



**LAVERKIN CITY
SECONDARY WATER MASTER PLAN**

**SUNRISE ENGINEERING, INC.
MAY 2010**

LAVERKIN CITY SECONDARY WATER MASTER PLAN

MAY 2010

INCLUDES:

**FIVE POINT ANALYSIS
RECOMMENDED SYSTEM IMPROVEMENTS
WRITTEN ANALYSIS FOR WATER USER RATE
& IMPACT FEE CALCULATIONS**

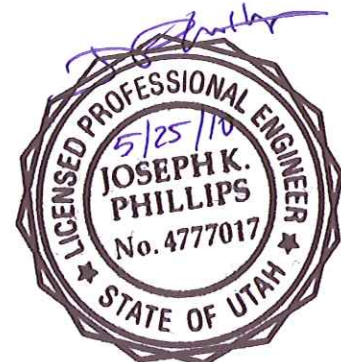
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SECTION I INTRODUCTION

A. PREFACE

LaVerkin is located in Southern Utah. In 2007 LaVerkin City acquired the LaVerkin Bench Canal Company and is in the process of evaluating its water system and the impact which future growth may have on it. The City has entered into an agreement with Sunrise Engineering, Inc. to provide a Master Plan for the secondary water system; this report does not analyze culinary water, its rights, source, distribution system, etc.

B. INTRODUCTION

This Master Plan has been prepared for the City of LaVerkin. With the City's acquisition of the LaVerkin Bench Canal Company and with the City's wish to expand the secondary system to more of the residences, LaVerkin has contracted with Sunrise Engineering, Inc. to make recommendations for improvements to the secondary water system.

The secondary water system has been analyzed under the State of Utah Division of Drinking Water guidelines and the City's direction to determine the current system status and to determine possible system upgrades as the community grows and the system expands during the next 20 years. As part of this plan, Sunrise Engineering, Inc. has recommended some improvements to the secondary water system and has developed a financing plan that will help LaVerkin City obtain the necessary funds for the recommended improvements.

The existing water rates and impact fees have also been analyzed as a possible means of supporting the recommended system improvements. The recommended secondary water rates and impact fees are fair and they will allow LaVerkin to continue to maintain the level of service that is required of secondary water systems for the present time and over the 20-year planning period.

The secondary water system is made up of contract holders and lessees. The contract holders are share holders from the LaVerkin Bench Canal Company that maintain a right of delivery of the previous share holder allotment. However, the contact holders are not shared owners of the system, the secondary water system is the sole ownership of the City of LaVerkin. The lessees are made up of residences that come on to the system through the City.

SECTION II

SYSTEM USERS ANALYSIS

A. PROJECTED GROWTH RATE

One of the most important elements in the development of the Master Plan is the calculation of the City's outdoor irrigation characteristics and projected demands. The population growth rate is also important and gives the planner a glimpse of the timing of future demands that may need to be accommodated by the City's secondary water system.

Projecting the number of future secondary irrigation water connections with any degree of accuracy can be a very subjective process, especially with the extreme growth swings that LaVerkin City and surrounding areas have seen in recent years. With this in mind, this Plan uses several resources including Census figures, water connections from the City's billing summaries, and building permits, to evaluate the growth trends and to provide a projection of how growth will occur in the future. The table below shows the historic growth rate and provides an idea of how the community has grown based on Census counts from 1970 through 2000, and Census estimates for 2008.

Table II.A-1 LaVerkin City Historic Population

YEAR	Census Population	Growth Rate	
1970	463		
1980	1,174	1970-1980	9.8%
1990	1,786	1980-1990	4.3%
2000	3,392	1990-2000	6.6%
2008	4,624	*2000-2008	3.9%
<i>* U.S. Bureau of the Census Subcounty Population Estimates</i>			

The current economy has slowed growth in the area to a rate not fully shown in the historic population count. It is expected that this lower growth trend will continue for at least the near future. For the purpose of this Master Plan and to prepare for future secondary irrigation water requirements, we will assume that a low growth will occur for two years and increase but maintain a lower level of growth for the projected period. The growth rate used in this Master Plan will start at 1% and increase to 3%. Table II.A-2 on the following page shows anticipated connection growth at these rates through the year 2037.

TABLE II.A-2 SECONDARY WATER CONNECTIONS GROWTH

Year	Est. Residential Growth Rate	Culinary Connections	Total Contract Holders	Lessees Connected	Lessees not Connected	Potential Lessees	*Estimated Population
2008		1326	337	376	261	355	4,487
2009	-	1,329	337	376	261	355	4,497
2010	1.0%	1,342	337	389	261	355	4,542
2011	1.0%	1,356	337	423	241	355	4,588
2012	2.0%	1,383	337	470	221	355	4,679
2013	2.0%	1,410	337	517	201	355	4,773
2014	3.0%	1,453	337	580	181	355	4,916
2015	3.0%	1,496	337	643	161	355	5,064
2016	3.0%	1,541	337	708	141	355	5,215
2017	3.0%	1,588	337	775	121	355	5,372
2018	3.0%	1,635	337	842	101	355	5,533
2019	3.0%	1,684	337	911	81	355	5,699
2020	3.0%	1,735	337	982	61	355	5,870
2021	3.0%	1,787	337	1,054	41	355	6,046
2022	3.0%	1,840	337	1,127	21	355	6,228
2023	3.0%	1,896	337	1,183	21	355	6,414
2024	3.0%	1,952	337	1,239	21	355	6,607
2025	3.0%	2,011	337	1,298	21	355	6,805
2026	3.0%	2,071	337	1,358	21	355	7,009
2027	3.0%	2,133	337	1,420	21	355	7,219
2028	3.0%	2,197	337	1,484	21	355	7,436
2029	3.0%	2,263	337	1,550	21	355	7,659
2030	3.0%	2,331	337	1,618	21	355	7,889
2031	3.0%	2,401	337	1,688	21	355	8,126
2032	3.0%	2,473	337	1,760	21	355	8,369
2033	3.0%	2,547	337	1,834	21	355	8,620
2034	3.0%	2,624	337	1,911	21	355	8,879
2035	3.0%	2,703	337	1,990	21	355	9,145
2036	3.0%	2,784	337	2,071	21	355	9,420
2037	3.0%	2,867	337	2,154	21	355	9,702
* Estimated Population is determined by multiplying the number of culinary connection by 4 the average number of people per connection.							

It should be understood that projected population figures are not the essential basis of this Master Plan. Perhaps more important is the number of acres placed into outdoor irrigation demand. This projection is complicated and relies on the percentage of a development that ends up being irrigated. This report will identify the percentage of development irrigated at a maximum level of use. The Master Plan is more directed towards planning for build out than for a certain population growth rate or design period. Also for the above Table II.A-2, it is assumed that the Lessees not connected to the system will connect at a rate of 20 per year with a few never connecting and the secondary system exception to the Potential Lessees is not taken in to account.

B. LENGTH OF PLANNING PERIOD

This Master Plan uses a 20-year planning period beginning in year 2010 and running through year 2030. This period will allow an adequate evaluation of the system for potential infrastructure

improvements or other needs. Revenue sources should be carefully evaluated each year as budgets are set.

C. CURRENT OUTDOOR WATERING CHARACTERISTICS

LaVerkin City's secondary water system users consist of contract holders and lessees. The contract holders have set amounts of allotments equivalent to 4.39 ac-ft per allotment per year. City allotments are used to feed the lessees of the system and vary in usage. Residences without secondary lessee connections or contract allotments use culinary water for their outdoor usage.

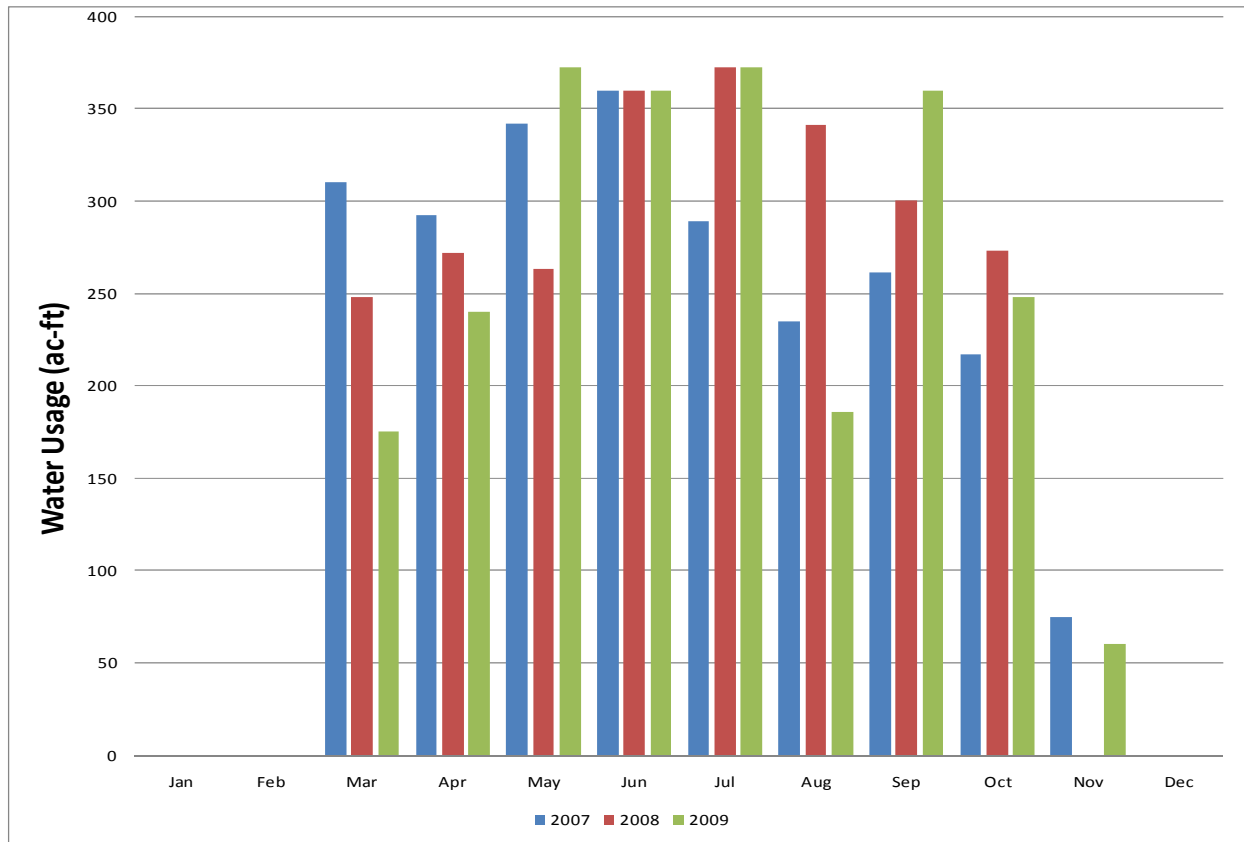
There are 337 total contract holders with a total of 603.17 allotments allocating 2650.2 ac-ft of water annually. The City is a contract holder and holds 105.05 allotments that are used for the lessee connections. There are 376 lessees currently using the City's allotments. 261 residences are classified as standby, meaning they can be connected but have chosen to remain on culinary water. This leaves 355 residences that do not currently have access to the secondary system. This user breakdown is shown in the previous Table II.A-2.

Currently the system has no way to monitor the usage of each contract holder or lessee. The City does have account of the total system usage which is shown in Graph II.C-1. It is assumed that some contract holders use less than allocated to them and some contract holder's use more than is allocated to them. With no way to determine the contract holder usage it is assumed in this Master Plan that the contract holders will use their full allotted amount. Lessee usage was determined using Utah State guidelines for outdoor use. In Section R309-510-3 of the State of Utah Administrative Rules for Public Drinking Water Systems guidelines for determining outdoor usage are given. In this rule, areas are geographically zoned for water consumption. LaVerkin is in Zone 6, meaning that an average of 3.26 ac-ft is used per year per acre of irrigated area of residential usage. An average irrigated area measurement was taken in the City and is shown in Table II.C-1. The average irrigated area of 0.15 acres per residence times the 3.26 ac-ft per irrigated area gives a State recommended lessee usage of 0.489 ac-ft annually (0.489 ac-ft converts to 159,336 gallons per lessee connection annually). The City secondary system is only in operation for a nine month season; therefore the 159,336 gallons divided by 270 days for the nine months give 590 gallons per day. For this Master Plan we will use the 590 gal/day as the lessee usage.

TABLE II.C-1 AVERAGE RESIDENTIAL IRRIGATED AREA

Area #	Houses	Total Acres	Irr. Acres	% Irr.	Ave Irr.
1	11	3.95	2.37	60%	0.22
2	10	2.14	0.92	43%	0.09
3	16	4.29	2.36	55%	0.15
Average Irr. Area					0.15

GRAPH ILC-1 SECONDARY WATER TOTAL USAGE



D. EXISTING SECONDARY WATER SERVICE AREA

LaVerkin City owns and operates a secondary irrigation system throughout the majority of the City. This irrigation system is made up of pressurized lines. This system flows from one source and is conveyed to the end users via a network of pressurized distribution lines. A service area is shown in Appendix A.

SECTION III

WATER RIGHTS, SOURCE, STORAGE, FILTERING, & DISTRIBUTION SYSTEM ANALYSIS

A. WATER RIGHT ANALYSIS

The existing LaVerkin City water rights used for irrigation water are identified in Table III.A-1 below. Also in the LaVerkin City Culinary Water Master Plan is an inventory of all of LaVerkin City's water rights. The secondary water rights below are listed according to number, source, and flow.

TABLE III.A-1 LAVERKIN SECONDARY WATER RIGHTS

Secondary Water Rights		Flow			
W.R. #		Source	gpm	cfs	ac-ft
81-2481	Industrial	Virgin River	13.3	0.0297	20.0
81-2477	Irrigation	Virgin River			
a13530	Irrigation	Virgin River	2,230.5	4.970	1,640.2
81-4334	Irrigation	Virgin River	1,346.4	3.000	990.0
Total Other Water Rights			3,590.2	8.0	2,650.2

The contract holders are currently allocated a large amount of the City's water rights and no allotments can be made. The City must allocate the contract holder's water; therefore the only water users that can change are the lessees. The lessees use the water not allotted to the contract holders; the City's calculated remaining portion of the water rights is shown in Table III.A-2

TABLE III.A-2 LAVERKIN OWNED SECONDARY WATER RIGHTS

City Owned Allotment	Flow	
Allotments	ac-ft/share	ac-ft
105.05	4.39	461.2
Total Other Water Rights		461.2

1. EXISTING REQUIRED WATER RIGHT

The State of Utah Division of Water Rights requires that no entity exceed its water right in usage in any year. In order to plan effectively for secondary water rights, we need to be able to ascertain the current need.

TABLE III.A-3 LAVERKIN CURRENT SECONDARY WATER RIGHTS USAGE

Average Demand (Total Use)						
389 Conn. X	590 gpd X	1 day X	1 hr	=	160 gpm	
	ERU	24 hr	60 min.			
389 Conn. X	590 gpd X	365 day X	1 ac-ft.	=	257 ac-ft	
	ERU	1 yr	325,829 gal			
Total Required Water Right					257	ac-ft
Existing Secondary System Water Right <u>Surplus</u>					204	ac-ft

The existing water right surplus or deficit is determined by subtracting the existing required water right of 257 ac-ft from the grand total available water right of 461 ac-ft, which yields a surplus of 204 ac-ft.

2. PROJECTED REQUIRED WATER RIGHT

The projected required water right for the 20 year time period is calculated by using the same factors. The amount of net irrigated acres per residence is assumed to be the same as the calculated average. The number of connections is taken from Table II.A-2 at the end of the 20 year period, 2030.

TABLE III.A-4 LAVERKIN FUTURE SECONDARY WATER RIGHT USAGE

Average Demand (Total Use)						
1,618 Conn. X	590 gpd X	1 day X	1 hr	=	663 gpm	
	ERU	24 hr	60 min.			
1,618 Conn. X	590 gpd X	365 day X	1 ac-ft.	=	1,070 ac-ft	
	ERU	1 yr	325,829 gal			
Total Required Water Right					1,070	ac-ft
Existing Secondary System Water Right <u>Deficit</u>					(609)	ac-ft

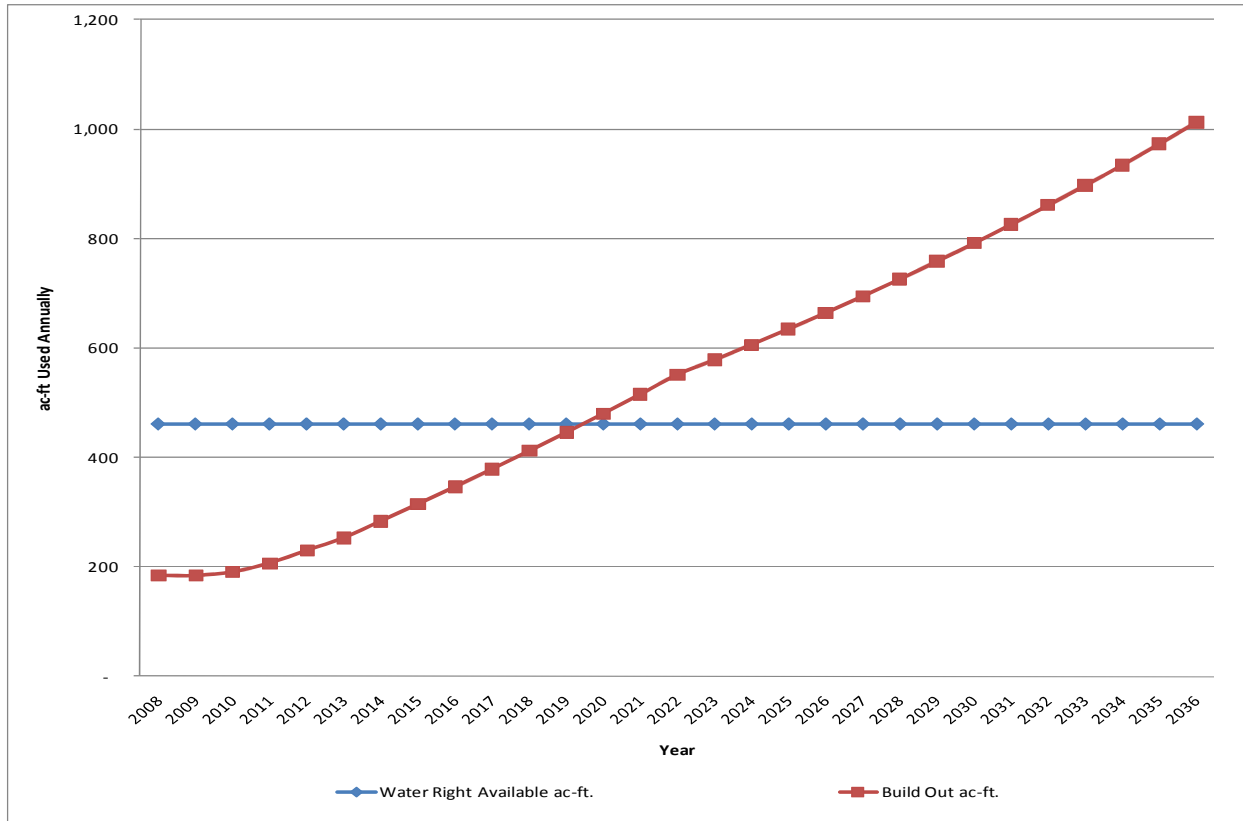
The projected water right surplus or deficit is determined by subtracting the projected required water right of 1,084 ac-ft from the grand total available water right of 461 ac-ft, which yields a deficit of (609) ac-ft.

3. RECOMMENDED WATER RIGHT IMPROVEMENTS

The City is estimated to have insufficient water right around the year 2019 or when the lessee connections approach 911. The City is currently aware of an upcoming shortage in water rights and is addressing this from several areas. The City is educating and encouraging the secondary water usages on conservation and smart usage of the water. The City is looking into water re-use and different water

rights from additional sources. Also, the City has been in talks with the Washington County Water Conservancy District to provide additional water.

GRAPH III.A-1 LAVERKIN PROJECTED SECONDARY WATER RIGHT USAGE



B. SECONDARY WATER SOURCE CAPACITY ANALYSIS

1. WATER SOURCE CAPACITY

The available secondary water source has been identified solely as the Virgin River. The Virgin River flow can fluctuate; sufficient data is not available to determine a total source capacity. However, the source does have ample flow to far exceed the City's water right limitations. Therefore the source capacity in this Master Plan will be the limits established in the water rights of 8 cfs or 3,590 gpm.

2. REQUIRED WATER SOURCE CAPACITY

Industry standards for source requirement are that a community should have an adequate water source capacity to supply twice the peak day demand.

The State regulations require the peak day demand for secondary or outdoor irrigation source capacity to be approximately two times the average amount of water required per connection per day. This Master Plan assumes that the peak day demand in LaVerkin City for pressurized irrigation source capacity will follow the state guidelines closely. The lessee connections have an average day demand of 590 gallons and thus a source requirement of 1,180 gallons per day. For the contract holder it is assumed that they are using their full allotment of 2,188.6 ac-ft annually that converts to 713 million gallons annually. Then, divided for the nine month service period and divided again by the number of

contract holders gives an average contract holder usage of 7,838 gallons per day. The 7,838 gallons times two gives the required existing source capacity of 15,676 gpd/Conn. as shown in Table III.B-1.

