

CITY OF ROLLINGWOOD WATER SYSTEM CAPITAL IMPROVEMENTS PLAN

FINAL REPORT

PREPARED FOR:

CITY OF ROLLINGWOOD
403 NIXON DRIVE
ROLLINGWOOD, TEXAS 78746



PREPARED BY



MAY 2022

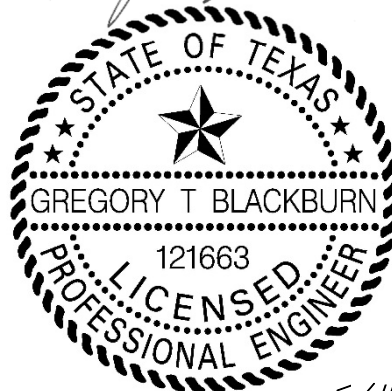
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WATER SYSTEM CAPITAL IMPROVEMENTS PLAN
FINAL REPORT

Prepared For:

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Rollingwood, TX 78746

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1 GLOSSARY AND ACRONYMS

CIP – Capital Improvement Plan

City – City of Rollingwood

EPS – Extended Period Simulation

GIS – Geographic Information System

KFA – K Friese + Associates

LCRA – Lower Colorado River Authority

MGD – Million Gallons per Day

PRV – Pressure Reducing Valve

PSI – Pounds per Square Inch

TCEQ – Texas Commission on Environmental Quality

TWDB – Texas Water Development Board

2 INTRODUCTION

The City of Rollingwood (City) contracted K Friese + Associates (KFA) to perform a city-wide Water System Capital Improvements Plan (CIP) to review the operation of the current system, identify potential issues, review fire flow availability, examine causes for repeated water main breaks, and other issues. This plan provides recommendations for potential improvements to address these issues and to guide the City's development of a CIP.

The project team began by gathering as-builts and updating the City's GIS data for the water system. KFA met with the City's Public Works Department staff and Crossroads, who services the City's water system, to further update the GIS mapping and learn about known issues in the system, such as water main breaks, valves that did not work properly, and pressure reducing valves (PRVs) that did not function properly, among others. KFA also performed site visits to field identify surface features and potential issues. Once the data collection was completed, KFA modeled the water system to identify areas in the system that had high or low pressures, pipes with excessive velocities, and locations with insufficient fire flows.

Following the data collection and modeling efforts, the project team developed project concepts to address the existing water system concerns. This final report includes summary sheets and cost estimates for these project concepts.

This report documents the methodology and results of the plan in the following sections:

- *Data Collection:* This section describes the data collection, coordination with City staff, and field investigations.
- *Hydraulic Modeling:* This section details the methodology and results of the process by which the project team used the collected data to perform hydraulic modeling of the water system to identify and rank the CIP projects.
- *Recommendations:* This section contains information regarding the CIP projects and associated cost estimates that are recommended for further analysis and design.
- *Next Steps:* This section provides a roadmap for further analysis and coordination for the City of Rollingwood to undertake to successfully implement the projects recommended by this plan.

3 DATA COLLECTION

KFA obtained the City's GIS data for the water system from the City's previous consultant, LNV, and used that data source as the base. Through research of available as-builts drawings, previous reports, coordination with City staff, and field investigations, KFA updated the GIS data to represent the existing water system more accurately. Data that was updated includes, but is not limited to, alignments, diameters, active vs. abandoned features, pipe connectivity, and PRV settings. Because much of the data seems to conflict with experiences of field personnel, it is recommended that ongoing field investigations and testing of valves/pipelines to further refine the mapping and operations of the existing system continue on an ongoing basis.

4 EXISTING WATER SYSTEM

A map of the existing system, including major water infrastructure and pressure plane boundaries, is included as **Exhibit 1**.

City of Rollingwood Travis County, TX

Existing Active Water System



Hatley Master Meter PRV

Hatley/Nixon PRV

Hatley/Almarion PRV

Riley Master Meter

Rollingwood/Riley PRV

Bee Cave Master Meter PRV

Waterline (Diameter)

- 1" (Red line)
- 2" (Brown line)
- 4" (Purple line)
- 6" (Green line)
- 8" (Blue line)
- 12" (Dark Red line)
- Unknown (Black line)

- Pressure Release Valve (Circle with crosshair symbol)
- Parcel Boundary (Thin black line)

Pressure Zone

- Upper (770') (Light Blue shaded area)
- Lower (700') (Light Pink shaded area)

Data Sources:
City of Rollingwood (2021)
Aerial Source: Stratmap (2021)



0 600 1,200 Feet

Date: 5/10/2022



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4.1 WATER SUPPLY

The City owns and operates the water distribution system within its City Limits. As the City has no water treatment infrastructure or raw water supply, all treated water is purchased wholesale from the City of Austin and delivered to Rollingwood at three (3) interconnection points, where it is then distributed to system customers through Rollingwood’s distribution system.

4.1.1 WHOLESAL WATER SERVICE AGREEMENT AND SUMMARY

The wholesale of treated water between the cities of Rollingwood and Austin is defined by the 2000 Agreement for Wholesale Water Service (**Appendix A**) and the First Amendment (**Appendix B**) to the Agreement. The maximum volume and flow rate defined by the Agreement is a monthly average of 1.0 million gallons per day (MGD) and an instantaneous maximum flow rate of 694.4 gallons per minute (gpm), which is approximately a 3.0 multiplier on the average flow limitation. The Agreement also mentions that when Rollingwood reaches 75% of the maximum monthly average flow rate that the parties shall negotiate adjustments to the maximum service level.

The First Amendment adds a new clause that says the City of Austin may require Rollingwood to provide its own source of raw water that will be treated and delivered by Austin to Rollingwood with 12 months’ notice. To our knowledge this notification has not been sent to date. The purpose of this clause is so that Rollingwood’s raw water supply will not count against Austin’s contracted maximum raw water supply from the Colorado River. Per the current 2021 Region K Water Plan for the Lower Colorado Water Planning Group (October 2020), it appears the City of Austin plans to enact this clause to require Rollingwood to have its own raw water supply prior to 2040. Rollingwood will need to have a separate raw water contract with the Lower Colorado River Authority (LCRA), but the raw water will then still be delivered to Rollingwood via the COA infrastructure. KFA recommends that Rollingwood begins discussions with the COA and LCRA in the near future to determine the timing and renegotiation of rates, both to remove the raw water portion of the COA contract and to develop a raw water purchase contract with the LCRA.

4.2 PIPES

The distribution system for the water system consists of approximately 15.7 miles of mains ranging in size from 1-inch to 12-inch lines serving a mixture of residential and commercial customers. Through data collection and in discussions with the City it was noted that the water system includes many small diameter lines that run through properties’ backyards and not within the right-of-way.

4.3 PRESSURE REDUCING VALVES & METERS

There are five (5) existing PRVs throughout the water system, serving as connections between the Austin Water system and the City’s system, and internally between the City’s two (2) pressure zones. Each of the pressure zones were intended to maintain pressures between 50 and 85 psi. The Texas Commission on Environmental Quality (TCEQ) requires a minimum system pressure of 35 psi under normal operations. However, for this CIP design, a minimum pressure of 50 psi was used to provide a safety factor above the TCEQ minimum and to minimize potential customer complaints of low pressures.

Additionally, the three (3) internal PRVs serve as backup connections. The internal PRVs are set to allow water to flow from the higher-pressure zone to the lower pressure zone in the event that the pressure drops significantly in the lower zone (i.e., main break or fire emergency). There are also many private PRVs on individual service lines; however, the number and locations are not known at this time. A list of the PRVs and settings for the existing system are shown in **Table 1**. The system had several valves that were designed to be closed to separate the upper and lower pressure planes. However, it was discovered through field investigations that some of these valves were left open, allowing the water to

bypass the PRV's and enter the lower pressure plane. This increased the typical pressure in the lower pressure plane above the intended maximum and resulted in repeated main breaks. Measurements in the field found the lower pressure zone experiencing at least 95 psi.

Table 1: Existing Pressure Reducing Valves and Settings

PRV	Setting (ft)
Bee Cave Woods Master Meter	770
Hatley Master Meter	710
Hatley/Nixon	690
Rollingwood/Riley	690
Hatley/Almarion ¹	690

1 – This PRV is currently out of service.

At the three (3) connection points to the City of Austin system, there are master meters to measure the flow into the City system. The master meters are located on Bee Cave Woods, Hatley, and Riley. The majority of the water supply for the higher-pressure plane comes through the Bee Cave Woods meter, as this connects to a higher-pressure plane within the City of Austin system.

5 HYDRAULIC MODELING

This section of the report describes how the project team used the data they collected to develop the CIP list.

5.1 DESIGN CRITERIA

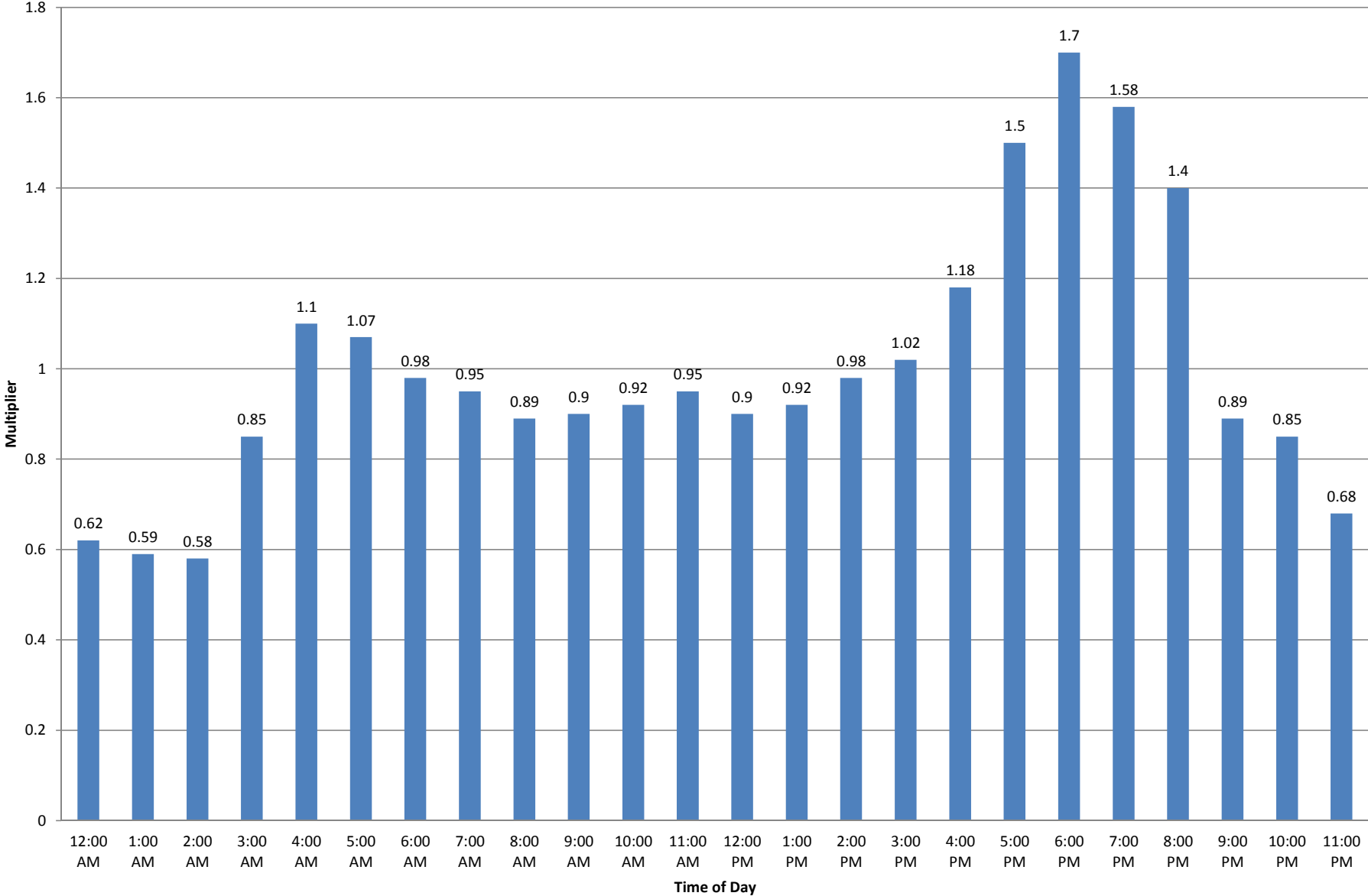
In order to properly model, size, and plan for future facilities, design criteria must be established. The modeling criteria used for the updated CIP is shown in **Table 2**. The model was run and evaluated using the maximum day supply from the City of Austin delivery points, provided by the City of Rollingwood.

Table 2: Planning and Design Criteria

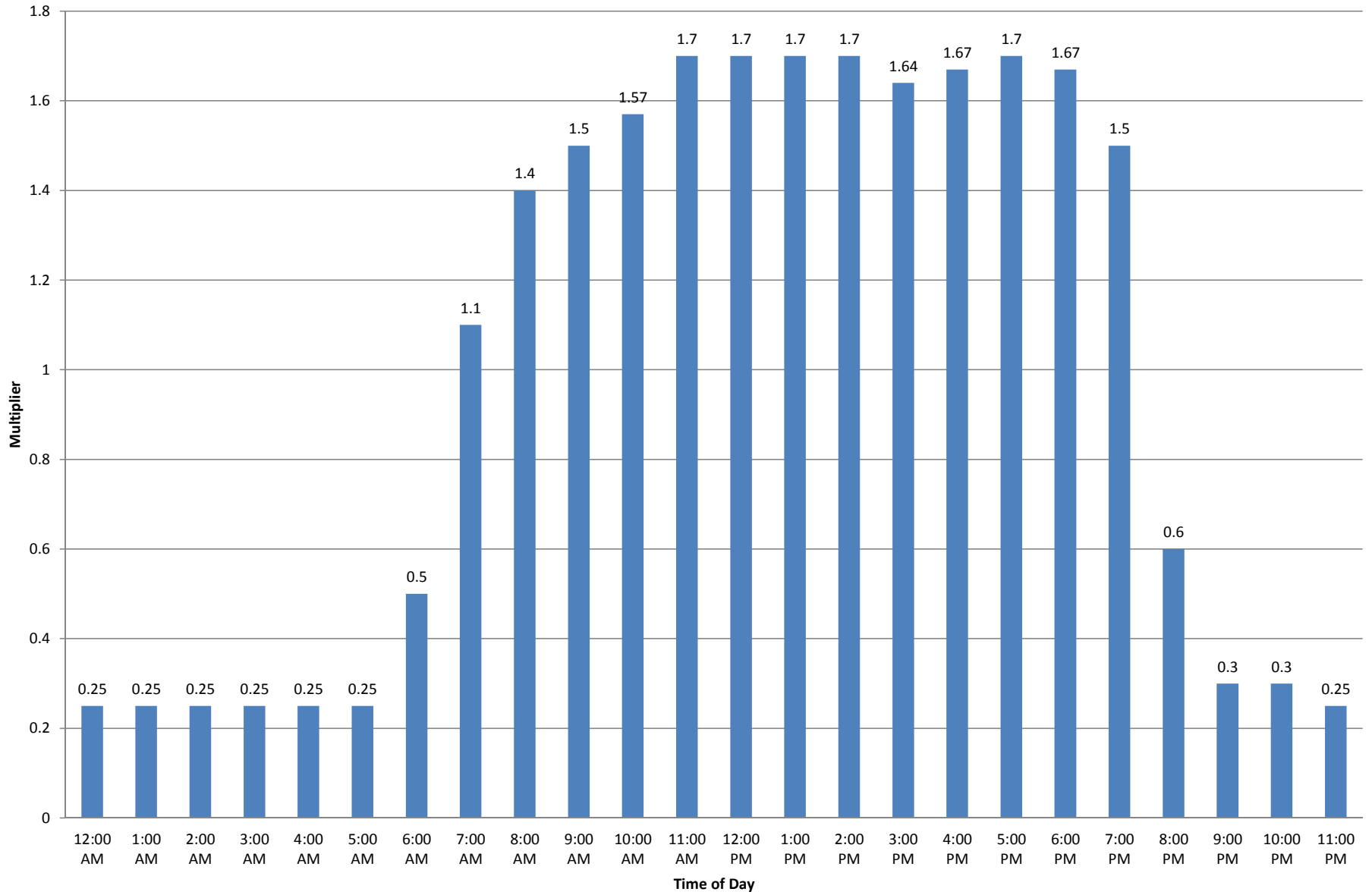
Criteria	Value
Max Day Unit Demand	0.41gpm/LUE
Fire Flow (Residential)	1,500 gpm
Fire Flow (Commercial)	3,500 gpm
Maximum Pressure	85 psi
Minimum Pressure	50 psi
Minimum Fire Flow Pressure	20 psi at Maximum Day Demand
C-Factor	120

These criteria were used to generate water demands for the service area during extended period and fire flow scenarios. Once the water demands were determined, the design criteria were utilized to calculate capacity of the existing facilities and to size the planned facilities. Diurnal curves, representing the hourly water demand, have been developed for residential and commercial demands. These curves are shown in **Exhibit 2** and **Exhibit 3**. The diurnal curves are applied to each demand node based on the development.

