



ROSEBURG PUBLIC WORKS COMMISSION AGENDA  
THURSDAY, NOVEMBER 10, 2022  
3:30 Regular Meeting

CM  
11-4-2022

Hybrid Meeting – In Person at Water Treatment Plant and Electronic  
Public Access: Facebook Live at [www.Facebook.com/CityofRoseburg](http://www.Facebook.com/CityofRoseburg)

**NOTE: IT IS UP TO EACH OF YOU AS COMMISSIONERS TO CALL 541-492-6730 AND LET STAFF KNOW BEFORE THE DAY OF THE MEETING IF YOU WILL NOT BE ATTENDING. THANK YOU.**

**NOTE: LOCATION CHANGE**

**I. CALL TO ORDER**

**II. ROLL CALL:**

Chair: Bob Cotterell  
Commissioners: Ken Hoffine                      Stuart Liebowitz                      Roger Whitcomb  
   John Seward                      Fred Dayton                      Vacant  
   Pat Lewandowski                      Tim Swenson

**III. APPROVAL OF MINUTES**

A. August 11, 2022

**IV. DISCUSSION ITEMS**

- A. Resolution Changing Central Dispensing Station Water Fees
- B. Urban Service Agreement – City of Roseburg – Umpqua Basin Water Association

**AUDIENCE PARTICIPATION** – Comments can be provided via email to the Commission at [pwd@cityofroseburg.org](mailto:pwd@cityofroseburg.org) or hand delivered to City Hall, 900 SE Douglas Avenue in Roseburg **prior to 12:00 pm on Thursday, November 10, 2022.** Comments must include the person's name and address for the record. The Commission reserves the right to delay any action requested until they are fully informed on the matter.

**V. INFORMATIONAL**

A. Project Updates

**VI. BUSINESS FROM THE COMMISSION**

**VII. NEXT MEETING DATE: December 8, 2022**

**VIII. ADJOURNMENT**

**\*\*\* AMERICANS WITH DISABILITIES ACT NOTICE \*\*\***

Please contact the City Administration Office at least 48 hours prior to the scheduled meeting time if you need accommodations in accordance with the Americans with Disabilities Act. TDD users please call Oregon Telecommunications Relay Service at 1-800-735-2900.

**CITY OF ROSEBURG  
PUBLIC WORKS COMMISSION MEETING  
AUGUST 11, 2022  
MINUTES**

**CALL TO ORDER:** The meeting of the City of Roseburg Public Works Commission was called to order at 3:30 p.m. Thursday, August 11, 2022 electronically via Zoom in Roseburg Oregon.

**ROLL CALL:** Present: Chair Bob Cotterell, Commissioners Fred Dayton, Tim Swenson, Pat Lewandowski, and John Seward

Absent: Noel Groshong, Stuart Liebowitz, Ken Hoffine, and Roger Whitcomb

Others Present: None

Attending Staff: Public Works Director Dawn Easley, Design and Construction Manager Ryan Herinckx, City Civil Engineer Daryn Anderson, and Public Works Department Technician Chanelle Rogers

**APPROVAL OF MINUTES:** Commissioner Lewandowski moved to approve the minutes of the June 9, 2022 Public Works Commission meeting as amended. Motion was seconded by Commissioner Dayton and approved with the following vote: Chair Cotterell, Commissioners Dayton, Swenson, Lewandowski, and Seward. No one voted no.

**DISCUSSION ITEMS:**

**Storm Pipe Rehabilitation Vine Street and Alameda Avenue Construction Bid**

**Recommendation Project No. 23PW05:** Herinckx stated this is a continuation of the storm rehabilitation project that was just completed on NE Stephens St. This project will consist of rehabilitation of approximately 483 feet of 48-inch pipe in Vine St. and about 904 feet of 42-inch pipe on Alameda Ave. Herinckx said five bids were received, with Allied Trenchless being low bidder at a cost of \$540,750.00. Chair Cotterell questioned if the City had worked with Allied Trenchless previously. Herinckx said they are the same company that just completed the other storm rehabilitation project on NE Stephens St. Commissioner Swenson asked if the City was pleased with that company. Herinckx said yes, the only thing was a shipping issue where the product was stuck on the ships off the coast of California but once the project was received, they installed it promptly.

**MOTION:** Commissioner Lewandowski moved to recommend that the City Council award the Storm Pipe Rehabilitation Vine Street and Alameda Avenue Project to the lowest responsible bidder, Allied Trenchless for \$540,750.00. Motion was seconded by Commissioner Seward and approved with the following vote: Chair Cotterell, Commissioners Dayton, Swenson, Lewandowski, and Seward. No one voted no.

**AUDIENCE PARTICIPATION:** None

**INFORMATIONAL ITEMS:** Herinckx informed the Mosher St railroad-crossing repair will be happening the week of August 22, 2022. The Stephens St paving project is moving along, they completed the ADA ramps and Knife River will start lowing manholes in preparation for paving after Labor Day. The generator will arrive at the Water Treatment Plant the week of September

26, 2022, and the contractor is there right now doing the preparation work prior to the arrival. Commissioner Lewandowski does not understand why the railroad does not do the Edenbower crossing while they are in town to do the Mosher crossing. Herinckx said it is on the railroads schedule, but there is a crossing in Medford that is higher on the priority list right now.

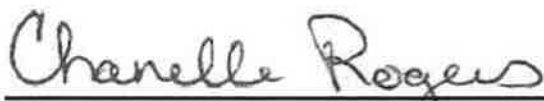
**BUSINESS FROM THE COMMISSION:** Commissioner Lewandowski mentioned there are a lot of missing bots (reflectors) on the raised medians on Garden Valley Blvd., which makes it hard to see the medians at night. Herinckx said he would let the street maintenance crew know.

Commissioner Seward inquired what the status of the homeless situation; he understood that once the pandemic was mostly over that the homeless would have to clear public spaces does there have to be an alternative location for them to stay. Chair Cotterell said no the issue is manpower, the police department is not fully staffed and public works helps but they also have other duties. Currently city staff are clearing one area at a time they are not able to clear the entire town at same time. Commissioner Swenson questioned if anyone is keeping track of the cost for the clean ups. Chair Cotterell said he thought the amount would come out of each department's budget. Easley said she knows there is actually a budget item that is specific for camp clean ups.

Commissioner Dayton feels when the discussion regarding allowing Umpqua Basin to serve inside City limits happens it needs to be an in person meeting as it is a very important topic to discuss.

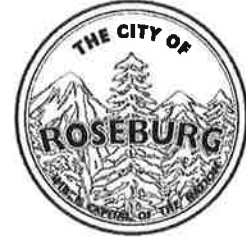
**NEXT MEETING DATE: September 8, 2022** Chair Cotterell asked Easley if it would be in person or via zoom. Easley said that is up to the commission. Chair Cotterell and Commissioners Seward and Swenson said Zoom works for them. Commissioners Dayton and Lewandowski would prefer to go back to in person meetings. Dayton feels it is important that the commissioners get to know each other and that requires in person meetings. Chair Cotterell felt if the commission were to meet in person a couple times of year that would be sufficient.

**ADJOURNMENT:** Meeting adjourned at 3:56 p.m.



Chanelle Rogers, Public Works Department Technician

**CITY OF ROSEBURG  
MEMORANDUM**



**DATE:** November 10, 2022  
**TO:** Public Works Commission  
**FROM:** Dawn Easley, Public Works Director

**SUBJECT: Resolution Changing Central Dispensing Station Water Fees**

**ISSUE STATEMENT AND SUMMARY**

The Public Works Department has identified a need to add fees for the water Central Dispensing Station to offset the new dispensing station's cost and provide consistency for central discrepancy customers.