TABLE III.B-1 LAVERKIN SECONDARY SOURCE USAGE

Peak Day Demand Using LaVerkin's Average Lessee Consumption Times 2	1,180 gpd/Conn.		
Peak Day Demand Using LaVerkin's Average Contract Holder Consumption Times 2	15,676 gpd/Conn.		
Current & Projected Required Water Source (2010-2030):			
Average Source Req.	Year 2010	2030	
Lessee Connections	389	1,618	Conn.
Share Hold Connections	337	337	Conn.
Average Lessee Water Use	1,180	1,180	gpd/Conn.
Average Share Holder Water Use	15,676	15,676	gpd/Conn.
Required Water Source For Lessees	319	1,326	gpm
Required Water Source for Share Holders	3,669	3,669	gpm
Total Required Water Source	3,988	4,995	gpm
Secondary System Water Source Surplus/(Deficit)	(398)	(1,405)	gpm

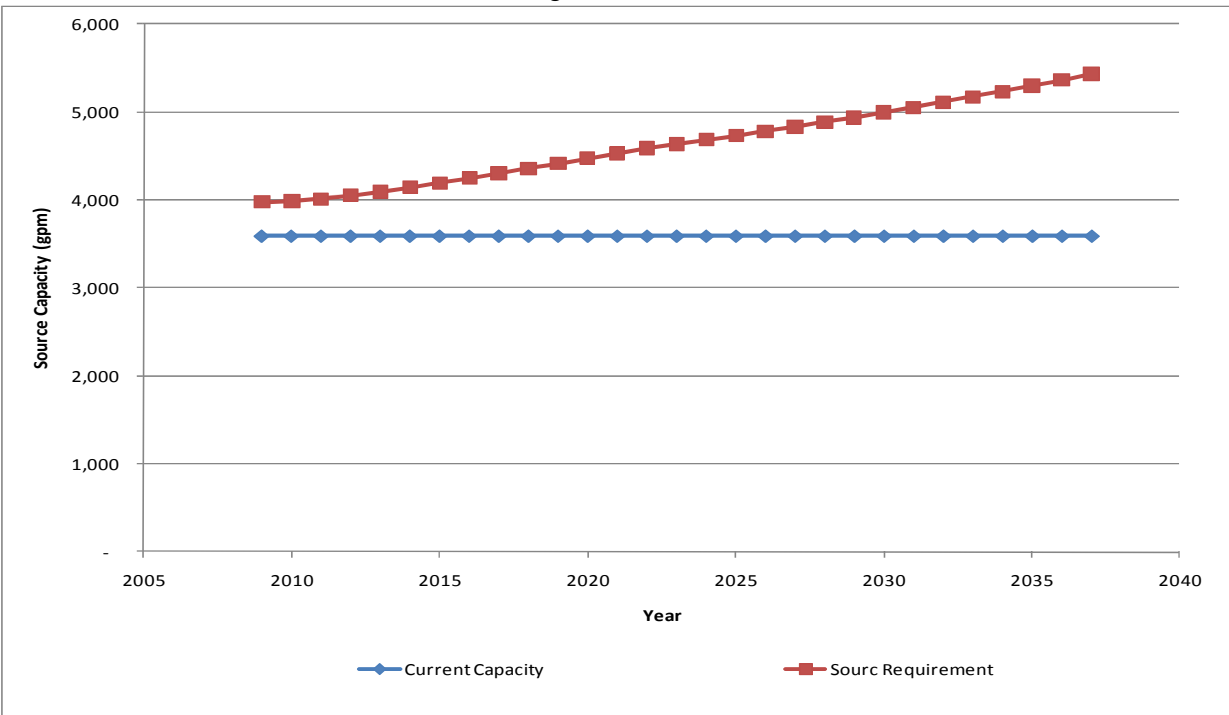
The existing source capacity surplus or deficit is determined by subtracting the existing required source capacity of 3,988 gpm from the total available source capacity of 3,590 gpm, which yields a deficit of 398 gpm.

EXISTING SOURCE CAPACITY DEFICIT = (398) gpm

The projected source capacity surplus or deficit is determined by subtracting the future required source capacity of 5,013 gpm from the total available source capacity of 3,590 gpm, which yields a deficit of 1,405 gpm.

PROJECTED WATER RIGHT DEFICIT = (1,405) gpm

GRAPH III.B-1 LAVERKIN PROJECTED SECONDARY SOURCE USAGE



3. RECOMMENDED WATER SOURCE CAPACITY IMPROVEMENTS

The existing source capacity is shown to be exceeded. Source capacity is a key element in keeping up with the projected growth of the City; this is true for both the secondary irrigation and culinary water. The limitation of the source in this case is the maximum rate at which the water right can be used and not the ability of the source to produce water. The source can physically supply a greater flow than the water right allowed.

The City has several options to increase the allowed source capacity. Water right alteration can be looked at since the water right amount has not yet been exceeded. This will only temporarily solve the source capacity deficiency and will need to be looked at in the near future as the system grows. The City can build a storage tank to provide the additional flow at peak time but this would be an expensive and again, temporary solution. The City can implement restrictions on usage at different times or have a rotation schedule to reduce the peak usage; this will also be a temporary solution. The City can acquire additional rights or make agreements with the Washington County Water Conservancy District to provide the additional source capacity needed.

The secondary water source requirement will vary with the degree to which secondary irrigation is implemented and with the level of conservation. The system should be monitored regularly to evaluate the source capacity status.

C. SECONDARY WATER STORAGE CAPACITY ANALYSIS

1. EXISTING WATER STORAGE CAPACITY

Currently LaVerkin City has no storage for secondary water.

2. EXISTING REQUIRED WATER STORAGE CAPACITY

Water storage capacity requirements found in the State of Utah Administrative Rules for Public Drinking Water Systems require storage for a community's culinary water system to meet one full day's use requirement for all connections in the community. The secondary requirement may be modeled after this standard.

Currently, the source is constant in its ability to meet the secondary demands and does not require a storage system. Nevertheless, a storage facility would be beneficial in mitigating demands on the source and add the ability to provide source during repair or other times when water cannot be provided directly from the Virgin River. At the end of the planning period one day's storage would be 3.6 million gallons.

D. SECONDARY WATER FILTERING STATION ANALYSIS

1. EXISTING WATER FILTERING STATION

Currently LaVerkin City filters the secondary water after it is pulled from the source. The Virgin River is known for the amount of dirt, silt, and other debris it contains. The current system is made up of four horizontal tube screen filters that remove the dirt, silt, and debris. The system is old and requires frequent maintenance and repair. Also, the level of filtration is lacking and residents often complain about the dirt, silt, and debris that still find its way through the system. Some residents have stopped using the secondary water due to the lack of cleanliness of the water.

2. RECOMMENDED WATER FILTERING STATION IMPROVEMENTS

With the level of maintenance and dissatisfied residents, the City has already started redesigning and obtaining funding to upgrade the filtering station with a new and more effective system that will reduce maintenance time for the City and provide cleaner water to the users.

E. SECONDARY WATER DISTRIBUTION SYSTEM ANALYSIS

1. EXISTING DISTRIBUTION SYSTEM ANALYSIS

As shown in a previous subsection, the existing distribution system within LaVerkin City is made up of pressurized pipes. These systems distribute water from the source to the end users throughout the City. A pressurized irrigation distribution network must be analyzed and modeled to provide adequate pressure while delivering peak instantaneous flows throughout the service area.

When culinary water is used for outdoor watering, the experience of LaVerkin City and other southwest Utah communities has shown that the peak instantaneous flow can be much higher than State guidelines or "old" industry standards might indicate. The local climate and irrigation needs along with a shift in public watering trends tend to promote early morning irrigation by the majority of users at the same time. As a community grows in size, the peaks and valleys of the demands on a system tend to even out. Also, as education of proper watering techniques continues with a push to encourage non-peak irrigation, the demands on the system will be minimized. With the City implementing conservation efforts, this plan will assume use of State guidelines. The peak instantaneous flow is calculated the same as the peak day but with a higher usage rate per acre of 9.8 gpd as given in the State guidelines. The calculations in Table III.E-1 show the current peak instantaneous flow for the proposed pressurized secondary irrigation system in the service area.

**TABLE III.E-1 LAVERKIN CURRENT SECONDARY
PEAK INSTANTANEOUS DEMAND**

Outdoor Peak Instantaneous Demand:					
389	Conn	X	<u>0.15 acre</u>	X	<u>9.8 gpm</u>
			ERU		irr. acre
Current Lessee Peak Instantaneous Demand					= 579 gpm
Outdoor Peak Instantaneous Demand:					
2	X	336	Conn	X	<u>7838 gpd</u>
			Conn.		<u>1 day</u>
					1440 min.
Current Contract Holder Peak Instantaneous Demand					= 3,658 gpm
Total					= 4,237 gpm

A pressurized irrigation distribution network supplying the existing population within the service area has been modeled, using the computer program H2Onet® by MWHSoft, Inc. At the existing peak instantaneous demand, the model shows a range of 18 psi up to 137 psi. This range is much wider than what would be considered appropriate for culinary water distribution. However, with appropriate education to the end user so that irrigation systems may be properly designed for expected pressures, this range can provide a more simple system to operate for the City. It does not require mainline pressure reducing valves which could be problematic in a secondary irrigation system. Additionally, the model shows some lines with high velocities and head losses due to being undersized. A map and H2Onet analysis of the existing system is provided in Appendix C.

2. PROJECTED DISTRIBUTION SYSTEM ANALYSIS

The projected distribution system analysis is performed using the same assumptions as used in the existing system analysis, except that the projected lessee connections are included in the calculations. The calculations in Table III.E-2 show the future peak instantaneous flow for the pressurized secondary irrigation system.

**TABLE III.E-2 LAVERKIN FUTURE SECONDARY
PEAK INSTANTANEOUS DEMAND**

Outdoor Peak Instantaneous Demand:					
1,618	Conn	X	<u>0.15 acre</u>	X	<u>9.8 gpm</u>
			ERU		irr. acre
Current Lessee Peak Instantaneous Demand					= 2,405 gpm
Outdoor Peak Instantaneous Demand:					
2	X	336	Conn	X	<u>7838 gpd</u>
			Conn.		<u>1 day</u>
					1440 min.
Current Contract Holder Peak Instantaneous Demand					= 3,658 gpm
Total					= 6,063 gpm

A computer model of the projected distribution system has been created. In this model, the recommended distribution system has been incorporated and modeled. Under peak future flows, some

pressures are showing in the negative along with excessive velocities and head losses. A map and H2Onet analysis of the proposed system is provided in Appendix C.

3. RECOMMENDED DISTRIBUTION SYSTEM IMPROVEMENTS

The current distribution needs are shown in Appendix C. These needs are taken from known problem areas in the system and from the water model. The main line in 100 East is known to be old, brittle, problematic and in need of replacement. The two State Street road crossings shown are also known to be old and in need of an upgrade. The two other lines shown in Appendix C have high velocities and head loss due to being undersized for the demand. It is recommended that these lines be enlarged or that additional lines be added to increase looping. Upsizing the lines is the simplest solution, so that is what is recommended here.

The future distribution needs are shown in Appendix C. These needs are taken from the water model and show low pressure zones, excessive velocities, and high head losses. Due to the number of variable deficiencies in the system, no recommended improvements are given here. The system needs to be reviewed as other water rights and source capacity deficiencies are worked out. This will allow the distribution system improvements to be addressed in a systematic and efficient manner.

A future distribution improvement of moving secondary water lines, not already in city streets, to the streets on the City's list of wanted improvements. This will reduce liabilities of having lines on private property, reduces potential access obstructions, and reduce coordination time of going on to private property to making needed improvements.

SECTION IV

SUMMARY OF RECOMMENDED SECONDARY WATER SYSTEM IMPROVEMENTS

A. RECOMMENDED IMPROVEMENTS

Based on the findings from Section III, showing immediate system needs, as well as requirements for growth projected to period end, this summary of proposed improvements is provided. Appendix C contains a map showing the location of the proposed improvements.

RECOMMENDED SECONDARY WATER SYSTEM IMPROVEMENTS	
ANALYSIS	RECOMMENDED IMPROVEMENT
1. Water Rights	<ul style="list-style-type: none"> Acquire additional water rights through purchase or negotiations. Reduce user consumption through conservation measures such as effective water usage.
2. Water Source Capacity	<ul style="list-style-type: none"> Acquire additional source capacity through purchase, negotiations, or water right alteration. Reduce peak day demands through conservation efforts such as rotating usage zones, reduced usage, and discouraging wastefulness.
3. Water Storage Capacity	<ul style="list-style-type: none"> Currently the City has no storage. Consider if storage would be cost beneficial to the system.
4. Filtering Station	<ul style="list-style-type: none"> Upgrade the filtering station.
5. Distribution System	<p>Current Improvements:</p> <ul style="list-style-type: none"> Replace the 15 inch line in 100 East. Replace the two State Street crossings. Replace undersized lines as shown in Appendix C. <p>Future Improvements:</p> <ul style="list-style-type: none"> Reevaluate distribution system improvements as water rights and source capacity deficiencies are resolved. Move lines to City streets.

B. ENGINEER'S OPINION OF PROBABLE COST

Engineer's Opinions of Probable Cost for the recommended secondary water improvements are provided in Appendix D and summarized in the following table.

TABLE IV.B-1 ESTIMATED SECONDARY PROJECT COST SUMMARY

Year	Description	Opinion of Probable Cost
2010	Filter Station Improvements	\$ 344,000
2014	Current Needed Improvements	\$ 820,000
Unknown	Lines to City Streets Improvement	\$ 3,799,800

Included in the Opinions of Probable Cost for each Project are anticipated construction costs, a contingency budget, and a budget for other normal project costs such as survey, administration, engineering, legal services, fiscal costs, rights-of-way and etc.

SECTION V

WATER RATE ANALYSIS

A. GENERAL

Generally water rates are a combination of base rates and overage rates. Typically, a base amount of water is provided for the base rate charge. The base rate is charged to all connections in the system whether or not water is used. Overage rates are normally set to encourage water conservation.

The City currently has no meters on the connections and therefore a base rate is used for the total water rate fee. Careful consideration and conservation measures need to be taken with this rate structure to ensure that users don't overuse or waste the water.

The City currently charges a base rate of \$60 per contract holder and an additional \$10 per allotment above one allotment for the nine months of usage. The lessees are charged \$10 per month for the nine months of usage for a total of \$90 per year. The standby connections are charged \$3 per month for the nine months of usage for a total of \$27 per year.

B. AVERAGE RATE DETERMINATION

Table V.B-1 and Table V.B-2 in Appendix F show the methods used to determine the suggested average secondary water rate per connection, which should cover the cost of the suggested projects. These rates take into account contract holders, lessees, and standby users. This average rate does not suggest that each connection be charged this base rate; rather, for the total sum of connections, the average rate suggested should be collected.

Annual revenues must be sufficient to cover the expenses incurred by the construction, maintenance, and administration of the secondary water system. These expenses include debt service, insurance, utilities, personnel salaries, system maintenance, legal and professional fees, and other miscellaneous items. It is strongly recommended that the secondary water department maintain a fund for normal operation, as well as a renewal and replacement account (funded depreciation) to provide the dollars necessary for replacement and repair of secondary water facilities and pipelines.

The total expenses for the fiscal year 2010 are estimated to be around \$76,000, which includes annual operation and maintenance and debt service. Subtracting the standby connection fee revenue and then dividing by the estimated average total projected number of connections in the system by both contract holders and lessees, and again by nine months yields the result of \$10.57 per connection per month. Since the filter station project is not impact fee eligible, no impact fee revenues are taken into this calculation. This is the average total cost per month that each user connected to the system would be required to pay to allow the LaVerkin secondary water system fund to be self sustaining under the assumed parameters.

As of fiscal year 2008, the City charged a total of \$54,787 in user fees with a total number of 712 connections. Taking the user fees divided by the connections and again by nine months gives a current average user rate of \$8.55. From this, it is calculated that the City may need to increase their usage rates

an average of 2.02 per month. It is recommended that the City track revenues against expenses in the coming year to verify this need.

C. ALTERNATIVE RATE STRUCTURE

Because the LaVerkin secondary water system currently is without metering capabilities at each connection, no other rate structure is available. Special focus will be needed to encourage conservation and proper use of the water. Watering limits can be given, and if abuse of those limits is suspected, a temporary meter can be placed and fines given, but these items will have to be in the City Code.

D. SUMMARY

The recommended rates in this section meet the requirements of the system to construct the recommended projects. The Cash Flow projection in Appendix E incorporates the recommended rates. Expenses, shown on the Cash Flow projection, incorporate a 3.5% annual rate of inflation during the planning period. The Cash Flow also incorporates near future projects as given in this Master Plan. Water rates and fees should be reviewed by the City Council periodically to ensure that they remain current with actual inflation rates and costs.

SECTION VI IMPACT FEES

A. IMPACT FEE

It is recommended that an impact fee be charged to all new development connections to the secondary water system. An impact fee that is charged by a community may be used to pay for the debt service associated with surplus capacity built into the system. The surplus capacity in the water system has been designed for growth, and for this reason, impact fees should pay for that portion of the debt service associated with the system surplus capacity. The impact fee should also be used to pay for the cost of improvements to the system that are required to support new growth as new connections are added to the system.

Impact fees may also be used for water rights required by future growth. As stated in previous sections, the City is projected to need additional water rights before the end of the 20 year projection. Some of these costs could be considered impact fee eligible for the secondary water system as well. However, the projects suggested in this Master Plan are not due to new growth and thus are not impact fee eligible. Also, there are no past projects that can contribute to the impact fee calculations. Water rights and source capacity are needed and can contribute to impact fees, but with the City in negotiations no projected route is suggested. As the City makes arrangements and decides on a route, the impact fees will need to be reevaluated. Therefore, no impact fee is calculated or suggested in this Master Plan.

Existing residents provided new services are not covered by impact fees, but a one-time service fee may be charged to provide the connection to the new service. This would be on a case by case basis and has not been evaluated in this Master Plan.

SECTION VII

SECONDARY WATER PERIPHERAL AREAS

A. AREAS

The City boundaries can be separated into three sections including the lower area following the Virgin River and LaVerkin Creek, the main part of the City on the bench, and the upper area by the mesa. The upper area by the mesa is undeveloped and has no services. The main part of the City is the main service area of the secondary water system. The lower area is partially developed and partially serviced.

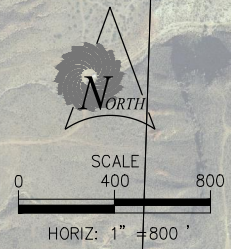
The Master Plan has addressed the main part of the City and a portion of the lower area. The upper area has not been evaluated. When development starts in this area, secondary water system planning will need to be addressed for that area.

APPENDIX A

MAP OF EXISTING SYSTEM

APPENDIX A

CURRENT SYSTEM



SUPPLIED BY
W.C.W.C.D.
SYSTEM

NOT CONNECTED
TO THE SYSTEM

LEGEND:

- 1" EXISTING
- 2" EXISTING
- 3" EXISTING
- 4" EXISTING
- 5"-6" EXISTING
- 8"-10" EXISTING
- 12" EXISTING
- 14" EXISTING
- 15" EXISTING



SUNRISE
ENGINEERING

11 NORTH 300 WEST
WASHINGTON, UT 84780

APPENDIX B

H2ONET ANALYSIS DATA

Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
1	P101	J102	J106	43.88	3.00	130.00	37.02	1.68	0.23	5.35
2	P103	J106	J108	154.95	8.00	130.00	12.34	0.08	0.00	0.00
3	P105	J106	J110	91.81	3.00	130.00	12.34	0.56	0.06	0.66
4	P107	J100	J112	186.54	15.00	130.00	2,032.99	3.69	0.70	3.75
5	P109	J112	J114	135.98	2.00	130.00	12.34	1.26	0.63	4.66
6	P111	RES9000	J12	478.65	14.00	130.00	3,802.38	7.92	7.28	15.21
7	P111	J112	J116	137.69	15.00	130.00	2,008.31	3.65	0.53	3.86
8	P113	J116	J118	152.02	4.00	130.00	12.34	0.32	0.02	0.16
9	P115	J116	J120	156.12	15.00	130.00	1,983.63	3.60	0.58	3.68
10	P117	J120	J122	164.28	10.00	130.00	806.89	3.30	0.76	4.65
11	P119	J122	J124	108.32	3.00	130.00	12.34	0.56	0.07	0.66
12	P121	J122	J126	174.60	10.00	130.00	782.21	3.20	0.76	4.36
13	P123	J126	J134	195.71	10.00	130.00	732.85	2.99	0.75	3.82
14	P125	J134	J708	182.58	3.00	130.00	24.68	1.12	0.43	2.34
15	P127	J126	J128	254.23	3.00	130.00	37.02	1.68	1.25	4.93
16	P129	J128	J130	55.66	3.00	130.00	12.34	0.56	0.04	0.68
17	P131	J12	J14	334.48	12.00	130.00	2,221.73	6.30	4.03	12.04
18	P131	J128	J132	605.46	3.00	130.00	12.34	0.56	0.39	0.64
19	P133	J120	J138	486.72	15.00	130.00	1,164.40	2.11	0.59	1.20
20	P135	J138	J642	413.66	3.00	130.00	24.68	1.12	0.96	2.31
21	P137	J138	J142	271.33	15.00	130.00	1,127.38	2.05	0.32	1.19
22	P139	J142	J144	662.30	3.00	130.00	12.34	0.56	0.42	0.64
23	P141	J142	J146	298.43	15.00	130.00	1,102.70	2.00	0.34	1.13
24	P145	J146	J150	29.68	15.00	130.00	1,090.36	1.98	0.06	2.03
25	P147	J150	J152	713.64	3.00	130.00	12.34	0.56	0.45	0.64
26	P149	J150	J154	419.82	15.00	130.00	1,065.68	1.93	0.43	1.03
27	P151	J602	J18	656.24	12.00	130.00	1,555.97	4.41	3.92	5.98

Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
28	P151	J154	J156	934.87	10.00	130.00	646.12	2.64	2.62	2.80
29	P153	J154	J160	107.95	15.00	130.00	407.22	0.74	0.02	0.20
30	P155	J160	J158	479.08	4.00	130.00	12.34	0.32	0.08	0.16
31	P157	J160	J162	230.85	15.00	130.00	382.54	0.69	0.04	0.16
32	P159	J162	J164	390.07	4.00	130.00	12.34	0.32	0.06	0.16
33	P161	J162	J166	349.16	15.00	130.00	357.86	0.65	0.05	0.14
34	P165	J166	J170	842.65	12.00	130.00	345.52	0.98	0.31	0.36
35	P167	J170	J172	520.78	2.00	130.00	12.34	1.26	2.39	4.59
36	P169	J170	J174	213.63	12.00	130.00	320.84	0.91	0.07	0.34
37	P17	J14	J604	615.90	6.00	130.00	24.68	0.28	0.05	0.08
38	P171	J174	J180	610.14	6.00	130.00	82.96	0.94	0.46	0.75
39	P173	J180	J184	245.37	6.00	130.00	58.28	0.66	0.10	0.40
40	P175	J184	J188	267.92	6.00	130.00	33.60	0.38	0.04	0.14
41	P177	J184	J186	251.26	6.00	130.00	12.34	0.14	0.01	0.02
42	P179	J180	J182	230.16	6.00	130.00	12.34	0.14	0.01	0.02
43	P181	J174	J176	250.18	12.00	130.00	225.54	0.64	0.04	0.17
44	P183	J176	J178	346.25	6.00	130.00	12.34	0.14	0.01	0.02
45	P185	J176	J190	239.53	12.00	130.00	200.86	0.57	0.03	0.14
46	P187	J190	J192	498.22	6.00	130.00	77.59	0.88	0.33	0.66
47	P189	J192	J200	548.99	6.00	130.00	52.91	0.60	0.18	0.33
48	P19	J14	J20	1,389.82	15.00	130.00	2,184.71	3.97	5.17	3.72
49	P191	J188	J194	254.58	6.00	130.00	12.34	0.14	0.01	0.02
50	P193	J188	J196	264.94	6.00	130.00	8.92	0.10	0.00	0.01
51	P195	J196	J198	227.35	6.00	130.00	12.34	0.14	0.00	0.02
52	P197	J196	J200	270.09	6.00	130.00	-15.76	0.18	0.01	0.04
53	P199	J200	J202	250.34	6.00	130.00	12.34	0.14	0.01	0.02
54	P201	J200	J212	308.97	6.00	130.00	12.47	0.14	0.01	0.02

