

2022

*Baker City Public Works*

**CAPITAL**

**PLAN**

**Water—Wastewater—Stormwater**



## Public Works Department

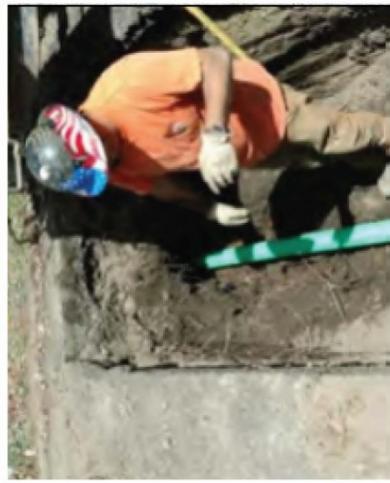
1655 1st Street P.O. Box 650 Baker City, OR 97814

Phone: (541) 524-2047

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2021 in action

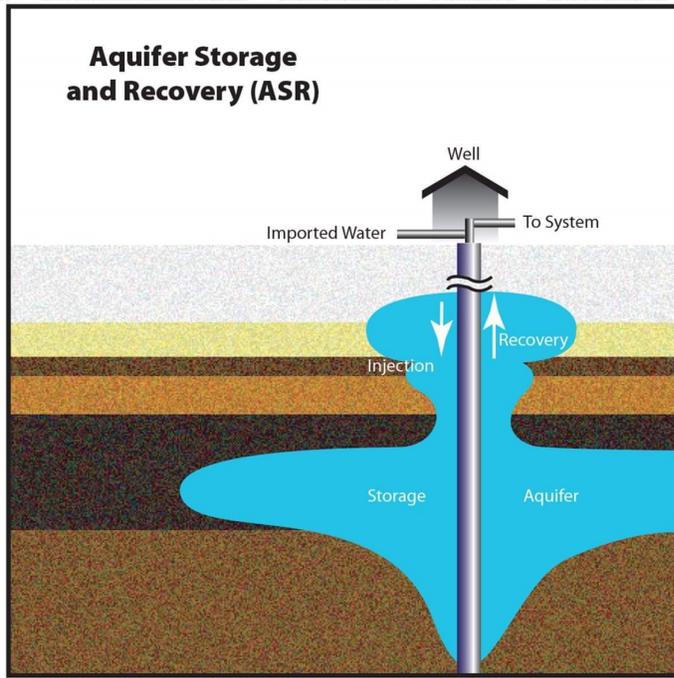


# INTRODUCTION

This three-year Capital Plan for Water, Wastewater and Stormwater was completed to help inform the Public Works Advisory Committee, City Council and interested citizens about the upcoming major projects that are planned within the Public Works Department. Staff understands that residents pay fees for water and wastewater and taxes for streets and they want to see what they get for the money spent. This plan tries to show through both words and pictures the types of projects we need to accomplish to keep our utilities operating effectively and efficiently. Many of the projects are in response to ever increasing regulations. All of the projects proposed are necessary to help propel Baker City into the future with solid infrastructure. Thank you for taking time to read through this plan.

Michelle Owen  
Public Works Director





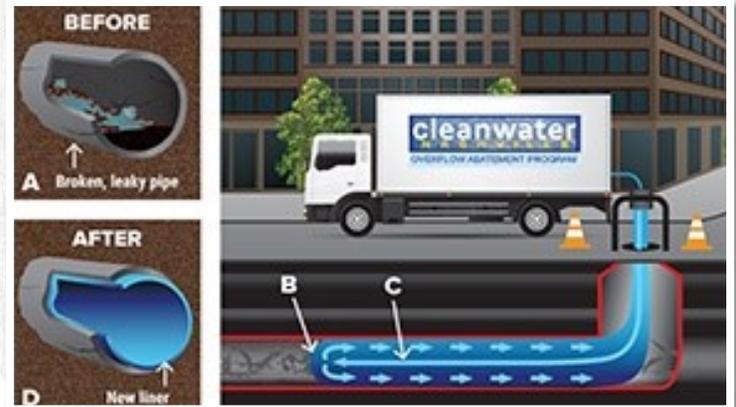
The ASR 2 well at the Golf Course was drilled and completed April of 2021. The well was drilled to a depth of 654 feet.

By the end of May 2021, the screen liner was set at the bottom of the borehole at the depth of 654 feet.