**BACKGROUND/ANALYSIS**

On June 3<sup>rd</sup>, 2022, House Bill 4061 to deter water use on unlicensed cannabis, both marijuana and hemp, growing sites became effective. Public Works purchased a bulk-filling dispensing station to comply with the bill's requirements. House Bill 4061 required records to be collected, and the new filling station has that ability.

Our current method of dispensing water is a manual process that is difficult to monitor and does not collect the data needed to comply with House Bill 4061. The process is also labor-intensive and susceptible to water theft.

Our new dispensing station would offer options to pay via credit card at the station or an online account managed by a third party.

Currently, all residential central dispensing pay a flat rate per usage fee of \$5.00 with a 200-gallon maximum. Commercial central dispensing customers pay a \$25.00 account set-up fee and a monthly bulk permit fee of \$50.00 plus \$2.06 per 100 cubic feet.

Customers who utilize the new online account or credit card system would not have account set-up fees.

Public works staff asks that the commission recommend council increase the usage fee per 100 cubic feet from \$2.06 to \$5.00 for all central dispensing customers and eliminate the residential customer exemptions from the account set-up fee and monthly demand charge.

**FINANCIAL CONSIDERATIONS**

The fee adjustments will help offset the cost of the new dispensing station and provide consistency for all central dispensing customers.

**TIMING ISSUES**

None.

**COMMISSION OPTIONS**

The Public Works Commission can provide its recommendation to the City Council to:

1. Adopt the resolution; or
2. Request additional information

**STAFF RECOMMENDATION**

Staff recommends that the commission forward a recommendation to the City Council to adopt a resolution to adjust Central Dispensing Station fees to offset the cost of the new dispensing station and eliminate inconsistency in fees.

**SUGGESTED MOTION**

*I move to recommend that the City Council adopt a resolution to adjust fees for the Water Central Dispensing Station as outlined in the attachement to offset the cost of the new dispensing station.*

**ATTACHMENTS**

Proposed Fee Schedule

**Current Fee Schedule:**

**Central Dispensing Station**

Commercial Customers (Fill Water Tank)

Bulk Rate Setup Charge .....	\$	25.00	
Bulk Rate .....	\$	2.06	per 100 cubic feet
Monthly Demand or Open Account Charge .....	\$	50.00	per month
Unauthorized Use of Water from Hydrant .....	\$	250.00	

Residential Customers (3/4/inch fitting)

*Note: Fee to be deposited in envelope at station*

Flat Rate Per Usage (200 gallon maximum) .....	\$	5.00	per usage
Unauthorized Use of Water .....	\$	250.00	
Error or Underestimating Quantities .....	\$	100.00	

**Proposed Fee Schedule:**

**Central Dispensing Station**

Bulk Water Customers

Bulk Rate Setup Charge .....	\$	25.00	
<i>* Waived if account is setup online or by credit card</i>			
Bulk Rate .....	\$	5.00	per 100 cubic feet
Monthly Demand or Open Account Charge .....	\$	50.00	per month
Unauthorized Use of Water from Hydrant .....	\$	250.00	

**CITY OF ROSEBURG  
MEMORANDUM**



**DATE:** November 10, 2022

**TO:** Public Works Commission

**FROM:** Dawn Easley, Public Works Director

**SUBJECT:** **Urban Service Agreement- City of Roseburg-Umpqua Basin Water Association**

**ISSUE STATEMENT AND SUMMARY**

Umpqua Basin Water Association (UBWA) has been serving the Lookingglass/Military area within the Urban Growth Boundary (UGB). The Urban Service Agreement is expired and the City of Roseburg wants to renew the agreement. The issue for the Commission is whether to recommend the City Council renew the Urban Service Agreement with UBWA.

**BACKGROUND/ANALYSIS**

UBWA is a non-profit water company that serves about 100 square miles of mostly rural area both inside and outside the City's UGB. There are currently three areas inside the Roseburg's UGB that are served by UBWA facilities:

1. Stacie Court (off Kline/Moorea Drive) – This area includes 13 homes that are located adjacent to but slightly above the City's reservoir. These homes are inside the City Limits but served by an UBWA reservoir that is at a higher elevation on Moorea Drive. UBWA has a master meter and bills the City monthly. The City meters each of the homes and bills as if these residents were served by the City. UBWA charges slightly higher rates, so there is a small net loss on these services.
2. North of the North Umpqua River – The City has no facilities located north of the river and this industrial and residential area is served by UBWA directly.
3. Lookingglass/Military Area – this area consists of approximately 93.5 acres and is the topic of the attached technical memorandum. The area is mostly undeveloped at this time and has a mixture of elevations, some of which are within the City's existing pressure zone and some that are above it. UBWA serves approximately 42 homes on Military Avenue above the 610' main pressure zone elevation. Of these 42 homes, 17 are within the UGB but outside the City Limits.

In 2008, the City, Douglas County and UBWA entered into an Urban Services Agreement. The agreement identified those areas within the UGB that would be served by UBWA (numbers 2 and 3 above). The downside to not serving these areas has been the lack of planning authority when the parcels develop outside of the City Limits but within the UGB. Typically, if a parcel develops within the UGB, the City requires annexation into the City Limits prior to allowing development to occur (if contiguous to the City Limits). If the parcel is not contiguous, the City requires the developer to sign a consent to annex and to build to a

City standard where appropriate. The mechanism for ensuring that either annexation or consent to annexation happens has always been the provision of water service.

In January 2019 the City contracted with Murraysmith to analyze the area and make recommendations on how it could be served Murraysmith presented the City with options to serve the area.

Option 1 is estimated to cost \$3.689 million and includes the construction of the following:

- 6,100 LF of 12-inch main on Military Avenue
- 874 LF of 8-inch main on Lookingglass Road
- a new pump station at Broccoli Street

Option 2 is estimated to cost \$4.417 million and includes the construction of the following:

- 6,100 LF of 12-inch main on Military Avenue
- 1,300 LF of 12-inch main looping Lookingglass Road to Military Avenue
- 874 LF of 8-inch main on Lookingglass Road
- a new Pump Station facility at Lookingglass Road near Rosemary Avenue
- (2) pressure reducing stations

Option 3 is to continue to work with UBWA to serve the area. UBWA has reservoirs at higher elevations and their distribution systems operate at higher pressures than the City's water system in this area, which allows them to serve the region. It is unknown what financial investment is involved in UBWA serving this area. However, upgrades to UBWA's infrastructure is assumed to cost a fraction of what it would cost the City to serve this area.

On August 8, 2019 those options were discussed by the Commission and the Commission requested staff to bring back additional information.

### **FINANCIAL AND/OR RESOURCE CONSIDERATIONS**

The costs associated with the City serving this area is estimated to be between \$ 4.3 to \$5.2 million dollars. Since the study in 2019 only one additional home was built in the area and UBWA is currently serving 18 homes inside the UGB.

### **TIMING ISSUES**

The previous Urban Service Agreement expired on July 1, 2016.

### **COMMISSION OPTIONS**

The Public Works Commission has the following options:

1. Recommend that staff program resources to proceed with the design and construction of Option 1; or
2. Recommend that staff program resources to proceed with design and construction of Option 2; or
3. Recommend that council execute the Urban Service Agreement between the City and UBWA; or
4. Request additional information.



**STAFF RECOMMENDATION**

Staff's opinion is that it is more economically feasible to coordinate with UBWA to provide service to certain areas inside the UGB than to construct costly infrastructure improvements. Staff recommends proceeding with Option #3 and recommending to council to execute the updated Urban Service Agreement with UBWA identifying which areas in the southwest quadrant will be served by the City and which will be served by UBWA. Staff further recommends that the City serve the areas within the study area that are within the City's main pressure zone, 610' in elevation and below.