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Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
55	P203	J212	J214	228.79	6.00	130.00	12.34	0.14	0.01	0.02
56	P205	J212	J218	272.28	6.00	130.00	-12.21	0.14	0.01	0.02
57	P207	J218	J216	228.85	6.00	130.00	12.34	0.14	0.01	0.02
58	P209	J218	J206	277.26	6.00	130.00	-36.89	0.42	0.05	0.17
59	P21	J20	J22	16.00	15.00	130.00	2,135.35	3.88	0.17	10.77
60	P211	J206	J210	377.78	6.00	130.00	12.34	0.14	0.01	0.02
61	P213	J192	J208	369.26	6.00	130.00	12.34	0.14	0.01	0.02
62	P215	J190	J204	241.38	12.00	130.00	110.93	0.31	0.01	0.05
63	P217	J204	J206	1,056.27	6.00	130.00	61.57	0.70	0.45	0.43
64	P219	J204	J220	853.78	12.00	130.00	37.02	0.11	0.00	0.01
65	P221	J220	J222	40.62	14.00	130.00	12.34	0.03	0.00	0.00
66	P223	J220	J224	109.87	14.00	130.00	12.34	0.03	0.00	0.00
67	P225	J156	J240	208.31	3.00	130.00	12.34	0.56	0.13	0.65
68	P227	J156	J528	24.41	10.00	130.00	621.44	2.54	0.11	4.60
69	P229	J528	J242	321.58	3.00	130.00	37.02	1.68	1.58	4.91
70	P23	J20	J24	325.95	3.00	130.00	37.02	1.68	1.60	4.91
71	P231	J242	J244	205.80	3.00	130.00	12.34	0.56	0.13	0.65
72	P233	J528	J612	814.62	10.00	130.00	572.08	2.34	1.83	2.24
73	P235	J238	J236	331.16	6.00	130.00	98.38	1.12	0.34	1.04
74	P237	J236	J232	278.19	3.00	130.00	49.02	2.22	2.31	8.29
75	P239	J232	J676	326.39	3.00	130.00	24.68	1.12	0.76	2.32
76	P241	J232	J228	818.62	2.00	130.00	12.00	1.23	3.56	4.35
77	P243	J228	J226	142.47	2.00	130.00	4.00	0.41	0.08	0.58
78	P245	J228	J230	158.09	2.00	130.00	4.00	0.41	0.09	0.57
79	P247	J236	J392	367.44	3.00	130.00	37.02	1.68	1.80	4.90
80	P249	J392	J394	69.90	3.00	130.00	12.34	0.56	0.05	0.67
81	P25	J24	J26	189.48	3.00	130.00	12.34	0.56	0.12	0.65

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Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
82	P251	J392	J396	258.92	3.00	130.00	12.34	0.56	0.17	0.64
83	P253	J242	J246	248.18	3.00	130.00	12.34	0.56	0.16	0.64
84	P255	J594	J592	244.52	4.00	130.00	-24.68	0.63	0.14	0.58
85	P257	J256	J706	461.15	10.00	130.00	-683.49	2.79	1.46	3.18
86	P259	J256	J258	182.59	10.00	130.00	621.79	2.54	0.52	2.83
87	P261	J258	J260	327.64	3.00	130.00	12.34	0.56	0.21	0.64
88	P263	J258	J262	514.39	10.00	130.00	597.11	2.44	1.27	2.46
89	P265	J94	J96	130.98	3.00	130.00	12.34	0.56	0.09	0.65
90	P267	J74	J76	206.10	3.00	130.00	12.34	0.56	0.13	0.65
91	P269	J80	J78	118.91	3.00	130.00	12.34	0.56	0.08	0.65
92	P27	J24	J28	506.78	3.00	130.00	12.34	0.56	0.32	0.64
93	P271	J262	J264	392.17	10.00	130.00	535.41	2.19	0.80	2.03
94	P273	J590	J704	166.27	3.00	130.00	24.68	1.12	0.39	2.34
95	P275	J700	J588	346.93	6.00	130.00	24.68	0.28	0.03	0.08
96	P277	J18	J600	350.81	4.00	130.00	24.68	0.63	0.20	0.57
97	P279	J18	J638	411.10	12.00	130.00	1,518.95	4.31	2.40	5.85
98	P281	J314	J310	474.71	12.00	130.00	588.68	1.67	0.47	1.00
99	P283	J310	J312	29.40	12.00	130.00	502.30	1.42	0.04	1.25
100	P285	J310	J294	261.14	4.00	130.00	74.04	1.89	1.15	4.41
101	P287	J294	J296	193.27	3.00	130.00	12.34	0.56	0.12	0.65
102	P289	J294	J290	400.98	4.00	130.00	49.36	1.26	0.83	2.06
103	P29	J22	J30	123.09	3.00	130.00	12.34	0.56	0.08	0.65
104	P291	J290	J292	205.87	3.00	130.00	12.34	0.56	0.13	0.65
105	P293	J586	J288	284.18	3.00	130.00	12.34	0.56	0.18	0.64
106	P295	J314	J316	338.21	10.00	130.00	905.59	3.70	1.84	5.44
107	P297	J316	J596	219.55	4.00	130.00	111.06	2.84	2.07	9.41
108	P299	J308	J306	153.45	4.00	130.00	12.34	0.32	0.02	0.16

Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/ft)
109	P301	J308	J302	117.62	4.00	130.00	49.36	1.26	0.25	2.14
110	P303	J302	J304	155.42	4.00	130.00	12.34	0.32	0.02	0.16
111	P305	J302	J300	329.58	4.00	130.00	24.68	0.63	0.19	0.57
112	P307	J300	J298	273.63	4.00	130.00	12.34	0.32	0.04	0.16
113	P309	J636	J320	325.49	10.00	130.00	757.51	3.09	1.27	3.91
114	P31	J22	J32	612.09	15.00	130.00	2,110.67	3.83	2.20	3.60
115	P311	J320	J634	503.47	10.00	130.00	745.17	3.04	1.87	3.72
116	P313	J324	J322	645.71	3.00	130.00	12.34	0.56	0.41	0.64
117	P315	J324	J548	213.75	10.00	130.00	708.15	2.89	0.76	3.56
118	P319	J346	J352	27.75	10.00	130.00	265.13	1.08	0.02	0.85
119	P321	J352	J350	10.10	4.00	130.00	37.69	0.96	0.02	1.96
120	P323	J350	J344	58.57	4.00	130.00	12.34	0.32	0.01	0.17
121	P327	J332	J350	621.34	4.00	130.00	-13.01	0.33	0.11	0.17
122	P329	J332	J328	139.57	6.00	130.00	-74.21	0.84	0.09	0.64
123	P33	J32	J36	543.72	15.00	130.00	2,575.95	4.68	2.85	5.24
124	P331	J328	J330	185.64	6.00	130.00	-98.89	1.12	0.20	1.07
125	P333	J328	J326	394.85	6.00	130.00	12.34	0.14	0.01	0.02
126	P335	J332	J334	148.16	6.00	130.00	74.87	0.85	0.10	0.65
127	P337	J334	J336	492.81	2.00	130.00	12.34	1.26	2.26	4.59
128	P339	J334	J632	547.80	6.00	130.00	50.19	0.57	0.16	0.30
129	P341	J338	J346	220.64	8.00	130.00	-307.11	1.96	0.48	2.19
130	P343	J352	J342	135.29	4.00	130.00	215.11	5.49	4.43	32.78
131	P345	J342	J340	253.59	4.00	130.00	12.34	0.32	0.04	0.16
132	P347	J536	J354	686.34	4.00	130.00	-196.88	5.03	18.28	26.64
133	P349	J354	J338	200.07	8.00	130.00	-332.62	2.12	0.51	2.55
134	P35	J32	J34	620.07	12.00	130.00	-477.62	1.35	0.41	0.67
135	P351	J354	J358	509.70	8.00	130.00	98.72	0.63	0.13	0.26

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Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
136	P353	J358	J360	209.72	8.00	130.00	12.34	0.08	0.00	0.01
137	P359	J370	J364	238.38	6.00	130.00	-212.26	2.41	1.05	4.39
138	P361	J364	J366	32.90	6.00	130.00	138.03	1.57	0.08	2.47
139	P363	J364	J368	37.01	6.00	130.00	-362.63	4.11	0.55	14.88
140	P365	J354	J630	641.47	4.00	130.00	24.68	0.63	0.36	0.57
141	P367	J628	J372	833.56	4.00	130.00	49.36	1.26	1.71	2.05
142	P369	J372	J374	456.88	2.00	130.00	12.34	1.26	2.10	4.59
143	P37	J656	J38	363.08	3.00	130.00	12.34	0.56	0.23	0.64
144	P371	J640	J376	478.02	4.00	130.00	12.34	0.32	0.08	0.16
145	P373	J264	J672	169.55	8.00	130.00	441.05	2.82	0.74	4.37
146	P375	J266	J268	296.86	8.00	130.00	390.86	2.49	1.00	3.37
147	P377	J644	J670	313.51	3.00	130.00	37.02	1.68	1.54	4.91
148	P379	J264	J650	542.70	4.00	130.00	82.02	2.09	2.86	5.27
149	P381	J266	J648	549.97	3.00	130.00	25.51	1.16	1.35	2.45
150	P383	J268	J270	232.29	8.00	130.00	329.16	2.10	0.58	2.48
151	P385	J270	J272	344.49	8.00	130.00	23.85	0.15	0.01	0.02
152	P387	J272	J274	102.97	2.00	130.00	12.34	1.26	0.48	4.69
153	P389	J272	J276	237.88	2.00	130.00	12.34	1.26	1.10	4.62
154	P39	J606	J40	301.74	15.00	130.00	2,526.59	4.59	1.60	5.30
155	P391	J270	J380	751.22	8.00	130.00	292.97	1.87	1.44	1.92
156	P393	J380	J384	119.63	2.00	130.00	12.34	1.26	0.56	4.67
157	P395	J380	J382	201.40	4.00	130.00	12.34	0.32	0.03	0.16
158	P397	J282	J280	301.53	6.00	130.00	-12.34	0.14	0.01	0.02
159	P399	J280	J278	811.32	6.00	130.00	-4.36	0.05	0.00	0.00
160	P401	J278	J540	512.87	8.00	130.00	12.34	0.08	0.00	0.01
161	P403	J674	J530	245.24	3.00	130.00	37.02	1.68	1.21	4.93
162	P405	J530	J252	124.03	2.00	130.00	12.34	1.26	0.58	4.66

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Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/ft)
163	P407	J530	J250	143.01	3.00	130.00	12.34	0.56	0.09	0.65
164	P409	J388	J248	366.61	8.00	130.00	-412.00	2.63	1.35	3.68
165	P41	J40	J42	557.91	3.00	130.00	12.34	0.56	0.36	0.64
166	P411	J614	J238	402.86	8.00	130.00	-449.02	2.87	1.73	4.30
167	P413	J388	J390	454.19	2.00	130.00	12.34	1.26	2.09	4.59
168	P415	J544	J432	236.93	8.00	130.00	305.77	1.95	0.51	2.16
169	P417	J278	J386	243.85	6.00	130.00	-29.04	0.33	0.03	0.11
170	P419	J432	J696	440.22	8.00	130.00	-13.20	0.08	0.00	0.01
171	P421	J402	J400	98.64	2.00	130.00	-12.34	1.26	0.46	4.69
172	P423	J400	J398	158.33	2.00	130.00	12.34	1.26	0.74	4.64
173	P425	J400	J404	490.90	2.00	130.00	-37.02	3.78	17.25	35.14
174	P427	J404	J406	213.80	3.00	130.00	12.34	0.56	0.14	0.65
175	P429	J404	J408	150.03	3.00	130.00	-61.70	2.80	1.93	12.88
176	P43	J40	J44	243.11	15.00	130.00	2,501.91	4.54	1.30	5.33
177	P431	J408	J410	261.19	4.00	130.00	12.34	0.32	0.04	0.16
178	P433	J408	J412	292.79	3.00	130.00	-86.38	3.92	6.93	23.68
179	P435	J412	J414	213.32	1.00	130.00	2.00	0.82	0.99	4.62
180	P437	J412	J416	365.24	3.00	130.00	-100.72	4.57	11.46	31.37
181	P439	J416	J418	119.20	3.00	130.00	12.34	0.56	0.08	0.65
182	P441	J416	J420	354.20	6.00	130.00	-125.40	1.42	0.58	1.63
183	P443	J690	J422	257.53	3.00	130.00	12.34	0.56	0.17	0.64
184	P445	J420	J424	128.18	6.00	130.00	-162.42	1.84	0.35	2.77
185	P447	J424	J426	183.31	6.00	130.00	-213.23	2.42	0.82	4.49
186	P449	J426	J428	503.83	3.00	130.00	12.34	0.56	0.32	0.64
187	P45	J44	J46	305.90	3.00	130.00	12.34	0.56	0.20	0.64
188	P451	J426	J616	295.97	6.00	130.00	-237.91	2.70	1.59	5.38
189	P453	J430	J432	300.18	6.00	130.00	-306.62	3.48	2.59	8.62

Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
190	P455	J430	J438	177.00	4.00	130.00	44.03	1.12	0.30	1.70
191	P457	J438	J440	269.34	4.00	130.00	84.93	2.17	1.53	5.69
192	P459	J440	J516	605.17	4.00	130.00	47.91	1.22	1.18	1.94
193	P461	J424	J620	873.96	6.00	130.00	38.47	0.44	0.16	0.18
194	P463	J512	J516	533.17	3.00	130.00	-23.23	1.05	1.10	2.06
195	P465	J516	J514	330.90	4.00	130.00	12.34	0.32	0.05	0.16
196	P467	J692	J442	334.41	4.00	130.00	12.34	0.32	0.05	0.16
197	P469	J694	J436	370.13	4.00	130.00	-65.58	1.67	1.30	3.50
198	P47	J44	J48	502.31	15.00	130.00	2,477.23	4.50	2.46	4.90
199	P471	J436	J434	544.84	6.00	130.00	-116.90	1.33	0.77	1.42
200	P473	J434	J444	347.99	8.00	130.00	-154.78	0.99	0.21	0.60
201	P475	J444	J446	70.14	8.00	130.00	-203.54	1.30	0.08	1.15
202	P477	J546	J380	130.57	8.00	130.00	-255.95	1.63	0.21	1.62
203	P479	J446	J448	297.97	4.00	130.00	55.56	1.42	0.77	2.58
204	P481	J448	J450	36.99	4.00	130.00	43.22	1.10	0.07	1.84
205	P483	J450	J452	291.95	4.00	130.00	18.54	0.47	0.10	0.34
206	P485	J452	J454	209.61	4.00	130.00	12.34	0.32	0.03	0.16
207	P487	J452	J456	244.74	4.00	130.00	-6.14	0.16	0.01	0.04
208	P489	J624	J444	532.99	4.00	130.00	-36.42	0.93	0.62	1.17
209	P49	J48	J50	421.72	3.00	130.00	47.06	2.14	3.22	7.64
210	P491	J436	J668	613.76	6.00	130.00	38.99	0.44	0.11	0.18
211	P493	J512	J510	415.12	3.00	130.00	12.34	0.56	0.27	0.64
212	P495	J450	J458	154.62	3.00	130.00	12.34	0.56	0.10	0.65
213	P497	J464	J466	66.80	6.00	130.00	-22.71	0.26	0.00	0.07
214	P499	J466	J468	353.65	6.00	130.00	-38.92	0.44	0.07	0.19
215	P501	J464	J462	411.38	4.00	130.00	12.34	0.32	0.06	0.16
216	P503	J466	J664	247.27	3.00	130.00	3.87	0.18	0.02	0.07

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Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
217	P505	J470	J508	278.14	3.00	130.00	12.34	0.56	0.18	0.64
218	P507	J534	J504	123.99	6.00	130.00	-57.59	0.65	0.05	0.40
219	P51	J50	J52	45.18	3.00	130.00	37.02	1.68	0.24	5.33
220	P511	J504	J502	352.32	6.00	130.00	-69.93	0.79	0.19	0.55
221	P521	J492	J532	236.66	6.00	130.00	94.61	1.07	0.23	0.98
222	P523	J492	J488	387.86	6.00	130.00	-39.31	0.45	0.07	0.19
223	P525	J488	J490	333.56	6.00	130.00	12.34	0.14	0.01	0.02
224	P527	J488	J484	328.34	6.00	130.00	-63.99	0.73	0.15	0.47
225	P529	J484	J486	154.18	6.00	130.00	12.34	0.14	0.00	0.02
226	P53	J52	J54	129.38	3.00	130.00	12.34	0.56	0.08	0.65
227	P531	J484	J482	159.67	6.00	130.00	-88.67	1.01	0.14	0.88
228	P533	J482	J480	283.61	6.00	130.00	12.34	0.14	0.01	0.02
229	P535	J482	J478	43.18	6.00	130.00	-113.35	1.29	0.07	1.61
230	P537	J498	J476	453.07	8.00	130.00	-79.98	0.51	0.08	0.17
231	P539	J476	J370	570.47	8.00	130.00	-104.66	0.67	0.16	0.29
232	P541	J370	J626	495.40	6.00	130.00	95.26	1.08	0.48	0.97
233	P543	J476	J474	467.85	4.00	130.00	12.34	0.32	0.07	0.16
234	P545	J456	J460	745.95	4.00	130.00	5.60	0.14	0.03	0.04
235	P547	J524	J522	140.05	6.00	130.00	0.00	0.00	0.00	0.00
236	P549	J522	J526	763.40	6.00	130.00	0.00	0.00	0.00	0.00
237	P55	J52	J56	180.61	3.00	130.00	12.34	0.56	0.12	0.65
238	P551	J522	J520	289.67	6.00	130.00	0.00	0.00	0.00	0.00
239	P553	J520	J518	972.07	6.00	130.00	1.82	0.02	0.00	0.00
240	P555	J518	J520	1,325.92	6.00	130.00	1.82	0.02	0.00	0.00
241	P559	J460	J472	136.61	6.00	130.00	-6.74	0.08	0.00	0.01
242	P561	J472	J468	411.44	6.00	130.00	63.84	0.72	0.19	0.46
243	P563	J470	J534	12.52	6.00	130.00	-27.42	0.31	0.00	0.16

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Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
244	P565	J468	J552	343.67	6.00	130.00	12.58	0.14	0.01	0.02
245	P567	J342	J536	590.72	4.00	130.00	190.43	4.86	14.82	25.09
246	P569	J536	J368	110.29	6.00	130.00	374.97	4.25	1.47	13.33
247	P57	J50	J58	249.85	3.00	130.00	-2.30	0.10	0.01	0.03
248	P571	J366	J478	574.88	6.00	130.00	125.69	1.43	0.93	1.62
249	P573	J532	J502	146.00	6.00	130.00	82.27	0.93	0.11	0.77
250	P575	J498	J492	311.51	6.00	130.00	67.64	0.77	0.16	0.52
251	P579	J34	J312	43.34	12.00	130.00	-489.96	1.39	0.04	1.02
252	P583	J248	J542	850.61	6.00	130.00	12.34	0.14	0.02	0.02
253	P585	J388	J544	90.92	8.00	130.00	387.32	2.47	0.33	3.68
254	P587	J446	J546	41.12	8.00	130.00	-271.44	1.73	0.09	2.20
255	P589	J546	J386	334.38	6.00	130.00	-27.84	0.32	0.03	0.10
256	P59	J58	J60	73.76	3.00	130.00	12.34	0.56	0.05	0.67
257	P591	J386	J544	676.83	8.00	130.00	-69.21	0.44	0.09	0.13
258	P593	J548	J346	142.11	10.00	130.00	584.58	2.39	0.37	2.59
259	P595	J548	J330	171.79	6.00	130.00	111.23	1.26	0.23	1.34
260	P597	J550	J470	153.48	3.00	130.00	-2.74	0.12	0.01	0.04
261	P599	J552	J534	154.18	6.00	130.00	-17.84	0.20	0.01	0.04
262	P601	J550	J552	17.47	6.00	130.00	-18.08	0.21	0.00	0.07
263	P603	J554	J556	208.16	8.00	130.00	320.84	2.05	0.50	2.38
264	P605	J556	J688	470.91	8.00	130.00	148.08	0.95	0.26	0.55
265	P607	J558	J562	556.07	6.00	130.00	50.47	0.57	0.17	0.30
266	P609	J562	J560	270.59	6.00	130.00	-3.88	0.04	0.00	0.00
267	P61	J58	J62	281.31	3.00	130.00	-26.98	1.22	0.77	2.74
268	P611	J560	J558	275.26	6.00	130.00	-72.93	0.83	0.17	0.60
269	P613	J560	J568	141.80	6.00	130.00	56.71	0.64	0.05	0.39
270	P615	J568	J582	173.07	6.00	130.00	12.34	0.14	0.00	0.02

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	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/ft)
271	P617	J568	J570	115.30	6.00	130.00	32.03	0.36	0.02	0.14
272	P619	J562	J564	275.02	6.00	130.00	42.01	0.48	0.06	0.22
273	P621	J564	J610	515.06	6.00	130.00	12.86	0.15	0.01	0.02
274	P623	J566	J564	310.34	6.00	130.00	-16.82	0.19	0.01	0.04
275	P625	J566	J608	617.36	6.00	130.00	4.99	0.06	0.00	0.00
276	P627	J570	J572	270.30	6.00	130.00	12.34	0.14	0.01	0.02
277	P629	J556	J652	1,027.81	8.00	130.00	160.42	1.02	0.64	0.62
278	P63	J48	J64	396.89	15.00	130.00	2,417.83	4.39	1.89	4.76
279	P631	J574	J654	508.33	8.00	130.00	53.82	0.34	0.04	0.08
280	P633	J682	J576	360.16	8.00	130.00	-32.56	0.21	0.01	0.03
281	P635	J576	J578	81.49	8.00	130.00	12.34	0.08	0.00	0.01
282	P637	J684	J574	170.62	8.00	130.00	-69.58	0.44	0.02	0.14
283	P639	RES9002	J554	32.30	8.00	130.00	333.18	2.13	0.11	3.47
284	P641	J598	J308	191.09	4.00	130.00	74.04	1.89	0.85	4.45
285	P643	J290	J586	280.51	3.00	130.00	24.68	1.12	0.65	2.32
286	P645	J588	J286	751.87	6.00	130.00	12.34	0.14	0.02	0.02
287	P647	J702	J590	154.65	3.00	130.00	37.02	1.68	0.77	4.99
288	P649	J710	J256	130.08	4.00	130.00	-49.36	1.26	0.28	2.13
289	P65	J64	J62	655.00	6.00	130.00	88.68	1.01	0.55	0.85
290	P651	J254	J594	213.55	4.00	130.00	-12.34	0.32	0.03	0.16
291	P653	J596	J584	194.98	4.00	130.00	98.72	2.52	1.48	7.59
292	P655	J584	J598	174.07	4.00	130.00	86.38	2.21	1.04	5.95
293	P657	J600	J318	80.95	4.00	130.00	12.34	0.32	0.01	0.17
294	P659	J12	J602	338.16	12.00	130.00	1,568.31	4.45	2.13	6.29
295	P661	J604	J16	409.06	6.00	130.00	12.34	0.14	0.01	0.02
296	P663	J36	J606	222.46	15.00	130.00	2,538.93	4.61	1.23	5.54
297	P665	J608	J570	500.47	6.00	130.00	-7.35	0.08	0.00	0.01