By the beginning of June 2021, a pump was installed and water testing began. By the end of July 2021, the final well video inspection was done, and the first phase of the project was completed.

The second phase, which is the construction of the wellhouse and piping, is expected to start in the Spring of 2022.

The Cured in Place Pipe (CIPP) Wastewater Rehabilitation Project ended for the 2021 year around February with roughly 1,793 feet of wastewater mainlines treated. This year's project will take place in April or May.



CIPP is the process of inserting a flexible liner inside existing pipes, where the liner is then inflated and exposed to heat to harden the liner inside the pipe, creating a smooth surface inside the existing pipe. This process is more cost effective than removing and replacing the old pipes.

# 2021 PROJECT HIGHLIGHTS

There were 6 hydrants replaced in Baker City for 2021, and 4 new hydrants installed. Two of the hydrants replaced this year were from the 1950's and only had two 2.5" diameter ports.

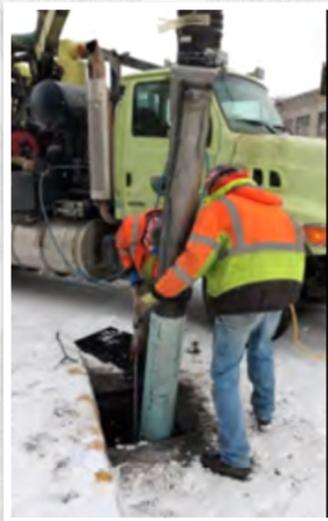
The new hydrants will help to supply a greater volume of water for fire protection due to having two 2.5" ports and a 5.25" diameter steamer port.

With a total of 10 hydrants replaced or installed, Baker City Public Works has surpassed their goal of replacing five hydrants per year.



Baker City Public Works crews cleaned 1,074 catch basins around Baker City and 2,894 feet of storm lines were video inspected, repaired or cleaned in 2021.

Stormwater catch basins must be cleaned regularly or debris will build up inside and eventually plug the stormwater collection system. It is also important to keep these basins and lines clean because most of the stormwater drains directly into the Powder River.



# WHAT'S HAPPENING IN 2022?

## WATER

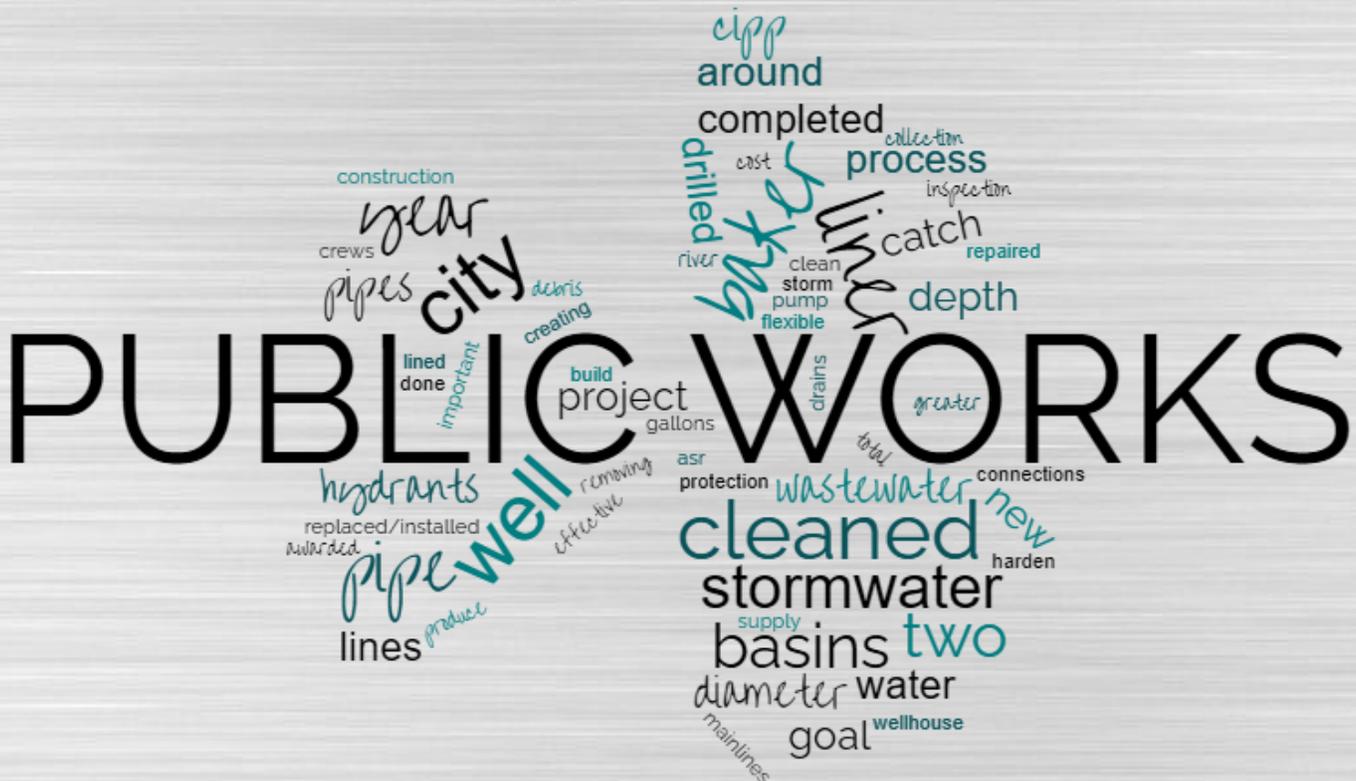
- \* ASR 2 Wellhouse & Piping Construction
- \* Mountain Pipeline project continues
- \* Hydrant replacements– ODOT ADA

