified in the report the growth rates are 1.0% for Beaver Creek.

The population projections have been calculated for a 20 year period as defined by the City's current Official Community Plan. The population projections to 2034 are detailed in Table 6 below:

Table 6 – Population Projections

Year	Population	
	City of Port Alberni	Beaver Creek
2013	16,769	2,337
2014	16,850	2,360
2024	17,715	2,607
2034	18,621	2,880

5.2 Water Demand Projections

The water demand projections for the City of Port Alberni are shown in Table 7 below. A detailed breakdown of the demand calculations is included in Appendix A. For the demand projections the following assumptions have been made:

1) The residential per capita demands will be 225 lpcd
2) The SD rate will be 21,195 l/ha/day
3) The ICI demands and lot areas will increase at 0.5%
4) NRW will remain constant at 24.1% of the Base Demand
5) Irrigated land area usage will remain constant for residential (65%) and ICI (45%)

Table 7 – City of Port Alberni Water Demand Projections

Year	Population	ADD (lps)	BD (lps)	PSD (lps)	MDD (lps)
2014	16,850	121.9	105.5	141.2	246.7
2024	17,715	128.1	110.9	148.6	259.4
2034	18,621	134.7	116.5	156.4	272.9

The water projections for the Beaver Creek Water System are shown in Table 8 below. The demands are based on the historical per capita demands as shown in the September 2010 ACRD report.

Table 8 – Beaver Creek Water Demand Projections

Year	Population	ADD (lps)	MDD (lps)
2014	2,360	14.9	39.8
2024	2,607	16.5	43.9
2034	2,880	18.2	48.5

6 SUMMARY

The total projected demands for the City of Port Alberni water system, including the demands for the supply to the Beaver Creek Water System are shown in Table 9 below. The MDD was factored by 115% to provide a factor of safety for the computer modelling to account for uncertainties with regards to climate change and future irrigation rates, and changes in existing water use and land zoning.

Table 9 – Total Water System Demand Projections

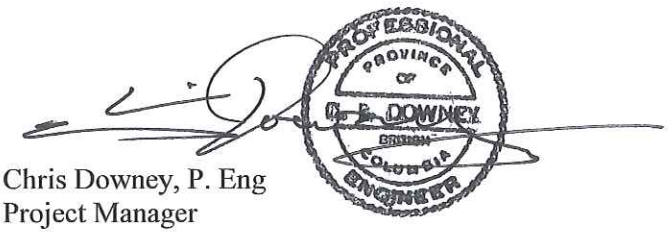
	Population		ADD			MDD			
Year	Port Alberni	Beaver Creek	Port Alberni	Beaver Creek	Total	Port Alberni	Beaver Creek	Total	Factored
2014	16,850	2,360	121.9	14.9	**136.8**	246.7	39.8	**286.5**	**329.5**
2024	17,715	2,607	128.1	16.5	**144.6**	259.4	43.9	**303.3**	**348.8**
2034	18,621	2,880	134.7	18.2	**152.9**	272.9	48.5	**321.4**	**369.61**

Yours truly,
KOERS & ASSOCIATES ENGINEERING LTD.

Prepared By:

Mitchell Brook, P. Eng
Project Engineer

Reviewed By:



Chris Downey, P. Eng
Project Manager

KOERS & ASSOCIATES ENGINEERING LTD.
Consulting Engineers

Appendix A - Detailed Demand Calculation Summary Table

		Base Demand (lps)				Seasonal Demand								
						Residential			ICI					
Year	Population	Res	ICI	NRW	**BD**	Irrigation Lot Area (ha)	Rate (l/ha/day)	Total (lps)	Irrigation Lot Area (ha)	Rate (l/ha/day)	Total (lps)	**PSD (lps)**	**MDD (lps)**	**ADD (lps)**
2013	16,769	40.8	43.8	20.38	**104.9**	390.0	21,950	99.08	163.0	21,950	41.4	**140.5**	**245.4**	**121.3**
2014	16,853	41.0	44.0	20.48	**105.5**	392.0	21,950	99.59	163.8	21,950	41.6	**141.2**	**246.7**	**121.9**
2015	16,937	41.2	44.2	20.58	**106.0**	394.0	21,950	100.10	164.6	21,950	41.8	**141.9**	**247.9**	**122.5**
2016	17,022	41.4	44.5	20.69	**106.5**	396.1	21,950	100.62	165.5	21,950	42.0	**142.7**	**249.2**	**123.1**
2017	17,107	41.6	44.7	20.79	**107.1**	398.1	21,950	101.14	166.3	21,950	42.2	**143.4**	**250.4**	**123.7**
2018	17,192	41.8	44.9	20.89	**107.6**	400.2	21,950	101.66	167.1	21,950	42.5	**144.1**	**251.7**	**124.4**
2019	17,278	42.0	45.1	21.00	**108.1**	402.2	21,950	102.19	168.0	21,950	42.7	**144.9**	**253.0**	**125.0**
2020	17,365	42.2	45.4	21.10	**108.7**	404.3	21,950	102.71	168.8	21,950	42.9	**145.6**	**254.3**	**125.6**
2021	17,452	42.4	45.6	21.21	**109.2**	406.4	21,950	103.24	169.6	21,950	43.1	**146.3**	**255.5**	**126.2**
2022	17,539	42.6	45.8	21.31	**109.8**	408.5	21,950	103.77	170.5	21,950	43.3	**147.1**	**256.8**	**126.9**
2023	17,627	42.8	46.0	21.42	**110.3**	410.6	21,950	104.31	171.3	21,950	43.5	**147.8**	**258.1**	**127.5**
2024	17,715	43.1	46.3	21.53	**110.9**	412.7	21,950	104.85	172.2	21,950	43.7	**148.6**	**259.4**	**128.1**
2025	17,803	43.3	46.5	21.64	**111.4**	414.8	21,950	105.39	173.1	21,950	44.0	**149.4**	**260.8**	**128.8**
2026	17,892	43.5	46.7	21.74	**112.0**	417.0	21,950	105.93	173.9	21,950	44.2	**150.1**	**262.1**	**129.4**
2027	17,982	43.7	47.0	21.85	**112.5**	419.1	21,950	106.47	174.8	21,950	44.4	**150.9**	**263.4**	**130.1**
2028	18,072	43.9	47.2	21.96	**113.1**	421.3	21,950	107.02	175.7	21,950	44.6	**151.6**	**264.7**	**130.7**
2029	18,162	44.1	47.4	22.07	**113.7**	423.4	21,950	107.57	176.5	21,950	44.9	**152.4**	**266.1**	**131.4**
2030	18,253	44.4	47.7	22.18	**114.2**	425.6	21,950	108.13	177.4	21,950	45.1	**153.2**	**267.4**	**132.0**
2031	18,344	44.6	47.9	22.29	**114.8**	427.8	21,950	108.68	178.3	21,950	45.3	**154.0**	**268.8**	**132.7**
2032	18,436	44.8	48.2	22.40	**115.4**	430.0	21,950	109.24	179.2	21,950	45.5	**154.8**	**270.1**	**133.4**
2033	18,528	45.0	48.4	22.52	**115.9**	432.2	21,950	109.80	180.1	21,950	45.8	**155.6**	**271.5**	**134.0**
2034	18,621	45.3	48.6	22.63	**116.5**	434.4	21,950	110.37	181.0	21,950	46.0	**156.4**	**272.9**	**134.7**

Notes:
1) Base demand (BD) is based on individual meter readings. Residential Base Demand is based on a per capita demand of 225 lpcd. ICI Base Demand is based on an assume growth rate of 0.5% for the ICI demands.
2) NRW (Non revenue water) is calculated based on the historical NRW expressed as a % of the bulk meter BD. Historical values indicated NRW is 24.1% BD
3) Residential lot area is based on an assumed 65% lot coverage for the existing lot area. Future lot area is based on an assumed population growth of 0.5%, a population denisty of 2.5 ppu and a minimum lot size of 0.6 ha
4)Irrigation rate is based on historical seasonal demands. Seasonal demands are caluclated as the difference between the bulk meter maximum day and the bulk meter base demand. The irrigation rate is then calculated based on the total available land in the City. Lot coverage is assumed to be 65% for residential and 45% for ICI. For the purposes of this study the 2009 irrigation rate has been used as this was the driest summer in the past 5 years
5)Projected ICI land area is based on an assumed growth rate of 0.5%
6) PSD is the sum of the Residential and ICI Seasonal Demand
7) MDD is the sum of the PSD and BD

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TECHNICAL MEMORANDUM No. 1436-01 Rev 1

City of Port Alberni
Reservoir Optimization Review

Issued: July 4, 2014
Previous Issue: June 18, 2014

1. Objective

The objective of this technical memorandum is to review the existing reservoir set points in the distribution system and provide recommendations to optimize the amount of turnover in the reservoirs.

2. Current Conditions

The current City of Port Alberni water model was evaluated under an extended period simulation for maximum day demands. The performances of the five storage reservoirs, with the current set points, were plotted and are enclosed.

Listed below is a summary of the reservoirs and a brief description of the operation of each reservoir.

Table 1: Current Reservoir Volumes

Reservoir	Storage Volume (m3)	Top Water Level (m)
Arrowview	250	173.0
Burde	6,813	88.4
Johnston	9,084	66.0
Lower Cowichan	6,813	144.8
Upper Cowichan	11,355	158.4

Arrowview Reservoir

The reservoir is filled by the Arrowsmith Pump Station which consists of two electric duty pumps.

The pump station is controlled by the top water level (TWL) in the reservoir. When the reservoir drops 0.15 m from the TWL the lead pump is turned on. If the water level of the reservoir continues to drop 0.3 m below the TWL the second pump is turned on. All pumps are then turned off when the reservoir reaches its TWL.

A check valve has been installed at Burde Street, near the pump station, to allow flow from the 158 m pressure zone (Upper Cowichan) to supply the Arrowview service area in the event of an emergency.

As shown in Figure 1 the reservoir level takes between three to six hours to drop to the first reservoir call point. Once the pump is turned on the reservoir fills in less than an hour.

Burde Reservoir

The reservoir is filled through two separate sources. The first supply is from the PRV station at North Park Drive and 11th Avenue. The downstream HGL setting of the PRV will increase from 83.0 m to 94.0 m when the water level of the Burde Reservoir drops 0.2 m below the TWL to fill the reservoir. Once the reservoir has reached its TWL the downstream HGL setting of the PRV returns to 83.0 m.

The second supply is from an altitude valve chamber connected to a transmission main, which is supplied from the Upper Burde PRV service area (126 m HGL). This chamber consists of a 75 mm and 150 mm dia. altitude valves. The 75 mm dia. altitude valve opens when the water level of the Burde reservoir drops 0.4 m below the TWL and closes when the reservoir reaches its TWL. The 150 mm dia. control valve opens when the water level of the Burde Reservoir drops 0.85 m below the TWL and closes when the reservoir reaches an elevation of 88.2 The altitude valves have a pressure sustaining feature that will restrict the flow through the valve to ensure that the upstream HGL does not drop below 110 m.

As shown in Figure 2 the reservoir level takes between four to six hours to drop to the first reservoir call point. Once the PRV at 11th and North Park opens the reservoir takes between five and six hours to fill.

Johnston Reservoir

The reservoir is filled from two sources, an altitude valve, located at the reservoir, supplied from the Huff PRV service area (126 m HGL) and a PRV at 3rd Avenue and Dunbar Street. The primary supply is the altitude valve, which will open when the water level of the Johnston reservoir drops 0.1 m below the TWL and closes when the reservoir reaches its TWL. The altitude valve has a pressure sustaining feature that will restrict the flow through the valve to ensure that the upstream HGL does not drop below 110 m.

When the water level in the reservoir drops to 0.4 m below the TWL, the downstream HGL setting at the 3rd Avenue and Dunbar PRV will increase from 64.5 m to 75 m to fill the reservoir. Once the reservoir has reached its TWL the downstream HGL setting of the PRV will return to 64.5 m.

As shown in Figure 3 the reservoir level takes approximately 1.5 hours to drop to the first reservoir call point. The altitude valve at the reservoir opens and begins to fill the reservoir, however as the demands increase the reservoir level drops below the second reservoir call point and the 3rd and Dunbar PRV is activated. The reservoir takes approximately 24 hours to completely fill.

Lower Cowichan Reservoir

The reservoir is filled from an altitude valve in the Cowichan Pump Station and is fed from China Creek and/or Brainbridge Lake. The altitude valve opens when the water level of the Lower Cowichan reservoir drops 0.27 m below the TWL and will close the altitude valve when the reservoir reaches its TWL.

The reservoir level also controls the 300 mm dia. PRV's on transmission main on Anderson Ave. The first valve will open when the reservoir level drops 1.08 m below the TWL and will close when the reservoir level reaches 144.5 m. The second valve will open when the reservoir level drops 1.89 m below the TWL and will close when the reservoir level reaches 144.75m.

As shown in Figure 4 the reservoir level takes between one to two hours to drop to the first reservoir call point. Once the altitude valve opens the reservoir takes less than an hour to fill.

Upper Cowichan Reservoir

The reservoir is filled from an altitude valve in the Cowichan Pump Station, which is fed from China Creek and/or Brainbridge Lake. The altitude valve opens when the water level of the Upper Cowichan reservoir drops 0.23 m below the TWL and closes when the reservoir reaches its TWL.

The reservoir can also be filled from the Lower Cowichan Reservoir through the pumps at the Cowichan Pump Station. If the reservoir level drops 0.69 m below the TWL the first pump is turned on and will turn off when the reservoir level reaches 158.35 m. The second pump is turned on when the reservoir level drops 1.15 m below the TWL and will turn off when the reservoir level reaches 158.3 m.

As shown in Figure 5 the reservoir level takes between one to two hours to drop to the first reservoir call point. Once the altitude valve opens the reservoir takes between one to two hours to fill, however as the demands increase the reservoir level does not fully recover and the altitude valve runs continuously, without reaching the second call point, for approximately 12 hours until the reservoir reaches its TWL at approximately 27 hours.

Listed below is a summary of the current reservoir set points:

Table 2: Existing Reservoir Set Points (HGL)

	TWL		1st Call		2nd Call		3rd Call	
Reservoir	HGL (m)	Depth (m)	HGL (m)	Depth (m)	HGL (m)	Depth (m)	HGL (m)	Depth (m)
Arrowview	173.0	4.2	172.85	4.05	172.7	3.9	-	-
Burde	88.4	3.7	88.2	3.5	88	3.3	87.55	2.85
Johnston	66.0	4.7	65.9	4.6	65.6	4.3	-	-
Lower Cowichan	144.8	5.14	144.53	4.87	143.72	4.06	142.91	3.25
Upper Cowichan	158.4	4.36	158.17	4.13	157.71	3.67	157.25	3.21

3. Proposed Conditions

The reservoir set points were modified in an effort to provide greater reservoir turnover during a 48 hour period. The proposed reservoir set points are summarized in the table below:

Table 3: Proposed Reservoir Set Points (HGL)

	TWL		1st Call		2nd Call		3rd Call	
Reservoir	HGL (m)	Depth (m)	HGL (m)	Depth (m)	HGL (m)	Depth (m)	HGL (m)	Depth (m)
Arrowview	173.0	4.2	171.95	3.15	171.71	2.94	-	-
Burde	88.4	3.7	87.48	2.78	87.29	2.59	87.11	2.41
Johnston	66.0	4.7	64.83	3.53	64.59	3.29	-	-
Lower Cowichan	144.8	5.14	143.52	3.86	143.26	3.60	143.0	3.34
Upper Cowichan	158.4	4.36	157.31	3.27	157.7	3.66	156.87	2.83

The current City of Port Alberni water model was evaluated under an extended period simulation for maximum day demands. The reservoir performance with the proposed reservoir set points were plotted and are enclosed.

Arrowview Reservoir

As shown in Figure 6, the reservoir level takes approximately 36 hours to drop to the first reservoir call point. Once the pump is turned on the reservoir fills in approximately three hours. This longer duration fill will increase the mixing in the reservoir and will improve water quality.

Burde Reservoir

As shown in Figure 7, the reservoir level takes approximately 17 hours to drop to the first reservoir call point. Once the PRV at 11th and North Park opens the reservoir takes approximately 24 hours to fill. Flow from the Burde Reservoir could be increased by modifying the PRV settings at the Burde and 7th PRV and the Roger PRV to allow more flow into the 65 m pressure zone. This would decrease the time that the reservoir takes to drop to the first reservoir call point. It is recommended that the City initially set the Roger PRV to 80 psi and the Burde and 7th PRV to 60 psi and monitor the reservoir levels. The PRV settings can be adjusted as required.

Johnston Reservoir

As shown in Figure 8 the reservoir level takes approximately 10 hours to drop to the first reservoir call point. The altitude valve at the reservoir opens and begins to fill the reservoir, however the reservoir level continues to drops below the second reservoir call point and the 3rd and Dunbar PRV is activated. The reservoir takes approximately 10 hours to fill.

Lower Cowichan Reservoir

As shown in Figure 9 the reservoir level takes approximately five hours to drop to the first reservoir call point. Once the altitude valve opens the reservoir takes approximately two hours fill.

Upper Cowichan Reservoir

As shown in Figure 10 the reservoir level takes approximately 12 hours to drop to the first reservoir call point. Once the altitude valve opens the reservoir takes approximately 14 hours to fill.

4. Recommendations

It is recommended that the City implement the proposed reservoir set points noted in Section 3 and monitor the system for a period of two weeks. The reservoir levels and flow data should be recorded and compared to the model results to assist in future calibration of the water model.

Yours truly,
KOERS & ASSOCIATES ENGINEERING LTD.

Prepared By:

Mitchell Brook, P.Eng
Project Engineer

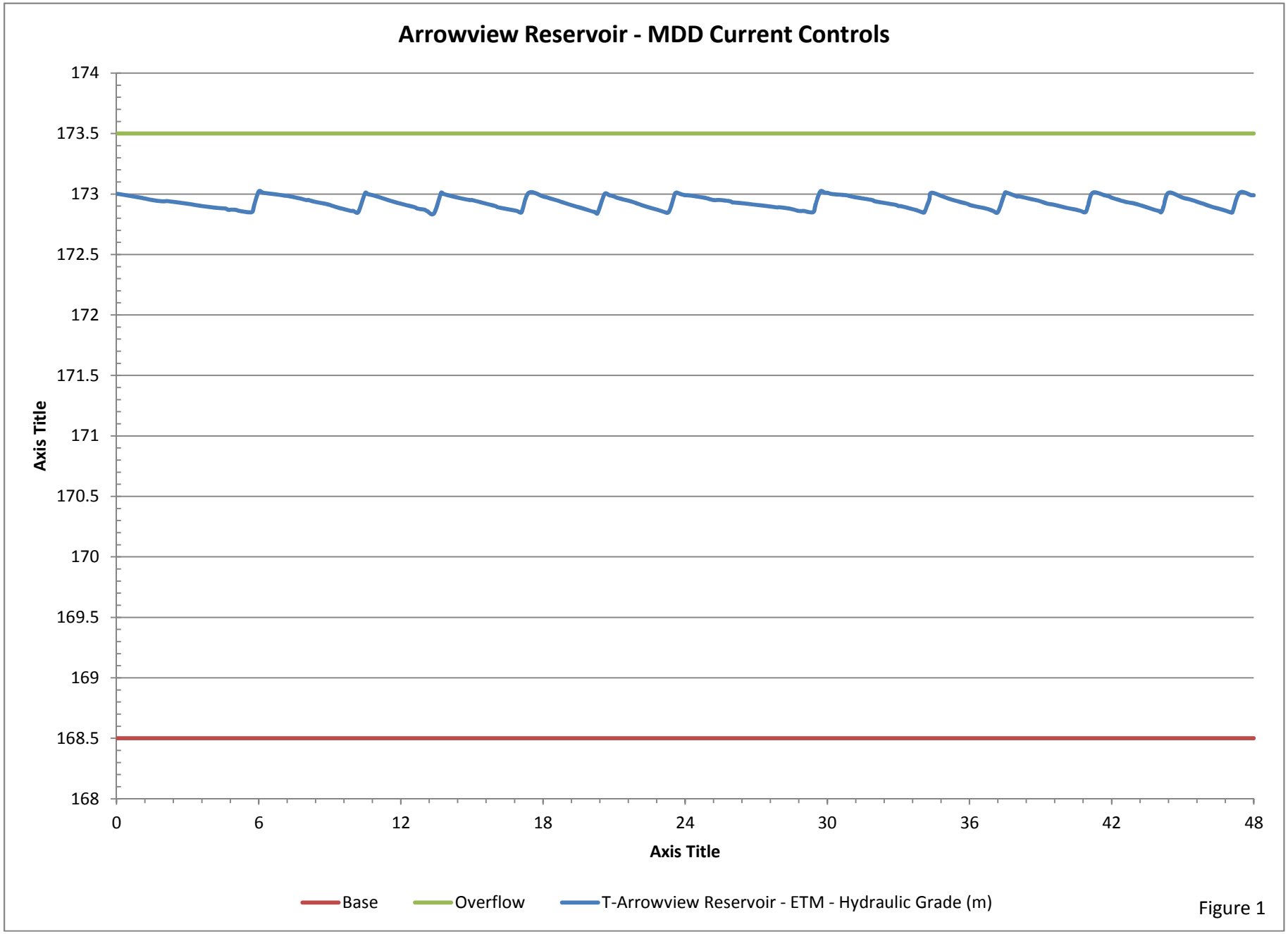

Arrowview Reservoir - MDD Current Controls
174
173.5
173
172.5
172
171.5
171
170.5
170
169.5
169
168.5
168
Axis Title
0
6
12
18
24
30
36
42
48
Axis Title
Base
Overflow
T-Arrowview Reservoir - ETM - Hydraulic Grade (m)

Figure 1

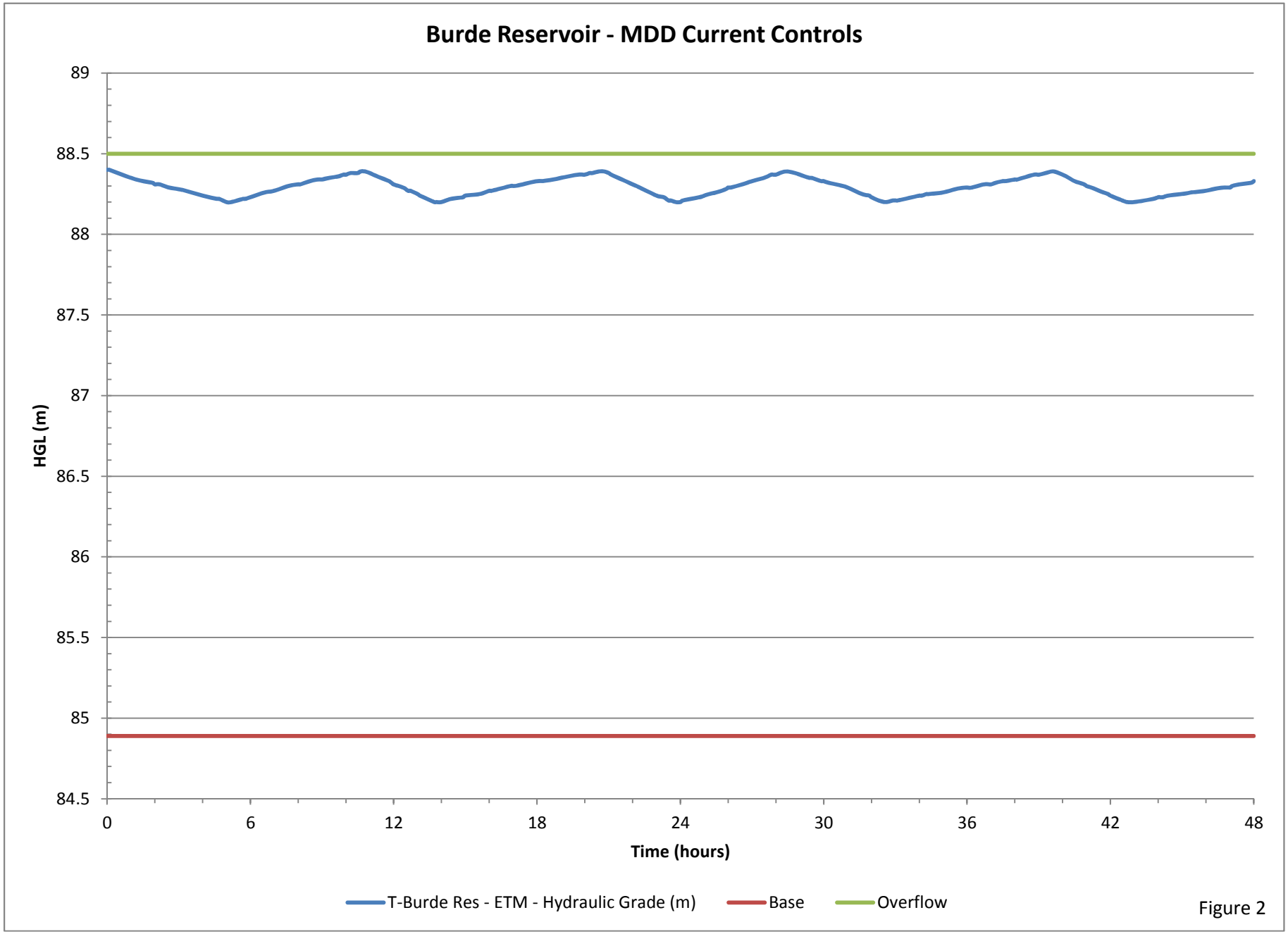

Burde Reservoir - MDD Current Controls
89
88.5
88
87.5
87
86.5
86
85.5
85
84.5
HGL (m)
0
6
12
18
24
30
36
42
48
Time (hours)
T-Burde Res - ETM - Hydraulic Grade (m)
Base
Overflow

Figure 2

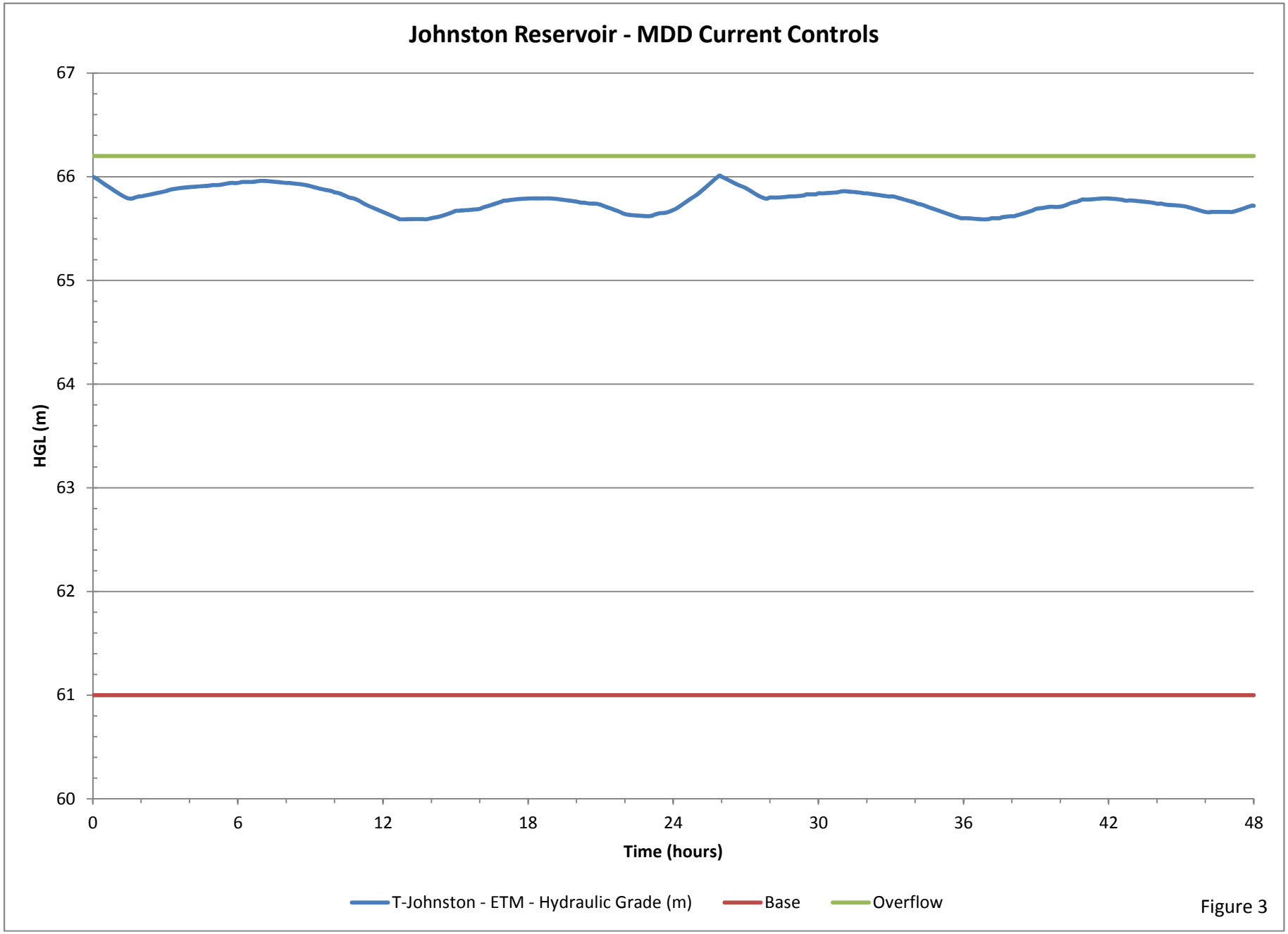

Johnston Reservoir - MDD Current Controls
67
66
65
64
63
62
61
60
HGL (m)
0
6
12
18
24
30
36
42
48
Time (hours)
T-Johnston - ETM - Hydraulic Grade (m)
Base
Overflow

Figure 3

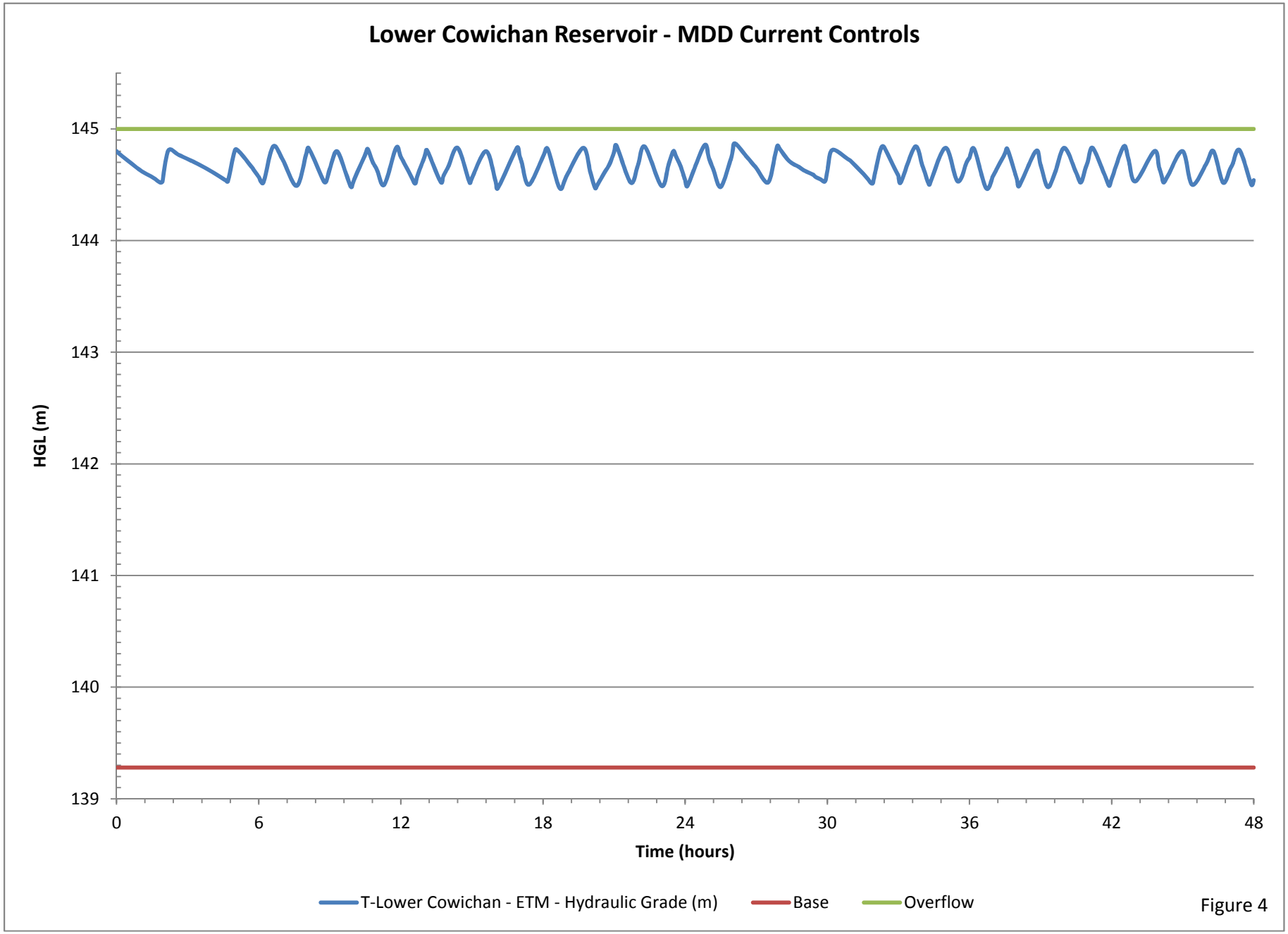

Lower Cowichan Reservoir - MDD Current Controls
HGL (m)
145
144
143
142
141
140
139
0
6
12
18
24
30
36
42
48
Time (hours)
T-Lower Cowichan - ETM - Hydraulic Grade (m)
Base
Overflow

Figure 4

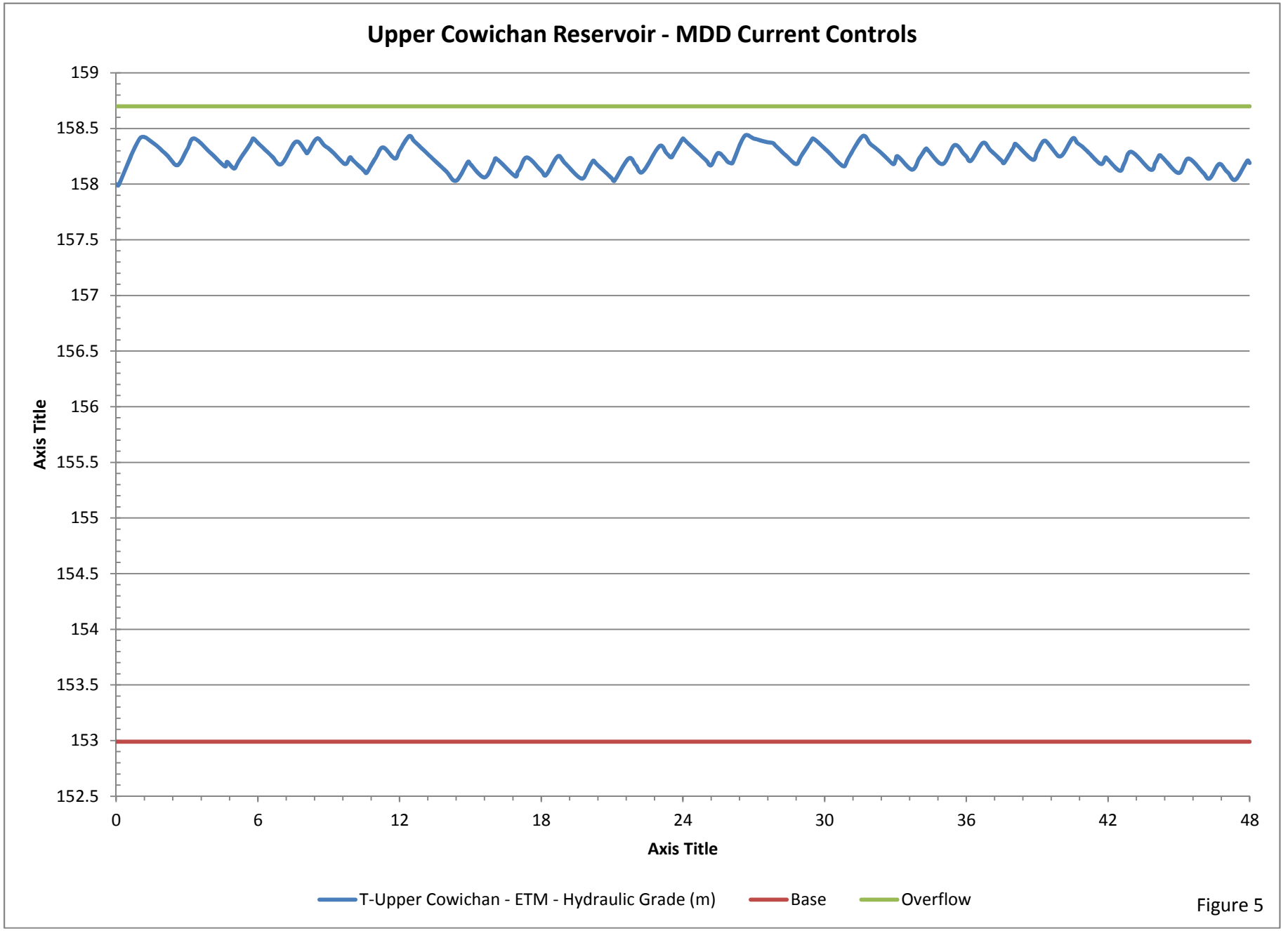

Upper Cowichan Reservoir - MDD Current Controls
159
158.5
158
157.5
157
156.5
156
155.5
155
154.5
154
153.5
153
152.5
Axis Title
0
6
12
18
24
30
36
42
48
Axis Title
T-Upper Cowichan - ETM - Hydraulic Grade (m)
Base
Overflow

Figure 5

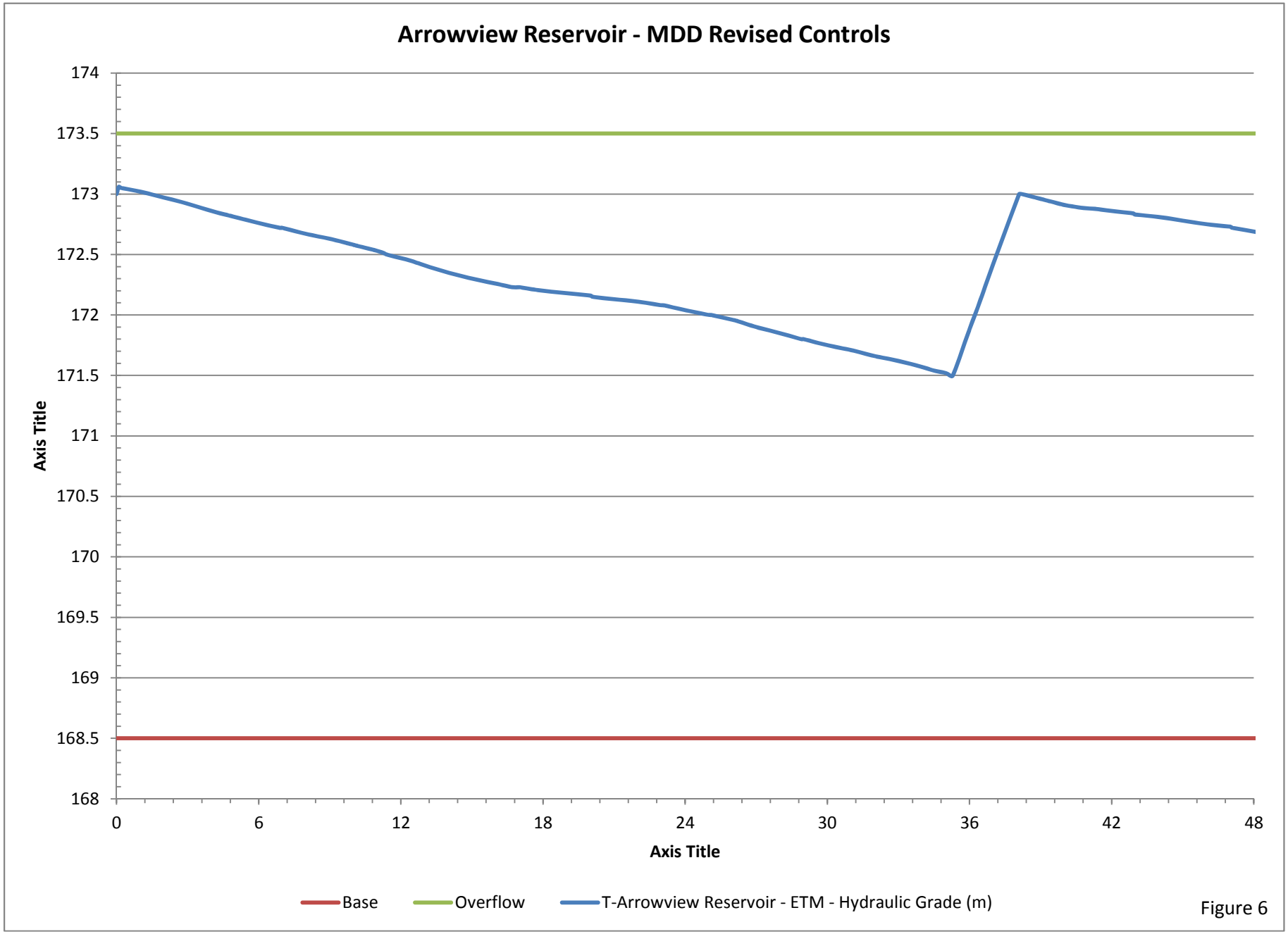

Arrowview Reservoir - MDD Revised Controls
174
173.5
173
172.5
172
171.5
171
170.5
170
169.5
169
168.5
168
Axis Title
0
6
12
18
24
30
36
42
48
Axis Title
Base
Overflow
T-Arrowview Reservoir - ETM - Hydraulic Grade (m)

Figure 6

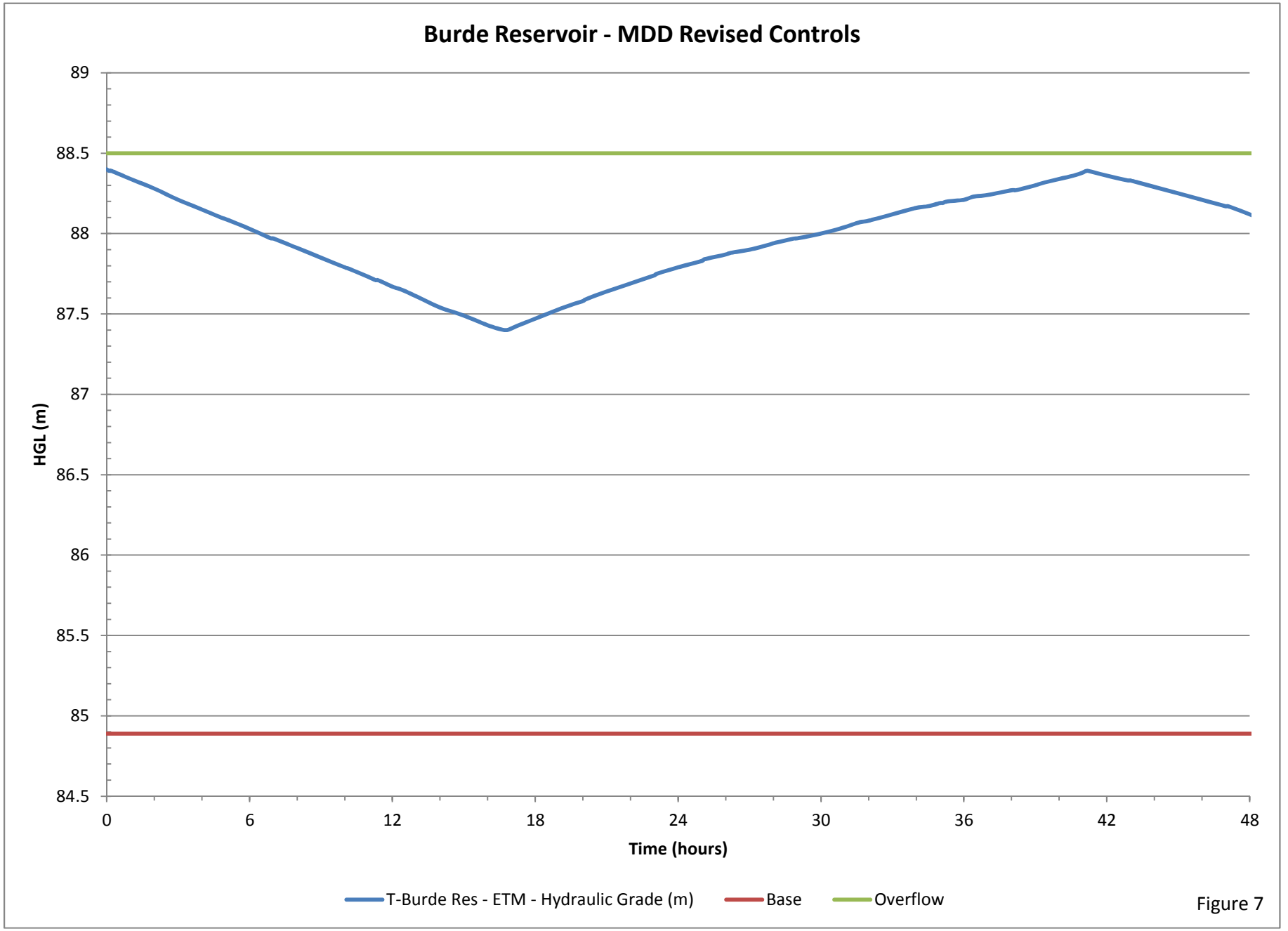

Burde Reservoir - MDD Revised Controls
89
88.5
88
87.5
87
86.5
86
85.5
85
84.5
HGL (m)
0
6
12
18
24
30
36
42
48
Time (hours)
T-Burde Res - ETM - Hydraulic Grade (m)
Base
Overflow

Figure 7

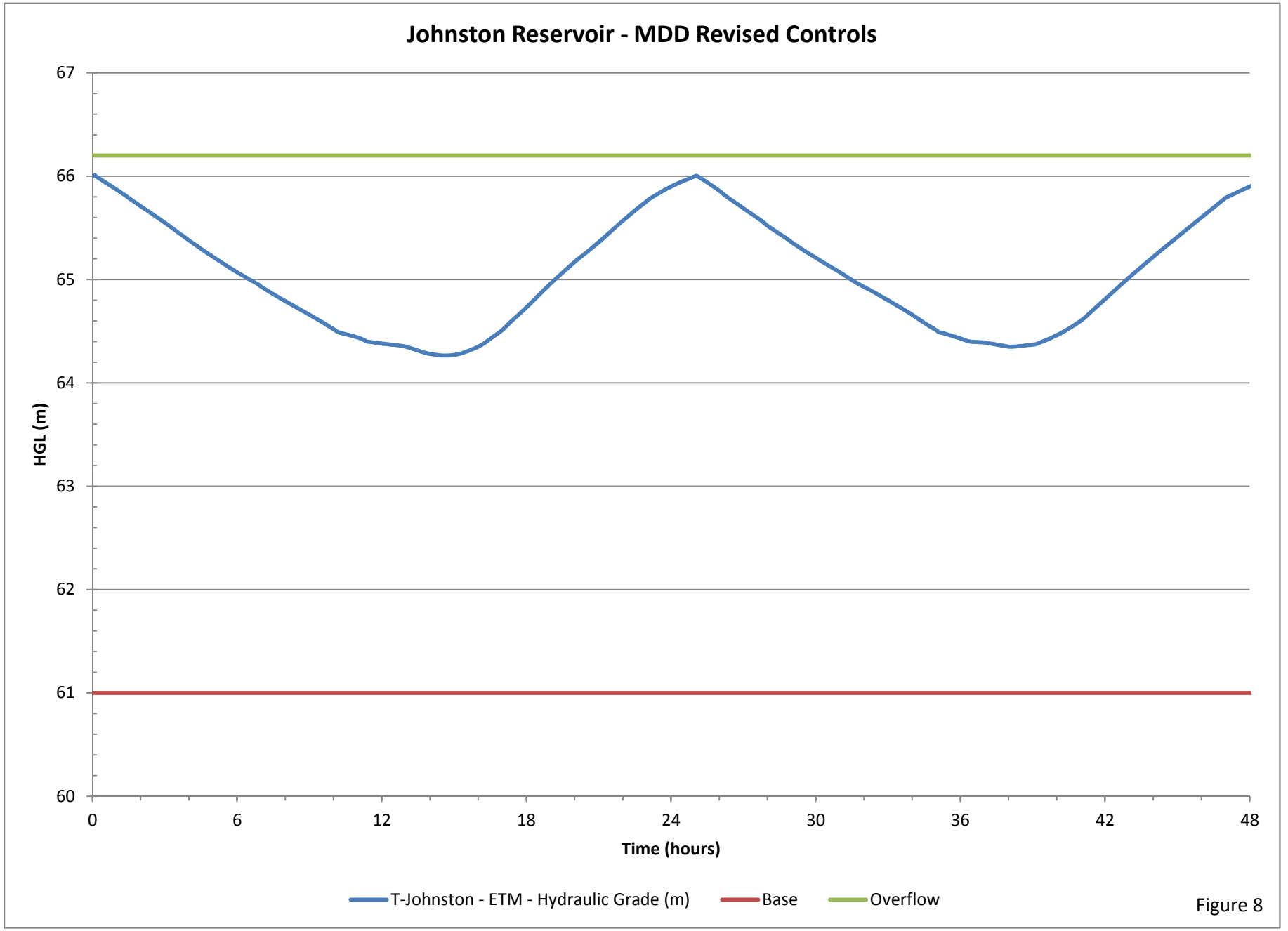

Johnston Reservoir - MDD Revised Controls
67
66
65
64
63
62
61
60
HGL (m)
0
6
12
18
24
30
36
42
48
Time (hours)
T-Johnston - ETM - Hydraulic Grade (m)
Base
Overflow

Figure 8

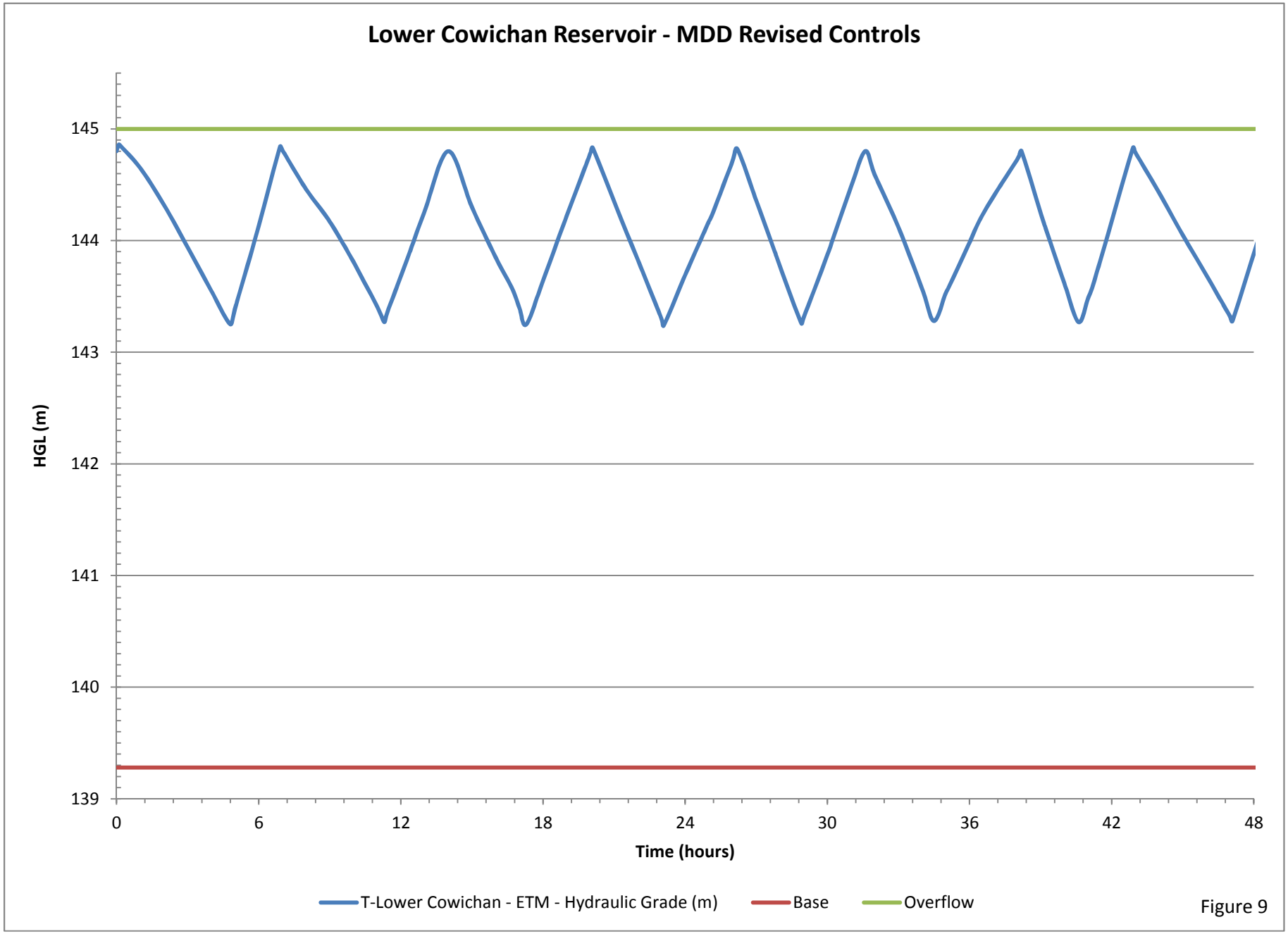

Lower Cowichan Reservoir - MDD Revised Controls
HGL (m)
145
144
143
142
141
140
139
0
6
12
18
24
30
36
42
48
Time (hours)
T-Lower Cowichan - ETM - Hydraulic Grade (m)
Base
Overflow

Figure 9

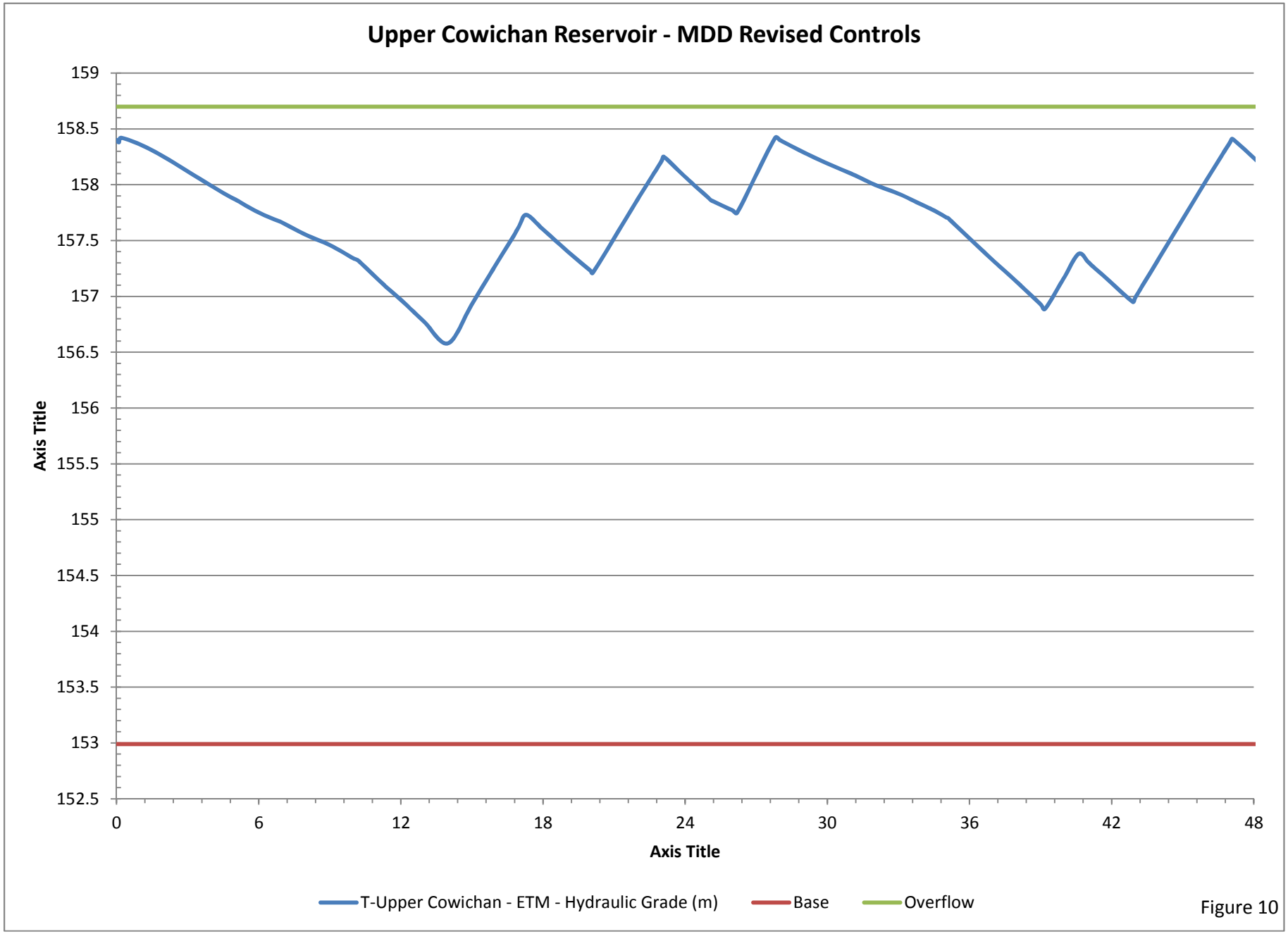

Upper Cowichan Reservoir - MDD Revised Controls
159
158.5
158
157.5
157
156.5
156
155.5
155
154.5
154
153.5
153
152.5
Axis Title
0
6
12
18
24
30
36
42
48
Axis Title
T-Upper Cowichan - ETM - Hydraulic Grade (m)
Base
Overflow

Figure 10

Appendix C

Official Community Plan Map

SCHEDULE A
LAND USE MAP

- Multi-Family Residential
- Residential
- General Commercial
- Neighbourhood Commercial
- Highway Commercial
- Institutional
- Industrial
- Parks and Open Space
- Urban Agriculture
- Future Residential
- City of Port Alberni

City of Port Alberni
Official Community Plan
Planning Department, 2015

AHASWINIS I.R.