Diurnal Curve - Residential Demand



Diurnal Curve - Commercial Demand



5.2 WATER MODELING

Water models of the current system and proposed future systems were developed using WaterCAD Version V8i by Haested Methods. These models were used to evaluate options for system expansion. The model evaluation included static, extended period (24-hour), and fire flow analysis of each system.

The GIS data of the existing water system was imported into WaterCAD to develop the existing model. The model consists primarily of pipes, nodes, reservoirs, and PRVs. Each element has specific attributes assigned to define system characteristics and operation. A list of the primary attributes for each element and their definition is shown in **Table 3**.

Table 3 Water Model Element Attributes

Attribute	Definition
Pipe (Water Main)	
ID	ID to differentiate pipes
Pipe Diameter	Nominal value in inches
Pipe Material	Asbestos Cement, Cast Iron, Ductile Iron, or PVC
C-Factor	120
Open/Closed	Closed pipes represent closed valves in the system
Check Valve	Pipes can be defined to flow in one direction only
Node (Water Demand Point)	
ID	ID to differentiate nodes
Elevation	Ground elevation in feet
Demand	Assign water demand for node and assign diurnal curve
Zone	Label node's pressure zone
Reservoir (Water Supply Source)	
ID	ID to differentiate reservoirs
Elevation	Represents pressure plane of water system to the system
Pressure Reducing Valve (PRV)	
ID	ID to differentiate PRVs
Elevation	Ground elevation in feet
Diameter	Nominal valve diameter in inches
Settings	Define valve operation

5.3 EXTENDED PERIOD SIMULATION

The Extended Period Simulation (EPS) analysis is used to model the City's water system over a 24-hour period to model the pressures and flow rates changing throughout the system based on the demands varying per the associated diurnal curves. This ensures that the system is able to meet the highest demand peaks throughout a full day, and to see how the system reacts to the changing demands. The model output shows the pressures at each node, flow and velocity in each pipe, and flow through the PRVs. If the design criteria shown in **Table 2** are not met, then proposed improvements are added to the model to resolve the issue.

5.4 FIRE FLOW ANALYSIS

The fire flow analysis is used to model the City's water system to ensure that the system has sufficient capacity during a fire emergency, without causing low pressure to the rest of the system. The required

fire flow at each node is input based on the type of property that it serves (residential vs. commercial), as shown in **Table 2**. The model output is the total available fire flow at each node and the minimum residual pressure at each node and the overall system. If there is not enough available fire flow, or the residual pressures are too low, proposed improvements are added to the model to resolve the issue.

6 RECOMMENDATIONS

This section of the plan contains a summary of CIP project concepts that were developed by the project team to address the water system issues described in the previous section. Specific project summaries and cost estimates can be found in **Appendix C** and **Appendix D**, respectively.

6.1 MODELING RESULTS

The system modeling results showed several areas that did not meet the pressure or fire flow requirements listed in **Table 2**. The southeast portion of the City at the Town Centre had maximum pressures above 110 PSI. The northeast area of the City had two locations of low-pressure concerns, the 6-inch waterline along Hatley and the 6-inch main within Ashworth Dr.

From the modeling results, the main concern is the lack of sufficient fire flow in multiple locations throughout the City. In general, there was a lack of available fire flow at the dead-ends of small diameter pipes within cul-de-sacs, along Pickwick Ln, Inwood Rd, Bettis Blvd, Gentry Dr, Park Hills Dr and Laura Ln.

Several solutions were developed to solve these flow concerns. The most comprehensive change is adding an additional pressure plane to the City’s water system, for a total of three (3) separate pressure planes interconnected with PRV’s and adjusting the current boundaries of the high- and low-pressure planes. This is anticipated to be achieved by installing a new PRV at the Town Centre. Other project improvements include upsizing small diameter pipes and adding additional looping within the system. The overall proposed Water CIP improvement map can be seen in **Exhibit 4**. The new PRV settings can be found below in **Table 4**

Table 4 Proposed Pressure Reducing Valves and Settings

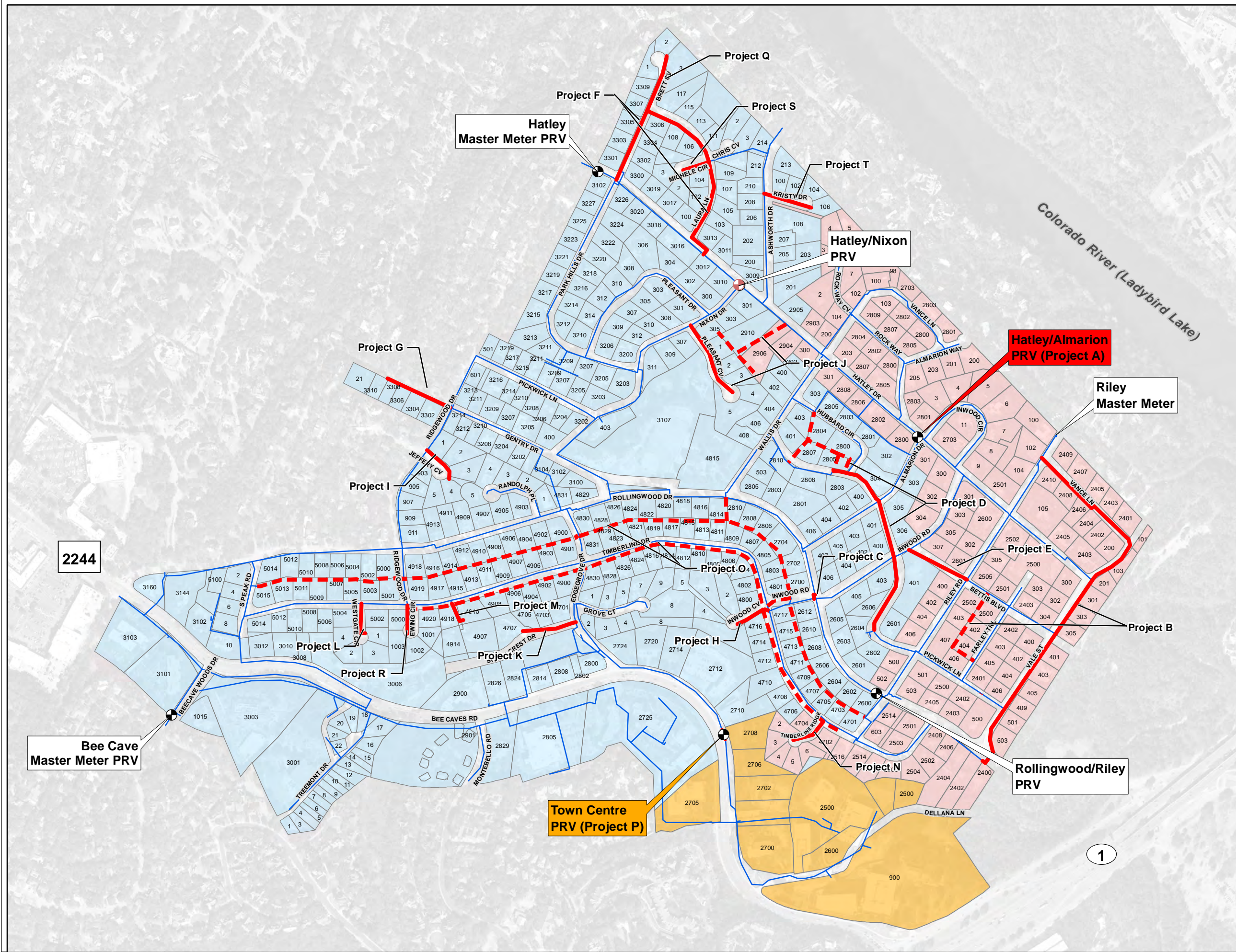
PRV	Setting (ft)
Bee Cave Woods Master Meter	770
Hatley Master Meter	710
Hatley/Nixon ¹	-----
Rollingwood/Riley	730
Hatley/Almarion ²	730
Town Centre	690

1 – This PRV will be abandoned

2 – This PRV is currently out of service, but will need to be repaired

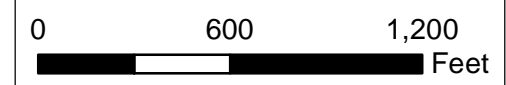
City of Rollingwood Travis County, TX

Proposed Water CIP Projects



- Existing Waterline
 - Proposed Project
 - Proposed Abandonment
 - Parcel Boundary
 - Pressure Release Valve
 - Master Meter
- | Pressure Zone | |
|---------------|---------------|
| | Zone 1 (770') |
| | Zone 2 (730') |
| | Zone 3 (690') |

Data Sources: KFA (2022)
City of Rollingwood (2021)
Aerial Source: Stratmap (2021)



Date: 5/10/2022



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6.2 CIP DEVELOPMENT

The proposed CIP projects work in conjunction together to update the existing water system to address and satisfy all design criteria applied during the modeling phase. The water system is currently not experiencing any large-scale system deficiencies and there are no immediate concerns of system failures. The proposed CIP projects are to provide a reliable water system with sufficient system pressures, and adequate fire flow to meet the design standards.

The various proposed projects have been consolidated into three (3) main categories: Maintenance, Fire Flow Improvements, and System Improvements.

Maintenance projects are projects that are low cost and can be completed by City staff or subcontractors to address minor concerns within the system. In addition to the daily maintenance that the Public Works department conducts, a larger update needs to be made to the current organization of the water system. The current boundaries of the high- and low- pressure zones need to be amended. The existing PRV that is out of service at Hatley/Almarion needs to be repaired and put back into service, and along with the Riley/Rollingwood PRV, be set to a hydraulic grade setting of 730-ft. Furthermore, the homes along Ashworth Dr will be moved over to the high-pressure zone by ensuring the loop between Chris Cove and Ashworth Dr is completed. The open valve in Hatley Dr, between Wallis Dr and Ashworth Dr, will be closed to separate the pressure planes. This pressure plane adjustment will fix low pressure issues along Hatley Dr and Ashworth Dr. Adjusting the PRV settings at the Hatley/Almarion PRV and the Riley/Rollingwood PRV, thus allowing the low-pressure zone to be fed from the high-pressure zone rather than the Riley Master Meter COA feed point, will also increase pressure within the entire low-pressure zone, and should help reduce low pressure complaints from citizens.

The fire flow improvement projects were identified to provide sufficient fire flows to meet the design criteria, which includes several aspects. The main condition that all proposed areas failed was to deliver the required fire flow demand. A secondary design condition is that there must be a fire hydrant within 500-ft of a home as accessed along streets. The fire flow improvement projects can be classified into four subgroups:

1. Water mains within the system that do not meet fire flow requirements and have existing fire hydrants on the line. These lines should be addressed, as the fire hydrants have the highest potential of being necessary for fire protection.
2. Small diameter water mains that do not meet fire flow requirements but also have an existing fire hydrant on the line. These projects would be prioritized next to ensure firefighting capabilities should the existing hydrants be used.
3. Small diameter water mains that do not meet fire flow requirements, but also do not have an existing fire hydrant on the line and do not have a local fire hydrant on another main within 500-ft of the homes. These lines are required to be addressed to provide sufficient fire hydrant spatial coverage of the homes within the City limits.
4. Small diameter water mains that do not meet fire flow requirements, do not have existing fire hydrants on the line, and are located within 500-ft of existing hydrants located on another water main. These mains are the lowest priority because they can be covered by other localized existing mains. However, these lines are included in the CIP proposed projects because, while not necessary for firefighting protection, they provide a complete system that meets fire flow requirements and for the potential need necessitated by large sprinkler systems being incorporated into new homes in the community.

System update projects include projects to fix specific concerns within the system, not related to fire flow improvements. Projects include the following:

- Vance/Vale waterline replacement - addresses continued instances of main breaks occurring in the area resulting in city-wide boil water notices. The 4-inch diameter waterlines are undersized, are not buried to an adequate depth, are bedded improperly, and are made of pipe material that does not meet industry standards.
- Inwood Interconnect - provides additional looping within the system and improves pressure concerns during normal operation
- Backyard abandonment projects - while not required for functionality, this will provide for operational ease and overall system resiliency. Many of the waterlines located in easements in backyards of private properties are difficult for City Staff to access and isolate in the event of a main break.
- Towne Centre PRV installation - this area of the city experiences pressures exceeding the maximum design criteria, however, there is no records of main breaks or customer complaints in the area. These customers within the affected area may have individual PRVs on their service lines, which would likely eliminate the need for this project.

The proposed CIP projects have been prioritized by “high” or “low” priorities relative to one another. However, depending on the amount of City funding in each fiscal year, these projects can be grouped as needed to provide the best value to the City. **Table 5** shows the proposed improvements accomplished with each project. Note that the proposed improvements included in each CIP project are based on preliminary level engineering, field visits, and high-level topographic information; these are not detailed engineering analysis or design.