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	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kt)
298	P667	J610	J566	475.37	6.00	130.00	0.52	0.01	0.00	0.00
299	P669	J612	J238	440.15	10.00	130.00	559.74	2.29	0.97	2.20
300	P67	J64	J66	242.99	15.00	130.00	2,316.81	4.21	1.12	4.62
301	P671	J248	J614	297.31	8.00	130.00	-436.68	2.79	1.23	4.14
302	P673	J616	J430	244.65	6.00	130.00	-250.25	2.84	1.46	5.96
303	P675	J618	J666	494.35	6.00	130.00	13.79	0.16	0.01	0.03
304	P677	J620	J618	732.05	6.00	130.00	26.13	0.30	0.06	0.09
305	P679	J622	J662	188.45	6.00	130.00	14.31	0.16	0.01	0.03
306	P681	J456	J624	406.94	4.00	130.00	-24.08	0.61	0.22	0.55
307	P683	J626	J472	424.11	6.00	130.00	82.92	0.94	0.32	0.75
308	P685	J660	J628	158.19	4.00	130.00	61.70	1.58	0.51	3.19
309	P687	J630	J356	411.71	4.00	130.00	12.34	0.32	0.06	0.16
310	P689	J632	J338	417.92	6.00	130.00	37.85	0.43	0.07	0.18
311	P69	J66	J68	239.31	3.00	130.00	98.72	4.48	7.29	30.45
312	P691	J634	J324	215.32	10.00	130.00	732.83	2.99	0.82	3.79
313	P693	J316	J658	141.90	10.00	130.00	782.19	3.20	0.63	4.47
314	P695	J638	J314	371.30	12.00	130.00	1,506.61	4.27	2.15	5.80
315	P697	J372	J640	468.16	4.00	130.00	24.68	0.63	0.27	0.57
316	P699	J642	J140	412.95	3.00	130.00	12.34	0.56	0.26	0.64
317	P701	J268	J644	318.85	3.00	130.00	49.36	2.24	2.67	8.38
318	P703	J646	J378	331.36	3.00	130.00	12.34	0.56	0.21	0.64
319	P705	J648	J272	326.22	3.00	130.00	13.17	0.60	0.24	0.72
320	P707	J650	J280	451.73	4.00	130.00	69.68	1.78	1.76	3.90
321	P709	J686	J574	376.25	8.00	130.00	135.74	0.87	0.18	0.47
322	P71	J68	J70	100.79	3.00	130.00	12.34	0.56	0.07	0.66
323	P711	J654	J712	225.41	8.00	130.00	41.48	0.26	0.01	0.05
324	P713	J36	J656	188.37	3.00	130.00	24.68	1.12	0.44	2.34

Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/ft)
325	P715	J658	J636	140.22	10.00	130.00	769.85	3.14	0.61	4.34
326	P717	J358	J660	105.40	4.00	130.00	74.04	1.89	0.48	4.57
327	P719	J662	J464	146.60	6.00	130.00	1.97	0.02	0.00	0.00
328	P721	J664	J550	234.91	3.00	130.00	-8.47	0.38	0.08	0.32
329	P723	J666	J512	183.50	6.00	130.00	1.45	0.02	0.00	0.00
330	P725	J668	J622	367.12	6.00	130.00	26.65	0.30	0.03	0.09
331	P727	J670	J646	301.22	3.00	130.00	24.68	1.12	0.70	2.32
332	P729	J672	J266	157.75	8.00	130.00	428.71	2.74	0.66	4.17
333	P73	J68	J72	227.02	3.00	130.00	74.04	3.36	4.06	17.88
334	P731	J280	J674	235.87	3.00	130.00	49.36	2.24	1.99	8.42
335	P733	J676	J234	268.35	3.00	130.00	12.34	0.56	0.17	0.64
336	P735	J678	J580	41.65	8.00	130.00	16.80	0.11	0.00	0.01
337	P737	J580	J680	56.85	8.00	130.00	4.46	0.03	0.00	0.00
338	P739	J714	J682	277.60	8.00	130.00	-20.22	0.13	0.00	0.01
339	P741	J576	J684	168.64	8.00	130.00	-57.24	0.37	0.02	0.10
340	P743	J652	J686	312.34	8.00	130.00	148.08	0.95	0.17	0.55
341	P745	J688	J558	415.68	8.00	130.00	135.74	0.87	0.19	0.47
342	P747	J420	J690	238.01	3.00	130.00	24.68	1.12	0.55	2.33
343	P749	J440	J692	296.46	4.00	130.00	24.68	0.63	0.17	0.57
344	P75	J72	J74	112.82	3.00	130.00	24.68	1.12	0.27	2.37
345	P751	J438	J694	349.18	4.00	130.00	-53.24	1.36	0.83	2.38
346	P753	J696	J434	339.84	8.00	130.00	-25.54	0.16	0.01	0.02
347	P755	J62	J698	211.55	6.00	130.00	49.36	0.56	0.06	0.29
348	P757	J698	J700	300.30	6.00	130.00	37.02	0.42	0.05	0.17
349	P759	J262	J702	124.11	3.00	130.00	49.36	2.24	1.06	8.57
350	P761	J704	J284	161.83	3.00	130.00	12.34	0.56	0.10	0.65
351	P763	J706	J134	325.98	10.00	130.00	-695.83	2.84	1.09	3.34

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


































Pipe Report (Current Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kt)
352	P765	J708	J136	181.54	3.00	130.00	12.34	0.56	0.12	0.65
353	P767	J592	J710	118.98	4.00	130.00	-37.02	0.95	0.15	1.25
354	P769	J712	J678	44.85	8.00	130.00	29.14	0.19	0.00	0.03
355	P777	J72	J80	96.34	3.00	130.00	37.02	1.68	0.49	5.07
356	P774	J680	J714	48.13	8.00	130.00	-7.88	0.05	0.00	0.01
357	P799	J80	J82	103.80	3.00	130.00	12.34	0.56	0.07	0.66
358	P81	J66	J84	432.20	15.00	130.00	2,205.75	4.00	1.72	3.99
359	P83	J84	J86	317.70	6.00	130.00	12.34	0.14	0.01	0.02
360	P85	J84	J88	42.26	15.00	130.00	2,181.07	3.96	0.27	6.51
361	P87	J88	J90	477.14	3.00	130.00	61.70	2.80	6.01	12.61
362	P89	J90	J92	99.28	3.00	130.00	12.34	0.56	0.07	0.66
363	P91	J90	J94	96.32	3.00	130.00	37.02	1.68	0.49	5.07
364	P93	J94	J98	34.63	3.00	130.00	12.34	0.56	0.02	0.70
365	P95	J88	J100	266.07	15.00	130.00	2,107.03	3.83	1.02	3.83
366	P97	J100	J102	210.73	3.00	130.00	61.70	2.80	2.69	12.77
367	P99	J102	J104	67.71	3.00	130.00	12.34	0.56	0.05	0.67

Junction Report (Current Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
1		J100	12.34	3,254.00	3,337.68	36.26
2		J102	12.34	3,236.00	3,334.99	42.89
3		J104	12.34	3,240.00	3,334.94	41.14
4		J106	12.34	3,234.00	3,334.75	43.66
5		J108	12.34	3,238.00	3,334.75	41.92
6		J110	12.34	3,227.00	3,334.69	46.66
7		J112	12.34	3,255.00	3,336.98	35.52
8		J114	12.34	3,260.00	3,336.35	33.08
9		J116	12.34	3,250.00	3,336.45	37.46
10		J118	12.34	3,244.00	3,336.42	40.05
11		J12	12.34	3,138.00	3,364.72	98.24
12		J120	12.34	3,248.00	3,335.87	38.08
13		J122	12.34	3,242.00	3,335.11	40.34
14		J124	12.34	3,239.00	3,335.04	41.61
15		J126	12.34	3,228.00	3,334.35	46.08
16		J128	12.34	3,232.00	3,333.09	43.80
17		J130	12.34	3,233.00	3,333.06	43.35
18		J132	12.34	3,220.00	3,332.71	48.84
19		J134	12.34	3,218.00	3,333.60	50.09
20		J136	12.34	3,215.00	3,333.06	51.15
21		J138	12.34	3,247.00	3,335.29	38.25
22		J14	12.34	3,170.00	3,360.69	82.63
23		J140	12.34	3,220.00	3,334.07	49.43
24		J142	12.34	3,253.00	3,334.97	35.52
25		J144	12.34	3,229.00	3,334.54	45.73
26		J146	12.34	3,249.00	3,334.63	37.10
27		J150	12.34	3,249.00	3,334.57	37.08
28		J152	12.34	3,230.00	3,334.11	45.11
29		J154	12.34	3,250.00	3,334.14	36.46
30		J156	12.34	3,224.00	3,331.52	46.59
31		J158	12.34	3,234.00	3,334.04	43.35
32		J16	12.34	3,220.00	3,360.63	60.94
33		J160	12.34	3,250.00	3,334.11	36.45
34		J162	12.34	3,250.00	3,334.08	36.43
35		J164	12.34	3,237.00	3,334.01	42.04
36		J166	12.34	3,248.00	3,334.03	37.28
37		J170	12.34	3,253.00	3,333.72	34.98
38		J172	12.34	3,245.00	3,331.33	37.41
39		J174	12.34	3,255.00	3,333.65	34.08
40		J176	12.34	3,252.00	3,333.61	35.36

Junction Report (Current Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
41		J178	12.34	3,264.00	3,333.60	30.16
42		J18	12.34	3,210.00	3,358.67	64.42
43		J180	12.34	3,268.00	3,333.19	28.25
44		J182	12.34	3,274.00	3,333.19	25.65
45		J184	12.34	3,277.00	3,333.10	24.31
46		J186	12.34	3,282.00	3,333.09	22.14
47		J188	12.34	3,287.00	3,333.06	19.96
48		J190	12.34	3,249.00	3,333.57	36.65
49		J192	12.34	3,267.00	3,333.24	28.70
50		J194	12.34	3,290.00	3,333.05	18.65
51		J196	12.34	3,288.00	3,333.05	19.52
52		J198	12.34	3,290.00	3,333.05	18.65
53		J20	12.34	3,260.00	3,355.52	41.39
54		J200	12.34	3,286.00	3,333.06	20.39
55		J202	12.34	3,290.00	3,333.06	18.66
56		J204	12.34	3,250.00	3,333.56	36.21
57		J206	12.34	3,272.00	3,333.11	26.48
58		J208	12.34	3,268.00	3,333.23	28.27
59		J210	12.34	3,275.00	3,333.10	25.18
60		J212	12.34	3,284.00	3,333.06	21.26
61		J214	12.34	3,290.00	3,333.05	18.65
62		J216	12.34	3,285.00	3,333.06	20.82
63		J218	12.34	3,278.00	3,333.06	23.86
64		J22	12.34	3,260.00	3,355.35	41.31
65		J220	12.34	3,205.00	3,333.56	55.70
66		J222	12.34	3,205.00	3,333.56	55.70
67		J224	12.34	3,197.00	3,333.56	59.17
68		J226	4.00	3,250.00	3,322.32	31.34
69		J228	4.00	3,250.00	3,322.40	31.37
70		J230	4.00	3,245.00	3,322.31	33.50
71		J232	12.34	3,242.00	3,325.96	36.38
72		J234	12.34	3,230.00	3,325.03	41.18
73		J236	12.34	3,248.00	3,328.27	34.78
74		J238	12.34	3,240.00	3,328.61	38.40
75		J24	12.34	3,227.00	3,353.92	54.99
76		J240	12.34	3,230.00	3,331.38	43.93
77		J242	12.34	3,220.00	3,329.82	47.59
78		J244	12.34	3,218.00	3,329.69	48.40
79		J246	12.34	3,218.00	3,329.66	48.38
80		J248	12.34	3,234.00	3,325.65	39.71

Junction Report (Current Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
81		J250	12.34	3,214.00	3,320.56	46.17
82		J252	12.34	3,210.00	3,320.07	47.69
83		J254	12.34	3,212.00	3,330.45	51.32
84		J256	12.34	3,205.00	3,331.05	54.62
85		J258	12.34	3,203.00	3,330.53	55.26
86		J26	12.34	3,211.00	3,353.80	61.87
87		J260	12.34	3,198.00	3,330.32	57.33
88		J262	12.34	3,194.00	3,329.26	58.61
89		J264	12.34	3,190.00	3,328.47	60.00
90		J266	12.34	3,190.00	3,327.07	59.39
91		J268	12.34	3,190.00	3,326.07	58.96
92		J270	12.34	3,200.00	3,325.49	54.38
93		J272	12.34	3,207.00	3,325.48	51.34
94		J274	12.34	3,212.00	3,325.00	48.96
95		J276	12.34	3,221.00	3,324.39	44.80
96		J278	12.34	3,225.00	3,323.85	42.83
97		J28	12.34	3,203.00	3,353.59	65.25
98		J280	12.34	3,198.00	3,323.84	54.53
99		J282	12.34	3,198.00	3,323.84	54.53
100		J284	12.34	3,188.00	3,326.94	60.20
101		J286	12.34	3,188.00	3,341.10	66.34
102		J288	12.34	3,188.00	3,350.83	70.55
103		J290	12.34	3,195.00	3,351.66	67.88
104		J292	12.34	3,198.00	3,351.53	66.52
105		J294	12.34	3,195.00	3,352.49	68.24
106		J296	12.34	3,203.00	3,352.36	64.72
107		J298	12.34	3,188.00	3,346.36	68.62
108		J30	12.34	3,244.00	3,355.27	48.21
109		J300	12.34	3,188.00	3,346.40	68.64
110		J302	12.34	3,189.00	3,346.59	68.28
111		J304	12.34	3,188.00	3,346.56	68.71
112		J306	12.34	3,189.00	3,346.82	68.38
113		J308	12.34	3,189.00	3,346.84	68.39
114		J310	12.34	3,198.00	3,353.64	67.44
115		J312	12.34	3,198.00	3,353.60	67.42
116		J314	12.34	3,195.00	3,354.11	68.94
117		J316	12.34	3,193.00	3,352.27	69.01
118		J318	12.34	3,210.00	3,358.46	64.33
119		J32	12.34	3,260.00	3,353.15	40.36
120		J320	12.34	3,190.00	3,349.76	69.22

Junction Report (Current Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
121		J322	12.34	3,030.00	3,346.66	137.21
122		J324	12.34	3,184.00	3,347.07	70.66
123		J326	12.34	3,186.00	3,345.87	69.27
124		J328	12.34	3,182.00	3,345.88	71.01
125		J330	12.34	3,178.00	3,346.08	72.83
126		J332	12.34	3,182.00	3,345.79	70.97
127		J334	12.34	3,179.00	3,345.70	72.23
128		J336	12.34	3,185.00	3,343.43	68.65
129		J338	12.34	3,178.00	3,345.46	72.56
130		J34	12.34	3,200.00	3,353.56	66.54
131		J340	12.34	3,169.00	3,341.44	74.72
132		J342	12.34	3,178.00	3,341.49	70.84
133		J344	12.34	3,178.00	3,345.89	72.75
134		J346	12.34	3,178.00	3,345.94	72.77
135		J350	12.34	3,178.00	3,345.90	72.75
136		J352	12.34	3,178.00	3,345.92	72.76
137		J354	12.34	3,183.00	3,344.95	70.17
138		J356	12.34	3,188.00	3,344.52	67.82
139		J358	12.34	3,192.00	3,344.82	66.22
140		J36	12.34	3,255.00	3,350.30	41.29
141		J360	12.34	3,192.00	3,344.82	66.22
142		J364	12.34	3,189.00	3,324.65	58.77
143		J366	12.34	3,189.00	3,324.56	58.74
144		J368	12.34	3,188.00	3,325.20	59.45
145		J370	12.34	3,194.00	3,323.60	56.15
146		J372	12.34	3,195.00	3,342.13	63.75
147		J374	12.34	3,188.00	3,340.03	65.87
148		J376	12.34	3,188.00	3,341.78	66.63
149		J378	12.34	3,198.00	3,320.95	53.27
150		J38	12.34	3,214.00	3,349.62	58.77
151		J380	12.34	3,222.00	3,324.05	44.22
152		J382	12.34	3,226.00	3,324.02	42.47
153		J384	12.34	3,222.00	3,323.49	43.98
154		J386	12.34	3,228.00	3,323.87	41.54
155		J388	12.34	3,237.00	3,324.30	37.83
156		J390	12.34	3,245.00	3,322.21	33.46
157		J392	12.34	3,250.00	3,326.46	33.13
158		J394	12.34	3,248.00	3,326.42	33.98
159		J396	12.34	3,252.00	3,326.30	32.19
160		J398	12.34	3,220.00	3,277.75	25.02

Junction Report (Current Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
161		J40	12.34	3,255.00	3,347.46	40.06
162		J400	12.34	3,220.00	3,278.48	25.34
163		J402	12.34	3,205.00	3,278.02	31.64
164		J404	12.34	3,208.00	3,295.74	38.02
165		J406	12.34	3,204.00	3,295.60	39.69
166		J408	12.34	3,214.00	3,297.67	36.25
167		J410	12.34	3,212.00	3,297.63	37.10
168		J412	12.34	3,233.00	3,304.60	31.02
169		J414	2.00	3,245.00	3,303.62	25.40
170		J416	12.34	3,222.00	3,316.06	40.76
171		J418	12.34	3,220.00	3,315.98	41.59
172		J42	12.34	3,221.00	3,347.11	54.64
173		J420	12.34	3,209.00	3,316.64	46.64
174		J422	12.34	3,238.00	3,315.92	33.76
175		J424	12.34	3,209.00	3,316.99	46.79
176		J426	12.34	3,215.00	3,317.81	44.55
177		J428	12.34	3,242.00	3,317.49	32.71
178		J430	12.34	3,240.00	3,320.86	35.04
179		J432	12.34	3,240.00	3,323.45	36.16
180		J434	12.34	3,232.00	3,323.46	39.63
181		J436	12.34	3,228.00	3,322.69	41.03
182		J438	12.34	3,236.00	3,320.56	36.64
183		J44	12.34	3,255.00	3,346.17	39.50
184		J440	12.34	3,240.00	3,319.03	34.24
185		J442	12.34	3,234.00	3,318.81	36.75
186		J444	12.34	3,224.00	3,323.67	43.19
187		J446	12.34	3,223.00	3,323.75	43.65
188		J448	12.34	3,222.00	3,322.98	43.75
189		J450	12.34	3,222.00	3,322.91	43.72
190		J452	12.34	3,220.00	3,322.81	44.55
191		J454	12.34	3,224.00	3,322.78	42.80
192		J456	12.34	3,220.00	3,322.82	44.55
193		J458	12.34	3,221.00	3,322.81	44.11
194		J46	12.34	3,220.00	3,345.97	54.58
195		J460	12.34	3,208.00	3,322.80	49.74
196		J462	12.34	3,216.00	3,322.47	46.13
197		J464	12.34	3,224.00	3,322.54	42.70
198		J466	12.34	3,224.00	3,322.54	42.70
199		J468	12.34	3,218.00	3,322.61	45.33
200		J470	12.34	3,222.00	3,322.60	43.59

Junction Report (Current Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
201		J472	12.34	3,208.00	3,322.80	49.74
202		J474	12.34	3,209.00	3,323.36	49.55
203		J476	12.34	3,202.00	3,323.44	52.62
204		J478	12.34	3,197.00	3,323.63	54.87
205		J48	12.34	3,255.00	3,343.71	38.44
206		J480	12.34	3,208.00	3,323.56	50.07
207		J482	12.34	3,195.00	3,323.56	55.71
208		J484	12.34	3,195.00	3,323.42	55.64
209		J486	12.34	3,205.00	3,323.42	51.31
210		J488	12.34	3,195.00	3,323.27	55.58
211		J490	12.34	3,195.00	3,323.26	55.58
212		J492	12.34	3,215.00	3,323.19	46.88
213		J498	12.34	3,216.00	3,323.36	46.52
214		J50	12.34	3,215.00	3,340.49	54.37
215		J502	12.34	3,220.00	3,322.85	44.56
216		J504	12.34	3,220.00	3,322.66	44.48
217		J508	12.34	3,200.00	3,322.42	53.05
218		J510	12.34	3,215.00	3,316.49	43.98
219		J512	12.34	3,225.00	3,316.76	39.76
220		J514	12.34	3,228.00	3,317.80	38.91
221		J516	12.34	3,234.00	3,317.85	36.33
222		J518	0.00	3,314.00	0.00	-1,435.96
223		J52	12.34	3,213.00	3,340.24	55.13
224		J520	0.00	3,315.00	0.00	-1,436.39
225		J522	0.00	3,330.00	0.00	-1,442.89
226		J524	0.00	3,310.00	0.00	-1,434.22
227		J526	0.00	3,320.00	0.00	-1,438.56
228		J528	12.34	3,224.00	3,331.40	46.54
229		J530	12.34	3,210.00	3,320.65	47.94
230		J532	12.34	3,220.00	3,322.96	44.61
231		J534	12.34	3,222.00	3,322.61	43.59
232		J536	12.34	3,188.00	3,326.67	60.08
233		J54	12.34	3,216.00	3,340.16	53.80
234		J540	12.34	3,230.00	3,323.84	40.66
235		J542	12.34	3,210.00	3,325.63	50.10
236		J544	12.34	3,238.00	3,323.96	37.25
237		J546	12.34	3,223.00	3,323.84	43.69
238		J548	12.34	3,178.00	3,346.31	72.93
239		J550	12.34	3,224.00	3,322.60	42.72
240		J552	12.34	3,224.00	3,322.60	42.72
