**SUGGESTED MOTION**

*I move to recommend the City Council approve the updated Urban Service Agreement with UBWA outlining responsibilities for serving specific areas within the City's Urban Growth Boundary.*

**ATTACHMENTS** Technical Memorandum

## Technical Memorandum

**Date:** January 9, 2019

**Project:** Roseburg Water System – Expanded Service Area Analysis

**To:** Mr. Daryn Anderson, P.E.  
City of Roseburg

**From:** Brian Ginter P.E.  
Natalie Jennings P.E.  
Murraysmith

**Re:** Southwest Quadrant Service Area Expansion Broccoli and Military Pressure Zones

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### Introduction

The following Technical Memorandum documents analysis and recommendations related to the expansion of the City's water service area to the southwest corner of the City. The City's current Water System Master Plan (WSMP) was completed by Murraysmith in 2010. Based on discussions with City staff, the current Plan continues to serve the City well, and this Technical Memorandum provides updated analysis and recommendations in support of the Water System Master Plan.

### Study Area

The study area includes the existing Broccoli and Military Pressure Zones as well as the expansion area as shown in Figure 1. The expansion area, which is within the City's Urban Growth Boundary (UGB), is currently served by the Umpqua Basin Water Authority but will be withdrawn and served by the City due to a proposed City limits expansion. The City would like to create a plan to incorporate this area into their system, as well as optimize existing adjacent pressure zones.

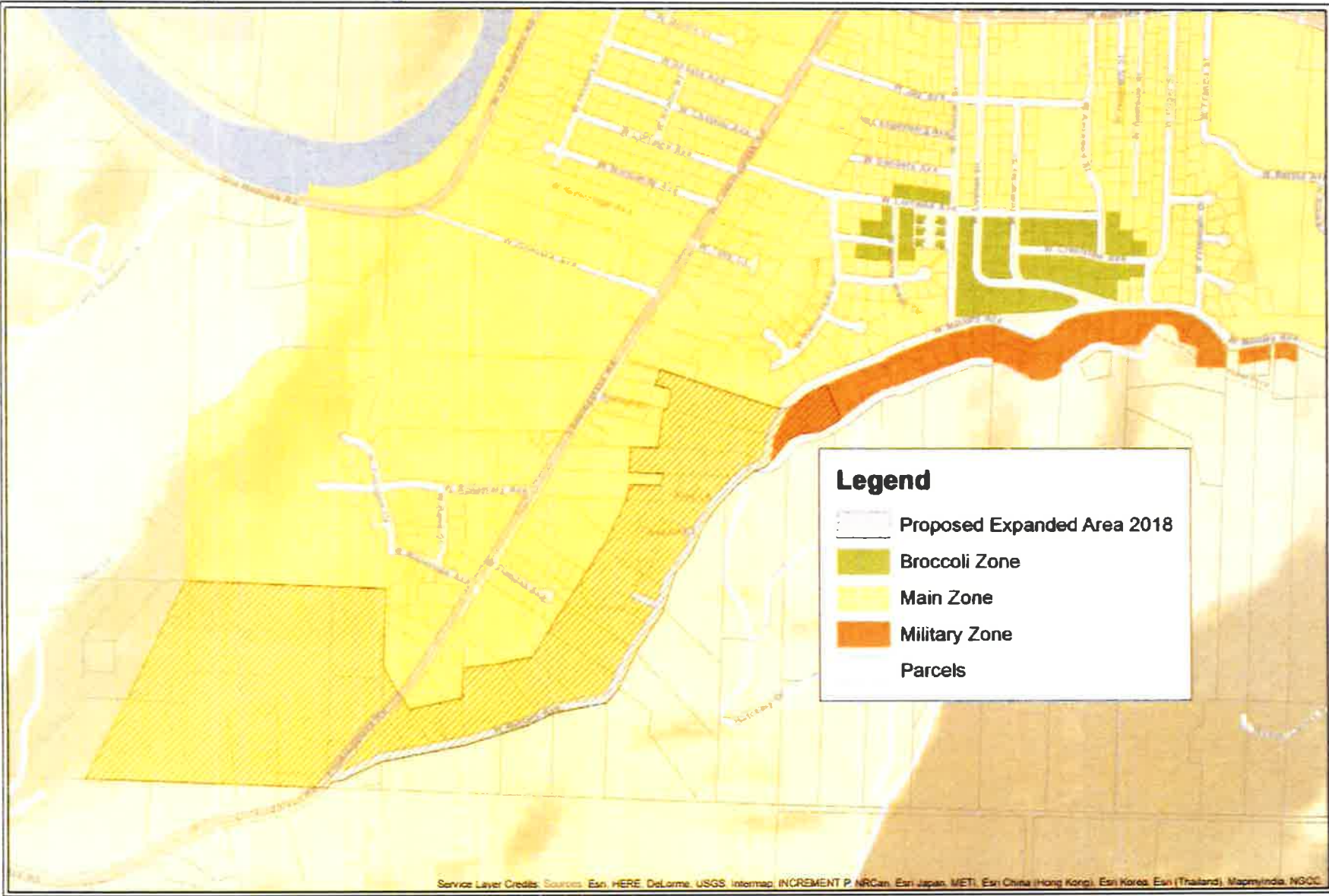
#### *Umpqua Basin Water Association*

The Umpqua Basin Water Association (UBWA) currently provides service to a limited number of existing customers in the expansion area. When the expansion area is brought into the City, the City will need to provide water to these customers in addition to serving new development that will occur. The existing UBWA distribution main runs along Military Avenue from Lookingglass Road to adjacent to the City's existing Military Zone. This pipe is primarily 4-inch diameter reducing to 2-inch diameter in the northernmost portion. All of this pipe is too small to be used by the City for fire flow protection to existing and future customers in the expansion area. The City could consider withdrawing this main from UBWA for use until larger water main can be constructed, assuming it is eligible for withdrawal under State of Oregon law. If the City decided to do this, it

would need to be made clear that future development would not have fire protection until the new larger main and other improvements are constructed.

When the expanded service area is brought into the City, UBWA and the City agree there needs to be an IGA agreement for the area designated as "Proposed Expanded area 2018", as identified in Figure 1. This agreement is required if a buyout of UBWA's current infrastructure in the identified expansion area is to occur.

Figure 1: Study Area and Existing Pressure Zones



## *Master Plan Summary*

The 2010 WSMP provided system information and recommendations that are summarized in the following paragraphs.

### *Issues with Military Reservoir*

The Military Reservoir is a 0.5 million-gallon reservoir that was built in 1956 and is located on the southern end of the city. Over time, it may have some age-related problems, but the City has recoated it, and currently maintains it in adequate condition. One known issue is the condition of the inlet and outlet pipes which have experienced degradation due to corrosion. The main issue with the Military Reservoir is the overflow elevation of the structure. It is 683.4 feet. The Main Pressure Zone Reservoirs have overflow elevations of 710 feet. This difference prevents the Military Reservoir from serving the Main Zone. It currently serves a small zone, the Broccoli Zone, which is isolated from the Main Zone.

### *Purpose of Broccoli Zone*

The Broccoli Zone is a small zone served by the Military Reservoir. An altitude valve with a timer for delayed opening allows the Military Reservoir to fill from the Main Zone.

The purpose of the Broccoli Zone is to turn over water in the Military Reservoir. All of the elevations in the Broccoli Zone fall within the lower end of the Main Zone service elevations, so they can be served by the Main Zone, or the Military Reservoir. The lower pressure available from the Military Reservoir is approximately 12 psi lower than the Main Zone.