Table 5: Proposed System Improvements Analysis

Project ID	Street	Project Type	Existing Fire Hydrant(s) on Water Main?	Other Available Fire Hydrants within 500 ft to Deliver Min. Fire Flow?	Approx. # Homes Impacted	Current Fire Flow Available within 500' (gpm)	Proposed Fire Flow (gpm)	Notes
A	Hatley	Maintenance	N/A	N/A	15-20	N/A	N/A	Pressure Plane adjustment to address low pressure issues
B	Vance	System Improvements	N/A	N/A	N/A	N/A	N/A	Main replacement for repeated breaks and maintenance issues.
C	Inwood/Rollingwood	System Improvements	Yes	No	5-10	1,289	2,519	Interconnect mains at Rollingwood/Inwood to provide better looping for the system and address fire flow concerns. Improves fire flows along Inwood Road.
D	Pickwick	Fire Flow Improvements	Yes	No	35-40	988 (Pickwick FH)	1,906	Upsize existing 4-inch and 6-inch to 8-inch main to provide better looping for the system and address fire flow concerns along Pickwick.
E	Bettis	Fire Flow Improvements	Yes	No	5-10	359	2,812	Install new 8-inch main along Bettis Blvd between Riley Rd and Inwood Rd to provide better looping for the system and address fire flow concerns along Inwood Rd.
F	Park Hills Dr	Fire Flow Improvements	Yes	No	40-45	1,133	2,007	Upsize existing 6-inch mains within Park Hills Dr and Laura Ln to 8-inch main to provide better looping for the system and address fire flow concerns along Hatley Dr, Laura Ln, and Park Hills Dr. These streets must be upsized together to achieve the system benefits, so they are packaged as project F.
	Laura Ln	Fire Flow Improvements				1,216	2,207	
G	Gentry Dr	Fire Flow Improvements	Yes	No	10-15	1,221	1,693	Upsize existing 6-inch main that deadends at Gentry Dr with an 8-inch main to provide sufficient fire flow for the two existing fire hydrants.
H	Inwood Cv	Fire Flow Improvements	Yes	No	5-10	1,045	3,189	Upsize existing 4-inch main within the Inwood Cv cul-de-sac to an 8-inch main to provide enough fire flow to the existing fire hydrant located on the line.
I	Jeffrey Cv	Fire Flow Improvements	Yes	No	5-10	131	1,924	Upsize existing 2-inch main to an 8-inch line to provide sufficient fire flow for Jeffrey Cv.
J	Pleasant Cv	Fire Flow Improvements	Yes	No	5-10	711 (at end, 1,494 at approx FH location)	1,503 (1,641)	Upsize the existing 4-inch and 6-inch mains along Pleasant Cv with an 8-inch main to provide sufficient fire flow at the existing fire hydrant.
K	S. Crest Dr	Fire Flow Improvements	No	No	1-5	0 (144 in main)	3,500	Upsize the existing 6-inch main to an 8-inch main and install a fire hydrant to provide sufficient fire flow and fire hydrant coverage along S. Crest Dr.
L	Westgate Circle	Fire Flow Improvements	No	No	1-5	0 (901 in main)	2,805	Upsize the existing 4-inch main to an 8-inch main and install a fire hydrant to provide sufficient fire flow and fire hydrant coverage within the Westgate Circle cul-de-sac.
M	Ewing Easement	Fire Flow Improvements	No	No	1-5	0 (1,106 in main)	3,213	Upsize the existing 4-inch main located in the easement adjacent to Ewing Circle to an 8-inch main and install a new fire hydrant to provide sufficient fire flows and fire hydrant coverage for the homes served off this line.
N	Timberline Ridge	Fire Flow Improvements	No	No	1-5	0 (460 in main)	1,938	Upsize the existing 4-inch main within Timberline Ridge Dr to an 8-inch main and install a new fire hydrant to provide sufficient fire flow and fire hydrant coverages for all of the homes within the cul-de-sac.
O	Rollingwood/Ridgewood	System Improvements	N/A	N/A	N/A	N/A	N/A	Abandonment projects for operational management purposes
P	Town Centre PRV	System Improvements	N/A	N/A	N/A	N/A	N/A	Pressure plane adjustment to address high pressure issues at the Town Centre complex.
Q	Brett Cv	Fire Flow Improvements	No	Yes	5-10	>1,500 (476 in main)	1,699 (upsized)	Upsize existing main from 4-inch to 8-inch main within Brett Cv to provide improved flows for domestic and sprinkler system use. This area is currently covered by fire hydrants within 500 feet.
R	Ewing Circle	Fire Flow Improvements	No	Yes	5-10	>1,500 (937 in main)	3,014 (upsized)	Upsize existing main from 4-inch to 8-inch main within Ewing Circle to provide improved flows for domestic and sprinkler system use. This area is currently covered by fire hydrants within 500 feet.
S	Michele Circle	Fire Flow Improvements	No	Yes	5-10	>1,500 (167 in main)	1,884 (upsized)	Upsize existing main from 2-inch to 8-inch main within Michelle Circle to provide improved flows for domestic and sprinkler system use. This area is currently covered by fire hydrants within 500 feet.
T	Kristy Dr	Fire Flow Improvements	No	Yes	5-10	>1,500 (578 in main)	1,793 (upsized)	Upsize existing main from 4-inch to 8-inch main within Kristy Drive to provide improved flows for domestic and sprinkler system use. This area is currently covered by fire hydrants within 500 feet.

italics - analysis done assuming all projects have been completed

6.3 PROJECT COST ESTIMATES

Planning-level cost estimates were developed for the proposed projects. These cost estimates are based on the preliminary project concepts developed to mitigate the issues identified and are likely to vary when detailed design is completed for each project.

The cost estimates include:

- *Engineering & Surveying:* Engineering, surveying, and environmental costs were estimated as a uniform percentage of construction costs for each project.
- *Construction:* Unit costs and quantities are provided in the project cost estimate sheets. Traffic control and roadway reconstruction are included where necessary.

The estimates do not include costs for:

- *Right-of-Way & Easement Acquisition:* Right-of-way and easement acquisition was assumed not to be necessary for these projects. However, it is recommended that the City perform this research prior to implementation of recommended CIP projects.

Cost summary sheets for each project can be found in **Appendix D**. A summary of costs is provided in **Table 6**.

Table 6: Project Cost Summary

ID	Project Name	Cost	Priority
A	Hatley/Almarion PRV Replacement	\$37,000	High
B	Vance & Vale St Water Improvements	\$1,275,000	High
C	Inwood Rd Interconnect	\$65,000	High
D	Pickwick Dr Fire Flow Improvements	\$718,000	High
E	Bettis Blvd Fire Improvements	\$189,000	High
F	Park Hills Dr/Laura Ln Fire Improvements	\$751,000	High
G	Gentry Dr Fire Improvements	\$232,000	High
H	Inwood Cove Fire Improvements	\$105,000	High
I	Jeffrey Cove Fire Improvements	\$105,000	High
J	Pleasant Cove Fire Improvements	\$268,000	High
K	S. Crest Dr Fire Improvements	\$167,000	High
L	Westgate Circle Fire Improvements	\$105,000	High
M	Ewing Easement Main Fire Improvements	\$84,000	High
N	Timberline Ridge Fire Improvements	\$105,000	High
O	Abandonment Projects	\$494,000	Low
P	Town Centre PRV	\$112,000	Low
Q	Brett Cove Fire Improvements	\$167,000	Low
R	Ewing Circle Fire Improvements	\$105,000	Low
S	Michele Circle Fire Improvements	\$84,000	Low
T	Kristy Dr Fire Improvements	\$148,000	Low
Total CIP Cost		\$5,316,000	

7 NEXT STEPS

While this Plan provides a preliminary assessment of top water service issues and potential solutions across the City of Rollingwood, additional study, coordination, analysis, and engineering design are required for implementation.

7.1 ONGOING DATA NEEDS

During the course of this project, a significant data needs issue came to KFA's attention that must be addressed prior to design and implementation of CIP projects. There is currently no comprehensive and up-to-date database of the existing water infrastructure. The current GIS database that KFA has put together was developed with old construction plan sets that were hard to follow and may or may not have been implemented. The City has since begun field investigations to determine if waterlines are active, have been abandoned, or have already been upsized. The City will need to continue these field investigations and continue to update the GIS database until the entirety of the water system has been mapped out.

7.2 MODELING

The current WaterCAD model was developed using the latest GIS database. As the field investigations provide updated information for the database and as proposed improvements are installed, the recommendation is that the water model is updated with the changes. The field investigation changes may alter the recommendations for the proposed CIP projects as the design.

7.3 FUNDING SOURCES

It is KFA's understanding that the City of Rollingwood is limited in the availability of City funds for implementation of the recommended CIP projects. The City may consider looking into applying for the Texas Water Development Board (TWDB) programs. The TWDB offers a variety of cost-effective loan and grant programs that the proposed projects may be eligible for. KFA recommends initiating contact with the TWDB regional team and beginning the relationship to advance future collaboration for funding for the proposed CIP projects.

8 APPENDICES

Appendix A: 2000 Agreement for Wholesale Water Service

**2000 AGREEMENT FOR WHOLESALE WATER
SERVICE BETWEEN THE CITY OF
AUSTIN AND THE CITY OF ROLLINGWOOD**

THE STATE OF TEXAS)
) KNOW ALL BY THESE PRESENTS:
COUNTY OF TRAVIS)

THIS AGREEMENT ("Agreement") for the provision of wholesale water service is made and entered into by and between the of City of Austin, Texas ("Austin"), a Texas home rule municipal corporation, and the City of Rollingwood, a Texas general law municipal corporation ("Rollingwood"), collectively ("Parties"), and may be referred to as the "2000 Rollingwood Water Service Agreement".

WHEREAS, Austin and Rollingwood previously entered into a wholesale water service agreement dated January 2, 1968, entitled "Water Contract" ("1968 Water Contract"), pursuant to which Austin provided a potable water supply to Rollingwood for its distribution system that served connections within its existing corporate boundaries. The 1968 Water Contract expired of its own terms on January 2, 1998;

WHEREAS, Austin has provided additional wholesale water service to Rollingwood since the expiration of the 1968 Water Contract;

WHEREAS, Austin and Rollingwood desires to enter into a new wholesale water service agreement to set out terms and conditions for Austin's continued provision of wholesale water service to Rollingwood for its distribution system that currently serves more than 300 retail connections within its corporate boundaries and extraterritorial jurisdiction;

WHEREAS, Austin and Rollingwood are authorized to enter into this agreement pursuant to the provision of the Interlocal Cooperation Act, V.T.C.A. Government Code, Chapter 791 and other applicable law;

WHEREAS, the Austin City Council, by Resolution No. 991209-30, dated December 9, 1999, has duly authorized the negotiation and execution of a wholesale water service agreement with Rollingwood;

WHEREAS, the Rollingwood City Council, by Approved and Signed Minutes, Regular Council Meeting, dated December 15, 1999, has duly authorized the negotiation and execution of a wholesale water service agreement with Austin;

WHEREAS, Austin and Rollingwood, as authorized by their respective city councils, intend to set forth a comprehensive statement of all terms and conditions applicable to the continued provision of wholesale water service by Austin to Rollingwood ;

NOW, THEREFORE, in consideration of the foregoing premises and the mutual undertakings herein contained, the parties agree as follows:

ARTICLE I DEFINITIONS

The following terms shall have the meanings set out below:

1.01. Austin Water Facilities, Austin System or Austin's Water System: means all water treatment, transmission and distribution facilities, lines, mains, reservoirs, pump stations, residential, commercial, and industrial connections and any other parts or components that comprise the public water system of Austin.

1.02. Austin Water Capital Recovery Fee: means a charge imposed on each service unit of new development pursuant to Chapter 25-9 of the 1999 Austin City Code to generate revenue for funding or recouping the costs of capital improvements or facility expansions of Austin's Water System.

1.03. Commission: means the Texas Natural Resource Conservation Commission or its successor agency.

1.04. Connection: means a single family residential unit or each commercial or industrial establishment to which drinking water is supplied from Rollingwood's system.

1.05. Default: means the omission or failure of a party to perform their contractual duty under this agreement.

1.06. Director: means the Director of Austin's Water and Wastewater Utility or the Director's authorized designee.

1.07. Metering Facility: means the meter, meter vault, and all metering equipment required to measure wholesale water service to Rollingwood at the agreed points of delivery. The term also includes any other facilities constructed by Rollingwood that are associated with the metering facilities.

1.08. New Development: means the subdivision of land, the construction, reconstruction, redevelopment, conversion, structural alteration, relocation, or enlargement of any structure, or any use or extension of the use of land, that increases the number of service units for water service. The term includes the sale of water taps resulting from the conversion of an individual well to Rollingwood's System.

1.09. Point of Delivery: means the points designated and approved under this Agreement at which Rollingwood shall receive water from the Austin Water System for distribution within Rollingwood's Water System as more particularly described below.

1.10. Rollingwood Water Facilities, Rollingwood Water System or Rollingwood's System: means the lines, reservoirs, pump stations, mains, residential, commercial, and industrial connections and any other parts or components that comprise the public water system of Rollingwood.

1.11. Water: means potable water meeting the requirements of the Texas Natural Resource Conservation Commission for human consumption and other domestic uses.

1.12. Wholesale Water Service Area: means Rollingwood's corporate city limits and extraterritorial jurisdiction as amended from time to time by Rollingwood. This term does not include any area outside of Rollingwood's corporate city limits, as of the effective date of this agreement, that is served by Austin's water system prior to annexation by Rollingwood.

1.13. Wholesale Water Service: means Austin's provision of a potable water supply to Rollingwood for its distribution system that serves retail connections in its wholesale water service area.

ARTICLE II. DELIVERY OF WATER

2.01. Maximum Volume and Rate of Flow. Subject to all the terms and conditions set forth in this Agreement, Austin agrees to sell and Rollingwood agrees to buy potable water for the operation of Rollingwood's Water System for domestic, commercial and industrial uses on an as-needed basis in an amount not to exceed a monthly average of 1.0 million gallons per day (MGD) and at a rate not exceeding 694.4 gallons per minute (GPM) and at a minimum pressure of 35 (psi) pounds per square inch under normal operating conditions at the master meter(s) located at the agreed point(s) of delivery in **Exhibit A**. The parties agree that a monthly average of 1.0 (MGD) is the maximum level of service to which Rollingwood is entitled under this Agreement.

The parties agree that when use by Rollingwood reaches or exceeds seventy five per cent (75%) of the maximum level of 1.0 million gallons per day (MGD) established hereunder based on a monthly average for any monthly billing period during the term of this Agreement, the parties shall negotiate with regard to an appropriate adjustment of the maximum service level described under this agreement. **The parties agree that the maximum service level provided under this agreement will not be increased unless Rollingwood secures a raw water supply and assigns that supply to Austin to provide any proposed increased service level under this agreement. The parties shall negotiate a wholesale water rate adjustment for the raw water supply assigned to Austin by Rollingwood over the agreed 1.0 MGD monthly average limit that is used by Austin to provide water service under this agreement.** Any increase in the maximum service level provided under this agreement must be made by written amendment of this Agreement and shall be subject to review and approval by the Austin City Council and the Rollingwood City Council and the ability of Austin to provide such additional water service.

In the event that Austin is unable or unwilling to provide the increased level of water service requested by Rollingwood, Rollingwood may endeavor to secure supplemental water service from another provider.

If Rollingwood secures another source of water supply without having first negotiated in good faith with Austin as described above or without having first secured a written final decision from the Director that Austin is unwilling or unable to provide the requested increase in the maximum level of water service to be provided under this agreement, Austin may reduce the maximum level of

service to be provided hereunder commensurate with the maximum contracted level of potable water service acquired by Rollingwood from such other source and Austin shall be released from any obligation to provide the same under this agreement. If Rollingwood desires to secure an additional source of water supply it must first provide Austin with written notice of its need for additional water service. The notice must include the quantity of water needed by Rollingwood and all other information requested by the Director and must be provided to the Director. Austin shall respond to Rollingwood's notice within 180 days.

2.02. Sole Supply Intended. Rollingwood and Austin agree that Austin shall provide the sole source of water for the operation of the Rollingwood System during the term of this agreement and the parties do not construe this agreement to provide for supplemental, backup, peak-load or as-available service.

2.03. Manner of Delivery. During the term of this agreement, Rollingwood shall provide retail water service to connections within the wholesale water service area in this agreement.

2.04. Nondiscrimination. Water service to Rollingwood by Austin shall be nondiscriminatory and consistent with Austin's policies, ordinances and regulations applicable to wholesale water services as established by the Austin City Council and amended from time to time.

2.05. Water Capital Recovery Fees. The parties agree that the assessment and collection of Austin's Water Capital Recovery Fee within Rollingwoods' wholesale water service area is authorized by Texas Local Government Code, '395.011(c). Rollingwood shall collect, on behalf of Austin, Austin's Water Capital Recovery Fee from its customers for each service unit of new development connected to Rollingwood's System in the agreed wholesale water service area at the time Rollingwood's connection is made.