Junction Report (Current Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
241		J554	12.34	3,180.00	3,368.89	81.85
242		J556	12.34	3,182.00	3,368.39	80.76
243		J558	12.34	3,178.00	3,367.94	82.30
244		J56	12.34	3,203.00	3,340.13	59.42
245		J560	12.34	3,188.00	3,367.78	77.90
246		J562	12.34	3,188.00	3,367.78	77.90
247		J564	12.34	3,194.00	3,367.72	75.27
248		J566	12.34	3,194.00	3,367.70	75.27
249		J568	12.34	3,195.00	3,367.72	74.84
250		J570	12.34	3,198.00	3,367.71	73.53
251		J572	12.34	3,218.00	3,367.70	64.86
252		J574	12.34	3,090.00	3,367.40	120.20
253		J576	12.34	3,078.00	3,367.36	125.38
254		J578	12.34	3,082.00	3,367.36	123.65
255		J58	12.34	3,200.00	3,340.49	60.88
256		J580	12.34	3,110.00	3,367.35	111.51
257		J582	12.34	3,205.00	3,367.72	70.51
258		J584	12.34	3,193.00	3,348.73	67.48
259		J586	12.34	3,190.00	3,351.01	69.77
260		J588	12.34	3,190.00	3,341.12	65.48
261		J590	12.34	3,190.00	3,327.43	59.55
262		J592	12.34	3,208.00	3,330.62	53.13
263		J594	12.34	3,210.00	3,330.48	52.20
264		J596	12.34	3,192.00	3,350.21	68.55
265		J598	12.34	3,190.00	3,347.69	68.33
266		J60	12.34	3,200.00	3,340.44	60.85
267		J600	12.34	3,210.00	3,358.47	64.33
268		J602	12.34	3,170.00	3,362.59	83.45
269		J604	12.34	3,200.00	3,360.64	69.61
270		J606	12.34	3,255.00	3,349.06	40.76
271		J608	12.34	3,196.00	3,367.70	74.40
272		J610	12.34	3,192.00	3,367.70	76.13
273		J612	12.34	3,240.00	3,329.58	38.81
274		J614	12.34	3,236.00	3,326.88	39.38
275		J616	12.34	3,225.00	3,319.41	40.91
276		J618	12.34	3,230.00	3,316.77	37.60
277		J62	12.34	3,195.00	3,341.26	63.38
278		J620	12.34	3,220.00	3,316.83	41.96
279		J622	12.34	3,220.00	3,322.54	44.43
280		J624	12.34	3,222.00	3,323.05	43.78

Junction Report (Current Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
281		J626	12.34	3,200.00	3,323.12	53.35
282		J628	12.34	3,193.00	3,343.83	65.36
283		J630	12.34	3,187.00	3,344.59	68.28
284		J632	12.34	3,184.00	3,345.53	69.99
285		J634	12.34	3,187.00	3,347.89	69.71
286		J636	12.34	3,192.00	3,351.03	68.91
287		J638	12.34	3,205.00	3,356.27	65.54
288		J64	12.34	3,255.00	3,341.82	37.62
289		J640	12.34	3,192.00	3,341.86	64.93
290		J642	12.34	3,222.00	3,334.33	48.67
291		J644	12.34	3,193.00	3,323.40	56.50
292		J646	12.34	3,196.00	3,321.16	54.23
293		J648	12.34	3,200.00	3,325.72	54.47
294		J650	12.34	3,194.00	3,325.61	57.03
295		J652	12.34	3,135.00	3,367.75	100.85
296		J654	12.34	3,100.00	3,367.36	115.85
297		J656	12.34	3,230.00	3,349.85	51.93
298		J658	12.34	3,192.00	3,351.64	69.17
299		J66	12.34	3,254.00	3,340.70	37.56
300		J660	12.34	3,193.00	3,344.34	65.57
301		J662	12.34	3,222.00	3,322.54	43.56
302		J664	12.34	3,224.00	3,322.52	42.69
303		J666	12.34	3,223.00	3,316.76	40.62
304		J668	12.34	3,224.00	3,322.58	42.71
305		J670	12.34	3,193.00	3,321.86	55.83
306		J672	12.34	3,190.00	3,327.73	59.68
307		J674	12.34	3,204.00	3,321.86	51.07
308		J676	12.34	3,235.00	3,325.21	39.09
309		J678	12.34	3,110.00	3,367.35	111.51
310		J68	12.34	3,228.00	3,333.41	45.67
311		J680	12.34	3,110.00	3,367.35	111.51
312		J682	12.34	3,100.00	3,367.35	115.84
313		J684	12.34	3,086.00	3,367.38	121.92
314		J686	12.34	3,110.00	3,367.58	111.61
315		J688	12.34	3,180.00	3,368.14	81.52
316		J690	12.34	3,218.00	3,316.08	42.50
317		J692	12.34	3,238.00	3,318.86	35.04
318		J694	12.34	3,238.00	3,321.39	36.13
319		J696	12.34	3,238.00	3,323.45	37.03
320		J698	12.34	3,193.00	3,341.20	64.22

Junction Report (Current Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
321		J70	12.34	3,228.00	3,333.34	45.64
322		J700	12.34	3,192.00	3,341.15	64.63
323		J702	12.34	3,192.00	3,328.20	59.02
324		J704	12.34	3,189.00	3,327.04	59.81
325		J706	12.34	3,210.00	3,332.51	53.08
326		J708	12.34	3,216.00	3,333.17	50.77
327		J710	12.34	3,206.00	3,330.77	54.06
328		J712	12.34	3,110.00	3,367.35	111.51
329		J714	12.34	3,110.00	3,367.35	111.51
330		J72	12.34	3,214.00	3,329.35	49.98
331		J74	12.34	3,214.00	3,329.08	49.87
332		J76	12.34	3,205.00	3,328.95	53.71
333		J78	12.34	3,205.00	3,328.78	53.64
334		J80	12.34	3,209.00	3,328.86	51.94
335		J82	12.34	3,210.00	3,328.79	51.47
336		J84	12.34	3,255.00	3,338.97	36.39
337		J86	12.34	3,287.00	3,338.96	22.52
338		J88	12.34	3,255.00	3,338.70	36.27
339		J90	12.34	3,225.00	3,332.68	46.66
340		J92	12.34	3,218.00	3,332.62	49.66
341		J94	12.34	3,221.00	3,332.19	48.18
342		J96	12.34	3,209.00	3,332.11	53.34
343		J98	12.34	3,217.00	3,332.17	49.90

Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kt)
1	P101	J102	J106	43.88	3.00	130.00	53.28	2.42	0.46	10.54
2	P103	J106	J108	154.95	8.00	130.00	17.76	0.11	0.00	0.01
3	P105	J106	J110	91.81	3.00	130.00	17.76	0.81	0.12	1.30
4	P107	J100	J112	186.54	15.00	130.00	2,920.12	5.30	1.38	7.39
5	P109	J112	J114	135.98	2.00	130.00	17.76	1.81	1.24	9.15
6	P111	RES9000	J12	478.65	14.00	130.00	5,466.32	11.39	14.31	29.90
7	P111	J112	J116	137.69	15.00	130.00	2,884.60	5.24	1.05	7.63
8	P113	J116	J118	152.02	4.00	130.00	17.76	0.45	0.05	0.32
9	P115	J116	J120	156.12	15.00	130.00	2,849.08	5.17	1.14	7.27
10	P117	J120	J122	164.28	10.00	130.00	1,159.64	4.74	1.51	9.16
11	P119	J122	J124	108.32	3.00	130.00	17.76	0.81	0.14	1.29
12	P121	J122	J126	174.60	10.00	130.00	1,124.12	4.59	1.50	8.59
13	P123	J126	J134	195.71	10.00	130.00	1,053.08	4.30	1.47	7.51
14	P125	J134	J708	182.58	3.00	130.00	35.52	1.61	0.84	4.60
15	P127	J126	J128	254.23	3.00	130.00	53.28	2.42	2.46	9.69
16	P129	J128	J130	55.66	3.00	130.00	17.76	0.81	0.07	1.33
17	P131	J12	J14	334.48	12.00	130.00	3,193.76	9.06	7.92	23.68
18	P131	J128	J132	605.46	3.00	130.00	17.76	0.81	0.76	1.25
19	P133	J120	J138	486.72	15.00	130.00	1,671.68	3.04	1.15	2.36
20	P135	J138	J642	413.66	3.00	130.00	35.52	1.61	1.88	4.54
21	P137	J138	J142	271.33	15.00	130.00	1,618.40	2.94	0.63	2.33
22	P139	J142	J144	662.30	3.00	130.00	17.76	0.81	0.83	1.25
23	P141	J142	J146	298.43	15.00	130.00	1,582.88	2.87	0.66	2.22
24	P145	J146	J150	29.68	15.00	130.00	1,565.12	2.84	0.12	4.06
25	P147	J150	J152	713.64	3.00	130.00	17.76	0.81	0.89	1.25
26	P149	J150	J154	419.82	15.00	130.00	1,529.60	2.78	0.85	2.02
27	P151	J602	J18	656.24	12.00	130.00	2,237.04	6.35	7.70	11.74

Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kt)
28	P151	J154	J156	934.87	10.00	130.00	925.76	3.78	5.10	5.46
29	P153	J154	J160	107.95	15.00	130.00	586.08	1.06	0.04	0.40
30	P155	J160	J158	479.08	4.00	130.00	17.76	0.45	0.15	0.31
31	P157	J160	J162	230.85	15.00	130.00	550.56	1.00	0.07	0.32
32	P159	J162	J164	390.07	4.00	130.00	17.76	0.45	0.12	0.31
33	P161	J162	J166	349.16	15.00	130.00	515.04	0.94	0.09	0.27
34	P165	J166	J170	842.65	12.00	130.00	497.28	1.41	0.60	0.71
35	P167	J170	J172	520.78	2.00	130.00	17.76	1.81	4.69	9.01
36	P169	J170	J174	213.63	12.00	130.00	461.76	1.31	0.14	0.67
37	P17	J14	J604	615.90	6.00	130.00	35.52	0.40	0.10	0.16
38	P171	J174	J180	610.14	6.00	130.00	119.40	1.35	0.90	1.47
39	P173	J180	J184	245.37	6.00	130.00	83.88	0.95	0.19	0.78
40	P175	J184	J188	267.92	6.00	130.00	48.36	0.55	0.08	0.28
41	P177	J184	J186	251.26	6.00	130.00	17.76	0.20	0.01	0.04
42	P179	J180	J182	230.16	6.00	130.00	17.76	0.20	0.01	0.04
43	P181	J174	J176	250.18	12.00	130.00	324.60	0.92	0.09	0.34
44	P183	J176	J178	346.25	6.00	130.00	17.76	0.20	0.01	0.04
45	P185	J176	J190	239.53	12.00	130.00	289.08	0.82	0.07	0.28
46	P187	J190	J192	498.22	6.00	130.00	111.65	1.27	0.65	1.30
47	P189	J192	J200	548.99	6.00	130.00	76.13	0.86	0.35	0.64
48	P19	J14	J20	1,389.82	15.00	130.00	3,140.48	5.70	10.14	7.30
49	P191	J188	J194	254.58	6.00	130.00	17.76	0.20	0.01	0.04
50	P193	J188	J196	264.94	6.00	130.00	12.84	0.15	0.01	0.02
51	P195	J196	J198	227.35	6.00	130.00	17.76	0.20	0.01	0.04
52	P197	J196	J200	270.09	6.00	130.00	-22.68	0.26	0.02	0.07
53	P199	J200	J202	250.34	6.00	130.00	17.76	0.20	0.01	0.04
54	P201	J200	J212	308.97	6.00	130.00	17.94	0.20	0.01	0.04

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Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
55	P203	J212	J214	228.79	6.00	130.00	17.76	0.20	0.01	0.04
56	P205	J212	J218	272.28	6.00	130.00	-17.58	0.20	0.01	0.04
57	P207	J218	J216	228.85	6.00	130.00	17.76	0.20	0.01	0.04
58	P209	J218	J206	277.26	6.00	130.00	-53.10	0.60	0.09	0.33
59	P21	J20	J22	16.00	15.00	130.00	3,069.44	5.57	0.35	21.90
60	P211	J206	J210	377.78	6.00	130.00	17.76	0.20	0.02	0.04
61	P213	J192	J208	369.26	6.00	130.00	17.76	0.20	0.02	0.04
62	P215	J190	J204	241.38	12.00	130.00	159.66	0.45	0.02	0.09
63	P217	J204	J206	1,056.27	6.00	130.00	88.62	1.01	0.89	0.84
64	P219	J204	J220	853.78	12.00	130.00	53.28	0.15	0.01	0.01
65	P221	J220	J222	40.62	14.00	130.00	17.76	0.04	0.00	0.00
66	P223	J220	J224	109.87	14.00	130.00	17.76	0.04	0.00	0.00
67	P225	J156	J240	208.31	3.00	130.00	17.76	0.81	0.26	1.27
68	P227	J156	J528	24.41	10.00	130.00	890.24	3.64	0.22	9.17
69	P229	J528	J242	321.58	3.00	130.00	53.28	2.42	3.10	9.65
70	P23	J20	J24	325.95	3.00	130.00	53.28	2.42	3.15	9.65
71	P231	J242	J244	205.80	3.00	130.00	17.76	0.81	0.26	1.27
72	P233	J528	J612	814.62	10.00	130.00	819.20	3.35	3.56	4.36
73	P235	J238	J236	331.16	6.00	130.00	136.32	1.55	0.63	1.91
74	P237	J236	J232	278.19	3.00	130.00	65.28	2.96	3.92	14.10
75	P239	J232	J676	326.39	3.00	130.00	35.52	1.61	1.48	4.55
76	P241	J232	J228	818.62	2.00	130.00	12.00	1.23	3.56	4.35
77	P243	J228	J226	142.47	2.00	130.00	4.00	0.41	0.08	0.58
78	P245	J228	J230	158.09	2.00	130.00	4.00	0.41	0.09	0.58
79	P247	J236	J392	367.44	3.00	130.00	53.28	2.42	3.54	9.63
80	P249	J392	J394	69.90	3.00	130.00	17.76	0.81	0.09	1.31
81	P25	J24	J26	189.48	3.00	130.00	17.76	0.81	0.24	1.27

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Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kt)
82	P251	J392	J396	258.92	3.00	130.00	17.76	0.81	0.33	1.26
83	P253	J242	J246	248.18	3.00	130.00	17.76	0.81	0.31	1.26
84	P255	J594	J592	244.52	4.00	130.00	-35.52	0.91	0.28	1.13
85	P257	J256	J706	461.15	10.00	130.00	-982.04	4.01	2.87	6.23
86	P259	J256	J258	182.59	10.00	130.00	893.24	3.65	1.02	5.57
87	P261	J258	J260	327.64	3.00	130.00	17.76	0.81	0.41	1.26
88	P263	J258	J262	514.39	10.00	130.00	857.72	3.50	2.48	4.82
89	P265	J94	J96	130.98	3.00	130.00	17.76	0.81	0.17	1.28
90	P267	J74	J76	206.10	3.00	130.00	17.76	0.81	0.26	1.27
91	P269	J80	J78	118.91	3.00	130.00	17.76	0.81	0.15	1.29
92	P27	J24	J28	506.78	3.00	130.00	17.76	0.81	0.64	1.25
93	P271	J262	J264	392.17	10.00	130.00	768.92	3.14	1.56	3.98
94	P273	J590	J704	166.27	3.00	130.00	35.52	1.61	0.77	4.61
95	P275	J700	J588	346.93	6.00	130.00	35.52	0.40	0.05	0.16
96	P277	J18	J600	350.81	4.00	130.00	35.52	0.91	0.39	1.12
97	P279	J18	J638	411.10	12.00	130.00	2,183.76	6.19	4.72	11.49
98	P281	J314	J310	474.71	12.00	130.00	845.23	2.40	0.93	1.95
99	P283	J310	J312	29.40	12.00	130.00	720.91	2.05	0.07	2.49
100	P285	J310	J294	261.14	4.00	130.00	106.56	2.72	2.27	8.67
101	P287	J294	J296	193.27	3.00	130.00	17.76	0.81	0.25	1.27
102	P289	J294	J290	400.98	4.00	130.00	71.04	1.81	1.63	4.05
103	P29	J22	J30	123.09	3.00	130.00	17.76	0.81	0.16	1.28
104	P291	J290	J292	205.87	3.00	130.00	17.76	0.81	0.26	1.27
105	P293	J586	J288	284.18	3.00	130.00	17.76	0.81	0.36	1.26
106	P295	J314	J316	338.21	10.00	130.00	1,303.00	5.32	3.62	10.71
107	P297	J316	J596	219.55	4.00	130.00	159.84	4.08	4.06	18.50
108	P299	J308	J306	153.45	4.00	130.00	17.76	0.45	0.05	0.32

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Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
109	P301	J308	J302	117.62	4.00	130.00	71.04	1.81	0.49	4.21
110	P303	J302	J304	155.42	4.00	130.00	17.76	0.45	0.05	0.32
111	P305	J302	J300	329.58	4.00	130.00	35.52	0.91	0.37	1.12
112	P307	J300	J298	273.63	4.00	130.00	17.76	0.45	0.09	0.31
113	P309	J636	J320	325.49	10.00	130.00	1,089.88	4.45	2.51	7.70
114	P31	J22	J32	612.09	15.00	130.00	3,033.92	5.51	4.32	7.06
115	P311	J320	J634	503.47	10.00	130.00	1,072.12	4.38	3.68	7.30
116	P313	J324	J322	645.71	3.00	130.00	17.76	0.81	0.81	1.25
117	P315	J324	J548	213.75	10.00	130.00	1,018.84	4.16	1.50	7.01
118	P319	J346	J352	27.75	10.00	130.00	381.45	1.56	0.05	1.72
119	P321	J352	J350	10.10	4.00	130.00	54.32	1.39	0.04	3.89
120	P323	J350	J344	58.57	4.00	130.00	17.76	0.45	0.02	0.33
121	P327	J332	J350	621.34	4.00	130.00	-18.80	0.48	0.21	0.34
122	P329	J332	J328	139.57	6.00	130.00	-106.85	1.21	0.18	1.26
123	P33	J32	J36	543.72	15.00	130.00	3,701.56	6.72	5.60	10.29
124	P331	J328	J330	185.64	6.00	130.00	-142.37	1.62	0.39	2.11
125	P333	J328	J326	394.85	6.00	130.00	17.76	0.20	0.02	0.04
126	P335	J332	J334	148.16	6.00	130.00	107.88	1.22	0.19	1.28
127	P337	J334	J336	492.81	2.00	130.00	17.76	1.81	4.44	9.01
128	P339	J334	J632	547.80	6.00	130.00	72.36	0.82	0.32	0.58
129	P341	J338	J346	220.64	8.00	130.00	-441.74	2.82	0.95	4.30
130	P343	J352	J342	135.29	4.00	130.00	309.38	7.90	8.72	64.44
131	P345	J342	J340	253.59	4.00	130.00	17.76	0.45	0.08	0.31
132	P347	J536	J354	686.34	4.00	130.00	-283.22	7.23	35.87	52.27
133	P349	J354	J338	200.07	8.00	130.00	-478.58	3.05	1.01	5.03
134	P35	J32	J34	620.07	12.00	130.00	-685.39	1.94	0.81	1.31
135	P351	J354	J358	509.70	8.00	130.00	142.08	0.91	0.26	0.50

Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/ft)
136	P353	J358	J360	209.72	8.00	130.00	17.76	0.11	0.00	0.01
137	P359	J370	J364	238.38	6.00	130.00	-305.26	3.46	2.06	8.63
138	P361	J364	J366	32.90	6.00	130.00	198.54	2.25	0.16	4.91
139	P363	J364	J368	37.01	6.00	130.00	-521.56	5.92	1.09	29.57
140	P365	J354	J630	641.47	4.00	130.00	35.52	0.91	0.72	1.12
141	P367	J628	J372	833.56	4.00	130.00	71.04	1.81	3.35	4.02
142	P369	J372	J374	456.88	2.00	130.00	17.76	1.81	4.12	9.01
143	P37	J656	J38	363.08	3.00	130.00	17.76	0.81	0.46	1.26
144	P371	J640	J376	478.02	4.00	130.00	17.76	0.45	0.15	0.31
145	P373	J264	J672	169.55	8.00	130.00	633.30	4.04	1.46	8.59
146	P375	J266	J268	296.86	8.00	130.00	561.12	3.58	1.96	6.60
147	P377	J644	J670	313.51	3.00	130.00	53.28	2.42	3.03	9.65
148	P379	J264	J650	542.70	4.00	130.00	117.86	3.01	5.60	10.32
149	P381	J266	J648	549.97	3.00	130.00	36.67	1.66	2.64	4.80
150	P383	J268	J270	232.29	8.00	130.00	472.32	3.01	1.13	4.86
151	P385	J270	J272	344.49	8.00	130.00	34.37	0.22	0.01	0.04
152	P387	J272	J274	102.97	2.00	130.00	17.76	1.81	0.95	9.21
153	P389	J272	J276	237.88	2.00	130.00	17.76	1.81	2.16	9.07
154	P39	J606	J40	301.74	15.00	130.00	3,630.52	6.59	3.15	10.43
155	P391	J270	J380	751.22	8.00	130.00	420.18	2.68	2.81	3.74
156	P393	J380	J384	119.63	2.00	130.00	17.76	1.81	1.10	9.17
157	P395	J380	J382	201.40	4.00	130.00	17.76	0.45	0.06	0.31
158	P397	J282	J280	301.53	6.00	130.00	-17.76	0.20	0.01	0.04
159	P399	J280	J278	811.32	6.00	130.00	-6.46	0.07	0.01	0.01
160	P401	J278	J540	512.87	8.00	130.00	17.76	0.11	0.01	0.01
161	P403	J674	J530	245.24	3.00	130.00	53.28	2.42	2.38	9.69
162	P405	J530	J252	124.03	2.00	130.00	17.76	1.81	1.14	9.16

Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
163	P407	J530	J250	143.01	3.00	130.00	17.76	0.81	0.18	1.28
164	P409	J388	J248	366.61	8.00	130.00	-594.08	3.79	2.66	7.27
165	P41	J40	J42	557.91	3.00	130.00	17.76	0.81	0.70	1.25
166	P411	J614	J238	402.86	8.00	130.00	-647.36	4.13	3.42	8.49
167	P413	J388	J390	454.19	2.00	130.00	17.76	1.81	4.09	9.01
168	P415	J544	J432	236.93	8.00	130.00	440.30	2.81	1.01	4.26
169	P417	J278	J386	243.85	6.00	130.00	-41.98	0.48	0.05	0.22
170	P419	J432	J696	440.22	8.00	130.00	-18.01	0.11	0.00	0.01
171	P421	J402	J400	98.64	2.00	130.00	-17.76	1.81	0.91	9.22
172	P423	J400	J398	158.33	2.00	130.00	17.76	1.81	1.44	9.12
173	P425	J400	J404	490.90	2.00	130.00	-53.28	5.44	33.87	69.00
174	P427	J404	J406	213.80	3.00	130.00	17.76	0.81	0.27	1.27
175	P429	J404	J408	150.03	3.00	130.00	-88.80	4.03	3.80	25.33
176	P43	J40	J44	243.11	15.00	130.00	3,595.00	6.53	2.55	10.50
177	P431	J408	J410	261.19	4.00	130.00	17.76	0.45	0.08	0.31
178	P433	J408	J412	292.79	3.00	130.00	-124.32	5.64	13.62	46.51
179	P435	J412	J414	213.32	1.00	130.00	2.00	0.82	0.98	4.62
180	P437	J412	J416	365.24	3.00	130.00	-144.08	6.54	22.25	60.93
181	P439	J416	J418	119.20	3.00	130.00	17.76	0.81	0.15	1.29
182	P441	J416	J420	354.20	6.00	130.00	-179.60	2.04	1.12	3.18
183	P443	J690	J422	257.53	3.00	130.00	17.76	0.81	0.33	1.26
184	P445	J420	J424	128.18	6.00	130.00	-232.88	2.64	0.69	5.41
185	P447	J424	J426	183.31	6.00	130.00	-306.10	3.47	1.61	8.79
186	P449	J426	J428	503.83	3.00	130.00	17.76	0.81	0.63	1.25
187	P45	J44	J46	305.90	3.00	130.00	17.76	0.81	0.39	1.26
188	P451	J426	J616	295.97	6.00	130.00	-341.62	3.88	3.12	10.54
189	P453	J430	J432	300.18	6.00	130.00	-440.56	5.00	5.07	16.90