### *Recommendation: Dissolution of Broccoli Zone*

The Military Reservoir is aging and will need capital improvements in the future to keep it in service. The recommendation from the WSMP is to abandon this reservoir because its capacity is redundant to other reservoirs and the City has plenty of Main Zone storage for the planning period. The Broccoli Zone is currently served by the reservoir, however, the service elevations within the zone fall within the Main Zone and can therefore be combined with the Main Zone. To supply Main Zone water to the Broccoli Zone, eight closed valves separating the two pressure zones will be opened and the altitude valve will be removed. A flushing/valve opening plan is shown in Table 1/Figure 3, later in this Technical Memorandum.

### *Recommendation: Expansion of West Military Pump Station*

The existing West Military Pump Station consists of two pumps, one has a capacity of 45 gpm, and the other has a capacity of 90 gpm. The total capacity of the pump station is 135 gpm, and the firm capacity of the pump station is 45 gpm. Firm capacity is the capacity of the pump station with the largest pump offline and is used to evaluate reliable facility capacities. The West Military Pump Station is undersized and does not provide fire flow to the Military Zone. The WSMP recommendation is to upgrade the pump station to 2100 gpm firm capacity to provide sufficient fire flows to the zone.

### *Relationship of this Technical Memorandum to WSMP*

The recommendations from the WSMP were updated through this analysis in regard to service to the additional expansion area. The WSMP recommendations are still valid, but this technical memorandum provides detail regarding integration of the expansion area.

### **Analysis**

The analysis in this Technical Memorandum updates the 2010 WSMP hydraulic model to include projects implemented since the plan, evaluates system improvements for the Broccoli and Military Zones and Expanded Service Area, and assesses the continued operation of the existing West Military Reservoir and Pump Station.

### *Objective*

The objective of this analysis is to optimize pressures in the southwest portion of the City and evaluate the needs for associated infrastructure improvements.

### *Model Setup*

The 2010 WSMP hydraulic model was used as a starting point for this analysis. The City provided water usage data and GIS mapping updates to allow for updates of the model to existing conditions.

### *Infrastructure Updates*

The hydraulic model was updated to reflect pipes added to the system since the WSMP, with the exceptions of smaller, dead-end lines that do not affect overall system performance.

A proposed backbone piping structure for the expansion area was included in the model. For the purpose of this technical memorandum, it is assumed to be a 12-inch diameter loop from the existing Military Zone to the existing Main Zone piping along Lookingglass Road.

### *Demands Updates*

The demands in the model were scaled to match the current design peak hour demand (PHD) (~10,050 gpm) distributed at existing nodes. The City provided the average day demand (ADD) for the existing system for 2017. This was multiplied by the ADD:MDD peaking factor from the master plan of 1.99 to estimate the current Maximum Day Demand (MDD) and update in the model. The MDD was multiplied by the WSMP MDD:PHD peaking factor of 1.5 to get the peak hour demand (PHD) and updated in the model.

The potential future expanded area population was estimated using the following assumptions:

1. Expansion area = 93.5 acres
2. 7 dwelling units per acre
3. 2.3 people per dwelling unit
4. Average ADD per capita for the years 2013-2017 of 202 gallons per capita per day (gpcd).
5. ADD:MDD peaking factor is 1.99
6. MDD:PHD peaking factor is 1.5

The estimated demand for the expansion area (MDD=421 gpm and PHD =634gpm) was divided equally and applied to the nodes in the backbone piping structure developed for the expansion area.

### *Modeled Scenarios*

The model was run under MDD conditions to evaluate system performance. PHD + fire flow conditions could not be evaluated with existing infrastructure due to the lack of available flow from the existing West Military Pump Station. As presented below, evaluation of the system first requires identification of supply facilities (pump station) adequate to meet PHD and fire flow.

## Findings

The findings of this analysis are summarized in the following sub-sections.

### *Pressure Zones*

The expansion area can be served with the same hydraulic grade as the existing Military Zone by adjusting the existing hydraulic grade slightly. Full tax lots that fall partially within the expansion area were included in the Military Zone. This keeps adjacent houses on the same street in the same pressure zone if larger tax lots sub divide as houses are constructed. If streets are laid out differently, pressure zone boundaries are recommended to be defined to keep houses on the same local street in the same pressure zone whenever practical.

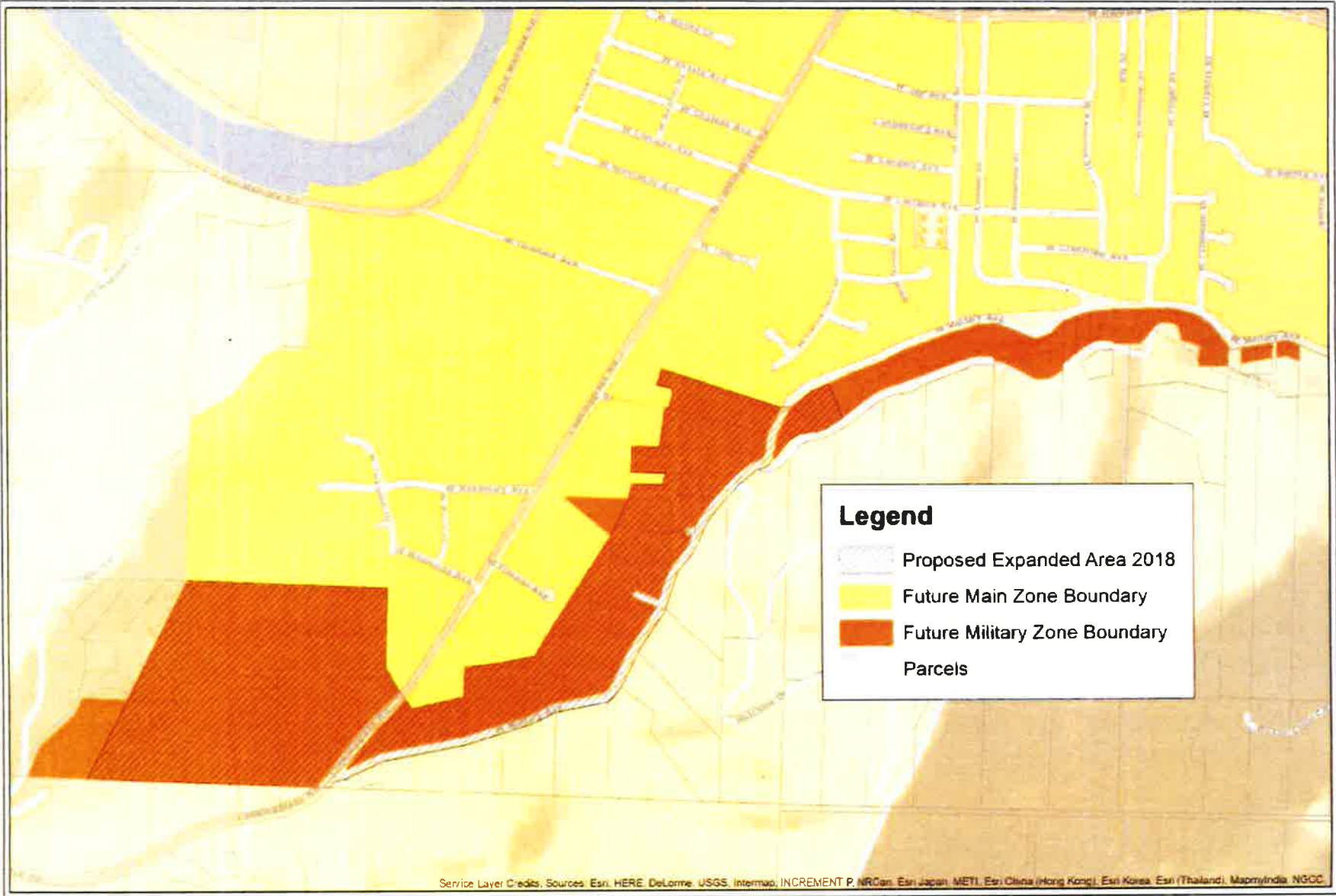
There are two check valves that supply additional flow from the Main Zone to the Military Zone in case of a large pressure drop. These valves are located at Military Avenue & Pilger Street, and Military Ave. & Fromdahl Drive. These valves are recommended to remain in place as a backup system with all improvements proposed.