ALBERNI I.R.

Somass River

Roger Cr

Alberni Inlet

Owatchet (Dry) Cr

Cr

Schedule "A" (Land Use Map) referred to in Section "C" 2.0 of the City of Port Alberni Official Community Plan Bylaw Number 4602. (Adopted April 10, 2007. Consolidated to July 27, 2015 for convenience only.)

All persons making use of this consolidated map are advised that it has no legislative sanction; that the amendments have been embodied for convenience of reference only and that the original bylaw and all amending bylaws must be consulted for all purposes of interpreting and applying the law. Any parts of the original bylaw or original bylaw as amended which have been repealed have not been included in this consolidation.

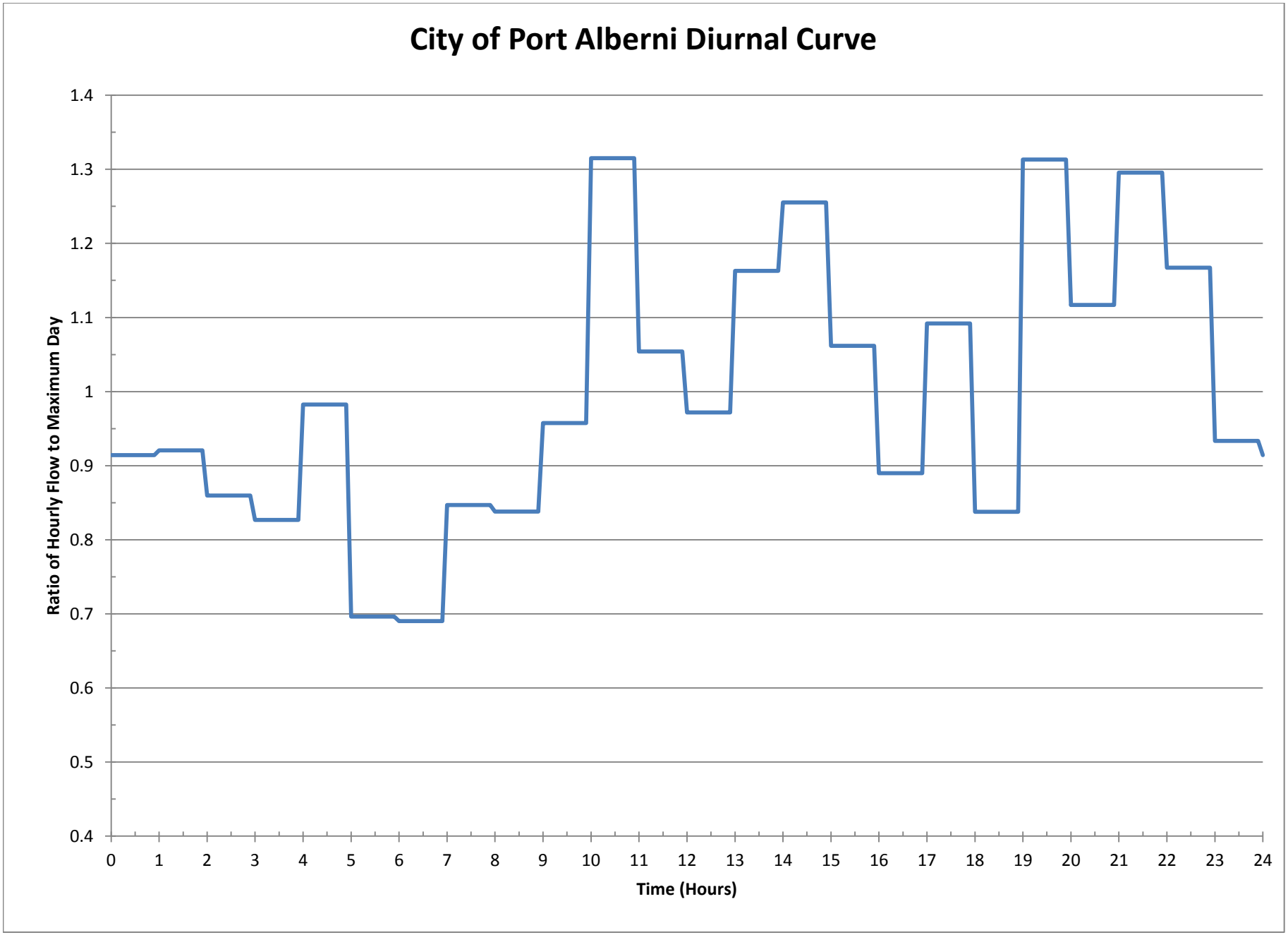
MAYOR John Douglas

CITY CLERK Davina Hartwell

LandUseMap-Jul-2015

Appendix D

Model Results Table


City of Port Alberni Diurnal Curve
Ratio of Hourly Flow to Maximum Day
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (Hours)

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-776	122.2	32.13	20	49.5	J-305	P-4973	4.2
J-1947	173	41.07	103	45.8	J-357	P-4973	5.9
J-305	86.1	46.97	20	32.5	J-306	P-4973	5.9
J-852	65	47.72	20	35.7	J-817	P-4973	5.9
J-306	86.1	48.25	20	17.5	J-305	P-4973	5.9
J-818	65	50.9	20	30.2	J-852	P-4973	5.9
J-16	180	58.37	20	24	J-71	P-4973	5.9
J-798	65	58.72	20	26	J-309	P-4973	5.9
J-309	65	59.7	20	23.3	J-798	P-4973	5.9
J-1962	173	59.94	51	41.7	J-357	P-4973	5.9
J-209	122.1	59.97	92	46.3	J-225	P-4973	5.9
J-1204	122.1	59.97	50	46.4	J-225	P-4973	5.9
J-100	144	59.97	29	30.3	J-321	P-4973	5.9
J-110	144	59.97	56	28.9	J-100	P-4973	5.9
J-113	144	59.97	60	28.9	J-100	P-4973	5.9
J-114	144	59.97	76	28.9	J-100	P-4973	5.9
J-225	122.1	59.97	46	46.9	J-226	P-4973	5.9
J-228	122.1	59.97	54	46.3	J-225	P-4973	5.9
J-229	122.1	59.97	61	46.3	J-225	P-4973	5.9
J-256	122.1	59.97	53	46.3	J-225	P-4973	5.9
J-271	122.1	59.97	71	46.3	J-225	P-4973	5.9
J-291	86.1	59.97	49	41.6	J-355	P-4973	5.9
J-8	144	59.97	32	29.1	J-100	P-4973	5.9
J-325	144	59.97	35	28.9	J-100	P-4973	5.9
J-365	65	62.21	20	37.4	J-364	P-4973	5.9
J-816	65	62.82	20	23.5	J-852	P-4973	5.9
J-817	65	63.21	20	17.4	J-852	P-4972	5.9
J-374	65	63.98	20	17.8	J-798	P-4973	5.9
J-827	65	70.07	20	40	J-830	P-4973	5.9
J-850	65	73.66	20	35.9	J-830	P-4973	5.9
J-308	65	74.17	20	16.5	J-798	P-4973	5.9
J-1209	122.1	74.34	20	45.5	J-1205	P-4973	5.9
J-523	86.2	76.28	20	30	J-521	P-4973	5.6
J-1413	86.2	76.29	20	31.2	J-521	P-2001	4.3
J-839	65	77.03	20	36.8	J-830	P-4973	5.9
J-1208	122.1	77.3	20	43.1	J-1204	P-4973	5.9
J-825	65	77.76	20	38.4	J-830	P-4973	5.9
J-815	65	78.34	20	7.4	J-852	P-4973	5.9
J-250	122.1	78.57	20	46.3	J-225	P-4973	5.9
J-364	65	78.74	20	7.8	J-365	P-4973	5.9
J-337	86.1	78.91	20	41.2	J-355	P-4973	5.9
J-336	86.1	78.97	20	41.4	J-355	P-201	10.1
J-978	158.1	79.93	20	47.5	J-977	P-4973	5.9

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-842	65	79.94	20	27.8	J-841	P-4973	5.9
J-551	86.2	81.15	20	23.2	J-563	P-4973	5.0
J-1958	173	82.44	23	40.4	J-357	P-4973	5.9
J-643	65	82.48	20	30.1	J-638	P-4973	5.9
J-1968	173	82.62	43	40.1	J-357	P-4973	5.9
J-666	65	83.18	20	29.9	J-645	P-4973	5.9
J-441	65	84.18	20	38.2	J-416	P-4973	5.9
J-292	86.1	84.32	20	38.1	J-355	P-4973	5.9
J-1957	173	84.6	55	40.2	J-357	P-4973	5.9
J-1960	173	84.74	47	40.1	J-357	P-4973	5.9
J-945	122.2	85.08	20	41.4	J-949	P-3105	4.8
J-563	86.2	85.53	20	19.2	J-551	P-4973	4.9
J-851	65	85.65	20	30.7	J-830	P-4973	5.9
J-361	65	86.53	20	28.4	J-362	P-4973	5.9
J-843	65	86.77	20	27.9	J-842	P-4973	5.9
J-1961	173	87.75	31	30	J-1963	P-221	4.8
J-755	122.2	88.45	20	48.2	J-305	P-4710	5.1
J-855	65	89.31	20	41.6	J-416	P-4973	5.9
J-638	65	90.17	20	18	J-643	P-4973	5.9
J-841	65	90.79	20	20	J-842	P-4973	5.9
J-1419	86.2	90.94	20	30.9	J-521	P-1493	5.2
J-362	65	91.48	20	25.3	J-361	P-4973	5.9
J-57	158.2	91.76	20	33	J-56	P-4973	5.9
J-821	65	91.84	20	34.3	J-830	P-4973	5.9
J-645	65	92.14	20	21.4	J-666	P-4973	5.9
J-112	144	92.22	20	28.7	J-100	P-4973	5.9
J-1959	173	92.35	47	38.8	J-1963	P-4973	5.9
J-416	65	92.44	20	25.2	J-414	P-4973	5.9
J-346	86.1	93.52	20	40.5	J-355	P-4973	5.9
J-20	158.2	93.57	20	34.1	J-19	P-4973	5.9
J-379	86.1	95.11	20	25.9	J-362	P-4973	5.9
J-670	65	95.28	20	40.8	J-666	P-4972	5.9
J-1967	173	95.52	43	37.8	J-1963	P-4973	5.9
J-1203	122.1	96.44	20	25.5	J-1204	P-153	6.9
J-813	65	97.42	20	40.2	J-339	P-4973	5.9
J-977	158.1	97.75	20	20	J-978	P-4973	5.9
J-362	86.1	97.76	20	26.2	J-379	P-4973	5.9
J-976	158.1	97.82	20	26.5	J-978	P-4973	5.9
J-26	158.2	97.87	20	39.8	J-28	P-4973	5.9
J-847	65	97.88	20	20.5	J-830	P-4973	5.9
J-1963	117	98.08	33	36.1	J-357	P-4973	5.9
J-830	65	98.69	20	21.7	J-847	P-4973	5.9
J-1964	117	99.24	26	32.3	J-1963	P-4973	5.9

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-572	86.2	99.26	20	30.4	J-521	P-1740	5.7
J-360	65	99.4	20	19.7	J-362	P-4973	5.9
J-55	158.2	99.61	20	27.2	J-56	P-4973	5.9
J-307	65	99.66	20	13.7	J-798	P-4973	5.9
J-1956	117	100.23	49	37.3	J-1963	P-4973	5.9
J-1412	86.2	100.24	20	18.2	J-1413	P-4973	3.3
J-603	65	100.26	20	40.9	J-416	P-4973	5.9
J-807	65	100.36	20	39.9	J-339	P-4973	5.9
J-656	65	100.36	20	39.7	J-666	P-4973	5.9
J-54	158.2	101.65	20	29.2	J-55	P-4972	5.9
J-298	158.2	102.05	20	35.7	J-26	P-4973	5.9
J-27	158.2	102.77	20	20.1	J-26	P-4973	5.9
J-561	86.2	102.82	20	23.6	J-5000	P-4973	4.4
J-56	158.2	103.4	20	21.4	J-55	P-6260	5.9
J-1205	122.1	103.49	20	22.7	J-1204	P-153	7.3
J-312	86.1	103.86	20	30.8	J-337	6 P-90	5.9
J-975	158.1	104.21	20	32.5	J-978	P-4973	5.9
J-974	158.1	104.35	20	32	J-976	P-4973	5.9
J-849	65	104.68	20	20.4	J-830	P-4973	5.9
J-24	158.2	105.1	20	35.6	J-26	P-5490	6.0
J-754	122.2	105.44	20	40.9	J-753	P-4710	6.0
J-5000	86.2	106.26	20	19.4	J-561	P-4973	4.3
J-848	65	106.92	20	17.3	J-830	P-4973	5.9
J-948	122.2	106.93	20	30.5	J-943	P-3104	6.1
J-414	65	108.51	20	19.4	J-416	P-4973	5.9
J-748	122.2	109.85	20	47.6	J-305	P-4691	6.2
J-115	144	110.15	20	28.6	J-100	P-4973	5.9
J-828	65	110.17	20	19.8	J-830	P-4973	5.9
J-845	65	110.55	20	20	J-830	P-4973	5.9
J-829	65	110.64	20	17.7	J-830	P-4973	5.9
J-846	65	110.94	20	18.4	J-830	P-4973	5.9
J-689	65	113.28	20	36.5	J-686	P-4973	5.9
J-838	65	113.54	20	20	J-839	P-4973	5.9
J-5004	122.2	113.95	20	44.7	J-305	P-7520	6.5
J-826	65	115.72	20	20.7	J-830	P-4973	5.9
J-789	100	115.81	20	59.1	J-706	P-3856	6.6
J-357	117	116.22	27	36.2	J-1963	P-4973	5.9
J-698	65	116.52	20	31.8	J-666	P-9021	6.6
J-1420	122.2	116.84	20	28.6	J-566	P-3051	4.9
J-17	180	116.95	20	23.8	J-71	P-4973	5.9
J-53	158.2	118.84	20	17	J-54	P-6260	6.8
J-29	158.2	118.84	20	13.1	J-26	P-4973	5.9
J-65	158.2	119.91	20	32.4	J-26	P-2580	6.8

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-836	65	120.08	20	19	J-843	P-4973	5.9
J-39	158.2	120.55	20	32.3	J-26	P-6080	6.8
J-686	65	120.71	20	30.1	J-689	P-4973	5.9
J-835	65	120.78	20	19.8	J-830	P-4973	5.9
J-21	158.2	120.8	20	23.8	J-20	P-4973	5.9
J-536	86.2	120.93	20	29.7	J-521	P-7160	6.9
J-277	122.1	121.5	20	46.2	J-225	P-6075	6.9
J-919	122.2	121.71	20	37	J-918	P-7123	4.9
J-384	86.1	122.14	20	44.5	J-355	P-571	7.0
J-566	122.2	122.98	20	12.4	J-1420	P-3051	5.2
J-19	158.2	122.99	20	18	J-20	P-4973	5.9
J-1207	122.1	123.19	20	10.6	J-1208	P-153	7.2
J-834	65	123.76	20	18.5	J-843	P-4973	5.9
J-279	122.1	124.1	20	46.2	J-225	P-4973	5.9
J-853	65	124.17	20	25.8	J-852	P-4973	5.9
J-302	122.2	124.26	20	38.3	J-938	P-7123	5.3
J-943	122.2	124.76	20	19.3	J-948	P-7123	5.2
J-709	100	124.78	20	25	J-366	P-235	7.1
J-509	86.2	125.58	20	29.5	J-521	P-7010	7.1
J-753	122.2	125.77	20	24.4	J-755	P-4710	7.2
J-313	86.1	126.09	20	40.3	J-355	P-5570	7.2
J-951	122.2	126.2	20	20.7	J-945	P-7123	5.2
J-950	122.2	126.38	20	26.1	J-949	P-7123	5.2
J-667	65	127.04	20	37.7	J-666	P-4072	7.2
J-434	65	127.31	20	32	J-441	P-4973	5.9
J-949	122.2	127.81	20	26.4	J-950	P-7123	5.3
J-440	65	128.3	20	21	J-430	P-4973	5.9
J-295	122.1	128.62	20	46.2	J-225	P-109	7.3
J-1407	86.2	128.83	20	18.3	J-934	P-2474	3.7
J-430	65	128.86	20	20.7	J-440	P-4973	5.9
J-824	65	129.19	20	16.5	J-825	P-4973	5.9
J-589	86.2	129.51	20	29.9	J-521	P-1954	7.4
J-353	86.1	129.64	20	44.5	J-355	P-4973	5.9
J-505	86.2	129.81	20	29.4	J-521	P-4973	4.3
J-380	86.1	130.09	20	39.5	J-355	P-6810	7.4
J-1417	86.2	130.26	20	12.5	J-934	P-7985	4.2
J-366	100	130.27	20	23.1	J-709	P-234	7.4
J-1202	122.1	130.41	20	11.2	J-1203	P-153	7.5
J-581	86.2	130.98	20	29.7	J-934	P-1112	7.4
J-5005	86.2	131.12	20	28.9	J-521	P-4973	4.3
J-595	86.2	131.71	20	13	J-934	P-7985	4.4
J-28	158.2	131.82	20	9.1	J-26	P-4973	5.9
J-822	65	132.06	20	18.7	J-830	P-4973	5.9

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-942	122.2	132.08	20	23.8	J-948	P-7123	5.3
J-1206	122.1	132.43	20	11.8	J-1208	P-153	7.6
J-811	65	132.68	20	17.9	J-853	P-4973	5.9
J-413	65	133.02	20	20	J-416	P-4973	5.5
J-938	122.2	133.24	20	27.8	J-949	P-7123	5.4
J-625	65	133.35	20	40.3	J-416	P-4973	5.9
J-685	65	133.41	33	39.4	J-666	P-4973	5.9
J-579	86.2	133.85	20	29.9	J-521	P-7730	7.6
J-804	65	133.88	20	35.5	J-339	P-4973	5.9
J-339	65	134.02	22	24.1	J-375	P-4973	5.9
J-840	65	135.01	35	35.2	J-339	P-3125	7.7
J-15	180	135.29	20	21.3	J-16	P-4973	5.9
J-662	65	135.56	20	32.6	J-666	P-4140	7.7
J-315	122.2	136.29	20	39.8	J-306	P-147	7.7
J-628	65	136.45	20	40.4	J-416	P-4973	5.9
J-917	122.2	136.69	20	26.3	J-919	P-7123	5.3
J-644	65	137.57	31	20.6	J-666	P-4972	5.9
J-63	158.2	137.57	20	28.8	J-26	P-3080	7.8
J-1200	122.1	138.11	24	5	J-1203	P-153	7.9
J-1201	122.1	138.11	21	5	J-1203	P-153	7.9
J-635	65	138.44	22	31.4	J-634	P-4973	5.9
J-301	158.2	138.51	20	28.6	J-26	P-4973	5.9
J-435	65	138.76	20	27.1	J-434	P-4973	5.9
J-810	65	138.96	25	5	J-855	P-4973	5.9
J-936	122.2	139.13	20	20.7	J-949	P-7123	5.5
J-249	122.1	139.4	20	14.5	J-250	P-6221	7.9
J-937	122.2	139.61	20	20.4	J-949	P-7123	5.5
J-355	86.1	139.64	20	36	J-292	P-4973	5.9
J-303	122.2	139.67	20	30.3	J-302	P-7123	5.6
J-812	65	140.43	20	19.9	J-813	P-4973	5.9
J-922	122.2	140.44	20	31.3	J-935	P-7123	5.4
J-108	180	140.91	20	17.1	J-16	P-4973	5.9
J-918	122.2	141.24	20	18.5	J-919	P-7123	5.4
J-204	122.1	141.96	20	29.4	J-293	P-4973	5.9
J-293	122.1	142.14	20	30.1	J-204	P-4973	5.9
J-577	86.2	142.68	20	29.3	J-934	P-7720	8.1
J-634	65	143.09	20	26.1	J-635	P-4973	5.9
J-375	65	143.53	20	20.1	J-339	P-4973	5.8
J-22	180	143.57	20	17.6	J-16	P-4973	5.9
J-300	158.2	144.12	20	26.3	J-298	P-118	5.9
J-25	158.2	144.77	20	27.5	J-26	P-4973	5.9
J-935	122.2	145.16	20	23.5	J-949	P-7123	5.6
J-697	65	145.32	20	39.9	J-416	P-4082	8.2

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-365	86.1	145.37	20	17.1	J-379	P-4973	5.9
J-587	86.2	145.37	20	21.4	J-589	P-1950	4.5
J-856	65	145.97	20	19.1	J-362	P-159	5.8
J-585	86.2	146.33	20	28.4	J-934	P-9018	4.5
J-565	122.2	146.45	20	19.9	J-1420	P-7790	6.2
J-503	86.2	146.49	20	22.7	J-1415	P-4973	5.5
J-318	86.1	146.98	20	40.4	J-355	P-4973	5.9
J-552	86.2	147.24	20	9.8	J-551	P-2620	4.5
J-61	158.2	148.03	20	26.3	J-298	P-4973	5.9
J-923	122.2	149.04	20	20.8	J-949	P-7123	5.6
J-1415	86.2	149.17	20	21	J-503	P-6931	5.4
J-1406	86.2	149.32	20	18.3	J-934	P-7993	4.8
J-854	65	149.42	22	5	J-852	P-3604	6.3
J-590	86.2	149.5	20	28.2	J-934	P-1952	4.8
J-732	100	149.68	20	32.7	J-731	P-4471	4.8
J-507	86.2	149.86	20	28.8	J-521	P-6920	4.3
J-731	100	150.29	20	31.7	J-732	P-4661	4.7
J-863	65	150.61	20	14.1	J-362	P-159	5.8
J-806	65	151.28	20	21.7	J-807	P-159	5.8
J-521	86.2	152.27	20	33.5	J-520	P-4973	5.2
J-307	86.1	152.45	20	44.5	J-355	P-570	8.7
J-741	100	152.75	20	62.7	J-732	P-4430	6.6
J-14	180	153.21	20	8.7	J-16	P-4973	5.9
J-584	86.2	154.01	20	28.4	J-934	P-1492	5.6
J-368	65	154.44	20	29.7	J-441	P-159	5.9
J-289	122.1	154.97	20	46.2	J-225	P-4973	5.9
J-553	86.2	155.02	20	7.1	J-551	P-7650	5.0
J-506	86.2	155.13	20	27.5	J-505	P-4973	3.9
J-317	122.1	155.65	20	46.2	J-225	P-4973	5.9
J-633	65	156.68	20	26.4	J-634	P-159	5.8
J-361	86.1	156.71	20	10.5	J-362	P-4973	5.9
J-920	122.2	157.05	20	27.3	J-922	P-7123	5.8
J-13	180	157.29	20	22.8	J-1501	P-1500	6.2
J-364	86.1	158.47	20	7.6	J-379	P-4973	5.9
J-305	122.2	159.05	20	24.4	J-304	P-125	8.0
J-715	122.2	159.23	20	45.9	J-305	P-4850	7.0
J-687	65	159.28	20	23.6	J-686	P-159	5.8
J-431	65	159.44	20	19	J-441	P-159	5.9
J-586	86.2	159.8	20	14.6	J-1419	P-9018	5.9
J-929	122.2	160.7	20	23.2	J-304	P-7123	6.1
J-1424	122.2	161.35	20	44.5	J-305	P-7672	9.2
J-23	158.2	161.55	20	24.1	J-26	P-4973	5.9
J-340	65	162.07	20	17.1	J-339	P-159	5.8

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-436	65	163.3	20	22.3	J-441	P-159	5.9
J-34	158.2	163.38	20	17.4	J-25	P-4973	5.9
J-341	65	164.42	20	22.1	J-369	P-159	5.8
J-444	65	164.59	20	37.2	J-416	P-6871	9.3
J-699	65	165.2	20	11.4	J-666	P-159	5.8
J-519	86.2	165.29	20	15.9	J-523	P-4973	4.0
J-1418	86.2	165.32	20	5.8	J-1419	P-9018	6.5
J-433	65	165.48	20	21.8	J-434	P-159	6.0
J-534	86.2	165.62	20	28.5	J-521	P-7310	5.6
J-694	65	165.78	20	35.1	J-666	P-159	5.8
J-432	65	166.45	20	21	J-441	P-159	5.9
J-304	122.2	166.58	20	20.1	J-305	P-7123	6.3
J-48	158.2	166.69	20	25	J-26	P-4973	5.3
J-369	65	166.9	20	19.2	J-341	P-159	5.9
J-927	122.2	167.06	20	19.9	J-304	P-7123	6.3
J-832	65	167.37	20	19.6	J-339	P-159	5.9
J-809	65	167.53	20	8.6	J-855	P-159	5.9
J-60	158.2	167.59	20	24.9	J-298	P-4973	5.1
J-248	122.1	167.6	20	13.8	J-250	P-4973	5.9
J-326	86.1	167.64	20	39.9	J-355	P-4973	5.9
J-664	65	167.85	20	19.6	J-698	P-159	5.8
J-296	144	168.3	20	28.2	J-100	P-5401	6.6
J-306	122.2	168.31	20	21.4	J-315	P-3250	5.6
J-857	65	170.13	26	5	J-825	P-159	5.9
J-808	65	170.21	20	19.2	J-855	P-159	5.9
J-1408	86.2	170.44	20	10.5	J-934	P-2474	4.9
J-345	86.1	170.49	20	39.2	J-355	0 P-21	9.7
J-968	122.2	170.6	20	19.5	J-304	P-7123	6.5
J-691	65	170.77	20	32.7	J-339	P-159	5.9
J-914	122.2	171.01	20	20.5	J-919	P-7123	6.2
J-906	122.2	171.1	20	19.8	J-304	P-7123	6.5
J-353	117	171.23	20	30.4	J-1963	P-212	6.1
J-913	122.2	171.59	20	18.1	J-304	P-7123	6.4
J-347	122.2	171.98	20	45.8	J-305	P-200	5.5
J-438	65	172.74	20	17.3	J-441	P-159	6.0
J-692	65	173.09	20	29	J-691	P-159	5.9
J-862	65	173.1	20	14.3	J-362	P-159	5.9
J-439	65	173.12	20	17.1	J-441	P-159	6.0
J-665	65	173.13	20	13.1	J-666	P-159	5.9
J-366	86.1	173.56	20	12.6	J-379	P-4973	5.9
J-594	86.2	173.93	20	10.8	J-934	P-2474	5.1
J-333	86.1	173.99	20	20	J-292	P-4973	5.9
J-596	86.2	174.23	20	14.5	J-934	P-2474	5.1

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-1949	117	174.25	20	11.8	J-1961	P-221	6.0
J-708	100	175.09	20	22.3	J-366	P-4315	5.3
J-546	86.2	175.09	20	16.1	J-551	P-7510	4.2
J-419	65	175.39	20	24.7	J-440	P-159	5.9
J-626	65	175.48	20	38.7	J-666	P-3854	11.3
J-412	65	175.93	20	14.6	J-416	P-1051	7.0
J-1410	86.2	177.89	20	9.9	J-934	P-2474	5.1
J-556	122.2	178.13	20	44.2	J-555	P-7690	5.6
J-1409	86.2	178.23	20	9.7	J-934	P-2474	5.1
J-316	86.2	179.15	20	27.3	J-521	P-148	5.7
J-352	117	179.27	20	29.1	J-1963	P-208	6.7
J-5002	122.2	179.29	20	35.3	J-5001	P-7670	5.3
J-639	65	180.33	20	22.8	J-643	P-159	5.9
J-367	86.1	181.3	20	13.8	J-379	P-4973	5.9
J-1404	86.2	182.03	20	11	J-934	P-2474	5.2
J-858	65	183.37	24	5	J-852	P-159	5.9
J-1405	86.2	183.49	20	9.4	J-934	P-2474	5.2
J-915	122.2	183.92	20	11.3	J-919	P-7123	6.3
J-568	86.2	184.89	20	24.6	J-551	P-7770	3.9
J-597	86.2	185.36	20	11.4	J-934	P-2474	5.3
J-540	86.2	185.81	20	27.6	J-551	P-1461	6.7
J-437	65	186.15	20	13.7	J-441	P-159	6.0
J-690	65	186.58	20	28.1	J-689	P-159	5.9
J-924	122.2	187.27	20	13.7	J-919	P-7123	6.2
J-870	122.2	187.7	20	45.7	J-305	P-4978	6.0
J-297	158.2	188.36	20	10.1	J-298	P-6582	6.0
J-508	86.2	188.56	20	27.4	J-521	P-7020	4.1
J-321	86.1	188.66	20	40	J-355	P-590	6.1
J-706	100	188.89	20	26.7	J-789	P-4315	6.8
J-363	86.1	189.01	20	5.7	J-379	P-4973	5.9
J-567	86.2	189.08	20	13.7	J-561	P-2450	4.3
J-354	86.1	190.4	20	33.6	J-355	P-4973	5.9
J-5001	122.2	191.29	20	14.8	J-5002	P-7670	5.4
J-653	65	191.43	20	27.5	J-666	P-4152	6.7
J-599	86.2	191.74	20	9.8	J-934	P-2474	5.4
J-52	158.2	192.56	20	10.2	J-54	P-6251	6.5
J-802	65	192.88	20	24.6	J-342	P-159	5.9
J-752	122.2	192.93	20	19.9	J-753	P-4700	4.9
J-1411	86.2	193	20	6.6	J-1413	P-2474	5.5
J-814	65	193.32	22	5	J-852	P-159	5.9
J-916	122.2	193.72	20	6.4	J-919	P-7123	6.4
J-330	86.1	194.29	20	38.7	J-355	P-4973	5.9
J-311	86.1	194.33	20	28.6	J-312	P-5580	6.8

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-47	158.2	194.61	20	22.7	J-298	P-6561	7.7
J-598	86.2	194.9	20	9.7	J-934	P-2474	5.5
J-909	122.2	195.09	20	41.1	J-908	P-3141	5.6
J-1501	180	195.44	20	20.6	J-13	P-4973	5.9
J-527	86.2	195.48	20	13.6	J-5005	P-7380	4.5
J-541	86.2	195.69	20	26	J-551	P-1721	5.7
J-680	65	196.06	20	31.3	J-339	P-3755	6.1
J-510	86.2	196.8	20	27.1	J-521	P-7030	3.8
J-636	65	197.95	20	18.6	J-635	P-159	5.9
J-5003	122.2	197.97	20	38.7	J-919	P-2900	6.0
J-921	122.2	198.06	26	5	J-949	P-7123	6.5
J-342	65	198.1	20	22.5	J-802	P-159	5.9
J-1425	86.2	198.49	20	31	J-521	P-2474	8.4
J-339	86.1	198.52	20	38.7	J-355	P-6100	6.4
J-756	122.2	198.66	20	30.5	J-753	P-4845	4.7
J-106	144	199.95	20	27.9	J-100	P-5130	7.2
J-928	122.2	200.36	20	21.7	J-306	P-3250	6.7
J-733	122.2	201.23	20	45.6	J-305	P-4363	6.4
J-1400	86.2	201.76	20	7.2	J-934	P-2474	5.7
J-522	122.2	202.27	39	5	J-919	P-7123	6.5
J-1403	86.2	202.82	20	5	J-934	P-2474	5.7
J-562	86.2	203.54	20	10.4	J-561	P-2450	4.9
J-747	122.2	203.66	20	45.6	J-305	P-4520	6.5
J-795	100	203.84	20	49.5	J-314	P-144	6.3
J-402	65	204.56	34	5	J-443	P-6820	7.0
J-278	122.1	205.07	20	39.8	J-274	P-6160	6.4
J-417	65	205.11	20	16.3	J-416	P-7001	6.1
J-785	100	205.25	20	43.8	J-743	P-146	6.2
J-1402	86.2	205.53	21	5	J-934	P-2473	5.8
J-524	122.2	205.75	33	5	J-949	P-7123	6.6
J-688	65	205.97	20	17.7	J-690	P-159	5.9
J-726	122.2	207.89	20	45.6	J-305	P-4480	7.4
J-304	86.1	208.4	20	41.4	J-355	P-153	6.7
J-530	86.2	209.1	20	23.5	J-551	P-7340	4.6
J-105	144	209.48	20	22.5	J-115	P-4973	5.9
J-704	100	210.17	20	19.2	J-706	P-4315	8.2
J-1429	86.2	211	20	10.6	J-934	P-7891	6.7
J-652	65	211.12	20	19.7	J-656	P-3930	8.6
J-655	65	211.84	20	25.2	J-666	P-4151	7.9
J-520	86.2	212.06	20	20.9	J-521	P-4973	3.8
J-415	65	212.06	20	10.3	J-416	P-159	6.0
J-672	65	212.13	20	29.8	J-666	P-159	5.9
J-518	86.2	212.46	20	19.4	J-523	P-7220	3.7

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-669	65	212.75	20	12.6	J-670	P-159	5.9
J-537	86.2	213.87	20	23.7	J-551	P-7460	5.4
J-526	122.2	214.29	41	5	J-919	P-7123	6.6
J-803	65	214.51	20	19.4	J-339	P-159	5.9
J-743	100	215.47	20	35.6	J-785	P-4400	5.7
J-751	122.2	215.78	20	23.4	J-748	P-4690	5.6
J-525	122.2	215.79	42	5	J-919	P-7123	6.6
J-504	86.2	216.04	20	26.2	J-523	P-7040	5.1
J-555	122.2	216.59	20	30.6	J-556	P-7680	5.6
J-1401	86.2	217.22	43	5	J-934	P-2474	5.9
J-833	122.2	217.22	20	45.5	J-305	P-4278	12.3
J-354	117	217.23	20	13.2	J-1961	P-7123	6.4
J-18	158.2	217.61	20	12.4	J-26	P-4973	5.9
J-801	65	217.66	20	20.4	J-339	P-159	6.0
J-332	86.1	217.87	20	21	J-291	P-4973	5.9
J-517	86.2	218	20	23.2	J-521	P-4973	3.5
J-535	86.2	218.19	20	24.1	J-551	P-7170	4.7
J-569	86.2	220.29	20	16.7	J-551	P-7630	5.0
J-222	122.1	220.39	20	46.4	J-225	P-113	7.5
J-550	122.2	220.56	20	28.7	J-919	P-7551	6.0
J-592	86.2	220.7	22	5	J-934	P-2474	6.5
J-50	158.2	220.7	20	19.7	J-26	P-223	4.5
J-593	86.2	221.34	20	5	J-934	P-2474	6.8
J-693	65	222.05	20	25.8	J-339	P-159	6.0
J-547	122.2	222.47	20	24.1	J-919	P-7123	5.9
J-343	86.1	222.56	20	38.2	J-355	P-6380	7.1
J-51	158.2	222.73	20	19.6	J-26	P-223	7.0
J-859	65	222.95	27	5	J-830	P-3331	7.4
J-591	86.2	223.06	26	5	J-934	P-2474	6.3
J-911	122.2	223.41	20	38.6	J-908	P-3232	5.8
J-583	86.2	223.43	46	5	J-934	P-2474	6.0
J-376	86.1	223.46	20	20	J-380	P-280	7.2
J-769	122.2	224.28	20	28.3	J-768	P-4954	3.9
J-355	180	224.29	20	18.6	J-17	P-220	8.6
J-268	122.1	224.95	20	45.9	J-225	P-151	7.1
J-368	86.1	224.97	22	5	J-379	P-158	5.9
J-744	100	225.19	20	41.2	J-732	P-4400	5.5
J-684	65	225.21	20	17.8	J-690	P-159	6.0
J-30	158.2	225.25	27	5	J-26	P-4973	5.9
J-1414	86.2	225.78	30	5	J-934	P-2474	6.1
J-511	86.2	225.82	20	23.4	J-551	P-7180	4.5
J-908	122.2	225.82	20	34.9	J-909	P-3240	6.4
J-757	122.2	225.95	20	16.4	J-756	P-4840	5.3

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-772	122.2	226.11	20	24.3	J-771	P-4935	3.9
J-931	122.2	226.15	20	36.2	J-928	P-3057	8.0
J-823	65	227.09	27	5	J-830	P-159	6.0
J-312	65	227.09	27	5	J-830	P-159	6.0
J-322	86.1	227.64	20	26.7	J-318	P-4973	5.9
J-43	158.2	227.95	20	17.9	J-26	P-224	7.2
J-290	122.1	228.74	20	25.5	J-295	P-970	9.6
J-771	122.2	228.81	20	23	J-772	P-4954	3.9
J-429	65	228.92	20	11.5	J-441	P-159	6.2
J-861	65	230.23	20	13.1	J-341	P-159	6.0
J-683	65	230.26	20	17	J-690	P-159	6.0
J-103	144	230.43	20	14.1	J-115	P-4973	5.9
J-314	100	230.61	20	28.3	J-795	P-145	5.6
J-411	65	230.96	20	7.6	J-416	P-159	6.2
J-768	122.2	231.27	20	27.6	J-769	P-4954	4.0
J-793	100	231.29	20	27.5	J-732	P-4470	4.8
J-428	65	231.88	20	16.8	J-441	P-159	6.2
J-582	86.2	232.2	38	5	J-934	P-2473	6.0
J-236	122.1	232.27	20	46	J-225	P-5630	7.3
J-1427	86.2	232.3	20	17.1	J-551	P-2431	4.9
J-621	65	232.56	20	23.6	J-625	P-4160	6.3
J-533	86.2	233.13	20	21.1	J-551	P-7320	4.4
J-654	65	233.62	20	22.7	J-666	P-4190	6.4
J-770	122.2	234.1	20	23	J-771	P-4954	4.0
J-288	122.1	234.9	20	45.9	J-225	P-6611	6.8
J-548	122.2	235.26	20	17.8	J-919	P-7123	6.1
J-549	122.2	235.37	32	5	J-919	P-7123	6.6
J-349	122.2	235.73	20	45	J-305	P-205	7.5
J-673	65	236.06	20	23.8	J-672	P-159	6.0
J-1432	122.1	236.06	20	42.8	J-1431	P-4973	5.9
J-578	86.2	236.52	20	12.7	J-934	P-2474	5.3
J-576	86.2	236.6	20	12.7	J-934	P-2474	5.3
J-564	86.2	236.7	22	5	J-551	P-2474	4.0
J-512	86.2	236.9	20	21.6	J-551	P-7190	4.6
J-668	65	237.06	20	17	J-670	P-159	6.0
J-513	86.2	237.09	20	21.5	J-523	P-7200	4.1
J-844	65	238.11	20	10.2	J-341	P-159	6.0
J-360	86.1	238.25	20	8.9	J-362	P-158	6.0
J-642	65	238.49	20	8.5	J-643	P-3947	10.2
J-261	122.1	238.63	20	45.9	J-225	P-2120	7.3
J-746	122.2	238.76	20	27.7	J-747	P-3298	5.7
J-788	122.2	238.78	20	29.9	J-771	P-4910	4.2
J-514	86.2	239.54	20	19.6	J-523	P-7210	5.3

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-820	65	239.82	27	5	J-830	P-159	6.0
J-532	86.2	240.81	20	19.1	J-551	P-2474	4.1
J-727	100	241.33	20	18.4	J-732	P-3950	4.5
J-831	65	241.53	27	5	J-830	P-159	6.0
J-796	65	242.28	20	10.4	J-341	P-159	6.0
J-42	158.2	242.52	20	15.7	J-26	P-6240	5.2
J-531	86.2	242.61	20	18	J-551	P-7340	4.4
J-651	65	243.03	20	22.5	J-656	P-3941	6.3
J-538	86.2	244.66	20	18.5	J-551	P-7470	4.7
J-676	65	245.21	20	24.8	J-339	P-3761	7.8
J-275	122.1	246.98	20	32.3	J-278	P-1390	6.6
J-516	86.2	247.15	20	18.9	J-523	P-1483	3.7
J-544	86.2	247.82	20	12.6	J-551	P-7490	4.3
J-734	122.2	248.4	20	32.1	J-726	P-4481	6.8
J-819	65	248.58	27	5	J-830	P-159	6.0
J-543	86.2	249.04	20	14.7	J-551	P-7490	4.5
J-515	86.2	249.25	20	16.2	J-523	P-7210	3.9
J-351	117	249.46	20	15.2	J-1961	P-7123	8.4
J-528	86.2	249.51	20	10.8	J-5005	P-7370	3.9
J-1426	86.2	249.57	20	12.5	J-551	P-2431	5.3
J-742	100	249.87	20	39.5	J-741	P-4377	4.1
J-262	122.1	250.43	20	45.8	J-225	P-2260	9.4
J-837	65	250.82	20	8.4	J-341	P-3124	11.6
J-299	158.2	250.97	20	10.7	J-298	P-219	2.6
J-420	65	251.08	20	11	J-440	P-159	6.3
J-750	122.2	251.13	20	21.1	J-756	P-4680	4.8
J-580	86.2	251.28	20	5.8	J-934	P-2473	6.0
J-972	158.1	251.33	20	22	J-975	P-10002	4.5
J-273	122.1	251.45	20	45.1	J-274	P-4973	5.9
J-502	86.2	252.51	20	18.4	J-523	P-1483	3.8
J-363	65	253.07	25	5	J-365	P-159	6.0
J-671	65	253.27	20	10.6	J-365	P-159	6.0
J-675	65	253.59	25	5	J-365	P-159	6.0
J-344	86.1	253.59	20	20	J-345	0 P-21	14.4
J-545	86.2	253.8	20	5	J-551	P-2474	4.2
J-663	65	254.81	20	5	J-666	P-159	6.0
J-674	65	254.85	20	7.4	J-365	P-159	6.0
J-758	122.2	255.93	20	13.2	J-756	P-4830	5.7
J-303	86.1	256.25	20	18.8	J-304	P-153	6.7
J-973	158.1	256.35	20	31.5	J-972	P-10013	4.9
J-679	65	256.8	20	21	J-339	P-3750	7.7
J-728	100	256.91	20	16.3	J-732	P-3950	5.2
J-542	86.2	257.37	20	14.4	J-551	P-2474	4.7

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-274	122.1	258.01	20	25.7	J-278	P-4973	5.9
J-682	65	258.1	20	16.7	J-690	P-159	6.0
J-763	122.2	258.16	20	30.3	J-788	P-4890	4.9
J-611	65	258.26	20	34.3	J-666	P-3881	8.5
J-316	86.1	258.93	20	37.7	J-355	P-5770	8.0
J-410	65	258.93	20	15.6	J-416	P-159	6.4
J-287	122.1	258.99	20	39.6	J-279	P-1010	9.9
J-641	65	259.01	20	7.7	J-643	P-159	6.0
J-723	122.2	260.56	20	29.4	J-756	P-4660	5.6
J-735	100	260.61	20	30.2	J-732	P-4330	6.5
J-971	158.1	261.99	20	20.9	J-974	P-10002	5.3
J-696	65	262.7	20	21.8	J-697	P-4081	9.7
J-762	122.2	263.04	20	21.9	J-788	P-4954	4.1
J-797	65	263.32	22	5	J-365	P-159	6.1
J-571	86.2	263.55	20	12.8	J-551	P-2473	5.1
J-1422	122.2	263.72	20	24.5	J-919	P-7123	5.9
J-775	122.2	263.99	20	23.9	J-870	P-4325	4.2
J-729	100	264.29	20	13.1	J-732	P-3950	5.8
J-104	144	264.67	20	19.4	J-106	P-4973	5.9
J-575	86.2	264.74	20	9.8	J-934	P-7590	5.8
J-331	86.1	264.83	20	33.4	J-332	P-5970	6.6
J-805	65	264.85	28	5	J-339	P-159	6.1
J-912	122.2	265.48	20	12.1	J-911	P-3232	5.2
J-276	122.1	265.67	20	26.7	J-275	P-1390	8.7
J-557	122.2	265.87	20	12.5	J-911	P-3232	4.9
J-338	86.1	265.92	20	37.1	J-355	P-6110	6.4
J-781	100	266.55	20	20.1	J-742	P-4370	4.8
J-749	122.2	266.82	20	22.5	J-756	P-4660	4.7
J-334	86.1	267.03	20	28.3	J-355	P-4973	5.9
J-58	158.2	267.56	20	6.1	J-298	P-219	2.6
J-500	86.2	269.08	20	17.1	J-1415	P-1483	4.7
J-1431	122.1	269.57	20	7	J-1432	P-1860	5.9
J-570	86.2	269.67	20	8.5	J-551	P-2474	5.1
J-792	100	270.37	20	21	J-790	P-9014	4.0
J-869	122.2	270.38	20	18.6	J-870	P-4976	4.4
J-868	122.2	272.28	20	23	J-870	P-4975	4.7
J-102	144	272.93	22	5	J-115	P-2020	6.8
J-764	122.2	273.13	20	29.4	J-771	P-4880	5.4
J-270	122.1	273.15	20	33.1	J-1416	P-4973	5.9
J-1423	122.2	273.9	20	22.8	J-1422	P-7123	5.8
J-423	65	274.03	20	30.7	J-416	P-159	6.6
J-640	65	274.67	20	7.7	J-643	P-159	6.1
J-501	86.2	274.73	20	14.4	J-523	P-2474	4.1