## WASTEWATER

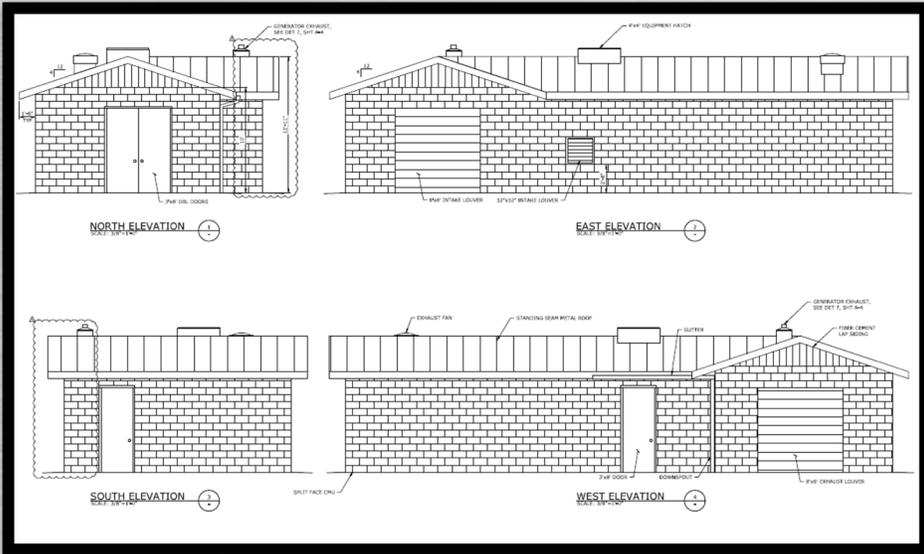
- \* CIPP Pipe Lining
- \* Wastewater treatment facility effluent disposal project to finish construction and piping, along with upgrades to current system
- \* Biosolids removal from Main Lagoon, Pond A

## STORMWATER

- \* CIPP Pipe Lining
- \* Inspection of the condition of existing storm mainlines



# ASR 2 WELLHOUSE & PIPING



The first few phases of the Municipal ASR 2 Well and Wellhouse consisted of:

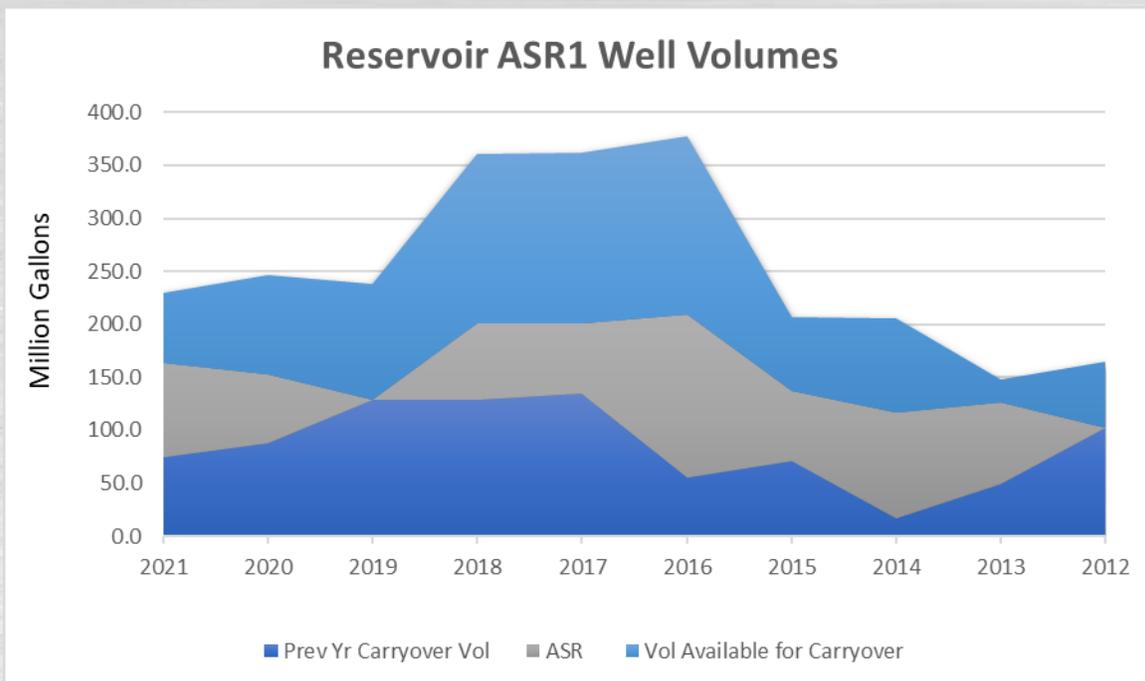
- \* Modifying the City's water rights
- \* Design of the well and well house
- \* Well drilling and pump testing

On November 2, 2021 the bid was accepted for the construction of the well house and piping. The final phase of the ASR 2 well project is scheduled to start in April 2022.

The well is expected to be operational by the Fall of 2022, which will help achieve the City's goal of water supply security and increase the quantity of our water supply between the City's other well and the watershed supply.

### The final phase:

- \* Construction of a new well pump station
- \* Piping
- \* Electrical & controls
- \* Deep well turbine pump
- \* Chlorination system
- \* Back up generator



The above graph shows the volume of water supply in million gallons stored in the ASR1 Well located at the Water Treatment Plant throughout the last 10 years. Use of the ASR2 well will help to increase the City's water supply, offer more storage and supply additional water in the summer months. The ASR2 well is capable of producing 2.16 million gallons per day.

# MOUNTAIN PIPELINE PROJECT

The next phases of the Mountain Pipeline Project from the Elk Creek settling tank to the Little Salmon Creek diversion was expected to start in the summer of 2021. However due to the high cost and supply shortage of materials the start date was postponed.



## HISTORY OF THE MOUNTAIN LINE

The pipeline road follows the route of a ditch originally built during the Civil War era to transport water to mines in the Auburn area southwest of Baker City.

The project was opened back up for bids in November and final bids were received December 7, 2021. Work is expected to begin May of 2022.

The open ditch had a wooden flume that was later replaced with a concrete pipe between the 1920's and 1930's.



Due to problems with leaking joints and cracked concrete pipes from tree roots, the concrete pipeline is being replaced with ductile iron in the high pressure areas and PVC piping in the areas with lower pressure.