The Broccoli Zone can be dissolved, transitioning the services to the hydraulic grade of the Main Zone. The service elevations in the Main Zone are 470 feet to 610 feet. The Broccoli Zone service elevations are 490 feet to 583 feet.

Figure 2 illustrates the new pressure zone boundaries and the expansion zone boundary.



Figure 2: Proposed Pressure Zones





## Facility Improvements

Several facility changes are needed to move the zone boundaries and are summarized in the following sub-sections. The Appendix figures illustrate the proposed modification to the system in two different alternative locations.

### *Military Reservoir and Broccoli Zone Isolation*

The Military Reservoir is at a hydraulic grade that is too low to effectively incorporate it into the Main Zone. While this reservoir is currently in operable condition, it is redundant to other reservoirs and is not needed for storage in the new combined zone. When improvements to maintain the reservoir become necessary, the reservoir is recommended to be abandoned and the closed valves separating the Broccoli Zone will be opened to supply the area from the Main Zone. The timing of this change, removing the reservoir from service and eliminating the Broccoli Zone may be coordinated with the expansion of the Military Zone.

### *Flushing/Valve Opening Plan*

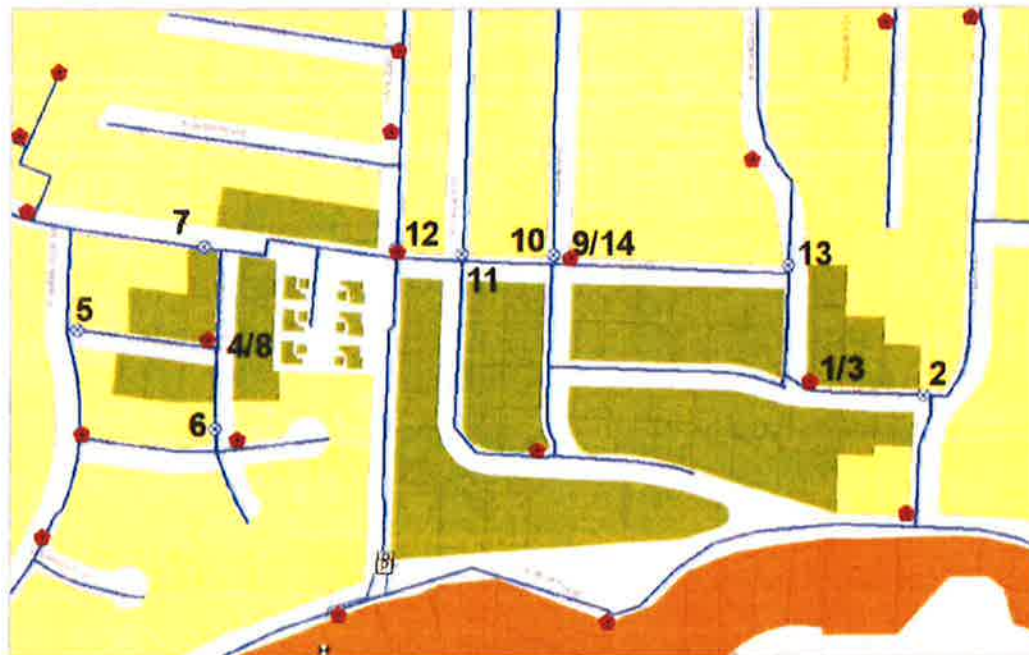
When the Broccoli Zone services are transferred into the Main Zone, a plan for flushing is recommended to be followed as several lines have been dead-ended for several years, and the water quality in those pipes may result in customer complaints when the typical direction and rate of flow is changed. Table 1 and Figure 3 illustrate the sequenced numbers of events to achieve a systematic flushing of the area.

The purpose of this sequence is to discharge the first flush of the water by opening a hydrant downstream of where a valve will be opened before opening the valve. Flushing for 5 to 10 minutes at each location is anticipated to adequately address potential water quality complaints.

Table 1: Valve Opening/ Hydrant Flushing Order

Location	Description of Activity
1	Open hydrant on Crestview Ave. & Kenwood St.
2	Open valve @ Pilger St. & Crestview Ave.
3	Close hydrant after flushing
4	Open hydrant on Colvin St. & Winter Ridge Rd.
5	Open valve on Colvin St. & Harris Hill Dr.
6	Open valve on Juniper Ct. & Winter Ridge R.
7	Open Valve on Lorraine Ave. & Winter Ridge R.
8	Close hydrant after flushing
9	Open hydrant on Lorraine Ave. & Indianola St.
10	Open valve on Lorraine Ave. & Indianola St.
11	Open valve on Luellen Dr. & Lorraine Ave.
12	Open valve on Broccoli St. & Lorraine Ave.
13	Open valve on Lorraine Ave. & Kenwood St.
14	Close hydrant after flushing
15	(Not shown) replace altitude valve with straight pipe

Figure 3: Valve Opening/ Hydrant Flushing Order



#### *West Military Pump Station*

As previously discussed, the existing West Military Pump Station lacks firm capacity to meet PHD + Fire Flow conditions. Two options to supply water to the Military Zone include pumping water up to a reservoir that gravity feeds the zone or operating a constant pressure pump station to supply water. An approach involving a reservoir would still require a pump station and there are no adjacent areas within the existing UGB, or in the same general vicinity just outside the UGB, that would have suitable topography for siting a ground-level reservoir to supply this zone.

For the reasons described above, this analysis assumes construction of a replacement constant pressure pump station, as recommended in the WSMP, to address this capacity deficiency. The proposed West Military Pump Station replacement will serve houses from 595 feet to 687 feet. Even though some of the land within the existing Military Zone is above 687 feet, those areas are located in yards behind existing houses, and will not result in low pressure at the service. The entire expansion area is located at an elevation below 687 feet and is recommended to be integrated into an expanded Military Zone.

There are three factors to consider for the West Military Pump Station: Capacity, Hydraulic Grade, and Location. These are described in the following paragraphs.

### *Capacity*

Since the zone will be supplied entirely by a single permanent pump station and has no storage capacity, PHD + fire flow is the controlling condition (which is stricter than MDD + fire flow that is used to evaluate zones gravity fed by reservoirs). The West Military Pump Station is recommended to be upgraded to provide a minimum of 2,700 gpm firm capacity to supply water for these demands. This will cover the existing users' PHD (approximately 8 gpm) and future buildout customers of the Military Zone with a projected approximate PDH of 632 gpm.

The fire flow available in the expanded area will not exceed 2,000 gpm. This will limit the development of the expansion area to large single-family residential development. It also assumes that existing homes in the zone and anything east of the pump station will not require a fire flow greater than 1,500 gpm. If larger fire flows are required for commercial or high-density residential development, additional piping and pumping improvements would need to be constructed to supply the larger fire demand. This may include Main Zone piping improvements to provide adequate flow and suction pressure to the pump station.