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Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
190	P455	J430	J438	177.00	4.00	130.00	63.42	1.62	0.59	3.35
191	P457	J438	J440	269.34	4.00	130.00	122.14	3.12	3.01	11.17
192	P459	J440	J516	605.17	4.00	130.00	68.86	1.76	2.30	3.81
193	P461	J424	J620	873.96	6.00	130.00	55.46	0.63	0.31	0.35
194	P463	J512	J516	533.17	3.00	130.00	-33.34	1.51	2.15	4.02
195	P465	J516	J514	330.90	4.00	130.00	17.76	0.45	0.10	0.31
196	P467	J692	J442	334.41	4.00	130.00	17.76	0.45	0.10	0.31
197	P469	J694	J436	370.13	4.00	130.00	-94.24	2.41	2.54	6.86
198	P47	J44	J48	502.31	15.00	130.00	3,559.48	6.46	4.83	9.62
199	P471	J436	J434	544.84	6.00	130.00	-168.36	1.91	1.52	2.79
200	P473	J434	J444	347.99	8.00	130.00	-221.89	1.42	0.41	1.17
201	P475	J444	J446	70.14	8.00	130.00	-292.13	1.86	0.16	2.25
202	P477	J546	J380	130.57	8.00	130.00	-366.90	2.34	0.42	3.18
203	P479	J446	J448	297.97	4.00	130.00	80.00	2.04	1.51	5.08
204	P481	J448	J450	36.99	4.00	130.00	62.24	1.59	0.14	3.66
205	P483	J450	J452	291.95	4.00	130.00	26.72	0.68	0.19	0.66
206	P485	J452	J454	209.61	4.00	130.00	17.76	0.45	0.07	0.31
207	P487	J452	J456	244.74	4.00	130.00	-8.80	0.22	0.02	0.08
208	P489	J624	J444	532.99	4.00	130.00	-52.48	1.34	1.23	2.30
209	P49	J48	J50	421.72	3.00	130.00	67.74	3.07	6.33	15.01
210	P491	J436	J668	613.76	6.00	130.00	56.36	0.64	0.22	0.37
211	P493	J512	J510	415.12	3.00	130.00	17.76	0.81	0.52	1.26
212	P495	J450	J458	154.62	3.00	130.00	17.76	0.81	0.20	1.28
213	P497	J464	J466	66.80	6.00	130.00	-32.44	0.37	0.01	0.14
214	P499	J466	J468	353.65	6.00	130.00	-55.80	0.63	0.13	0.36
215	P501	J464	J462	411.38	4.00	130.00	17.76	0.45	0.13	0.31
216	P503	J466	J664	247.27	3.00	130.00	5.60	0.25	0.04	0.15

Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
217	P505	J470	J508	278.14	3.00	130.00	17.76	0.81	0.35	1.26
218	P507	J534	J504	123.99	6.00	130.00	-82.69	0.94	0.10	0.79
219	P51	J50	J52	45.18	3.00	130.00	53.28	2.42	0.47	10.51
220	P511	J504	J502	352.32	6.00	130.00	-100.45	1.14	0.38	1.08
221	P521	J492	J532	236.66	6.00	130.00	135.97	1.54	0.45	1.92
222	P523	J492	J488	387.86	6.00	130.00	-56.46	0.64	0.14	0.37
223	P525	J488	J490	333.56	6.00	130.00	17.76	0.20	0.01	0.04
224	P527	J488	J484	328.34	6.00	130.00	-91.98	1.04	0.30	0.92
225	P529	J484	J486	154.18	6.00	130.00	17.76	0.20	0.01	0.04
226	P53	J52	J54	129.38	3.00	130.00	17.76	0.81	0.17	1.28
227	P531	J484	J482	159.67	6.00	130.00	-127.50	1.45	0.28	1.74
228	P533	J482	J480	283.61	6.00	130.00	17.76	0.20	0.01	0.04
229	P535	J482	J478	43.18	6.00	130.00	-163.02	1.85	0.14	3.19
230	P537	J498	J476	453.07	8.00	130.00	-115.03	0.73	0.16	0.34
231	P539	J476	J370	570.47	8.00	130.00	-150.55	0.96	0.32	0.56
232	P541	J370	J626	495.40	6.00	130.00	136.95	1.55	0.94	1.90
233	P543	J476	J474	467.85	4.00	130.00	17.76	0.45	0.15	0.31
234	P545	J456	J460	745.95	4.00	130.00	8.16	0.21	0.05	0.07
235	P547	J524	J522	140.05	6.00	130.00	0.00	0.00	0.00	0.00
236	P549	J522	J526	763.40	6.00	130.00	0.00	0.00	0.00	0.00
237	P55	J52	J56	180.61	3.00	130.00	17.76	0.81	0.23	1.27
238	P551	J522	J520	289.67	6.00	130.00	0.00	0.00	0.00	0.00
239	P553	J520	J518	972.07	6.00	130.00	3.96	0.04	0.00	0.00
240	P555	J518	J520	1,325.92	6.00	130.00	3.96	0.04	0.00	0.00
241	P559	J460	J472	136.61	6.00	130.00	-9.60	0.11	0.00	0.01
242	P561	J472	J468	411.44	6.00	130.00	91.83	1.04	0.37	0.91
243	P563	J470	J534	12.52	6.00	130.00	-39.42	0.45	0.00	0.31

Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
244	P565	J468	J552	343.67	6.00	130.00	18.27	0.21	0.02	0.05
245	P567	J342	J536	590.72	4.00	130.00	273.86	6.99	29.06	49.20
246	P569	J536	J368	110.29	6.00	130.00	539.32	6.12	2.90	26.27
247	P57	J50	J58	249.85	3.00	130.00	-3.30	0.15	0.01	0.06
248	P571	J366	J478	574.88	6.00	130.00	180.78	2.05	1.83	3.18
249	P573	J532	J502	146.00	6.00	130.00	118.21	1.34	0.22	1.52
250	P575	J498	J492	311.51	6.00	130.00	97.27	1.10	0.32	1.02
251	P579	J34	J312	43.34	12.00	130.00	-703.15	1.99	0.09	2.03
252	P583	J248	J542	850.61	6.00	130.00	17.76	0.20	0.04	0.04
253	P585	J388	J544	90.92	8.00	130.00	558.56	3.57	0.66	7.30
254	P587	J446	J546	41.12	8.00	130.00	-389.89	2.49	0.18	4.36
255	P589	J546	J386	334.38	6.00	130.00	-40.75	0.46	0.07	0.20
256	P59	J58	J60	73.76	3.00	130.00	17.76	0.81	0.10	1.31
257	P591	J386	J544	676.83	8.00	130.00	-100.49	0.64	0.18	0.26
258	P593	J548	J346	142.11	10.00	130.00	840.95	3.44	0.73	5.11
259	P595	J548	J330	171.79	6.00	130.00	160.13	1.82	0.45	2.64
260	P597	J550	J470	153.48	3.00	130.00	-3.90	0.18	0.01	0.08
261	P599	J552	J534	154.18	6.00	130.00	-25.51	0.29	0.01	0.09
262	P601	J550	J552	17.47	6.00	130.00	-26.02	0.30	0.00	0.13
263	P603	J554	J556	208.16	8.00	130.00	461.76	2.95	0.98	4.69
264	P605	J556	J688	470.91	8.00	130.00	213.12	1.36	0.51	1.07
265	P607	J558	J562	556.07	6.00	130.00	72.66	0.82	0.33	0.59
266	P609	J562	J560	270.59	6.00	130.00	-5.62	0.06	0.00	0.00
267	P61	J58	J62	281.31	3.00	130.00	-38.82	1.76	1.51	5.38
268	P611	J560	J558	275.26	6.00	130.00	-104.94	1.19	0.32	1.18
269	P613	J560	J568	141.80	6.00	130.00	81.56	0.93	0.11	0.76
270	P615	J568	J582	173.07	6.00	130.00	17.76	0.20	0.01	0.05

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	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
271	P617	J568	J570	115.30	6.00	130.00	46.04	0.52	0.03	0.27
272	P619	J562	J564	275.02	6.00	130.00	60.52	0.69	0.12	0.43
273	P621	J564	J610	515.06	6.00	130.00	18.66	0.21	0.02	0.05
274	P623	J566	J564	310.34	6.00	130.00	-24.10	0.27	0.02	0.08
275	P625	J566	J608	617.36	6.00	130.00	7.24	0.08	0.00	0.01
276	P627	J570	J572	270.30	6.00	130.00	17.76	0.20	0.01	0.04
277	P629	J556	J652	1,027.81	8.00	130.00	230.88	1.47	1.26	1.23
278	P63	J48	J64	396.89	15.00	130.00	3,473.98	6.31	3.71	9.36
279	P631	J574	J654	508.33	8.00	130.00	77.48	0.49	0.08	0.16
280	P633	J682	J576	360.16	8.00	130.00	-46.84	0.30	0.02	0.07
281	P635	J576	J578	81.49	8.00	130.00	17.76	0.11	0.00	0.01
282	P637	J684	J574	170.62	8.00	130.00	-100.12	0.64	0.05	0.27
283	P639	RES9002	J554	32.30	8.00	130.00	479.52	3.06	0.22	6.93
284	P641	J598	J308	191.09	4.00	130.00	106.56	2.72	1.67	8.75
285	P643	J290	J586	280.51	3.00	130.00	35.52	1.61	1.28	4.56
286	P645	J588	J286	751.87	6.00	130.00	17.76	0.20	0.03	0.04
287	P647	J702	J590	154.65	3.00	130.00	53.28	2.42	1.52	9.80
288	P649	J710	J256	130.08	4.00	130.00	-71.04	1.81	0.54	4.19
289	P65	J64	J62	655.00	6.00	130.00	127.62	1.45	1.09	1.66
290	P651	J254	J594	213.55	4.00	130.00	-17.76	0.45	0.07	0.31
291	P653	J596	J584	194.98	4.00	130.00	142.08	3.63	2.91	14.93
292	P655	J584	J598	174.07	4.00	130.00	124.32	3.17	2.04	11.70
293	P657	J600	J318	80.95	4.00	130.00	17.76	0.45	0.03	0.33
294	P659	J12	J602	338.16	12.00	130.00	2,254.80	6.40	4.18	12.36
295	P661	J604	J16	409.06	6.00	130.00	17.76	0.20	0.02	0.04
296	P663	J36	J606	222.46	15.00	130.00	3,648.28	6.62	2.43	10.92
297	P665	J608	J570	500.47	6.00	130.00	-10.52	0.12	0.01	0.02

Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
298	P667	J610	J566	475.37	6.00	130.00	0.90	0.01	0.00	0.00
299	P669	J612	J238	440.15	10.00	130.00	801.44	3.27	1.88	4.28
300	P67	J64	J66	242.99	15.00	130.00	3,328.60	6.04	2.21	9.09
301	P671	J248	J614	297.31	8.00	130.00	-629.60	4.02	2.43	8.18
302	P673	J616	J430	244.65	6.00	130.00	-359.38	4.08	2.86	11.67
303	P675	J618	J666	494.35	6.00	130.00	19.94	0.23	0.03	0.05
304	P677	J620	J618	732.05	6.00	130.00	37.70	0.43	0.13	0.17
305	P679	J622	J662	188.45	6.00	130.00	20.84	0.24	0.01	0.06
306	P681	J456	J624	406.94	4.00	130.00	-34.72	0.89	0.44	1.07
307	P683	J626	J472	424.11	6.00	130.00	119.19	1.35	0.63	1.48
308	P685	J660	J628	158.19	4.00	130.00	88.80	2.27	0.99	6.28
309	P687	J630	J356	411.71	4.00	130.00	17.76	0.45	0.13	0.31
310	P689	J632	J338	417.92	6.00	130.00	54.60	0.62	0.15	0.35
311	P69	J66	J68	239.31	3.00	130.00	142.08	6.45	14.32	59.83
312	P691	J634	J324	215.32	10.00	130.00	1,054.36	4.31	1.61	7.46
313	P693	J316	J658	141.90	10.00	130.00	1,125.40	4.60	1.25	8.82
314	P695	J638	J314	371.30	12.00	130.00	2,166.00	6.14	4.23	11.40
315	P697	J372	J640	468.16	4.00	130.00	35.52	0.91	0.52	1.12
316	P699	J642	J140	412.95	3.00	130.00	17.76	0.81	0.52	1.26
317	P701	J268	J644	318.85	3.00	130.00	71.04	3.22	5.25	16.45
318	P703	J646	J378	331.36	3.00	130.00	17.76	0.81	0.42	1.26
319	P705	J648	J272	326.22	3.00	130.00	18.91	0.86	0.46	1.41
320	P707	J650	J280	451.73	4.00	130.00	100.10	2.56	3.45	7.64
321	P709	J686	J574	376.25	8.00	130.00	195.36	1.25	0.35	0.92
322	P71	J68	J70	100.79	3.00	130.00	17.76	0.81	0.13	1.29
323	P711	J654	J712	225.41	8.00	130.00	59.72	0.38	0.02	0.10
324	P713	J36	J656	188.37	3.00	130.00	35.52	1.61	0.87	4.59

Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	H/L/1000 (ft/kt)
325	P715	J658	J636	140.22	10.00	130.00	1,107.64	4.52	1.20	8.58
326	P717	J358	J660	105.40	4.00	130.00	106.56	2.72	0.95	9.00
327	P719	J662	J464	146.60	6.00	130.00	3.08	0.03	0.00	0.00
328	P721	J664	J550	234.91	3.00	130.00	-12.16	0.55	0.15	0.63
329	P723	J666	J512	183.50	6.00	130.00	2.18	0.02	0.00	0.00
330	P725	J668	J622	367.12	6.00	130.00	38.60	0.44	0.07	0.18
331	P727	J670	J646	301.22	3.00	130.00	35.52	1.61	1.37	4.55
332	P729	J672	J266	157.75	8.00	130.00	615.54	3.93	1.29	8.20
333	P731	J68	J72	227.02	3.00	130.00	106.56	4.84	7.97	35.13
334	P733	J280	J674	235.87	3.00	130.00	71.04	3.22	3.90	16.54
335	P735	J676	J234	268.35	3.00	130.00	17.76	0.81	0.34	1.26
336	P737	J678	J580	41.65	8.00	130.00	24.20	0.15	0.00	0.02
337	P739	J580	J680	56.85	8.00	130.00	6.44	0.04	0.00	0.00
338	P741	J714	J682	277.60	8.00	130.00	-29.08	0.19	0.01	0.03
339	P743	J576	J684	168.64	8.00	130.00	-82.36	0.53	0.03	0.19
340	P745	J652	J686	312.34	8.00	130.00	213.12	1.36	0.34	1.09
341	P747	J688	J558	415.68	8.00	130.00	195.36	1.25	0.38	0.92
342	P749	J420	J690	238.01	3.00	130.00	35.52	1.61	1.09	4.57
343	P751	J440	J692	296.46	4.00	130.00	35.52	0.91	0.33	1.13
344	P753	J72	J74	112.82	3.00	130.00	35.52	1.61	0.53	4.67
345	P755	J438	J694	349.18	4.00	130.00	-76.48	1.95	1.63	4.66
346	P757	J696	J434	339.84	8.00	130.00	-35.77	0.23	0.01	0.04
347	P759	J62	J698	211.55	6.00	130.00	71.04	0.81	0.12	0.58
348	P761	J698	J700	300.30	6.00	130.00	53.28	0.60	0.10	0.33
349	P763	J262	J702	124.11	3.00	130.00	71.04	3.22	2.09	16.85
350	P765	J704	J284	161.83	3.00	130.00	17.76	0.81	0.21	1.27
351	P767	J706	J134	325.98	10.00	130.00	-999.80	4.08	2.14	6.56

Pipe Report (Future Peak Instantaneous Demand)

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
352	P765	J708	J136	181.54	3.00	130.00	17.76	0.81	0.23	1.27
353	P767	J592	J710	118.98	4.00	130.00	-53.28	1.36	0.29	2.46
354	P769	J712	J678	44.85	8.00	130.00	41.96	0.27	0.00	0.06
355	P777	J72	J80	96.34	3.00	130.00	53.28	2.42	0.96	9.98
356	P771	J680	J714	48.13	8.00	130.00	-11.32	0.07	0.00	0.01
357	P779	J80	J82	103.80	3.00	130.00	17.76	0.81	0.13	1.29
358	P81	J66	J84	432.20	15.00	130.00	3,168.76	5.75	3.38	7.83
359	P83	J84	J86	317.70	6.00	130.00	17.76	0.20	0.01	0.04
360	P85	J84	J88	42.26	15.00	130.00	3,133.24	5.69	0.55	13.03
361	P87	J88	J90	477.14	3.00	130.00	88.80	4.03	11.81	24.75
362	P89	J90	J92	99.28	3.00	130.00	17.76	0.81	0.13	1.29
363	P91	J90	J94	96.32	3.00	130.00	53.28	2.42	0.96	9.98
364	P93	J94	J98	34.63	3.00	130.00	17.76	0.81	0.05	1.39
365	P95	J88	J100	266.07	15.00	130.00	3,026.68	5.50	2.00	7.53
366	P97	J100	J102	210.73	3.00	130.00	88.80	4.03	5.29	25.09
367	P99	J102	J104	67.71	3.00	130.00	17.76	0.81	0.09	1.32









































Junction Report (Future Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
1		J100	17.76	3,254.00	3,304.53	21.90
2		J102	17.76	3,236.00	3,299.24	27.40
3		J104	17.76	3,240.00	3,299.15	25.63
4		J106	17.76	3,234.00	3,298.78	28.07
5		J108	17.76	3,238.00	3,298.78	26.34
6		J110	17.76	3,227.00	3,298.66	31.05
7		J112	17.76	3,255.00	3,303.15	20.86
8		J114	17.76	3,260.00	3,301.91	18.16
9		J116	17.76	3,250.00	3,302.10	22.58
10		J118	17.76	3,244.00	3,302.05	25.15
11		J12	17.76	3,138.00	3,357.69	95.19
12		J120	17.76	3,248.00	3,300.97	22.95
13		J122	17.76	3,242.00	3,299.46	24.90
14		J124	17.76	3,239.00	3,299.32	26.14
15		J126	17.76	3,228.00	3,297.96	30.31
16		J128	17.76	3,232.00	3,295.50	27.51
17		J130	17.76	3,233.00	3,295.42	27.05
18		J132	17.76	3,220.00	3,294.74	32.39
19		J134	17.76	3,218.00	3,296.49	34.01
20		J136	17.76	3,215.00	3,295.42	34.85
21		J138	17.76	3,247.00	3,299.82	22.89
22		J14	17.76	3,170.00	3,349.77	77.89
23		J140	17.76	3,220.00	3,297.42	33.55
24		J142	17.76	3,253.00	3,299.19	20.01
25		J144	17.76	3,229.00	3,298.36	30.05
26		J146	17.76	3,249.00	3,298.52	21.46
27		J150	17.76	3,249.00	3,298.40	21.41
28		J152	17.76	3,230.00	3,297.51	29.25
29		J154	17.76	3,250.00	3,297.55	20.61
30		J156	17.76	3,224.00	3,292.45	29.66
31		J158	17.76	3,234.00	3,297.36	27.46
32		J16	17.76	3,220.00	3,349.65	56.18
33		J160	17.76	3,250.00	3,297.51	20.59
34		J162	17.76	3,250.00	3,297.44	20.56
35		J164	17.76	3,237.00	3,297.32	26.14
36		J166	17.76	3,248.00	3,297.34	21.38
37		J170	17.76	3,253.00	3,296.74	18.95
38		J172	17.76	3,245.00	3,292.05	20.39
39		J174	17.76	3,255.00	3,296.60	18.03
40		J176	17.76	3,252.00	3,296.52	19.29

Junction Report (Future Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
41		J178	17.76	3,264.00	3,296.50	14.08
42		J18	17.76	3,210.00	3,345.80	58.84
43		J180	17.76	3,268.00	3,295.70	12.00
44		J182	17.76	3,274.00	3,295.69	9.40
45		J184	17.76	3,277.00	3,295.51	8.02
46		J186	17.76	3,282.00	3,295.50	5.85
47		J188	17.76	3,287.00	3,295.44	3.66
48		J190	17.76	3,249.00	3,296.45	20.56
49		J192	17.76	3,267.00	3,295.80	12.48
50		J194	17.76	3,290.00	3,295.42	2.35
51		J196	17.76	3,288.00	3,295.43	3.22
52		J198	17.76	3,290.00	3,295.42	2.35
53		J20	17.76	3,260.00	3,339.62	34.50
54		J200	17.76	3,286.00	3,295.45	4.09
55		J202	17.76	3,290.00	3,295.44	2.36
56		J204	17.76	3,250.00	3,296.43	20.12
57		J206	17.76	3,272.00	3,295.54	10.20
58		J208	17.76	3,268.00	3,295.78	12.04
59		J210	17.76	3,275.00	3,295.52	8.89
60		J212	17.76	3,284.00	3,295.43	4.95
61		J214	17.76	3,290.00	3,295.42	2.35
62		J216	17.76	3,285.00	3,295.44	4.52
63		J218	17.76	3,278.00	3,295.45	7.56
64		J22	17.76	3,260.00	3,339.27	34.35
65		J220	17.76	3,205.00	3,296.42	39.61
66		J222	17.76	3,205.00	3,296.42	39.61
67		J224	17.76	3,197.00	3,296.42	43.08
68		J226	4.00	3,250.00	3,278.59	12.39
69		J228	4.00	3,250.00	3,278.68	12.43
70		J230	4.00	3,245.00	3,278.59	14.55
71		J232	17.76	3,242.00	3,282.24	17.43
72		J234	17.76	3,230.00	3,280.41	21.84
73		J236	17.76	3,248.00	3,286.16	16.53
74		J238	17.76	3,240.00	3,286.79	20.27
75		J24	17.76	3,227.00	3,336.48	47.44
76		J240	17.76	3,230.00	3,292.19	26.95
77		J242	17.76	3,220.00	3,289.12	29.95
78		J244	17.76	3,218.00	3,288.86	30.71
79		J246	17.76	3,218.00	3,288.81	30.68
80		J248	17.76	3,234.00	3,280.94	20.34