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-529	86.2	274.89	20	7.6	J-551	P-2473	4.4
J-730	100	275.26	20	13.7	J-732	P-4450	5.0
J-740	100	275.77	20	13.9	J-741	P-4360	4.9
J-648	65	275.83	20	11	J-666	P-3944	7.3
J-427	65	276.72	20	12.7	J-441	P-159	6.6
J-217	122.1	277.65	20	45.9	J-225	P-4973	5.9
J-724	122.2	277.76	20	26.3	J-756	P-4740	4.5
J-627	65	278.13	20	32.3	J-666	P-3854	7.2
J-574	86.2	278.41	20	8.8	J-934	P-2474	5.7
J-980	122.2	279.97	20	24.4	J-903	P-7123	4.0
J-404	65	280.14	20	19.1	J-443	P-661	10.5
J-573	86.2	280.21	20	9.5	J-934	P-2474	5.7
J-767	122.2	281.01	20	35.6	J-768	P-4954	5.4
J-269	122.1	281.06	20	45.3	J-250	P-6620	6.0
J-421	65	282.14	20	9.9	J-441	P-159	6.6
J-224	122.1	282.58	20	45.7	J-225	P-5690	6.1
J-1416	122.1	282.8	20	24.9	J-1432	P-1860	6.2
J-759	122.2	282.86	20	11.6	J-756	P-4821	4.8
J-646	65	283.14	21	5	J-666	P-159	6.1
J-661	65	283.21	20	5.3	J-666	P-3963	8.5
J-637	65	283.78	20	9.1	J-643	P-159	6.1
J-62	158.2	283.83	20	5	J-298	P-219	2.8
J-617	65	283.86	20	32.2	J-666	P-3882	7.0
J-647	65	283.94	24	5	J-666	P-159	6.1
J-342	86.1	284.11	32	31.9	J-343	P-6390	6.3
J-800	65	284.29	29	5	J-339	P-159	6.1
J-783	122.2	284.85	20	36.5	J-767	P-4782	7.5
J-703	100	284.91	20	13.1	J-792	P-4451	4.0
J-701	100	285.03	20	13.8	J-792	P-4322	5.8
J-1430	122.1	285.96	24	5	J-1432	P-1860	6.3
J-657	65	286.24	20	18.7	J-670	P-159	6.1
J-702	100	286.61	20	12.7	J-792	P-4324	4.5
J-760	122.2	287.01	20	12.2	J-756	P-4820	4.5
J-341	86.1	287.13	35	36.6	J-355	P-6390	6.6
J-736	100	287.52	20	11.4	J-732	P-4340	4.2
J-766	122.2	288.15	20	23.9	J-767	P-4954	4.8
J-660	65	288.5	20	6.4	J-666	P-3963	6.8
J-738	100	288.75	20	11.2	J-732	P-4450	4.1
J-739	100	289.1	20	12.4	J-795	P-4355	4.2
J-618	65	289.97	20	23.5	J-696	P-159	6.1
J-375	86.1	290.01	34	21.2	J-381	P-142	9.7
J-264	122.1	290.08	20	21.4	J-1416	P-1860	6.5
J-403	65	290.5	20	15.3	J-443	P-159	7.1

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-369	86.1	290.61	20	10.5	J-362	P-6690	7.1
J-49	158.2	290.77	52	5	J-298	P-219	2.9
J-41	158.2	291.38	20	9	J-54	P-160	3.6
J-710	100	291.43	20	14.7	J-732	P-4451	4.2
J-383	86.1	291.55	32	32.4	J-362	P-6689	7.7
J-340	86.1	291.71	47	36.3	J-355	P-119	6.1
J-737	100	292.37	20	8.1	J-732	P-4340	4.1
J-910	122.2	293.39	20	5.7	J-911	P-5001	6.1
J-382	86.1	294.08	40	33.8	J-362	P-119	6.1
J-378	86.1	294.16	26	19.1	J-362	P-6690	9.7
J-903	122.2	294.21	20	19.3	J-980	P-7123	4.3
J-725	122.2	294.57	20	25.5	J-756	P-4740	4.9
J-283	122.1	295.07	20	45.8	J-225	P-951	10.5
J-558	122.2	295.85	28	5	J-911	P-7123	5.3
J-347	86.1	296.41	56	35.5	J-355	P-121	6.3
J-554	122.2	297.16	20	14.8	J-555	P-7123	5.8
J-761	122.2	297.17	20	13.1	J-756	P-4818	5.0
J-46	158.2	297.24	41	5	J-298	P-219	3.0
J-315	86.1	297.76	31	37.1	J-355	P-110	7.7
J-373	86.1	297.94	50	29.1	J-362	P-6689	12.3
J-681	65	298.13	20	14	J-339	P-159	6.2
J-329	86.1	298.48	20	34.9	J-330	P-5961	13.5
J-765	122.2	301.37	20	22.6	J-767	P-4954	4.7
J-221	144	301.96	20	25.9	J-321	P-5480	7.2
J-649	65	304.71	20	9.7	J-666	P-159	6.2
J-348	86.1	304.98	59	33.9	J-362	P-121	6.5
J-722	122.2	305.03	20	11.2	J-756	P-4740	4.8
J-560	122.2	305.93	20	11.9	J-911	P-7123	5.7
J-349	86.1	305.98	20	35.2	J-355	P-119	6.7
J-35	158.2	306.22	23	5	J-26	P-6050	4.3
J-33	158.2	306.24	28	5	J-26	P-6060	3.7
J-32	158.2	306.52	28	5	J-26	P-6060	3.7
J-370	86.1	307.17	28	13.4	J-362	P-119	6.4
J-45	158.2	307.39	36	5	J-298	P-219	3.1
J-257	122.1	308.3	20	36.3	J-256	P-4973	5.9
J-31	158.2	308.75	26	5	J-26	P-219	3.4
J-258	122.1	309.43	20	43.1	J-256	P-4973	5.9
J-44	158.2	309.77	35	5	J-298	P-219	3.2
J-36	158.2	310.91	25	5	J-26	P-219	3.4
J-371	86.1	311.41	59	27.5	J-362	P-121	6.7
J-282	122.1	312.79	20	37.1	J-279	P-1420	7.8
J-612	65	313.31	20	28.6	J-666	P-4083	7.0
J-314	86.1	313.6	54	37.4	J-355	P-119	7.2

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-323	158.2	314.65	21	5	J-298	P-159	4.0
J-40	158.2	315.56	25	5	J-298	P-219	3.2
J-359	86.1	315.88	52	31.7	J-362	P-121	6.9
J-721	122.2	315.97	20	13.2	J-756	P-4812	5.1
J-901	158.1	316.74	20	20.6	J-1950	P-10000	3.3
J-422	65	317.25	20	12.8	J-441	P-159	7.0
J-1950	158.1	317.61	20	20.4	J-960	P-10000	3.3
J-372	86.1	317.79	63	26.8	J-362	P-119	6.4
J-678	65	317.82	31	5	J-339	P-159	6.3
J-960	158.1	318.22	20	20.4	J-1950	P-10000	3.4
J-37	158.2	319.18	20	5.1	J-26	P-219	3.4
J-255	122.1	319.31	20	40.4	J-256	P-4973	5.9
J-325	86.1	319.95	41	37.4	J-355	P-121	7.5
J-350	86.1	321.05	23	33.5	J-355	P-6121	12.2
J-632	65	321.53	20	5.9	J-643	P-4245	7.2
J-559	122.2	322.55	28	5	J-911	P-7123	5.6
J-38	158.2	323	21	5	J-298	P-219	3.3
J-658	65	323.19	20	9.1	J-670	P-159	6.3
J-358	86.1	323.37	52	30.5	J-362	P-4954b	1565.6
J-659	65	325.07	20	9.7	J-670	P-159	6.3
J-240	122.1	325.7	20	25.6	J-290	P-5911	10.3
J-242	122.1	326.02	20	45.7	J-225	P-5920	6.4
J-59	158.2	326.04	20	6.1	J-298	P-10000	3.2
J-900	158.1	326.18	20	22	J-901	P-10000	3.2
J-405	65	327.22	20	17.4	J-443	P-6869	11.7
J-357	86.1	327.41	43	29.9	J-355	P-121	7.0
J-377	86.1	327.47	72	28.4	J-362	P-158	6.0
J-310	86.1	327.83	25	34.5	J-326	P-121	7.2
J-622	65	329.58	20	27.1	J-666	P-159	6.3
J-1948	158.1	330.58	20	16.4	J-1950	P-10000	3.5
J-356	86.1	331.53	36	27.7	J-355	P-119	6.8
J-409	65	332.59	20	16.5	J-416	P-159	7.3
J-351	86.1	332.96	35	32.8	J-355	P-119	7.7
J-374	86.1	333.97	42	36.8	J-355	P-5781	8.6
J-352	86.1	336.07	30	28.6	J-355	P-158	7.0
J-650	65	336.46	20	8.9	J-666	P-159	6.3
J-309	86.1	336.89	57	38.5	J-355	P-119	6.4
J-782	122.2	337.93	20	18.6	J-767	P-4802	14.3
J-328	86.1	338.26	43	33.9	J-355	P-121	7.8
J-720	122.2	338.55	20	10.9	J-756	P-4740	5.5
J-677	65	339.26	31	5	J-339	P-159	6.4
J-695	65	339.46	20	32.5	J-666	P-7893	7.5
J-324	86.1	339.57	49	36.4	J-355	P-121	7.9

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-904	122.2	341.28	20	10.6	J-980	P-7123	4.9
J-865	122.2	341.79	20	36.1	J-980	P-4451	7.0
J-111	144	342.03	20	24.9	J-321	P-5480	8.6
J-244	122.1	342.59	20	44.2	J-271	P-1625	8.1
J-327	86.1	342.87	49	36	J-355	P-121	7.9
J-320	86.1	343.8	46	35.9	J-355	P-121	8.1
J-327	86.1	344.2	49	37.2	J-355	P-121	7.8
J-323	86.1	344.29	61	37.9	J-355	P-119	7.6
J-241	122.1	344.53	20	33.4	J-240	P-5911	7.2
J-719	122.2	344.83	20	16.4	J-767	P-4740	6.0
J-301	86.1	345.41	37	36.1	J-355	P-121	8.6
J-319	86.1	345.53	40	35.9	J-355	P-121	8.3
J-401	65	345.57	31	5	J-443	P-6811	14.1
J-213	122.1	346.12	20	24.7	J-237	P-5620	8.2
J-348	122.2	347.07	20	29.3	J-791	P-9016	5.8
J-718	122.2	348.63	20	21	J-767	P-4740	6.6
J-233	122.1	348.68	20	45.8	J-225	P-1360	8.5
J-308	86.1	348.71	62	38.5	J-355	P-4954b	1600.2
J-1421	122.2	349.84	20	13.7	J-911	P-3053	7.7
J-791	122.2	353.75	20	27.1	J-348	P-9016	6.7
J-631	65	354.1	22	5	J-643	P-159	6.4
J-237	122.1	354.97	20	20.6	J-213	P-4973	5.9
J-107	144	358.76	20	20.6	J-115	P-4973	5.9
J-335	86.1	359.74	20	22.8	J-304	P-340	7.9
J-784	122.2	360.03	20	19.9	J-767	P-4782	17.4
J-207	122.1	365.19	20	33.7	J-293	P-4973	5.9
J-867	122.2	365.74	20	12.4	J-767	P-4952	6.7
J-967	158.1	366.33	35	5	J-901	P-7123	20.7
J-940	158.1	366.4	20	6.2	J-960	P-10000	4.0
J-272	122.1	366.72	20	24.6	J-276	P-1380	6.1
J-208	122.1	366.89	20	30	J-207	P-5290	6.2
J-939	158.1	367.43	20	6.7	J-960	P-10000	4.1
J-286	122.1	367.87	20	24.4	J-285	P-6452	7.5
J-326	144	368.25	20	19.4	J-115	P-4973	5.9
J-944	122.2	368.97	20	16.5	J-305	P-10000	4.1
J-302	86.1	369.24	56	39.8	J-355	P-4973	5.9
J-941	158.1	370.41	20	6	J-960	P-10000	4.1
J-946	158.1	372.02	20	7.1	J-960	P-10000	4.2
J-300	86.1	372.51	42	39.9	J-355	P-155	6.4
J-947	158.1	372.7	20	7.4	J-960	P-10000	4.2
J-794	122.2	372.75	20	13.9	J-767	P-4951	5.1
J-717	122.2	372.89	20	16.9	J-767	P-4740	7.7
J-624	65	372.93	24	5	J-666	P-159	6.5

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-206	122.1	378.82	20	28.7	J-293	P-5310	6.0
J-285	122.1	379.93	20	20.6	J-284	P-4973	5.9
J-284	122.1	381	20	20.1	J-285	P-4973	5.9
J-799	122.2	381.45	20	20	J-833	P-4277	7.8
J-954	158.1	382.47	25	5	J-960	P-10000	4.3
J-905	122.2	383.47	35	5	J-980	P-7123	5.4
J-970	158.1	384.22	20	10.4	J-960	P-278imp	5.4
J-902	158.1	384.27	21	5	J-960	P-10000	4.4
J-981	158.1	384.82	20	10.4	J-960	P-10000	4.5
J-232	122.1	392.31	20	45.7	J-225	P-5660	6.5
J-620	65	392.51	21	5	J-666	P-159	6.6
J-716	122.2	396.74	20	14.4	J-767	P-4730	7.0
J-243	122.1	397.83	20	42.4	J-274	P-1370	6.3
J-408	65	399.05	20	12.3	J-443	P-6969	12.0
J-400	65	399.17	34	5	J-443	P-159	9.1
J-614	65	400.45	20	8.9	J-666	P-159	6.7
J-280	122.1	401.65	20	11.7	J-279	P-4973	5.9
J-203	122.1	402	20	21.4	J-204	P-5330	6.3
J-418	65	402.56	26	5	J-443	P-159	9.3
J-212	122.1	403.01	20	24.7	J-237	P-270imp	7.3
J-615	65	403.34	24	5	J-666	P-159	6.7
J-745	122.2	404.34	20	20	J-833	P-4953	5.1
J-714	122.2	407.44	20	19.6	J-767	P-4953	5.2
J-406	65	414.65	31	5	J-443	P-159	9.0
J-266	122.1	415.02	20	37	J-257	P-4973	5.9
J-210	122.1	416.04	20	30.7	J-293	P-5390	8.5
J-1428	122.2	416.28	20	6.1	J-980	P-2472	13.3
J-205	122.1	416.87	20	12.3	J-293	P-4973	5.9
J-610	65	417.65	20	15.8	J-666	P-159	7.0
J-930	122.2	419.79	32	5	J-980	P-7123	5.4
J-350	122.2	420.12	32	5	J-980	P-7123	5.4
J-281	122.1	421.76	20	17.7	J-279	P-4973	5.9
J-932	122.2	426.8	21	5	J-980	P-7123	5.4
J-252	122.1	434.78	20	25.7	J-250	P-6540	6.2
J-933	122.2	434.99	20	5	J-980	P-7123	5.4
J-407	65	436.26	31	5	J-443	P-159	8.9
J-773	122.2	437.18	20	9.3	J-767	P-4953	5.5
J-774	122.2	440.11	20	9	J-767	P-4953	5.5
J-211	122.1	440.43	20	30.4	J-376	P-750	7.2
J-424	65	442.73	22	5	J-441	P-7269	10.7
J-215	122.1	445.78	20	25.6	J-293	P-5420	6.3
J-214	122.1	447.52	20	25.8	J-293	P-4973	5.9
J-328	122.2	448.67	20	10.8	J-980	P-167	10.8

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-202	122.1	450.23	20	35.9	J-293	P-5340	7.6
J-966	122.2	450.26	31	5	J-980	P-4953	5.5
J-952	122.2	451.2	31	5	J-980	P-4953	5.6
J-608	65	454.63	31	5	J-339	P-159	7.3
J-779	122.2	460.15	31	5	J-980	P-4953	5.7
J-218	122.1	461.38	20	33.7	J-293	P-5440	6.0
J-239	122.1	462.17	58	42.3	J-225	P-165	6.5
J-265	122.1	465.76	20	33.1	J-268	P-4973	5.9
J-267	122.1	467.03	20	20.4	J-279	P-4972	5.9
J-613	65	467.58	35	5	J-666	P-159	7.4
J-616	65	467.69	34	5	J-666	P-159	7.3
J-231	122.1	468.77	20	42.8	J-225	P-5670	6.3
J-101	144	469.87	22	5	J-115	P-5245	7.0
J-619	65	470.07	32	5	J-666	P-159	7.3
J-713	122.2	470.14	24	5	J-767	P-4455	6.2
J-607	65	470.66	35	5	J-666	P-159	7.5
J-425	65	471.76	30	5	J-441	P-159	8.7
J-371	122.2	472.98	20	8.3	J-767	P-4953	5.9
J-623	65	473.99	31	5	J-666	P-159	7.3
J-778	122.2	474.1	32	5	J-980	P-4953	5.9
J-712	122.2	474.51	24	5	J-767	P-4953	5.9
J-606	65	474.56	35	5	J-666	P-159	7.6
J-216	122.1	475.64	20	23.3	J-293	P-5430	6.2
J-605	65	477.55	34	5	J-666	P-159	7.7
J-630	65	479.13	31	5	J-666	P-159	7.2
J-604	65	480.96	33	5	J-666	P-159	7.7
J-219	122.1	485.66	20	43.2	J-293	P-5450	6.6
J-629	65	486.49	20	6.6	J-666	P-159	7.1
J-602	65	489.08	31	5	J-666	P-159	7.9
J-777	122.2	489.55	20	7.2	J-767	P-4953	6.1
J-601	65	489.9	31	5	J-666	P-159	8.0
J-609	65	497.66	21	5	J-666	P-507	9.1
J-317	122.1	497.98	20	21.3	J-268	P-4973	5.9
J-600	65	499.11	27	5	J-666	P-159	8.3
J-109	144	500	25	17.9	J-325	P-4973	5.9
J-200	122.1	500	33	37.3	J-201	P-4973	5.9
J-201	122.1	500	36	37.5	J-200	P-4973	5.9
J-220	122.1	500	45	44.2	J-201	P-4973	5.9
J-223	122.1	500	46	41.4	J-225	P-4973	5.9
J-226	122.1	500	37	36.3	J-225	P-4973	5.9
J-227	122.1	500	43	38.5	J-225	P-4973	5.9
J-230	122.1	500	55	40.5	J-225	P-4973	5.9
J-234	122.1	500	50	41	J-225	P-4973	5.9

Existing Conditions - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-235	122.1	500	51	41	J-225	P-4973	5.9
J-238	122.1	500	56	41.1	J-225	P-4973	5.9
J-245	122.1	500	52	40.8	J-225	P-4973	5.9
J-246	122.1	500	40	40.5	J-322	P-4973	5.9
J-247	122.1	500	34	26.6	J-250	P-4973	5.9
J-251	122.1	500	24	18.9	J-250	P-6530	6.4
J-253	122.1	500	34	24.6	J-250	P-4973	5.9
J-254	122.1	500	38	26.4	J-250	P-4973	5.9
J-259	122.1	500	37	28.2	J-250	P-4973	5.9
J-260	122.1	500	37	28.4	J-250	P-4973	5.9
J-263	122.1	500	37	26.8	J-268	P-4973	5.9
J-442	65	500	28	6	J-666	P-159	8.5
J-786	122.2	500	23	7.4	J-980	P-4953	6.3
J-294	122.1	500	37	26.2	J-268	P-4973	5.9
J-321	144	500	20	24.2	J-100	P-4973	5.9
J-322	122.1	500	38	42.2	J-225	P-4973	5.9
J-367	65	500	26	5.6	J-441	P-159	8.7

Existing Conditions - Peak Hour Demands 1411-02
Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-72	75	Steel	1	0.21	No	Open
P-71	75	Steel	1	0.21	No	Open
P-201	100	Cast iron	44	0.08	No	Open
P-1201	100	Cast iron	143	1.05	No	Open
P-1953	100	Cast iron	60	0.08	No	Open
P-2491	100	PVC	60	0.04	No	Open
P-3051	100	PVC	273	0.34	No	Open
P-3854	100	AC	25	0.23	No	Open
P-3855	100	AC	65	0.55	No	Open
P-3861	100	AC	206	0.15	No	Open
P-4225	100	AC	134	0.28	No	Open
P-4262	100	AC	102	0.27	No	Open
P-4311	100	AC	68	0.02	No	Open
P-4327	100	AC	296	0.02	No	Open
P-4430	100	AC	94	0.2	No	Open
P-4400	100	AC	91	0.05	No	Open
P-4850	100	AC	102	0.22	No	Open
P-6320	100	Cast iron	100	0.38	No	Open
P-6869	100	Cast iron	16	0.5	No	Open
P-9023	100	PVC	4	1.05	No	Open
P-9015	100	PVC	88	0.04	No	Open
P-10012	100	Steel	6	6.02	No	Open
P-7127	100	Steel	3	0	No	Open
P-7128	100	Steel	4	0	No	Closed
P-4955	100	Steel	3	0	No	Open
P-276imp	100	PVC	3	6.02	No	Open
P-106	150	Steel	3	2.13	No	Open
P-154	150	Steel	3	2.13	No	Open
P-120	150	Steel	5	5.2	No	Open
P-160	150	Steel	5	5.2	No	Closed
P-770	150	PVC	220	0.04	No	Open
P-4154	150	PVC	107	0.21	No	Open
P-4257	150	PVC	95	0.14	No	Open
P-5550	150	AC	314	0.03	No	Open
P-6590	150	PVC	124	1.03	No	Open
P-7230	150	PVC	98	0.39	No	Open
P-9002	150	PVC	110	0.1	No	Open
P-9004	150	PVC	204	0	No	Open
P-9006	150	PVC	166	0	No	Open
P-9008	150	PVC	150	0.09	No	Open
P-7240	150	PVC	94	0.01	No	Open
P-7250	150	PVC	96	0.39	No	Open
P-5321	150	PVC	94	0.09	No	Open
P-2180	150	AC	204	0.85	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-5401	150	Ductile Iron	72	0.86	No	Open
P-113	150	PVC	62	0.86	No	Open
P-6583	150	PVC	98	0	No	Open
P-118	150	PVC	80	0.53	No	Open
P-119	150	PVC	197	0.53	No	Open
P-120	150	PVC	185	0.53	No	Open
P-121	150	PVC	191	0.56	No	Open
P-122	150	PVC	211	0.56	No	Open
P-125	150	PVC	10	0.56	No	Open
P-126	150	PVC	121	0.56	No	Open
P-128	150	PVC	158	0.67	No	Open
P-3711	150	PVC	196	0.07	No	Open
P-146	150	PVC	107	0	No	Open
P-147	150	PVC	52	0	No	Open
P-148	150	PVC	86	0.4	No	Open
P-151	150	PVC	107	0.72	No	Open
P-152	150	PVC	203	0.1	No	Open
P-198	150	PVC	268	0.07	No	Open
P-208	150	PVC	101	0.12	No	Open
P-209	150	PVC	236	0.12	No	Open
P-212	150	PVC	120	0.12	No	Open
P-213	150	PVC	113	0.28	No	Open
P-214	150	PVC	131	0.13	No	Open
P-216	150	PVC	123	0.01	No	Open
P-217	150	PVC	54	0.01	No	Open
P-220	150	PVC	5	0	Yes	Open
P-221	150	PVC	83	0.44	No	Open
P-223	150	PVC	84	0.31	No	Open
P-224	150	PVC	112	0.67	No	Open
P-231	150	PVC	272	0	No	Open
P-232	150	PVC	194	0	No	Open
P-233	150	PVC	193	0	No	Open
P-253imp	150	PVC	141	0.4	No	Open
P-294imp	150	PVC	8	0.07	No	Open
P-296imp	150	PVC	4	0	No	Closed
P-5260	150	AC	99	0.02	No	Open
P-2520	150	AC	108	0.02	No	Open
P-2521	150	Ductile Iron	609	0.01	No	Open
P-2530	150	AC	184	0	No	Open
P-2320	150	Ductile Iron	18	0.01	No	Open
P-5370	150	AC	86	0	Yes	Open
P-20	150	AC	64	0.03	No	Open
P-21	150	AC	21	0.1	No	Open
P-34	150	Cast iron	234	0.03	No	Open
P-50	150	PVC	253	0.1	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-70	150	Cast iron	514	0.07	No	Open
P-75	150	Cast iron	105	0.04	No	Open
P-90	150	Cast iron	140	0.07	No	Open
P-5571	150	Cast iron	177	0.04	No	Open
P-100	150	Cast iron	285	0.08	No	Open
P-105	150	Steel	3	2.24	No	Open
P-153	150	Steel	3	2.24	No	Open
P-790	150	Cast iron	183	0.27	No	Open
P-110	150	Cast iron	93	0.31	No	Open
P-112	150	Steel	5	4.19	No	Open
P-159	150	Steel	5	4.19	No	Open
P-113	150	Steel	3	0	No	Open
P-161	150	Steel	3	0	No	Open
P-115	150	Cast iron	248	0.09	No	Open
P-119	150	Steel	3	0	No	Open
P-130	150	Cast iron	290	0.1	No	Open
P-140	150	PVC	177	0.27	No	Open
P-141	150	PVC	71	0.03	No	Open
P-142	150	PVC	73	0.21	No	Open
P-200	150	Cast iron	115	0.29	No	Open
P-210	150	Cast iron	152	0.15	No	Open
P-220	150	Cast iron	137	0.11	No	Open
P-230	150	PVC	156	0.16	No	Open
P-240	150	PVC	294	0.16	No	Open
P-6810	150	Cast iron	96	0.04	No	Open
P-281	150	PVC	86	0.69	No	Open
P-300	150	AC	158	0.01	No	Open
P-5021	150	AC	24	0.03	No	Open
P-5022	150	AC	210	0.01	No	Open
P-5180	150	AC	47	0.87	No	Open
P-5190	150	AC	329	0.44	No	Open
P-5200	150	AC	321	0.44	No	Open
P-5210	150	AC	129	0.89	No	Open
P-441	150	Cast iron	288	0.14	No	Open
P-480	150	Cast iron	176	0.52	No	Open
P-490	150	Cast iron	193	0.5	No	Open
P-500	150	Cast iron	189	0.51	No	Open
P-506	150	Cast iron	150	0.02	No	Open
P-510	150	Cast iron	176	0.39	No	Open
P-530	150	AC	202	0.01	No	Open
P-570	150	AC	144	0.04	No	Open
P-571	150	PVC	204	0.05	No	Open
P-580	150	AC	128	0.09	No	Open
P-590	150	AC	114	0.05	No	Open
P-600	150	AC	191	0.22	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-610	150	PVC	140	0.46	No	Open
P-620	150	Cast iron	148	0.33	No	Open
P-630	150	Cast iron	142	0.67	No	Open
P-640	150	Cast iron	143	0.39	No	Open
P-650	150	Cast iron	137	0.02	No	Open
P-660	150	PVC	174	0.54	No	Open
P-661	150	PVC	10	0.75	No	Open
P-670	150	PVC	184	0.71	No	Open
P-680	150	AC	189	0.51	No	Open
P-690	150	AC	178	0.34	No	Open
P-700	150	AC	211	0.18	No	Open
P-710	150	PVC	201	0.04	No	Open
P-780	150	PVC	216	0.1	No	Open
P-5490	150	Cast iron	98	0.02	No	Open
P-5500	150	Cast iron	97	0.44	No	Open
P-5510	150	Cast iron	101	0.57	No	Open
P-5520	150	AC	103	0.42	No	Open
P-800	150	PVC	140	0.63	No	Open
P-810	150	Cast iron	148	0.83	No	Open
P-820	150	Cast iron	145	1.09	No	Open
P-830	150	Cast iron	139	0.34	No	Open
P-840	150	Cast iron	114	0.05	No	Open
P-850	150	AC	183	0.22	No	Open
P-860	150	Cast iron	176	0.2	No	Open
P-880	150	AC	201	0.04	No	Open
P-930	150	AC	192	0.07	No	Open
P-950	150	AC	179	0.21	No	Open
P-951	150	Cast iron	58	0.19	No	Open
P-960	150	Cast iron	233	0.65	No	Open
P-970	150	Cast iron	48	1.04	No	Open
P-980	150	Cast iron	182	1.03	No	Open
P-1000	150	Cast iron	288	1.02	No	Open
P-1010	150	Cast iron	33	1.02	No	Open
P-1020	150	PVC	111	0.16	No	Open
P-1030	150	Cast iron	139	0.18	No	Open
P-1040	150	Cast iron	138	0.05	No	Open
P-1050	150	AC	94	0.08	No	Open
P-1051	150	AC	55	0.1	No	Open
P-1060	150	AC	185	0.11	No	Open
P-1112	150	AC	146	0.01	No	Open
P-1140	150	AC	191	0.09	No	Open
P-1160	150	AC	206	0.17	No	Open
P-1170	150	AC	168	0.65	No	Open
P-1180	150	AC	172	0.49	No	Open
P-1200	150	Cast iron	128	0.45	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-1210	150	AC	173	0.09	No	Open
P-1220	150	PVC	106	0.06	No	Open
P-1230	150	AC	149	0.03	No	Open
P-1240	150	AC	185	0.08	No	Open
P-1250	150	AC	169	0.09	No	Open
P-1260	150	Cast iron	211	0.17	No	Open
P-1270	150	AC	202	0.24	No	Open
P-1330	150	AC	191	0.12	No	Open
P-1340	150	Cast iron	144	0.23	No	Open
P-1350	150	AC	171	0.2	No	Open
P-1360	150	PVC	102	0.39	No	Open
P-1370	150	PVC	160	0.74	No	Open
P-1380	150	PVC	123	0.84	No	Open
P-1390	150	PVC	55	1.16	No	Open
P-1391	150	PVC	41	1.14	No	Open
P-1400	150	PVC	125	0.63	No	Open
P-1410	150	PVC	258	1.1	No	Open
P-1420	150	PVC	114	0.8	No	Open
P-1430	150	AC	153	0.11	No	Open
P-1440	150	AC	185	0.22	No	Open
P-1450	150	AC	176	0.33	No	Open
P-1460	150	Cast iron	149	0.23	No	Open
P-1461	150	AC	60	0.2	No	Open
P-1492	150	AC	191	0.27	No	Open
P-1491	150	Cast iron	167	0.25	No	Open
P-1490	150	Cast iron	108	0.22	No	Open
P-9018	150	AC	113	0.13	No	Open
P-1489	150	AC	47	0.2	No	Open
P-1493	150	PVC	138	0.04	No	Open
P-1510	150	AC	214	0.04	No	Open
P-1520	150	AC	115	0.03	No	Open
P-7999	150	AC	334	0.03	No	Open
P-2001	150	AC	66	0.03	No	Open
P-2000	150	AC	191	0.03	No	Open
P-1590	150	AC	218	0.1	No	Open
P-1600	150	AC	190	0.1	No	Open
P-1610	150	AC	316	0.23	No	Open
P-1620	150	AC	188	0.25	No	Open
P-1625	150	AC	85	1	No	Open
P-1630	150	AC	108	0.85	No	Open
P-1640	150	AC	218	0.73	No	Open
P-1660	150	AC	131	0.7	No	Open
P-1670	150	Cast iron	184	1.04	No	Open
P-1690	150	Cast iron	203	0.03	No	Open
P-1700	150	Cast iron	184	0.17	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-1710	150	Cast iron	177	0.3	No	Open
P-1720	150	AC	110	0.27	No	Open
P-1721	150	AC	101	0.24	No	Open
P-1730	150	AC	204	0.21	No	Open
P-1740	150	AC	189	0.04	No	Open
P-1750	150	AC	214	0.04	No	Open
P-1800	150	AC	195	0.07	No	Open
P-1810	150	AC	305	0.25	No	Open
P-6020	150	AC	109	0.33	No	Open
P-1890	150	Cast iron	208	0.19	No	Open
P-1900	150	AC	184	0.23	No	Open
P-1910	150	Cast iron	178	0.37	No	Open
P-1920	150	Cast iron	212	0.22	No	Open
P-1930	150	AC	203	0.22	No	Open
P-1940	150	Cast iron	192	0.16	No	Open
P-1950	150	Cast iron	133	0.37	No	Open
P-1951	150	Cast iron	85	0.26	No	Open
P-1952	150	Cast iron	153	0.22	No	Open
P-1954	150	AC	27	0.04	No	Open
P-1960	150	AC	100	0.12	No	Open
P-1970	150	AC	61	0.06	No	Open
P-1980	150	AC	154	0.05	No	Open
P-1990	150	PVC	115	0.03	No	Open
P-2090	150	AC	210	0.81	No	Open
P-2100	150	Cast iron	212	0.67	No	Open
P-2110	150	AC	256	0.6	No	Open
P-2120	150	AC	154	0.32	No	Open
P-2150	150	Cast iron	212	0.2	No	Open
P-2160	150	AC	202	0.17	No	Open
P-2170	150	AC	161	0.06	No	Open
P-2175	150	AC	156	0.16	No	Open
P-2176	150	AC	262	0.15	No	Open
P-2210	150	AC	264	0.01	No	Open
P-2220	150	AC	188	0.25	No	Open
P-2230	150	AC	211	0.88	No	Open
P-2240	150	AC	212	0.66	No	Open
P-2250	150	AC	260	0.61	No	Open
P-2260	150	AC	81	0.33	No	Open
P-2270	150	AC	318	1.15	No	Open
P-2280	150	AC	183	0.48	No	Open
P-2473	150	PVC	16	0	No	Open
P-2474	150	PVC	15	0	No	Open
P-7980	150	AC	100	0.02	No	Open
P-7985	150	AC	66	0.07	No	Open
P-7970	150	AC	100	0.02	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-2540	150	AC	51	0.02	No	Open
P-2550	150	AC	67	0.67	No	Open
P-2560	150	Cast iron	199	0.65	No	Open
P-2570	150	Cast iron	191	1.06	No	Open
P-2575	150	AC	197	1.03	No	Open
P-2580	150	AC	188	0.01	No	Open
P-2585	150	AC	268	0.48	No	Open
P-2590	150	AC	184	0.51	No	Open
P-2600	150	AC	183	0.4	No	Open
P-2610	150	AC	213	0.37	No	Open
P-2620	150	AC	99	0.26	No	Open
P-2630	150	AC	101	0.14	No	Open
P-2650	150	AC	154	0.02	No	Open
P-2660	150	AC	135	0.7	No	Open
P-2710	150	AC	203	1.13	No	Open
P-2720	150	Cast iron	89	0.68	No	Open
P-2740	150	AC	183	0.89	No	Open
P-2750	150	AC	180	0.46	No	Open
P-2780	150	AC	305	0.63	No	Open
P-2790	150	Cast iron	195	0.16	No	Open
P-2800	150	AC	186	0.19	No	Open
P-2801	150	AC	113	0.17	No	Open
P-2860	150	AC	334	0.27	No	Open
P-2889	150	AC	32	2.08	No	Open
P-2890	150	AC	183	0.79	No	Open
P-2940	150	AC	184	0.18	No	Open
P-2950	150	AC	79	0.43	No	Open
P-2960	150	AC	273	0.14	No	Open
P-2970	150	AC	197	0.47	No	Open
P-2990	150	AC	244	0.45	No	Open
P-3000	150	AC	183	0.57	No	Open
P-3010	150	AC	211	0.44	No	Open
P-3052	150	PVC	5	0.16	No	Open
P-3057	150	PVC	116	0.67	No	Open
P-3060	150	AC	92	0.85	No	Open
P-3070	150	AC	187	1.12	No	Open
P-3080	150	Ductile Iron	85	0.01	No	Open
P-3090	150	AC	132	0.12	No	Open
P-3100	150	AC	100	0.11	No	Open
P-3101	150	PVC	51	0.55	No	Open
P-3102	150	PVC	42	0.19	No	Open
P-3103	150	PVC	111	0.17	No	Open
P-3104	150	PVC	37	0.01	No	Open
P-3105	150	PVC	130	0.01	No	Open
P-3106	150	PVC	42	0.35	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3107	150	PVC	100	0.23	No	Open
P-3108	150	PVC	184	0.11	No	Open
P-3109	150	PVC	79	0.21	No	Open
P-3110	150	PVC	163	0.2	No	Open
P-3111	150	PVC	72	0.12	No	Open
P-3117	150	PVC	45	0.15	No	Open
P-7415	150	AC	68	0.32	No	Open
P-7416	150	AC	118	0.51	No	Open
P-3140	150	PVC	136	0.25	No	Open
P-3141	150	PVC	117	0.26	No	Open
P-3150	150	AC	62	0	No	Open
P-3155	150	AC	103	0.03	No	Open
P-3160	150	AC	232	0.01	No	Open
P-3170	150	Ductile Iron	169	0.07	No	Open
P-3180	150	Ductile Iron	68	0.53	No	Open
P-3230	150	PVC	237	0.26	No	Open
P-3231	150	PVC	95	0.06	No	Open
P-3232	150	PVC	33	0.19	No	Open
P-3240	150	PVC	96	0.54	No	Open
P-3250	150	PVC	131	0.68	No	Open
P-7820	150	Cast iron	102	0	No	Closed
P-3281	150	Ductile Iron	117	0.03	No	Open
P-3291	150	AC	165	0.03	No	Open
P-3292	150	AC	196	0.03	No	Open
P-3296	150	AC	102	0.04	No	Open
P-3297	150	PVC	229	0.09	No	Open
P-3298	150	PVC	135	0.02	No	Open
P-3299	150	PVC	147	0.04	No	Open
P-3330	150	AC	103	0.35	No	Open
P-8311	150	AC	108	0.09	No	Open
P-8314	150	AC	116	0.03	No	Open
P-8318	150	PVC	108	0.06	No	Open
P-8315	150	PVC	65	0.03	No	Open
P-8316	150	AC	194	0.03	No	Open
P-8317	150	PVC	156	0.03	No	Open
P-3340	150	AC	84	0.03	No	Open
P-8346	150	PVC	131	0.03	No	Open
P-8349	150	PVC	185	0.07	No	Open
P-8350	150	PVC	51	0.03	No	Open
P-8351	150	PVC	145	0.01	No	Open
P-8352	150	PVC	270	0.02	No	Open
P-3425	150	AC	265	0.04	No	Open
P-3426	150	AC	19	0.21	No	Open
P-3470	150	AC	122	0.26	No	Open
P-3471	150	AC	191	0.02	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3472	150	AC	231	0.04	No	Open
P-3602	150	PVC	42	0.01	No	Open
P-3603	150	PVC	193	0.04	No	Open
P-3604	150	PVC	57	0.22	No	Open
P-3485	150	PVC	205	0.15	No	Open
P-3501	150	AC	204	0.03	No	Open
P-3502	150	PVC	219	0.03	No	Open
P-3550	150	PVC	122	0.03	No	Open
P-3580	150	AC	288	0.3	No	Open
P-3590	150	AC	93	0.24	No	Open
P-3591	150	AC	113	0.03	No	Open
P-3601	150	AC	230	0.02	No	Open
P-3600	150	AC	112	0.18	No	Open
P-3620	150	AC	114	0.13	No	Open
P-3621	150	PVC	68	0.03	No	Open
P-3651	150	AC	258	0.1	No	Open
P-3705	150	PVC	194	0.16	No	Open
P-3710	150	AC	382	0.02	No	Open
P-3720	150	AC	199	0.41	No	Open
P-3721	150	AC	555	0.13	No	Open
P-3740	150	PVC	87	0.5	No	Open
P-3750	150	AC	64	0.03	No	Open
P-3751	150	PVC	234	0.21	No	Open
P-3755	150	AC	101	0.14	No	Open
P-3756	150	AC	157	0.09	No	Open
P-3790	150	PVC	113	0.12	No	Open
P-3791	150	AC	166	0.11	No	Open
P-3792	150	AC	206	0.04	No	Open
P-3852	150	AC	109	0.28	No	Open
P-3853	150	AC	120	0.35	No	Open
P-3856	150	AC	131	0.01	No	Open
P-3857	150	AC	102	0	No	Open
P-3858	150	AC	308	0.02	No	Open
P-3881	150	PVC	92	0.22	No	Open
P-3880	150	PVC	150	0.2	No	Open
P-3882	150	PVC	113	0.31	No	Open
P-3884	150	AC	148	0.11	No	Open
P-3885	150	AC	147	0.23	No	Open
P-3890	150	AC	135	0.21	No	Open
P-3910	150	AC	183	0.39	No	Open
P-3911	150	PVC	308	0.43	No	Open
P-3930	150	AC	30	0.3	No	Open
P-3931	150	AC	161	0.04	No	Open
P-3940	150	AC	196	0.45	No	Open
P-3941	150	AC	107	0.2	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3942	150	AC	101	0.35	No	Open
P-3943	150	AC	90	0.26	No	Open
P-3944	150	AC	42	0.05	No	Open
P-3947	150	AC	8	0.33	No	Open
P-3948	150	AC	232	0.04	No	Open
P-3962	150	AC	100	0.62	No	Open
P-3963	150	AC	12	0.42	No	Open
P-3965	150	AC	120	0.07	No	Open
P-3966	150	AC	179	0.09	No	Open
P-3967	150	AC	368	0.13	No	Open
P-4801	150	Ductile Iron	97	0.15	No	Open
P-4802	150	AC	3	0.05	No	Open
P-4781	150	Ductile Iron	74	0.29	No	Open
P-4782	150	AC	3	0.3	No	Open
P-3968	150	AC	205	0.09	No	Open
P-4362	150	AC	210	0.1	No	Open
P-4480	150	AC	85	0.11	No	Open
P-4481	150	AC	102	0.2	No	Open
P-3990	150	AC	88	0.57	No	Open
P-3991	150	AC	71	0.74	No	Open
P-4030	150	AC	191	0.44	No	Open
P-4072	150	AC	90	0.04	No	Open
P-4080	150	AC	130	0.13	No	Open
P-4081	150	AC	19	0.13	No	Open
P-4082	150	PVC	81	0.02	No	Open
P-4090	150	AC	136	0.16	No	Open
P-4100	150	AC	190	0.48	No	Open
P-4120	150	AC	408	0.38	No	Open
P-4130	150	AC	185	0.25	No	Open
P-4140	150	PVC	81	0.04	No	Open
P-4150	150	AC	237	0.25	No	Open
P-4151	150	AC	36	0.29	No	Open
P-4152	150	AC	62	0.24	No	Open
P-4153	150	AC	137	0.23	No	Open
P-4160	150	AC	99	0.14	No	Open
P-4170	150	AC	134	0.1	No	Open
P-4180	150	AC	191	0.56	No	Open
P-4190	150	AC	108	0.57	No	Open
P-4200	150	AC	234	0.2	No	Open
P-4220	150	PVC	95	0.01	No	Open
P-4221	150	AC	137	0.07	No	Open
P-4222	150	AC	244	0.03	No	Open
P-4223	150	AC	22	0.18	No	Open
P-4230	150	AC	104	0.26	No	Open
P-4256	150	AC	140	0.14	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4261	150	AC	141	0.08	No	Open
P-4300	150	PVC	71	0.24	No	Open
P-4270	150	Ductile Iron	90	0.33	No	Open
P-4271	150	PVC	226	0.11	No	Open
P-4280	150	AC	139	0.26	No	Open
P-4310	150	AC	44	0.01	No	Open
P-4315	150	AC	86	0.03	No	Open
P-4320	150	AC	200	0.03	No	Open
P-4330	150	AC	108	0.06	No	Open
P-4331	150	AC	359	0.01	No	Open
P-4351	150	AC	192	0.04	No	Open
P-4352	150	AC	167	0.04	No	Open
P-4356	150	AC	192	0.06	No	Open
P-4357	150	AC	92	0.02	No	Open
P-4361	150	AC	182	0.07	No	Open
P-4363	150	AC	169	0.12	No	Open
P-4364	150	AC	439	0.08	No	Open
P-4471	150	AC	177	0.02	No	Open
P-4600	150	AC	96	0	No	Open
P-4501	150	PVC	211	0.03	No	Open
P-4502	150	PVC	235	0.07	No	Open
P-4520	150	PVC	97	0.02	No	Open
P-4521	150	PVC	212	0.02	No	Open
P-4522	150	PVC	238	0.04	No	Open
P-4660	150	AC	82	0.02	No	Open
P-4680	150	AC	96	0.04	No	Open
P-4661	150	AC	200	0.01	No	Open
P-4662	150	AC	203	0	No	Closed
P-4690	150	AC	94	0.04	No	Open
P-4691	150	AC	187	0.02	No	Open
P-4692	150	PVC	234	0.03	No	Open
P-4700	150	AC	95	0.03	No	Open
P-4710	150	AC	96	0.07	No	Open
P-4711	150	PVC	212	0.02	No	Open
P-4715	150	AC	96	0.02	No	Open
P-4741	150	AC	207	0.14	No	Open
P-4816	150	PVC	203	0.03	No	Open
P-4819	150	AC	189	0.05	No	Open
P-4880	150	AC	99	0.14	No	Open
P-4890	150	AC	100	0.1	No	Open
P-4900	150	AC	89	0.02	No	Open
P-4913	150	AC	259	0.05	No	Open
P-4915	150	AC	359	0.01	No	Open
P-4930	150	AC	468	0.02	No	Open
P-4931	150	AC	105	0.1	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4950	150	AC	128	0.14	No	Open
P-5321	150	PVC	215	0.07	No	Open
P-5570	150	Cast iron	101	0.04	No	Open
P-5580	150	Cast iron	109	0.21	No	Open
P-5590	150	Cast iron	91	0.11	No	Open
P-5600	150	Cast iron	112	0.22	No	Open
P-5610	150	Cast iron	101	0.09	No	Open
P-5650	150	Cast iron	99	0.2	No	Open
P-5660	150	Cast iron	104	0.24	No	Open
P-5670	150	Cast iron	101	0.44	No	Open
P-5680	150	Cast iron	104	0.46	No	Open
P-5690	150	Cast iron	85	0.72	No	Open
P-5770	150	Cast iron	69	0.19	No	Open
P-5910	150	Cast iron	102	0.66	No	Open
P-5911	150	Cast iron	20	0.42	No	Open
P-5920	150	Cast iron	102	0.05	No	Open
P-5940	150	AC	104	0.14	No	Open
P-5960	150	PVC	121	0.2	No	Open
P-5961	150	PVC	24	0.24	No	Open
P-5970	150	PVC	94	0.25	No	Open
P-5980	150	PVC	101	0.09	No	Open
P-5990	150	Cast iron	9	0.23	No	Open
P-6000	150	AC	199	0.24	No	Open
P-6010	150	AC	98	0.16	No	Open
P-6030	150	AC	95	0.2	No	Open
P-6075	150	AC	130	0.01	No	Open
P-6080	150	AC	122	0.01	No	Open
P-6090	150	AC	67	0.01	No	Open
P-6100	150	PVC	141	0.13	No	Open
P-6110	150	PVC	102	0.19	No	Open
P-6120	150	PVC	100	0.22	No	Open
P-6121	150	PVC	15	0.38	No	Open
P-6130	150	PVC	96	0.48	No	Open
P-6140	150	Cast iron	100	0.28	No	Open
P-6150	150	Ductile Iron	95	0.04	No	Open
P-6160	150	Ductile Iron	61	0.08	No	Open
P-6170	150	Cast iron	103	0.5	No	Open
P-6180	150	Cast iron	105	0.24	No	Open
P-6190	150	Cast iron	104	0.63	No	Open
P-6200	150	Cast iron	93	0.57	No	Open
P-6210	150	Cast iron	85	0.54	No	Open
P-6220	150	Cast iron	105	0.52	No	Open
P-6221	150	Cast iron	17	0.03	No	Open
P-6230	150	Cast iron	94	0.01	No	Open
P-6240	150	Cast iron	101	0.43	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-6260	150	AC	83	0.07	No	Open
P-6270	150	AC	102	0.03	No	Open
P-6251	150	AC	64	0.92	No	Open
P-6370	150	AC	67	0.29	No	Open
P-6480	150	PVC	107	0.06	No	Open
P-6561	150	AC	102	0.62	No	Open
P-6560	150	Ductile Iron	230	0.62	No	Open
P-6780	150	Ductile Iron	193	0.61	No	Open
P-6610	150	Cast iron	111	0.87	No	Open
P-6611	150	Cast iron	102	1.04	No	Open
P-6620	150	Cast iron	138	1.17	No	Open
P-6650	150	AC	97	0.6	No	Open
P-6660	150	PVC	100	0.35	No	Open
P-6670	150	AC	102	0.37	No	Open
P-6689	150	Ductile Iron	15	0.66	No	Open
P-6690	150	Ductile Iron	52	0.76	No	Open
P-6691	150	AC	49	0.79	No	Open
P-6700	150	AC	101	0.43	No	Open
P-6710	150	AC	101	0.1	No	Open
P-6720	150	AC	101	0.02	No	Open
P-6760	150	AC	125	0.32	No	Open
P-6811	150	PVC	15	1.13	No	Open
P-6820	150	PVC	89	0.59	No	Open
P-6850	150	Cast iron	105	0.03	No	Open
P-6870	150	PVC	89	0.23	No	Open
P-6900	150	AC	109	0.06	No	Open
P-6910	150	AC	20	0.02	No	Open
P-6920	150	PVC	116	0.12	No	Open
P-6930	150	PVC	167	0.17	No	Open
P-6969	150	Cast iron	17	0.46	No	Open
P-6970	150	Cast iron	88	0.41	No	Open
P-6980	150	Cast iron	108	0.59	No	Open
P-6990	150	Cast iron	101	0.34	No	Open
P-7000	150	Cast iron	102	0.11	No	Open
P-7001	150	Cast iron	21	0.03	No	Open
P-7010	150	Cast iron	76	0.02	No	Open
P-7020	150	Cast iron	95	0.16	No	Open
P-7030	150	Cast iron	113	0.32	No	Open
P-7040	150	Cast iron	92	0.76	No	Open
P-7100	150	AC	99	0.54	No	Open
P-7110	150	AC	99	0.89	No	Open
P-7113	150	AC	31	1.92	No	Open
P-7120	150	Cast iron	91	0.14	No	Open
P-7130	150	Cast iron	103	0.27	No	Open
P-7140	150	Cast iron	100	0.24	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-7150	150	Cast iron	100	0.07	No	Open
P-7160	150	Cast iron	86	0.03	No	Open
P-7170	150	Cast iron	97	0.18	No	Open
P-7180	150	AC	113	0.35	No	Open
P-7190	150	Cast iron	90	0.52	No	Open
P-7200	150	PVC	103	0.51	No	Open
P-7210	150	PVC	41	0.57	No	Open
P-7220	150	PVC	100	0.47	No	Open
P-7270	150	Cast iron	91	0.41	No	Open
P-7280	150	Cast iron	103	0.14	No	Open
P-7290	150	Cast iron	100	0.12	No	Open
P-7300	150	Cast iron	96	0.04	No	Open
P-7310	150	Cast iron	102	0.21	No	Open
P-7320	150	Cast iron	96	0.16	No	Open
P-7330	150	Cast iron	113	0.21	No	Open
P-7340	150	AC	91	0.22	No	Open
P-7350	150	AC	137	0.43	No	Open
P-7400	150	AC	78	0.98	No	Open
P-7420	150	PVC	95	0.07	No	Open
P-7430	150	Cast iron	101	0.06	No	Open
P-7440	150	PVC	100	0.05	No	Open
P-7450	150	PVC	101	0.06	No	Open
P-7460	150	AC	101	0.12	No	Open
P-7470	150	AC	102	0.17	No	Open
P-7480	150	AC	110	0.2	No	Open
P-7490	150	AC	90	0.26	No	Open
P-7500	150	PVC	131	0.28	No	Open
P-7510	150	AC	99	0.07	No	Open
P-7530	150	AC	235	0.05	No	Open
P-7540	150	AC	213	0.09	No	Open
P-7551	150	AC	86	1.25	No	Open
P-7672	150	PVC	84	0.03	No	Open
P-7660	150	AC	184	0.02	No	Open
P-7650	150	AC	100	0.13	No	Open
P-7560	150	AC	96	0.03	No	Open
P-7570	150	AC	101	0.06	No	Open
P-1470	150	Cast iron	205	0.2	No	Open
P-7630	150	AC	89	0.32	No	Open
P-7640	150	AC	127	0.19	No	Open
P-7680	150	AC	91	0.61	No	Open
P-7690	150	AC	103	0.27	No	Open
P-7695	150	AC	187	0.25	No	Open
P-7715	150	AC	261	0.06	No	Open
P-7720	150	AC	98	0.01	No	Open
P-7730	150	AC	91	0.01	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-7770	150	AC	213	0.26	No	Open
P-7790	150	AC	256	0.2	No	Open
P-7892	150	Steel	3	0	No	Open
P-7893	150	Steel	4	0	No	Open
P-7940	150	AC	165	0.1	No	Open
P-7950	150	AC	95	0.03	No	Open
P-7960	150	AC	87	0.03	No	Open
P-7990	150	AC	107	0.05	No	Open
P-7991	150	AC	95	0.03	No	Open
P-7992	150	AC	86	0.04	No	Open
P-7993	150	PVC	76	0.03	No	Open
P-7994	150	AC	108	0	No	Open
P-7118	150	Steel	2	2.53	No	Open
P-7119	150	Steel	2	2.53	No	Open
P-7121	150	Steel	1	2.53	No	Open
P-7123	150	PVC	7	2.54	No	Open
P-9021	150	PVC	64	0.04	No	Open
P-10005	150	PVC	380	0.04	No	Open
P-10006	150	PVC	382	0.07	No	Open
P-10007	150	PVC	331	0.04	No	Open
P-10008	150	PVC	342	0.06	No	Open
P-10009	150	PVC	115	0.05	No	Open
P-10010	150	PVC	178	0.01	No	Open
P-7117	150	Cast iron	54	1.54	No	Open
P-6871	150	PVC	63	0.02	No	Open
P-4083	150	PVC	117	0.15	No	Open
P-3622	150	PVC	226	0.07	No	Open
P-4224	150	AC	104	0.18	No	Open
P-4272	150	PVC	143	0.07	No	Open
P-4273	150	PVC	81	0.08	No	Open
P-4274	150	PVC	75	0.17	No	Open
P-4278	150	PVC	45	0.01	No	Open
P-3124	150	PVC	5	0.45	No	Open
P-3125	150	PVC	43	0.01	No	Open
P-3126	150	PVC	219	0.47	No	Open
P-3623	150	PVC	36	0.04	No	Open
P-1500	150	AC	9	0.05	No	Open
P-121	150	Steel	3	0	No	Open
P-151	150	AC	20	0	No	Closed
P-9025	150	PVC	38	0.01	No	Open
P-9026	150	PVC	90	0.09	No	Open
P-9027	150	PVC	69	0.09	No	Open
P-6931	150	PVC	134	1.17	No	Open
P-2271	150	PVC	14	1.17	No	Open
P-5003	150	AC	9	0	No	Closed