The amount of the Water Capital Recovery Fee shall be calculated per service unit in accordance with the provisions of Chapter 25-9 of the 1999 Austin City Code, as adopted by Austin. The amount collected by Rollingwood, on behalf of Austin, shall be the amount of Austin's Water Capital Recovery Fee in effect at the time each connection of a new service unit is made, following notice to Rollingwood of any change as provided in this subsection. The number of service units for which the fee is charged shall be calculated in accordance with Chapter 25-9 of the 1999 Austin City Code, as adopted by Austin.

Austin agrees to provide Rollingwood with written notice of any change in the amount of the Water Capital Recovery Fee to be collected by Rollingwood under this Agreement, and such change will be effective on the date the notice is received by Rollingwood or the effective date of Austin's ordinance, whichever is later.

Rollingwood agrees to remit all Water Capital Recovery Fees collected to Austin monthly together with a report of all new water connections made within each calendar month. The report shall also contain the service address, meter size, date of connection, and amount remitted for each new connection within each monthly period to the Director. Rollingwood shall not retain any portion of the Austin Water Capital Recovery Fees collected. If no new connections are made during the month, Rollingwood shall not be required to prepare a monthly report of new connections to Austin.

For each calendar year, Rollingwood shall provide to the Director an annual report that states the total number of connections and the type of connections by use (residential, multi-family, commercial, industrial) by February 28th of the following year.

2.06. Points of Delivery. The points of delivery are shown on **Exhibit "A"**. Exhibit A is attached to this agreement and incorporated by reference for all purposes. The points of delivery may be changed at any time by agreement in writing between the Director and Rollingwood. In the event that Rollingwood requests a change in the points of delivery, Rollingwood shall bear the expense of changing such points of delivery. In the event that Austin requests an addition or change in the points of delivery, Austin shall bear the expense of changing such points of delivery.

2.07. Approval of Changes or Additional Points of Delivery. Prior to adding or changing any point of delivery to Austin's Water System, Rollingwood shall submit a written request to the Director for approval of the additional or new point of delivery accompanied by an engineering report and plans, prepared by a registered professional engineer and approved by the Rollingwood City Council, which detail the proposed changed or new point of delivery, the area to be served, the design, size, location and configuration of meters to be installed, and other pertinent information requested by Austin. The parties agree that the undeveloped tracts, constituting approximately 32 acres collectively, zoned commercial in Rollingwood will require Rollingwood to request an additional point of delivery to Austin's Water System or some other mutually agreed upon methodology for the provision of fire protection.

2.08. Backflow Prevention. Rollingwood, at its own expense, shall install a backflow prevention assembly (Reduced Pressure Zone Valve) on all points of delivery from Austin's Water System within 90 days after the effective date of this contract. All approved additional points of delivery in the future will be required to have a backflow prevention assembly installed at the time of construction at Rollingwood's own expense.

ARTICLE III. COMPLIANCE WITH STATE LAWS AND CITY REGULATIONS

3.01. Legal Lots Required. Rollingwood shall not sell taps or otherwise permit the connection of water service to any customer within the agreed wholesale water service area unless the property is exempt from or in compliance with the provisions of Chapter 212, Texas Local Government Code, as amended.

3.02. Service Outside Rollingwood; Enlargement of Rollingwood Boundaries or Service Area. This Agreement provides for the purchase of wholesale water by Rollingwood from Austin for delivery to retail customers within the agreed wholesale water service area. Rollingwood agrees that it shall not sell, resell, or deliver water to areas outside the agreed wholesale water service area as of the effective date of this Agreement unless it first obtains either the prior written consent of Austin or is ordered to provide such service by the Commission in involuntary proceedings that are not initiated by Rollingwood. In the latter event, Rollingwood shall provide written notice to Austin of the proceedings at the Commission relating to the expansion of Rollingwood's service to areas

now outside of Rollingwood's corporate limits. Rollingwood further agrees that it will not initiate any proceedings to enlarge its service area through any other agency or court of competent jurisdiction without the prior written notification to Austin of such expansion.

3.03. Curtailment and Conservation Restrictions. Delivery, volume, and pressure of potable water to Rollingwood under this Agreement is subject to and limited by Austin's available water supply and water system treatment and transportation capabilities. Austin shall have the right to curtail or ration wholesale service to Rollingwood in times of high system demand in the same manner and to the same extent that Austin imposes such curtailment or water rationing on other wholesale customers of Austin. Austin will give written notice to Rollingwood of the implementation and termination of any conservation and user restrictions it imposes on its customers, and Rollingwood agrees to impose on its customers and enforce the same voluntary and mandatory conservation and use restrictions Austin imposes on its own customers within three business days of receipt of notice from Austin.

3.04. Temporary Curtailment of Service for Maintenance, Capital Replacement or Emergency Operations. Austin shall have the right at all times to curtail water service hereunder in the event of a required maintenance operation, replacement of capital facilities or emergency for a reasonable period necessary to complete such maintenance operations or capital replacement, effect emergency repairs or otherwise respond to emergency conditions necessitating the temporary suspension of water service or decreased volume or pressure. For any curtailment other than one caused by an emergency, Austin, if possible, will give at least 72 hours telephonic notice to Rollingwood. In the event of an emergency curtailment, Austin will give telephonic notice as soon as possible.

3.05. Cooperation During Maintenance or Emergency. Rollingwood shall cooperate with Austin during periods of emergency or required maintenance or replacement of equipment and, if necessary, Rollingwood shall, at its sole expense, discontinue, cycle, test, inspect, or otherwise operate and maintain its pumps or other Rollingwood Water Facilities in a manner determined by the Director to be necessary to the safe and efficient completion of such operations.

3.06. Water Conservation Program. Rollingwood will adopt and enforce a water conservation program sufficient to meet the requirements of the Texas Natural Resource Conservation Commission ("TNRCC") water conservation rules, as amended. Rollingwood shall also adopt and enforce water conservation measures that meet or exceed the following standards:

- (1) promote the participation of its citizens in the water conservation programs offered by Austin with bill stuffers (4 times/year minimum) and advertising;
- (2) adopt an incentive plan for low-flush toilet retrofits that will include Austin rebates plus matching Rollingwood rebates (would currently add \$60 per toilet, for a total rebate of \$120);
- (3) send letters to high volume water users offering irrigation audits;
- (4) review its landscaping ordinances to promote water conservation, with the consideration of recommendations by the Austin Water Conservation Office;

now outside of Rollingwood's corporate limits. Rollingwood further agrees that it will not initiate any proceedings to enlarge its service area through any other agency or court of competent jurisdiction without the prior written notification to Austin of such expansion.

3.03. Curtailment and Conservation Restrictions. Delivery, volume, and pressure of potable water to Rollingwood under this Agreement is subject to and limited by Austin's available water supply and water system treatment and transportation capabilities. Austin shall have the right to curtail or ration wholesale service to Rollingwood in times of high system demand in the same manner and to the same extent that Austin imposes such curtailment or water rationing on other wholesale customers of Austin. Austin will give written notice to Rollingwood of the implementation and termination of any conservation and user restrictions it imposes on its customers, and Rollingwood agrees to impose on its customers and enforce the same voluntary and mandatory conservation and use restrictions Austin imposes on its own customers within three business days of receipt of notice from Austin.

3.04. Temporary Curtailment of Service for Maintenance, Capital Replacement or Emergency Operations. Austin shall have the right at all times to curtail water service hereunder in the event of a required maintenance operation, replacement of capital facilities or emergency for a reasonable period necessary to complete such maintenance operations or capital replacement, effect emergency repairs or otherwise respond to emergency conditions necessitating the temporary suspension of water service or decreased volume or pressure. For any curtailment other than one caused by an emergency, Austin, if possible, will give at least 72 hours telephonic notice to Rollingwood. In the event of an emergency curtailment, Austin will give telephonic notice as soon as possible.

3.05. Cooperation During Maintenance or Emergency. Rollingwood shall cooperate with Austin during periods of emergency or required maintenance or replacement of equipment and, if necessary, Rollingwood shall, at its sole expense, discontinue, cycle, test, inspect, or otherwise operate and maintain its pumps or other Rollingwood Water Facilities in a manner determined by the Director to be necessary to the safe and efficient completion of such operations.

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- (1) promote the participation of its citizens in the water conservation programs offered by Austin with bill stuffers (4 times/year minimum) and advertising;
- (2) adopt an incentive plan for low-flush toilet retrofits that will include Austin rebates plus matching Rollingwood rebates (would currently add \$60 per toilet, for a total rebate of \$120);
- (3) send letters to high volume water users offering irrigation audits;
- (4) review its landscaping ordinances to promote water conservation, with the consideration of recommendations by the Austin Water Conservation Office;

- (5) adopt an ordinance requiring separate water meters for commercial irrigation where feasible;
- (6) in consultation with the Austin Water Conservation Office, adopt a conservation water rate ordinance that is effective in promoting water conservation; and
- (7) provide a rebate for purchasing horizontal axis washing machines (now set at \$50).

3.07. Water Conservation Ordinance . Separate from the requirements of Section 3.06, Rollingwood agrees to adopt and enforce an ordinance with similar provisions to Austin's emergency and peak day water management provisions, Chapter 4-2, Article II, 1999 City Code, as in effect on the date of this Agreement, within the wholesale water service area in this agreement. In the event that ordinance is amended, Austin will give written notice to Rollingwood of those amendments and will request that Rollingwood amend its ordinance to include similar provisions.

3.08. Timely Adoption of Conservation Plan . All ordinances and programs to be adopted by Rollingwood relating to toilet retrofits, emergency and peak day water management, conservation water rate, horizontal axis washing machines, and separate water meters for commercial irrigation, must be adopted before October 1, 2000.

3.09. Penalty Provision . If Rollingwood fails to comply with all the terms of this Agreement with respect to adopting and enforcing water conservation measures, Austin may impose on Rollingwood a monthly water surcharge equal to 25% of the rate determined by cost of service methodology, for as long as Rollingwood remains out of compliance. Before imposing such a surcharge, Austin will give Rollingwood written notice of any such failure, specifying in detail the alleged non-compliance. Rollingwood will have 90 days for the date of the notice to cure the failure. In the event Austin or Rollingwood do not agree on the satisfaction of any of the terms of this Section, either party may request mandatory mediation to resolve the conflict.

ARTICLE IV. WATER RATES, CHARGES AND BILLING

4.01. Wholesale Water Rates. Rollingwood agrees to make payments to Austin for all water delivered to Rollingwood under this agreement in accordance with the wholesale water rate established and amended from time to time by the Austin City Council for Rollingwood's customer class. The parties agreed billing and payments procedures are below in Section 4.05 and 4.06.

4.02. Rollingwood Water Rates and Charges. During the term of this agreement, Rollingwood shall fix and collect rates and charges for retail water service to its customers that are, in the opinion of the Rollingwood City Council, sufficient, together with any other revenues available to Rollingwood, to produce the amount necessary to operate, repair, and maintain the Rollingwood System, and to pay the cost of wholesale water service from Austin under this agreement.

Rollingwood shall be solely responsible for ensuring that its retail rates and charges are determined and collected in accordance with applicable law.

4.03. Customer Connection Fees. Rollingwood shall be solely responsible for the proper exercise of its governmental power to assess and collect fees, rates, taxes or other charges and for ensuring that the assessment and collection of the same is in compliance with applicable law.

4.04. Utility Service Regulations Applicable. Austin shall deliver wholesale water and charge Rollingwood in accordance with the terms of this Agreement. Rollingwood shall make payments to Austin for wholesale water delivered hereunder in accordance with Austin's Utility Service Regulations, as amended from time to time by Austin Council and the terms of this Agreement.

4.05. Billing and Payment. Austin shall send a bill to Rollingwood once per month setting forth the quantity of water delivered to Rollingwood as determined by Austin's periodic readings of the master meter(s) installed at the agreed points of delivery. Each bill shall include a due date and the total amount owed to Austin based on the metered quantity of wholesale water delivered multiplied by Austin's wholesale water rate for Rollingwood's customer class as amended from time to time by the Austin City Council. Rollingwood shall pay the total amount owed to Austin by the due date on each bill for wholesale water service. If Rollingwood in good faith questions the amount of the bill, Rollingwood shall follow the procedures therefore established in the City of Austin Utility Customer Service Regulations in Chapter 18-4 of the 1999 Austin City Code, as adopted by Austin. In the event of a conflict between this Agreement and the terms of Austin's Utility Service Regulations, the provisions of this Agreement shall prevail.

Rollingwood agrees to make timely payments to Austin for wholesale water service. Payments shall be considered past due 30 days after the due date of each bill for wholesale water service. Austin may apply a late charge on past due payments in accordance with its policies and ordinances applicable to other customers of Austin.

4.06. Effect of Default for Non-Payment. With respect to monthly billings, if Austin has not received payment from Rollingwood by the due date, the bill shall be considered delinquent, unless contested in good faith. In such event, Austin shall notify Rollingwood of such delinquency in writing, if Rollingwood fails to make payment of the delinquent billing within 30 calendar days from the due date, then Austin may, at its discretion, temporarily terminate service to Rollingwood until payment is made, subject to Rollingwood's right of continuity of service during a good faith appeal or a disputed bill as provided by applicable state laws and regulations and Austin's Utility Service Regulations, Chapter 18-4 of the 1999 Austin City Code, as adopted by Austin.

4.07. Penalty for Exceeding Flow Limits. In the event Rollingwood's monthly average of 1.0 million gallons per day (MGD) is ever exceeded, without the assignment of sufficient raw water supply to Austin, Rollingwood agrees to pay a penalty of \$5,000 per month for each month of exceedance of the monthly average under this agreement. Within 30 days of an exceedance of the monthly average, without the assignment of a sufficient raw supply to Austin, Rollingwood must escrow the sum of \$5,000 with Austin, and retain an engineer to prepare a report explaining the reasons for the exceedance of the monthly average, and within 60 days of the exceedance of the monthly average under this agreement, without the assignment of a sufficient raw water supply to

Austin, present the engineer's report and proposed solution to Austin. Within 120 days of the exceedance of the monthly average, without the assignment of a sufficient raw water supply to Austin, Rollingwood must take appropriate action, as detailed in the engineer's report. If Rollingwood either completes the curative action within 120 days or, if the parties agree that the curative action cannot be completed within 120 days, commences the curative action within 120 days and thereafter diligently pursue the curative action to completion, Austin will return the \$5,000 escrow deposited with Austin. If Rollingwood fails to act within 120 days as required by this section, then the \$5,000 escrow will be retained by Austin as an additional penalty for Rollingwood's violation of the monthly average limit contained in this Agreement. Based on the engineer's report and following a written request by Austin, Rollingwood will take immediate corrective action to reduce the exceedance of the monthly average under this agreement. The return or forfeiture of the \$5,000 escrow amount shall not exempt Rollingwood from the requirement of escrowing another \$5,000 with Austin should any subsequent exceedances of the monthly average occur.

4.08. Obligation of Rollingwood. The parties agree that Rollingwood's obligation under this agreement to make payments to Austin for water service in any fiscal year are a current expense for that fiscal year payable solely from the revenues of Rollingwood's Water System for that fiscal year. The obligation of Rollingwood to make payments to Austin does not constitute a general obligation or indebtedness of Rollingwood for which Rollingwood is obligated to levy or pledge any form of taxation.

ARTICLE V. MASTER METERS

5.01. Master Meters Required. Water consumed by Rollingwood shall be measured by master water meters of a design, size, location and configuration approved by the Director and Rollingwood. The parties agree that the existing master water meters located at the points of delivery in **Exhibit A** shall be deemed approved under this Section upon the effective date of this agreement.