### *Hydraulic Grade*

The hydraulic grade of the zone needs to be raised from a current level of 780 ft. to approximately 790-800 ft. depending on the location of the proposed pump station. This will create a small pressure increase across the zone under static pressure conditions and improve pressures under fire flow conditions as mentioned above. If pressures at low services in the zone raise above 80 psi, individual pressure reducing valves may be installed at those services to decrease pressure.

### *Location*

The Main Zone (suction source for the existing and proposed pump stations) has a hydraulic grade of 710 feet. This supports a pump station suction pressure of 20 psi at an elevation of approximately 663 or below not accounting for head loss, but head loss is a significant concern here requiring the pump station to be as low as 535ft. in elevation depending on site conditions. Since these improvements involve a long dead-end line, and a potentially large fire demand causing high head loss, the location of the proposed pump station location needs to be evaluated in the hydraulic model during the design process to verify suction pressure availability at the site.

Through discussions with the City, Murraysmith understands that one possible site being explored is the existing Military Reservoir site. This site is too high to provide suction pressure to the new pump station, but locations within the existing unimproved Broccoli Street Right-of-way (shown as option 1 in the appendix maps) which is the current location of the pump station, with lower elevations would provide sufficient suction pressure for the new pump station. The existing pump station is located at 595 feet of elevation.

If the expected direction of growth is from southwest to northeast, the pump station for the future expanded Military Zone could be dedicated from the right-of-way in the development near Lookingglass Road and Rosemary Avenue to allow development in this direction without immediate system buildout of the 12-inch diameter pipe backbone described in a later paragraph.

This is shown as option 2 in the appendix. This pump station could be temporary or permanent. If it is temporary pump station, an additional waterline, 12-inches in diameter to supply the Military Zone would be needed parallel to the existing pipe in Lookingglass Road which serves the Main Zone. If it is permanent pump station, there would be too much headloss through the length of the pipe along Lookingglass Road and Military Road to provide fire flows to the far eastern end of the Military Zone, so looping is needed through an easement, not necessarily through the development. One option is shown schematically on the figure, but the location could be adjusted depending on which easement could be negotiated. If this pump station is temporary, or a phased approach to full buildout, the Military mainline could run down Lookingglass Road.

A permanent pump station in either location could be configured for expansion to allow for increased pumping capacity over time as the pressure zone expands with development. A permanent proposed pump station is recommended to have all of the electrical, controls, and internal and site piping for future buildout of the zone, but pumps may be added over time as needed. The locations for future pumps are recommended to be blocked off with a blind flange for easy pump installation later. If this approach is used, the developer will be required to install the 12-inch diameter backbone pipe for the length that development is occurring in the current phase, as well as all local piping. It should be noted that this will not increase fire flows in the full Military Zone until the full recommended 12-inch diameter backbone pipeline is installed from the pump station to existing Military Zone piping.

### *Piping Improvements*

Backbone piping to serve the expanded Military Zone will need to be installed along Military Road and Lookingglass Road and from the pump station to the zone. This is recommended to be a 12-inch diameter pipe to supply water for future buildout of the zone. This will connect into the location of the existing 8-inch diameter pipe at the southern end of Lookingglass Road, and to the existing main near the end of Broccoli St. in the existing Military Zone as shown in each option in the appendix figures. This partially replaces the 8-inch diameter line on the west side of the existing Military Zone and fully replaces the 4-inch diameter line in Lookingglass Road. The local pipes in neighborhood streets are not shown in the appendix figure because the streets have not yet been laid out, but all future pipes with fire hydrants shall be a minimum of 8-inch diameter, even if fire protection is not immediately available from the existing or temporary West Military Pump Station.

One option that could be investigated is the purchase and temporary use of Umpqua Basin Water Authority pipes. The Military Zone could be extended by connecting into the 4-inch diameter main to an upgraded West Military Pump Station. This would not provide fire flow to any existing or expanded Military Zone area. It is also not known what condition these pipes are in and could present a problem if pressure is raised through the pipes. This option is not recommended because it does not provide a quality product to customers, does not address fire flow, and has uncertain results. However, current UBWA customers will need to continue to be served by UBWA until the improvements recommended in this memorandum are completed.

### *Pressure Reducing Valve Station*

Installation of one or two pressure reducing valves (PRV) between the Military Zone and Main Zone is recommended to help with water quality at the dead-end main locations. It will be located on Lookingglass Road if the pump station remains in its current location (option 1), or near the existing pump station and on Lookingglass Road if the proposed pump station is constructed on Lookingglass Road (option 2) (as shown in the appendix figures). Each station is recommended to be a 2- stage PRV station with a small PRV (typically 1-inch or 2-inch diameter) that is normally open to let water flow through it and improve water quality in the long dead-end line, and a larger PRV that opens only when pressure drops in the Main Zone due to a fire flow event close to the zone boundary. In addition, the PRV station is recommended to include a check valve to maintain positive pressure in the Military Zone (supplied from the Main Zone) in the event of a pump station failure.

The location of these PRV stations will define the boundary between the Military and Main Zones. Although, there is a range of possibilities where this could be located, it makes most sense to locate this at the edge of a proposed subdivision if possible. This will keep the entire subdivision in the same pressure zone. As illustrated in the Appendix figures, the PRV station is recommended to be located at an elevation near to 600 feet in elevation where the break between zones will occur.

### **Cost Summary**

An estimated project cost has been developed for each improvement project recommended in this memorandum. Cost estimates represent opinions of cost only, acknowledging that final costs of individual projects will vary depending on actual labor and material costs, market conditions for construction, regulatory factors, final project scope, project schedule and other factors. The Association for the Advancement of Cost Engineering International (AACE) classifies cost estimates depending on project definition, end usage and other factors. The cost estimates presented here are considered Class 4 with an end use being a study or feasibility evaluation and an expected accuracy range of -30 percent to +50 percent. As the project is better defined, the accuracy level of the estimates can be narrowed.

Estimated project costs are based upon recent experience with construction costs for similar work in Oregon and southwest Washington and assume improvements will be accomplished by private contractors. Estimated project costs include approximate construction costs and an aggregate 45 percent allowance for administrative, engineering and other project related costs. Estimates do not include the cost of property acquisition. Since construction costs change periodically, an indexing method to adjust present estimates in the future is useful. The Engineering News-Record (ENR) Construction Cost Index (CCI) is a commonly used index for this purpose. For purposes of future cost estimate updating; the current ENR CCI for Seattle, Washington is 11524.68 (September 2018).

Table 2: Improvement Cost Estimates

Improvement Element	Cost (Option 1)	Cost (Option 2)
<b>12-inch Diameter Pipe Backbone</b>	(6,100 LF)	(7,400 LF)
Construction of 12" DI pipe	\$1,650,000	\$2,002,000
Construction of 8" DI pipe (874 ft.)	\$157,000	\$157,000
Allowance for Engineering, Admin, Permitting, and Legal	\$814,000	\$972,000
<b>Total</b>	<b>\$2,621,000</b>	<b>\$3,131,000</b>
<b>Pressure Reducing Valve Station</b>	(1PRV)	(2 PRVs)
Construction of PRV Station(s)	\$150,000	\$300,000
Allowance for Engineering, Admin, Permitting, and Legal	\$68,000	\$136,000
<b>Total</b>	<b>\$218,000</b>	<b>\$436,000</b>
<b>Abandon Military Reservoir and Pump Station</b>		
Abandon Reservoir and Pump Station and Remove Altitude Valve	\$50,000	\$50,000
<b>Total</b>	<b>\$50,000</b>	<b>\$50,000</b>
<b>New West Military Pump Station</b>		
Construction of New Pump Station	\$550,000	\$550,000
Allowance for Engineering, Admin, Permitting, and Legal	\$250,000	\$250,000
<b>Total</b>	<b>\$800,000</b>	<b>\$800,000</b>
<b>Total</b>	<b>\$3,689,000</b>	<b>\$4,417,000</b>

## Recommended Alternative

Due to the extended amount of time anticipated for development to be completed, a potential for phased development of the expanded Military Zone was considered. Existing customers of the City and UBWA will need to maintain service until their service can be provided by the City through expansion of the Military Zone with transmission piping and pumping improvements. The location and scoping of improvements will depend on where development starts.