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-7780	150	AC	260	0.03	No	Open
P-7710	150	AC	263	0.2	No	Open
P-5005	150	AC	1	0	No	Closed
P-7670	150	AC	240	0.2	No	Open
P-5006	150	AC	2	0	No	Closed
P-7550	150	AC	217	0.71	No	Open
P-5010	150	AC	2	0	No	Closed
P-2900	150	AC	102	0.71	No	Open
P-2980	150	AC	175	0.07	No	Open
P-7520	150	AC	196	0	No	Open
P-3130	150	AC	191	0.32	No	Open
P-4972	150	Steel	1	0	No	Open
P-4973	150	Steel	1	0	No	Open
P-5630	150	AC	97	0.19	No	Open
P-109	150	Cast Iron	100	0	No	Open
P-130	150	PVC	159	0.04	No	Open
P-132	150	PVC	132	0.04	No	Open
P-135	150	PVC	52	0.04	No	Open
P-144	150	AC	84	0.08	No	Open
P-145	150	PVC	92	0.08	No	Open
P-234	150	AC	67	0.01	No	Open
P-235	150	PVC	23	0.01	No	Open
P-238	150	Ductile Iron	107	0.11	No	Open
P-239	150	Cast iron	116	0.11	No	Open
P-254imp	150	PVC	96	0.04	No	Open
P-255imp	150	PVC	53	0	No	Open
P-2010	200	AC	82	0.44	No	Open
P-32	200	Ductile Iron	582	0.09	No	Open
P-102	200	Cast iron	23	1.53	No	Open
P-5460	200	Cast iron	34	1.53	No	Open
P-111	200	Steel	3	3.43	No	Open
P-158	200	Steel	3	3.43	No	Open
P-2129	200	Cast iron	3	0.13	No	Open
P-114	200	PVC	32	1.65	No	Open
P-118	200	Steel	4	0	No	Open
P-280	200	Cast iron	139	0.04	No	Open
P-340	200	AC	124	1.09	No	Open
P-341	200	Cast iron	135	1.12	No	Open
P-5000	200	AC	148	1.18	No	Open
P-5002	200	AC	60	1.2	No	Open
P-5020	200	AC	86	0.72	No	Open
P-5120	200	AC	431	0.75	No	Open
P-5125	200	AC	44	1.25	No	Open
P-5218	200	AC	314	0.5	No	Open
P-5130	200	AC	82	1.27	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-5135	200	AC	270	0.77	No	Open
P-507	200	AC	27	0.42	No	Open
P-7885	200	PVC	165	0.02	No	Open
P-7269	200	Cast iron	19	0.44	No	Open
P-740	200	AC	192	0.1	No	Open
P-750	200	AC	106	0.27	No	Open
P-762	200	PVC	17	0.02	No	Open
P-5420	200	AC	102	0.17	No	Open
P-5430	200	Cast iron	100	0.24	No	Open
P-5440	200	Cast iron	103	0.32	No	Open
P-5450	200	Cast iron	101	0.43	No	Open
P-5480	200	Cast iron	81	1.08	No	Open
P-5470	200	Cast iron	49	1.06	No	Open
P-1001	200	Cast iron	439	0.02	No	Open
P-1070	200	AC	175	0.13	No	Open
P-1080	200	AC	213	0.13	No	Open
P-1090	200	AC	195	0.05	No	Open
P-1100	200	AC	198	0.28	No	Open
P-1101	200	AC	2	0.26	No	Open
P-1110	200	AC	196	0.25	No	Open
P-1111	200	AC	221	0.23	No	Open
P-1290	200	AC	48	0.17	No	Open
P-1300	200	AC	234	0.1	No	Open
P-1310	200	AC	206	0.05	No	Open
P-7900	200	AC	159	0.03	No	Open
P-7910	200	AC	182	0.09	No	Open
P-7995	200	AC	170	0.04	No	Open
P-7996	200	AC	10	0.01	No	Open
P-7997	200	AC	69	0.01	No	Open
P-7998	200	AC	198	0.01	No	Open
P-1820	200	AC	189	0.25	No	Open
P-1830	200	AC	213	1.11	No	Open
P-1831	200	AC	199	0.93	No	Open
P-1860	200	Cast iron	203	1.66	No	Open
P-2020	200	AC	98	0.53	No	Open
P-2130	200	Cast iron	249	1.56	No	Open
P-2140	200	AC	183	0.6	No	Open
P-2410	200	Cast iron	186	0.31	No	Open
P-2420	200	AC	184	0.4	No	Open
P-2430	200	AC	155	0.4	No	Open
P-2431	200	AC	57	0.45	No	Open
P-2440	200	AC	200	0.27	No	Open
P-2450	200	AC	99	0.21	No	Open
P-2460	200	AC	95	0.15	No	Open
P-2470	200	Ductile Iron	161	0.05	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-2471	200	PVC	412	0.01	No	Open
P-2472	200	PVC	17	0.01	No	Open
P-2490	200	AC	33	0.03	No	Open
P-2880	200	AC	177	0.65	No	Open
P-3020	200	AC	318	0.71	No	Open
P-3030	200	AC	102	0.59	No	Open
P-3040	200	AC	91	0.7	No	Open
P-3053	200	PVC	59	0.82	No	Open
P-3120	200	AC	106	0.72	No	Open
P-3270	200	AC	210	0.22	No	Open
P-3280	200	AC	95	0.17	No	Open
P-3290	200	AC	144	0.14	No	Open
P-3295	200	AC	111	0.5	No	Open
P-3331	200	AC	5	0.44	No	Open
P-3310	200	PVC	135	0.06	No	Open
P-3314	200	PVC	76	0.07	No	Open
P-9017	200	PVC	40	0.02	No	Open
P-8341	200	PVC	181	0.17	No	Open
P-8342	200	PVC	20	0.02	No	Open
P-8343	200	PVC	58	0.13	No	Open
P-8344	200	PVC	168	0.07	No	Open
P-8347	200	PVC	174	0.04	No	Open
P-8354	200	PVC	84	0.01	No	Open
P-3500	200	AC	196	0.05	No	Open
P-3650	200	PVC	363	0.36	No	Open
P-3660	200	PVC	261	0.35	No	Open
P-3700	200	Ductile Iron	117	0.27	No	Open
P-3701	200	AC	93	0.24	No	Open
P-3760	200	Ductile Iron	117	0.52	No	Open
P-3761	200	Ductile Iron	96	0.03	No	Open
P-3770	200	Ductile Iron	131	0.38	No	Open
P-3771	200	Ductile Iron	66	0.4	No	Open
P-3862	200	AC	92	0.24	No	Open
P-3863	200	AC	115	0.12	No	Open
P-3864	200	AC	111	0.09	No	Open
P-3865	200	AC	115	0.09	No	Open
P-3900	200	AC	188	0.47	No	Open
P-3945	200	AC	55	0.32	No	Open
P-3946	200	AC	78	0.23	No	Open
P-3949	200	AC	364	0.04	No	Open
P-3950	200	AC	45	0.01	No	Open
P-3961	200	AC	106	0.24	No	Open
P-3960	200	AC	141	0.47	No	Open
P-4060	200	AC	185	0.53	No	Open
P-4061	200	AC	9	0.86	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3964	200	AC	132	0.28	No	Open
P-4800	200	AC	97	0.28	No	Open
P-4780	200	AC	73	0.25	No	Open
P-4470	200	AC	69	0.04	No	Open
P-4461	200	AC	122	0.02	No	Open
P-4460	200	AC	52	0.03	No	Open
P-3992	200	AC	155	0.44	No	Open
P-4000	200	AC	214	0.4	No	Open
P-4050	200	AC	464	0.47	No	Open
P-4070	200	AC	217	0.55	No	Open
P-4071	200	AC	196	0.59	No	Open
P-4210	200	PVC	188	0.27	No	Open
P-4240	200	AC	205	0.76	No	Open
P-4245	200	AC	40	0.67	No	Open
P-4250	200	AC	72	0.52	No	Open
P-4255	200	AC	71	0.41	No	Open
P-4260	200	AC	89	0.44	No	Open
P-4325	200	AC	384	0.09	No	Open
P-4340	200	AC	72	0.08	No	Open
P-4350	200	AC	92	0.11	No	Open
P-4355	200	AC	92	0.15	No	Open
P-4360	200	AC	99	0.21	No	Open
P-4370	200	AC	97	0.18	No	Open
P-4371	200	AC	182	0.19	No	Open
P-4372	200	AC	155	0.25	No	Open
P-4377	200	AC	20	0.25	No	Open
P-4373	200	AC	370	0.14	No	Open
P-4374	200	AC	206	0.07	No	Open
P-4375	200	AC	134	0.16	No	Open
P-4376	200	AC	166	0.16	No	Open
P-4450	200	AC	81	0.04	No	Open
P-4490	200	PVC	185	0.02	No	Open
P-4730	200	AC	88	0.4	No	Open
P-4740	200	AC	33	0.42	No	Open
P-4810	200	AC	99	0.25	No	Open
P-4812	200	AC	100	0.15	No	Open
P-4815	200	AC	80	0.15	No	Open
P-4818	200	AC	23	0.09	No	Open
P-4820	200	AC	63	0.1	No	Open
P-4821	200	AC	27	0.06	No	Open
P-4822	200	Cast iron	186	0.07	No	Open
P-4830	200	AC	69	0.11	No	Open
P-4840	200	PVC	96	0.08	No	Open
P-4845	200	PVC	99	0.05	No	Open
P-4910	200	AC	126	0.07	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4911	200	AC	369	0.05	No	Open
P-4912	200	AC	107	0.07	No	Open
P-4935	200	AC	49	0.04	No	Open
P-4940	200	AC	86	0.01	No	Open
P-4951	200	AC	120	0.17	No	Open
P-4970	200	AC	362	0.15	No	Open
P-4980	200	AC	147	0.08	No	Open
P-5290	200	AC	101	0.11	No	Open
P-5300	200	AC	100	0.15	No	Open
P-5310	200	AC	105	0.21	No	Open
P-5320	200	AC	102	0.25	No	Open
P-5330	200	AC	98	0.37	No	Open
P-5340	200	AC	101	0.42	No	Open
P-5771	200	PVC	100	0.15	No	Open
P-5780	200	PVC	80	0.11	No	Open
P-5781	200	PVC	23	0.13	No	Open
P-6380	200	PVC	157	0.02	No	Open
P-6381	200	PVC	46	0.07	No	Open
P-6390	200	Ductile Iron	101	0.05	No	Open
P-6400	200	Cast iron	106	0.07	No	Open
P-6410	200	Cast iron	113	0.12	No	Open
P-7050	200	Cast iron	98	0.53	No	Open
P-7060	200	Cast iron	49	0.89	No	Open
P-7070	200	Cast iron	98	0.77	No	Open
P-7080	200	Cast iron	99	1.07	No	Open
P-7090	200	Cast iron	111	1.58	No	Open
P-7370	200	AC	98	0.24	No	Open
P-7380	200	AC	97	0.24	No	Open
P-7391	200	AC	16	0.63	No	Open
P-7673	200	AC	48	1.09	No	Open
P-7671	200	AC	58	1.07	No	Open
P-7590	200	AC	100	0.29	No	Open
P-7600	200	AC	102	0.18	No	Open
P-7610	200	AC	96	0.26	No	Open
P-7620	200	AC	114	0.19	No	Open
P-7800	200	AC	91	0.18	No	Open
P-7810	200	AC	86	0.06	No	Open
P-7890	200	AC	75	0.21	No	Open
P-7891	200	PVC	152	0.01	No	Open
P-7920	200	AC	99	0.12	No	Open
P-7930	200	AC	104	0.07	No	Open
P-8000	200	AC	167	0.2	No	Open
P-7122	200	PVC	15	1.42	No	Open
P-7124	200	PVC	12	0	Yes	Open
P-9024	200	PVC	22	0.26	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-9003	200	PVC	99	0.2	No	Open
P-9005	200	PVC	18	0.2	No	Open
P-9007	200	PVC	101	0.2	No	Open
P-9009	200	PVC	207	0.25	No	Open
P-9010	200	PVC	194	0	No	Open
P-9012	200	PVC	28	0.25	No	Open
P-9016	200	PVC	138	0.51	No	Open
P-9019	200	AC	235	0.01	No	Open
P-10002	200	PVC	168	0.32	No	Open
P-10003	200	PVC	95	0.3	No	Open
P-10004	200	PVC	196	0.35	No	Open
P-7116	200	Cast iron	21	0	No	Open
P-7125	200	Steel	3	0	No	Open
P-7126	200	Steel	4	0	No	Closed
P-10013	200	PVC	202	0.35	No	Open
P-461	200	Cast iron	145	0.45	No	Open
P-462	200	Cast iron	139	0.35	No	Open
P-1483	200	PVC	11	0.13	No	Open
P-3129	200	PVC	81	0.31	No	Open
P-3131	200	PVC	192	0.02	No	Open
P-3134	200	PVC	164	0.01	No	Open
P-2003	200	Steel	46	0	No	Closed
P-4957	200	Steel	3	0	No	Open
P-4959	200	Steel	3	0	No	Open
P-4961	200	Steel	3	0	No	Open
P-4963	200	Steel	3	0	No	Open
P-4966	200	Steel	4	0	No	Open
P-6612	200	PVC	120	0.58	No	Open
P-163	200	PVC	12	0.07	No	Open
P-5001	200	PVC	35	0.17	No	Open
P-5004	200	PVC	91	0.02	No	Open
P-5008	200	PVC	106	0.11	No	Open
P-5009	200	PVC	109	0.03	No	Open
P-5011	200	PVC	95	0.53	No	Open
P-3050	200	PVC	204	0.74	No	Open
P-7390	200	AC	97	0	No	Open
P-2870	200	AC	194	0.45	No	Open
P-7112	200	Cast iron	72	1.58	Yes	Open
P-7108	200	Cast iron	13	1.58	No	Open
P-7109	200	PVC	80	0.87	Yes	Open
P-7129	200	PVC	11	2.23	No	Open
P-7131	200	PVC	4	2.23	No	Closed
P-2177	200	PVC	120	0.51	No	Open
P-2571	200	Ductile Iron	312	0.59	No	Open
P-108	200	PVC	127	0.26	No	Open

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Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-5620	200	PVC	14	0.14	No	Open
P-4952	200	PVC	24	0.25	No	Open
P-4954	200	PVC	121	0.32	No	Open
P-4975	200	PVC	321	0.07	No	Open
P-4976	200	PVC	53	0.07	No	Open
P-4977	200	PVC	25	0.07	No	Open
P-4978	200	PVC	182	0	No	Open
P-196	200	PVC	92	0.28	No	Open
P-197	200	PVC	110	0.32	No	Open
P-206	200	PVC	196	0.26	No	Open
P-210	200	PVC	239	0.2	No	Open
P-211	200	PVC	501	0.26	No	Open
P-244imp	200	AC	136	0.2	No	Open
P-245imp	200	AC	148	0.2	No	Open
P-269imp	200	Ductile Iron	52	0.27	No	Open
P-270imp	200	Ductile Iron	76	0.27	No	Open
P-107	200	Steel	22	0	No	Open
P-155	200	AC	20	0	No	Open
P-4701	200	PVC	235	0.03	No	Open
P-7580	200	AC	96	0.03	No	Open
P-6582	200	PVC	62	0	No	Open
P-129	200	PVC	122	0	No	Open
P-167	200	PVC	33	0.51	No	Open
P-193	200	PVC	166	0.42	No	Open
P-194	200	PVC	267	0.42	No	Open
P-195	200	PVC	103	1.22	No	Open
P-200	200	PVC	393	0	No	Open
P-201	200	PVC	58	0.51	No	Open
P-202	200	PVC	191	0.51	No	Open
P-205	200	PVC	230	0	No	Open
P-222	200	PVC	330	0.25	No	Open
P-226	200	PVC	290	0	No	Open
P-227	200	PVC	195	0	No	Open
P-228	200	PVC	106	0	No	Open
P-295imp	200	PVC	11	0.04	No	Open
P-104	250	Steel	2	0	No	Open
P-152	250	Steel	2	0	No	Open
P-370	250	AC	173	0.67	No	Open
P-380	250	AC	86	0.53	No	Open
P-5380	250	AC	102	0.02	No	Open
P-5390	250	AC	101	0.04	No	Open
P-5400	250	AC	101	0.15	No	Open
P-5410	250	AC	100	0.13	No	Open
P-1427	250	PVC	63	0.01	No	Open
P-3294	250	AC	90	0.51	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4322	250	AC	19	0	No	Open
P-4324	250	AC	52	0	No	Open
P-4326	250	AC	136	0.01	No	Open
P-4452	250	AC	85	0	No	Open
P-4455	250	AC	16	0.55	No	Open
P-4456	250	AC	217	0.3	No	Open
P-6420	250	Cast iron	94	0.25	No	Open
P-6421	250	Cast iron	14	0.22	No	Open
P-6430	250	Cast iron	95	1.11	No	Open
P-6440	250	Cast iron	99	1.48	No	Open
P-6450	250	Cast iron	57	2.18	No	Open
P-6451	250	Cast iron	4	1.53	No	Open
P-6452	250	Cast iron	39	2.2	No	Open
P-6460	250	Cast iron	112	1.54	No	Open
P-6470	250	Cast iron	86	1.41	No	Open
P-6491	250	Cast iron	98	1.26	No	Open
P-6490	250	Cast iron	103	1.01	No	Open
P-7871	250	Steel	2	1.3	No	Open
P-7873	250	Steel	3	1.13	No	Open
P-9014	250	AC	233	0.02	No	Open
P-10000	250	PVC	8	0	Yes	Open
P-10001	250	PVC	2	0.2	No	Open
P-5572	250	PVC	96	0.13	No	Open
P-4275	250	AC	45	0.3	No	Open
P-4276	250	AC	177	0.3	No	Open
P-4277	250	PVC	30	0.01	No	Open
P-1482	250	PVC	103	1.42	No	Open
P-76	250	Steel	2	0	Yes	Open
P-4451	250	AC	203	0.01	No	Open
P-4453	250	AC	112	0	No	Open
P-79	250	AC	3	0	No	Open
P-4967	250	Steel	3	0	No	Open
P-4969	250	Steel	3	0	No	Open
P-149	250	PVC	130	1.01	No	Open
P-150	250	PVC	133	0.76	No	Open
P-240	250	PVC	18	1.05	No	Open
P-274imp	250	Steel	1	1.3	No	Open
P-275imp	250	Steel	1	1.13	No	Open
P-1480	261.4	HDPE	178	1.3	No	Open
P-1481	261.4	HDPE	100	1.3	No	Open
P-2015	297	Steel	76	0.01	No	Open
P-74	297	Steel	4	0	No	Open
P-77	297	Steel	3	0	No	Open
P-80	297	Steel	3	0	No	Open
P-178	297	Steel	2	0.01	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-179	297	Steel	15	0.01	No	Open
P-501	300	Ductile Iron	360	0.82	No	Open
P-159	300	Cast iron	66	0.23	No	Open
P-160	300	Cast iron	66	0.23	No	Open
P-172	300	Steel	2	4.97	No	Open
P-174	300	Ductile Iron	49	4.97	No	Open
P-177	300	Steel	2	0	No	Open
P-180	300	Steel	5	0	Yes	Open
P-182	300	Steel	2	4.97	No	Closed
P-248imp	300	PVC	915	0.19	No	Open
P-261imp	300	PVC	289	0.19	No	Open
P-262imp	300	PVC	262	0.19	No	Open
P-101	300	Steel	2	2.21	No	Open
P-150	300	Steel	2	2.21	No	Open
P-116	300	Cast iron	8	1.49	No	Open
P-164	300	Cast iron	14	0	No	Open
P-165	300	Ductile Iron	32	0	No	Open
P-5245	300	AC	211	0.58	No	Open
P-410	300	Ductile Iron	176	0.22	No	Open
P-420	300	Ductile Iron	191	0.21	No	Open
P-440	300	Cast iron	288	0.23	No	Open
P-450	300	Ductile Iron	142	0.81	No	Open
P-460	300	Ductile Iron	144	0.96	No	Open
P-470	300	Ductile Iron	92	1.31	No	Open
P-472	300	Ductile Iron	46	1.3	No	Open
P-481	300	Ductile Iron	176	1	No	Open
P-491	300	Ductile Iron	193	0.94	No	Open
P-2032	300	AC	60	0	No	Open
P-2050	300	AC	201	0.19	No	Open
P-2070	300	AC	295	0.29	No	Open
P-2080	300	AC	185	0.29	No	Open
P-6501	300	AC	6	1.14	No	Open
P-6500	300	AC	92	1.21	No	Open
P-2370	300	Cast iron	206	1.09	No	Open
P-2380	300	Cast iron	268	0.82	No	Open
P-2640	300	Cast iron	199	1.63	No	Open
P-2670	300	Cast iron	203	1.29	No	Open
P-2690	300	Cast iron	610	1.32	No	Open
P-2810	300	Cast iron	107	1.27	No	Open
P-2820	300	Cast iron	97	1.26	No	Open
P-2830	300	Cast iron	100	1.13	No	Open
P-2840	300	Cast iron	169	1.22	No	Open
P-3055	300	PVC	254	1.13	No	Open
P-9013	300	Cast iron	21	0.95	No	Open
P-3261	300	Cast iron	261	1.49	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3305	300	Steel	323	0.99	No	Open
P-3860	300	Steel	47	1.02	No	Open
P-4721	300	AC	150	0.39	No	Open
P-4946	300	AC	23	0.19	No	Open
P-4947	300	PVC	72	0.42	No	Open
P-4949	300	PVC	269	0.68	No	Open
P-5790	300	Ductile Iron	91	0.03	No	Open
P-5800	300	Ductile Iron	106	0.02	No	Open
P-5782	300	PVC	23	0.2	No	Open
P-5820	300	Ductile Iron	102	0.12	No	Open
P-5830	300	Ductile Iron	99	0.25	No	Open
P-5840	300	Ductile Iron	140	0.34	No	Open
P-5850	300	Ductile Iron	100	0.53	No	Open
P-5860	300	AC	99	0.84	No	Open
P-5870	300	AC	102	0.76	No	Open
P-5880	300	AC	87	0.92	No	Open
P-6050	300	Cast iron	84	0	No	Open
P-6051	300	Cast iron	12	0.25	No	Open
P-6060	300	Cast iron	88	0.25	No	Open
P-6061	300	Cast iron	15	1.55	No	Open
P-6070	300	Cast iron	99	1.27	No	Open
P-6365	300	PVC	55	1.3	No	Open
P-6510	300	AC	93	0.99	No	Open
P-6520	300	AC	72	0.93	No	Open
P-6530	300	Ductile Iron	113	0.11	No	Open
P-6540	300	Ductile Iron	81	0	No	Open
P-6570	300	Cast iron	142	1.07	No	Open
P-6580	300	Cast iron	111	1.35	No	Open
P-6585	300	Cast iron	500	1.49	No	Open
P-6492	300	Cast iron	11	0.58	No	Open
P-7101	300	Cast iron	204	0.7	No	Open
P-7111	300	Cast iron	73	0.48	No	Open
P-7850	300	PVC	190	0.77	No	Open
P-7860	300	PVC	146	0.94	No	Open
P-7874	300	PVC	69	0.9	No	Open
P-4953	300	PVC	79	1.09	No	Open
P-3121	300	Ductile Iron	198	0.33	No	Open
P-3122	300	PVC	200	0.31	No	Open
P-3127	300	PVC	120	0.42	No	Open
P-3128	300	PVC	93	0.13	No	Open
P-73	300	PVC	254	0.01	No	Open
P-5810	300	Ductile Iron	85	0	No	Open
P-1	300	Steel	5	0	No	Open
P-2	300	Steel	4	0	No	Open
P-4968	300	Steel	2	0	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4971	300	Steel	17	0	No	Open
P-4956	300	Steel	2	0	No	Open
P-4958	300	Steel	1	0	No	Open
P-4960	300	Steel	1	0	No	Open
P-4962	300	Steel	2	0	No	Open
P-4964	300	Steel	2	0	No	Open
P-4965	300	Steel	10	0	No	Open
P-4974	300	Steel	8	1.09	No	Open
P-4954a	300	Steel	6	1.08	No	Closed
P-4954b	300	Steel	4	1.08	No	Open
P-6580	300	Cast iron	133	1.36	No	Open
P-6584	300	Cast iron	58	1.49	No	Open
P-7115	300	Cast iron	211	0.63	No	Open
P-124	300	Cast iron	11	0.49	No	Open
P-157	300	AC	122	1.1	No	Open
P-158	300	AC	90	1.1	No	Open
P-163	300	AC	204	0	No	Open
P-164	300	AC	193	0	No	Open
P-165	300	Ductile Iron	120	0.27	No	Open
P-166	300	Ductile Iron	144	0.27	No	Open
P-218	300	Cast iron	187	1.63	No	Open
P-219	300	Cast iron	192	1.63	No	Open
P-229	300	PVC	274	0.34	No	Open
P-230	300	PVC	13	0.34	No	Open
P-241	300	AC	49	0.19	No	Open
P-242	300	AC	155	0.19	No	Open
P-277imp	300	PVC	211	0.77	No	Open
P-278imp	300	PVC	1	0.91	No	Open
P-7	305	Steel	4	0	No	Open
P-8	305	Steel	4	0	No	Open
P-142	350	AC	202	0	No	Open
P-236	350	Ductile Iron	250	0.73	No	Open
P-3300	350	AC	363	0.29	No	Open
P-3301	350	AC	492	0.36	No	Open
P-3302	350	AC	388	0.42	No	Open
P-3303	350	AC	564	0.54	No	Open
P-3304	350	AC	301	0.54	No	Open
P-3306	350	AC	54	0.3	No	Open
P-3307	350	AC	197	0.31	No	Open
P-3313	350	AC	839	0.14	No	Open
P-3932	350	AC	113	0.35	No	Open
P-3933	350	AC	89	0.48	No	Open
P-3934	350	AC	113	0.53	No	Open
P-3935	350	AC	110	0.59	No	Open
P-3936	350	AC	116	0.72	No	Open

Existing Conditions - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3937	350	AC	104	1.02	No	Open
P-3938	350	AC	88	1.07	No	Open
P-4321	350	AC	236	1.07	No	Open
P-4948	350	PVC	367	1.07	No	Open
P-4328	350	AC	229	1.07	No	Open
P-4323	350	AC	397	1.07	No	Open
P-4	387	Steel	10	0	No	Open
P-5	387	Steel	10	0	No	Open
P-2017	387	Steel	42	0	No	Open
P-168	387	Steel	10	0	No	Open
P-169	387	Steel	11	0	No	Open
P-3063	400	Ductile Iron	114	0.73	No	Open
P-4720	400	Ductile Iron	242	0.6	No	Open
P-3850	400	PVC	137	0.43	No	Open
P-7880	400	PVC	285	0.45	No	Open
P-7881	400	Steel	104	0.45	No	Open
P-7882	400	PVC	100	0.45	No	Open
P-237	400	Ductile Iron	210	0.56	No	Open
P-503	425	Ductile Iron	265	0.5	No	Open
P-504	425	Ductile Iron	359	0.49	No	Open
P-505	425	Ductile Iron	26	0.4	No	Open
P-2337	425	Ductile Iron	63	1.74	No	Open
P-2336	425	Ductile Iron	197	1.34	No	Open
P-2340	425	Ductile Iron	76	1.1	No	Open
P-2345	425	Ductile Iron	137	1.1	No	Open
P-3780	425	Ductile Iron	383	0.08	No	Open
P-155	425	Ductile Iron	127	1.45	No	Open
P-161	425	Ductile Iron	185	1.45	No	Open
P-162	425	Ductile Iron	148	1.45	No	Open
P-2019	438	Steel	80	1.92	No	Open
P-2016	438	PVC	34	0.77	No	Open
P-170	438	Steel	114	2.33	No	Open
P-176	438	Steel	30	1.92	No	Open
P-183	438	Steel	2	1.92	Yes	Open
P-184	438	Steel	1	1.92	No	Closed
P-2347	450	AC	66	0.98	No	Open
P-2350	450	AC	191	0.9	No	Open
P-3059	450	PVC	254	0.58	No	Open
P-3061	450	Steel	379	0.58	No	Open
P-3062	450	PVC	25	0.57	No	Open
P-3112	450	Ductile Iron	165	0.42	No	Open
P-3113	450	Ductile Iron	43	0.42	No	Open
P-3114	450	Ductile Iron	157	0.41	No	Open
P-3115	450	Ductile Iron	126	0.41	No	Open
P-3116	450	Ductile Iron	109	0.41	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3260	450	Ductile Iron	124	0.42	No	Open
P-9022	450	Ductile Iron	13	0.42	No	Open
P-4279	450	Ductile Iron	114	0.41	No	Open
P-4281	450	PVC	131	0.34	No	Open
P-3263	450	Ductile Iron	104	0.42	No	Open
P-203	450	PVC	11	0.58	No	Open
P-204	450	PVC	219	0.58	No	Open
P-138	474.9	HDPE	1,565	1.98	No	Open
P-186	474.9	HDPE	1,694	1.98	No	Open
P-187	474.9	HDPE	1	1.98	No	Open
P-2002	522	PVC	1,455	0	No	Open
P-136	531.9	Ductile Iron	338	1.58	No	Open
P-2011	591	Steel	52	0.9	Yes	Open
P-2009	591	Steel	119	0.9	No	Open
P-190	597	Steel	4,821	1.25	No	Open

Existing Conditions - Peak Hour Demands 1411-02
Node Table City of Port Alberni

Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-3	143.9	SOURCE	0	150	8.7
J-4	134.4	SOURCE	0	150	22.1
J-5	134.4	SOURCE	0	164	42.1
J-6	122.5	SOURCE	0	148.9	37.5
J-7	149.5	SOURCE	0	157.2	10.9
J-8	122.5	144	0	143.5	29.8
J-9	141.5	144res	0	143.7	3.1
J-11	141.5	158res	0	157.1	22.2
J-13	139.9	180	0.11	203.6	90.4
J-14	128.7	180	0.11	203.6	106.3
J-15	127.7	180	0.11	203.6	107.7
J-16	138.2	180	0.11	203.6	92.8
J-17	137	180	0.11	203.6	94.5
J-18	120.4	158.2	0.29	150.8	43.1
J-19	118.5	158.2	0.29	150.3	45.1
J-20	119.9	158.2	0.29	150.3	43.1
J-21	116.2	158.2	0.29	150	48
J-22	109.2	180	0.11	203.6	134
J-23	110.6	158.2	0.29	149.1	54.7
J-24	101	158.2	0.29	149.1	68.3
J-25	97.4	158.2	0.29	147	70.4
J-26	125.7	158.2	0.29	149.8	34.3
J-27	112	158.2	0.29	149.8	53.6
J-28	115.1	158.2	0.29	149.7	49.1
J-29	100.7	158.2	0.29	149.7	69.6
J-30	108.2	158.2	0.29	149.3	58.4
J-31	90.2	158.2	0.25	144.8	77.5
J-32	84.3	158.2	0.25	144.8	85.9
J-33	84.3	158.2	0.3	144.8	85.9
J-34	88	158.2	0.25	146.4	82.8
J-35	81.7	158.2	0.3	144.8	89.5
J-36	90.2	158.2	0.25	144.6	77.3
J-37	90	158.2	0.25	143.9	76.6
J-38	87.3	158.2	0.25	143.2	79.4
J-39	92.4	158.2	0.25	143.2	72.1
J-40	85.7	158.2	0.25	142.5	80.7
J-41	87.9	158.2	0.25	142.5	77.5
J-42	81.1	158.2	0.25	142.8	87.5
J-43	75	158.2	0.25	142.3	95.6
J-44	79.1	158.2	0.25	142	89.3
J-45	78.6	158.2	0.25	141.7	89.6
J-46	75.8	158.2	0.22	140.7	92.1
J-47	72.2	158.2	0.22	140.3	96.7
J-48	68.9	158.2	0.18	139.7	100.5

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-49	68.9	158.2	0.22	140	100.9
J-50	87.8	158.2	0.25	141.6	76.4
J-51	83.8	158.2	0.25	141.7	82.2
J-52	90.9	158.2	0.25	142.1	72.7
J-53	95.7	158.2	0.28	142.1	65.9
J-54	97.8	158.2	0.28	142.1	62.9
J-55	96.9	158.2	0.25	142.1	64.2
J-56	96.3	158.2	0.25	142.1	65
J-57	94.7	158.2	0.25	142.1	67.3
J-58	94.7	158.2	0.22	137.6	60.9
J-59	82.5	158.2	0.18	133.1	71.8
J-60	87.9	158.2	0.18	139.1	72.7
J-61	85.5	158.2	0.18	139	75.9
J-62	92.2	158.2	0.22	139.1	66.6
J-63	85.5	158.2	0.18	140	77.3
J-64	149.5	158res	0	157.1	10.8
J-65	77.2	158.2	0.25	144.8	96
J-71	141.5	180	0.11	203.6	88.1
J-72	141.5	158Res	0	157.1	22.2
J-100	124.1	144	0	143.1	26.9
J-101	99.8	144	0.23	142.8	61.1
J-102	99	144	0.23	142.7	62
J-103	103	144	0.23	142.6	56.2
J-104	84.4	144	0.2	141.9	81.7
J-105	101.9	144	0.2	142.4	57.5
J-106	84.5	144	0.16	141.3	80.5
J-107	84.8	144	0.23	142.8	82.3
J-108	108.5	180	0.11	203.6	134.9
J-109	109.2	144	0.23	141.1	45.2
J-110	103.3	144	0.23	140.3	52.5
J-111	86.1	144	0.24	139.6	76
J-112	82	144	0.25	139.6	81.8
J-113	101	144	0.23	140.1	55.5
J-114	88.9	144	0.23	139.7	72.2
J-115	111.5	144	0.23	142.6	44.2
J-200	84.8	122.1	0.28	121.1	51.5
J-201	84.3	122.1	0.28	121.1	52.2
J-202	79.6	122.1	0.28	121	58.7
J-203	76.6	122.1	0.28	120.9	62.9
J-204	78.3	122.1	0.28	120.9	60.4
J-205	68.3	122.1	0.28	120.9	74.6
J-206	66.3	122.1	0.28	120.8	77.4
J-207	62.2	122.1	0.28	120.8	83.2
J-208	53.1	122.1	0.28	120.8	96.1
J-209	55.2	122.1	0.25	120.8	93.1

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-210	41.3	122.1	0.24	120.8	112.8
J-211	48.9	122.1	0.24	120.7	102
J-212	41.8	122.1	0.24	120.7	111.9
J-213	52.6	122.1	0.92	120.6	96.5
J-214	58.7	122.1	0.29	120.8	88.1
J-215	60.1	122.1	0.29	120.8	86.2
J-216	62.4	122.1	0.29	120.8	82.9
J-217	61	122.1	0.29	120.7	84.8
J-218	72	122.1	0.29	120.9	69.4
J-219	77.4	122.1	0.3	121	61.8
J-220	79.4	122.1	0.3	121.1	59.2
J-221	83.9	144	0.23	139.2	78.6
J-222	86.1	122.1	0.28	140.4	77
J-223	75.9	122.1	0.31	121	64
J-224	82	122.1	0.31	121.3	55.7
J-225	89.2	122.1	0.29	121.7	46.2
J-226	88.9	122.1	0.3	121.9	46.9
J-227	84.2	122.1	0.29	121.4	52.8
J-228	83.6	122.1	0.33	121.2	53.3
J-229	78.3	122.1	0.33	121	60.6
J-230	68.4	122.1	0.31	120.7	74.3
J-231	69.2	122.1	0.31	120.8	73.2
J-232	64.5	122.1	0.29	120.7	79.8
J-233	63.8	122.1	0.29	120.7	80.7
J-234	62.7	122.1	0.29	120.5	82.1
J-235	57.2	122.1	0.29	120.5	89.9
J-236	60	122.1	0.29	120.6	86
J-237	52.6	122.1	0.29	120.6	96.6
J-238	45.5	122.1	0.29	120.5	106.6
J-239	45.5	122.1	0.29	120.5	106.6
J-240	49.4	122.1	0.25	119.4	99.4
J-241	50.9	122.1	0.25	119.5	97.3
J-242	59.1	122.1	0.25	119.9	86.4
J-243	64	122.1	0.28	119.9	79.4
J-244	68.2	122.1	0.31	120	73.5
J-245	66.7	122.1	0.31	120.6	76.5
J-246	81.7	122.1	0.29	120.6	55.1
J-247	75.2	122.1	0.29	119.5	62.8
J-248	76.7	122.1	0.29	119.1	60.2
J-249	77.2	122.1	0.25	119.1	59.5
J-250	81.1	122.1	0.25	119.1	54
J-251	63.2	122.1	0.25	118.6	78.7
J-252	65.9	122.1	0.25	118.6	74.8
J-253	66.8	122.1	0.25	118.6	73.5
J-254	63.9	122.1	0.25	118.4	77.4

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-255	75	122.1	0.33	119.2	62.7
J-256	81.7	122.1	0.33	119.9	54.2
J-257	80.2	122.1	0.33	119.9	56.3
J-258	73.9	122.1	0.33	118.8	63.8
J-259	63.2	122.1	0.25	118.1	77.9
J-260	63.2	122.1	0.25	118.1	77.9
J-261	51.2	122.1	0.17	118.2	95.1
J-262	58	122.1	0.17	118.3	85.6
J-263	61.8	122.1	0.25	117.6	79.2
J-264	44.3	122.1	0.17	113.8	98.7
J-265	72.7	122.1	0.33	118.4	64.8
J-266	72.9	122.1	0.31	119.8	66.5
J-267	65.5	122.1	0.25	117	73.1
J-268	71.4	122.1	0.33	117.5	65.4
J-269	54.2	122.1	0.17	115.7	87.3
J-270	39.6	122.1	0.17	113.6	105.1
J-271	68.6	122.1	0.33	119.4	72.1
J-272	64.5	122.1	0.28	119.4	77.9
J-273	73.6	122.1	0.33	118.4	63.7
J-274	74.5	122.1	0.28	118.2	62
J-275	72.1	122.1	0.28	118.5	65.9
J-276	68.5	122.1	0.28	118.9	71.5
J-277	62.2	122.1	0.22	118.9	80.5
J-278	74	122.1	0.22	118.2	62.7
J-279	70.3	122.1	0.22	115.6	64.3
J-280	61.5	122.1	0.22	115.3	76.3
J-281	65.9	122.1	0.24	116.1	71.3
J-282	48.5	122.1	0.2	115.7	95.3
J-283	50	122.1	0.29	120.5	100.1
J-284	54.5	122.1	0.2	113.9	84.3
J-285	54.5	122.1	0.2	113.8	84.2
J-286	48.5	122.1	0.2	112.9	91.5
J-287	50.7	122.1	0.2	114.1	90
J-288	46.3	122.1	0.2	114.8	97.2
J-289	56.9	122.1	0.22	116.9	85.2
J-290	49.4	122.1	0.25	118.9	98.6
J-291	45.5	86.1	0.8	82.5	52.4
J-292	50.4	86.1	0.69	82.7	45.8
J-293	79	122.1	0.28	120.9	59.4
J-294	61	122.1	0.25	117.6	80.3
J-295	45.5	122.1	0	118.9	104.1
J-296	109	144	0	140.7	44.9
J-297	97.5	158.2	0	137.6	56.9
J-298	104.5	158.2	0	137.6	47
J-299	97.6	158.2	0	138.1	57.5

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-300	41.3	86.1	0.76	83	59.2
J-300	94.8	158.2	0	138.3	61.7
J-301	45.5	86.1	0	82.5	52.5
J-301	87.1	158.2	0	138.6	73.1
J-302	34.1	86.1	0.76	83	69.4
J-302	77	122.2	0	118.1	58.4
J-303	38.4	86.1	0.63	85	66.2
J-303	77.1	122.2	0	118.6	58.9
J-304	48.3	86.1	0.63	86.1	53.7
J-304	87	122.2	0	118.9	45.3
J-305	36.1	86.1	0.63	85	69.4
J-305	87	122.2	0	118.9	45.2
J-306	27.3	86.1	0.63	85	81.9
J-306	66.2	122.2	0	111.7	64.6
J-307	36.9	86.1	0.63	120.8	119.1
J-307	9.6	65	0	58.2	68.9
J-308	28.6	86.1	0.63	82.7	76.7
J-308	11.5	65	0	58.2	66.2
J-309	24.3	86.1	0.63	82.6	82.8
J-309	13	65	0	58.1	64.1
J-310	27.6	86.1	0.63	82.5	78
J-310	178.8	SOURCE	0	182.7	5.6
J-311	18.9	86.1	0.63	82.5	90.2
J-311	163.8	SOURCE	0	173.8	14.2
J-312	12.8	86.1	0.63	82.4	98.9
J-312	2	65	0	58	79.4
J-313	5.2	86.1	0.63	82.5	109.7
J-314	14.2	86.1	0.63	82.4	96.9
J-314	41.3	100	0	97.9	80.3
J-315	6	86.1	0.63	82.3	108.3
J-315	65.2	122.2	0	111.7	66
J-316	5.2	86.1	0.63	82.3	109.4
J-316	44.1	86.2	0	82.9	55.1
J-317	41.8	122.1	0.78	82.5	57.7
J-317	68.8	122.1	0	117.9	69.7
J-318	45.7	86.1	0.78	82.5	52.2
J-319	44.8	86.1	0.92	82.5	53.5
J-320	42	86.1	0.92	82.5	57.4
J-321	41.4	86.1	0.92	82.5	58.3
J-321	123	144	0	142.5	27.7
J-322	39.9	86.1	0.78	82.5	60.4
J-322	85	122.1	0	120.9	51
J-323	30.2	86.1	0.78	82.5	74.3
J-323	85	158.2	0	142.5	81.7
J-324	40.6	86.1	0.78	82.5	59.4

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-325	32.7	86.1	0.63	82.5	70.6
J-325	119	144	0	141.7	32.2
J-326	36	86.1	0.63	82.5	66
J-326	96.5	144	0	142.8	65.7
J-327	40.8	86.1	0.78	82.5	59.1
J-327	39	86.1	0	82.5	61.8
J-328	42.5	86.1	0.75	82.4	56.7
J-328	54.5	122.2	0	110.5	79.5
J-329	42.4	86.1	0.67	82.4	56.8
J-330	39.9	86.1	0.67	82.4	60.3
J-330	141.8	SOURCE	0	147.3	7.8
J-331	43.5	86.1	0.8	82.5	55.3
J-331	141.8	SOURCE	0	147.1	7.5
J-332	45.5	86.1	0.8	82.5	52.4
J-332	140	SOURCE	0	143.9	5.5
J-333	50.4	86.1	0.69	82.7	45.8
J-333	141.8	SOURCE	0	157.2	21.9
J-334	48	86.1	0.69	82.6	49.1
J-334	143.6	SOURCE	0	157.2	19.3
J-335	31.2	86.1	0.76	83.8	74.6
J-335	141.5	SOURCE	0	157.1	22.2
J-336	14.2	86.1	0.63	82.6	97.1
J-337	5.2	86.1	0.63	82.4	109.6
J-337	134.4	SOURCE	0	164	42
J-338	35.9	86.1	0.67	82.3	65.9
J-338	142.3	SOURCE	0	147.3	7.1
J-339	25.4	86.1	0.69	82.3	80.7
J-339	22.5	65	0	57.7	50
J-340	9.9	86.1	0.62	82.3	102.7
J-340	15.9	65	0	57.6	59.1
J-341	6	86.1	0.62	82.3	108.3
J-341	19	65	0	57.3	54.4
J-342	4.3	86.1	0.62	82.3	110.7
J-342	10.9	65	0	58.1	67
J-343	4.6	86.1	0.62	82.3	110.2
J-344	4.3	86.1	0.56	82.3	110.7
J-345	4.3	86.1	0.56	82.3	110.7
J-346	3.7	86.1	0.56	82.3	111.5
J-347	17.8	86.1	0.62	82.3	91.5
J-347	59.5	122.2	0	110.2	71.9
J-348	25.2	86.1	0.62	82.3	81
J-348	62.5	122.2	0	110.3	67.9
J-349	41.3	86.1	0.67	82.3	58.3
J-349	48.9	122.2	0	111.1	88.2
J-350	46.8	86.1	0.69	82.4	50.5

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-350	55.4	122.2	0	111.1	79
J-351	46.9	86.1	0.69	82.4	50.4
J-351	88	173	0	172	119.2
J-352	48.5	86.1	0.62	85.5	52.6
J-352	88.8	173	0	172	118.1
J-353	48.3	86.1	0.69	113.9	93.1
J-353	91.5	173	0	172	114.2
J-354	44	86.1	0.69	82.8	55
J-354	91.5	173	0	172	114.2
J-355	53.5	86.1	0.69	83	41.9
J-355	134.2	180	0	203.6	98.5
J-356	45.2	86.1	0.62	84.1	55.3
J-356	135	158Res	0	152.9	25.4
J-357	38.9	86.1	0.62	83	62.6
J-357	137.9	173	0	172	48.3
J-358	33.7	86.1	0.62	82.3	69
J-359	33.6	86.1	0.62	82.3	69.2
J-360	40.5	86.1	0.56	82.4	59.4
J-360	17	65	0	58	58.2
J-361	42.3	86.1	0.56	82.3	56.7
J-361	17.1	65	0	58	58.1
J-362	50.7	86.1	0.62	82.2	44.8
J-362	17.2	65	0	58	57.9
J-363	33.9	86.1	0.56	82.2	68.6
J-363	5	65	0	58.2	75.5
J-364	34.7	86.1	0.56	82.2	67.4
J-364	10.2	65	0	58.2	68.2
J-365	32.7	86.1	0.56	82.2	70.2
J-365	18.8	65	0	58.2	56
J-366	28.7	86.1	0.48	82.2	75.9
J-366	37	100	0	97.9	86.4
J-367	20.2	86.1	0.48	82.2	88
J-367	3.5	65	0	61	81.6
J-368	31.7	86.1	0.56	82.2	71.7
J-368	18.9	65	0	61.1	60
J-369	26.2	86.1	0.48	82	79.2
J-369	17.5	65	51.48	57.2	56.4
J-370	30.8	86.1	0.56	82.3	73.1
J-371	25	86.1	0.56	82	80.9
J-371	62	122.2	0	110.2	68.4
J-372	18.9	86.1	0.48	81.5	88.9
J-372	5.9	65	0	60.7	77.8
J-373	18.9	86.1	0.48	81.6	89
J-373	21.6	<None>	0	57.8	51.3
J-374	40.6	86.1	0.63	82.5	59.4

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-374	12.5	65	0	58.1	64.8
J-375	4	86.1	0.56	82.2	110.9
J-375	22.1	65	0	57.8	50.6
J-376	3.3	86.1	0.67	81.9	111.5
J-376	46	122.1	0	120.7	106
J-377	8.5	86.1	0.4	81	103
J-377	74.8	<None>	0	112.8	54
J-378	22.6	86.1	0.48	81.8	84
J-378	75	<None>	0	130	78.1
J-379	49.4	86.1	0.56	82.2	46.6
J-380	3.3	86.1	0.67	81.9	111.5
J-381	13	86.1	0.56	82.2	98.2
J-382	24	86.1	0.56	82.1	82.5
J-383	18	86.1	0.63	81.9	90.7
J-384	51	86.1	0.88	120.8	99
J-400	3.9	65	0.57	62.5	83.2
J-401	3.9	65	0.34	62.4	83
J-402	5.7	65	0.41	62.3	80.3
J-403	5.1	65	0.34	62	80.8
J-404	5.1	65	0.34	62	80.7
J-405	4.8	65	0.34	62	81.2
J-406	4.8	65	0.57	62.1	81.3
J-407	3.1	65	0.57	61.7	83.2
J-408	3.1	65	0.57	61.7	83.2
J-409	4.2	65	0.57	61.6	81.4
J-410	5.6	65	0.57	61.3	79
J-411	14.9	65	0.57	61.2	65.7
J-412	15.8	65	0.34	61.2	64.4
J-413	23.5	65	0.34	61.1	53.4
J-414	30.5	65	0.34	61.1	43.5
J-415	21.6	65	0.57	61.1	56.1
J-416	30.9	65	0.34	61.1	42.9
J-417	20.4	65	0.57	61.1	57.9
J-418	8.5	65	0.34	62.7	76.9
J-419	22.3	65	0.8	61.1	55.1
J-420	13.6	65	0.8	61.1	67.5
J-421	5.5	65	0.8	61.2	79.1
J-422	3.9	65	0.8	61.3	81.5
J-423	3.3	65	0.8	61.3	82.3
J-424	3.6	65	0.91	61.2	81.7
J-425	3.6	65	0.91	61.2	81.7
J-427	11.4	65	0.91	61.2	70.7
J-428	14.9	65	0.91	61.2	65.7
J-429	18.4	65	0.91	61.1	60.7
J-430	25.8	65	0.91	61.1	50.2