Junction Report (Future Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
81		J250	17.76	3,214.00	3,270.91	24.66
82		J252	17.76	3,210.00	3,269.96	25.98
83		J254	17.76	3,212.00	3,290.30	33.93
84		J256	17.76	3,205.00	3,291.48	37.47
85		J258	17.76	3,203.00	3,290.47	37.90
86		J26	17.76	3,211.00	3,336.24	54.27
87		J260	17.76	3,198.00	3,290.05	39.89
88		J262	17.76	3,194.00	3,287.99	40.72
89		J264	17.76	3,190.00	3,286.43	41.78
90		J266	17.76	3,190.00	3,283.68	40.59
91		J268	17.76	3,190.00	3,281.72	39.74
92		J270	17.76	3,200.00	3,280.59	34.92
93		J272	17.76	3,207.00	3,280.58	31.88
94		J274	17.76	3,212.00	3,279.63	29.30
95		J276	17.76	3,221.00	3,278.42	24.88
96		J278	17.76	3,225.00	3,277.38	22.70
97		J28	17.76	3,203.00	3,335.84	57.56
98		J280	17.76	3,198.00	3,277.37	34.39
99		J282	17.76	3,198.00	3,277.36	34.39
100		J284	17.76	3,188.00	3,283.41	41.34
101		J286	17.76	3,188.00	3,311.28	53.42
102		J288	17.76	3,188.00	3,330.40	61.70
103		J290	17.76	3,195.00	3,332.03	59.38
104		J292	17.76	3,198.00	3,331.77	57.96
105		J294	17.76	3,195.00	3,333.66	60.08
106		J296	17.76	3,203.00	3,333.41	56.51
107		J298	17.76	3,188.00	3,321.59	57.89
108		J30	17.76	3,244.00	3,339.12	41.21
109		J300	17.76	3,188.00	3,321.68	57.92
110		J302	17.76	3,189.00	3,322.05	57.65
111		J304	17.76	3,188.00	3,322.00	58.06
112		J306	17.76	3,189.00	3,322.50	57.84
113		J308	17.76	3,189.00	3,322.55	57.87
114		J310	17.76	3,198.00	3,335.92	59.76
115		J312	17.76	3,198.00	3,335.85	59.73
116		J314	17.76	3,195.00	3,336.85	61.46
117		J316	17.76	3,193.00	3,333.23	60.76
118		J318	17.76	3,210.00	3,345.38	58.66
119		J32	17.76	3,260.00	3,334.95	32.48
120		J320	17.76	3,190.00	3,328.27	59.91

Junction Report (Future Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
121		J322	17.76	3,030.00	3,322.18	126.60
122		J324	17.76	3,184.00	3,322.98	60.22
123		J326	17.76	3,186.00	3,320.62	58.33
124		J328	17.76	3,182.00	3,320.64	60.07
125		J330	17.76	3,178.00	3,321.03	61.98
126		J332	17.76	3,182.00	3,320.46	60.00
127		J334	17.76	3,179.00	3,320.27	61.21
128		J336	17.76	3,185.00	3,315.83	56.69
129		J338	17.76	3,178.00	3,319.81	61.45
130		J34	17.76	3,200.00	3,335.76	58.83
131		J340	17.76	3,169.00	3,311.91	61.92
132		J342	17.76	3,178.00	3,311.99	58.06
133		J344	17.76	3,178.00	3,320.65	61.81
134		J346	17.76	3,178.00	3,320.76	61.86
135		J350	17.76	3,178.00	3,320.67	61.82
136		J352	17.76	3,178.00	3,320.71	61.84
137		J354	17.76	3,183.00	3,318.80	58.84
138		J356	17.76	3,188.00	3,317.96	56.31
139		J358	17.76	3,192.00	3,318.55	54.83
140		J36	17.76	3,255.00	3,329.35	32.22
141		J360	17.76	3,192.00	3,318.54	54.83
142		J364	17.76	3,189.00	3,278.94	38.97
143		J366	17.76	3,189.00	3,278.78	38.90
144		J368	17.76	3,188.00	3,280.03	39.88
145		J370	17.76	3,194.00	3,276.88	35.91
146		J372	17.76	3,195.00	3,313.25	51.24
147		J374	17.76	3,188.00	3,309.13	52.49
148		J376	17.76	3,188.00	3,312.58	53.98
149		J378	17.76	3,198.00	3,271.66	31.91
150		J38	17.76	3,214.00	3,328.03	49.41
151		J380	17.76	3,222.00	3,277.78	24.17
152		J382	17.76	3,226.00	3,277.72	22.41
153		J384	17.76	3,222.00	3,276.68	23.69
154		J386	17.76	3,228.00	3,277.43	21.42
155		J388	17.76	3,237.00	3,278.27	17.88
156		J390	17.76	3,245.00	3,274.18	12.64
157		J392	17.76	3,250.00	3,282.62	14.13
158		J394	17.76	3,248.00	3,282.53	14.96
159		J396	17.76	3,252.00	3,282.29	13.13
160		J398	17.76	3,220.00	3,187.14	-14.24

Junction Report (Future Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
161		J40	17.76	3,255.00	3,323.78	29.80
162		J400	17.76	3,220.00	3,188.58	-13.61
163		J402	17.76	3,205.00	3,187.67	-7.51
164		J404	17.76	3,208.00	3,222.45	6.26
165		J406	17.76	3,204.00	3,222.18	7.88
166		J408	17.76	3,214.00	3,226.25	5.31
167		J410	17.76	3,212.00	3,226.17	6.14
168		J412	17.76	3,233.00	3,239.87	2.98
169		J414	2.00	3,245.00	3,238.89	-2.65
170		J416	17.76	3,222.00	3,262.12	17.39
171		J418	17.76	3,220.00	3,261.97	18.19
172		J42	17.76	3,221.00	3,323.08	44.23
173		J420	17.76	3,209.00	3,263.25	23.51
174		J422	17.76	3,238.00	3,261.83	10.33
175		J424	17.76	3,209.00	3,263.94	23.81
176		J426	17.76	3,215.00	3,265.55	21.90
177		J428	17.76	3,242.00	3,264.92	9.93
178		J430	17.76	3,240.00	3,271.53	13.66
179		J432	17.76	3,240.00	3,276.60	15.86
180		J434	17.76	3,232.00	3,276.62	19.33
181		J436	17.76	3,228.00	3,275.10	20.41
182		J438	17.76	3,236.00	3,270.94	15.14
183		J44	17.76	3,255.00	3,321.22	28.70
184		J440	17.76	3,240.00	3,267.93	12.10
185		J442	17.76	3,234.00	3,267.49	14.51
186		J444	17.76	3,224.00	3,277.03	22.98
187		J446	17.76	3,223.00	3,277.18	23.48
188		J448	17.76	3,222.00	3,275.67	23.26
189		J450	17.76	3,222.00	3,275.54	23.20
190		J452	17.76	3,220.00	3,275.34	23.98
191		J454	17.76	3,224.00	3,275.28	22.22
192		J456	17.76	3,220.00	3,275.36	23.99
193		J458	17.76	3,221.00	3,275.34	23.54
194		J46	17.76	3,220.00	3,320.84	43.69
195		J460	17.76	3,208.00	3,275.31	29.16
196		J462	17.76	3,216.00	3,274.67	25.42
197		J464	17.76	3,224.00	3,274.80	22.01
198		J466	17.76	3,224.00	3,274.81	22.01
199		J468	17.76	3,218.00	3,274.94	24.67
200		J470	17.76	3,222.00	3,274.93	22.93









































Junction Report (Future Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
201		J472	17.76	3,208.00	3,275.31	29.17
202		J474	17.76	3,209.00	3,276.42	29.21
203		J476	17.76	3,202.00	3,276.56	32.31
204		J478	17.76	3,197.00	3,276.95	34.64
205		J48	17.76	3,255.00	3,316.39	26.60
206		J480	17.76	3,208.00	3,276.80	29.81
207		J482	17.76	3,195.00	3,276.81	35.45
208		J484	17.76	3,195.00	3,276.53	35.33
209		J486	17.76	3,205.00	3,276.53	30.99
210		J488	17.76	3,195.00	3,276.23	35.20
211		J490	17.76	3,195.00	3,276.22	35.19
212		J492	17.76	3,215.00	3,276.09	26.47
213		J498	17.76	3,216.00	3,276.41	26.17
214		J50	17.76	3,215.00	3,310.06	41.19
215		J502	17.76	3,220.00	3,275.41	24.01
216		J504	17.76	3,220.00	3,275.03	23.84
217		J508	17.76	3,200.00	3,274.58	32.31
218		J510	17.76	3,215.00	3,262.96	20.78
219		J512	17.76	3,225.00	3,263.48	16.67
220		J514	17.76	3,228.00	3,265.52	16.26
221		J516	17.76	3,234.00	3,265.63	13.70
222		J518	0.00	3,314.00	0.00	-1,435.96
223		J52	17.76	3,213.00	3,309.59	41.85
224		J520	0.00	3,315.00	0.00	-1,436.39
225		J522	0.00	3,330.00	0.00	-1,442.89
226		J524	0.00	3,310.00	0.00	-1,434.22
227		J526	0.00	3,320.00	0.00	-1,438.56
228		J528	17.76	3,224.00	3,292.23	29.56
229		J530	17.76	3,210.00	3,271.09	26.47
230		J532	17.76	3,220.00	3,275.63	24.11
231		J534	17.76	3,222.00	3,274.93	22.94
232		J536	17.76	3,188.00	3,282.93	41.13
233		J54	17.76	3,216.00	3,309.42	40.48
234		J540	17.76	3,230.00	3,277.37	20.53
235		J542	17.76	3,210.00	3,280.90	30.72
236		J544	17.76	3,238.00	3,277.61	17.16
237		J546	17.76	3,223.00	3,277.36	23.56
238		J548	17.76	3,178.00	3,321.49	62.17
239		J550	17.76	3,224.00	3,274.92	22.06
240		J552	17.76	3,224.00	3,274.92	22.06
























Junction Report (Future Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
241		J554	17.76	3,180.00	3,368.78	81.80
242		J556	17.76	3,182.00	3,367.80	80.51
243		J558	17.76	3,178.00	3,366.91	81.86
244		J56	17.76	3,203.00	3,309.36	46.09
245		J560	17.76	3,188.00	3,366.59	77.38
246		J562	17.76	3,188.00	3,366.59	77.38
247		J564	17.76	3,194.00	3,366.47	74.73
248		J566	17.76	3,194.00	3,366.45	74.72
249		J568	17.76	3,195.00	3,366.48	74.30
250		J570	17.76	3,198.00	3,366.45	72.99
251		J572	17.76	3,218.00	3,366.44	64.32
252		J574	17.76	3,090.00	3,365.85	119.53
253		J576	17.76	3,078.00	3,365.77	124.69
254		J578	17.76	3,082.00	3,365.77	122.96
255		J58	17.76	3,200.00	3,310.08	47.70
256		J580	17.76	3,110.00	3,365.74	110.81
257		J582	17.76	3,205.00	3,366.47	69.97
258		J584	17.76	3,193.00	3,326.25	57.74
259		J586	17.76	3,190.00	3,330.75	60.99
260		J588	17.76	3,190.00	3,311.31	52.56
261		J590	17.76	3,190.00	3,284.38	40.89
262		J592	17.76	3,208.00	3,290.65	35.81
263		J594	17.76	3,210.00	3,290.37	34.82
264		J596	17.76	3,192.00	3,329.17	59.43
265		J598	17.76	3,190.00	3,324.22	58.16
266		J60	17.76	3,200.00	3,309.98	47.65
267		J600	17.76	3,210.00	3,345.41	58.67
268		J602	17.76	3,170.00	3,353.51	79.51
269		J604	17.76	3,200.00	3,349.67	64.85
270		J606	17.76	3,255.00	3,326.92	31.16
271		J608	17.76	3,196.00	3,366.44	73.85
272		J610	17.76	3,192.00	3,366.45	75.59
273		J612	17.76	3,240.00	3,288.67	21.09
274		J614	17.76	3,236.00	3,283.37	20.52
275		J616	17.76	3,225.00	3,268.67	18.92
276		J618	17.76	3,230.00	3,263.51	14.52
277		J62	17.76	3,195.00	3,311.59	50.52
278		J620	17.76	3,220.00	3,263.63	18.91
279		J622	17.76	3,220.00	3,274.81	23.75
280		J624	17.76	3,222.00	3,275.80	23.31

Junction Report (Future Peak Instantaneous Demand)

		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
281		J626	17.76	3,200.00	3,275.94	32.90
282		J628	17.76	3,193.00	3,316.60	53.56
283		J630	17.76	3,187.00	3,318.09	56.80
284		J632	17.76	3,184.00	3,319.95	58.91
285		J634	17.76	3,187.00	3,324.59	59.62
286		J636	17.76	3,192.00	3,330.77	60.13
287		J638	17.76	3,205.00	3,341.08	58.96
288		J64	17.76	3,255.00	3,312.68	24.99
289		J640	17.76	3,192.00	3,312.73	52.31
290		J642	17.76	3,222.00	3,297.94	32.91
291		J644	17.76	3,193.00	3,276.47	36.17
292		J646	17.76	3,196.00	3,272.07	32.96
293		J648	17.76	3,200.00	3,281.04	35.11
294		J650	17.76	3,194.00	3,280.83	37.62
295		J652	17.76	3,135.00	3,366.54	100.33
296		J654	17.76	3,100.00	3,365.77	115.16
297		J656	17.76	3,230.00	3,328.49	42.68
298		J658	17.76	3,192.00	3,331.98	60.65
299		J66	17.76	3,254.00	3,310.47	24.47
300		J660	17.76	3,193.00	3,317.60	53.99
301		J662	17.76	3,222.00	3,274.80	22.88
302		J664	17.76	3,224.00	3,274.77	22.00
303		J666	17.76	3,223.00	3,263.48	17.54
304		J668	17.76	3,224.00	3,274.88	22.04
305		J670	17.76	3,193.00	3,273.44	34.86
306		J672	17.76	3,190.00	3,284.97	41.15
307		J674	17.76	3,204.00	3,273.47	30.10
308		J676	17.76	3,235.00	3,280.75	19.82
309		J678	17.76	3,110.00	3,365.74	110.81
310		J68	17.76	3,228.00	3,296.15	29.53
311		J680	17.76	3,110.00	3,365.74	110.81
312		J682	17.76	3,100.00	3,365.75	115.15
313		J684	17.76	3,086.00	3,365.81	121.24
314		J686	17.76	3,110.00	3,366.20	111.01
315		J688	17.76	3,180.00	3,367.29	81.15
316		J690	17.76	3,218.00	3,262.16	19.13
317		J692	17.76	3,238.00	3,267.59	12.82
318		J694	17.76	3,238.00	3,272.56	14.98
319		J696	17.76	3,238.00	3,276.61	16.73
320		J698	17.76	3,193.00	3,311.47	51.33

Junction Report (Future Peak Instantaneous Demand)

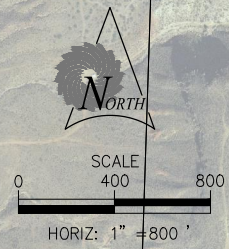
		ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
321		J70	17.76	3,228.00	3,296.02	29.47
322		J700	17.76	3,192.00	3,311.37	51.72
323		J702	17.76	3,192.00	3,285.90	40.68
324		J704	17.76	3,189.00	3,283.61	41.00
325		J706	17.76	3,210.00	3,294.35	36.55
326		J708	17.76	3,216.00	3,295.65	34.51
327		J710	17.76	3,206.00	3,290.94	36.80
328		J712	17.76	3,110.00	3,365.75	110.81
329		J714	17.76	3,110.00	3,365.74	110.81
330		J72	17.76	3,214.00	3,288.18	32.14
331		J74	17.76	3,214.00	3,287.65	31.91
332		J76	17.76	3,205.00	3,287.39	35.70
333		J78	17.76	3,205.00	3,287.06	35.56
334		J80	17.76	3,209.00	3,287.21	33.89
335		J82	17.76	3,210.00	3,287.08	33.40
336		J84	17.76	3,255.00	3,307.08	22.57
337		J86	17.76	3,287.00	3,307.07	8.70
338		J88	17.76	3,255.00	3,306.53	22.33
339		J90	17.76	3,225.00	3,294.72	30.21
340		J92	17.76	3,218.00	3,294.59	33.19
341		J94	17.76	3,221.00	3,293.76	31.53
342		J96	17.76	3,209.00	3,293.59	36.65
343		J98	17.76	3,217.00	3,293.71	33.24

APPENDIX C

SYSTEM IMPROVEMENTS MAPS

APPENDIX C-1

CURRENT 2014 IMPROVEMENTS



SUPPLIED BY
W.C.W.C.D.
SYSTEM

LOW PRESSURE

NOT CONNECTED
TO THE SYSTEM

W.C.W.C.D. SYSTEM LINE
HIGH HEAD LOSS

LEGEND:

- 1" EXISTING
- 2" EXISTING
- 3" EXISTING
- 4" EXISTING
- 5"-6" EXISTING
- 8"-10" EXISTING
- 12" EXISTING
- 14" EXISTING
- 15" EXISTING
- 6" PROPOSED
- 10" PROPOSED
- 15" PROPOSED

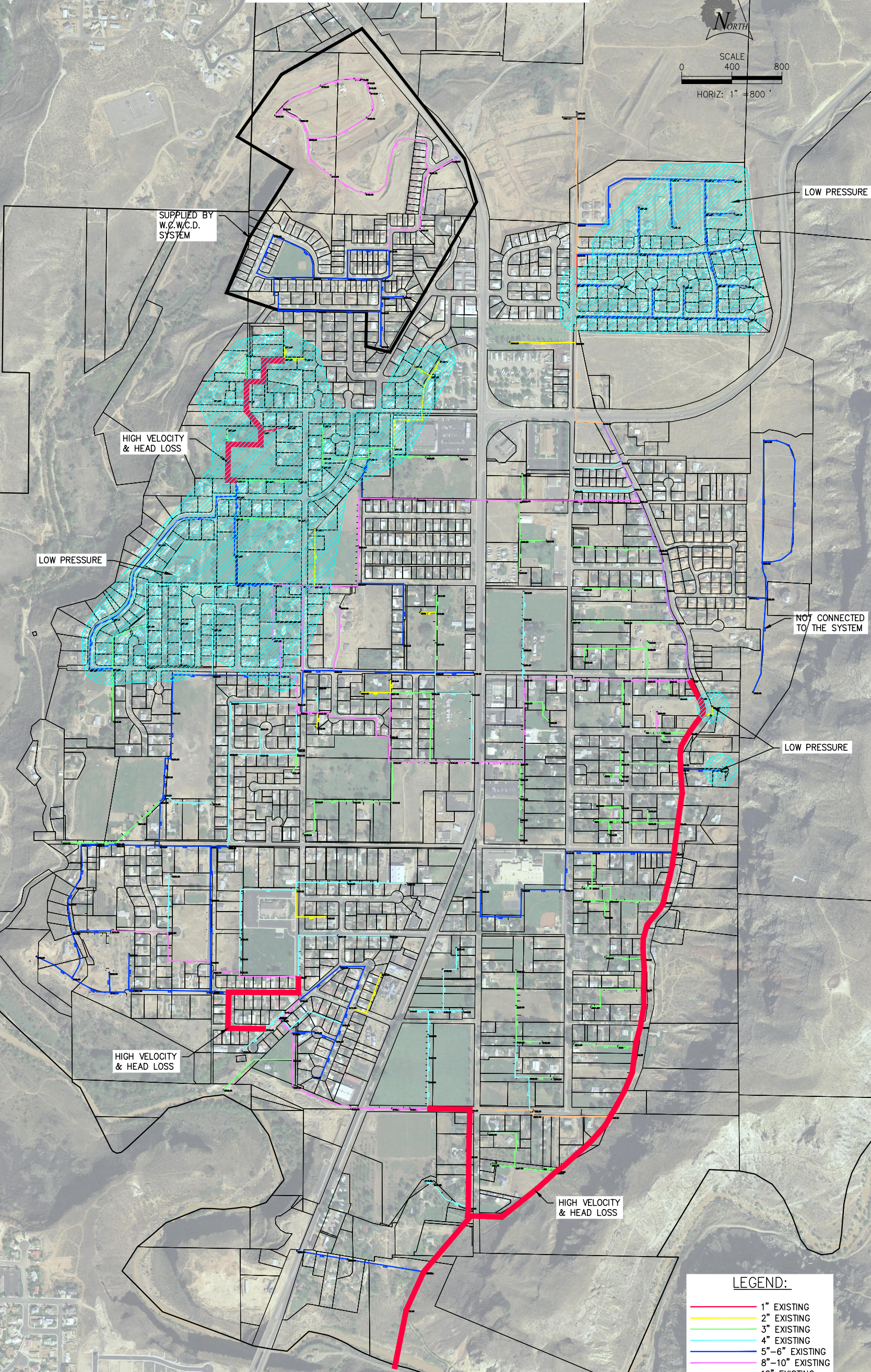
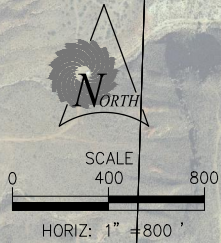


11 NORTH 300 WEST
WASHINGTON, UT 84780
TEL: 435.335.4565 FAX: 435.335.4566

NOTE:
DUE TO MULTIPLE OPTIONS AVAILABLE
TO ADDRESS FUTURE SYSTEM DEFICIENCIES,
THIS MAP ONLY SHOWS THE PROBLEM AREAS.
NO SOLUTIONS ARE PRESENTED AT THIS TIME.

APPENDIX C-2

FUTURE IMPROVEMENTS

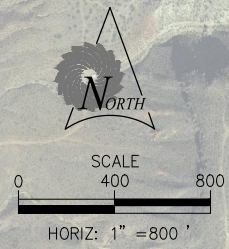


LEGEND:

1" EXISTING
2" EXISTING
3" EXISTING
4" EXISTING
5"-6" EXISTING
8"-10" EXISTING
12" EXISTING
14" EXISTING
15" EXISTING
PROBLEM AREAS

APPENDIX C-3

LINES TO BE MOVED TO CITY ROADS



SUPPLIED BY
W.C.W.C.D.
SYSTEM

NOT CONNECTED
TO THE SYSTEM

LEGEND:

- 1" EXISTING
- 2" EXISTING
- 3" EXISTING
- 4" EXISTING
- 5"-6" EXISTING
- 8"-10" EXISTING
- 12" EXISTING
- 14" EXISTING
- 15" EXISTING
- AREAS TO BE SERVED
BY IN ROAD LINES



SUNRISE
ENGINEERING

11 NORTH 300 WEST
WASHINGTON, UT 84780

APPENDIX D

ENGINEER'S OPINION OF PROBABLE COST

SUNRISE ENGINEERING, INC.