5.02. Master Meter Installations. A master meter (s) and related facilities, including a meter loop, a meter house or pit and appurtenances required for properly measuring the quantity of water delivered to Rollingwood shall be installed at each agreed new point of delivery of wholesale water to Rollingwood. Rollingwood, at its own expense, shall install and provide the meter loop, and the meter house or pit and appurtenances unless such expense is related to Austin's desire to change the point of delivery in which event Austin shall bear such expense. Austin shall provide and install the master meter(s) and the meter(s) shall be the property of Austin for all purposes hereunder. In the event that Rollingwood requests a change in the agreed points of delivery, Rollingwood shall bear the expense of providing and installing the meter. In the event Austin requests an addition or change in the points of delivery, Austin shall bear the expense of providing and installing the meter. Austin shall operate and maintain the master meter(s) and related equipment and appurtenances and shall calibrate the metering equipment annually and more frequently upon request by Rollingwood provided, however, that the additional cost of calibrating the metering equipment shall be directly borne by Rollingwood if requested more frequently than once every twelve (12) months. Any meter registering within AWWA (American Water Works Association) standards for that type and size of meter shall be deemed to be accurate. Unless otherwise agreed in writing, if any meter fails to

register accurately for any period, City's charge for the amount of water furnished during such period shall be determined in accordance with Austin's Utility Service Regulations as in effect on the effective date of this Agreement. Austin shall read the metering equipment at least once for each monthly billing cycle.

ARTICLE VI. CONSTRUCTION OF FACILITIES

6.01. Construction by Rollingwood. Unless otherwise agreed in writing, Rollingwood shall be solely responsible for design, engineering, financing, construction, installation, inspection, operation, maintenance, repair and replacement of all Rollingwood capital facilities for the transmission and delivery of water within the wholesale water service area in this agreement.

6.02. Reselling of Water. Rollingwood shall not permit the resale of potable water provided by Austin under this agreement.

6.03. Approval of Plans and Specifications. All Metering Facilities shall be constructed or installed to City of Austin Standard Specifications and in accordance with plans and specifications approved by Austin, the Commission, the Texas Department of Health and any other agency having jurisdiction thereof.

All plans and specifications for Metering Facilities to be constructed by Rollingwood shall be subject to review and approval of the Director prior to commencement of construction which approval will not be unreasonably withheld or delayed. The Director will review and approve or disapprove any plans submitted under this subsection within 30 days of submittal. Upon request by the Director, Rollingwood shall timely submit all documents that are needed for the review and approval of plans and specifications. If any plans are not approved, the Director will provide written comments to Rollingwood specifying in detail the changes that will be required for approval of the plans and specifications. Rollingwood agrees not to advertise for bids until approval from the Director has been secured with respect to the plans and specifications.

If after approval of the plans and specifications for particular Metering Facilities by Austin, Rollingwood fails to enter a construction contract for those facilities within two years, Rollingwood must resubmit the plans and specifications for review and approval by the Director to assure their conformity with Austin's then current specifications, current laws, ordinances, and regulations. If such plans and specifications do not conform to the then existing standards, then, upon the request of the Director, Rollingwood agrees to revise the plans and specifications to meet Austin's standards before commencement of construction.

6.04. Construction Responsibilities. Unless otherwise agreed in writing, it is understood and acknowledged that Rollingwood is responsible for the design, engineering, financing, construction, inspection and ownership of all Rollingwood Water Facilities.

6.05. Inspection by City. Austin may, but is not obligated to, inspect all phases of the construction and installation of Metering Facility and may charge City inspection fees for the

inspections of the Metering Facility. Inspection fees for the Metering Facility shall be determined in accordance with applicable City ordinances as such ordinances may be amended from time to time. Any Metering Facility constructed by Rollingwood will be dedicated to Austin for ownership, operation, and maintenance.

6.06. Notification of Commencement of Construction. After all required approvals for construction of the Metering Facility are obtained but prior to commencement of construction, Rollingwood shall provide written notice to the Director of the date on which construction of the facilities is scheduled to commence to allow Austin to assign an inspector.

6.07. As-Built or Record Drawings Upon Completion of Construction. Following completion of construction of Rollingwood Water Facilities and the Metering Facility or any portion thereof, Rollingwood shall provide, at Rollingwood's expense, to the Director as-built drawings or record drawings of each such completed project within 30 days of Rollingwood receiving them. Rollingwood will not be required to create new as-built or record drawings for water and metering facilities that were constructed prior to the effective date of this Agreement but may be required to provide other existing records or information concerning the construction of those facilities.

6.08. Required Rights-of-Way. Rollingwood shall be responsible for obtaining any easements or rights-of-way necessary for the construction of the Metering Facility or for construction of Austin Water Facilities within the wholesale water service area in this agreement. Austin shall be responsible for obtaining any easements or rights-of-way necessary for the construction of Austin Water Facilities outside of the wholesale water service area in this agreement. The form and content of easements for any Metering Facility to be dedicated to Austin under this Agreement shall be subject to review and approval by the Director and the City Attorney of Austin or his designee before final acceptance of such facilities by Austin, which approval will not be unreasonably withheld or delayed.

6.09. Right of Entry. During the term of this Agreement, Austin shall have the right of entry and access at all times to facilities comprising or connected to Rollingwood's Water System for any purpose related to providing wholesale water service hereunder or activities preparatory or incident hereto, to inspect Rollingwood Water System and the Metering Facility, to investigate the source of operational or maintenance problems or for preventative purposes intended to detect, minimize or avert operational or maintenance problems.

6.10. Operation and Maintenance. Austin shall be responsible for operation and maintenance of all Austin Water System and the Metering Facility constructed for the purpose of transporting water to Rollingwood or its customers. Unless otherwise agreed in writing, Rollingwood shall be responsible and totally liable for operation, maintenance, and leakage of water of all Rollingwood Water Facilities constructed for transportation and delivery of water to its retail customers whether within or outside Rollingwood from the City's master meters.

6.11. Option to Participate in Oversizing. Notwithstanding the foregoing, Rollingwood shall provide Austin with at least three (3) months notice of Rollingwood's intent to construct or expand its Rollingwood Water Facilities and, within such period, Austin shall have the option to request the oversizing of same for the benefit of other customers of Austin's regional water system.

6.12. Oversizing Costs. In the event that Austin elects to request and Rollingwood agrees to proceed with the requested oversizing of Rollingwood Water Facilities, Austin and Rollingwood shall, by separate written agreement approved by the respective governing bodies of each party and executed prior to the expenditure of funds therefore, provide for the design, construction, inspection, operation and maintenance, ownership and use of such oversized capital facilities in addition to such other and further matters appertaining thereto as may be of mutual interest. In no event shall Austin's right to ownership and use of the oversized facilities be less than the oversized capacity for which Austin is providing funding as determined by the Director.

ARTICLE VII. SERVICE AREA AND LIMITATIONS ON SERVICE

7.01. Limitation of Service Area. Rollingwood acknowledges that, as the provider of water service to other properties in this region, Austin must retain the ability to plan, fund and operate Austin Water Facilities needed to serve not only Rollingwood but all other customers of Austin's water system and that the expansion of customer service areas by any customer without the consent of Austin detrimentally affects the capability of Austin to plan, fund and operate its Water System for the benefit of all Austin water customers. Accordingly, the parties agree to the following:

(a) This agreement is for a specific level of wholesale water service for the wholesale service area. Rollingwood may not provide service outside the wholesale water service area without the prior approval of the Austin City Council .

(b) Austin's City Council reserves the right to deny for any reason any or all requests by Rollingwood to expand the level of the wholesale water service under this Agreement or to serve outside the wholesale water service area .

(c) If Rollingwood authorizes and provides water service outside the wholesale water service area, without the approval of Austin, as reflected by an amendment to the 2000 Agreement duly approved by the governing bodies of Austin and Rollingwood, Austin may terminate this agreement, or require Rollingwood to terminate service to the land outside the wholesale water service area.

(d) Rollingwood may not connect any customer that Rollingwood knows provides water service directly or indirectly to another person or entity outside the wholesale water service area. Rollingwood will immediately terminate the service of any such customer once it discovers any such connection.

7.02. Consideration for Wholesale Water Service. Rollingwood acknowledges that Austin has entered into this agreement based in part on Rollingwood's agreement to limit its water service to the wholesale water service area in this agreement, limit its monthly average volume of water usage to 1.0 MGD, and adopt and enforce ordinances and a water conservation program that meet or exceed the requirements of Austin and the TNRCC.

7.03. No Delegation of Governmental Authority. The limitations stated herein shall not be construed as a delegation by Rollingwood to Austin of any governmental authority or power but rather shall be construed as a contractual requirement for consent by Austin to the enlargement of Austin's required performance hereunder and a condition precedent to further performance by Austin hereunder.

7.04. Requests for Service Outside Rollingwood. With respect to all land for which service outside Rollingwood and its extraterritorial jurisdiction is formally requested, Rollingwood shall require the petitioner to submit a land use plan covering the land for which service outside Rollingwood and its extraterritorial jurisdiction is requested together with a statement of the engineering requirements for such property at the time of such petition for approval. Rollingwood covenants and agrees to forward to the Director of Austin's Water and Wastewater Utility a true copy of any written or other formal request for service outside of Rollingwood and its extraterritorial jurisdiction within ten (10) business days of receipt thereof by Rollingwood. Upon the receipt thereof, Austin will promptly initiate all reviews thereof required by applicable Austin ordinances, as amended from time to time. Requests for approval of service outside of Rollingwood shall be subject to review and approval by the Austin City Council, Director of Planning and Development, and the Director of Austin's Water and Wastewater Utility.

7.05 Reciprocal Service Covenant. Austin and Rollingwood agree that, upon the request of the other, temporary water service will be provided to retail customers along or adjacent to the corporate limits of the requesting entity until the requesting entity is able to construct its lines and mains necessary to service such customers provided that:

- (a) the non-requesting entity has lines and mains within a reasonable distance and is capable of providing such retail service;
- (b) the non-requesting entity agrees to provide such retail service on a temporary basis;
- (c) provision of such retail service will not result in a need for substantial construction or diminution in retail service to its own customers; and
- (d) the non-requesting entity providing temporary retail service may place such limitations on the level and geographic scope of such temporary retail service as is deemed in the best interest of such non-requesting entity;
- (e) the customer receiving such retail service agrees to accept the same from the non-requesting entity and pay applicable fees, costs and charges necessary to extend such temporary retail service;
- (f) provision of such temporary retail service does not violate applicable law, the provisions of any agreement respecting the provision of utility service to the area or the provisions of any certificate of convenience and public necessity (CCN) respecting utility service area boundaries.

**ARTICLE VIII.
TERM AND RENEWALS**

8.01. Term of Agreement. This Agreement shall be effective from the date of due execution by the authorized representatives of Austin and Rollingwood and shall continue in effect for a period of thirty (30) years unless earlier terminated in accordance with the provisions hereof.

8.02. Termination. Without prejudice to any provision hereof setting forth terms for automatic expiration, this Agreement may be terminated by Austin in the event of default of any of the provisions in this agreement by Rollingwood by giving thirty six (36) months written notice to Rollingwood. In the event that Austin elects to terminate this Agreement by giving thirty six (36) months written notice, Rollingwood shall exercise reasonable diligence to timely secure an alternative supply of potable water prior to the effective date of such termination. In the event of termination hereunder for any reason, Austin shall not be responsible for any costs and expenses of Rollingwood related, directly or indirectly, to securing alternative water service to Rollingwood.

8.03. Default. In the event that one party believes that the other party is in default of any of the provisions in this agreement, the non-defaulting party will make written demand to cure to the defaulting party and give the defaulting party up to 90 days to cure the default or, if the curative action cannot reasonably be completed within 90 days, the defaulting party will commence the curative action within 90 days and thereafter diligently pursue the curative action to completion. This period must pass before the non-defaulting party may initiate any remedies available to the non-defaulting party due to such default. The non-defaulting party shall mitigate direct or consequential damages arising from any default to the extent reasonably possible under the circumstances. The parties agree that they will use their best efforts to resolve any disputes and may engage in non-binding arbitration or other alternative dispute resolution methods as recommended by the laws of the State of Texas before initiating any lawsuit to enforce their rights under this agreement. Nothing in this agreement shall be construed to limit either parties' right to recover damages or to seek other appropriate curative remedies if a breach of contract action is filed by a non-defaulting party to this agreement.

8.04. Changes in Law Affecting the Rights of Other Party. Austin may terminate this Agreement on thirty (30) days written notice to Rollingwood if, during the tenure of this Agreement, Rollingwood directly sponsors, requests, lobbies for, or secures the adoption of state or federal legislation that is primarily designed to impair, undermine, restrict, eliminate, or otherwise adversely affect the rights of Austin under this Agreement. Rollingwood may terminate this Agreement on thirty (30) days written notice to Austin if, during the tenure of this Agreement, Austin directly sponsors, requests, lobbies for, or secures the adoption of state or federal legislation that is primarily designed to impair, undermine, restrict, eliminate, or otherwise adversely affect the rights of Rollingwood under this Agreement.

Notwithstanding the above, the tender of comments or analyses with regard to proposed legislation or rules of a government agency affecting this Agreement shall not give rise to an ability to terminate this Agreement pursuant to this Section.

In the event that Rollingwood secures adoption of legislation modifying or declaring this Section unlawful for any reason, this Agreement will terminate and expire automatically on the day prior to the effective date of such legislation.

8.05. Renewal. This Agreement may be renewed or extended by mutual agreement of the parties in writing for such additional periods as may be approved by the governing bodies of Rollingwood and Austin. No continuation of water service obligation is expressed or implied by Austin to Rollingwood beyond the term of this agreement.

ARTICLE IX. PERFORMANCE AND FORCE MAJEURE

9.01. Effect of Force Majeure. In the event that either party is rendered unable by force majeure to carry out any of its obligations under this Agreement, whether in whole or in part, then the obligations of that party, to the extent affected by the force majeure, shall be suspended during the continuance of the inability provided, however, that due diligence is exercised to resume performance at the earliest practicable time. As soon as reasonably possible after the occurrence of the force majeure relied upon to suspend performance, the party whose contractual obligations are affected thereby shall give notice and full particulars of the force majeure to the other party. The cause, as far as possible, shall be remedied with all reasonable diligence. The term "force majeure" includes acts of God, strikes, lockouts or other industrial disturbances, criminal conduct or sabotage, acts of the public enemy, orders of the government of the United States or the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraints of government and civil disturbances, explosions, breakage, or accidents to equipment, pipelines, or canals, partial or complete failure of water supply, and any other inability of either party, whether similar to those enumerated or otherwise, that are not within the control of the party claiming their ability and that could not have been avoided by the exercise of due diligence. It is understood and agreed that the settlement of strikes, lockouts and other industrial or labor disturbances shall be entirely within the discretion of the party having the difficulty and that the requirement that any force majeure be remedied with all reasonable dispatch shall not require the settlement of strikes, lockouts or other industrial or labor disturbances by acceding to the demands of the opposing party if the settlement is unfavorable to it in the judgment of the party having the difficulty. Force majeure shall relieve Austin from liability to Rollingwood or any water customer of Rollingwood for failure to provide water service due to an inability covered by this Article. Force majeure shall not relieve Rollingwood of its obligation to make payment to Austin for water service rendered as provided in this Agreement.

ARTICLE X. GENERAL PROVISIONS

10.01. Notices. Any notice required or permitted to be delivered under this Agreement shall be forwarded via hand-delivery or the United States Postal Service, postage prepaid, to the addresses shown below:

City of Austin
P.O. Box 1088
Austin, Texas 78767-8828
Attn: Director
Water and Wastewater Utility

City of Rollingwood
403 Nixon Drive
Rollingwood, Texas 78746
Attn: Mayor

Each party shall forward to the other within twenty four (24) hours of the filing thereof in the Commission or other court or agency of competent jurisdiction a true copy of any petition, application or other instrument affecting this Agreement, whether directly or indirectly.