Existing Conditions - Peak Hour Demands 1411-02

Node Table City of Port Alberni

Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-431	26.9	65	1	61.1	48.6
J-432	23.2	65	1	61.1	53.8
J-433	19.4	65	1	61.1	59.2
J-434	18.8	65	1	61.1	60.1
J-435	11.6	65	0.65	61.1	70.3
J-436	13.4	65	0.65	61.1	67.7
J-437	12.8	65	0.65	61.1	68.6
J-438	16.9	65	0.65	61.1	62.8
J-439	16.9	65	0.65	61.1	62.8
J-440	25.8	65	0.8	61.1	50.2
J-441	27.6	65	1	61.1	47.6
J-442	3.5	65	0.65	60.9	81.5
J-443	26.2	65	0.41	62.3	51.2
J-444	5.1	65	0.34	62	80.7
J-500	40.8	86.2	0.31	83	59.9
J-501	43	86.2	0.41	83	56.7
J-502	48	86.2	0.37	83	49.7
J-503	46.1	86.2	0.37	83	52.4
J-504	38.4	86.2	0.44	82.7	62.9
J-505	36.3	86.2	0.26	82.7	65.8
J-506	34.6	86.2	0.26	82.7	68.2
J-507	32	86.2	0.26	82.6	71.9
J-508	30.3	86.2	0.44	82.6	74.3
J-509	20.4	86.2	0.44	82.6	88.4
J-510	35.2	86.2	0.44	82.6	67.4
J-511	35.1	86.2	0.61	82.6	67.5
J-512	37.9	86.2	0.61	82.7	63.6
J-513	44	86.2	0.49	82.9	55.3
J-514	46.6	86.2	0.49	83	51.6
J-515	47.3	86.2	0.49	83	50.7
J-516	48.9	86.2	0.37	83.1	48.6
J-517	52.8	86.2	0.37	83.5	43.6
J-518	49.2	86.2	0.49	83.1	48.2
J-519	52.1	86.2	0.49	83.2	44.2
J-520	55.4	86.2	0.37	84.2	40.9
J-521	64.1	86.2	0	85.9	30.9
J-522	52.4	122.2	0.49	116.9	91.6
J-523	55	86.2	0.17	83.2	40.1
J-524	52.8	122.2	0.48	117	91.2
J-525	49.8	122.2	0.48	116.5	94.6
J-526	49.8	122.2	0.53	116.5	94.7
J-527	45.3	86.2	0.61	82.9	53.4
J-528	42.3	86.2	0.61	82.9	57.6
J-529	41.1	86.2	0.63	82.9	59.3
J-530	39.2	86.2	0.68	82.6	61.7

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-531	34.4	86.2	0.69	82.6	68.4
J-532	32.6	86.2	0.52	82.5	70.9
J-533	29.9	86.2	0.52	82.5	74.7
J-534	25.8	86.2	0.69	82.5	80.4
J-535	27.5	86.2	0.61	82.6	78.2
J-536	22.5	86.2	0.61	82.6	85.3
J-537	27.6	86.2	0.76	82.4	77.8
J-538	29.7	86.2	0.47	82.4	74.8
J-540	32	86.2	0.47	82.4	71.6
J-541	30.7	86.2	0.47	82.5	73.5
J-542	30.1	86.2	0.47	82.5	74.3
J-543	33.7	86.2	0.71	82.5	69.3
J-544	34.7	86.2	0.71	82.5	67.9
J-545	38.6	86.2	0.63	82.6	62.5
J-546	44.8	86.2	0.61	82.6	53.7
J-547	50.8	122.2	0.61	114.6	90.6
J-548	57.3	122.2	0.61	114.6	81.4
J-549	49.9	122.2	0.61	115.5	93.2
J-550	63.2	122.2	0.61	114.3	72.6
J-551	52.7	86.2	0.61	82.6	42.4
J-552	43.2	86.2	0.61	82.6	55.9
J-553	41.4	86.2	0.61	82.6	58.4
J-554	58.4	122.2	0.61	112.7	77.1
J-555	70.1	122.2	0.38	112.5	60.2
J-556	68.4	122.2	0.38	112.4	62.5
J-557	64.6	122.2	0.45	112.3	67.7
J-558	57.4	122.2	0.45	112.3	78
J-559	54.5	122.2	0.45	112.3	82.1
J-560	56.4	122.2	0.61	112.6	79.7
J-561	43.7	86.2	0.61	82.5	55.1
J-562	36.5	86.2	0.63	82.5	65.3
J-563	51.3	86.2	0.61	82.6	44.4
J-564	36.7	86.2	0.63	82.5	65.1
J-565	42.2	122.2	0.52	112.2	99.4
J-566	42.5	122.2	0.47	112.2	98.9
J-567	36.4	86.2	0.63	82.5	65.4
J-568	30.6	86.2	0.67	82.4	73.5
J-569	35.7	86.2	0.67	82.5	66.4
J-570	31.1	86.2	0.71	82.4	72.8
J-571	32.8	86.2	0.71	82.4	70.4
J-572	26.2	86.2	0.67	82.4	79.7
J-573	27.5	86.2	0.55	82.3	77.8
J-574	22.2	86.2	0.49	82.3	85.3
J-575	16.9	86.2	0.49	82.3	92.8
J-576	17.6	86.2	0.23	82.2	91.6

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-577	11.7	86.2	0.23	82.2	100
J-578	17.6	86.2	0.23	82.2	91.6
J-579	20.1	86.2	0.23	82.2	88.1
J-580	11.3	86.2	0.23	82.1	100.5
J-581	4.6	86.2	0.23	82.1	110
J-582	13.4	86.2	0.37	82	97.4
J-583	15.5	86.2	0.37	82	94.4
J-584	21.5	86.2	0.45	82.2	86.2
J-585	18.9	86.2	0.45	82.1	89.7
J-586	19.9	86.2	0.45	82	88.2
J-587	29	86.2	0.67	82.1	75.4
J-588	25.4	86.2	0.67	82.1	80.5
J-589	28	86.2	0.67	82.1	76.8
J-590	28	86.2	0.67	82.1	76.7
J-591	32.4	86.2	0.57	82	70.4
J-592	35.5	86.2	0.57	82	66
J-593	39.3	86.2	0.48	82	60.6
J-594	43.5	86.2	0.39	82	54.6
J-595	46.6	86.2	0.29	82	50.2
J-596	40	86.2	0.49	82	59.6
J-597	36.4	86.2	0.49	82	64.7
J-598	35.1	86.2	0.49	82	66.5
J-599	30.6	86.2	0.49	82	72.9
J-600	5.5	65	0.3	60.9	78.6
J-601	5.8	65	0.3	60.8	78
J-602	5.8	65	0.3	60.8	78
J-603	5.5	65	0.3	60.7	78.4
J-604	4.5	65	0.3	60.7	79.7
J-605	4.2	65	0.3	60.7	80.1
J-606	4	65	0.3	60.6	80.4
J-607	4.5	65	0.3	60.6	79.6
J-608	4.5	65	0.54	60.4	79.4
J-609	5.9	65	0.48	60.8	77.9
J-610	5.3	65	0.3	60.7	78.7
J-611	2.9	65	0.3	60.7	82
J-612	5.6	65	0.3	60.6	78.1
J-613	5.5	65	0.3	60.6	78.3
J-614	3.7	65	0.54	60.4	80.5
J-615	4.3	65	0.6	60.4	79.6
J-616	6.5	65	0.3	60.7	76.9
J-617	7.5	65	0.3	60.8	75.6
J-618	7.3	65	0.3	60.8	75.9
J-619	7.6	65	0.3	60.8	75.5
J-620	6	65	0.51	60.4	77.2
J-621	8.7	65	0.3	60.8	74

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-622	8.2	65	0.3	60.9	74.8
J-623	8.6	65	0.3	60.9	74.2
J-624	6.7	65	0.51	60.4	76.2
J-625	9.5	65	0.3	60.9	72.9
J-626	8.7	65	0.3	61	74.2
J-627	8.6	65	0.3	61	74.3
J-628	20.3	65	0.3	61.2	58.1
J-629	17.7	65	0.3	61.3	61.9
J-630	9.6	65	0.3	61	73
J-631	10.3	65	0.51	60.4	71.1
J-632	11	65	0.7	60.3	70
J-633	13	65	0.51	60.2	67
J-634	16	65	0.55	60.2	62.7
J-635	19	65	0.68	60.2	58.4
J-636	14.2	65	0.7	60.2	65.2
J-637	13.4	65	0.7	60.2	66.4
J-638	21.3	65	0.68	60	54.9
J-639	17	65	0.7	60.1	61.2
J-640	13.6	65	0.7	60.1	66
J-641	17.1	65	0.7	60	60.9
J-642	17.4	65	0.7	60	60.5
J-643	27.2	65	0.68	60	46.6
J-644	18.5	65	0.7	59.9	58.8
J-645	25.2	65	0.68	59.9	49.2
J-646	11.4	65	0.7	60	69
J-647	9.3	65	0.7	59.9	71.9
J-648	6.6	65	0.7	59.9	75.7
J-649	3.7	65	0.75	59.9	79.8
J-650	3.9	65	0.79	59.8	79.3
J-651	2.6	65	0.79	59.7	81.1
J-652	2.6	65	0.79	59.8	81.1
J-653	7.6	65	0.7	60.1	74.5
J-654	7.6	65	0.7	60.1	74.5
J-655	5	65	0.7	60.1	78.2
J-656	2.8	65	0.79	59.8	80.8
J-657	4.1	65	0.79	59.4	78.5
J-658	4.4	65	0.75	59.4	78.1
J-659	4.4	65	0.75	59.5	78.2
J-660	3.9	65	0.75	59.8	79.3
J-661	3.9	65	0.7	59.8	79.3
J-662	10	65	0.7	59.8	70.7
J-663	13.3	65	0.7	59.9	66.1
J-664	14.7	65	0.7	59.9	64.1
J-665	20	65	0.7	59.9	56.6
J-666	28.2	65	0.68	59.9	45

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-667	4.7	65	0.7	59	77.1
J-668	6.9	65	0.75	59	74
J-669	13.2	65	0.75	58.6	64.5
J-670	18.4	65	0.7	58.6	57.1
J-671	9	65	0.79	58.5	70.2
J-672	6.2	65	0.79	59	75
J-673	4	65	0.79	59.2	78.4
J-674	8	65	0.79	58.4	71.5
J-675	4.9	65	0.79	58.2	75.7
J-676	2.6	65	0.79	59.4	80.6
J-677	3.9	65	0.79	59.4	78.7
J-678	3.5	65	0.48	59.1	78.9
J-679	2.2	65	0.79	59.1	80.8
J-680	1.2	65	0.79	59.1	82.2
J-681	2.6	65	0.79	59.2	80.3
J-682	2.3	65	0.79	59.1	80.6
J-683	3.1	65	0.79	59	79.3
J-684	3.8	65	0.48	59	78.3
J-685	2.8	65	0.79	58.9	79.7
J-686	4.3	65	0.79	58.9	77.5
J-687	2.8	65	0.79	58.9	79.7
J-688	4.2	65	0.48	58.9	77.7
J-689	4.8	65	0.79	58.9	76.8
J-690	7.8	65	0.48	58.9	72.5
J-691	9.3	65	0.48	58.6	70
J-692	3.5	65	0.48	58.5	78
J-693	6.2	65	0.79	58.7	74.5
J-694	3	65	0.79	60	80.9
J-695	8.3	65	0.48	60.8	74.5
J-696	7.3	65	0.3	60.8	75.9
J-697	6	65	0.3	60.8	77.8
J-698	15	65	0.7	59.9	63.7
J-699	20	65	0.7	59.9	56.6
J-700	24.4	65res	0	61.6	52.7
J-701	24.4	100	0.14	97.9	104.3
J-702	25.6	100	0.14	97.9	102.6
J-703	29.2	100	0.14	97.9	97.5
J-704	33.7	100	0.14	97.9	91.1
J-705	32.6	100	0.14	97.9	92.6
J-706	38	100	0.14	97.9	85
J-708	38.6	100	0.14	97.9	84.1
J-709	34.8	100	0.14	97.9	89.5
J-710	44.2	100	0.24	97.9	76.2
J-711	52.8	65res	0	64	15.9
J-712	53.1	122.2	0.24	110.3	81.2

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-713	53.1	122.2	0.24	110.3	81.2
J-714	62.7	122.2	0.18	110.2	67.4
J-715	57.5	122.2	0.18	110.1	74.7
J-716	55.4	122.2	0.24	110.2	77.8
J-717	56.3	122.2	0.24	110.1	76.4
J-718	55.3	122.2	0.24	110.1	77.8
J-719	55.1	122.2	0.29	110.1	78
J-720	51.1	122.2	0.29	110	83.7
J-721	49.7	122.2	0.39	110	85.6
J-722	50.3	122.2	0.39	110	84.7
J-723	47	122.2	0.39	110	89.4
J-724	46.7	122.2	0.39	110	89.8
J-725	46.3	122.2	0.34	110	90.4
J-726	45.1	122.2	0.31	110	92.2
J-727	44.5	100	0.29	97.9	75.7
J-728	44.3	100	0.29	97.9	76
J-729	44.3	100	0.29	97.9	76
J-730	44.3	100	0.29	97.9	76
J-731	49.7	100	0.29	97.9	68.4
J-732	50.3	100	0.29	97.9	67.5
J-733	49.6	122.2	0.34	110	85.8
J-734	47.2	122.2	0.33	110	89.2
J-735	28.3	100	0.29	97.9	98.7
J-736	31.9	100	0.29	97.9	93.6
J-737	29.8	100	0.29	97.9	96.6
J-738	31.4	100	0.29	97.9	94.4
J-739	30.9	100	0.29	97.9	95.1
J-740	33.9	100	0.29	97.9	90.9
J-741	40.8	100	0.29	97.9	81.1
J-742	45.1	100	0.29	98	75.1
J-743	39.6	100	0.29	97.9	82.7
J-744	37	100	0.29	97.9	86.4
J-745	62.7	122.2	0.18	110.2	67.4
J-746	47.4	122.2	0.39	110	88.8
J-747	48.5	122.2	0.39	110	87.3
J-748	50.8	122.2	0.39	110	84
J-749	49	122.2	0.39	110	86.6
J-750	51	122.2	0.39	110	83.7
J-751	53.2	122.2	0.39	110	80.6
J-752	56.4	122.2	0.39	110	76.1
J-753	56.5	122.2	0.39	110	75.9
J-754	51.2	122.2	0.39	110	83.4
J-755	53.4	122.2	0.39	110	80.3
J-756	61	122.2	0.39	110	69.5
J-757	58	122.2	0.39	110	73.8

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-758	55.3	122.2	0.39	110	77.6
J-759	53.8	122.2	0.39	110	79.8
J-760	53.2	122.2	0.39	110	80.6
J-761	52.3	122.2	0.39	110	81.9
J-762	59.1	122.2	0.39	110	72.3
J-763	57.2	122.2	0.39	110	75
J-764	55.9	122.2	0.39	110	76.8
J-765	56.6	122.2	0.29	110	75.9
J-766	61.5	122.2	0.29	110.1	68.9
J-767	72	122.2	0.29	110.1	54
J-768	64.3	122.2	0.39	110	64.9
J-769	62.2	122.2	0.39	110	67.9
J-770	62.4	122.2	0.39	110	67.6
J-771	63.8	122.2	0.39	110	65.6
J-772	63.5	122.2	0.39	110	66
J-773	62.6	122.2	0.29	110.2	67.5
J-774	62.6	122.2	0.29	110.2	67.5
J-775	62.1	122.2	0.29	110.1	68.2
J-776	58.2	122.2	0.18	110.1	73.7
J-777	61.8	122.2	0.18	110.2	68.6
J-778	53.7	122.2	0.18	110.4	80.4
J-779	55.5	122.2	0.18	110.5	78.1
J-780	40.7	65res	0	62.2	30.6
J-781	33.9	100	0.29	97.9	90.9
J-782	55.1	122.2	0.29	110.1	78
J-783	55.2	122.2	0.24	110.1	77.9
J-784	56.3	122.2	0.24	110.1	76.4
J-785	40.6	100	0.29	97.9	81.3
J-786	62	122.2	0.18	110.1	68.3
J-787	62	122.2	0.18	110	68.2
J-788	62.2	122.2	0.39	110	67.9
J-789	33.3	100	0.14	97.9	91.6
J-790	40	100	0.29	97.9	82.1
J-791	63	122.2	0.18	110.3	67.1
J-792	40.7	100	0.21	97.9	81.1
J-793	45.1	100	0.29	97.9	74.9
J-794	62.6	122.2	0.29	110.1	67.5
J-795	42.9	100	0.29	97.9	78
J-796	11.5	65	0.36	58.1	66.1
J-797	5.1	65	0.48	58.2	75.3
J-798	14	65	0.79	58.1	62.7
J-799	62.7	122.2	0.18	110.2	67.4
J-800	4.6	65	0.36	58.6	76.6
J-801	2.6	65	0.36	58.3	79.1
J-802	10.8	65	0.36	58.2	67.2

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-803	11	65	0.36	58.1	66.8
J-804	4.9	65	0.53	58.1	75.6
J-805	4.4	65	0.53	58.4	76.6
J-806	3.8	65	0.53	58.1	77.1
J-807	2.6	65	0.53	58.1	78.8
J-808	2.8	65	0.53	58.1	78.5
J-809	3.1	65	0.53	58	78
J-810	3.6	65	0.53	58	77.3
J-811	3.3	65	0.53	58	77.7
J-812	2.9	65	0.53	58.1	78.3
J-813	3	65	0.53	58.1	78.2
J-814	4.4	65	0.53	58.1	76.2
J-815	10.1	65	0.53	58	68
J-816	5.1	65	0.53	58	75.1
J-817	17.2	65	0.53	58	57.9
J-818	15.5	65	0.53	58	60.3
J-819	4.5	65	0.53	58.2	76.2
J-820	4.7	65	0.53	58.1	75.8
J-821	14.1	65	0.53	57.9	62.1
J-822	14	65	0.53	57.9	62.2
J-823	5.1	65	0.53	58	75
J-824	15.7	65	0.53	57.8	59.8
J-825	18.2	65	0.53	57.8	56.3
J-826	18.9	65	0.53	57.8	55.3
J-827	17.4	65	0.53	57.8	57.4
J-828	19.5	65	0.53	57.8	54.4
J-829	8.6	65	0.53	57.8	69.8
J-830	20.2	65	0.53	57.8	53.4
J-831	4.7	65	0.53	58.1	75.8
J-832	20.2	65	0.53	57.9	53.5
J-833	62.7	122.2	0.18	110.2	67.4
J-834	15	65	0.53	57.8	60.8
J-835	15	65	0.53	57.8	60.8
J-836	16	65	0.53	57.8	59.4
J-837	7	65	0.18	58.1	72.5
J-838	17	65	0.53	57.8	57.9
J-839	17	65	0.53	57.8	57.9
J-840	7	65	0.18	58.1	72.5
J-841	17	65	0.53	57.8	57.9
J-842	17	65	0.53	57.8	57.9
J-843	18	65	0.53	57.8	56.5
J-844	12	65	0.18	58	65.3
J-845	19	65	0.53	57.8	55.1
J-846	19	65	0.53	57.8	55.1
J-847	19	65	0.53	57.8	55.1

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-848	10	65	0.53	57.8	67.8
J-849	10	65	0.53	57.8	67.8
J-850	5	65	0.53	57.8	74.9
J-851	5	65	0.53	57.8	74.9
J-852	19	65	0.53	58	55.4
J-853	8	65	0.53	58	71
J-854	7	65	0.53	58	72.5
J-855	18	65	0.53	58	56.8
J-856	11	65	0.53	58	66.7
J-857	2	65	0.53	57.9	79.3
J-858	4.4	65	0.53	58.1	76.2
J-859	5.1	65	0.53	58	75
J-861	13	65	0.36	58	63.9
J-862	12	65	0.53	58	65.3
J-863	13	65	0.53	58	63.9
J-864	50	65res	0	63.4	19
J-865	50	122.2	0.31	110.3	85.6
J-866	62	122.2	0	110	68.2
J-867	62.6	122.2	0	110.1	67.5
J-868	60	122.2	0	110.1	71.2
J-869	60	122.2	0	110.1	71.2
J-870	61	122.2	0	110.1	69.7
J-900	82.5	158.1	0.28	133	71.7
J-901	86	158.1	0.28	130.6	63.3
J-902	72.4	158.1	0.33	130.3	82.1
J-903	74.5	122.2	0.18	112.2	53.6
J-904	68.2	122.2	0.18	112	62.1
J-905	53.1	122.2	0.18	111.7	83.2
J-906	86	122.2	0.23	119.4	47.5
J-908	72.7	122.2	0.18	112.3	56.2
J-909	68.7	122.2	0.18	112.3	61.9
J-910	60	122.2	0.18	112.3	74.3
J-911	74.7	122.2	0.18	112.3	53.4
J-912	64.6	122.2	0.28	112.3	67.7
J-913	84.6	122.2	0.23	118.8	48.5
J-914	82.8	122.2	0.23	118	50
J-915	72	122.2	0.23	117.4	64.5
J-916	64.1	122.2	0.23	117.2	75.3
J-917	72.9	122.2	0.23	117.4	63.2
J-918	78.6	122.2	0.23	117.5	55.2
J-919	83.9	122.2	0.23	117.6	47.8
J-920	76.2	122.2	0.23	117.5	58.7
J-921	58.8	122.2	0.23	117.2	82.9
J-922	76.2	122.2	0.23	117.5	58.6
J-923	76.7	122.2	0.23	117.4	57.8

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-924	67	122.2	0.23	117	71
J-926	82.8	86res	0	86.3	5
J-927	86.8	122.2	0.23	118.9	45.6
J-928	67.4	122.2	0.18	111.7	62.8
J-929	86	122.2	0	118.9	46.7
J-930	55	122.2	0.18	111.1	79.6
J-931	59.7	122.2	0.18	111.3	73.3
J-932	63	122.2	0.18	111	68.1
J-933	63	122.2	0.18	110.8	67.9
J-934	52	86.2	0.29	81.9	42.5
J-935	78	122.2	0.23	117.5	56.1
J-936	77.5	122.2	0.23	117.5	56.8
J-937	76	122.2	0.23	117.6	59
J-938	76	122.2	0.23	117.7	59.2
J-939	76	158.1	0.28	130.4	77.3
J-940	76	158.1	0.28	130.5	77.3
J-941	75.4	158.1	0.28	130.4	78.1
J-942	75.4	122.2	0.23	117.6	59.9
J-943	75.8	122.2	0.23	117.5	59.2
J-944	76	122.2	0.28	130.4	77.3
J-945	75.5	122.2	0.23	117.5	59.7
J-946	75.5	158.1	0.28	130.3	77.9
J-947	75.5	158.1	0.28	130.3	77.9
J-948	76.3	122.2	0.23	117.5	58.5
J-949	79.4	122.2	0.23	117.5	54.1
J-950	78.2	122.2	0.23	117.5	55.8
J-951	76	122.2	0.23	117.5	59
J-952	55.5	122.2	0.18	110.6	78.3
J-953	86	86res	0	87.5	2.1
J-954	70	158.1	0.34	130.3	85.6
J-960	86	158.1	0.28	130.5	63.2
J-966	55.5	122.2	0.18	110.6	78.3
J-967	53.1	158.1	0.28	130.4	109.7
J-968	86	122.2	0.23	119.3	47.3
J-970	75	158.1	0.22	130	78.1
J-971	80	158.1	0.23	130.1	71.1
J-972	80	158.1	0.23	130.1	71.1
J-973	80	158.1	0.23	130.2	71.3
J-974	80	158.1	0.23	130.1	71.1
J-975	80	158.1	0.23	130.1	71.1
J-976	80	158.1	0.23	130.1	71.1
J-977	80	158.1	0.23	130.1	71.1
J-978	80	158.1	0.23	130.1	71.1
J-980	75	122.2	0.18	112.4	53
J-981	75	158.1	0.22	130	78.1

Existing Conditions - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-985	83	86res	0	86.5	5
J-1200	48.3	122.1	0.2	117.1	97.7
J-1201	55.1	122.1	0.2	117.6	88.7
J-1202	62.2	122.1	0.2	117.9	79
J-1203	75.3	122.1	0.2	118.4	61.2
J-1204	82.5	122.1	0.2	119.2	52.1
J-1205	84.5	122.1	0.2	119.5	49.7
J-1206	62.9	122.1	0.2	117.8	78
J-1207	62.1	122.1	0.2	117.8	79.1
J-1208	68.7	122.1	0.2	117.8	69.7
J-1209	66.8	122.1	0.2	117.8	72.4
J-1400	25	86.2	0.49	82	80.8
J-1401	17	86.2	0.49	82	92.2
J-1402	29.8	86.2	0.49	82	74
J-1403	29.6	86.2	0.49	82	74.3
J-1404	33.1	86.2	0.49	82	69.3
J-1405	36.2	86.2	0.49	82	64.9
J-1406	38.3	86.2	0.49	81.9	62
J-1407	47.2	86.2	0.29	81.9	49.3
J-1408	39.7	86.2	0.49	81.9	60
J-1409	38.4	86.2	0.49	81.9	61.8
J-1410	38.3	86.2	0.49	81.9	62
J-1411	33.7	86.2	0.49	82	68.5
J-1412	44	86.2	0.49	81.9	53.9
J-1413	45.3	86.2	0.49	81.9	52
J-1414	25	86.2	0.46	82	80.9
J-1415	46.1	86.2	0	83	52.4
J-1416	44.3	122.1	0.17	113.4	98.2
J-1417	46.7	86.2	0.29	82	50
J-1418	23	86.2	0.45	82	83.8
J-1419	33	86.2	0.67	82	69.6
J-1420	48	122.2	0.3	112.2	91.1
J-1421	61	122.2	0.18	111.9	72.2
J-1422	61	122.2	0.61	113.4	74.3
J-1423	61	122.2	0.61	113.1	73.9
J-1424	58	122.2	0.61	113.1	78.2
J-1425	55	86.2	0.29	82	38.3
J-1426	41.1	86.2	0.63	82.8	59.2
J-1427	41.1	86.2	0.67	82.8	59.2
J-1428	55	122.2	0.18	111.1	79.6
J-1429	8.3	86.2	0.37	82	104.6
J-1430	27.5	122.1	0	112.5	120.6
J-1431	31.6	122.1	0	111.9	114.1
J-1432	40.8	122.1	0	111.2	100
J-1500	139.9	158res	0	155	21.4

Existing Conditions - Peak Hour Demands 1411-02

Node Table City of Port Alberni

Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-1501	139.9	180	0	203.6	90.4
J-1947	86	173	0.07	172	122
J-1948	83.4	158.1	0.28	130.5	66.9
J-1949	112.1	173	0.07	172	85
J-1950	86	158.1	0.28	130.5	63.2
J-1956	110	173	0.07	172	88
J-1957	115.4	173	0.07	172	80.3
J-1958	115	173	0.07	172	80.9
J-1959	119.9	173	0.07	172	73.9
J-1960	117.3	173	0.07	172	77.6
J-1961	124.2	173	0.07	172	67.8
J-1962	119.7	173	0.07	172	74.2
J-1963	131.3	173	0.07	172	57.7
J-1964	128	173	0.07	172	62.4
J-1965	164	180res	0	172	11.3
J-1967	117.3	173	0	172	77.6
J-1968	119.7	173	0	172	74.2
J-4950	67.2	122.2	0	110	60.9
J-4951	67.2	122.2	0	110	60.9
J-4952	67.2	122.2	0	110	60.9
J-4953	67.2	122.2	0	110	60.9
J-4954	67.2	122.2	0	110	60.9
J-4955	67.2	122.2	0	110	60.9
J-4956	67.2	122.2	0	110	60.9
J-4957	67.2	122.2	0	110	60.9
J-5000	42.2	86.2	0	82.5	57.2
J-5001	43.7	122.2	0	112.7	97.9
J-5002	51.3	122.2	0	112.7	87.1
J-5003	52.7	122.2	0	114.2	87.4
J-5004	44.8	122.2	0	114.6	99.1
J-5005	49.8	86.2	0	82.9	47
J-Johnston12	60	65res	0	64.9	6.9

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-818	65	69.0	20	42	J-339	P-4972	5.3
J-384	122.2	73.5	20	23	J-383	P-3104	4.4
J-383	122.2	73.8	20	23	J-384	P-3104	4.4
J-798	65	74.7	20	29	J-309	P-4972	5.3
J-850	65	75.9	20	38	J-830	P-4972	5.3
J-309	65	76.0	20	26	J-798	P-4972	5.3
J-1413	86.2	76.7	20	29	J-521	P-2001	4.4
J-1209	122.1	77.0	20	45	J-401	P-153	5.8
J-250	122.1	78.4	20	44	J-401	P-4972	5.3
J-523	86.2	79.7	20	28	J-521	P-4973	5.3
J-825	65	80.3	20	40	J-339	P-4972	5.3
J-643	65	80.7	20	30	J-638	P-4972	5.3
J-1208	122.1	80.8	20	45	J-401	P-153	6.0
J-666	65	81.2	20	30	J-645	P-4972	5.3
J-839	65	82.7	20	39	J-830	P-4972	5.3
J-816	65	83.1	20	40	J-339	P-4972	5.3
J-945	122.2	83.1	20	33	J-383	P-3105	4.7
J-551	86.2	83.1	20	23	J-563	P-4973	4.5
J-365	65	83.9	20	41	J-666	P-4972	5.3
J-292	86.1	84.2	20	38	J-355	P-4972	5.3
J-337	86.1	84.7	20	41	J-355	P-4972	5.3
J-374	65	85.1	20	18	J-798	P-4972	5.3
J-563	86.2	87.7	20	19	J-551	P-4973	4.4
J-855	65	87.9	20	39	J-339	P-4972	5.3
J-755	122.2	88.3	20	47	J-305	P-4710	5.1
J-638	65	88.8	20	18	J-643	P-4973	5.3
J-441	65	89.0	20	40	J-431	P-4973	5.3
J-851	65	89.9	20	34	J-830	P-4972	5.3
J-645	65	90.3	20	21	J-666	P-4972	5.3
J-112	144	91.1	20	29	J-100	P-4972	5.3
J-978	158.1	92.5	20	56	J-977	P-4972	5.3
J-346	86.1	93.5	20	41	J-355	0 P-21	5.4
J-670	65	93.9	20	40	J-666	P-3296	5.3
J-379	86.1	95.3	20	26	J-362	P-4972	5.3
J-813	65	96.4	20	38	J-339	P-3550	5.5
J-362	86.1	98.0	20	26	J-379	P-4972	5.3
J-807	65	98.5	20	38	J-339	P-3591	5.6
J-656	65	99.3	20	39	J-666	P-3931	5.7
J-16	180	99.7	20	24	J-71	P-4972	5.3
J-603	65	100.0	20	42	J-666	P-506	5.7
J-416	65	100.3	20	26	J-414	P-6910	5.7
J-1412	86.2	101.5	20	18	J-1413	P-2000	3.3

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-948	122.2	102.5	20	12	J-383	P-3104	6.1
J-1203	122.1	103.9	20	28	J-1204	P-153	7.4
J-754	122.2	104.8	20	41	J-753	P-4710	6.0
J-561	86.2	105.8	20	24	J-5000	P-4973	3.9
J-20	158.2	106.3	20	37	J-19	P-2540	6.0
J-843	65	106.5	20	33	J-830	P-4972	5.3
J-748	122.2	109.0	20	46	J-305	P-4691	6.2
J-5000	86.2	109.4	20	20	J-561	P-4973	3.8
J-115	144	110.5	20	29	J-100	P-4972	5.3
J-847	65	110.7	20	21	J-830	P-4972	5.3
J-1204	122.1	112.2	20	22	J-1205	P-153	7.8
J-830	65	113.1	20	22	J-847	P-4972	5.3
J-308	65	113.4	20	17	J-798	P-4972	5.3
J-5004	122.2	113.7	20	45	J-305	P-7520	6.4
J-414	65	113.8	20	19	J-416	P-4972	5.3
J-1205	122.1	114.8	20	23	J-1204	P-153	8.0
J-698	65	115.0	20	31	J-666	P-9021	6.5
J-789	100	115.8	20	59	J-706	P-3856	6.6
J-849	65	116.1	20	24	J-830	P-4972	5.3
J-361	65	116.6	20	32	J-339	P-4972	5.3
J-1420	122.2	116.7	20	29	J-566	P-3051	4.9
J-24	158.2	117.3	20	44	J-26	P-5490	6.7
J-364	65	117.8	20	8	J-365	P-4972	5.3
J-827	65	118.3	20	24	J-406	P-4972	5.3
J-848	65	119.5	20	20	J-830	P-4972	5.3
J-312	86.1	120.1	20	31	J-337	6 P-90	6.9
J-943	122.2	120.3	20	11	J-383	P-7123	5.2
J-305	86.1	120.4	20	33	J-306	P-4972	5.3
J-919	122.2	120.6	20	37	J-918	P-7123	5.1
J-306	86.1	120.6	20	20	J-305	P-4972	5.3
J-277	122.1	121.4	20	44	J-401	P-6075	6.9
J-536	86.2	121.6	20	28	J-521	P-7160	6.9
J-977	158.1	121.9	20	20	J-978	P-4972	5.3
J-976	158.1	122.0	20	30	J-978	P-4972	5.3
J-951	122.2	122.0	20	14	J-383	P-7123	5.3
J-406	65	122.9	20	20	J-827	P-4972	5.3
J-566	122.2	122.9	20	12	J-1420	P-3051	5.2
J-950	122.2	122.9	20	24	J-383	P-7123	5.3
J-279	122.1	122.9	20	44	J-401	P-4972	5.3
J-302	122.2	124.0	20	35	J-383	P-7123	5.6
J-829	65	124.4	20	21	J-830	P-4972	5.3
J-949	122.2	124.4	20	20	J-383	P-7123	5.3
J-709	100	124.8	20	25	J-366	P-235	7.1

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-753	122.2	125.3	20	24	J-755	P-4710	7.1
J-667	65	125.6	20	37	J-666	P-4072	7.1
J-1207	122.1	126.9	20	11	J-1208	P-153	7.7
J-17	180	127.3	20	24	J-71	P-4972	5.3
J-353	86.1	128.3	20	44	J-355	P-4972	5.3
J-295	122.1	128.4	20	43	J-401	P-109	7.3
J-853	65	128.9	20	30	J-811	P-4972	5.3
J-509	86.2	129.3	20	28	J-521	P-7010	7.3
J-366	100	130.3	20	23	J-709	P-234	7.4
J-689	65	130.3	20	36	J-686	P-4972	5.3
J-817	65	130.4	20	22	J-818	P-4972	5.3
J-842	65	130.9	20	25	J-841	P-4972	5.3
J-942	122.2	131.1	20	15	J-383	P-7123	5.7
J-434	65	131.3	20	34	J-441	P-159	5.8
J-804	65	131.5	20	33	J-339	P-4973	5.3
J-505	86.2	131.8	20	28	J-521	P-4973	4.1
J-1407	86.2	132.2	20	19	J-934	P-2474	3.6
J-440	65	132.3	20	21	J-430	P-159	5.8
J-307	65	132.6	20	20	J-798	P-4972	5.3
J-298	158.2	132.7	20	43	J-26	P-6583	7.5
J-430	65	132.8	20	21	J-440	P-159	5.8
J-828	65	133.1	20	20	J-830	P-4972	5.2
J-821	65	133.2	20	19	J-406	P-4972	5.2
J-686	65	133.2	20	34	J-689	P-4972	5.3
J-413	65	133.3	20	20	J-416	P-112	5.7
J-1417	86.2	133.6	20	13	J-934	P-7985	4.3
J-841	65	133.6	20	22	J-843	P-4972	5.2
J-625	65	133.9	20	40	J-666	P-3884	5.5
J-662	65	134.0	20	32	J-666	P-4140	7.6
J-975	158.1	134.3	20	40	J-978	P-4972	5.3
J-938	122.2	134.5	20	22	J-383	P-7123	5.9
J-974	158.1	134.6	20	39	J-976	P-4972	5.3
J-581	86.2	135.0	20	28	J-521	P-1112	7.7
J-846	65	135.0	20	18	J-830	P-4972	5.2
J-595	86.2	135.1	20	13	J-934	P-7985	4.5
J-628	65	135.8	20	40	J-666	P-3855	5.4
J-65	158.2	136.7	20	43	J-26	P-2580	7.7
J-811	65	137.0	20	19	J-853	P-4972	5.1
J-845	65	137.2	20	20	J-830	P-4972	5.1
J-315	122.2	138.1	20	40	J-306	P-147	7.8
J-917	122.2	138.6	20	27	J-919	P-7123	5.8
J-1202	122.1	138.7	20	12	J-1203	P-153	7.9
J-249	122.1	139.1	20	15	J-250	P-6221	7.9

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-355	86.1	139.2	20	36	J-292	P-4972	5.3
J-589	86.2	140.3	20	28	J-521	P-1954	8.0
J-635	65	140.5	20	30	J-634	P-4972	5.2
J-810	65	140.5	25	5	J-855	P-112	5.1
J-5005	86.2	140.6	20	27	J-521	P-7390	4.5
J-812	65	140.8	20	20	J-813	P-159	5.1
J-391	117	140.8	20	27	J-357	P-4972	5.3
J-399	180	140.9	20	24	J-71	P-4972	5.3
J-826	65	140.9	20	22	J-830	P-112	5.1
J-435	65	141.1	20	28	J-434	P-159	5.9
J-1206	122.1	141.2	20	12	J-1208	P-153	8.1
J-634	65	141.7	20	26	J-635	P-4972	5.1
J-936	122.2	142.3	20	17	J-383	P-7123	6.1
J-937	122.2	143.2	20	14	J-383	P-7123	6.2
J-838	65	143.6	20	20	J-839	P-112	5.1
J-922	122.2	144.3	20	29	J-383	P-7123	6.1
J-21	158.2	145.4	20	27	J-20	P-4972	5.3
J-57	158.2	145.6	20	41	J-26	P-6090	8.3
J-365	86.1	145.7	20	17	J-379	P-4973	5.3
J-918	122.2	146.6	20	19	J-919	P-7123	6.1
J-318	86.1	146.9	20	40	J-355	P-4972	5.3
J-565	122.2	147.4	20	20	J-1420	P-7790	6.2
J-15	180	147.9	20	24	J-71	P-4972	5.3
J-1201	122.1	148.1	20	5	J-1208	P-153	8.5
J-1200	122.1	148.2	21	5	J-1208	P-153	8.5
J-382	65	148.5	20	24	J-830	P-159	5.2
J-806	65	149.2	20	22	J-807	P-159	5.2
J-39	158.2	149.4	20	42	J-26	P-6080	8.5
J-503	86.2	149.5	20	23	J-1415	P-2271	5.3
J-732	100	149.7	20	33	J-731	P-4471	4.8
J-731	100	150.3	20	32	J-732	P-4661	4.7
J-824	65	150.3	20	16	J-825	P-159	5.2
J-19	158.2	151.2	20	18	J-20	P-2660	5.5
J-1415	86.2	152.0	20	21	J-503	P-6931	5.5
J-935	122.2	152.2	20	20	J-383	P-7123	6.5
J-303	122.2	152.6	20	32	J-302	P-7123	7.1
J-741	100	152.7	20	63	J-732	P-4430	6.6
J-577	86.2	152.9	20	28	J-521	P-7720	8.7
J-1406	86.2	153.2	20	19	J-934	P-7993	4.9
J-507	86.2	153.6	20	28	J-521	P-6920	4.4
J-339	65	153.7	20	23	J-375	P-159	5.2
J-108	180	153.8	20	24	J-71	P-5370	5.8
J-289	122.1	154.2	20	43	J-401	P-4972	5.3

2034 Demands - Maximum Day Demands 1411-02

Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-633	65	155.5	20	26	J-634	P-4153	5.3
J-317	122.1	155.6	20	43	J-401	P-4972	5.3
J-368	65	155.7	20	30	J-441	P-159	6.0
J-552	86.2	155.8	20	10	J-551	P-2620	4.7
J-341	65	156.4	20	22	J-369	P-159	5.2
J-357	117	156.6	20	29	J-391	P-4972	5.3
J-361	86.1	157.3	20	11	J-362	P-158	5.4
J-22	180	157.5	20	22	J-108	P-5370	6.1
J-923	122.2	158.3	20	18	J-383	P-7123	6.7
J-506	86.2	158.5	20	27	J-521	P-4973	3.7
J-369	65	158.8	20	19	J-341	P-159	5.3
J-364	86.1	158.9	20	8	J-379	P-158	5.3
J-715	122.2	159.1	20	46	J-305	P-4850	7.0
J-836	65	160.4	20	18	J-830	P-159	5.3
J-431	65	160.9	20	19	J-441	P-159	6.0
J-587	86.2	161.5	20	21	J-589	P-1950	5.0
J-1424	122.2	161.6	20	44	J-305	P-7672	9.2
J-852	65	162.1	20	22	J-830	P-159	5.3
J-393	117	162.4	20	22	J-392	P-4972	5.3
J-375	65	162.9	20	20	J-339	P-159	5.3
J-699	65	163.4	20	11	J-666	P-4223	5.5
J-360	65	164.2	20	20	J-361	P-159	5.3
J-553	86.2	164.3	20	7	J-551	P-7650	5.3
J-840	65	164.5	20	28	J-339	P-3125	9.3
J-436	65	164.6	20	23	J-441	P-159	6.0
J-694	65	164.9	20	35	J-666	P-159	5.3
J-644	65	165.0	20	11	J-666	P-159	5.3
J-1964	117	165.3	20	24	J-357	P-4972	5.3
J-856	65	165.6	20	21	J-855	P-3623	7.0
J-835	65	166.1	20	18	J-830	P-112	5.3
J-444	65	166.2	20	39	J-443	P-6871	9.4
J-340	65	166.3	20	20	J-339	P-112	5.3
J-664	65	166.4	20	20	J-698	P-4220	5.6
J-296	144	166.8	20	28	J-100	P-5401	6.6
J-248	122.1	167.2	20	14	J-250	P-6220	5.6
J-433	65	167.3	20	22	J-434	P-159	6.0
J-1962	117	167.5	20	20	J-391	P-9027	5.3
J-432	65	167.8	20	21	J-441	P-159	6.0
J-834	65	169.0	20	17	J-830	P-159	5.4
J-815	65	169.1	20	13	J-817	P-112	5.4
J-809	65	169.2	20	9	J-855	P-159	5.4
J-685	65	169.3	20	32	J-339	P-159	5.4
J-590	86.2	169.6	20	26	J-934	P-357imp	5.7

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-832	65	170.0	20	21	J-339	P-112	5.4
J-808	65	170.0	20	19	J-855	P-112	5.4
J-345	86.1	170.6	20	39	J-355	0 P-21	9.7
J-534	86.2	171.1	20	27	J-521	P-7310	5.8
J-665	65	171.5	20	13	J-666	P-159	5.4
J-362	65	172.2	20	19	J-339	P-112	5.4
J-347	122.2	172.7	20	46	J-305	P-200	5.5
J-419	65	173.4	20	25	J-440	P-159	6.0
J-326	86.1	173.5	20	40	J-355	P-4972	5.3
J-438	65	173.5	20	17	J-441	P-159	6.0
J-439	65	173.7	20	17	J-441	P-159	6.0
J-333	86.1	173.9	20	20	J-292	P-4972	5.3
J-366	86.1	174.0	20	13	J-379	P-158	5.5
J-920	122.2	174.0	20	29	J-383	P-7123	7.3
J-412	65	174.3	20	14	J-416	P-1051	7.0
J-1960	117	175.6	20	20	J-391	P-9025	5.8
J-708	100	175.7	20	22	J-366	P-4315	5.3
J-626	65	176.0	20	38	J-666	P-3854	11.4
J-692	65	176.1	20	28	J-339	P-3740	5.6
J-1419	86.2	176.3	20	23	J-934	P-359imp	5.6
J-1408	86.2	176.8	20	11	J-934	P-2474	4.8
J-306	122.2	176.9	20	21	J-315	P-3250	6.0
J-822	65	178.5	20	16	J-830	P-159	5.5
J-585	86.2	179.0	20	26	J-934	P-1491	5.1
J-639	65	179.2	20	23	J-643	P-112	5.4
J-1956	117	180.2	20	21	J-391	P-9002	6.2
J-596	86.2	180.5	20	15	J-934	P-2474	5.0
J-293	122.1	180.7	20	30	J-401	P-5321	5.8
J-594	86.2	180.9	20	11	J-934	P-2474	5.1
J-54	158.2	180.9	20	39	J-26	P-6270	6.2
J-367	86.1	181.7	20	14	J-379	P-158	5.6
J-776	122.2	181.8	20	46	J-305	P-243imp	5.0
J-691	65	182.2	20	28	J-339	P-159	5.5
J-5002	122.2	182.4	20	36	J-5001	P-7670	5.4
J-854	65	184.1	20	20	J-339	P-159	5.5
J-395	158.2	184.6	20	29	J-26	P-4972	5.3
J-1410	86.2	184.9	20	11	J-934	P-2474	5.0
J-437	65	185.2	20	14	J-441	P-159	6.1
J-556	122.2	185.2	20	45	J-305	P-7690	5.8
J-1409	86.2	185.3	20	10	J-934	P-2474	5.0
J-63	158.2	186.1	20	41	J-26	P-3080	10.5
J-863	65	186.1	20	19	J-339	P-112	5.6
J-1963	117	186.7	20	18	J-357	P-4972	5.3

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-1967	117	188.0	20	17	J-391	P-4972	5.3
J-519	86.2	188.3	20	16	J-523	P-7230	4.4
J-1404	86.2	188.5	20	12	J-934	P-2474	5.0
J-321	86.1	188.6	20	40	J-355	P-590	6.1
J-401	122.1	189.4	20	41	J-204	P-4972	5.3
J-363	86.1	189.7	20	6	J-379	P-158	5.7
J-354	86.1	189.7	20	34	J-355	P-158	5.3
J-802	65	189.8	20	23	J-339	P-112	5.6
J-706	100	190.2	20	27	J-789	P-4315	6.9
J-653	65	190.5	20	27	J-666	P-4152	6.7
J-870	122.2	190.6	20	46	J-305	P-4978	6.1
J-1405	86.2	190.7	20	10	J-934	P-2474	5.1
J-305	122.2	190.9	20	26	J-304	P-125	9.8
J-301	158.2	191.1	20	40	J-26	P-119	5.7
J-546	86.2	191.5	20	17	J-551	P-7510	4.6
J-597	86.2	192.5	20	12	J-934	P-2474	5.2
J-1968	117	192.8	20	10	J-391	P-4972	5.3
J-929	122.2	192.9	20	25	J-304	P-7123	8.3
J-862	65	193.3	20	19	J-339	P-159	5.6
J-330	86.1	194.3	20	39	J-355	P-5961	5.9
J-342	65	195.6	20	22	J-339	P-159	5.7
J-5001	122.2	195.6	20	15	J-5002	P-7710	5.5
J-540	86.2	195.7	20	27	J-521	P-1461	7.1
J-680	65	196.3	20	29	J-339	P-3755	6.1
J-752	122.2	196.3	20	20	J-753	P-4700	5.0
J-316	86.2	196.4	20	25	J-521	P-148	6.3
J-687	65	196.6	20	22	J-686	P-412imp	6.4
J-857	65	196.6	22	5	J-825	P-159	5.7
J-636	65	196.8	20	19	J-635	P-159	5.6
J-521	86.2	197.2	20	33	J-520	P-4972	4.6
J-599	86.2	198.7	20	11	J-934	P-2474	5.3
J-339	86.1	198.8	20	39	J-355	P-6100	6.4
J-5003	122.2	199.2	20	39	J-919	P-2900	6.1
J-291	86.1	199.3	20	26	J-332	P-5990	8.1
J-1411	86.2	201.0	20	7	J-1413	P-2474	5.3
J-914	122.2	201.4	20	21	J-919	P-7123	8.2
J-1961	117	201.5	20	15	J-391	P-4972	5.3
J-390	117	201.9	20	14	J-1964	P-4972	5.3
J-13	180	202.1	20	23	J-1501	P-1500	6.1
J-1425	86.2	202.1	20	29	J-521	P-2474	8.5
J-586	86.2	202.8	20	19	J-934	P-1489	7.7
J-598	86.2	203.1	20	11	J-934	P-2474	5.4
J-396	158.2	203.1	20	24	J-395	P-4973	5.3

2034 Demands - Maximum Day Demands 1411-02

Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-756	122.2	203.3	20	31	J-753	P-4845	4.8
J-304	122.2	203.6	20	20	J-305	P-7123	8.6
J-927	122.2	203.9	20	20	J-304	P-7123	8.6
J-508	86.2	204.3	20	27	J-521	P-7020	4.5
J-417	65	205.1	20	16	J-416	P-159	6.0
J-733	122.2	205.3	20	46	J-305	P-4363	6.5
J-278	122.1	205.3	20	40	J-274	P-6160	6.5
J-795	100	206.0	20	50	J-314	P-144	6.4
J-402	65	206.5	34	5	J-443	P-6820	7.1
J-814	65	206.7	20	15	J-339	P-159	5.7
J-541	86.2	206.8	20	26	J-521	P-1721	6.0
J-567	86.2	206.8	20	14	J-561	P-2450	4.6
J-785	100	207.5	20	44	J-743	P-146	6.3
J-858	65	207.6	20	15	J-339	P-159	5.7
J-913	122.2	207.8	20	19	J-304	P-7123	8.7
J-747	122.2	207.9	20	46	J-305	P-4520	6.7
J-915	122.2	208.4	20	14	J-919	P-7123	8.1
J-924	122.2	209.1	20	19	J-919	P-7123	8.0
J-1400	86.2	209.2	20	9	J-934	P-2474	5.5
J-690	65	209.6	20	25	J-339	P-159	5.7
J-652	65	210.2	20	20	J-656	P-3930	8.5
J-655	65	210.8	20	25	J-666	P-4151	7.9
J-968	122.2	211.5	20	19	J-304	P-7123	9.0
J-415	65	211.6	20	10	J-416	P-159	6.1
J-909	122.2	211.7	20	45	J-305	P-3141	6.1
J-1403	86.2	212.0	20	6	J-934	P-2474	5.6
J-726	122.2	212.5	20	46	J-305	P-4480	7.6
J-26	158.2	212.5	20	24	J-395	P-4972	5.3
J-56	158.2	212.7	20	22	J-57	P-3150	6.7
J-704	100	212.7	20	19	J-706	P-4315	8.3
J-304	86.1	213.0	20	41	J-355	P-153	6.9
J-61	158.2	213.1	20	39	J-26	P-3180	7.7
J-906	122.2	213.2	20	20	J-304	P-7123	9.1
J-803	65	213.5	20	17	J-339	P-159	5.8
J-801	65	213.6	20	19	J-339	P-159	5.8
J-527	86.2	214.7	20	14	J-5005	P-7380	4.9
J-510	86.2	215.7	20	26	J-521	P-7030	4.3
J-916	122.2	216.6	20	10	J-919	P-7123	8.2
J-669	65	216.9	20	13	J-670	P-159	5.8
J-1402	86.2	217.2	20	5	J-934	P-2474	5.7
J-332	86.1	217.9	20	21	J-291	P-4972	5.3
J-222	122.1	219.1	20	45	J-401	P-113	7.4
J-921	122.2	219.4	27	5	J-383	P-7123	8.3