### *Development in the Northeast First*

If the development begins in the northeast end of the Military Zone, Option 1 should be constructed, with the 12-inch diameter backbone constructed incrementally as development occurs to the southwest.

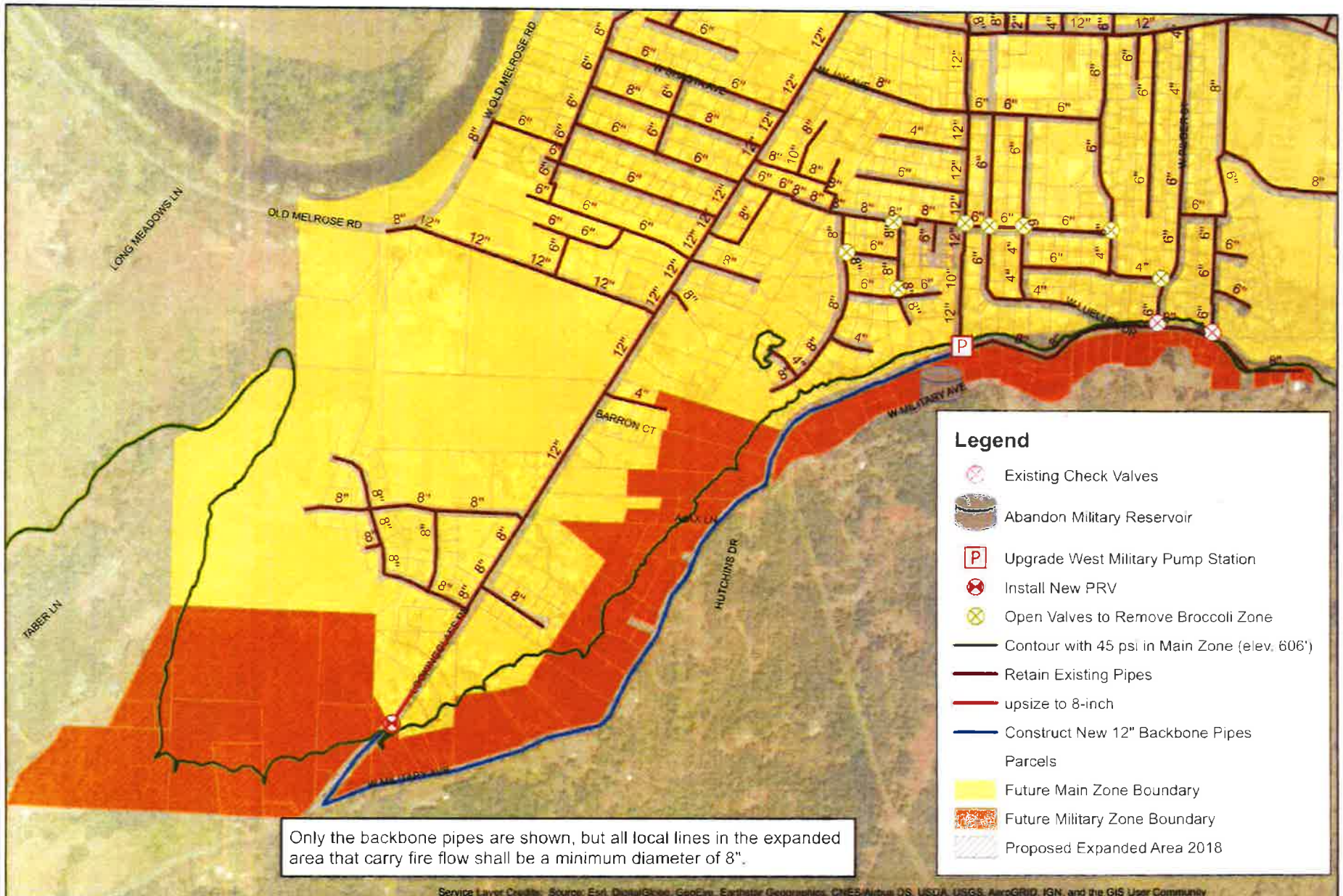
### *Development in the Southwest First*

If the development begins in the southwest, there are a few options. The City could require the construction of a new pump station, as described in Option 2, to serve the new areas of the Military Zone separate from the existing Military Zone. Ultimately, this pump station could be planned to meet the requirements of option 2 with proposed Military Zone piping and looping eventually extending back to the existing Military Zone. Alternately, as piping is extended back to the existing developed portions of the Military Zone, this station could be abandoned (or serve as a back-up facility) with the construction of a new Military Pump Station as described in Option 1.