11 North 300 West, Washington, Utah 84780

Tel: (435) 652-8450 Fax: (435) 652-8416

Engineer's Opinion of Probable Cost**Chance Hardy Filter Station Replacement Project, 2010**

LaVerkin, Utah

25-Apr-10

JKP/msn

ITEM NO.	ITEM DESCRIPTION	QTY.	UNITS	UNIT PRICE	TOTAL COST
1	Mobilization	1	LS	\$ 11,500.00	\$ 11,500.00
2	Demolition	1	LS	\$ 10,000.00	\$ 10,000.00
3	Metering Station	1	LS	\$ 13,000.00	\$ 13,000.00
4	Filter Station	1	LS	\$ 142,500.00	\$ 142,500.00
5	Concrete Pad	1	LS	\$ 7,500.00	\$ 7,500.00
6	Steel Canopy	1	LS	\$ 24,000.00	\$ 24,000.00
7	Hoist System	1	LS	\$ 13,000.00	\$ 13,000.00
8	Chain link Fence	84	LF	\$ 17.00	\$ 1,500.00
9	Utility Installation	470	LF	\$ 5.00	\$ 2,400.00
10					
11	Construction Sub-Total				\$ 225,400.00
12	Contingency			15%	34,000.00
13	Construction Total				\$ 259,400.00
14					
15					
16	Legal and Administrative	2.9%	LS	\$ 10,000.00	\$ 10,000.00
17	Engineering Design	7.5%	LS	\$ 26,000.00	\$ 26,000.00
18	Bidding & Negotiating	1.4%	HR	\$ 5,000.00	\$ 5,000.00
19	Construction Administration & Observation	0.9%	HR	\$ 3,000.00	\$ 3,000.00
20	Rocky Mountain Power line	2.3%	est.	\$ 8,000.00	\$ 8,000.00
21	Electrical	9.2%	est.	\$ 32,000.00	\$ 32,000.00
22	Phone line	0.9%	est.	\$ 2,500.00	\$ 3,000.00
TOTAL PROJECT COST					\$ 346,400.00

In providing opinions of probable construction cost, the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as to the accuracy of such opinions compared to bid or actual costs.

SUNRISE ENGINEERING, INC.

11 North 300 West, Washington, Utah 84780

Tel: (435) 652-8450 Fax: (435) 652-8416

Engineer's Opinion of Probable Cost**Current Secondary Needs (2014)**

11-Feb-10

City of LaVerkin

JKP/msn

NO.	DESCRIPTION	Estimated Quantity	Units	Unit Price	TOTAL COST
1	Mobilization	1	LS	\$ 29,000.00	\$ 29,000
2	Pre-Construction DVD	1	LS	\$ 800.00	\$ 800
3	Traffic Control & Sit Security	1	LS	\$ 7,000.00	\$ 7,000
4	Subsurface Investigation	20	HR	\$ 125.00	\$ 2,500
5	Misc, Connections, Fittings, Tie-ins & Capping	1	LS	\$ 11,300.00	\$ 11,300
6	Restore Surface Improvements	1	LS	\$ 10,000.00	\$ 10,000
7	6" PVC Line & Fittings	700	LF	\$ 18.00	\$ 12,600
8	6" Gate Valve Assembly	4	EA	\$ 900.00	\$ 3,600
9	15" PVC Line & Fittings	7,900	LF	\$ 36.00	\$ 284,400
10	15" Gate Valve Assembly	16	EA	\$ 3,400.00	\$ 54,400
11	Service Saddles 3/4"	58	EA	\$ 230.00	\$ 13,340
12	Service Line 3/4"	1,200	LF	\$ 8.00	\$ 9,600
13	Boring & Jacking	185	LF	\$ 340.00	\$ 62,900
14	Import Pipe Bedding	800	CY	\$ 32.00	\$ 25,600
15	Untreated Base Course	400	CY	\$ 25.00	\$ 10,000
16	Bituminous Surface Course	200	CY	\$ 230.00	\$ 46,000
17	Import Back Fill	100	CY	\$ 18.00	\$ 1,800
18	SWPPP (Storm Water Pollution Prevention Plan)	1	LS	\$ 3,400.00	\$ 3,400
19					
20	Sub-Total				\$ 583,000
21	Contingency	15%			\$ 87,500
22	Total Construction				\$ 670,500
23					
24	INCIDENTALS				
25	Funding & Administrative Services	1.50%	HR		\$ 10,100
26	Legal and Fiscal	0.73%	Est.		\$ 6,000
27	Engineering Design	7.05%	LS		\$ 57,800
28	Engineering Construction Services	6.54%	HR		\$ 53,600
29	Miscellaneous Engineering Services	1.34%	HR		\$ 11,000
30	Survey & GIS Mapping	1.34%	Est.		\$ 11,000
31	Loan Origination Fee	1.25%	LS		\$ 8,400
32					
	TOTAL PROJECT COST				\$ 820,000

In providing opinions of probable construction cost, the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as to the accuracy of such opinions compared to bid or actual costs.

SUNRISE ENGINEERING, INC.

11 North 300 West, Washington, Utah 84780

Tel: (435) 652-8450 Fax: (435) 652-8416

Engineer's Opinion of Probable Cost**Lines to City Streets Improvement**

LaVerkin, Utah

20-May-10

JKP/msn

ITEM NO.	ITEM DESCRIPTION	QTY.	UNITS	UNIT PRICE	TOTAL COST
1	Mobilization	1	LS	\$ 130,000.00	\$ 130,000.00
2	Pre-Construction DVD	1	LS	\$ 2,500.00	\$ 2,500.00
3	Traffic Control	1	LS	\$ 20,000.00	\$ 20,000.00
4	Subsurface Investigation	80	HR	\$ 125.00	\$ 10,000.00
5	Project Sign	2	EA	\$ 1,300.00	\$ 2,600.00
6	Restore Surface Improvements	1	LS	\$ 10,000.00	\$ 10,000.00
7	Miscellaneous Connections, Fitting, & Tie-ins	1	LS	\$ 20,000.00	\$ 20,000.00
8	Compaction & Materials Testing	1	LS	\$ 15,000.00	\$ 15,000.00
9	8" PVC (C900 DR-18)	48,000	LF	\$ 16.00	\$ 768,000.00
10	8" Gate Valve Assembly	96	EA	\$ 1,500.00	\$ 144,000.00
11	Boring & Jacking	448	LF	\$ 400.00	\$ 179,200.00
12	3/4" Service Saddle & Corporation Stop	600	EA	\$ 200.00	\$ 120,000.00
13	3/4" PE Service Lateral Pipe	120,000	LF	\$ 6.00	\$ 720,000.00
14	Untreated Base Course	2,667	CY	\$ 25.00	\$ 66,700.00
15	Bituminous Surface Course	1,760	CY	\$ 250.00	\$ 440,000.00
16	Import Pipe Bedding	4,374	CY	\$ 18.00	\$ 78,800.00
17					
18					
19	Construction Sub-Total				\$ 2,726,800.00
20	Contingency			20%	546,000.00
21	Construction Total				\$ 3,272,800.00
22					
23					
24	Funding Admin	0.2%	LS	\$ 6,000.00	\$ 6,000.00
25	Legal and Administrative	0.4%	LS	\$ 15,000.00	\$ 15,000.00
26	Engineering Design	5.0%	LS	\$ 189,000.00	\$ 189,000.00
27	Bidding & Negotiating	0.2%	HR	\$ 7,000.00	\$ 7,000.00
28	Construction Administration & Observation	5.3%	HR	\$ 200,000.00	\$ 200,000.00
29	SWPPP	0.1%	LS	\$ 5,000.00	\$ 5,000.00
30	Geotechnical	0.5%	Est	\$ 20,000.00	\$ 20,000.00
31	GIS Mapping	0.4%	Est	\$ 15,000.00	\$ 15,000.00
32	Loan Origination	0.5%	Est	\$ 20,000.00	\$ 20,000.00
33	Miscellaneous Engineering	1.3%	HR	\$ 50,000.00	\$ 50,000.00
TOTAL PROJECT COST					\$ 3,799,800.00

In providing opinions of probable construction cost, the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as to the accuracy of such opinions compared to bid or actual costs.

APPENDIX E

CASH FLOW SPREADSHEET

CASH FLOW PROJECTION
SECONDARY WATER MASTER PLAN

	Annual Population Growth Rate	3.00%														
	Annual Rate Increase	3.25%														
	Annual Inflation Rate	3.50%														
		Interest Rate														
		3.50%														
	Fiscal Year Beginning July 1	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2021
	Ending June30	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2022
0	Average Share Holders Rate/yr	\$71.57	\$71.57	\$85.00	\$85.00	\$85.00	\$85.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00
1	Rate per Connection	\$90.00	\$90.00	\$100.00	\$100.00	\$100.00	\$100.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00
		\$3.00	\$3.00	\$4.00	\$4.00	\$4.00	\$4.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
2	Connection Fee	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100
3	Impact fee	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	System Users:															
	Share Holders	337	337	337	337	337	337	337	337	337	337	337	337	337	337	337
5	Total Existing Lessees Connections	376	389	423	470	517	580	643	708	775	842	911	982	1,054	1,127	1,127
6	New Lessees Connections	1	13	33	47	48	62	64	65	66	68	69	71	72	74	74
	Stand By Connections	261	261	241	221	201	181	161	141	121	101	81	61	41	21	21
7																
8	REVENUES:															
9	User Fees (Water Sales)	54,787	61,063	75,138	81,138	85,878	93,495	116,413	123,992	131,732	139,637	147,713	155,965	164,398	173,017	173,017
10	Connection Fees	50	1,329	3,342	4,711	4,766	6,231	6,358	6,489	6,624	6,763	6,905	7,053	7,204	7,360	7,360
11	Late Fees & Penalties	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Impact Fees	8,575	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Interest Income/Bond Discount	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223
15	TOTAL REVENUE:	\$64,635	\$63,615	\$79,703	\$87,073	\$91,867	\$100,950	\$123,994	\$131,704	\$139,579	\$147,623	\$155,842	\$164,241	\$172,825	\$181,600	\$181,600
16																
17	EXPENSES: (Inc. O&M & Debt Serv.)															
18	Personal Services	31,733	32,844	33,993	35,183	36,414	37,689	39,008	40,373	41,786	43,249	44,763	46,329	47,951	49,629	49,629
19	Operating and Maintenance	14,878	15,399	15,938	16,496	17,073	17,670	18,289	18,929	19,591	20,277	20,987	21,721	22,482	23,269	23,269
20	Other supplies and expenses	10,422	10,787	11,164	11,555	11,959	12,378	12,811	13,260	13,724	14,204	14,701	15,216	15,748	16,300	16,300
21	Depreciation expense	8,142	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Interest Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Sub-Total Operation & Maintenance	\$65,175	\$59,029	\$61,095	\$63,234	\$65,447	\$67,737	\$70,108	\$72,562	\$75,102	\$77,730	\$80,451	\$83,266	\$86,181	\$89,197	\$89,197
24																
25	EXISTING DEBT SERVICE (810-820)															
26	None	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27																
28	Sub-Total Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
29																
30	NEW DEBT SERVICE (810-820)															
31	2010 Loan	0	0	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00
32	Loan Reserve (Payment/10)	0	0	\$1,097.60	\$1,097.60	\$1,097.60	\$1,097.60	\$1,097.60	\$1,097.60	\$1,097.60	\$1,097.60	\$1,097.60	\$1,097.60	0	0	0
33																
34	Sub-Total New Debt Service	0	0	\$12,074	\$12,074	\$12,074	\$12,074	\$12,074	\$12,074	\$12,074	\$12,074	\$12,074	\$12,074	\$10,976	\$10,976	\$10,976
1	2010 Loan	0	0	0	0	0	0	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90
2	Loan Reserve (Payment/10)	0	0	0	0	0	0	\$3,761.79	\$3,761.79	\$3,761.79	\$3,761.79	\$3,761.79	\$3,761.79	\$3,761.79	\$3,761.79	\$3,761.79
3																
4	Sub-Total New Debt Service	0	0	0	0	0	\$0	\$41,380	\$41,380	\$41,380	\$41,380	\$41,380	\$41,380	\$41,380	\$41,380	\$41,380
41	Total Debt Service	\$0	\$0	\$12,074	\$12,074	\$12,074	\$12,074	\$53,453	\$53,453	\$53,453	\$53,453	\$53,453	\$53,453	\$52,356	\$52,356	\$52,356
35																
36	OTHER SERVICE															
37	Renewal and Replacement Fund (590)	0	0	3,055	3,162	3,272	3,387	3,505	3,628	3,755	3,887	4,023	4,163	4,309	4,460	4,460
38																
39	Total Renewal and Replacement Fund	0	0	\$3,055	\$3,162	\$3,272	\$3,387	\$3,505	\$3,628	\$3,755	\$3,887	\$4,023	\$4,163	\$4,309	\$4,460	\$4,460
40																
####	TOTAL EXPENSES:	\$65,175	\$59,029	\$76,224	\$78,469	\$80,793	\$83,198	\$127,067	\$129,643	\$132,310	\$135,070	\$137,927	\$140,883	\$142,846	\$146,013	\$146,013
####																
####	Net Cashflow	(\$540)	\$4,586	\$3,479	\$8,604	\$11,074	\$17,752	(\$3,072)	\$2,061	\$7,269	\$12,553	\$17,915	\$23,358	\$29,979	\$35,587	\$35,587
####																
####	CASH ON HAND															
####	*Fund Balance	233,059	237,645	169,124	177,728	188,802	206,554	3,481	5,542	12,811	25,364	43,280	66,637	96,617	132,204	132,204
####	Renewal and Replacement Account Balance:	0	0	3,055	6,216	9,489	12,876	16,381	20,009	23,764	27,651	31,673	35,837	40,146	44,605	44,605
####	New Bond Reserves	0	0	1,098	2,195	3,293	4,390	5,488	6,586	7,683	8,781	9,878	10,976	10,976	10,976	10,976
####	Total	\$233,059	\$237,645	\$173,276	\$186,139	\$201,583	\$223,820	\$25,350	\$32,137	\$44,259	\$61,796	\$84,831	\$113,450	\$147,738	\$187,786	\$187,786
####	*Fund Balance is obtained by adding the previous year's															
####	balance to the net cash flow, minus any self funded portion															
####	of future projects. Fund Balance includes Impact Fees.															
####	Total Project Amount	0	0	274,400	0	0	0	620,000	0	0	0	0	0	0	0	0

CASH FLOW PROJECTION
SECONDARY WATER MASTER PLAN

	Annual Population Growth Rate Annual Rate Increase Annual Inflation Rate											
	Fiscal Year Beginning July 1 Ending June30	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
0	Average Share Holders Rate/yr	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00	\$100.00
1	Rate per Connection	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00	\$116.00
		\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
2	Connection Fee	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100
3	Impact fee	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	System Users:											
	Share Holders	337	337	337	337	337	337	337	337	337	337	337
5	Total Existing Lessees Connections	1,183	1,239	1,298	1,358	1,420	1,484	1,550	1,618	1,688	1,760	1,834
6	New Lessees Connections	55	57	59	60	62	64	66	68	70	72	74
	Stand By Connections	1	0	0	0	0	0	0	0	0	0	0
7												
8	REVENUES:											
9	User Fees (Water Sales)	177,188	183,972	190,964	198,166	205,584	213,225	221,095	229,201	237,550	246,150	255,008
10	Connection Fees	5,521	5,687	5,857	6,033	6,214	6,400	6,592	6,790	6,994	7,204	7,420
11	Late Fees & Penalties	0	0	0	0	0	0	0	0	0	0	0
12	Miscellaneous	0	0	0	0	0	0	0	0	0	0	0
13	Impact Fees	0	0	0	0	0	0	0	0	0	0	0
14	Interest Income/Bond Discount	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223	1,223
15	TOTAL REVENUE:	\$183,932	\$190,881	\$198,044	\$205,422	\$213,021	\$220,849	\$228,911	\$237,214	\$245,767	\$254,577	\$263,651
16												
17	EXPENSES: (Inc. O&M & Debt Serv.)											
18	Personal Services	51,366	53,164	55,025	56,950	58,944	61,007	63,142	65,352	67,639	70,007	72,457
19	Operating and Maintenance	24,083	24,926	25,798	26,701	27,636	28,603	29,604	30,640	31,713	32,823	33,971
20	Other supplies and expenses	16,870	17,460	18,072	18,704	19,359	20,036	20,738	21,463	22,215	22,992	23,797
21	Depreciation expense	0	0	0	0	0	0	0	0	0	0	0
22	Interest Expense	0	0	0	0	0	0	0	0	0	0	0
23	Sub-Total Operation & Maintenance	\$92,319	\$95,550	\$98,894	\$102,356	\$105,938	\$109,646	\$113,484	\$117,456	\$121,566	\$125,821	\$130,225
24												
25	EXISTING DEBT SERVICE (810-820)											
26	None	0	0	0	0	0	0	0	0	0	0	0
27												
28	Sub-Total Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	0	0	0	0	0
29												
30	NEW DEBT SERVICE (810-820)											
31	2010 Loan	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00	\$10,976.00
32	Loan Reserve (Payment/10)	0	0	0	0	0	0	0	0	0	0	0
33												
34	Sub-Total New Debt Service	\$10,976	\$10,976	\$10,976	\$10,976	\$10,976	\$10,976	\$10,976	\$10,976	\$10,976	\$10,976	\$10,976
1	2010 Loan	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90	\$37,617.90
2	Loan Reserve (Payment/10)	\$3,761.79	0	0	0	0	0	0	0	0	0	0
3												
4	Sub-Total New Debt Service	\$41,380	\$37,618	\$37,618	\$37,618	\$37,618	\$37,618	\$37,618	\$37,618	\$37,618	\$37,618	\$37,618
41	Total Debt Service	\$52,356	\$48,594	\$48,594	\$48,594	\$48,594	\$48,594	\$48,594	\$48,594	\$48,594	\$48,594	\$48,594
35												
36	OTHER SERVICE											
37	Renewal and Replacement Fund (590)	4,616	4,778	4,945	5,118	5,297	5,482	5,674	5,873	6,078	6,291	6,511
38												
39	Total Renewal and Replacement Fund	\$4,616	\$4,778	\$4,945	\$5,118	\$5,297	\$5,482	\$5,674	\$5,873	\$6,078	\$6,291	\$6,511
40												
####	TOTAL EXPENSES:	\$149,291	\$148,922	\$152,433	\$156,067	\$159,829	\$163,722	\$167,752	\$171,922	\$176,239	\$180,706	\$185,330
####												
####	Net Cashflow	\$34,641	\$41,960	\$45,611	\$49,355	\$53,192	\$57,126	\$61,159	\$65,292	\$69,529	\$73,871	\$78,321
####												
####	CASH ON HAND											
####	*Fund Balance	166,846	208,805	254,416	303,771	356,963	414,090	475,249	540,541	610,069	683,940	762,261
####	Renewal and Replacement Account Balance:	49,221	53,999	58,944	64,061	69,358	74,841	80,515	86,388	92,466	98,757	105,268
####	New Bond Reserves	10,976	10,976	10,976	10,976	10,976	10,976	10,976	10,976	10,976	10,976	10,976
####	Total	\$227,043	\$273,780	\$324,336	\$378,809	\$437,298	\$499,906	\$566,739	\$637,904	\$713,511	\$793,673	\$878,505
####	*Fund Balance is obtained by adding the previous year's balance to the net cash flow, minus any self funded portion of future projects. Fund Balance includes Impact Fees.											
####	Total Project Amount	0	0	0	0	0	0	0	0	0	0	0

APPENDIX F

FINANCIAG PLAN

TABLE V.B-1
LAVERKIN CITY WATER
FY 2010 PROPOSED FINANCING PLAN

TOTAL PROJECT COST				\$	346,400
FY 2010 EXPENSES					
Proposed Funding:	Rate	Term in Yrs.		Principal	
Self Participation					\$72,000
New Loan	0.00%	25	\$		274,400
TOTAL PROJECT FUNDING:					\$346,400
EXPENSES: (First Year of New Debt Serv. Pmt.)					
Personal Services					\$33,993
Operating and Maintenance					\$15,938
Other supplies and expenses					\$11,164
Depreciation expense					\$0
	Subtotal Expenses:				\$61,095
EXISTING DEBT SERVICE					
None					\$0
	Subtotal Existing Annual Debt Service:				\$0
NEW DEBT SERVICE					
New Loan(s)					\$10,976
Loan Reserve (Payment/10)					\$1,100
	Subtotal New Annual Debt Service:				\$12,076
Renewal and Replacement Fund					\$3,055
	GRAND TOTAL EXPENSES:				\$76,226
ANNUAL INCOME					
*New Impact Fee	13		\$0	\$	-
Total Number Of <u>Shareholder Connections</u>					337
Total Number Of <u>Lessee Connections</u>					389
Total Number Of <u>Stand Connections</u>					261
Average Monthly Water User Rate/Connection					\$10.58
	TOTAL ANNUAL INCOME:				\$76,226

TABLE V.B-2
LAVERKIN CITY WATER
FY 2014 PROPOSED FINANCING PLAN

TOTAL PROJECT COST				\$	820,000
FY 2014 EXPENSES					
Proposed Funding:	Rate	Term in Yrs.		Principal	
Self Participation					\$200,000
New Loan	3.50%	25	\$		620,000
TOTAL PROJECT FUNDING:					\$820,000
EXPENSES: (First Year of New Debt Serv. Pmt.)					
Personal Services					\$39,008
Operating and Maintenance					\$18,289
Other supplies and expenses					\$12,811
Depreciation expense					\$0
	Subtotal Expenses:				\$70,108
EXISTING DEBT SERVICE					
2010 Filter Improvements Project					\$12,074
	Subtotal Existing Annual Debt Service:				\$12,074
NEW DEBT SERVICE					
New Loan(s)					\$37,618
Loan Reserve (Payment/10)					\$3,800
	Subtotal New Annual Debt Service:				\$41,418
Renewal and Replacement Fund					\$3,505
	GRAND TOTAL EXPENSES:				\$127,105
ANNUAL INCOME					
*New Impact Fee	0		\$0	\$	-
Total Number Of <u>Shareholder Connections</u>					337
Total Number Of <u>Lessee Connections</u>					643
Total Number Of <u>Stand Connections</u>					161
Average Monthly Water User Rate/Connection					\$13.58
	TOTAL ANNUAL INCOME:				\$127,105