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-743	100	219.5	20	36	J-785	P-4400	5.8
J-48	158.2	219.6	20	39	J-26	P-6780	6.5
J-1429	86.2	220.9	20	12	J-934	P-7891	7.0
J-562	86.2	221.4	20	11	J-561	P-2450	5.2
J-928	122.2	221.6	20	22	J-306	P-3250	7.5
J-751	122.2	222.3	20	23	J-748	P-4690	5.8
J-343	86.1	222.8	20	38	J-355	P-6380	7.1
J-300	158.2	223.9	20	39	J-26	P-118	9.2
J-530	86.2	224.2	20	24	J-521	P-7340	4.9
J-268	122.1	224.7	20	43	J-401	P-151	7.1
J-1959	117	225.1	20	10	J-391	P-7123	5.9
J-368	86.1	225.3	22	5	J-379	P-158	6.0
J-833	122.2	225.5	20	46	J-305	P-4278	12.8
J-537	86.2	226.3	20	25	J-521	P-7460	5.7
J-353	117	226.5	20	24	J-357	P-212	7.7
J-1501	180	226.7	20	22	J-13	P-4972	5.3
J-1418	86.2	226.9	20	13	J-934	P-9018	5.5
J-429	65	227.0	20	11	J-441	P-159	6.3
J-322	86.1	227.6	20	27	J-318	P-121	5.4
J-290	122.1	228.1	20	26	J-295	P-970	9.6
J-524	122.2	229.6	34	5	J-383	P-7123	8.5
J-411	65	229.8	20	8	J-416	P-159	6.3
J-428	65	229.9	20	17	J-441	P-159	6.3
J-744	100	231.5	20	43	J-732	P-4400	5.7
J-688	65	231.6	20	19	J-690	P-159	5.8
J-654	65	232.1	20	22	J-666	P-4190	6.4
J-1401	86.2	232.2	43	5	J-934	P-2473	5.9
J-1958	117	232.3	20	10	J-391	P-7123	6.2
J-859	65	232.4	25	5	J-830	P-3331	6.3
J-593	86.2	232.5	20	6	J-934	P-2474	6.8
J-861	65	232.6	20	12	J-339	P-159	5.8
J-757	122.2	233.1	20	17	J-756	P-4840	5.4
J-236	122.1	233.7	20	39	J-401	P-5630	7.4
J-550	122.2	233.8	20	35	J-919	P-7123	6.5
J-769	122.2	234.0	20	29	J-768	P-4954	4.0
J-823	65	234.2	26	5	J-830	P-159	5.8
J-312	65	234.2	26	5	J-830	P-159	5.8
J-592	86.2	234.5	21	5	J-934	P-2474	6.5
J-23	158.2	234.9	20	34	J-24	P-5500	6.2
J-535	86.2	235.0	20	24	J-521	P-7170	5.1
J-569	86.2	235.2	20	20	J-551	P-7630	5.2
J-522	122.2	235.4	34	5	J-919	P-7123	8.5
J-402	144	235.8	20	27	J-100	P-4972	5.3

2034 Demands - Maximum Day Demands 1411-02

Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-288	122.1	235.8	20	42	J-401	P-6611	6.8
J-547	122.2	235.9	20	29	J-5004	P-7123	6.9
J-642	65	236.2	20	9	J-643	P-3947	10.1
J-668	65	236.2	20	18	J-670	P-159	5.8
J-404	144	236.5	20	25	J-115	P-4972	5.3
J-772	122.2	236.5	20	25	J-771	P-4935	4.1
J-555	122.2	237.2	20	32	J-556	P-7680	6.1
J-518	86.2	237.6	20	20	J-521	P-7220	4.2
J-621	65	238.2	20	24	J-625	P-4160	6.5
J-314	100	238.3	20	29	J-795	P-145	5.8
J-591	86.2	238.5	26	5	J-934	P-2474	6.3
J-360	86.1	238.9	20	9	J-362	P-158	6.0
J-504	86.2	239.5	20	23	J-521	P-7040	5.8
J-793	100	239.6	20	29	J-732	P-4470	5.0
J-771	122.2	240.0	20	23	J-772	P-4954	4.1
J-583	86.2	240.3	46	5	J-934	P-2474	6.0
J-844	65	240.4	20	10	J-341	P-159	5.8
J-256	122.1	240.8	20	43	J-401	P-6030	5.5
J-676	65	241.2	20	23	J-339	P-3761	7.7
J-820	65	241.2	26	5	J-339	P-159	5.8
J-1414	86.2	241.6	31	5	J-934	P-2474	6.1
J-651	65	241.8	20	23	J-656	P-3941	6.2
J-831	65	241.9	26	5	J-339	P-159	5.8
J-55	158.2	242.0	20	29	J-56	P-320imp	7.4
J-105	144	242.3	20	20	J-115	P-4972	5.3
J-768	122.2	243.1	20	28	J-769	P-4954	4.2
J-1957	117	243.5	20	5	J-391	P-7123	6.5
J-14	180	244.6	20	7	J-16	P-220	6.3
J-819	65	245.3	27	5	J-339	P-159	5.9
J-770	122.2	246.1	20	24	J-771	P-4954	4.2
J-275	122.1	246.3	20	33	J-278	P-1390	6.6
J-796	65	246.8	20	10	J-341	P-159	5.9
J-511	86.2	247.1	20	23	J-521	P-7180	4.9
J-28	158.2	247.1	20	28	J-26	P-5510	5.5
J-533	86.2	247.3	20	23	J-521	P-7320	4.7
J-60	158.2	247.4	20	32	J-61	P-3170	6.5
J-103	144	248.3	20	14	J-115	P-4972	5.3
J-746	122.2	248.4	20	28	J-747	P-3298	5.9
J-684	65	248.9	20	19	J-339	P-159	5.9
J-420	65	249.5	20	11	J-430	P-159	6.4
J-788	122.2	249.8	20	31	J-771	P-4910	4.4
J-568	86.2	249.9	20	19	J-934	P-356imp	4.7
J-672	65	250.3	20	19	J-339	P-159	5.9

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Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-53	158.2	250.8	20	23	J-54	P-6260	8.2
J-526	122.2	251.0	35	5	J-919	P-7123	8.5
J-1427	86.2	251.1	20	19	J-551	P-2431	5.4
J-204	122.1	251.1	20	12	J-401	P-4972	5.3
J-727	100	251.2	20	19	J-732	P-3950	4.7
J-931	122.2	251.4	20	43	J-928	P-3057	8.8
J-1949	117	251.8	24	5	J-391	P-7123	7.0
J-663	65	252.1	20	5	J-666	P-159	5.9
J-582	86.2	252.3	39	5	J-934	P-2474	6.0
J-273	122.1	252.5	20	41	J-401	P-6180	5.7
J-525	122.2	252.7	36	5	J-919	P-7123	8.5
J-683	65	253.3	20	18	J-339	P-159	5.9
J-344	86.1	254.0	20	20	J-345	0 P-21	14.5
J-679	65	254.0	20	19	J-339	P-3750	7.5
J-837	65	254.1	20	8	J-341	P-3124	12.1
J-673	65	255.0	20	21	J-339	P-159	5.9
J-349	122.2	255.1	20	46	J-305	P-205	8.1
J-548	122.2	255.9	20	19	J-550	P-7123	7.3
J-641	65	256.1	20	8	J-643	P-159	5.9
J-805	65	256.9	29	5	J-339	P-159	5.9
J-564	86.2	257.1	21	5	J-551	P-1483	4.0
J-410	65	257.4	20	16	J-416	P-159	6.5
J-532	86.2	257.6	20	22	J-521	P-7330	4.2
J-389	117	257.7	25	5	J-391	P-7123	7.3
J-274	122.1	257.9	20	26	J-278	P-4972	5.3
J-531	86.2	258.0	20	21	J-521	P-7340	4.7
J-911	122.2	258.4	20	44	J-556	P-3232	6.6
J-538	86.2	258.6	20	21	J-934	P-7470	5.0
J-385	117	259.0	20	26	J-357	P-7123	9.4
J-316	86.1	259.5	20	38	J-355	P-5770	8.1
J-734	122.2	259.9	20	33	J-726	P-4481	7.1
J-303	86.1	260.3	20	20	J-304	P-153	6.9
J-572	86.2	260.6	20	17	J-934	P-355imp	5.5
J-512	86.2	261.0	20	20	J-521	P-7190	5.2
J-742	100	261.2	20	41	J-741	P-4377	4.3
J-611	65	261.7	20	33	J-666	P-3881	8.4
J-750	122.2	264.1	20	23	J-756	P-4680	5.1
J-544	86.2	264.2	20	15	J-551	P-7500	4.6
J-287	122.1	264.7	20	39	J-279	P-1010	10.2
J-331	86.1	264.9	20	33	J-332	P-5970	6.6
J-543	86.2	264.9	20	17	J-551	P-7490	4.8
J-693	65	265.0	20	14	J-339	P-159	5.9
J-276	122.1	265.1	20	27	J-275	P-1390	8.7

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-47	158.2	265.9	20	36	J-26	P-6561	10.6
J-334	86.1	266.1	20	28	J-355	P-158	5.8
J-34	158.2	266.3	20	8	J-417	P-2575	6.5
J-338	86.1	266.6	20	37	J-355	P-6110	6.4
J-513	86.2	267.5	20	17	J-521	P-7200	4.5
J-671	65	269.1	20	11	J-670	P-159	5.9
J-728	100	269.8	20	17	J-732	P-3950	5.5
J-514	86.2	269.9	20	17	J-521	P-7210	5.9
J-674	65	270.3	20	8	J-365	P-159	5.9
J-27	158.2	270.4	20	26	J-26	P-4972	5.3
J-758	122.2	271.3	20	13	J-756	P-4830	6.1
J-579	86.2	271.3	20	13	J-934	P-354imp	5.7
J-735	100	271.3	20	34	J-732	P-4330	6.8
J-423	65	271.6	20	30	J-441	P-159	6.7
J-640	65	271.7	20	8	J-643	P-159	5.9
J-797	65	271.8	23	5	J-341	P-159	5.9
J-363	65	272.2	24	5	J-365	P-159	5.9
J-675	65	272.4	24	5	J-365	P-159	5.9
J-297	158.2	273.3	20	10	J-298	P-6582	8.7
J-648	65	273.3	20	11	J-666	P-3944	7.3
J-908	122.2	273.5	20	38	J-909	P-3240	8.2
J-1426	86.2	273.6	20	14	J-551	P-2431	5.8
J-682	65	273.8	20	15	J-339	P-159	6.0
J-800	65	274.1	29	5	J-339	P-159	6.0
J-427	65	274.2	20	13	J-441	P-159	6.7
J-723	122.2	274.6	20	32	J-756	P-4660	6.0
J-763	122.2	274.7	20	32	J-788	P-4890	5.2
J-542	86.2	275.1	20	17	J-551	P-7480	4.7
J-528	86.2	275.2	20	11	J-5005	P-7370	4.3
J-549	122.2	276.0	22	5	J-919	P-7123	8.3
J-262	122.1	276.5	20	42	J-401	P-2260	9.1
J-545	86.2	276.9	20	6	J-551	P-2473	4.2
J-384	86.1	276.9	20	44	J-355	P-272imp	9.8
J-404	65	277.6	20	19	J-443	P-661	10.4
J-580	86.2	278.4	22	5	J-934	P-2474	6.0
J-217	122.1	278.7	20	36	J-401	P-1350	5.9
J-729	100	278.8	20	13	J-732	P-3950	6.2
J-627	65	279.0	20	32	J-666	P-3854	7.2
J-781	100	279.1	20	22	J-742	P-4370	5.0
J-646	65	279.2	21	5	J-666	P-159	5.9
J-647	65	280.0	24	5	J-666	P-159	5.9
J-421	65	280.5	20	10	J-441	P-159	6.7
J-637	65	280.7	20	9	J-643	P-159	5.9

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-661	65	280.8	20	5	J-666	P-3963	8.4
J-520	86.2	281.4	20	11	J-521	P-7108	5.0
J-762	122.2	281.7	20	23	J-788	P-4954	4.4
J-29	158.2	281.9	28	28	J-26	P-2801	5.6
J-224	122.1	282.1	20	43	J-401	P-5690	6.1
J-749	122.2	282.9	20	25	J-756	P-4660	5.0
J-775	122.2	283.4	20	24	J-870	P-4325	4.5
J-515	86.2	284.5	20	15	J-521	P-7108	4.5
J-792	100	285.3	20	21	J-790	P-9014	4.2
J-660	65	286.2	20	6	J-666	P-3963	6.8
J-102	144	286.5	22	5	J-115	P-2020	6.4
J-1432	122.1	287.1	20	41	J-401	P-114	7.3
J-271	122.1	287.6	20	40	J-401	P-6010	6.1
J-269	122.1	287.6	20	41	J-401	P-6620	6.0
J-403	65	287.9	20	15	J-443	P-159	7.2
J-584	86.2	288.1	20	9	J-934	P-2473	5.7
J-570	86.2	289.9	20	11	J-551	P-2474	5.2
J-740	100	290.2	20	14	J-741	P-4360	5.1
J-869	122.2	290.8	20	19	J-870	P-4976	4.8
J-369	86.1	291.0	20	11	J-362	P-6690	7.1
J-575	86.2	291.4	20	9	J-934	P-2474	5.8
J-517	86.2	291.5	20	11	J-521	P-7108	5.0
J-657	65	291.6	20	16	J-670	P-159	6.0
J-576	86.2	291.7	20	6	J-934	P-2474	6.0
J-571	86.2	291.8	20	13	J-934	P-2473	5.4
J-352	117	291.9	20	16	J-391	P-7123	10.3
J-578	86.2	292.0	20	6	J-934	P-2474	6.0
J-730	100	292.3	20	14	J-732	P-4450	5.4
J-617	65	292.6	20	31	J-666	P-3882	6.8
J-868	122.2	293.3	20	24	J-870	P-4975	5.1
J-764	122.2	293.4	20	32	J-771	P-4880	5.8
J-1422	122.2	295.4	20	28	J-550	P-7123	6.6
J-724	122.2	295.9	20	30	J-756	P-4740	4.8
J-106	144	296.0	20	11	J-404	P-5130	6.3
J-283	122.1	296.4	20	38	J-401	P-951	10.5
J-767	122.2	298.2	24	40	J-768	P-4954	5.7
J-766	122.2	298.2	27	32	J-767	P-4954	5.0
J-760	122.2	298.2	25	18	J-756	P-4740	4.7
J-759	122.2	298.2	23	15	J-756	P-4821	5.0
J-720	122.2	298.2	49	38	J-767	P-4740	4.9
J-725	122.2	298.3	29	35	J-756	P-4740	4.9
J-719	122.2	298.3	50	41	J-767	P-4740	5.3
J-782	122.2	298.3	47	41	J-767	P-4802	12.6

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-783	122.2	298.3	25	44	J-767	P-4782	7.8
J-329	86.1	298.4	20	35	J-330	P-5961	13.5
J-739	100	298.9	25	18	J-795	P-4355	4.3
J-738	100	298.9	24	17	J-732	P-4450	4.3
J-737	100	298.9	27	16	J-732	P-4340	4.2
J-736	100	298.9	23	16	J-732	P-4340	4.4
J-703	100	299.0	21	15	J-792	P-4451	4.2
J-710	100	299.0	27	22	J-732	P-4451	4.3
J-701	100	299.0	20	16	J-792	P-4322	6.1
J-702	100	299.0	22	16	J-792	P-4324	4.7
J-307	86.1	300.2	20	44	J-355	P-271imp	9.3
J-221	144	300.2	20	26	J-321	P-5480	7.1
J-681	65	300.8	20	10	J-339	P-159	6.1
J-387	117	301.0	28	5	J-391	P-7123	9.8
J-649	65	302.3	20	9	J-666	P-159	6.1
J-349	86.1	305.6	20	35	J-355	P-121	6.8
J-678	65	305.8	32	5	J-339	P-159	6.1
J-354	117	305.8	39	5	J-391	P-7123	10.0
J-258	122.1	306.1	20	40	J-401	P-4972	5.3
J-257	122.1	307.4	20	36	J-256	P-6020	5.3
J-25	158.2	307.7	20	29	J-26	P-4972	5.3
J-342	86.1	307.9	20	20	J-343	P-6390	6.8
J-972	158.1	308.0	20	23	J-975	P-10002	5.5
J-573	86.2	309.4	20	8	J-934	P-2474	5.8
J-378	86.1	309.8	20	17	J-362	P-6690	10.3
J-1423	122.2	311.8	20	23	J-1422	P-7671	6.8
J-529	86.2	312.1	20	8	J-551	P-7108	4.8
J-574	86.2	313.2	20	6	J-934	P-2474	6.0
J-282	122.1	314.0	20	37	J-279	P-1420	7.8
J-422	65	314.3	20	13	J-441	P-159	7.1
J-516	86.2	315.7	20	9	J-521	P-7108	5.2
J-912	122.2	316.5	20	15	J-911	P-3232	6.3
J-386	117	316.8	23	5	J-391	P-7123	10.7
J-341	86.1	316.9	20	22	J-345	P-6390	7.3
J-557	122.2	317.1	20	15	J-911	P-3240	6.0
J-973	158.1	317.2	20	37	J-972	P-10013	6.2
J-632	65	317.6	20	6	J-643	P-4245	7.2
J-255	122.1	318.1	20	40	J-401	P-6210	5.7
J-502	86.2	319.3	20	10	J-521	P-7108	5.2
J-375	86.1	320.7	20	7	J-381	P-142	10.9
J-658	65	321.4	20	8	J-670	P-159	6.2
J-43	158.2	321.7	20	33	J-26	P-224	10.4
J-315	86.1	321.9	20	37	J-355	P-110	8.3

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-659	65	323.0	20	9	J-670	P-159	6.2
J-405	65	323.5	20	17	J-443	P-6869	11.6
J-761	122.2	323.5	20	14	J-756	P-4818	5.5
J-240	122.1	325.4	20	26	J-290	P-5911	10.3
J-677	65	326.0	32	5	J-339	P-159	6.3
J-242	122.1	326.1	20	39	J-401	P-5920	6.4
J-697	65	326.2	20	26	J-666	P-246imp	11.6
J-376	86.1	327.5	20	28	J-362	P-121	6.9
J-971	158.1	328.4	20	22	J-974	P-10002	6.6
J-409	65	329.3	20	17	J-416	P-159	7.4
J-765	122.2	331.8	20	27	J-767	P-4954	5.1
J-650	65	332.7	20	8	J-666	P-159	6.3
J-722	122.2	333.0	20	12	J-756	P-4740	5.3
J-270	122.1	333.8	20	39	J-250	P-114	7.7
J-370	86.1	334.6	20	8	J-362	P-119	7.4
J-351	117	334.7	40	5	J-391	P-7123	11.7
J-350	86.1	335.5	20	32	J-355	P-6121	12.8
J-1431	122.1	337.0	20	7	J-1432	P-114	8.6
J-622	65	337.4	20	25	J-666	P-159	6.3
J-696	65	339.1	20	24	J-666	P-4081	8.5
J-618	65	339.6	20	24	J-666	P-4081	8.5
J-111	144	340.2	20	25	J-321	P-5480	8.6
J-695	65	340.5	20	31	J-666	P-7893	7.7
J-401	65	340.6	31	5	J-443	P-6811	13.9
J-244	122.1	342.6	20	39	J-401	P-1625	8.1
J-380	86.1	344.3	20	27	J-362	P-416imp	12.9
J-241	122.1	344.4	20	33	J-240	P-5911	7.2
J-51	158.2	344.9	20	31	J-26	P-223	10.8
J-631	65	345.4	22	5	J-643	P-159	6.4
J-397	158.2	345.6	20	10	J-396	P-321imp	5.6
J-721	122.2	347.6	20	15	J-756	P-4812	5.6
J-104	144	349.1	23	5	J-404	P-5245	5.5
J-233	122.1	349.1	20	36	J-401	P-1360	8.5
J-554	122.2	349.9	20	20	J-1423	P-7123	6.1
J-58	158.2	355.8	20	6	J-298	P-4972	5.3
J-910	122.2	356.6	20	8	J-911	P-5001	7.3
J-213	122.1	357.6	20	25	J-237	P-5620	8.6
J-340	86.1	358.3	20	26	J-339	P-121	7.9
J-501	86.2	361.3	20	7	J-521	P-7108	5.5
J-500	86.2	361.6	20	8	J-521	P-7108	5.4
J-624	65	361.7	25	5	J-666	P-159	6.5
J-335	86.1	363.1	20	24	J-304	P-340	7.9
J-42	158.2	363.4	20	30	J-26	P-6240	7.9

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-560	122.2	363.7	20	20	J-555	P-3040	6.9
J-286	122.1	365.5	20	25	J-285	P-6452	7.5
J-50	158.2	365.7	20	29	J-26	P-3060	7.7
J-558	122.2	366.0	26	5	J-911	P-3240	6.7
J-299	158.2	366.3	20	10	J-298	P-4973	5.3
J-272	122.1	366.6	20	25	J-276	P-1380	6.1
J-237	122.1	367.8	20	21	J-213	P-270imp	5.9
J-1430	122.1	369.6	24	5	J-1432	P-114	9.4
J-107	144	371.0	20	16	J-115	P-5245	5.8
J-612	65	377.1	20	18	J-666	P-159	6.8
J-382	86.1	377.4	20	24	J-362	P-121	7.9
J-620	65	377.9	22	5	J-666	P-159	6.7
J-285	122.1	380.4	20	22	J-284	P-6460	5.4
J-52	158.2	380.7	20	27	J-26	P-6251	9.9
J-383	86.1	382.1	20	23	J-362	P-121	7.8
J-284	122.1	383.1	20	20	J-285	P-6460	5.5
J-207	122.1	386.3	20	27	J-401	P-5300	5.8
J-865	122.2	386.7	20	46	J-305	P-4451	7.9
J-326	144	387.2	20	13	J-115	P-5245	6.0
J-615	65	387.7	25	5	J-666	P-159	6.8
J-614	65	390.1	20	8	J-666	P-159	6.8
J-261	122.1	390.3	20	36	J-250	P-2120	6.3
J-352	86.1	390.8	20	22	J-355	P-121	7.8
J-232	122.1	392.5	20	36	J-401	P-5660	6.5
J-400	65	393.5	34	5	J-443	P-159	9.1
J-408	65	394.4	20	12	J-443	P-6969	11.8
J-1416	122.1	394.7	20	25	J-1432	P-114	10.0
J-206	122.1	396.5	20	25	J-401	P-5310	6.3
J-418	65	396.7	26	5	J-443	P-159	9.3
J-243	122.1	397.7	20	37	J-401	P-1370	6.3
J-718	122.2	400.8	20	27	J-715	P-4740	7.6
J-280	122.1	402.3	20	12	J-279	P-6470	5.8
J-559	122.2	403.6	25	5	J-911	P-3053	6.7
J-208	122.1	405.9	20	26	J-401	P-5290	5.9
J-406	65	408.8	31	5	J-443	P-159	9.0
J-348	122.2	409.5	20	33	J-791	P-9016	6.7
J-325	86.1	413.2	20	28	J-355	P-121	8.3
J-266	122.1	414.3	20	37	J-257	P-1831	5.7
J-610	65	415.7	20	13	J-666	P-159	7.1
J-347	86.1	417.1	20	22	J-338	P-121	8.2
J-373	86.1	417.5	20	16	J-362	P-6689	17.0
J-791	122.2	420.1	20	30	J-348	P-9016	7.9
J-784	122.2	420.7	20	27	J-767	P-4782	20.4

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Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-203	122.1	421.4	20	15	J-401	P-5340	5.8
J-356	86.1	421.8	20	16	J-355	P-121	8.0
J-355	180	423.3	20	15	J-399	P-220	17.7
J-281	122.1	423.9	20	18	J-279	P-4973	5.3
J-351	86.1	424.7	20	21	J-355	P-121	8.3
J-314	86.1	425.2	20	26	J-355	P-121	8.3
J-212	122.1	427.7	20	25	J-237	P-270imp	8.1
J-407	65	430.0	31	5	J-443	P-159	9.0
J-1947	117	431.2	35	5	J-391	P-7123	17.1
J-264	122.1	432.3	20	21	J-1416	P-1860	5.8
J-313	86.1	432.4	20	29	J-355	P-422imp	8.8
J-252	122.1	434.3	20	26	J-250	P-6540	6.2
J-608	65	435.0	32	5	J-339	P-159	7.3
J-301	86.1	437.0	20	25	J-355	P-121	9.5
J-424	65	437.1	22	5	J-441	P-7269	10.5
J-867	122.2	438.6	20	15	J-767	P-4952	8.0
J-980	122.2	440.4	20	24	J-903	P-7123	4.3
J-62	158.2	441.6	22	5	J-298	P-6580	5.6
J-717	122.2	442.4	20	20	J-784	P-4740	9.2
J-398	158.2	444.7	23	5	J-395	P-323imp	7.2
J-205	122.1	446.3	20	15	J-401	P-5320	6.0
J-613	65	449.4	35	5	J-666	P-159	7.4
J-616	65	449.5	34	5	J-666	P-159	7.3
J-374	86.1	450.0	20	22	J-355	P-5781	11.3
J-794	122.2	450.9	20	17	J-767	P-4951	6.2
J-903	122.2	451.4	20	21	J-980	P-7123	4.5
J-619	65	451.4	33	5	J-666	P-159	7.3
J-607	65	452.2	35	5	J-666	P-159	7.5
J-325	144	453.9	20	21	J-321	P-4972	5.3
J-623	65	454.8	32	5	J-666	P-159	7.3
J-1421	122.2	455.0	20	20	J-911	P-3053	10.3
J-101	144	456.1	22	5	J-115	P-5245	7.0
J-606	65	456.2	36	5	J-666	P-159	7.6
J-319	86.1	458.2	20	21	J-301	P-121	9.4
J-605	65	459.2	35	5	J-666	P-159	7.6
J-211	122.1	460.6	20	25	J-401	P-750	6.6
J-630	65	460.7	31	5	J-666	P-159	7.2
J-372	86.1	460.9	36	5	J-362	P-121	8.2
J-377	86.1	462.1	40	5	J-362	P-121	8.2
J-215	122.1	462.2	20	22	J-401	P-5420	6.4
J-604	65	462.5	34	5	J-666	P-159	7.7
J-202	122.1	463.5	20	9	J-401	P-5340	7.6
J-311	86.1	465.0	20	25	J-355	P-121	8.4

2034 Demands - Maximum Day Demands 1411-02

Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-214	122.1	465.8	20	22	J-401	P-5420	5.7
J-425	65	465.8	29	5	J-441	P-159	8.8
J-265	122.1	465.9	20	33	J-268	P-4973	5.3
J-218	122.1	467.3	20	24	J-401	P-5440	5.9
J-231	122.1	468.0	20	35	J-401	P-5670	6.3
J-267	122.1	469.5	20	21	J-279	P-6490	5.8
J-799	122.2	469.5	20	20	J-833	P-4277	9.6
J-602	65	470.3	32	5	J-666	P-159	7.9
J-629	65	470.9	20	6	J-666	P-159	7.2
J-371	86.1	471.0	34	5	J-362	P-121	8.2
J-601	65	471.1	32	5	J-666	P-159	7.9
J-357	86.1	473.7	20	12	J-355	P-121	8.2
J-609	65	478.7	23	5	J-666	P-507	8.6
J-210	122.1	479.3	20	22	J-401	P-5390	7.2
J-600	65	479.8	29	5	J-666	P-159	8.2
J-209	122.1	481.5	20	21	J-401	P-4973	5.3
J-716	122.2	482.0	20	22	J-767	P-4730	8.5
J-219	122.1	484.7	20	28	J-401	P-5450	6.6
J-442	65	486.3	29	5	J-666	P-159	8.5
J-216	122.1	487.6	20	19	J-401	P-5430	6.2
J-904	122.2	487.6	20	15	J-903	P-7123	5.1
J-328	86.1	490.2	20	14	J-355	P-121	8.7
J-367	65	493.3	26	5	J-666	P-159	8.7
J-321	144	495.6	20	24	J-100	P-4972	5.3
J-348	86.1	496.4	20	9	J-362	P-121	8.4
J-358	86.1	499.3	25	5	J-362	P-121	8.4
J-317	122.1	499.5	20	21	J-268	P-4973	5.3
J-100	144	500.0	24	25	J-321	P-4972	5.3
J-18	158.2	500.0	37	29	J-26	P-4972	5.3
J-30	158.2	500.0	49	25	J-26	P-4972	5.3
J-31	158.2	500.0	63	19	J-26	P-4973	5.3
J-32	158.2	500.0	54	18	J-26	P-6060	6.4
J-33	158.2	500.0	52	18	J-26	P-6060	6.4
J-35	158.2	500.0	35	18	J-26	P-6050	7.1
J-36	158.2	500.0	63	18	J-26	P-4973	5.3
J-37	158.2	500.0	61	18	J-26	P-4973	5.3
J-38	158.2	500.0	63	18	J-26	P-4973	5.3
J-40	158.2	500.0	64	17	J-26	P-4973	5.3
J-41	158.2	500.0	38	17	J-26	P-160	5.8
J-44	158.2	500.0	71	17	J-26	P-4973	5.3
J-45	158.2	500.0	71	17	J-26	P-4973	5.3
J-46	158.2	500.0	71	17	J-26	P-4973	5.3
J-49	158.2	500.0	59	8	J-298	P-6570	5.7

2034 Demands - Maximum Day Demands 1411-02
Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-59	158.2	500.0	37	29	J-26	P-424imp	5.4
J-109	144	500.0	25	17	J-325	P-4972	5.3
J-110	144	500.0	25	17	J-325	P-4972	5.3
J-113	144	500.0	25	17	J-325	P-4972	5.3
J-114	144	500.0	41	19	J-325	P-4972	5.3
J-200	122.1	500.0	33	33	J-401	P-4972	5.3
J-201	122.1	500.0	36	32	J-401	P-4972	5.3
J-220	122.1	500.0	45	35	J-401	P-4972	5.3
J-223	122.1	500.0	46	36	J-401	P-4972	5.3
J-225	122.1	500.0	36	38	J-226	P-4973	5.3
J-226	122.1	500.0	37	36	J-225	P-4973	5.3
J-227	122.1	500.0	43	39	J-225	P-4972	5.3
J-228	122.1	500.0	40	38	J-401	P-4972	5.3
J-229	122.1	500.0	46	37	J-401	P-4972	5.3
J-230	122.1	500.0	55	35	J-401	P-4973	5.3
J-234	122.1	500.0	51	33	J-401	P-4973	5.3
J-235	122.1	500.0	51	33	J-401	P-4973	5.3
J-238	122.1	500.0	57	33	J-401	P-5820	5.7
J-239	122.1	500.0	51	33	J-401	P-165	7.1
J-245	122.1	500.0	52	34	J-401	P-4973	5.3
J-246	122.1	500.0	47	43	J-401	P-118	7.4
J-247	122.1	500.0	34	27	J-250	P-4973	5.3
J-251	122.1	500.0	24	19	J-250	P-6530	6.4
J-253	122.1	500.0	34	25	J-250	P-4973	5.3
J-254	122.1	500.0	38	26	J-250	P-4973	5.3
J-259	122.1	500.0	37	28	J-250	P-4973	5.3
J-260	122.1	500.0	37	28	J-250	P-4973	5.3
J-263	122.1	500.0	37	28	J-268	P-4973	5.3
J-300	86.1	500.0	21	39	J-355	P-155	7.6
J-302	86.1	500.0	39	38	J-300	P-121	7.0
J-308	86.1	500.0	42	26	J-355	P-121	8.1
J-309	86.1	500.0	23	25	J-355	P-5572	8.5
J-310	86.1	500.0	27	20	J-355	P-121	8.5
J-320	86.1	500.0	20	16	J-355	P-121	9.3
J-323	86.1	500.0	39	21	J-355	P-121	8.6
J-324	86.1	500.0	26	17	J-355	P-121	8.9
J-327	86.1	500.0	26	16	J-355	P-121	8.9
J-359	86.1	500.0	21	5	J-362	P-121	8.4
J-712	122.2	500.0	51	32	J-767	P-4721	5.0
J-713	122.2	500.0	49	31	J-767	P-4455	6.9
J-714	122.2	500.0	23	27	J-833	P-4455	5.5
J-773	122.2	500.0	34	25	J-767	P-242	4.5
J-774	122.2	500.0	35	25	J-767	P-242	4.6

2034 Demands - Maximum Day Demands 1411-02

Available Fire Flows City of Port Alberni

Label	Zone	Available Fire Flow (L/s)	Residual Pressure (psi)	Pressure (Zone Lower Limit) (psi)	Junction w/ Min Pressure	Pipe w/ Max Velocity	Velocity of Max Pipe (m/s)
J-777	122.2	500.0	50	38	J-767	P-4947	5.1
J-778	122.2	500.0	62	39	J-767	P-4971	4.3
J-779	122.2	500.0	58	40	J-767	P-4971	4.3
J-786	122.2	500.0	56	43	J-767	P-4971	4.4
J-900	158.1	500.0	37	32	J-901	P-424imp	5.4
J-901	158.1	500.0	30	30	J-1950	P-424imp	5.3
J-902	158.1	500.0	43	34	J-973	P-424imp	5.0
J-970	158.1	500.0	37	33	J-971	P-278imp	7.1
J-981	158.1	500.0	37	33	J-971	P-10001	5.1
J-905	122.2	500.0	44	20	J-911	P-7123	5.2
J-930	122.2	500.0	51	35	J-911	P-4971	4.3
J-932	122.2	500.0	41	38	J-911	P-4971	4.3
J-933	122.2	500.0	43	40	J-767	P-4971	4.3
J-966	122.2	500.0	57	40	J-767	P-4971	4.3
J-967	158.1	500.0	47	30	J-901	P-7123	28.3
J-960	158.1	500.0	29	31	J-1950	P-424imp	5.2
J-947	158.1	500.0	40	33	J-960	P-424imp	5.1
J-1948	158.1	500.0	34	30	J-1950	P-424imp	5.3
J-8	144	500.0	29	27	J-100	P-4972	5.3
J-1428	122.2	500.0	33	35	J-911	P-2472	15.9
J-952	122.2	500.0	57	40	J-767	P-4971	4.3
J-1950	158.1	500.0	30	30	J-960	P-424imp	5.3
J-294	122.1	500.0	38	27	J-268	P-4973	5.3
J-745	122.2	500.0	21	21	J-833	P-4275	5.3
J-954	158.1	500.0	47	34	J-960	P-424imp	5.1
J-322	122.1	500.0	39	40	J-401	P-118	5.9
J-323	158.2	500.0	52	17	J-26	P-159	6.2
J-327	86.1	500.0	24	19	J-355	P-121	8.7
J-328	122.2	500.0	39	40	J-767	P-167	12.4
J-350	122.2	500.0	51	35	J-911	P-4971	4.3
J-371	122.2	500.0	45	34	J-767	P-241	5.5

2034 Demands - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-72	75	Steel	1	1.53	No	Open
P-71	75	Steel	1	1.53	No	Open
P-201	100	Cast iron	44	0.08	No	Open
P-1201	100	Cast iron	138	0.96	No	Open
P-1953	100	Cast iron	60	0.09	No	Open
P-2491	100	PVC	60	0.04	No	Open
P-3051	100	PVC	273	0.38	No	Open
P-3854	100	AC	25	0.23	No	Open
P-3855	100	AC	65	0.52	No	Open
P-3861	100	AC	206	0.14	No	Open
P-4225	100	AC	134	0.25	No	Open
P-4262	100	AC	102	0.32	No	Open
P-4311	100	AC	68	0.02	No	Open
P-4327	100	AC	296	0	No	Open
P-4430	100	AC	94	0.2	No	Open
P-4400	100	AC	91	0.05	No	Open
P-4850	100	AC	102	0.22	No	Open
P-6320	100	Cast iron	100	0.24	No	Open
P-6869	100	Cast iron	16	0.58	No	Open
P-9015	100	PVC	88	0.04	No	Open
P-10012	100	Steel	6	0	No	Open
P-7127	100	Steel	3	0	No	Open
P-7128	100	Steel	4	0	No	Closed
P-4955	100	Steel	3	0	No	Open
P-276imp	100	PVC	3	0	No	Open
P-106	150	Steel	3	1.58	No	Open
P-154	150	Steel	3	1.58	No	Open
P-770	150	PVC	220	0.04	No	Open
P-4154	150	PVC	107	0.24	No	Open
P-4257	150	PVC	95	0.16	No	Open
P-5550	150	AC	314	0.02	No	Open
P-6590	150	PVC	124	0.67	No	Open
P-7230	150	PVC	98	0.3	No	Open
P-9002	150	PVC	110	0.42	No	Open
P-9004	150	PVC	204	0.13	No	Open
P-9006	150	PVC	166	0.23	No	Open
P-9008	150	PVC	150	0.15	No	Open
P-7240	150	PVC	94	0.01	No	Open
P-7250	150	PVC	96	0.2	No	Open
P-5321	150	PVC	94	0.15	No	Open
P-2180	150	AC	204	1.04	No	Open
P-5401	150	Ductile Iron	72	1.06	No	Open
P-113	150	PVC	62	1.06	No	Open
P-6583	150	PVC	98	0	No	Open

2034 Demands - Peak Hour Demands						1411-02
Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-118	150	PVC	80	0.02	No	Open
P-119	150	PVC	197	0.02	No	Open
P-120	150	PVC	185	0.02	No	Open
P-121	150	PVC	191	0.46	No	Open
P-122	150	PVC	211	0.46	No	Open
P-125	150	PVC	10	0.46	No	Open
P-126	150	PVC	121	0.46	No	Open
P-128	150	PVC	158	1.04	No	Open
P-3711	150	PVC	196	0.08	No	Open
P-146	150	PVC	107	0	No	Open
P-147	150	PVC	52	0	No	Open
P-148	150	PVC	86	0.65	No	Open
P-151	150	PVC	107	0.63	No	Open
P-198	150	PVC	269	0.09	No	Open
P-208	150	PVC	101	0.25	No	Open
P-209	150	PVC	236	0.65	No	Open
P-212	150	PVC	120	0.65	No	Open
P-213	150	PVC	111	0.19	No	Open
P-214	150	PVC	131	0.08	No	Open
P-216	150	PVC	123	0.06	No	Open
P-217	150	PVC	54	0.08	No	Open
P-220	150	PVC	5	0	Yes	Open
P-221	150	PVC	83	0	No	Closed
P-223	150	PVC	84	0.13	No	Open
P-224	150	PVC	112	0.43	No	Open
P-231	150	PVC	272	0.19	No	Open
P-232	150	PVC	194	0	No	Open
P-233	150	PVC	193	0	No	Open
P-246imp	150	PVC	34	0.23	No	Open
P-247imp	150	PVC	91	0.21	No	Open
P-253imp	150	PVC	141	0.65	No	Open
P-266imp	150	PVC	257	0.19	No	Open
P-271imp	150	PVC	115	0.14	No	Open
P-272imp	150	PVC	73	0.1	No	Open
P-293imp	150	PVC	3	0	No	Closed
P-296imp	150	PVC	184	0.18	No	Open
P-297imp	150	PVC	96	0.02	No	Open
P-298imp	150	PVC	271	0.15	No	Open
P-299imp	150	PVC	159	0.73	No	Open
P-300imp	150	PVC	132	0.73	No	Open
P-312imp	150	PVC	95	0.41	No	Open
P-313imp	150	PVC	109	0.22	No	Open
P-320imp	150	PVC	116	0.58	No	Open
P-353imp	150	PVC	199	0.09	No	Open
P-354imp	150	PVC	110	0.17	No	Open

2034 Demands - Peak Hour Demands 1411-02

Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-355imp	150	PVC	94	0.34	No	Open
P-356imp	150	PVC	115	0.28	No	Open
P-359imp	150	PVC	74	0.03	No	Open
P-360imp	150	PVC	2	2.76	No	Open
P-362imp	150	PVC	3	2.76	No	Open
P-363imp	150	PVC	1	2.76	No	Open
P-364imp	150	PVC	1	0	No	Open
P-365imp	150	PVC	1	0	No	Open
P-403imp	150	PVC	8	0.63	No	Open
P-407imp	150	PVC	94	0.56	No	Open
P-410imp	150	PVC	200	0.41	No	Open
P-413imp	150	PVC	92	0.24	No	Open
P-416imp	150	PVC	58	0.25	No	Open
P-5260	150	AC	99	0	No	Closed
P-2520	150	AC	108	0	No	Closed
P-2521	150	Ductile Iron	609	0.01	No	Open
P-2530	150	AC	184	0.07	No	Open
P-2320	150	Ductile Iron	18	0.01	No	Open
P-5370	150	AC	86	0	Yes	Open
P-20	150	AC	64	0.03	No	Open
P-21	150	AC	21	0.1	No	Open
P-34	150	Cast iron	234	0.03	No	Open
P-50	150	PVC	253	0.05	No	Open
P-70	150	Cast iron	514	0	No	Closed
P-75	150	Cast iron	105	0	No	Closed
P-90	150	Cast iron	140	0.07	No	Open
P-5571	150	Cast iron	177	0.04	No	Open
P-100	150	Cast iron	285	0.09	No	Open
P-105	150	Steel	3	1.82	No	Open
P-153	150	Steel	3	1.7	No	Open
P-790	150	Cast iron	183	0.18	No	Open
P-110	150	Cast iron	93	0.2	No	Open
P-112	150	Steel	5	2.75	No	Open
P-159	150	Steel	5	2.75	No	Open
P-113	150	Steel	3	1.01	No	Open
P-161	150	Steel	3	1.01	No	Open
P-115	150	Cast iron	248	0.05	No	Open
P-119	150	Steel	3	0	No	Open
P-130	150	Cast iron	290	0.06	No	Open
P-140	150	PVC	177	0.17	No	Open
P-141	150	PVC	71	0.03	No	Open
P-142	150	PVC	73	0.12	No	Open
P-200	150	Cast iron	115	0.19	No	Open
P-210	150	Cast iron	152	0.1	No	Open
P-220	150	Cast iron	137	0.07	No	Open

2034 Demands - Peak Hour Demands						1411-02
Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-230	150	PVC	156	0.09	No	Open
P-240	150	PVC	294	0.08	No	Open
P-6810	150	Cast iron	96	0.27	No	Open
P-281	150	PVC	86	0.18	No	Open
P-300	150	AC	158	0.01	No	Open
P-5021	150	AC	24	0.04	No	Open
P-5022	150	AC	210	0.01	No	Open
P-5180	150	AC	47	0.65	No	Open
P-5190	150	AC	329	0.33	No	Open
P-5200	150	AC	321	0.33	No	Open
P-5210	150	AC	129	0.67	No	Open
P-441	150	Cast iron	291	0.06	No	Open
P-480	150	Cast iron	176	0.27	No	Open
P-490	150	Cast iron	193	0.27	No	Open
P-500	150	Cast iron	189	0.3	No	Open
P-506	150	Cast iron	150	0.02	No	Open
P-510	150	Cast iron	176	0.58	No	Open
P-530	150	AC	202	0.12	No	Open
P-570	150	AC	144	0.17	No	Open
P-571	150	PVC	204	0.05	No	Open
P-580	150	AC	128	0.05	No	Open
P-590	150	AC	114	0.04	No	Open
P-600	150	AC	191	0.16	No	Open
P-610	150	PVC	140	0.32	No	Open
P-620	150	Cast iron	152	0.26	No	Open
P-630	150	Cast iron	138	0.42	No	Open
P-640	150	Cast iron	143	0.23	No	Open
P-650	150	Cast iron	137	0.02	No	Open
P-660	150	PVC	174	0.27	No	Open
P-661	150	PVC	10	0.6	No	Open
P-670	150	PVC	184	0.62	No	Open
P-680	150	AC	189	0.36	No	Open
P-690	150	AC	178	0.25	No	Open
P-700	150	AC	211	0.57	No	Open
P-710	150	PVC	201	0.17	No	Open
P-780	150	PVC	216	0.07	No	Open
P-5490	150	Cast iron	98	0.02	No	Open
P-5500	150	Cast iron	97	0.34	No	Open
P-5510	150	Cast iron	101	1.03	No	Open
P-5520	150	AC	103	0.66	No	Open
P-800	150	PVC	140	0.43	No	Open
P-810	150	Cast iron	151	0.58	No	Open
P-820	150	Cast iron	141	0.73	No	Open
P-830	150	Cast iron	139	0.23	No	Open
P-840	150	Cast iron	114	0.04	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-850	150	AC	183	0.35	No	Open
P-860	150	Cast iron	176	0.24	No	Open
P-880	150	AC	201	0.04	No	Open
P-930	150	AC	192	0.06	No	Open
P-950	150	AC	179	0.24	No	Open
P-951	150	Cast iron	58	0.22	No	Open
P-960	150	Cast iron	233	0.67	No	Open
P-970	150	Cast iron	48	0.94	No	Open
P-980	150	Cast iron	182	0.93	No	Open
P-1000	150	Cast iron	292	0.92	No	Open
P-1010	150	Cast iron	30	0.66	No	Open
P-1020	150	PVC	111	0.12	No	Open
P-1030	150	Cast iron	139	0.11	No	Open
P-1040	150	Cast iron	138	0.03	No	Open
P-1050	150	AC	94	0.84	No	Open
P-1051	150	AC	55	0.83	No	Open
P-1060	150	AC	185	0.98	No	Open
P-1112	150	AC	146	0.01	No	Open
P-1140	150	AC	191	0.1	No	Open
P-1160	150	AC	206	0.2	No	Open
P-1170	150	AC	168	0.7	No	Open
P-1180	150	AC	175	0.54	No	Open
P-1200	150	Cast iron	132	0.41	No	Open
P-1210	150	AC	173	0.05	No	Open
P-1220	150	PVC	106	0.04	No	Open
P-1230	150	AC	149	0.89	No	Open
P-1240	150	AC	185	1.5	No	Open
P-1250	150	AC	169	0.66	No	Open
P-1260	150	Cast iron	211	0.2	No	Open
P-1270	150	AC	202	0.14	No	Open
P-1330	150	AC	191	0.14	No	Open
P-1340	150	Cast iron	144	0.23	No	Open
P-1350	150	AC	171	0.23	No	Open
P-1360	150	PVC	102	0.42	No	Open
P-1370	150	PVC	160	0.79	No	Open
P-1380	150	PVC	123	0.92	No	Open
P-1390	150	PVC	55	1.28	No	Open
P-1391	150	PVC	41	1.25	No	Open
P-1400	150	PVC	129	0.7	No	Open
P-1410	150	PVC	254	1.09	No	Open
P-1420	150	PVC	114	0.91	No	Open
P-1430	150	AC	153	1.03	No	Open
P-1440	150	AC	185	1.41	No	Open
P-1450	150	AC	176	0.75	No	Open
P-1460	150	Cast iron	149	0.26	No	Open