10.02. Address Change Procedure. The addresses of the parties shall, until changed as hereinafter provided, be as shown above. The parties shall have the right at any time to change their respective addresses by giving written notice of same to the other party.

10.03. Interlocal Cooperation. Austin and Rollingwood shall cooperate with each other at all times so as to promote the efficient performance of the utility services provided to Rollingwood hereunder. Austin and Rollingwood agree to use a third-party mediation service for any unresolved disputes prior to seeking legal remedies through lawsuits or court actions. This requirement does not preclude the actions available to both parties specifically identified in this contract.

10.04. Provision of Data, Documents. Rollingwood agrees to timely provide to Austin at Rollingwood's expense all requested data, records, plans and specifications, computer tapes, or other documents or information necessary or incidental to the provision of potable water service to Rollingwood under this agreement. Austin agrees to timely provide to Rollingwood at Austin's expense all requested data, records, plans and specifications, computer tapes, or other documents or information necessary or incidental to the provision of potable water service to Rollingwood.

10.05. Provision of Further Documents. Rollingwood and Austin shall execute and deliver such other and further requested legal documents or instruments and perform such other and further acts as are reasonably necessary to effectuate the purposes and intent of this Agreement.

10.06. Severability. The provisions of this Agreement are severable, and if any word, phrase, clause, sentence, paragraph, section, or other part of this Agreement or the application thereof to any person or circumstances shall ever be held by any court of competent jurisdiction to be invalid or unconstitutional for any reason, the remainder of this Agreement and the application of such word, phrase, clause, sentence, paragraph, section, or other part of this Agreement to other persons or circumstances shall not be affected thereby and this Agreement shall be construed as if such invalid or unconstitutional portion had never been contained herein.

10.07. Entire Agreement. This Agreement, including any exhibits attached hereto and made a part hereof by reference for all purposes, constitutes the entire agreement between the parties relative to the subject matter of this Agreement and supersedes all prior or contemporaneous agreements, representations, covenants or warranties, whether oral or in writing, respecting the subject matter hereof.

10.08. Previous Contract. This agreement by the parties supercedes that certain agreement entitled Water Contract, "1968 Water Contract", pursuant to which Austin provided a potable water supply to Rollingwood for its distribution system. Upon the execution of this agreement, the 1968 Water Contract and any and all other previous water service contracts between Austin and Rollingwood, shall be null, void and of no further legal force and effect.

10.09. Compliance with Rules. Rollingwood agrees to file a copy of this agreement with the Executive Director of the Texas Natural Resource Conservation Commission, P.O. Box 13087, Capitol Station, Austin, Texas 78711, it being fully recognized by the parties hereunder that the effectiveness of this contract is dependent upon and subject to compliance with all valid rules, regulations, and applicable laws of the United States of America, the State of Texas, Austin, Rollingwood, or any other governmental body or agency having lawful jurisdiction or any authorized representative or agency of any of them.

10.10. Water Line Breaks. Rollingwood shall notify Austin of any water line breaks inside the wholesale water service area in this agreement. Rollingwood is responsible for timely providing any required notice to Federal, State, and / or local government officials regarding water line breaks.

10.11. Liability. Rollingwood agrees to hold Austin harmless from any and all liability or claims or demands whatsoever for personal injury, property damage, damages to Rollingwood's Water System, or other loss, penalty, or expense arising directly or indirectly from the provision of water service under this agreement, to which Austin may be subjected to by reason of any injury to any person or damage to any property resulting or in any way connected with any and all actions and activities (or failure to act) of Rollingwood under this Agreement. Austin agrees to hold Rollingwood harmless from any and all liability or claims or demands whatsoever for personal injury, property damage, damages to Austin's Water System, or other loss, penalty, or expense arising directly or indirectly from the provision of water service under this agreement, to which Rollingwood may be subjected to by reason of any injury to any person or damage to any property resulting or in any way connected with any and all actions and activities (or failure to act) of Austin under this Agreement. Nothing in this section shall be construed to limit either parties' right to recover damages or to seek other appropriate curative remedies if a breach of contract action is filed by a non-defaulting party to this agreement.

10.12. Amendment. No amendment of this Agreement shall be effective unless and until it is duly approved by the governing bodies of each party and reduced to a writing signed by the authorized representatives of Austin and Rollingwood.

10.13. Independent Contractor. Austin shall have the status of an independent contractor hereunder and shall be solely responsible for the proper direction of its employees hereunder and Austin's employees shall not be considered employees or borrowed servants of Rollingwood for any reason.

10.14. No Third Party Beneficiary. This Agreement shall be construed as an interlocal contract respecting the performance of governmental services and nothing herein shall be construed to confer any right, privilege or benefit on any person or entity not a party hereto or otherwise creates any vested right or third party beneficiary relationship.

10.15. Governing Law. This Agreement shall be construed under the laws of the State of Texas and all obligations of the parties are deemed performable in Travis County, Texas.

10.16. Venue. Venue for any suit arising under this Agreement shall be in Travis County.

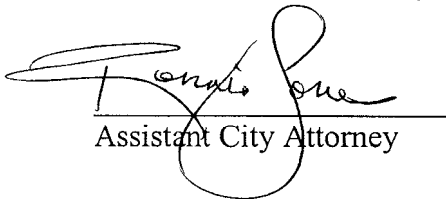
10.17. Assignment. Neither party may assign its rights and obligations hereunder without the prior written consent of the other.

10.18. Duplicate Originals. This Agreement may be executed in duplicate originals each of equal dignity.

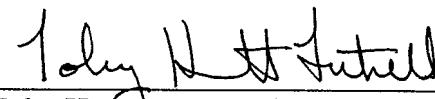
10.19. Effective Date. This Agreement shall become effective on the date of execution by the authorized representatives of Austin and Rollingwood.

IN WITNESS WHEREOF, the authorized representatives of Austin and Rollingwood have executed this Agreement as of the date(s) set forth below.

APPROVED AS TO FORM:

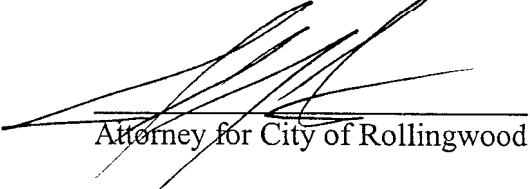

Assistant City Attorney

CITY OF AUSTIN:

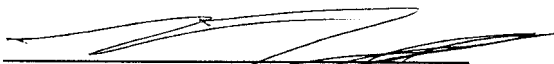
By: 
Toby Harnett Futrell
Assistant City Manager

Date: 2/3/00


APPROVED AS TO FORM:


Attorney for City of Rollingwood

CITY OF ROLLINGWOOD:

By: 
Thom Farrell, Mayor
City of Rollingwood

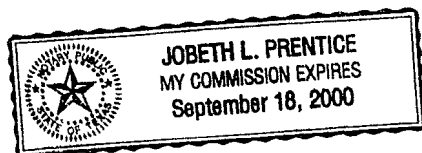
Date: 1/31/2000

By: 
Deets Justice, Alderman
City of Rollingwood

Date: 1/31/2000

THE STATE OF TEXAS)
)
COUNTY OF TRAVIS)

THIS INSTRUMENT is acknowledged before me on this 3rd day of February, 2000, by Toby Hammett Futrell, Assistant City Manager of Austin, Texas, a municipal corporation, on behalf of said municipal corporation.



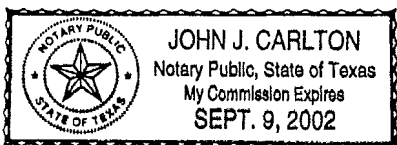
Jobeth L. Prentice
Notary Public, State of Texas

Printed/Typed Name of Notary

My Commission Expires: _____

THE STATE OF TEXAS)
)
COUNTY OF TRAVIS)

THIS INSTRUMENT was acknowledged before me on this 31st day of January, 2000 by Thom Farrell, Mayor of the City of Rollingwood, a municipal corporation, on behalf of said municipal corporation.



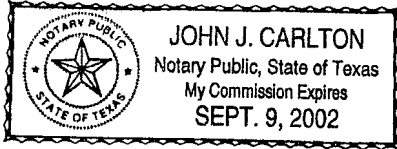
[Signature]
Notary Public, State of Texas


Printed/Typed Name of Notary

My Commission Expires: _____

THE STATE OF TEXAS)
)
COUNTY OF TRAVIS)

THIS INSTRUMENT was acknowledged before me on this 31st day of January, 2000 by Deets Justice, Alderman of the City of Rollingwood, a municipal corporation, on behalf of said municipal corporation.





Notary Public, State of Texas

Printed/Typed Name of Notary

My Commission Expires: _____

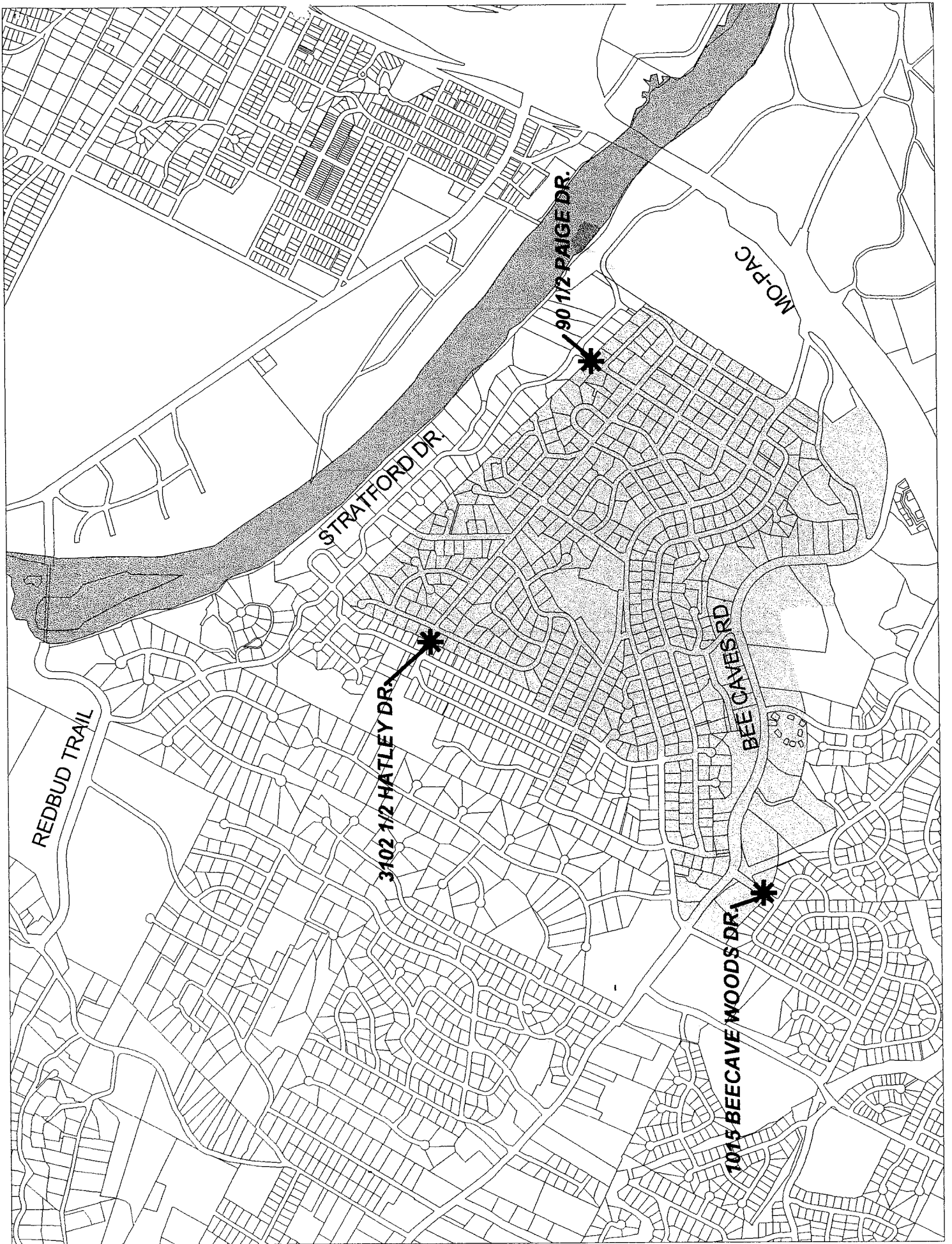


EXHIBIT A

Appendix B: 2000 Water Agreement First Amendment

**FIRST AMENDMENT TO AGREEMENT FOR WHOLESALE
WATER SERVICE BETWEEN THE CITY OF AUSTIN AND THE CITY OF
ROLLINGWOOD**

THE STATE OF TEXAS §

COUNTY OF TRAVIS §

This First Amendment to 2000 Agreement for Wholesale Water Service Between the City of Austin and the City of Rollingwood ("First Amendment") is entered into between the City of Austin, a Texas home rule municipality ("Austin") and the City of Rollingwood, a Texas general law municipality ("Rollingwood"), collectively "Parties," to modify certain rights and responsibilities of the Parties under a previous agreement for wholesale wastewater service.

RECITALS

A. Austin and Rollingwood previously entered into a 2000 Agreement for Wholesale Water Service Between the City of Austin, Texas and the City of Rollingwood, Texas ("2000 Water Contract") dated effective February 3, 2000, that is currently in full force and effect, setting forth certain terms and conditions under which Austin agreed to provide water service, on a wholesale basis, to Rollingwood for its distribution system serving retail connections within Rollingwood's corporate boundaries and extraterritorial jurisdiction.

B. Rollingwood and Austin now mutually desire to modify certain rights and responsibilities of the Parties under the 2000 Water Contract as hereinafter set forth;

AGREEMENT

NOW, THEREFORE, for good and valuable consideration, including the mutual agreements, covenants and conditions set forth in this First Amendment to the 2000 Water Contract, Austin and Rollingwood agree as follows:

1. A new section 2.09 is hereby incorporated into the 2000 Water Contract to read as follows:

2.09 Provision by Rollingwood of Source for Raw Water. After the expiration of four (4) years following the Effective Date of this First Amendment, Austin will reexamine its raw water supply and need for additional raw water and, at the option of the Director upon at least twelve (12) months written notice to Rollingwood ("Austin Notice Period"), may require Rollingwood to provide its own source of raw water for Austin to treat and transport to Rollingwood in lieu of and substitution for using Austin's own water rights or contract supply of raw water to treat and provide Water to Rollingwood pursuant to this Agreement.

After the expiration of four (4) years following the Effective Date of this First Amendment, Rollingwood may provide at least twelve (12) months written notice ("Rollingwood Notice Period") to the Director that Rollingwood desires to provide its own source of raw water for Austin to treat and transport to

Rollingwood in lieu of and substitution for Austin using its own water rights or contract supply of water to meet its obligations under this Agreement.

The alternative source of raw water to be obtained by Rollingwood must be surface water from the lower Colorado River located in Travis County, Texas, be accessible to Austin at a point or points of diversion reasonably approved by the Director and, if necessary, the Lower Colorado River Authority, to allow Austin to employ its existing raw water intake facilities for withdrawal of Rollingwood's raw water from the Colorado River without additional expense to Austin. Since Austin will be withdrawing raw water from the Colorado River on behalf of Rollingwood, terms and conditions relating to such raw water supply will be subject to review and approval by the Director in advance of the execution of any agreement between Rollingwood and any third party providing for the extraction of raw water from the Colorado River for the benefit of Rollingwood. The approval by the Director of such request from Rollingwood will not be unreasonably delayed or withheld.