Appendix

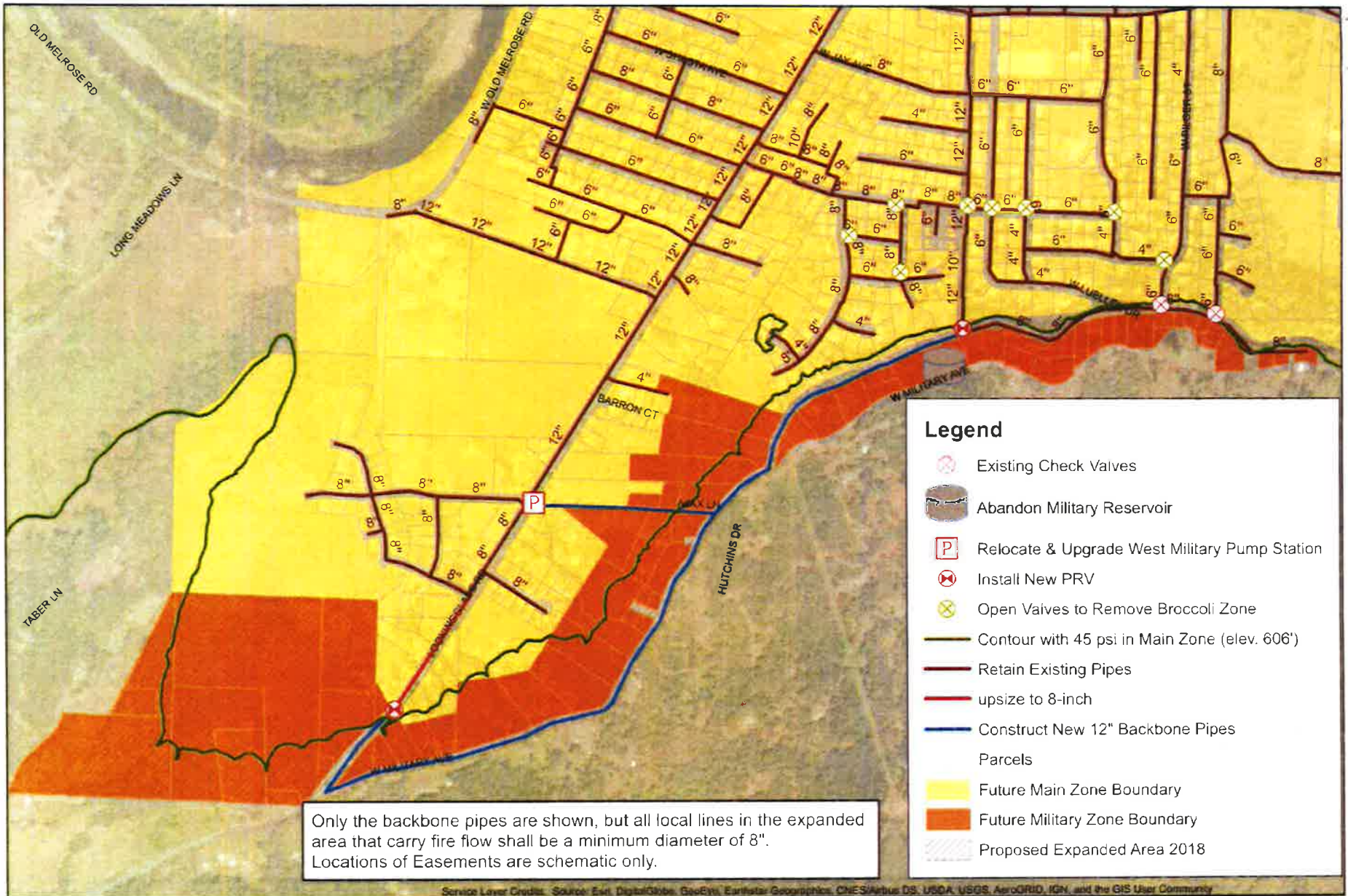


City of Roseburg  
Water Master Plan Update

Facility Improvements  
Option 1  
Pump Station in its  
Current Location







**City of Roseburg  
Water Master Plan Update**

**Facility Improvements  
Option 2  
Pump Station on  
Lookingglass Road**



**CITY OF ROSEBURG  
MEMORANDUM**



**DATE:** November 10, 2022  
**TO:** Public Works Commission  
**FROM:** Ryan Herinckx  
**SUBJECT:** Project Updates

The following is a brief status update of current Public Works projects.

**WATER PROJECTS**

**24-Inch Hooker to Isabell Transmission Main Replacement – Complete**

The project replaced about 3,000 linear feet of 20-inch transmission main installed in 1934 with new 24-inch ductile iron pipe. The contractor has completed the installation of the 24" pipe, and it was put into service on June 14.

20WA17	24-Inch Hooker to Isabell		
	Bid	Final	% to Bid
Engineering Services	\$ -	\$ -	0.0%
Construction	\$ 2,479,043.00	\$ 2,629,908.65	6.1%
Construction Mgmt.	\$ -	\$ -	0.0%
<b>Total Cost:</b>	<b>\$ 2,479,043.00</b>	<b>\$ 2,629,908.65</b>	<b>6.1%</b>

**Water Treatment Plant Standby Power**

The Water Treatment Plant generator, enclosure and fuel tank were delivered on October 12<sup>th</sup>. Grading work for the Reservoir Hill generator pad has begun; generator is scheduled to be delivered in February. The 2 towable generators were delivered to the shop on November 2<sup>nd</sup>. The contractor is still waiting on switchgear for all seven locations. Current information from the supplier indicates switchgear will be available in January.

**24-inch Transmission Main Replacement – Isabell to Newton Creek**

The City has received a 30% plan set for review. This project was originally schedule to bid in December; this has been pushed out to February 2023.

**18-inch Hwy 138 Water Main Replacement – Kester Rd to Sunshine Rd**

The City has received a 30% plan set for review. This project is scheduled to bid in January of 2023.

RFP – Five Year Water Distribution Main Replacement Design Contract

The City currently has a Request for Proposals out to bid for a 5-year design engineering contract for water distribution main replacement. The RFP is scheduled to open November 15<sup>th</sup>. A staff recommendation will be presented to the Commission on January 12, 2023.

Rocky Ridge Reservoir

Staff is negotiating the scope, schedule and fee with the consultant for this design work.

**TRANSPORTATION PROJECTS**

Stephens Street ADA Ramp Replacement - Complete

This project replaced 24 ADA ramps in Stephens Street from Diamond Lake Blvd. the Alameda Avenue.

22PW01	Stephens Street Curb Ramp Improvements			
		Bid	Final	% to Bid
Engineering Services**	\$	-	\$ -	0.0%
Construction	\$	337,092.00	\$ 333,736.31	-1.0%
Construction Mgmt.	\$	58,438.00	\$ 40,348.25	-31.0%
<b>Total Cost:</b>	<b>\$</b>	<b>395,530.00</b>	<b>\$ 374,084.56</b>	<b>-5.4%</b>

\*\* Engineering Services were combined with engineering fees in the grind/inlay portion of the project.

Stephens Street Grind Inlay – 98% Complete

This project work under the original contract is complete, the City add a change order to repair 6 manholes and 2 water valve cans on NE Stephens. This work has yet to be completed.

22PW01	Stephens Street Grind Inlay			
		Bid	As of 11/3/22	% to Bid
Engineering Services	\$	154,534.00	\$ 149,640.49	0.0%
Construction	\$	1,033,788.00	\$ 908,161.90	-12.2%
Construction Mgmt.	\$	26,588.00	\$ -	0.0%
<b>Total Cost:</b>	<b>\$</b>	<b>1,214,910.00</b>	<b>\$ 1,057,802.39</b>	<b>-12.9%</b>

Mosher Railroad Crossing - Complete

Railroad crossing was replaced the week of August 22<sup>nd</sup>. Work included installing concrete panels for the mainline, additional concrete panels for pedestrian crossing and repaving of the crossing. Cost to the City, \$29,858.

2022 Slurry Seal Project - Complete

This project applied a slurry seal of aggregate and asphalt emulsifier to approximately 43,000 square yards of road surface on 13 road sections.

22PW02	Slurry Seals				
		Bid	Final	% to Bid	
Engineering Services	\$	-	\$	-	0.0%
Construction	\$	147,798.26	\$	147,786.26	0.0%
Construction Mgmt.	\$	-	\$	-	0.0%
<b>Total Cost:</b>	<b>\$</b>	<b>147,798.26</b>	<b>\$</b>	<b>147,786.26</b>	<b>0.0%</b>

2023 Grind/Inlay, SE Pine & Stewart Parkway (Stephens to Airport)

Staff is currently negotiating a scope, fee and schedule with Century West Engineering.

2023 Slurry Seal Project

Staff is creating a list of streets to be slurry or chip sealed next summer. List will be finalized and notifications will go out to abutting property owners in December.

**STORM PROJECTS**

2023 Storm CIPP Project Vine and Alameda

Contract has been awarded in the amount of \$540,750, staff has requested lining will take place spring 2023. This project consists of rehabilitation of approximately 904 linear feet of 42-inch diameter and 483 linear feet of 48-inch diameter storm drain pipe utilizing cured-in-place-pipe.

Calkins/Troost and Rainbow/Haggerty Storm Project

Staff has received 60% construction plans for review; the project is on schedule to bid in January 2023. This project will install approximately 3,250 linear feet of storm line in the Calkins/Troost and Harvard at Rainbow and Haggerty. This project will abandon existing storm facilities that run through private property and in some cases, under residential buildings. The City put in for, received American Rescue Plan Act funding, and will be receiving \$1,570,064 towards the design and construction of this project.

**Facility**

Water Treatment Plant Operations Building Painting - Complete

Project was bid in the spring of 2022, contract was awarded to low bidder Heritage Painting for \$44,180. Project was completed in October, no change orders on the project.

Fulton Shop Roof Replacement

Roofing materials are scheduled to arrive the end of November. Material delivery delays have push the installation to the spring of 2023. The project will take about 2 months to complete. This project has bid and was awarded to Roseburg Roofing for \$356,017.