2034 Demands - Peak Hour Demands						1411-02
Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-1461	150	AC	60	0.28	No	Open
P-1492	150	AC	191	0.11	No	Open
P-1491	150	Cast iron	167	0.25	No	Open
P-1490	150	Cast iron	108	0.23	No	Open
P-9018	150	AC	113	0.16	No	Open
P-1489	150	AC	47	0.2	No	Open
P-1493	150	PVC	138	0.02	No	Open
P-1510	150	AC	214	0.04	No	Open
P-1520	150	AC	115	0.03	No	Open
P-7999	150	AC	334	0.03	No	Open
P-2001	150	AC	66	0.03	No	Open
P-2000	150	AC	191	0.03	No	Open
P-1590	150	AC	218	0.03	No	Open
P-1600	150	AC	190	0.12	No	Open
P-1610	150	AC	316	0.25	No	Open
P-1620	150	AC	188	0.27	No	Open
P-1625	150	AC	85	1.06	No	Open
P-1630	150	AC	108	0.92	No	Open
P-1640	150	AC	222	0.87	No	Open
P-1660	150	AC	131	0.62	No	Open
P-1670	150	Cast iron	184	1.63	No	Open
P-1690	150	Cast iron	203	0.3	No	Open
P-1700	150	Cast iron	184	0.67	No	Open
P-1710	150	Cast iron	177	0.43	No	Open
P-1720	150	AC	110	0.24	No	Open
P-1721	150	AC	101	0.26	No	Open
P-1730	150	AC	204	0.13	No	Open
P-1740	150	AC	189	0.1	No	Open
P-1750	150	AC	214	0.04	No	Open
P-1800	150	AC	195	0.05	No	Open
P-1810	150	AC	305	0.27	No	Open
P-6020	150	AC	109	0.31	No	Open
P-1890	150	Cast iron	208	0.76	No	Open
P-1900	150	AC	184	0.31	No	Open
P-1910	150	Cast iron	178	0.28	No	Open
P-1920	150	Cast iron	212	0.25	No	Open
P-1930	150	AC	203	0.29	No	Open
P-1940	150	Cast iron	192	0.17	No	Open
P-1950	150	Cast iron	133	0.39	No	Open
P-1951	150	Cast iron	85	0.28	No	Open
P-1954	150	AC	27	0.04	No	Open
P-1960	150	AC	100	0.12	No	Open
P-1970	150	AC	61	0.07	No	Open
P-1980	150	AC	154	0.06	No	Open
P-1990	150	PVC	115	0.03	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-2090	150	AC	210	0.98	No	Open
P-2100	150	Cast iron	212	0.82	No	Open
P-2110	150	AC	259	0.81	No	Open
P-2120	150	AC	151	1.73	No	Open
P-2150	150	Cast iron	212	0.26	No	Open
P-2160	150	AC	202	0.25	No	Open
P-2170	150	AC	161	0.06	No	Open
P-2175	150	AC	156	0.16	No	Open
P-2176	150	AC	262	0.15	No	Open
P-2210	150	AC	268	0.01	No	Open
P-2220	150	AC	188	0.29	No	Open
P-2230	150	AC	211	1.05	No	Open
P-2240	150	AC	212	0.86	No	Open
P-2250	150	AC	260	0.82	No	Open
P-2260	150	AC	81	1.53	No	Open
P-2270	150	AC	318	0.89	No	Open
P-2280	150	AC	183	0.75	No	Open
P-2473	150	PVC	16	0.13	No	Open
P-2474	150	PVC	15	0.13	No	Open
P-7980	150	AC	100	0.04	No	Open
P-7985	150	AC	66	0.1	No	Open
P-7970	150	AC	100	0.05	No	Open
P-2540	150	AC	51	0.02	No	Open
P-2550	150	AC	67	0.48	No	Open
P-2560	150	Cast iron	199	0.47	No	Open
P-2570	150	Cast iron	191	0.77	No	Open
P-2575	150	AC	197	0.49	No	Open
P-2580	150	AC	188	0.01	No	Open
P-2585	150	AC	268	0.62	No	Open
P-2590	150	AC	184	0.72	No	Open
P-2600	150	AC	183	0.62	No	Open
P-2610	150	AC	213	0.66	No	Open
P-2620	150	AC	99	0.44	No	Open
P-2630	150	AC	101	0.26	No	Open
P-2650	150	AC	154	0.09	No	Open
P-2660	150	AC	135	0.52	No	Open
P-2710	150	AC	203	0.71	No	Open
P-2720	150	Cast iron	89	0.44	No	Open
P-2740	150	AC	183	0.92	No	Open
P-2750	150	AC	180	0.62	No	Open
P-2780	150	AC	305	0.99	No	Open
P-2790	150	Cast iron	195	0.35	No	Open
P-2800	150	AC	186	0.4	No	Open
P-2801	150	AC	113	0.59	No	Open
P-2860	150	AC	334	0.18	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-2889	150	AC	32	1.15	No	Open
P-2890	150	AC	183	0.43	No	Open
P-2940	150	AC	184	0.2	No	Open
P-2950	150	AC	79	0.3	No	Open
P-2960	150	AC	273	0.09	No	Open
P-2970	150	AC	197	0.33	No	Open
P-2990	150	AC	244	0.31	No	Open
P-3000	150	AC	183	0.48	No	Open
P-3010	150	AC	211	0.27	No	Open
P-3052	150	PVC	5	0.18	No	Open
P-3057	150	PVC	116	1.03	No	Open
P-3060	150	AC	92	0.73	No	Open
P-3070	150	AC	187	0.58	No	Open
P-3080	150	Ductile Iron	85	0.01	No	Open
P-3090	150	AC	132	0.2	No	Open
P-3100	150	AC	100	0.18	No	Open
P-3101	150	PVC	51	0.45	No	Open
P-3102	150	PVC	42	0.24	No	Open
P-3103	150	PVC	111	0.23	No	Open
P-3104	150	PVC	37	0.34	No	Open
P-3105	150	PVC	130	0.01	No	Open
P-3106	150	PVC	42	0.2	No	Open
P-3107	150	PVC	100	0.19	No	Open
P-3108	150	PVC	184	0.14	No	Open
P-3109	150	PVC	79	0.14	No	Open
P-3110	150	PVC	163	0.15	No	Open
P-3111	150	PVC	72	0.2	No	Open
P-3117	150	PVC	45	0.18	No	Open
P-7415	150	AC	68	0.21	No	Open
P-7416	150	AC	118	0.24	No	Open
P-3140	150	PVC	136	0.45	No	Open
P-3141	150	PVC	117	0.46	No	Open
P-3150	150	AC	62	0.34	No	Open
P-3155	150	AC	103	0.32	No	Open
P-3160	150	AC	232	0.23	No	Open
P-3170	150	Ductile Iron	169	0.04	No	Open
P-3180	150	Ductile Iron	68	0.01	No	Open
P-3230	150	PVC	237	0.46	No	Open
P-3231	150	PVC	95	0.15	No	Open
P-3232	150	PVC	33	0.3	No	Open
P-3240	150	PVC	96	0.93	No	Open
P-3250	150	PVC	131	1.05	No	Open
P-7820	150	Cast iron	102	0	No	Closed
P-3281	150	Ductile Iron	117	0.03	No	Open
P-3291	150	AC	165	0.02	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3292	150	AC	196	0.03	No	Open
P-3296	150	AC	102	0.04	No	Open
P-3297	150	PVC	229	0.09	No	Open
P-3298	150	PVC	135	0.04	No	Open
P-3299	150	PVC	147	0.05	No	Open
P-3330	150	AC	103	0.42	No	Open
P-8311	150	AC	108	0.1	No	Open
P-8314	150	AC	116	0.03	No	Open
P-8318	150	PVC	108	0.05	No	Open
P-8315	150	PVC	65	0.04	No	Open
P-8316	150	AC	194	0.03	No	Open
P-8317	150	PVC	156	0.02	No	Open
P-3340	150	AC	84	0.08	No	Open
P-8346	150	PVC	131	0.03	No	Open
P-8349	150	PVC	185	0.04	No	Open
P-8350	150	PVC	51	0	No	Open
P-8351	150	PVC	145	0.01	No	Open
P-8352	150	PVC	270	0.02	No	Open
P-3425	150	AC	265	0.14	No	Open
P-3426	150	AC	19	0.29	No	Open
P-3470	150	AC	122	0.37	No	Open
P-3471	150	AC	191	0.05	No	Open
P-3472	150	AC	231	0.01	No	Open
P-3602	150	PVC	42	0.01	No	Open
P-3603	150	PVC	193	0.04	No	Open
P-3604	150	PVC	57	0.4	No	Open
P-3485	150	PVC	205	0.33	No	Open
P-3501	150	AC	204	0.03	No	Open
P-3502	150	PVC	219	0.14	No	Open
P-3550	150	PVC	122	0.03	No	Open
P-3580	150	AC	288	0.38	No	Open
P-3590	150	AC	93	0.32	No	Open
P-3591	150	AC	113	0.03	No	Open
P-3601	150	AC	230	0.02	No	Open
P-3600	150	AC	112	0.27	No	Open
P-3620	150	AC	114	0.22	No	Open
P-3621	150	PVC	68	0.03	No	Open
P-3651	150	AC	258	0.12	No	Open
P-3705	150	PVC	194	0.29	No	Open
P-3720	150	AC	199	0.43	No	Open
P-3740	150	PVC	87	0.53	No	Open
P-3750	150	AC	64	0.09	No	Open
P-3751	150	PVC	234	0.22	No	Open
P-3755	150	AC	101	0.27	No	Open
P-3756	150	AC	157	0.22	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3790	150	PVC	113	0.25	No	Open
P-3791	150	AC	166	0.13	No	Open
P-3852	150	AC	109	0.27	No	Open
P-3853	150	AC	120	0.32	No	Open
P-3856	150	AC	131	0.01	No	Open
P-3857	150	AC	102	0	No	Open
P-3858	150	AC	308	0.02	No	Open
P-3881	150	PVC	92	0.22	No	Open
P-3880	150	PVC	150	0.2	No	Open
P-3882	150	PVC	113	0.24	No	Open
P-3884	150	AC	148	0.1	No	Open
P-3885	150	AC	147	0.22	No	Open
P-3890	150	AC	135	0.24	No	Open
P-3910	150	AC	183	0.48	No	Open
P-3911	150	PVC	308	0.53	No	Open
P-3930	150	AC	30	0.39	No	Open
P-3931	150	AC	161	0.05	No	Open
P-3940	150	AC	196	0.6	No	Open
P-3941	150	AC	107	0.26	No	Open
P-3942	150	AC	101	0.47	No	Open
P-3943	150	AC	90	0.35	No	Open
P-3944	150	AC	42	0.09	No	Open
P-3947	150	AC	8	0.37	No	Open
P-3948	150	AC	232	0.06	No	Open
P-3962	150	AC	100	0.81	No	Open
P-3963	150	AC	12	0.56	No	Open
P-3965	150	AC	120	0.1	No	Open
P-3966	150	AC	179	0.1	No	Open
P-3967	150	AC	368	0.15	No	Open
P-4801	150	Ductile Iron	97	0.2	No	Open
P-4802	150	AC	3	0.08	No	Open
P-4781	150	Ductile Iron	74	0.37	No	Open
P-4782	150	AC	3	0.38	No	Open
P-3968	150	AC	205	0.09	No	Open
P-4362	150	AC	210	0.12	No	Open
P-4480	150	AC	85	0.14	No	Open
P-4481	150	AC	102	0.23	No	Open
P-3990	150	AC	88	0	No	Closed
P-3991	150	AC	71	0	No	Closed
P-4030	150	AC	191	0.52	No	Open
P-4072	150	AC	90	0.04	No	Open
P-4080	150	AC	130	0.12	No	Open
P-4081	150	AC	19	0.28	No	Open
P-4082	150	PVC	81	0.24	No	Open
P-4090	150	AC	136	0.14	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4100	150	AC	190	0.57	No	Open
P-4120	150	AC	408	0.45	No	Open
P-4130	150	AC	185	0.29	No	Open
P-4140	150	PVC	81	0.04	No	Open
P-4150	150	AC	237	0.3	No	Open
P-4151	150	AC	36	0.34	No	Open
P-4152	150	AC	62	0.28	No	Open
P-4153	150	AC	137	0.27	No	Open
P-4160	150	AC	99	0.13	No	Open
P-4170	150	AC	134	0.11	No	Open
P-4180	150	AC	191	0.62	No	Open
P-4190	150	AC	108	0.67	No	Open
P-4200	150	AC	234	0.24	No	Open
P-4220	150	PVC	95	0.01	No	Open
P-4221	150	AC	137	0.09	No	Open
P-4222	150	AC	244	0.05	No	Open
P-4223	150	AC	22	0.23	No	Open
P-4230	150	AC	104	0.23	No	Open
P-4256	150	AC	140	0.16	No	Open
P-4261	150	AC	141	0.1	No	Open
P-4300	150	PVC	71	0.29	No	Open
P-4270	150	Ductile Iron	90	0.39	No	Open
P-4271	150	PVC	226	0.13	No	Open
P-4280	150	AC	139	0.25	No	Open
P-4310	150	AC	44	0.01	No	Open
P-4315	150	AC	86	0.03	No	Open
P-4320	150	AC	200	0.03	No	Open
P-4330	150	AC	108	0.06	No	Open
P-4331	150	AC	359	0.01	No	Open
P-4351	150	AC	192	0.04	No	Open
P-4352	150	AC	167	0.04	No	Open
P-4356	150	AC	192	0.06	No	Open
P-4357	150	AC	92	0.02	No	Open
P-4361	150	AC	182	0.07	No	Open
P-4363	150	AC	169	0.14	No	Open
P-4364	150	AC	439	0.12	No	Open
P-4471	150	AC	177	0.02	No	Open
P-4600	150	AC	96	0	No	Open
P-4501	150	PVC	211	0.04	No	Open
P-4502	150	PVC	235	0.07	No	Open
P-4520	150	PVC	97	0.03	No	Open
P-4521	150	PVC	212	0.02	No	Open
P-4522	150	PVC	238	0.05	No	Open
P-4660	150	AC	82	0.04	No	Open
P-4680	150	AC	96	0.04	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4661	150	AC	200	0.01	No	Open
P-4662	150	AC	203	0	No	Closed
P-4690	150	AC	94	0.05	No	Open
P-4691	150	AC	187	0.02	No	Open
P-4692	150	PVC	234	0.03	No	Open
P-4700	150	AC	95	0.03	No	Open
P-4710	150	AC	96	0.07	No	Open
P-4711	150	PVC	212	0.02	No	Open
P-4715	150	AC	96	0.02	No	Open
P-4741	150	AC	207	0.15	No	Open
P-4816	150	PVC	203	0.04	No	Open
P-4819	150	AC	189	0.05	No	Open
P-4880	150	AC	99	0.15	No	Open
P-4890	150	AC	100	0.11	No	Open
P-4900	150	AC	89	0.04	No	Open
P-4913	150	AC	259	0.06	No	Open
P-4915	150	AC	359	0.02	No	Open
P-4930	150	AC	468	0.04	No	Open
P-4931	150	AC	105	0.11	No	Open
P-4950	150	AC	128	0.16	No	Open
P-5321	150	PVC	215	0.13	No	Open
P-5570	150	Cast iron	101	0	No	Closed
P-5580	150	Cast iron	109	0	No	Closed
P-5590	150	Cast iron	91	0	No	Closed
P-5600	150	Cast iron	112	0.14	No	Open
P-5610	150	Cast iron	101	0.05	No	Open
P-5650	150	Cast iron	99	0.21	No	Open
P-5660	150	Cast iron	104	0.24	No	Open
P-5670	150	Cast iron	101	0.49	No	Open
P-5680	150	Cast iron	104	0.51	No	Open
P-5690	150	Cast iron	85	0.82	No	Open
P-5770	150	Cast iron	69	0.12	No	Open
P-5910	150	Cast iron	102	0.65	No	Open
P-5911	150	Cast iron	20	0.29	No	Open
P-5920	150	Cast iron	102	0.04	No	Open
P-5940	150	AC	104	0.12	No	Open
P-5960	150	PVC	121	0.13	No	Open
P-5961	150	PVC	24	0.17	No	Open
P-5970	150	PVC	94	0.13	No	Open
P-5980	150	PVC	101	0.03	No	Open
P-5990	150	Cast iron	9	0.14	No	Open
P-6000	150	AC	199	0.35	No	Open
P-6010	150	AC	98	0.11	No	Open
P-6030	150	AC	95	0.17	No	Open
P-6075	150	AC	130	0.01	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-6080	150	AC	122	0.01	No	Open
P-6090	150	AC	67	0.01	No	Open
P-6100	150	PVC	141	0.09	No	Open
P-6110	150	PVC	102	0.15	No	Open
P-6120	150	PVC	100	0.17	No	Open
P-6121	150	PVC	15	0.24	No	Open
P-6130	150	PVC	96	0.29	No	Open
P-6140	150	Cast iron	100	0.17	No	Open
P-6150	150	Ductile Iron	95	0.04	No	Open
P-6160	150	Ductile Iron	60	0.12	No	Open
P-6170	150	Cast iron	103	0.32	No	Open
P-6180	150	Cast iron	100	0.55	No	Open
P-6190	150	Cast iron	109	0.58	No	Open
P-6200	150	Cast iron	93	0.58	No	Open
P-6210	150	Cast iron	85	0.57	No	Open
P-6220	150	Cast iron	105	0.66	No	Open
P-6221	150	Cast iron	17	0.03	No	Open
P-6230	150	Cast iron	94	0.01	No	Open
P-6240	150	Cast iron	101	0.25	No	Open
P-6260	150	AC	83	0.52	No	Open
P-6270	150	AC	102	0.22	No	Open
P-6251	150	AC	64	0.24	No	Open
P-6370	150	AC	67	0.14	No	Open
P-6480	150	PVC	107	0.02	No	Open
P-6561	150	AC	102	0.03	No	Open
P-6560	150	Ductile Iron	230	0.04	No	Open
P-6780	150	Ductile Iron	193	0.04	No	Open
P-6610	150	Cast iron	111	0.78	No	Open
P-6611	150	Cast iron	102	0.68	No	Open
P-6620	150	Cast iron	136	1.04	No	Open
P-6650	150	AC	97	0.36	No	Open
P-6660	150	PVC	100	0.2	No	Open
P-6670	150	AC	102	0.26	No	Open
P-6689	150	Ductile Iron	15	0.16	No	Open
P-6690	150	Ductile Iron	52	0.39	No	Open
P-6691	150	AC	49	0.42	No	Open
P-6700	150	AC	101	0.22	No	Open
P-6710	150	AC	101	0.05	No	Open
P-6720	150	AC	101	0.04	No	Open
P-6760	150	AC	125	1.52	No	Open
P-6811	150	PVC	15	0.59	No	Open
P-6820	150	PVC	89	0.31	No	Open
P-6850	150	Cast iron	105	0.02	No	Open
P-6870	150	PVC	89	0.32	No	Open
P-6900	150	AC	109	0.86	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-6910	150	AC	20	0.02	No	Open
P-6920	150	PVC	116	1.04	No	Open
P-6930	150	PVC	167	0.75	No	Open
P-6969	150	Cast iron	17	0.92	No	Open
P-6970	150	Cast iron	88	0.76	No	Open
P-6980	150	Cast iron	108	1.05	No	Open
P-6990	150	Cast iron	101	1.37	No	Open
P-7000	150	Cast iron	102	1.54	No	Open
P-7001	150	Cast iron	21	3.95	No	Open
P-7010	150	Cast iron	76	3.99	No	Open
P-7020	150	Cast iron	95	1.58	No	Open
P-7030	150	Cast iron	113	1.24	No	Open
P-7040	150	Cast iron	92	1.89	No	Open
P-7100	150	AC	99	0.36	No	Open
P-7110	150	AC	99	0.61	No	Open
P-7113	150	AC	31	1.42	No	Open
P-7120	150	Cast iron	91	0.77	No	Open
P-7130	150	Cast iron	103	0.9	No	Open
P-7140	150	Cast iron	100	0.79	No	Open
P-7150	150	Cast iron	100	0.81	No	Open
P-7160	150	Cast iron	86	0.04	No	Open
P-7170	150	Cast iron	97	0.74	No	Open
P-7180	150	AC	113	1.05	No	Open
P-7190	150	Cast iron	90	1.48	No	Open
P-7200	150	PVC	103	0.48	No	Open
P-7210	150	PVC	41	0.57	No	Open
P-7220	150	PVC	100	0.38	No	Open
P-7270	150	Cast iron	91	1.09	No	Open
P-7280	150	Cast iron	103	0.8	No	Open
P-7290	150	Cast iron	100	0.63	No	Open
P-7300	150	Cast iron	96	0.6	No	Open
P-7310	150	Cast iron	102	0.18	No	Open
P-7320	150	Cast iron	96	0.39	No	Open
P-7330	150	Cast iron	113	0.63	No	Open
P-7340	150	AC	91	0.65	No	Open
P-7350	150	AC	137	0.96	No	Open
P-7400	150	AC	78	0.53	No	Open
P-7420	150	PVC	95	0.09	No	Open
P-7430	150	Cast iron	101	0.35	No	Open
P-7440	150	PVC	100	0.39	No	Open
P-7450	150	PVC	101	0.06	No	Open
P-7460	150	AC	101	0.16	No	Open
P-7470	150	AC	102	0.34	No	Open
P-7480	150	AC	110	0.56	No	Open
P-7490	150	AC	90	0.64	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-7500	150	PVC	131	0.66	No	Open
P-7510	150	AC	99	0.18	No	Open
P-7530	150	AC	235	0.03	No	Open
P-7540	150	AC	213	0.15	No	Open
P-7551	150	AC	86	0.68	No	Open
P-7672	150	PVC	84	0.04	No	Open
P-7660	150	AC	184	0.08	No	Open
P-7650	150	AC	100	0.3	No	Open
P-7560	150	AC	96	0.14	No	Open
P-7570	150	AC	101	0.33	No	Open
P-1470	150	Cast iron	205	0.13	No	Open
P-7630	150	AC	89	0.68	No	Open
P-7640	150	AC	127	0.47	No	Open
P-7680	150	AC	91	0.35	No	Open
P-7690	150	AC	103	0.15	No	Open
P-7695	150	AC	187	0.18	No	Open
P-7715	150	AC	261	0.11	No	Open
P-7720	150	AC	98	0.01	No	Open
P-7730	150	AC	91	0.22	No	Open
P-7770	150	AC	213	0.54	No	Open
P-7790	150	AC	256	0.23	No	Open
P-7892	150	Steel	3	0	No	Open
P-7893	150	Steel	4	0	No	Open
P-7940	150	AC	165	0.1	No	Open
P-7950	150	AC	95	0.04	No	Open
P-7960	150	AC	87	0.04	No	Open
P-7990	150	AC	107	0.06	No	Open
P-7991	150	AC	95	0.03	No	Open
P-7992	150	AC	86	0.04	No	Open
P-7993	150	PVC	76	0.03	No	Open
P-7994	150	AC	108	0.01	No	Open
P-7118	150	Steel	2	1.94	No	Open
P-7119	150	Steel	2	1.94	No	Open
P-7121	150	Steel	1	1.94	No	Open
P-7123	150	PVC	7	1.96	No	Open
P-9021	150	PVC	64	0.04	No	Open
P-10005	150	PVC	380	0.09	No	Open
P-10006	150	PVC	382	0.14	No	Open
P-10007	150	PVC	331	0.09	No	Open
P-10008	150	PVC	342	0.13	No	Open
P-10009	150	PVC	115	0.1	No	Open
P-10010	150	PVC	178	0.01	No	Open
P-7117	150	Cast iron	54	2.63	No	Open
P-6871	150	PVC	63	0.02	No	Open
P-4083	150	PVC	117	0.19	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3622	150	PVC	226	0.16	No	Open
P-4224	150	AC	104	0.23	No	Open
P-4272	150	PVC	143	0.09	No	Open
P-4273	150	PVC	81	0.1	No	Open
P-4274	150	PVC	75	0.2	No	Open
P-4278	150	PVC	45	0.01	No	Open
P-3124	150	PVC	5	0.48	No	Open
P-3125	150	PVC	43	0.01	No	Open
P-3126	150	PVC	219	0.5	No	Open
P-3623	150	PVC	36	0.13	No	Open
P-1500	150	AC	9	0.38	No	Open
P-121	150	Steel	3	0	No	Open
P-151	150	AC	20	0	No	Closed
P-9025	150	PVC	38	0.23	No	Open
P-9026	150	PVC	90	0.41	No	Open
P-9027	150	PVC	69	0.15	No	Open
P-6931	150	PVC	134	0.91	No	Open
P-2271	150	PVC	14	0.91	No	Open
P-5003	150	AC	9	0	No	Closed
P-7780	150	AC	260	0.07	No	Open
P-7710	150	AC	263	0.13	No	Open
P-5005	150	AC	1	0	No	Closed
P-7670	150	AC	240	0.13	No	Open
P-5006	150	AC	2	0	No	Closed
P-7550	150	AC	217	0.39	No	Open
P-5010	150	AC	2	0	No	Closed
P-2900	150	AC	102	0.39	No	Open
P-2980	150	AC	175	0.13	No	Open
P-7520	150	AC	196	0	No	Open
P-3130	150	AC	191	0.21	No	Open
P-4972	150	Steel	1	5.9	No	Open
P-4973	150	Steel	1	5.9	No	Open
P-5630	150	AC	97	0.22	No	Open
P-109	150	Cast Iron	100	0	No	Open
P-130	150	PVC	159	0.14	No	Open
P-132	150	PVC	132	0.14	No	Open
P-135	150	PVC	52	0.05	No	Open
P-144	150	AC	84	0.08	No	Open
P-145	150	PVC	92	0.08	No	Open
P-234	150	AC	67	0.01	No	Open
P-235	150	PVC	23	0.01	No	Open
P-238	150	Ductile Iron	107	0.09	No	Open
P-239	150	Cast iron	116	0.09	No	Open
P-254imp	150	PVC	96	0.05	No	Open
P-255imp	150	PVC	53	0	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-357imp	150	Cast iron	76	0.24	No	Open
P-358imp	150	Cast iron	76	0.21	No	Open
P-405imp	150	AC	189	0.13	No	Open
P-406imp	150	AC	366	0.28	No	Open
P-408imp	150	AC	186	0.13	No	Open
P-409imp	150	AC	196	0.04	No	Open
P-411imp	150	AC	185	0.17	No	Open
P-412imp	150	AC	21	0.07	No	Open
P-2010	200	AC	82	0.45	No	Open
P-32	200	Ductile Iron	582	0.05	No	Open
P-102	200	Cast iron	23	1.9	No	Open
P-5460	200	Cast iron	34	1.82	No	Open
P-111	200	Steel	3	2.31	No	Open
P-158	200	Steel	3	2.32	No	Open
P-2129	200	Cast iron	3	1.27	No	Open
P-114	200	PVC	32	3.68	No	Open
P-118	200	Steel	4	0	No	Open
P-280	200	Cast iron	139	0.17	No	Open
P-340	200	AC	124	0.78	No	Open
P-341	200	Cast iron	135	0.81	No	Open
P-5000	200	AC	148	0.87	No	Open
P-5002	200	AC	60	0.89	No	Open
P-5020	200	AC	86	0.53	No	Open
P-5120	200	AC	431	0.56	No	Open
P-5125	200	AC	44	0.95	No	Open
P-5130	200	AC	82	0.77	No	Open
P-5135	200	AC	270	0.55	No	Open
P-507	200	AC	27	0.4	No	Open
P-7885	200	PVC	165	0.02	No	Open
P-7269	200	Cast iron	19	0.9	No	Open
P-740	200	AC	192	0.08	No	Open
P-750	200	AC	106	0.25	No	Open
P-762	200	PVC	17	0.03	No	Open
P-5420	200	AC	102	0.19	No	Open
P-5430	200	Cast iron	100	0.25	No	Open
P-5440	200	Cast iron	103	0.33	No	Open
P-5450	200	Cast iron	101	0.5	No	Open
P-5480	200	Cast iron	81	1.33	No	Open
P-5470	200	Cast iron	50	1.32	No	Open
P-1001	200	Cast iron	447	0.02	No	Open
P-1070	200	AC	175	0.54	No	Open
P-1080	200	AC	213	0.5	No	Open
P-1090	200	AC	195	0.24	No	Open
P-1100	200	AC	198	0.15	No	Open
P-1101	200	AC	2	0.13	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-1110	200	AC	196	0.25	No	Open
P-1111	200	AC	221	0.23	No	Open
P-1290	200	AC	48	0.18	No	Open
P-1300	200	AC	234	0.1	No	Open
P-1310	200	AC	206	0.06	No	Open
P-7900	200	AC	159	0.03	No	Open
P-7910	200	AC	182	0.1	No	Open
P-7995	200	AC	170	0.04	No	Open
P-7996	200	AC	10	0.02	No	Open
P-7997	200	AC	69	0.02	No	Open
P-7998	200	AC	198	0.02	No	Open
P-1820	200	AC	189	0.28	No	Open
P-1830	200	AC	215	1.28	No	Open
P-1831	200	AC	199	1.12	No	Open
P-1860	200	Cast iron	201	1.86	No	Open
P-2020	200	AC	98	0.55	No	Open
P-2130	200	Cast iron	249	0	No	Closed
P-2140	200	AC	183	1.08	No	Open
P-2410	200	Cast iron	186	0.64	No	Open
P-2420	200	AC	184	0.77	No	Open
P-2430	200	AC	155	0.77	No	Open
P-2431	200	AC	57	0.82	No	Open
P-2440	200	AC	200	0.48	No	Open
P-2450	200	AC	99	0.37	No	Open
P-2460	200	AC	95	0.28	No	Open
P-2470	200	Ductile Iron	161	0.07	No	Open
P-2471	200	PVC	412	0.07	No	Open
P-2472	200	PVC	17	0.08	No	Open
P-2490	200	AC	33	0.05	No	Open
P-2880	200	AC	177	0.39	No	Open
P-3020	200	AC	318	0.39	No	Open
P-3030	200	AC	102	0.38	No	Open
P-3040	200	AC	91	0.44	No	Open
P-3053	200	PVC	59	0.91	No	Open
P-3120	200	AC	106	0.39	No	Open
P-3270	200	AC	210	0.25	No	Open
P-3280	200	AC	95	0.19	No	Open
P-3290	200	AC	144	0.19	No	Open
P-3295	200	AC	111	0.58	No	Open
P-3331	200	AC	5	0.5	No	Open
P-3310	200	PVC	135	0.06	No	Open
P-3314	200	PVC	76	0.11	No	Open
P-9017	200	PVC	40	0.02	No	Open
P-8341	200	PVC	181	0.21	No	Open
P-8342	200	PVC	20	0.12	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-8343	200	PVC	58	0.07	No	Open
P-8344	200	PVC	168	0.03	No	Open
P-8347	200	PVC	174	0	No	Open
P-8354	200	PVC	84	0.03	No	Open
P-3500	200	AC	196	0.11	No	Open
P-3650	200	PVC	363	0.44	No	Open
P-3660	200	PVC	261	0.43	No	Open
P-3700	200	Ductile Iron	117	0.44	No	Open
P-3701	200	AC	93	0.33	No	Open
P-3760	200	Ductile Iron	117	0.7	No	Open
P-3761	200	Ductile Iron	96	0.03	No	Open
P-3770	200	Ductile Iron	131	0.55	No	Open
P-3771	200	Ductile Iron	66	0.65	No	Open
P-3862	200	AC	92	0.28	No	Open
P-3863	200	AC	115	0.12	No	Open
P-3864	200	AC	111	0.1	No	Open
P-3865	200	AC	115	0.1	No	Open
P-3900	200	AC	188	0.56	No	Open
P-3945	200	AC	55	0.4	No	Open
P-3946	200	AC	78	0.28	No	Open
P-3949	200	AC	364	0.04	No	Open
P-3950	200	AC	45	0.01	No	Open
P-3961	200	AC	106	0.4	No	Open
P-3960	200	AC	141	0.71	No	Open
P-4060	200	AC	185	0.67	No	Open
P-4061	200	AC	9	1.1	No	Open
P-3964	200	AC	132	0.36	No	Open
P-4800	200	AC	97	0.37	No	Open
P-4780	200	AC	73	0.33	No	Open
P-4470	200	AC	69	0.04	No	Open
P-4461	200	AC	122	0.02	No	Open
P-4460	200	AC	52	0.03	No	Open
P-3992	200	AC	155	0.69	No	Open
P-4000	200	AC	214	0.37	No	Open
P-4050	200	AC	464	0.58	No	Open
P-4070	200	AC	217	0.62	No	Open
P-4071	200	AC	196	0.67	No	Open
P-4210	200	PVC	188	0.32	No	Open
P-4240	200	AC	205	0.81	No	Open
P-4245	200	AC	40	0.77	No	Open
P-4250	200	AC	72	0.6	No	Open
P-4255	200	AC	71	0.48	No	Open
P-4260	200	AC	89	0.52	No	Open
P-4325	200	AC	384	0.1	No	Open
P-4340	200	AC	72	0.08	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4350	200	AC	92	0.11	No	Open
P-4355	200	AC	92	0.15	No	Open
P-4360	200	AC	99	0.22	No	Open
P-4370	200	AC	97	0.19	No	Open
P-4371	200	AC	182	0.2	No	Open
P-4372	200	AC	155	0.26	No	Open
P-4377	200	AC	20	0.26	No	Open
P-4373	200	AC	370	0.14	No	Open
P-4374	200	AC	206	0.08	No	Open
P-4375	200	AC	134	0.16	No	Open
P-4376	200	AC	166	0.18	No	Open
P-4450	200	AC	81	0.04	No	Open
P-4490	200	PVC	185	0.04	No	Open
P-4730	200	AC	88	0.61	No	Open
P-4740	200	AC	33	0.55	No	Open
P-4810	200	AC	99	0.32	No	Open
P-4812	200	AC	100	0.17	No	Open
P-4815	200	AC	80	0.15	No	Open
P-4818	200	AC	23	0.1	No	Open
P-4820	200	AC	63	0.11	No	Open
P-4821	200	AC	27	0.06	No	Open
P-4822	200	Cast iron	186	0.08	No	Open
P-4830	200	AC	69	0.12	No	Open
P-4840	200	PVC	96	0.08	No	Open
P-4845	200	PVC	99	0.05	No	Open
P-4910	200	AC	126	0.07	No	Open
P-4911	200	AC	369	0.06	No	Open
P-4912	200	AC	107	0.08	No	Open
P-4935	200	AC	49	0.04	No	Open
P-4940	200	AC	86	0.01	No	Open
P-4951	200	AC	120	0.19	No	Open
P-4970	200	AC	362	0.16	No	Open
P-4980	200	AC	147	0.09	No	Open
P-5290	200	AC	101	0.14	No	Open
P-5300	200	AC	100	0.18	No	Open
P-5310	200	AC	105	0.25	No	Open
P-5320	200	AC	102	0.26	No	Open
P-5330	200	AC	98	0.32	No	Open
P-5340	200	AC	101	0.52	No	Open
P-5771	200	PVC	100	0.08	No	Open
P-5780	200	PVC	80	0.07	No	Open
P-5781	200	PVC	23	0.09	No	Open
P-6380	200	PVC	157	0.02	No	Open
P-6381	200	PVC	46	0.02	No	Open
P-6390	200	Ductile Iron	101	0.07	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-6400	200	Cast iron	106	0.08	No	Open
P-6410	200	Cast iron	113	0.14	No	Open
P-7050	200	Cast iron	98	0	No	Closed
P-7060	200	Cast iron	49	0	No	Closed
P-7070	200	Cast iron	98	0	No	Closed
P-7080	200	Cast iron	99	0	No	Closed
P-7370	200	AC	98	0.29	No	Open
P-7380	200	AC	97	0.33	No	Open
P-7391	200	AC	16	0.37	No	Open
P-7673	200	AC	48	0.59	No	Open
P-7671	200	AC	58	0.58	No	Open
P-7590	200	AC	100	0.16	No	Open
P-7600	200	AC	102	0.24	No	Open
P-7610	200	AC	96	0.37	No	Open
P-7620	200	AC	114	0.43	No	Open
P-7800	200	AC	91	0.51	No	Open
P-7810	200	AC	86	0.16	No	Open
P-7890	200	AC	75	0.21	No	Open
P-7891	200	PVC	152	0.01	No	Open
P-7920	200	AC	99	0.13	No	Open
P-7930	200	AC	104	0.08	No	Open
P-8000	200	AC	167	0.23	No	Open
P-7122	200	PVC	15	1.08	No	Open
P-7124	200	PVC	12	0	Yes	Open
P-9003	200	PVC	99	0.59	No	Open
P-9005	200	PVC	18	0.66	No	Open
P-9007	200	PVC	101	0.54	No	Open
P-9009	200	PVC	207	0.46	No	Open
P-9010	200	PVC	194	0.39	No	Open
P-9012	200	PVC	28	1.1	No	Open
P-9016	200	PVC	138	0.75	No	Open
P-9019	200	AC	235	0.03	No	Open
P-10002	200	PVC	168	0.64	No	Open
P-10003	200	PVC	95	0.6	No	Open
P-10004	200	PVC	196	0.69	No	Open
P-7116	200	Cast iron	21	0	No	Open
P-7125	200	Steel	3	0	No	Open
P-7126	200	Steel	4	0	No	Closed
P-10013	200	PVC	202	0.69	No	Open
P-461	200	Cast iron	145	0.29	No	Open
P-462	200	Cast iron	139	0.23	No	Open
P-1483	200	PVC	11	1.28	No	Open
P-3129	200	PVC	81	0.39	No	Open
P-3131	200	PVC	192	0.2	No	Open
P-3134	200	PVC	164	0.18	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-2003	200	Steel	46	0	No	Closed
P-4957	200	Steel	3	0	No	Open
P-4959	200	Steel	3	0	No	Open
P-4961	200	Steel	3	0	No	Open
P-4963	200	Steel	3	0	No	Open
P-4966	200	Steel	4	3.32	No	Open
P-6612	200	PVC	120	0.91	No	Open
P-163	200	PVC	12	0.16	No	Open
P-5001	200	PVC	35	0.33	No	Open
P-5004	200	PVC	91	0.04	No	Open
P-5008	200	PVC	106	0.07	No	Open
P-5009	200	PVC	109	0.06	No	Open
P-5011	200	PVC	95	0.26	No	Open
P-3050	200	PVC	204	0.82	No	Open
P-7390	200	AC	97	0	No	Open
P-2870	200	AC	194	0.3	No	Open
P-7112	200	Cast iron	72	2.3	Yes	Open
P-7108	200	Cast iron	13	2.3	No	Open
P-7109	200	PVC	80	1.48	Yes	Open
P-7129	200	PVC	11	4.58	No	Open
P-7131	200	PVC	4	4.58	No	Closed
P-2177	200	PVC	120	0.53	No	Open
P-2571	200	Ductile Iron	312	0.28	No	Open
P-156	200	Cast iron	8	0	No	Closed
P-108	200	PVC	127	0.3	No	Open
P-5620	200	PVC	14	0.15	No	Open
P-4952	200	PVC	24	0.27	No	Open
P-4954	200	PVC	121	0.35	No	Open
P-4975	200	PVC	321	0.08	No	Open
P-4976	200	PVC	53	0.08	No	Open
P-4977	200	PVC	25	0.08	No	Open
P-4978	200	PVC	182	0	No	Open
P-196	200	PVC	92	0.35	No	Open
P-197	200	PVC	110	0.4	No	Open
P-206	200	PVC	196	1.15	No	Open
P-210	200	PVC	239	0.68	No	Open
P-244imp	200	AC	136	0.25	No	Open
P-245imp	200	AC	148	0.24	No	Open
P-269imp	200	Ductile Iron	52	0.23	No	Open
P-270imp	200	Ductile Iron	76	0.3	No	Open
P-303imp	200	PVC	262	0.7	No	Open
P-304imp	200	PVC	239	0.7	No	Open
P-336imp	200	AC	141	0.16	No	Open
P-337imp	200	AC	173	0.23	No	Open
P-361imp	200	PVC	21	1.55	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-107	200	Steel	22	0	No	Open
P-155	200	AC	20	0	No	Open
P-4701	200	PVC	235	0.04	No	Open
P-7580	200	AC	96	0.22	No	Open
P-6582	200	PVC	62	0	No	Open
P-129	200	PVC	122	0	No	Open
P-167	200	PVC	33	0.75	No	Open
P-193	200	PVC	166	0.66	No	Open
P-194	200	PVC	267	0.66	No	Open
P-195	200	PVC	103	1.68	No	Open
P-200	200	PVC	393	0	No	Open
P-201	200	PVC	58	0.75	No	Open
P-202	200	PVC	191	0.75	No	Open
P-205	200	PVC	230	0	No	Open
P-222	200	PVC	329	1.1	No	Open
P-226	200	PVC	290	0.24	No	Open
P-227	200	PVC	195	0	No	Open
P-228	200	PVC	106	0.24	No	Open
P-243imp	200	PVC	306	0.01	No	Open
P-250imp	200	PVC	148	0.03	No	Open
P-251imp	200	PVC	151	0.02	No	Open
P-252imp	200	PVC	519	0.04	No	Open
P-258imp	200	PVC	480	0.02	No	Open
P-260imp	200	PVC	533	0.04	No	Open
P-263imp	200	PVC	82	0.24	No	Open
P-294imp	200	PVC	286	0.08	No	Open
P-295imp	200	PVC	189	0.11	No	Open
P-306imp	200	PVC	209	0.12	No	Open
P-307imp	200	PVC	113	0.52	No	Open
P-308imp	200	PVC	152	0.45	No	Open
P-309imp	200	PVC	166	0.39	No	Open
P-310imp	200	PVC	209	0.31	No	Open
P-311imp	200	PVC	210	0.25	No	Open
P-314imp	200	PVC	190	0.1	No	Open
P-315imp	200	PVC	387	0.07	No	Open
P-317imp	200	PVC	116	0.69	No	Open
P-318imp	200	PVC	273	0.51	No	Open
P-319imp	200	PVC	341	0.34	No	Open
P-321imp	200	PVC	202	0.21	No	Open
P-322imp	200	PVC	347	0.55	No	Open
P-323imp	200	PVC	175	0.29	No	Open
P-324imp	200	PVC	320	0.1	No	Open
P-325imp	200	PVC	120	0.08	No	Open
P-328imp	200	PVC	222	0.2	No	Open
P-329imp	200	PVC	105	0.11	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-330imp	200	PVC	227	0.47	No	Open
P-331imp	200	PVC	218	0.38	No	Open
P-338imp	200	PVC	226	0.39	No	Open
P-339imp	200	PVC	516	0.29	No	Open
P-340imp	200	PVC	88	1.1	No	Open
P-341imp	200	PVC	119	0.01	No	Open
P-342imp	200	PVC	101	0.05	No	Open
P-345imp	200	PVC	99	0.03	No	Open
P-347imp	200	PVC	127	0.03	No	Open
P-348imp	200	PVC	206	0.58	No	Open
P-349imp	200	PVC	168	0.52	No	Open
P-350imp	200	PVC	473	0.7	No	Open
P-351imp	200	PVC	116	0.3	No	Open
P-352imp	200	PVC	136	0.27	No	Open
P-366imp	200	PVC	4	2.24	No	Open
P-367imp	200	PVC	4	2.24	No	Closed
P-404imp	200	PVC	8	0.23	No	Open
P-414imp	200	PVC	78	0.66	No	Open
P-415imp	200	PVC	94	0.48	No	Open
P-417imp	200	PVC	204	0.14	No	Open
P-420imp	200	PVC	102	0	No	Open
P-421imp	200	PVC	114	1.82	No	Open
P-104	250	Steel	2	0	No	Open
P-152	250	Steel	2	0	No	Open
P-370	250	AC	173	0.47	No	Open
P-380	250	AC	86	0.36	No	Open
P-5380	250	AC	102	0.02	No	Open
P-5390	250	AC	101	0.05	No	Open
P-5400	250	AC	101	0.17	No	Open
P-5410	250	AC	100	0.15	No	Open
P-1427	250	PVC	63	0.01	No	Open
P-3294	250	AC	90	0.66	No	Open
P-4322	250	AC	19	0	No	Open
P-4324	250	AC	52	0	No	Open
P-4326	250	AC	136	0.01	No	Open
P-4452	250	AC	85	0	No	Open
P-4455	250	AC	16	0.84	No	Open
P-4456	250	AC	217	0.45	No	Open
P-6420	250	Cast iron	90	0.22	No	Open
P-6421	250	Cast iron	15	0.23	No	Open
P-6430	250	Cast iron	98	0.73	No	Open
P-6440	250	Cast iron	99	0.99	No	Open
P-6450	250	Cast iron	53	1.47	No	Open
P-6451	250	Cast iron	9	1.02	No	Open
P-6452	250	Cast iron	42	1.48	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-6460	250	Cast iron	106	1.03	No	Open
P-6470	250	Cast iron	88	0.93	No	Open
P-6491	250	Cast iron	98	0.82	No	Open
P-6490	250	Cast iron	102	0.66	No	Open
P-7871	250	Steel	2	2.59	No	Open
P-7873	250	Steel	3	2.59	No	Open
P-9014	250	AC	233	0.02	No	Open
P-10000	250	PVC	8	0	Yes	Open
P-10001	250	PVC	2	0.4	No	Open
P-5572	250	PVC	96	0.09	No	Open
P-4275	250	AC	45	0.45	No	Open
P-4276	250	AC	177	0.44	No	Open
P-4277	250	PVC	30	0.01	No	Open
P-1482	250	PVC	103	2.93	No	Open
P-76	250	Steel	2	0	Yes	Open
P-4451	250	AC	203	0.01	No	Open
P-4453	250	AC	112	0	No	Open
P-79	250	AC	3	0	No	Open
P-4967	250	Steel	3	2.73	No	Open
P-4969	250	Steel	3	2.73	No	Open
P-149	250	PVC	127	1.22	No	Open
P-150	250	PVC	135	0.99	No	Open
P-240	250	PVC	18	1.5	No	Open
P-267imp	250	PVC	94	0.07	No	Open
P-268imp	250	PVC	112	0.08	No	Open
P-274imp	250	Steel	1	2.59	No	Open
P-275imp	250	Steel	1	2.59	No	Open
P-397imp	250	PVC	105	1.23	No	Open
P-398imp	250	PVC	59	1.29	No	Open
P-399imp	250	PVC	105	0.92	No	Open
P-400imp	250	PVC	107	1.13	No	Open
P-422imp	250	PVC	104	0.01	No	Open
P-1480	261.4	HDPE	178	2.68	No	Open
P-1481	261.4	HDPE	100	2.68	No	Open
P-2015	297	Steel	76	2.58	No	Open
P-74	297	Steel	4	2.99	No	Open
P-77	297	Steel	3	2.99	No	Open
P-80	297	Steel	3	0	No	Open
P-178	297	Steel	2	2.94	No	Open
P-179	297	Steel	15	2.58	No	Open
P-120	300	Steel	5	0	No	Open
P-160	300	Steel	5	0	No	Closed
P-501	300	Ductile Iron	360	0.72	No	Open
P-7090	300	Cast iron	111	1.02	No	Open
P-159	300	Cast iron	66	0.06	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-160	300	Cast iron	66	0.06	No	Open
P-172	300	Steel	2	6.29	No	Open
P-177	300	Steel	2	1.84	No	Open
P-180	300	Steel	5	1.84	Yes	Open
P-182	300	Steel	2	6.29	No	Closed
P-248imp	300	PVC	915	0.2	No	Open
P-261imp	300	PVC	289	0.19	No	Open
P-262imp	300	PVC	262	0.29	No	Open
P-396imp	300	PVC	252	1.8	No	Open
P-401imp	300	Ductile Iron	4	6.29	No	Open
P-402imp	300	Ductile Iron	45	6.29	No	Open
P-101	300	Steel	2	2.69	No	Open
P-150	300	Steel	2	2.6	No	Open
P-116	300	Cast iron	8	3.02	No	Open
P-164	300	Cast iron	14	0	No	Open
P-165	300	Ductile Iron	32	0	No	Open
P-5245	300	AC	211	0.71	No	Open
P-410	300	Ductile Iron	176	0.11	No	Open
P-420	300	Ductile Iron	191	0.09	No	Open
P-440	300	Cast iron	292	0.1	No	Open
P-450	300	Ductile Iron	139	0.42	No	Open
P-460	300	Ductile Iron	144	0.5	No	Open
P-470	300	Ductile Iron	92	0.63	No	Open
P-472	300	Ductile Iron	46	0.68	No	Open
P-481	300	Ductile Iron	176	0.53	No	Open
P-491	300	Ductile Iron	193	0.56	No	Open
P-2032	300	AC	60	0	No	Open
P-2050	300	AC	201	0.24	No	Open
P-2070	300	AC	295	0.34	No	Open
P-2080	300	AC	185	0.34	No	Open
P-6501	300	AC	8	1.21	No	Open
P-6500	300	AC	87	0.79	No	Open
P-2370	300	Cast iron	206	1.36	No	Open
P-2380	300	Cast iron	268	1.05	No	Open
P-2640	300	Cast iron	199	0	No	Closed
P-2670	300	Cast iron	203	0	No	Closed
P-2810	300	Cast iron	107	0	No	Closed
P-2820	300	Cast iron	97	0	No	Closed
P-2830	300	Cast iron	100	0	No	Closed
P-2840	300	Cast iron	169	0	No	Closed
P-3055	300	PVC	254	1.68	No	Open
P-9013	300	Cast iron	21	0	No	Closed
P-3261	300	Cast iron	261	0	No	Closed
P-3305	300	Steel	323	1.26	No	Open
P-3860	300	Steel	47	1.28	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4721	300	AC	150	0.59	No	Open
P-4946	300	AC	23	0.33	No	Open
P-4947	300	PVC	72	0.68	No	Open
P-4949	300	PVC	269	1.01	No	Open
P-5790	300	Ductile Iron	91	0.04	No	Open
P-5800	300	Ductile Iron	106	0.02	No	Open
P-5782	300	PVC	23	0.12	No	Open
P-5820	300	Ductile Iron	102	0.12	No	Open
P-5830	300	Ductile Iron	99	0.25	No	Open
P-5840	300	Ductile Iron	140	0.34	No	Open
P-5850	300	Ductile Iron	100	0.54	No	Open
P-5860	300	AC	99	0.92	No	Open
P-5870	300	AC	102	0.83	No	Open
P-5880	300	AC	87	1.02	No	Open
P-6050	300	Cast iron	84	0	No	Open
P-6051	300	Cast iron	12	0.11	No	Open
P-6060	300	Cast iron	88	0.11	No	Open
P-6061	300	Cast iron	15	0	No	Closed
P-6070	300	Cast iron	99	0	No	Closed
P-6365	300	PVC	55	0	No	Closed
P-6510	300	AC	93	1.01	No	Open
P-6520	300	AC	72	1.19	No	Open
P-6530	300	Ductile Iron	113	0.15	No	Open
P-6540	300	Ductile Iron	81	0	No	Open
P-6570	300	Cast iron	142	0.12	No	Open
P-6580	300	Cast iron	111	0.02	No	Open
P-6492	300	Cast iron	14	0.37	No	Open
P-7101	300	Cast iron	204	1.02	No	Open
P-7111	300	Cast iron	73	0.36	No	Open
P-7850	300	PVC	190	1.3	No	Open
P-7860	300	PVC	146	1.56	No	Open
P-7874	300	PVC	69	1.8	No	Open
P-4953	300	PVC	79	1.69	No	Open
P-3121	300	Ductile Iron	198	0.53	No	Open
P-3122	300	PVC	200	0.55	No	Open
P-3127	300	PVC	120	0.67	No	Open
P-3128	300	PVC	93	0.08	No	Open
P-73	300	PVC	254	0.09	No	Open
P-5810	300	Ductile Iron	85	0	No	Open
P-1	300	Steel	5	0	No	Open
P-2	300	Steel	4	0	No	Open
P-4968	300	Steel	2	1.9	No	Open
P-4971	300	Steel	17	3.79	No	Open
P-4956	300	Steel	2	1.48	No	Open
P-4958	300	Steel	1	1.48	No	Open

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Pipe Table City of Port Alberni

Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-4960	300	Steel	1	0	No	Open
P-4962	300	Steel	2	0	No	Open
P-4964	300	Steel	2	0	No	Open
P-4965	300	Steel	10	1.48	No	Open
P-4974	300	Steel	8	5.48	No	Open
P-4954a	300	Steel	6	5.48	No	Closed
P-4954b	300	Steel	4	5.48	No	Open
P-6580	300	Cast iron	133	0.01	No	Open
P-6584	300	Cast iron	58	0	No	Open
P-7115	300	Cast iron	211	0.48	No	Open
P-124	300	Cast iron	11	0.36	No	Open
P-157	300	AC	122	1.36	No	Open
P-158	300	AC	90	1.36	No	Open
P-163	300	AC	204	0.21	No	Open
P-164	300	AC	193	0	No	Open
P-165	300	Ductile Iron	120	0.16	No	Open
P-166	300	Ductile Iron	144	0.16	No	Open
P-218	300	Cast iron	187	0	No	Closed
P-219	300	Cast iron	192	0	No	Closed
P-229	300	PVC	274	0.45	No	Open
P-230	300	PVC	13	0.54	No	Open
P-241	300	AC	49	0.35	No	Open
P-242	300	AC	155	0.35	No	Open
P-277imp	300	PVC	211	1.52	No	Open
P-278imp	300	PVC	1	1.8	No	Open
P-418imp	300	Cast iron	401	0	No	Closed
P-419imp	300	Cast iron	209	0	No	Closed
P-423imp	300	Cast iron	281	0	No	Closed
P-424imp	300	Cast iron	219	3.03	No	Open
P-7	305	Steel	4	0	No	Open
P-8	305	Steel	4	0	No	Open
P-142	350	AC	202	0	No	Open
P-236	350	Ductile Iron	250	0.81	No	Open
P-3300	350	AC	363	0.32	No	Open
P-3301	350	AC	492	0.43	No	Open
P-3302	350	AC	388	0.51	No	Open
P-3303	350	AC	564	0.66	No	Open
P-3304	350	AC	301	0.68	No	Open
P-3306	350	AC	54	0.36	No	Open
P-3307	350	AC	197	0.36	No	Open
P-3313	350	AC	839	0.16	No	Open
P-3932	350	AC	113	0.31	No	Open
P-3933	350	AC	89	0.43	No	Open
P-3934	350	AC	113	0.45	No	Open
P-3935	350	AC	110	0.54	No	Open

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Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3936	350	AC	116	0.67	No	Open
P-3937	350	AC	104	0.98	No	Open
P-3938	350	AC	88	1.03	No	Open
P-4321	350	AC	236	1.03	No	Open
P-4948	350	PVC	367	1.03	No	Open
P-4328	350	AC	229	1.03	No	Open
P-4323	350	AC	397	1.03	No	Open
P-4	387	Steel	10	0.92	No	Open
P-5	387	Steel	10	0.92	No	Open
P-2017	387	Steel	42	1.84	No	Open
P-168	387	Steel	10	0.92	No	Open
P-169	387	Steel	11	0.92	No	Open
P-3063	400	Ductile Iron	114	1.07	No	Open
P-4720	400	Ductile Iron	242	0.89	No	Open
P-3850	400	PVC	137	0.52	No	Open
P-7880	400	PVC	285	0.5	No	Open
P-7881	400	Steel	104	0.5	No	Open
P-7882	400	PVC	100	0.5	No	Open
P-237	400	Ductile Iron	210	0.62	No	Open
P-503	425	Ductile Iron	265	0.54	No	Open
P-504	425	Ductile Iron	359	0.54	No	Open
P-505	425	Ductile Iron	26	0.45	No	Open
P-2337	425	Ductile Iron	63	2.13	No	Open
P-2336	425	Ductile Iron	197	1.64	No	Open
P-2340	425	Ductile Iron	76	1.34	No	Open
P-2345	425	Ductile Iron	137	1.34	No	Open
P-3780	425	Ductile Iron	383	0.14	No	Open
P-155	425	Ductile Iron	127	1.77	No	Open
P-161	425	Ductile Iron	185	1.77	No	Open
P-162	425	Ductile Iron	148	1.77	No	Open
P-2019	438	Steel	80	2.5	No	Open
P-2016	438	PVC	34	1.7	No	Open
P-170	438	Steel	114	2.95	No	Open
P-176	438	Steel	30	2.5	No	Open
P-183	438	Steel	2	2.44	Yes	Open
P-184	438	Steel	1	2.44	No	Closed
P-2347	450	AC	66	1.16	No	Open
P-2350	450	AC	191	1.06	No	Open
P-3059	450	PVC	254	0.85	No	Open
P-3061	450	Steel	379	0.85	No	Open
P-3062	450	PVC	25	0.85	No	Open
P-3112	450	Ductile Iron	165	0.83	No	Open
P-3113	450	Ductile Iron	43	0.83	No	Open
P-3114	450	Ductile Iron	157	0.82	No	Open
P-3115	450	Ductile Iron	126	0.82	No	Open