If Rollingwood has not secured an alternative source of raw water on terms reasonably acceptable to Rollingwood and the Director prior to expiration of the Austin Notice Period or Rollingwood Notice Period, as applicable, Austin may terminate this Agreement upon thirty (30) days advance written notice to Rollingwood, whereupon this Agreement will automatically terminate and expire upon the expiration of such thirty (30) day period without further notice and will thereafter be of no further force or effect. In the event of termination of this Agreement pursuant to this Section 2.09, Rollingwood will be solely responsible for all costs associated with securing an alternative source of Water for the Wholesale Water Service Area. If Rollingwood has commenced and is proceeding in reasonable good faith to complete contractual negotiations to secure an alternative source of raw water within the Austin Notice Period or Rollingwood Notice Period, as applicable, but cannot reasonably complete such contractual agreement prior to the expiration of the applicable notice period, and, prior to the expiration of such notice period, Rollingwood makes written request for an extension of the time to obtain an alternative raw water source, as applicable, the Director agrees to extend the Austin Notice Period or Rollingwood Notice Period, as applicable, for a reasonable period, not to exceed one hundred eighty (180) days.

In the event that (a) Rollingwood notifies Austin of its decision to provide its source of raw water for treatment and transportation pursuant to this Agreement and the City approves such request, or (ii) Austin requires Rollingwood to provide its own source of raw water for treatment and transportation by Austin pursuant to this Agreement, Austin will begin using the raw water supplied by or on behalf of Rollingwood in the fiscal year next succeeding the approval by the Director of Rollingwood's arrangements for such alternative raw water supply. In such an event, and prior to the commencement of such succeeding fiscal year, Austin agrees to recompute the then wholesale water rate for the provision of Water to Rollingwood in order to delete Austin's cost of raw water allocable to Rollingwood from the wholesale water rate applicable to Rollingwood.

2. **Defined Terms.** All terms delineated with initial capital letters in this First Amendment that are defined in the 2000 Water Contract have the same meanings in this First Amendment as in the 2000 Water Contract. Other terms have the meanings commonly ascribed to them.

3. **Effect of First Amendment.** Except as specifically provided in this First Amendment, the terms of the 2000 Water Contract continue to govern the rights and obligations of the parties, and all terms of the 2000 Water Contract, as modified by this First Amendment, remain in full force and effect. The 2000 Water Contract is incorporated herein by reference for all purposes. The Parties recognize that this First Amendment is a legally binding document and is enforceable under the laws of the State of Texas. In the event a dispute arises over the meaning or performance of this Agreement, the Parties agree that venue for any lawsuits shall be in Travis County, Texas. The prevailing Party in such a dispute shall be entitled to costs and attorney's fees, in addition to any damages or specific performance.

4. **Multiple Originals.** This First Amendment may be executed in multiple counterparts, each of which will constitute an original.

5. **Effective Date.** This First Amendment will be effective on the date the last party signs.

IN WITNESS WHEREOF, the authorized representatives of Austin and Rollingwood have executed this First Amendment, as authorized by the City Councils of Austin and Rollingwood, on the date(s) indicated below.

CITY OF AUSTIN

ok
jmv

By: _____

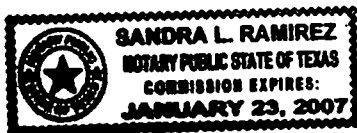
Jose E. Canales
Deputy City Manager

Date: 11-29-04

THE STATE OF TEXAS §

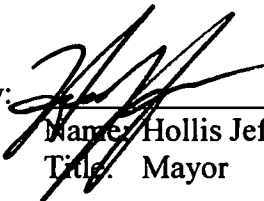
COUNTY OF TRAVIS §

THIS INSTRUMENT was acknowledged before me on this 29 day of November, 2004, by Jose E. Canales as Deputy City Manager of the City of Austin, Texas, a municipal corporation, on behalf of said municipal corporation.



Notary Public, State of Texas

CITY OF ROLLINGWOOD

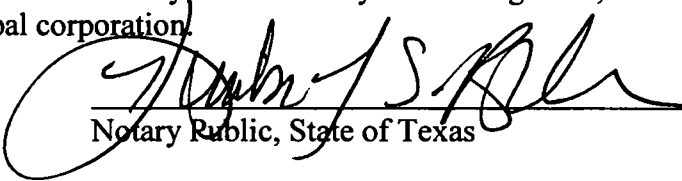
By: 
Name: Hollis Jefferies
Title: Mayor

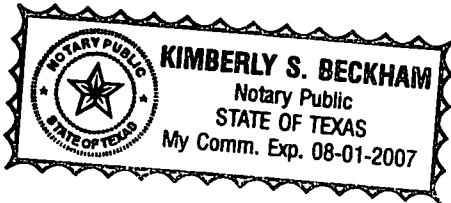
Date: 11/17/04

THE STATE OF TEXAS §

COUNTY OF TRAVIS §

November **THIS INSTRUMENT** was acknowledged before me on this 17th day of November 2004, by Hollis Jefferies as Mayor of the City of Rollingwood, a municipal corporation, on behalf of said municipal corporation.


Notary Public, State of Texas



Appendix C: Project Summary Sheets

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: A
Project Name: Hatley/Almarion PRV Replacement

Project Map



Problem Description

The water model results indicated low pressures along Hatley between Inwood Circle and Wallis Dr.

Proposed Improvements

To eliminate the low pressure areas, the existing PRV located at Hatley and Almarion that is out of service will be repaired. The PRVs at Hatley and Almarion and at Riley and Rollingwood will be set so that the lower pressure zone is fed from the high pressure zone rather than the Riley Master Meter and will increase pressures. The valve located between Ashworth Dr and Wallis Dr will be closed to move Ashworth Dr to the high pressure plane to address low pressure concerns.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	5,000
Construction:	\$	32,000
Other:		
Total:	\$	37,000
Conceptual Cost Range:		< \$100k
Estimated Construction Duration:		1 Month

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: B
Project Name: Vance & Vale St Water Improvements

Problem Description

History of repeated main breaks on older 4" waterline. During most recent repair, the City found that this line is improperly bedded with insufficient cover above the pipe, and the PVC material does not meet industry standards for a water main.

Proposed Improvements

Upsizing undersized 4-inch pipe to typical 8-inch PVC. The limits of the proposed pipe are along Vance Rd and Vale St between Riley Rd to Rollingwood Dr, and continuing along Rollingwood Dr to Timberline Dr. Additionally, abandoning the backyard easement 2-inch pipeline that is located between Farley Tr and Riley Rd. This line has been confirmed active by the City.

CIP Priority

High

Project Costs

Engineering & Survey:	\$ 167,000
Construction:	\$ 1,108,000
Other:	
Total:	\$ 1,275,000
Conceptual Cost Range:	\$1M - \$1.5M
Estimated Construction Duration:	6 Months

Assumptions

- It is assumed that the City wishes to abandon the backyard easement water mains.

Project Map



**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: C
Project Name: Inwood Rd Interconnect

Project Map

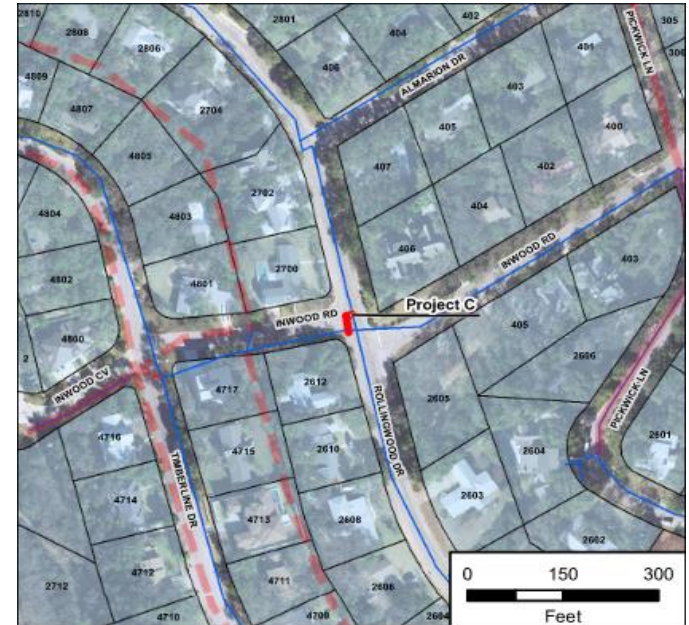


Problem Description

Two of the main waterlines for the City cross at the Inwood Rd and Rollingwood Rd intersection, however they were never tied in. Additionally, the existing system showed fire flow concerns along Inwood Rd.

Proposed Improvements

Connecting the Existing 8-inch water main within Rollingwood Dr to the existing 6-inch water main within Inwood Rd to provide a better connected and looped system, thus reducing headlosses during fire flow events.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	9,000
Construction:	\$	56,000
Other:		
Total:	\$	65,000
Conceptual Cost Range:		< \$100k
Estimated Construction Duration:		2 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: D
Project Name: Pickwick Dr Fire Flow Improvements

Project Map & Photo

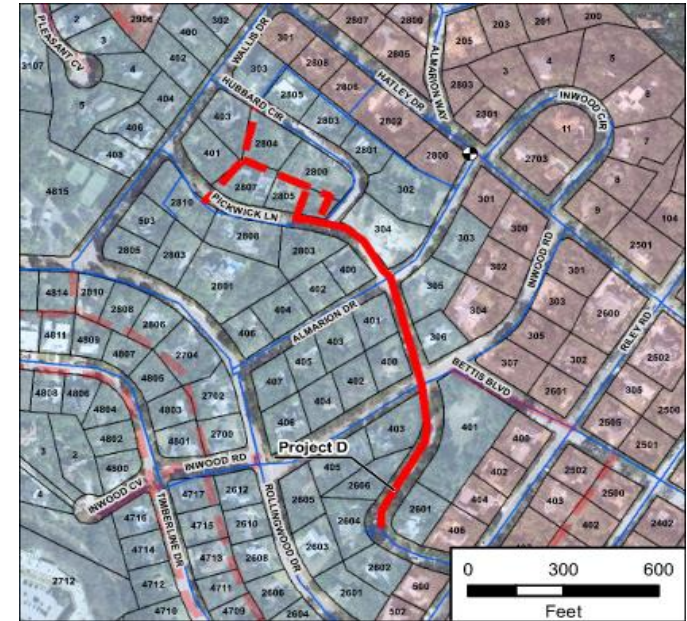


Problem Description

The existing water system model results show that from Pickwick Ln from Wallis Dr to Riley Rd there is not enough flow to satisfy fire flow constraints.

Proposed Improvements

Install 8-inch PVC pipe from Riley Rd to the existing 6-inch PVC at Hubbard Circle. This will include new pipe between Almarion Dr and Inwood Rd. During construction, the backyard easement water mains will be abandoned and the services relocated to water mains located within the roadways,



CIP Priority

High

Project Costs

Engineering & Survey:	\$	94,000
Construction:	\$	624,000
Other:		
Total:	\$	718,000
Conceptual Cost Range:	\$500k - \$750k	
Estimated Construction Duration:	12 Months	

Assumptions

- It is assumed that the City wishes to abandon the backyard easement water mains.

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: E
Project Name: Bettis Blvd Fire Improvements

Project Map



Problem Description

There is not enough flow at the pressure plane boundary due to the 4-inch pipe between Hatley and Bettis Blvd.

Proposed Improvements

The proposed installation of 8-inch PVC along Bettis Blvd between Riley Rd and Farley Tr will provide a better connected and looped water system. This will provide additional flow for fire flow events throughout the lower pressure plane system.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	25,000
Construction:	\$	164,000
Other:		
Total:	\$	189,000
Conceptual Cost Range:		\$150k - \$200k
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: F
Project Name: Park Hills Dr/Laura Ln Fire Improvements

Project Map



Problem Description

The model results show a significant lack of fire flow coverage for the northern neighborhood of the City.

Proposed Improvements

Upsizing the existing 6-inch mains within Park Hill Dr and Laura Ln to an 8-inch PVC water main will provide the additional fire flow needs for the area.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	98,000
Construction:	\$	653,000
Other:		
Total:	\$	751,000
Conceptual Cost Range:		\$750k - \$1M
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: G
Project Name: Gentry Dr Fire Improvements

Project Map



Problem Description

The water model results show that the two fire hydrants located along Gentry Dr between Ridgewood Rd and Brady Ln do not receive enough flow to satisfy a fire flow requirements

Proposed Improvements

Upsizing the existing 6-inch line with an 8-inch PVC line from Ridgewood Dr to the end of the Rollingwood water system will provide enough flow for the existing fire hydrants.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	31,000
Construction:	\$	201,000
Other:		
Total:	\$	232,000
Conceptual Cost Range:		\$200k - \$250k
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: H
Project Name: Inwood Cove Fire Improvements

Project Map



Problem Description

The water model results show that the small water main within the Inwood Cove cul-de-sac does not have enough flow to meet the fire flow design requirements.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	14,000
Construction:	\$	91,000
Other:		
Total:	\$	105,000
Conceptual Cost Range:		\$100k - \$150k
Estimated Construction Duration:		6 Months

Assumptions

- It is assumed that the City wishes to abandon the backyard easement water mains.

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: I
Project Name: Jeffrey Cove Fire Improvements

Project Map



Problem Description

The water model results show that the small water main within the Jeffrey Cove cul-de-sac does not have enough flow to meet the fire flow design requirements.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	14,000
Construction:	\$	91,000
Other:		
Total:	\$	105,000
Conceptual Cost Range:		\$100k - \$150k
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: J
Project Name: Pleasant Cove Fire Improvements

Project Map

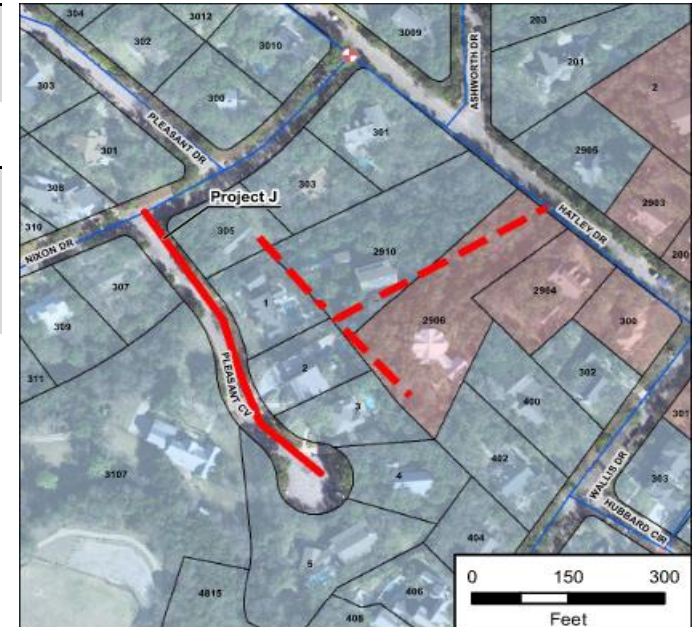


Problem Description

The water model results show that the small water main within the Pleasant Cove cul-de-sac does not have enough flow to meet the fire flow design requirements for the existing fire hydrant on the line.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements. Additionally, there are several backyard lines that are proposed to be abandoned and have the services relocated to the new mains.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	35,000
Construction:	\$	233,000
Other:		
Total:	\$	268,000
Conceptual Cost Range:		\$250k - \$500k
Estimated Construction Duration:		6 Months

Assumptions

- It is assumed that the City wishes to abandon the backyard easement water mains.