2034 Demands - Peak Hour Demands						1411-02
Pipe Table						City of Port Alberni
Label	Diameter (mm)	Material	Length (m)	Velocity (m/s)	Check Valve	Status (Initial)
P-3116	450	Ductile Iron	109	0.82	No	Open
P-3260	450	Ductile Iron	124	0.83	No	Open
P-9022	450	Ductile Iron	13	1.13	No	Open
P-4279	450	Ductile Iron	114	0.82	No	Open
P-4281	450	PVC	131	0.68	No	Open
P-3263	450	Ductile Iron	104	0.83	No	Open
P-203	450	PVC	11	0.85	No	Open
P-204	450	PVC	219	0.85	No	Open
P-379imp	450	Ductile Iron	200	1.57	No	Open
P-380imp	450	Ductile Iron	189	1.57	No	Open
P-381imp	450	Ductile Iron	196	1.57	No	Open
P-382imp	450	Ductile Iron	204	1.4	No	Open
P-383imp	450	Ductile Iron	613	1.24	No	Open
P-425imp	450	PVC	771	1.35	No	Open
P-426imp	450	PVC	173	1.29	No	Open
P-427imp	450	PVC	62	1.28	No	Open
P-428imp	450	PVC	102	1.23	No	Open
P-429imp	450	PVC	103	1.24	No	Open
P-430imp	450	PVC	111	1.24	No	Open
P-431imp	450	PVC	117	1.21	No	Open
P-432imp	450	PVC	18	1.29	No	Open
P-433imp	450	PVC	262	1.34	No	Open
P-434imp	450	PVC	22	1.13	No	Open
P-138	474.9	HDPE	1,565	1.29	No	Open
P-186	474.9	HDPE	1,694	1.29	No	Open
P-187	474.9	HDPE	1	1.29	No	Open
P-2002	522	PVC	1,455	1.01	No	Open
P-136	531.9	Ductile Iron	338	1.03	No	Open
P-2011	591	Steel	52	1.81	Yes	Open
P-2009	591	Steel	119	1.1	No	Open
P-190	597	Steel	4,821	1.59	No	Open

2034 Demands - Peak Hour Demands 1411-02
Node Table City of Port Alberni

Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-3	143.9	SOURCE	0	149.6	8
J-4	134.4	SOURCE	0	147.3	18.2
J-5	134.4	SOURCE	0	175.1	57.8
J-6	122.5	SOURCE	0	151.6	41.4
J-7	149.5	SOURCE	0	156.9	10.5
J-8	122.5	144	0	143.2	29.4
J-9	141.5	144res	0	143.4	2.8
J-11	141.5	158res	0	156.8	21.7
J-13	139.9	180	0.12	190.4	71.7
J-14	128.7	180	0.12	190.4	87.6
J-15	127.7	180	0.12	190.4	89
J-16	138.2	180	0.12	190.4	74.1
J-17	137	180	0.12	190.4	75.8
J-18	120.4	158.2	0.29	154	47.6
J-19	118.5	158.2	0.29	153.7	49.9
J-20	119.9	158.2	0.29	153.7	47.9
J-21	116.2	158.2	0.29	153.5	53
J-22	109.2	180	0.12	190.4	115.3
J-23	110.6	158.2	0.3	153	60.2
J-24	101	158.2	0.3	153	73.9
J-25	97.4	158.2	0.29	151.8	77.2
J-26	125.7	158.2	0.29	151.7	36.9
J-27	112	158.2	0.29	151.5	56
J-28	115.1	158.2	0.29	152.1	52.5
J-29	100.7	158.2	0.29	151.8	72.5
J-30	108.2	158.2	0.29	153.2	63.8
J-31	90.2	158.2	0.26	151.3	86.7
J-32	84.3	158.2	0.26	151.3	95.1
J-33	84.3	158.2	0.3	151.3	95.1
J-34	88	158.2	0.26	151.7	90.4
J-35	81.7	158.2	0.3	151.3	98.7
J-36	90.2	158.2	0.26	151.2	86.6
J-37	90	158.2	0.26	150.9	86.5
J-38	87.3	158.2	0.26	150.6	89.9
J-39	92.4	158.2	0.26	150.6	82.6
J-40	85.7	158.2	0.26	150.3	91.7
J-41	87.9	158.2	0.26	150.3	88.6
J-42	81.1	158.2	0.26	150.4	98.4
J-43	75	158.2	0.26	150.2	106.8
J-44	79.1	158.2	0.26	150.1	100.7
J-45	78.6	158.2	0.26	149.9	101.2
J-46	75.8	158.2	0.22	149.4	104.4
J-47	72.2	158.2	0.22	149.4	109.5
J-48	68.9	158.2	0.18	149.4	114.2

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-49	68.9	158.2	0.22	149.4	114.2
J-50	87.8	158.2	0.26	149.9	88.1
J-51	83.8	158.2	0.26	149.9	93.8
J-52	90.9	158.2	0.26	150.3	84.3
J-53	95.7	158.2	0.28	150.5	77.7
J-54	97.8	158.2	0.28	150.5	74.8
J-55	96.9	158.2	0.26	150.6	76.3
J-56	96.3	158.2	0.26	150.6	77
J-57	94.7	158.2	0.26	150.6	79.3
J-58	94.7	158.2	0.22	149.4	77.6
J-59	82.5	158.2	0.18	139.2	80.5
J-60	87.9	158.2	0.18	149.4	87.3
J-61	85.5	158.2	0.18	149.4	90.7
J-62	92.2	158.2	0.22	149.4	81.2
J-63	85.5	158.2	0.18	149.4	90.7
J-64	149.5	158res	0	156.7	10.2
J-65	77.2	158.2	0.26	151.3	105.1
J-71	141.5	180	0.12	190.5	69.5
J-72	141.5	158Res	0	156.8	21.7
J-100	124.1	144	0	142.7	26.4
J-101	99.8	144	0.24	142.4	60.5
J-102	99	144	0.24	142.2	61.4
J-103	103	144	0.24	142.1	55.5
J-104	84.4	144	0.2	141.9	81.6
J-105	101.9	144	0.2	141.9	56.8
J-106	84.5	144	0.17	141.6	81.1
J-107	84.8	144	0.24	142.4	81.7
J-108	108.5	180	0.12	190.4	116.3
J-109	109.2	144	0.24	139.8	43.4
J-110	103.3	144	0.24	138.7	50.2
J-111	86.1	144	0.25	137.7	73.2
J-112	82	144	0.26	137.7	79
J-113	101	144	0.24	138.4	53.1
J-114	88.9	144	0.24	137.9	69.5
J-115	111.5	144	0.24	142.2	43.5
J-200	84.8	122.1	0.29	120.9	51.2
J-201	84.3	122.1	0.29	120.9	51.9
J-202	79.6	122.1	0.29	120.7	58.3
J-203	76.6	122.1	0.29	120.6	62.5
J-204	78.3	122.1	0.29	120.6	60.1
J-205	68.3	122.1	0.29	120.6	74.2
J-206	66.3	122.1	0.29	120.5	77
J-207	62.2	122.1	0.29	120.5	82.8
J-208	53.1	122.1	0.29	120.5	95.7
J-209	55.2	122.1	0.26	120.5	92.7

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-210	41.3	122.1	0.25	120.5	112.4
J-211	48.9	122.1	0.25	120.5	101.6
J-212	41.8	122.1	0.25	120.4	111.5
J-213	52.6	122.1	0.95	120.3	96.1
J-214	58.7	122.1	0.29	120.5	87.7
J-215	60.1	122.1	0.29	120.5	85.8
J-216	62.4	122.1	0.29	120.6	82.5
J-217	61	122.1	0.3	120.5	84.4
J-218	72	122.1	0.29	120.6	69
J-219	77.4	122.1	0.32	120.7	61.5
J-220	79.4	122.1	0.32	120.9	58.9
J-221	83.9	144	0.24	137.1	75.4
J-222	86.1	122.1	0.29	138.7	74.7
J-223	75.9	122.1	0.32	120.8	63.7
J-224	82	122.1	0.32	121.1	55.4
J-225	89.2	122.1	0.3	121.7	46.1
J-226	88.9	122.1	0.32	121.9	46.8
J-227	84.2	122.1	0.3	121.2	52.6
J-228	83.6	122.1	0.34	120.9	53
J-229	78.3	122.1	0.34	120.7	60.2
J-230	68.4	122.1	0.32	120.4	73.8
J-231	69.2	122.1	0.32	120.5	72.8
J-232	64.5	122.1	0.3	120.4	79.4
J-233	63.8	122.1	0.3	120.4	80.3
J-234	62.7	122.1	0.3	120.2	81.7
J-235	57.2	122.1	0.3	120.2	89.4
J-236	60	122.1	0.3	120.3	85.6
J-237	52.6	122.1	0.3	120.3	96.1
J-238	45.5	122.1	0.3	120.2	106.1
J-239	45.5	122.1	0.3	120.2	106.1
J-240	49.4	122.1	0.26	119.1	98.9
J-241	50.9	122.1	0.26	119.1	96.8
J-242	59.1	122.1	0.26	119.6	85.8
J-243	64	122.1	0.29	119.6	78.9
J-244	68.2	122.1	0.32	119.6	72.9
J-245	66.7	122.1	0.32	120.3	76.1
J-246	81.7	122.1	0.3	120	54.3
J-247	75.2	122.1	0.3	118.3	61.2
J-248	76.7	122.1	0.3	117.8	58.3
J-249	77.2	122.1	0.26	117.8	57.6
J-250	81.1	122.1	0.26	117.8	52.1
J-251	63.2	122.1	0.26	117	76.3
J-252	65.9	122.1	0.26	117	72.5
J-253	66.8	122.1	0.26	117	71.2
J-254	63.9	122.1	0.26	116.6	74.8

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-255	75	122.1	0.34	118	61
J-256	81.7	122.1	0.34	119.2	53.2
J-257	80.2	122.1	0.34	119.2	55.3
J-258	73.9	122.1	0.34	117.6	62.1
J-259	63.2	122.1	0.26	116.3	75.4
J-260	63.2	122.1	0.26	116.3	75.3
J-261	51.2	122.1	0.18	113.3	88.1
J-262	58	122.1	0.18	115.3	81.3
J-263	61.8	122.1	0.26	116.1	77
J-264	44.3	122.1	0.18	111.7	95.8
J-265	72.7	122.1	0.34	117.2	63.2
J-266	72.9	122.1	0.32	119.1	65.5
J-267	65.5	122.1	0.26	115.9	71.5
J-268	71.4	122.1	0.34	116.3	63.7
J-269	54.2	122.1	0.18	114.6	85.7
J-270	39.6	122.1	0.18	110.6	100.7
J-271	68.6	122.1	0.34	118.9	71.3
J-272	64.5	122.1	0.28	118.9	77.2
J-273	73.6	122.1	0.34	117.6	62.4
J-274	74.5	122.1	0.28	117.4	61
J-275	72.1	122.1	0.28	117.9	65
J-276	68.5	122.1	0.28	118.3	70.7
J-277	62.2	122.1	0.22	118.3	79.6
J-278	74	122.1	0.22	117.5	61.7
J-279	70.3	122.1	0.22	115.4	64
J-280	61.5	122.1	0.22	115.1	76.1
J-281	65.9	122.1	0.25	115.5	70.4
J-282	48.5	122.1	0.2	114.8	94.2
J-283	50	122.1	0.3	120.2	99.7
J-284	54.5	122.1	0.2	114.5	85.1
J-285	54.5	122.1	0.2	114.4	85.1
J-286	48.5	122.1	0.2	113.9	92.9
J-287	50.7	122.1	0.2	114.5	90.5
J-288	46.3	122.1	0.2	114.6	97
J-289	56.9	122.1	0.22	117	85.3
J-290	49.4	122.1	0.26	118.6	98.3
J-291	45.5	86.1	0.83	84.2	54.9
J-292	50.4	86.1	0.71	84.3	48.1
J-293	79	122.1	0.29	120.6	59.1
J-294	61	122.1	0.26	116.1	78.2
J-295	45.5	122.1	0	118.6	103.7
J-296	109	144	0	139.2	42.8
J-297	97.5	158.2	0	149.4	73.6
J-298	104.5	158.2	0	149.4	63.7
J-299	97.6	158.2	0	149.4	73.5

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-300	41.3	86.1	0.78	84.4	61.3
J-300	94.8	158.2	0	149.4	77.5
J-301	45.5	86.1	0	84.2	55
J-301	87.1	158.2	0	149.4	88.4
J-302	34.1	86.1	0.78	84.4	71.5
J-302	77	122.2	0	118.6	59
J-303	38.4	86.1	0.65	85.5	66.9
J-303	77.1	122.2	0	118.9	59.3
J-304	48.3	86.1	0.65	86.2	53.8
J-304	87	122.2	0	119.1	45.6
J-305	36.1	86.1	0.65	85.5	70.2
J-305	87	122.2	0	119.1	45.6
J-306	27.3	86.1	0.65	85.5	82.7
J-306	66.2	122.2	0	115.8	70.4
J-307	36.9	86.1	0.65	120.5	118.6
J-307	9.6	65	0	56.9	67.2
J-308	28.6	86.1	0.65	84.3	79
J-308	11.5	65	0	57	64.5
J-309	24.3	86.1	0.65	84.3	85.1
J-309	13	65	0	57	62.4
J-310	27.6	86.1	0.65	84.2	80.4
J-310	178.8	SOURCE	0	183.5	6.7
J-311	18.9	86.1	0.65	84.2	92.7
J-311	163.8	SOURCE	0	179.5	22.3
J-312	12.8	86.1	0.65	84.2	101.3
J-312	2	65	0	56.6	77.4
J-313	5.2	86.1	0.65	84.2	112.1
J-314	14.2	86.1	0.65	84.2	99.3
J-314	41.3	100	0	97.9	80.3
J-315	6	86.1	0.65	84.1	110.9
J-315	65.2	122.2	0	115.8	71.8
J-316	5.2	86.1	0.65	84.1	112
J-316	44.1	86.2	0	82.1	54
J-317	41.8	122.1	0.81	84.2	60.1
J-317	68.8	122.1	0	116.6	67.8
J-318	45.7	86.1	0.81	84.2	54.6
J-319	44.8	86.1	0.95	84.2	55.9
J-320	42	86.1	0.95	84.2	59.9
J-321	41.4	86.1	0.95	84.2	60.7
J-321	123	144	0	141.9	26.9
J-322	39.9	86.1	0.81	84.2	62.9
J-322	85	122.1	0	120.5	50.4
J-323	30.2	86.1	0.81	84.2	76.7
J-323	85	158.2	0	150.3	92.7
J-324	40.6	86.1	0.81	84.2	61.9

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-325	32.7	86.1	0.65	84.2	73.1
J-325	119	144	0	140.7	30.9
J-326	36	86.1	0.65	84.2	68.4
J-326	96.5	144	0	142.4	65.1
J-327	40.8	86.1	0.81	84.2	61.6
J-327	39	86.1	0	84.2	64.2
J-328	42.5	86.1	0.77	84.2	59.2
J-328	54.5	122.2	0	112.2	81.9
J-329	42.4	86.1	0.69	84.2	59.3
J-330	39.9	86.1	0.69	84.2	62.8
J-330	141.8	SOURCE	0	149.1	10.4
J-331	43.5	86.1	0.83	84.2	57.8
J-331	141.8	SOURCE	0	148.9	10
J-332	45.5	86.1	0.83	84.2	54.9
J-332	140	SOURCE	0	143.8	5.4
J-333	50.4	86.1	0.71	84.3	48.1
J-333	141.8	SOURCE	0	156.9	21.5
J-334	48	86.1	0.71	84.2	51.4
J-334	143.6	SOURCE	0	156.9	18.9
J-335	31.2	86.1	0.78	84.9	76.2
J-335	141.5	SOURCE	0	156.8	21.7
J-336	14.2	86.1	0.65	84.3	99.4
J-337	5.2	86.1	0.65	84.2	112.1
J-337	134.4	SOURCE	0	175.1	57.7
J-338	35.9	86.1	0.69	84.1	68.4
J-338	142.3	SOURCE	0	149.2	9.8
J-339	25.4	86.1	0.71	84.1	83.3
J-339	22.5	65	0	56.2	47.9
J-340	9.9	86.1	0.65	84.1	105.3
J-340	15.9	65	0	55.9	56.7
J-341	6	86.1	0.65	84.1	110.9
J-341	19	65	0	55.3	51.5
J-342	4.3	86.1	0.65	84.1	113.3
J-342	10.9	65	0	56.7	65
J-343	4.6	86.1	0.65	84.1	112.8
J-344	4.3	86.1	0.58	84.1	113.3
J-345	4.3	86.1	0.58	84.1	113.3
J-346	3.7	86.1	0.58	84.1	114.1
J-347	17.8	86.1	0.65	84.1	94.1
J-347	59.5	122.2	0	111.1	73.3
J-348	25.2	86.1	0.65	84.1	83.6
J-348	62.5	122.2	0	111.7	69.8
J-349	41.3	86.1	0.69	84.1	60.8
J-349	48.9	122.2	0	113.8	92.2
J-350	46.8	86.1	0.71	84.2	53

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-350	55.4	122.2	0	113.8	83
J-351	46.9	86.1	0.71	84.2	52.9
J-351	88	173	0	170.9	117.7
J-352	48.5	86.1	0.65	85.6	52.8
J-352	88.8	173	0	170.9	116.6
J-353	48.3	86.1	0.71	114.5	93.9
J-353	91.5	173	0	170.9	112.7
J-354	44	86.1	0.71	84.3	57.3
J-354	91.5	173	0	170.9	112.7
J-355	53.5	86.1	0.71	84.5	44
J-355	134.2	180	0	190.4	79.8
J-356	45.2	86.1	0.65	85	56.5
J-356	135	158Res	0	154.9	28.2
J-357	38.9	86.1	0.65	84.5	64.7
J-357	137.9	173	0	171.2	47.3
J-358	33.7	86.1	0.65	84.2	71.6
J-359	33.6	86.1	0.65	84.2	71.8
J-360	40.5	86.1	0.58	84.2	62.1
J-360	17	65	0	56.4	55.9
J-361	42.3	86.1	0.58	84.2	59.4
J-361	17.1	65	0	56.4	55.7
J-362	50.7	86.1	0.65	84.1	47.5
J-362	17.2	65	0	56.3	55.5
J-363	33.9	86.1	0.58	84.1	71.3
J-363	5	65	0	57.1	73.9
J-364	34.7	86.1	0.58	84.1	70.2
J-364	10.2	65	0	57	66.5
J-365	32.7	86.1	0.58	84.1	73
J-365	18.8	65	0	57	54.3
J-366	28.7	86.1	0.5	84.1	78.7
J-366	37	100	0	97.8	86.4
J-367	20.2	86.1	0.5	84.1	90.7
J-367	3.5	65	0	61.5	82.2
J-368	31.7	86.1	0.58	84.1	74.4
J-368	18.9	65	0	62.4	61.8
J-369	26.2	86.1	0.5	84.1	82.2
J-369	17.5	65	73.63	55.1	53.4
J-370	30.8	86.1	0.58	84.2	75.8
J-371	25	86.1	0.58	84.1	83.9
J-371	62	122.2	0	111.1	69.7
J-372	18.9	86.1	0.5	84	92.3
J-372	5.9	65	0	60.6	77.7
J-373	18.9	86.1	0.5	84	92.3
J-373	21.6	<None>	0	56.3	49.3
J-374	40.6	86.1	0.65	84.2	61.9

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-374	12.5	65	0	57	63.1
J-375	4	86.1	0.58	84.1	113.7
J-375	22.1	65	0	56.3	48.6
J-376	3.3	86.1	0.69	83.9	114.5
J-376	46	122.1	0	120.4	105.6
J-377	8.5	86.1	0.41	83.8	107
J-377	74.8	<None>	0	135.1	85.7
J-378	22.6	86.1	0.5	84	87.2
J-378	75	<None>	0	135.2	85.4
J-379	49.4	86.1	0.58	84.1	49.3
J-380	3.3	86.1	0.69	83.9	114.3
J-381	13	86.1	0.58	84.1	100.9
J-382	24	86.1	0.58	84.1	85.3
J-382	16.6	65	5.81	56.3	56.4
J-383	18	86.1	0.65	84	93.6
J-383	82	122.2	2.9	118	51.1
J-384	51	86.1	0.91	120.5	98.7
J-384	81.5	122.2	2.9	118	51.9
J-385	84.9	173	0	170.9	122.1
J-386	87	173	2.9	170.9	119.1
J-387	97	173	2.9	170.9	104.9
J-388	102.3	173	0	170.9	97.5
J-389	108	173	2.9	170.9	89.4
J-390	118	173	2.9	171	75.2
J-391	132.5	173	2.9	171	54.7
J-392	113.4	173	0	170.9	81.7
J-393	107	173	5.54	170.9	90.7
J-395	124.5	158.2	5.81	151.5	38.3
J-396	116	158.2	5.81	151.1	49.8
J-397	97	158.2	5.81	150.9	76.5
J-398	92	158.2	5.81	150.9	83.7
J-399	139	180	5.81	190.4	73
J-400	3.9	65	0.59	62.9	83.8
J-401	3.9	65	0.36	62.9	83.8
J-401	90	122.1	2.9	120.6	43.5
J-402	5.7	65	0.42	62.8	81.1
J-402	103	144	2.9	142.1	55.5
J-403	5.1	65	0.36	62.7	81.8
J-404	5.1	65	0.36	62.7	81.8
J-404	99	144	13.2	141.7	60.6
J-405	4.8	65	0.36	62.7	82.2
J-405	92.3	<None>	0	141.9	70.4
J-406	4.8	65	0.59	62.8	82.3
J-406	16.4	65	0	56.4	56.8
J-407	3.1	65	0.59	62.6	84.4

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-407	30.2	86.2	0	80	70.7
J-408	3.1	65	0.59	62.6	84.4
J-408	86	<None>	0	170.9	120.5
J-409	4.2	65	0.59	62.6	82.9
J-409	85.4	<None>	0	137.9	74.6
J-410	5.6	65	0.59	62.6	80.9
J-411	14.9	65	0.59	62.6	67.8
J-412	15.8	65	0.36	62.6	66.5
J-413	23.5	65	0.36	62.7	55.6
J-414	30.5	65	0.36	62.7	45.7
J-414	8.2	<None>	0	57.3	69.7
J-415	21.6	65	0.59	62.8	58.5
J-415	6.3	<None>	0	57.6	72.7
J-416	30.9	65	0.36	62.7	45.2
J-416	2.9	<None>	0	57.6	77.6
J-417	20.4	65	0.59	63	60.5
J-417	96.4	158.2	0	151.7	78.5
J-418	8.5	65	0.36	63	77.4
J-418	87.8	<None>	0	146.9	83.9
J-419	22.3	65	0.83	62.5	57.1
J-420	13.6	65	0.83	62.5	69.4
J-421	5.5	65	0.83	62.5	80.9
J-422	3.9	65	0.83	62.5	83.1
J-423	3.3	65	0.83	62.5	84
J-424	3.6	65	0.94	62	82.9
J-425	3.6	65	0.94	61.9	82.8
J-427	11.4	65	0.94	62.4	72.4
J-428	14.9	65	0.94	62.4	67.5
J-429	18.4	65	0.94	62.5	62.5
J-430	25.8	65	0.94	62.5	52.1
J-431	26.9	65	1.03	62.4	50.4
J-432	23.2	65	1.03	62.4	55.7
J-433	19.4	65	1.03	62.4	61
J-434	18.8	65	1.03	62.4	61.9
J-435	11.6	65	0.67	62.4	72.1
J-436	13.4	65	0.67	62.4	69.6
J-437	12.8	65	0.67	62.4	70.4
J-438	16.9	65	0.67	62.4	64.6
J-439	16.9	65	0.67	62.4	64.6
J-440	25.8	65	0.83	62.5	52.1
J-441	27.6	65	1.03	62.4	49.4
J-442	3.5	65	0.67	61.3	82
J-443	26.2	65	0.42	62.8	52
J-444	5.1	65	0.36	62.7	81.8
J-500	40.8	86.2	0.33	83	59.9

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-501	43	86.2	0.42	82.8	56.5
J-502	48	86.2	0.38	82.8	49.4
J-503	46.1	86.2	0.38	82.9	52.3
J-504	38.4	86.2	0.45	80.7	60
J-505	36.3	86.2	0.28	79.7	61.6
J-506	34.6	86.2	0.28	79.2	63.3
J-507	32	86.2	0.28	78.6	66.1
J-508	30.3	86.2	0.45	77.7	67.2
J-509	20.4	86.2	0.45	70.3	70.8
J-510	35.2	86.2	0.45	79.3	62.7
J-511	35.1	86.2	0.63	80	63.7
J-512	37.9	86.2	0.63	80.7	60.8
J-513	44	86.2	0.5	82.3	54.3
J-514	46.6	86.2	0.5	82.3	50.7
J-515	47.3	86.2	0.5	82.3	49.7
J-516	48.9	86.2	0.38	82.8	48.2
J-517	52.8	86.2	0.38	83.1	43
J-518	49.2	86.2	0.5	82.4	47.1
J-519	52.1	86.2	0.5	82.4	43.1
J-520	55.4	86.2	0.38	83.5	40
J-521	64.1	86.2	0	84	28.3
J-522	52.4	122.2	0.5	118.1	93.2
J-523	55	86.2	0.24	82.4	38.9
J-524	52.8	122.2	0.5	118.1	92.7
J-525	49.8	122.2	0.5	117.9	96.7
J-526	49.8	122.2	0.54	117.9	96.7
J-527	45.3	86.2	0.63	81.9	52
J-528	42.3	86.2	0.63	81.9	56.1
J-529	41.1	86.2	0.65	81.8	57.8
J-530	39.2	86.2	0.7	80.9	59.2
J-531	34.4	86.2	0.71	80.6	65.6
J-532	32.6	86.2	0.53	80.2	67.6
J-533	29.9	86.2	0.53	80.1	71.3
J-534	25.8	86.2	0.71	80.1	77.1
J-535	27.5	86.2	0.63	79.6	73.9
J-536	22.5	86.2	0.63	79.6	81
J-537	27.6	86.2	0.78	80.2	74.6
J-538	29.7	86.2	0.48	80.2	71.7
J-540	32	86.2	0.48	80.2	68.4
J-541	30.7	86.2	0.48	80.3	70.3
J-542	30.1	86.2	0.48	80.3	71.2
J-543	33.7	86.2	0.73	80.5	66.5
J-544	34.7	86.2	0.73	80.8	65.4
J-545	38.6	86.2	0.65	81.2	60.4
J-546	44.8	86.2	0.62	81.2	51.6

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-547	50.8	122.2	0.62	117.3	94.4
J-548	57.3	122.2	0.62	117.3	85.2
J-549	49.9	122.2	0.62	117.6	96.1
J-550	63.2	122.2	0.62	117.2	76.7
J-551	52.7	86.2	0.62	81	40.1
J-552	43.2	86.2	0.62	81	53.7
J-553	41.4	86.2	0.62	81	56.2
J-554	58.4	122.2	0.62	116.8	82.8
J-555	70.1	122.2	0.38	116.7	66.2
J-556	68.4	122.2	0.38	116.7	68.6
J-557	64.6	122.2	0.46	116.7	74
J-558	57.4	122.2	0.46	116.7	84.2
J-559	54.5	122.2	0.46	116.6	88.1
J-560	56.4	122.2	0.62	116.7	85.6
J-561	43.7	86.2	0.62	80.8	52.7
J-562	36.5	86.2	0.65	80.8	62.9
J-563	51.3	86.2	0.62	81	42.1
J-564	36.7	86.2	0.65	80.9	62.7
J-565	42.2	122.2	0.53	116.5	105.4
J-566	42.5	122.2	0.49	116.4	104.9
J-567	36.4	86.2	0.65	80.8	63
J-568	30.6	86.2	0.69	80.3	70.6
J-569	35.7	86.2	0.69	80.7	63.9
J-570	31.1	86.2	0.73	80.4	70
J-571	32.8	86.2	0.73	80.3	67.4
J-572	26.2	86.2	0.69	80.3	76.7
J-573	27.5	86.2	0.57	80.2	74.8
J-574	22.2	86.2	0.51	80.2	82.3
J-575	16.9	86.2	0.51	80.2	89.8
J-576	17.6	86.2	0.24	80.1	88.8
J-577	11.7	86.2	0.24	80.1	97.2
J-578	17.6	86.2	0.24	80.1	88.8
J-579	20.1	86.2	0.24	80.2	85.3
J-580	11.3	86.2	0.24	80.1	97.6
J-581	4.6	86.2	0.24	80.1	107.1
J-582	13.4	86.2	0.37	80	94.6
J-583	15.5	86.2	0.37	80	91.6
J-584	21.5	86.2	0.46	80.2	83.3
J-585	18.9	86.2	0.46	80.1	86.9
J-586	19.9	86.2	0.46	80	85.4
J-587	29	86.2	0.69	80.1	72.6
J-588	25.4	86.2	0.69	80.1	77.7
J-589	28	86.2	0.69	80.1	74
J-590	28	86.2	0.69	80.1	73.9
J-591	32.4	86.2	0.59	80	67.6

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-592	35.5	86.2	0.59	80	63.2
J-593	39.3	86.2	0.5	80	57.8
J-594	43.5	86.2	0.41	80	51.8
J-595	46.6	86.2	0.3	80	47.4
J-596	40	86.2	0.51	80	56.8
J-597	36.4	86.2	0.51	80	61.9
J-598	35.1	86.2	0.51	80	63.7
J-599	30.6	86.2	0.51	80	70.1
J-600	5.5	65	0.3	61.1	78.9
J-601	5.8	65	0.3	60.9	78.1
J-602	5.8	65	0.3	60.8	78.1
J-603	5.5	65	0.3	60.8	78.6
J-604	4.5	65	0.3	60.7	79.7
J-605	4.2	65	0.3	60.6	80.1
J-606	4	65	0.3	60.6	80.3
J-607	4.5	65	0.3	60.5	79.5
J-608	4.5	65	0.55	60.2	79.1
J-609	5.9	65	0.49	60.8	78
J-610	5.3	65	0.3	60.7	78.6
J-611	2.9	65	0.3	60.6	81.9
J-612	5.6	65	0.3	60.6	78
J-613	5.5	65	0.3	60.5	78.1
J-614	3.7	65	0.55	60.2	80.2
J-615	4.3	65	0.62	60.1	79.2
J-616	6.5	65	0.3	60.6	76.7
J-617	7.5	65	0.3	60.7	75.5
J-618	7.3	65	0.3	60.7	75.7
J-619	7.6	65	0.3	60.6	75.3
J-620	6	65	0.51	60.1	76.8
J-621	8.7	65	0.3	60.7	73.8
J-622	8.2	65	0.3	60.7	74.6
J-623	8.6	65	0.3	60.7	74
J-624	6.7	65	0.51	60.1	75.8
J-625	9.5	65	0.3	60.7	72.7
J-626	8.7	65	0.3	60.8	74
J-627	8.6	65	0.3	60.8	74.1
J-628	20.3	65	0.3	61.1	57.9
J-629	17.7	65	0.3	61.2	61.7
J-630	9.6	65	0.3	60.9	72.8
J-631	10.3	65	0.51	60.1	70.7
J-632	11	65	0.73	60	69.5
J-633	13	65	0.51	59.9	66.6
J-634	16	65	0.57	59.9	62.3
J-635	19	65	0.7	59.8	58
J-636	14.2	65	0.73	59.8	64.7

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-637	13.4	65	0.73	59.8	65.9
J-638	21.3	65	0.7	59.6	54.4
J-639	17	65	0.73	59.8	60.7
J-640	13.6	65	0.73	59.7	65.5
J-641	17.1	65	0.73	59.6	60.3
J-642	17.4	65	0.73	59.6	59.9
J-643	27.2	65	0.7	59.6	46
J-644	18.5	65	0.73	59.5	58.2
J-645	25.2	65	0.7	59.4	48.6
J-646	11.4	65	0.73	59.6	68.4
J-647	9.3	65	0.73	59.5	71.3
J-648	6.6	65	0.73	59.5	75.1
J-649	3.7	65	0.77	59.4	79.1
J-650	3.9	65	0.82	59.2	78.5
J-651	2.6	65	0.82	59.2	80.3
J-652	2.6	65	0.82	59.2	80.3
J-653	7.6	65	0.73	59.7	73.9
J-654	7.6	65	0.73	59.7	74
J-655	5	65	0.73	59.7	77.6
J-656	2.8	65	0.82	59.2	80
J-657	4.1	65	0.82	58.6	77.3
J-658	4.4	65	0.77	58.7	77.1
J-659	4.4	65	0.77	58.7	77.1
J-660	3.9	65	0.77	59.3	78.6
J-661	3.9	65	0.73	59.3	78.6
J-662	10	65	0.73	59.3	70
J-663	13.3	65	0.73	59.4	65.4
J-664	14.7	65	0.73	59.4	63.5
J-665	20	65	0.73	59.4	55.9
J-666	28.2	65	0.7	59.4	44.3
J-667	4.7	65	0.73	58.2	75.9
J-668	6.9	65	0.77	58.2	72.8
J-669	13.2	65	0.77	57.7	63.2
J-670	18.4	65	0.73	57.7	55.8
J-671	9	65	0.82	57.5	68.8
J-672	6.2	65	0.82	57.8	73.2
J-673	4	65	0.82	58.2	76.9
J-674	8	65	0.82	57.3	70
J-675	4.9	65	0.82	57.1	74.1
J-676	2.6	65	0.82	58.6	79.4
J-677	3.9	65	0.82	58.6	77.6
J-678	3.5	65	0.5	58.1	77.6
J-679	2.2	65	0.82	58.1	79.4
J-680	1.2	65	0.82	58.1	80.7
J-681	2.6	65	0.82	58.2	79

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-682	2.3	65	0.82	58	79.1
J-683	3.1	65	0.82	57.8	77.7
J-684	3.8	65	0.5	57.8	76.7
J-685	2.8	65	0.82	57.7	77.9
J-686	4.3	65	0.82	57.6	75.6
J-687	2.8	65	0.82	57.6	77.8
J-688	4.2	65	0.5	57.7	75.9
J-689	4.8	65	0.82	57.6	74.9
J-690	7.8	65	0.5	57.6	70.7
J-691	9.3	65	0.5	57.3	68.1
J-692	3.5	65	0.5	57.1	76.1
J-693	6.2	65	0.82	57.6	72.9
J-694	3	65	0.82	59.6	80.3
J-695	8.3	65	0.49	60.8	74.6
J-696	7.3	65	0.3	60.7	75.7
J-697	6	65	0.3	60.6	77.5
J-698	15	65	0.73	59.4	63
J-699	20	65	0.73	59.4	56
J-700	24.4	65res	0	61.4	52.5
J-701	24.4	100	0.13	97.8	104.3
J-702	25.6	100	0.13	97.8	102.6
J-703	29.2	100	0.13	97.8	97.4
J-704	33.7	100	0.13	97.8	91.1
J-705	32.6	100	0.13	97.8	92.6
J-706	38	100	0.13	97.8	84.9
J-708	38.6	100	0.13	97.8	84.1
J-709	34.8	100	0.13	97.8	89.5
J-710	44.2	100	0.25	97.8	76.1
J-711	52.8	65res	0	63.8	15.6
J-712	53.1	122.2	0.25	111.6	83.1
J-713	53.1	122.2	0.25	111.6	83
J-714	62.7	122.2	0.18	111.4	69.1
J-715	57.5	122.2	0.18	111.3	76.3
J-716	55.4	122.2	0.25	111.4	79.5
J-717	56.3	122.2	0.25	111.3	78.1
J-718	55.3	122.2	0.25	111.3	79.4
J-719	55.1	122.2	0.3	111.2	79.6
J-720	51.1	122.2	0.29	111.1	85.2
J-721	49.7	122.2	0.4	111.1	87.2
J-722	50.3	122.2	0.4	111.1	86.3
J-723	47	122.2	0.4	111.1	90.9
J-724	46.7	122.2	0.4	111.1	91.4
J-725	46.3	122.2	0.36	111.1	91.9
J-726	45.1	122.2	0.32	111.1	93.7
J-727	44.5	100	0.3	97.8	75.7

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-728	44.3	100	0.3	97.8	76
J-729	44.3	100	0.3	97.8	76
J-730	44.3	100	0.3	97.8	76
J-731	49.7	100	0.3	97.8	68.3
J-732	50.3	100	0.3	97.8	67.5
J-733	49.6	122.2	0.36	111.2	87.4
J-734	47.2	122.2	0.34	111.1	90.7
J-735	28.3	100	0.3	97.8	98.7
J-736	31.9	100	0.3	97.9	93.6
J-737	29.8	100	0.3	97.9	96.6
J-738	31.4	100	0.3	97.9	94.3
J-739	30.9	100	0.3	97.9	95.1
J-740	33.9	100	0.3	97.9	90.9
J-741	40.8	100	0.3	97.9	81.1
J-742	45.1	100	0.3	98	75.1
J-743	39.6	100	0.3	97.9	82.7
J-744	37	100	0.3	97.9	86.4
J-745	62.7	122.2	0.18	111.3	69
J-746	47.4	122.2	0.4	111.1	90.4
J-747	48.5	122.2	0.4	111.1	88.8
J-748	50.8	122.2	0.4	111.1	85.5
J-749	49	122.2	0.4	111.1	88.1
J-750	51	122.2	0.4	111.1	85.3
J-751	53.2	122.2	0.4	111.1	82.1
J-752	56.4	122.2	0.4	111.1	77.6
J-753	56.5	122.2	0.4	111.1	77.4
J-754	51.2	122.2	0.4	111.1	85
J-755	53.4	122.2	0.4	111.1	81.8
J-756	61	122.2	0.4	111.1	71.1
J-757	58	122.2	0.4	111.1	75.3
J-758	55.3	122.2	0.4	111.1	79.2
J-759	53.8	122.2	0.4	111.1	81.3
J-760	53.2	122.2	0.4	111.1	82.2
J-761	52.3	122.2	0.4	111.1	83.4
J-762	59.1	122.2	0.4	111.1	73.8
J-763	57.2	122.2	0.4	111.1	76.5
J-764	55.9	122.2	0.4	111.1	78.4
J-765	56.6	122.2	0.29	111.1	77.4
J-766	61.5	122.2	0.29	111.1	70.4
J-767	72	122.2	0.29	111.1	55.5
J-768	64.3	122.2	0.4	111.1	66.4
J-769	62.2	122.2	0.4	111.1	69.4
J-770	62.4	122.2	0.4	111.1	69.1
J-771	63.8	122.2	0.4	111.1	67.1
J-772	63.5	122.2	0.4	111.1	67.6

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-773	62.6	122.2	0.29	111.2	68.9
J-774	62.6	122.2	0.29	111.2	68.9
J-775	62.1	122.2	0.29	111.1	69.6
J-776	58.2	122.2	0.18	111.1	75.2
J-777	61.8	122.2	0.18	111.1	70
J-778	53.7	122.2	0.18	111.8	82.5
J-779	55.5	122.2	0.18	112.3	80.6
J-780	40.7	65res	0	62.1	30.4
J-781	33.9	100	0.3	97.9	90.9
J-782	55.1	122.2	0.3	111.2	79.6
J-783	55.2	122.2	0.25	111.2	79.5
J-784	56.3	122.2	0.25	111.3	78.1
J-785	40.6	100	0.3	97.9	81.3
J-786	62	122.2	0.18	111	69.6
J-787	62	122.2	0.18	110.5	68.9
J-788	62.2	122.2	0.4	111.1	69.4
J-789	33.3	100	0.13	97.8	91.6
J-790	40	100	0.3	97.8	82.1
J-791	63	122.2	0.18	111.5	68.8
J-792	40.7	100	0.22	97.8	81.1
J-793	45.1	100	0.3	97.8	74.9
J-794	62.6	122.2	0.29	111.1	68.9
J-795	42.9	100	0.3	97.9	78
J-796	11.5	65	0.36	56.7	64.2
J-797	5.1	65	0.5	56.9	73.5
J-798	14	65	0.82	57	61
J-799	62.7	122.2	0.18	111.3	69
J-800	4.6	65	0.36	57.4	75
J-801	2.6	65	0.36	57	77.3
J-802	10.8	65	0.36	56.8	65.3
J-803	11	65	0.36	56.6	64.7
J-804	4.9	65	0.54	56.7	73.6
J-805	4.4	65	0.54	57.1	74.8
J-806	3.8	65	0.54	56.7	75.1
J-807	2.6	65	0.54	56.7	76.8
J-808	2.8	65	0.54	56.6	76.4
J-809	3.1	65	0.54	56.6	75.9
J-810	3.6	65	0.54	56.5	75.1
J-811	3.3	65	0.54	56.6	75.6
J-812	2.9	65	0.54	56.6	76.3
J-813	3	65	0.54	56.6	76.1
J-814	4.4	65	0.54	56.7	74.2
J-815	10.1	65	0.54	56.4	65.7
J-816	5.1	65	0.54	56.4	72.8
J-817	17.2	65	0.54	56.4	55.6

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-818	15.5	65	0.54	56.4	58
J-819	4.5	65	0.54	56.8	74.2
J-820	4.7	65	0.54	56.7	73.8
J-821	14.1	65	0.54	56.4	60
J-822	14	65	0.54	56.4	60.2
J-823	5.1	65	0.54	56.6	73
J-824	15.7	65	0.54	56.4	57.8
J-825	18.2	65	0.54	56.4	54.2
J-826	18.9	65	0.54	56.4	53.2
J-827	17.4	65	0.54	56.4	55.3
J-828	19.5	65	0.54	56.4	52.3
J-829	8.6	65	0.54	56.3	67.8
J-830	20.2	65	0.54	56.3	51.3
J-831	4.7	65	0.54	56.7	73.8
J-832	20.2	65	0.54	56.5	51.5
J-833	62.7	122.2	0.18	111.3	69
J-834	15	65	0.54	56.3	58.7
J-835	15	65	0.54	56.3	58.7
J-836	16	65	0.54	56.3	57.3
J-837	7	65	0.18	56.7	70.6
J-838	17	65	0.54	56.3	55.8
J-839	17	65	0.54	56.3	55.8
J-840	7	65	0.18	56.7	70.6
J-841	17	65	0.54	56.3	55.8
J-842	17	65	0.54	56.3	55.8
J-843	18	65	0.54	56.3	54.4
J-844	12	65	0.18	56.5	63.2
J-845	19	65	0.54	56.3	53
J-846	19	65	0.54	56.3	53
J-847	19	65	0.54	56.3	53
J-848	10	65	0.54	56.3	65.8
J-849	10	65	0.54	56.3	65.8
J-850	5	65	0.54	56.3	72.9
J-851	5	65	0.54	56.3	72.9
J-852	19	65	0.54	56.3	53
J-853	8	65	0.54	56.6	68.9
J-854	7	65	0.54	56.6	70.4
J-855	18	65	0.54	56.5	54.7
J-856	11	65	0.54	56.5	64.5
J-857	2	65	0.54	56.5	77.3
J-858	4.4	65	0.54	56.6	74.1
J-859	5.1	65	0.54	56.6	73
J-861	13	65	0.36	56.5	61.8
J-862	12	65	0.54	56.5	63.2
J-863	13	65	0.54	56.5	61.7

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-864	50	65res	0	63.2	18.8
J-865	50	122.2	0.32	111.6	87.5
J-866	62	122.2	0	110.5	68.9
J-867	62.6	122.2	0	111.1	68.9
J-868	60	122.2	0	111.1	72.6
J-869	60	122.2	0	111.1	72.6
J-870	61	122.2	0	111.1	71.2
J-900	82.5	158.1	0.29	138.9	80.1
J-901	86	158.1	0.29	138.1	73.9
J-902	72.4	158.1	0.34	136.5	91
J-903	74.5	122.2	0.18	117.7	61.3
J-904	68.2	122.2	0.18	116.7	68.9
J-905	53.1	122.2	0.18	115.8	89
J-906	86	122.2	0.24	119.4	47.5
J-908	72.7	122.2	0.18	117.1	63.1
J-909	68.7	122.2	0.18	117	68.5
J-910	60	122.2	0.18	116.7	80.6
J-911	74.7	122.2	0.18	116.8	59.7
J-912	64.6	122.2	0.29	116.7	74
J-913	84.6	122.2	0.24	119.1	48.9
J-914	82.8	122.2	0.24	118.6	50.8
J-915	72	122.2	0.24	118.3	65.7
J-916	64.1	122.2	0.24	118.2	76.8
J-917	72.9	122.2	0.24	118.3	64.4
J-918	78.6	122.2	0.24	118.3	56.4
J-919	83.9	122.2	0.24	118.4	49
J-920	76.2	122.2	0.24	118.3	59.7
J-921	58.8	122.2	0.24	118.1	84.2
J-922	76.2	122.2	0.24	118.2	59.6
J-923	76.7	122.2	0.24	118.1	58.8
J-924	67	122.2	0.24	118.1	72.5
J-926	82.8	86res	0	84.9	3
J-927	86.8	122.2	0.24	119.1	45.9
J-928	67.4	122.2	0.18	115.8	68.7
J-929	86	122.2	0	119.1	47
J-930	55	122.2	0.18	113.9	83.5
J-931	59.7	122.2	0.18	114.7	78.1
J-932	63	122.2	0.18	113.5	71.7
J-933	63	122.2	0.18	113.2	71.3
J-934	52	86.2	0.3	80	39.7
J-935	78	122.2	0.24	118.2	57
J-936	77.5	122.2	0.24	118.2	57.7
J-937	76	122.2	0.24	118.2	59.9
J-938	76	122.2	0.24	118.3	60
J-939	76	158.1	0.29	137.4	87.2

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-940	76	158.1	0.29	137.7	87.5
J-941	75.4	158.1	0.29	137.4	87.9
J-942	75.4	122.2	0.24	118.2	60.7
J-943	75.8	122.2	0.24	118.1	60.1
J-944	76	122.2	0.29	137.1	86.8
J-945	75.5	122.2	0.24	118.1	60.5
J-946	75.5	158.1	0.29	136.9	87.3
J-947	75.5	158.1	0.29	136.8	87.1
J-948	76.3	122.2	0.24	118.1	59.3
J-949	79.4	122.2	0.24	118.1	55
J-950	78.2	122.2	0.24	118.1	56.8
J-951	76	122.2	0.24	118.1	59.9
J-952	55.5	122.2	0.18	112.6	81
J-953	86	86res	0	87.5	2.1
J-954	70	158.1	0.36	136.6	94.6
J-960	86	158.1	0.29	137.8	73.5
J-966	55.5	122.2	0.18	112.6	81.1
J-967	53.1	158.1	0.29	137.9	120.4
J-968	86	122.2	0.24	119.4	47.3
J-970	75	158.1	0.22	135.2	85.4
J-971	80	158.1	0.22	135.5	78.8
J-972	80	158.1	0.22	135.7	79.1
J-973	80	158.1	0.22	136.2	79.7
J-974	80	158.1	0.22	135.5	78.8
J-975	80	158.1	0.22	135.6	79
J-976	80	158.1	0.22	135.6	78.9
J-977	80	158.1	0.22	135.6	78.9
J-978	80	158.1	0.22	135.6	78.9
J-980	75	122.2	0.18	118.3	61.4
J-981	75	158.1	0.22	135.2	85.4
J-985	83	86res	0	85.3	3.3
J-1200	48.3	122.1	0.21	118.2	99.2
J-1201	55.1	122.1	0.21	118.4	89.9
J-1202	62.2	122.1	0.21	118.6	80.1
J-1203	75.3	122.1	0.21	118.9	61.9
J-1204	82.5	122.1	0.21	119.4	52.4
J-1205	84.5	122.1	0.21	119.6	49.8
J-1206	62.9	122.1	0.21	118.6	79
J-1207	62.1	122.1	0.21	118.6	80.2
J-1208	68.7	122.1	0.21	118.6	70.8
J-1209	66.8	122.1	0.21	118.6	73.5
J-1400	25	86.2	0.51	80	78
J-1401	17	86.2	0.51	80	89.4
J-1402	29.8	86.2	0.51	80	71.2
J-1403	29.6	86.2	0.51	80	71.5

2034 Demands - Peak Hour Demands					1411-02
Node Table					City of Port Alberni
Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-1404	33.1	86.2	0.51	80	66.5
J-1405	36.2	86.2	0.51	80	62.1
J-1406	38.3	86.2	0.51	80	59.2
J-1407	47.2	86.2	0.3	80	46.5
J-1408	39.7	86.2	0.51	80	57.2
J-1409	38.4	86.2	0.51	80	59
J-1410	38.3	86.2	0.51	80	59.2
J-1411	33.7	86.2	0.51	80	65.7
J-1412	44	86.2	0.51	80	51.1
J-1413	45.3	86.2	0.51	80	49.2
J-1414	25	86.2	0.48	80	78.1
J-1415	46.1	86.2	0	82.9	52.3
J-1416	44.3	122.1	0.18	110.2	93.5
J-1417	46.7	86.2	0.3	80	47.2
J-1418	23	86.2	0.46	80	80.9
J-1419	33	86.2	0.69	80	66.8
J-1420	48	122.2	0.3	116.4	97.1
J-1421	61	122.2	0.18	116	78.1
J-1422	61	122.2	0.62	116.9	79.4
J-1423	61	122.2	0.62	116.8	79.3
J-1424	58	122.2	0.62	116.8	83.5
J-1425	55	86.2	0.3	80	35.5
J-1426	41.1	86.2	0.65	81.6	57.5
J-1427	41.1	86.2	0.69	81.6	57.5
J-1428	55	122.2	0.18	113.9	83.5
J-1429	8.3	86.2	0.37	80	101.8
J-1430	27.5	122.1	0	106.9	112.6
J-1431	31.6	122.1	0	105	104.2
J-1432	40.8	122.1	0	102.4	87.5
J-1500	139.9	158res	0	155.8	22.5
J-1501	139.9	180	0	190.4	71.7
J-1947	86	173	0.07	170.9	120.5
J-1948	83.4	158.1	0.29	138	77.5
J-1949	112.1	173	0.07	171	83.6
J-1950	86	158.1	0.29	138	73.9
J-1956	110	173	0.07	170.9	86.5
J-1957	115.4	173	0.07	171	78.8
J-1958	115	173	0.07	171	79.4
J-1959	119.9	173	0.07	171	72.5
J-1960	117.3	173	0.07	171	76.2
J-1961	124.2	173	0.07	171	66.5
J-1962	119.7	173	0.07	171	72.8
J-1963	131.3	173	0.07	171.1	56.4
J-1964	128	173	0.07	171	61.1
J-1965	164	180res	0	171.9	11.2

2034 Demands - Peak Hour Demands 1411-02

Node Table City of Port Alberni

Label	Elevation (m)	Zone	Demand (L/s)	HGL (m)	Pressure (psi)
J-1967	117.3	173	0	171	76.2
J-1968	119.7	173	0	171	72.8
J-4950	67.2	122.2	0	111.2	62.5
J-4951	67.2	122.2	0	111.2	62.5
J-4952	67.2	122.2	0	110.5	61.6
J-4953	67.2	122.2	0	110.5	61.6
J-4954	67.2	122.2	0	110.5	61.6
J-4955	67.2	122.2	0	110.5	61.6
J-4956	67.2	122.2	0	110.5	61.6
J-4957	67.2	122.2	0	110.5	61.6
J-5000	42.2	86.2	0	80.8	54.8
J-5001	43.7	122.2	0	116.7	103.6
J-5002	51.3	122.2	0	116.7	92.9
J-5003	52.7	122.2	0	117.2	91.5
J-5004	44.8	122.2	0	117.3	102.9
J-5005	49.8	86.2	0	81.9	45.6
J-Johnston12	60	65res	0	64.5	6.4