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: K
Project Name: S. Crest Dr Fire Improvements

Project Map



Problem Description

The water model results show that the small water main within the S. Crest Dr cul-de-sac does not have enough flow to meet the fire flow design requirements.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	22,000
Construction:	\$	145,000
Other:		
Total:	\$	167,000
Conceptual Cost Range:		\$150k - \$200k
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: L
Project Name: Westgate Circle Fire Improvements

Project Map



Problem Description

The water model results show that the small water main within the Westgate Circle cul-de-sac does not have enough flow to meet the fire flow design requirements.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	14,000
Construction:	\$	91,000
Other:		
Total:	\$	105,000
Conceptual Cost Range:		\$100k - \$150k
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: M
Project Name: Ewing Easement Main Fire Improvements

Project Map

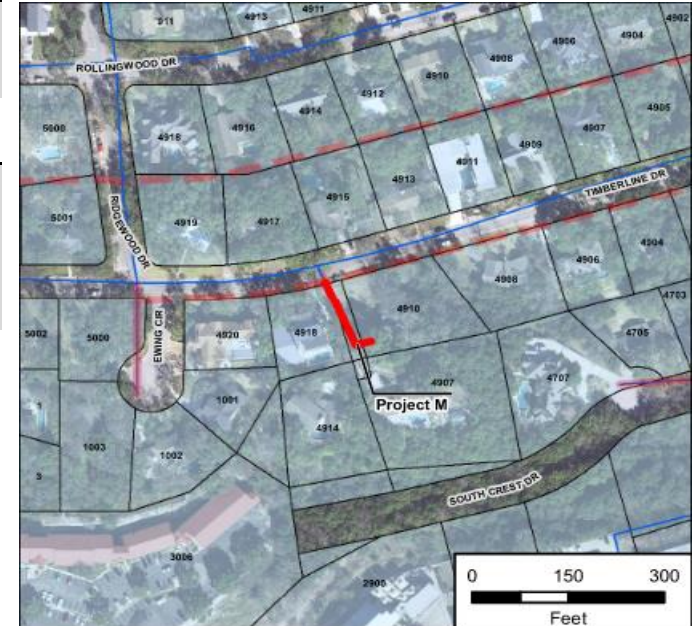


Problem Description

The water model results show that the small water main within the Ewing Easement does not have enough flow to meet the fire flow design requirements. There are currently two homes served off the line, and the homes are set away from the

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	11,000
Construction:	\$	73,000
Other:		
Total:	\$	84,000
Conceptual Cost Range:		< \$100k
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: N
Project Name: Timberline Ridge Fire Improvements

Project Map

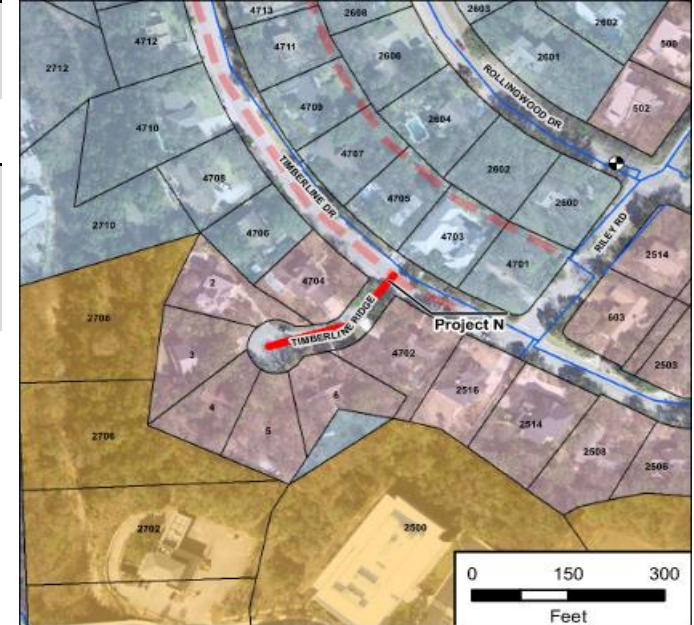


Problem Description

The water model results show that the small water main within the Timberline Ridge cul-de-sac does not have enough flow to meet the fire flow design requirements.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

High

Project Costs

Engineering & Survey:	\$	14,000
Construction:	\$	91,000
Other:		
Total:	\$	105,000
Conceptual Cost Range:		\$100k - \$150k
Estimated Construction Duration:		6 Months

Assumptions

CITY OF ROLLINGWOOD WATER IMPROVEMENTS PLAN COST SUMMARY



Project ID: O
Project Name: Abandonment Projects

Problem Description

The current existing water system utilizes a 6-inch water main located in a backyard easement between Timberline Rd and Rollingwood Dr. Additionally, there is an existing 4-inch water main located within Timberline Dr that is not necessary. The City has expressed a desire to abandon these lines and relocate the existing services.

Proposed Improvements

Abandon approximately 10,000 linear feet of existing water main and relocate existing services that are currently fed from the mains to existing water mains located within the roadways.

CIP Ranking

Low

Project Costs

Engineering & Survey:	\$ 65,000
Construction:	\$ 429,000
Other:	
Total:	\$ 494,000

Conceptual Cost Range: \$250k - \$500k

Estimated Construction Duration: 18 months

Project Map



Assumptions

- It is assumed that the City wishes to move forward with this project. This project is not required for functionality of the water system as a whole, but for operational ease.



**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: P
Project Name: Town Centre PRV

Project Map



Problem Description

The water model results indicated high pressures at the Town Centre.

Proposed Improvements

To eliminate high pressures at Town Centre, a new PRV is proposed to be installed on the 12-inch water main that is within Bee Cave Rd. The PRV will solely serve the Town Centre.



CIP Priority

Low

Project Costs

Engineering & Survey:	\$	15,000
Construction:	\$	97,000
Other:		
Total:	\$	112,000
Conceptual Cost Range:		\$100k - \$150k
Estimated Construction Duration:		2 Months

Assumptions

-It is assumed that the buildings at the Rollingwood Town Centre do not currently have individual PRV's on their water service. If the properties do have individual PRV's, this project is not required.

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: Q
Project Name: Brett Cove Fire Improvements

Project Map



Problem Description

The water model results show that the small water main within the Brett Cove cul-de-sac does not have enough flow to meet the fire flow design requirements.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

Low

Project Costs

Engineering & Survey:	\$	22,000
Construction:	\$	145,000
Other:		
Total:	\$	167,000
Conceptual Cost Range:		\$150k - \$200k
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: R
Project Name: Ewing Circle Fire Improvements

Project Map



Problem Description

The water model results show that the small water main within the Ewing Circle cul-de-sac does not have enough flow to meet the fire flow design requirements.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

Low

Project Costs

Engineering & Survey:	\$	14,000
Construction:	\$	91,000
Other:		
Total:	\$	105,000
Conceptual Cost Range:		\$100k - \$150k
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: S
Project Name: Michele Circle Fire Improvements

Project Map



Problem Description

The water model results show that the small water main within the Michele Circle cul-de-sac does not have enough flow to meet the fire flow design requirements.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

Low

Project Costs

Engineering & Survey:	\$	11,000
Construction:	\$	73,000
Other:		
Total:	\$	84,000
Conceptual Cost Range:		< \$100k
Estimated Construction Duration:		6 Months

Assumptions

**CITY OF ROLLINGWOOD
WATER IMPROVEMENTS PLAN
COST SUMMARY**



Project ID: T
Project Name: Kristy Dr Fire Improvements

Project Map

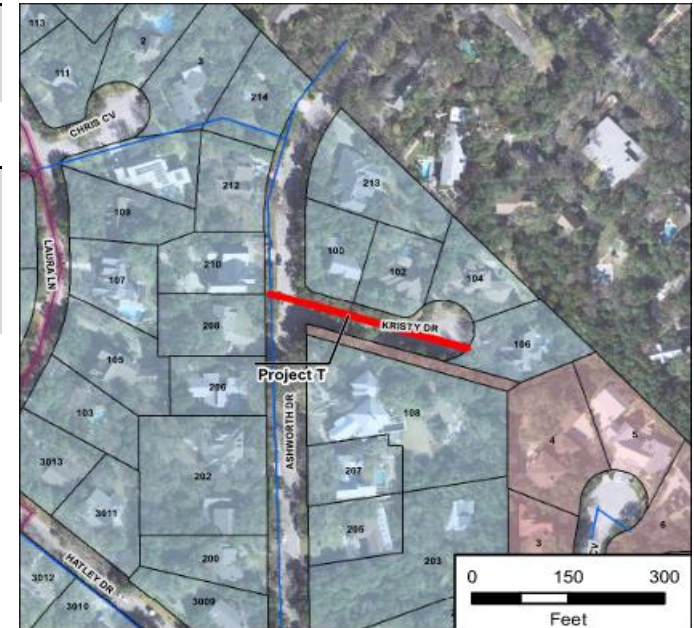


Problem Description

The water model results show that the small water main within the Kristy Dr cul-de-sac does not have enough flow to meet the fire flow design requirements.

Proposed Improvements

Upsizing the existing line with an 8-inch PVC line will provide enough flow to meet fire flow requirements.



CIP Priority

Low

Project Costs

Engineering & Survey:	\$	20,000
Construction:	\$	128,000
Other:		.
Total:	\$	148,000
Conceptual Cost Range:		\$100k - \$150k
Estimated Construction Duration:		6 Months

Assumptions

Appendix D: Project Cost Estimates

Proposed Water CIP
Project Cost Estimates

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-A	Hatley/Almarion PRV Replacement				
1	PRV REPAIR AND ADJUSTMENTS	EA	1	\$ 25,000	\$ 25,000
SUBTOTAL					\$ 25,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 2,000
CONTINGENCY (15%)					\$ 5,000
ENGINEERING (15%)					\$ 5,000
TOTAL					\$ 37,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-B	Vance & Vale St Water Improvements				
1	PIPELINE ABANDONMENT	LF	650	\$ 25	\$ 17,000
2	8" PVC PIPE, COMPLETE AND IN PLACE	LF	3000	\$ 300	\$ 900,000
SUBTOTAL					\$ 917,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 46,000
CONTINGENCY (15%)					\$ 145,000
ENGINEERING (15%)					\$ 167,000
TOTAL					\$ 1,275,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-C	Inwood Rd Interconnect				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	100	\$ 300	\$ 30,000
2	PIPELINE INTERCONNECT	EA	1	\$ 15,000	\$ 15,000
SUBTOTAL					\$ 45,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 3,000
CONTINGENCY (15%)					\$ 8,000
ENGINEERING (15%)					\$ 9,000
TOTAL					\$ 65,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-D	Pickwick Dr Fire Flow Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	1500	\$ 300	\$ 450,000
2	PIPELINE ABANDONMENT	LF	2100	\$ 25	\$ 53,000
3	SERVICE RELOCATES	EA	5	\$ 2,500	\$ 13,000
SUBTOTAL					\$ 516,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 26,000
CONTINGENCY (15%)					\$ 82,000
ENGINEERING (15%)					\$ 94,000
TOTAL					\$ 718,000

Proposed Water CIP
Project Cost Estimates

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-E	Bettis Blvd Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	450	\$ 300	\$ 135,000
SUBTOTAL					\$ 135,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 7,000
CONTINGENCY (15%)					\$ 22,000
ENGINEERING (15%)					\$ 25,000
TOTAL					\$ 189,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-F	Park Hills Dr/Laura Ln Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	1800	\$ 300	\$ 540,000
SUBTOTAL					\$ 540,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 27,000
CONTINGENCY (15%)					\$ 86,000
ENGINEERING (15%)					\$ 98,000
TOTAL					\$ 751,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-G	Gentry Dr Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	550	\$ 300	\$ 165,000
SUBTOTAL					\$ 165,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 9,000
CONTINGENCY (15%)					\$ 27,000
ENGINEERING (15%)					\$ 31,000
TOTAL					\$ 232,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-H	Inwood Cove Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	250	\$ 300	\$ 75,000
SUBTOTAL					\$ 75,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 4,000
CONTINGENCY (15%)					\$ 12,000
ENGINEERING (15%)					\$ 14,000
TOTAL					\$ 105,000

Proposed Water CIP
Project Cost Estimates

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-I	Jeffrey Cove Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	250	\$ 300	\$ 75,000
SUBTOTAL					\$ 75,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 4,000
CONTINGENCY (15%)					\$ 12,000
ENGINEERING (15%)					\$ 14,000
TOTAL					\$ 105,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-J	Pleasant Cove Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	550	\$ 300	\$ 165,000
2	PIPELINE ABANDONMENT	LF	750	\$ 25	\$ 19,000
3	SERVICE RELOCATES	EA	3	\$ 2,500	\$ 8,000
SUBTOTAL					\$ 192,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 10,000
CONTINGENCY (15%)					\$ 31,000
ENGINEERING (15%)					\$ 35,000
TOTAL					\$ 268,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-K	S. Crest Dr Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	400	\$ 300	\$ 120,000
SUBTOTAL					\$ 120,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 6,000
CONTINGENCY (15%)					\$ 19,000
ENGINEERING (15%)					\$ 22,000
TOTAL					\$ 167,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-L	Westgate Circle Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	250	\$ 300	\$ 75,000
SUBTOTAL					\$ 75,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 4,000
CONTINGENCY (15%)					\$ 12,000
ENGINEERING (15%)					\$ 14,000
TOTAL					\$ 105,000

Proposed Water CIP
Project Cost Estimates

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-M	Ewing Easement Main Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	200	\$ 300	\$ 60,000
SUBTOTAL					\$ 60,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 3,000
CONTINGENCY (15%)					\$ 10,000
ENGINEERING (15%)					\$ 11,000
TOTAL					\$ 84,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-N	Timberline Ridge Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	250	\$ 300	\$ 75,000
SUBTOTAL					\$ 75,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 4,000
CONTINGENCY (15%)					\$ 12,000
ENGINEERING (15%)					\$ 14,000
TOTAL					\$ 105,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-O	Abandonment Projects				
1	PRV ABANDONMENT	EA	1	\$ 5,000	\$ 5,000
2	PIPELINE ABANDONMENT	LF	10000	\$ 25	\$ 250,000
3	SERVICE RELOCATES	EA	40	\$ 2,500	\$ 100,000
SUBTOTAL					\$ 355,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 18,000
CONTINGENCY (15%)					\$ 56,000
ENGINEERING (15%)					\$ 65,000
TOTAL					\$ 494,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-P	Town Centre PRV				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	100	\$ 300	\$ 30,000
2	PRV	EA	1	\$ 50,000	\$ 50,000
SUBTOTAL					\$ 80,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 4,000
CONTINGENCY (15%)					\$ 13,000
ENGINEERING (15%)					\$ 15,000
TOTAL					\$ 112,000

Proposed Water CIP
Project Cost Estimates

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-Q	Brett Cove Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	400	\$ 300	\$ 120,000
SUBTOTAL					\$ 120,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 6,000
CONTINGENCY (15%)					\$ 19,000
ENGINEERING (15%)					\$ 22,000
TOTAL					\$ 167,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-R	Ewing Circle Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	250	\$ 300	\$ 75,000
SUBTOTAL					\$ 75,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 4,000
CONTINGENCY (15%)					\$ 12,000
ENGINEERING (15%)					\$ 14,000
TOTAL					\$ 105,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-S	Michele Circle Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	200	\$ 300	\$ 60,000
SUBTOTAL					\$ 60,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 3,000
CONTINGENCY (15%)					\$ 10,000
ENGINEERING (15%)					\$ 11,000
TOTAL					\$ 84,000

ITEM	DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
CIP-T	Kristy Dr Fire Improvements				
1	8" PVC PIPE, COMPLETE AND IN PLACE	LF	350	\$ 300	\$ 105,000
SUBTOTAL					\$ 105,000
MOBILIZATION (5% OF SUBTOTAL)					\$ 6,000
CONTINGENCY (15%)					\$ 17,000
ENGINEERING (15%)					\$ 20,000
TOTAL					\$ 148,000