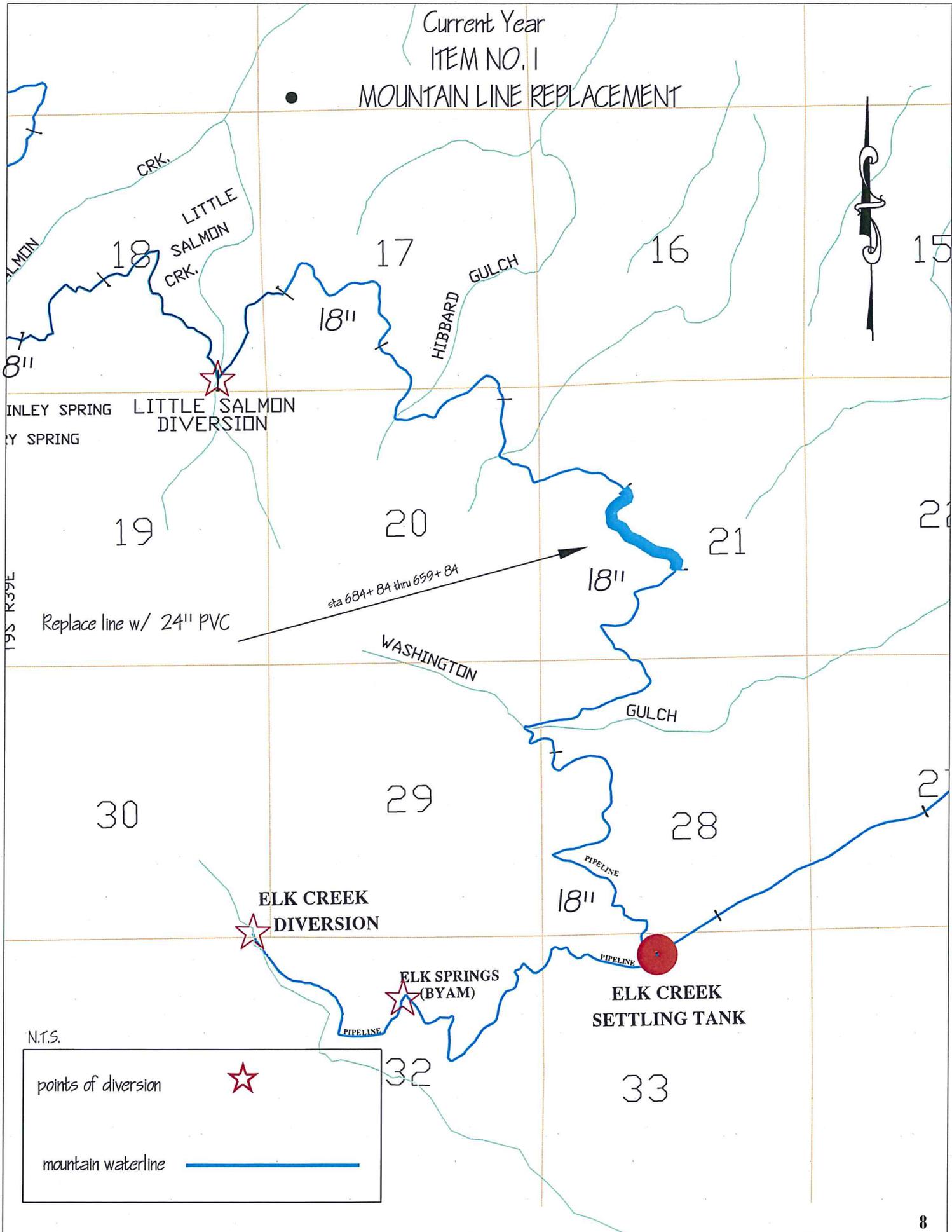
**BAKER CITY PUBLIC WORKS  
3 YEAR WATER CAPITAL PLAN  
ESTIMATE OF COST  
2021-2022 FISCAL YEAR  
JANUARY 1, 2021—JUNE 30, 2022**

ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Mountain Line Replacement Elk Cr. To Little Salmon Phase III	2500	Lineal Feet	\$190.00	\$475,000	24" PVC	Purchase, transport and install, 24" C-900 PVC Pipe and fittings. (May thru June)
2	Mountain Line Replacement Road Work and Prep	1	Lump Sum	\$25,000.00	\$25,000	N/A	Road and prep work for pipe installation. (May thru June)
3	Replace Hydrants for ODOT ADA Project	7	Each	\$6,000.00	\$42,000	Varies	Replace hydrants as required for ODOT ADA project. Locations to be determined once construction schedule is available.
4	Water Line Extensions	Varies	Lineal Feet	Varies	\$10,000	Varies	Misc. water line extensions.
5	Indiana Water Line Replacement	350	Lineal Feet	\$160.00	\$56,000	16" DI.	Replace old steel water line with 16" DI water line prior to paving Indiana
6	Groundwater Source Development	1	Lump Sum	\$1,200,000.00	\$1,200,000	N/A	Construct well house, pump station, new piping, chlorination system, back-up power, telemetry, start up and commissioning. Includes consulting services during construction and start up.
<b>SUBTOTAL</b>					<b>\$1,808,000</b>		
<b>ENGINEERING (10%)*</b>					<b>\$60,800</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$149,504</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$2,018,304</b>		

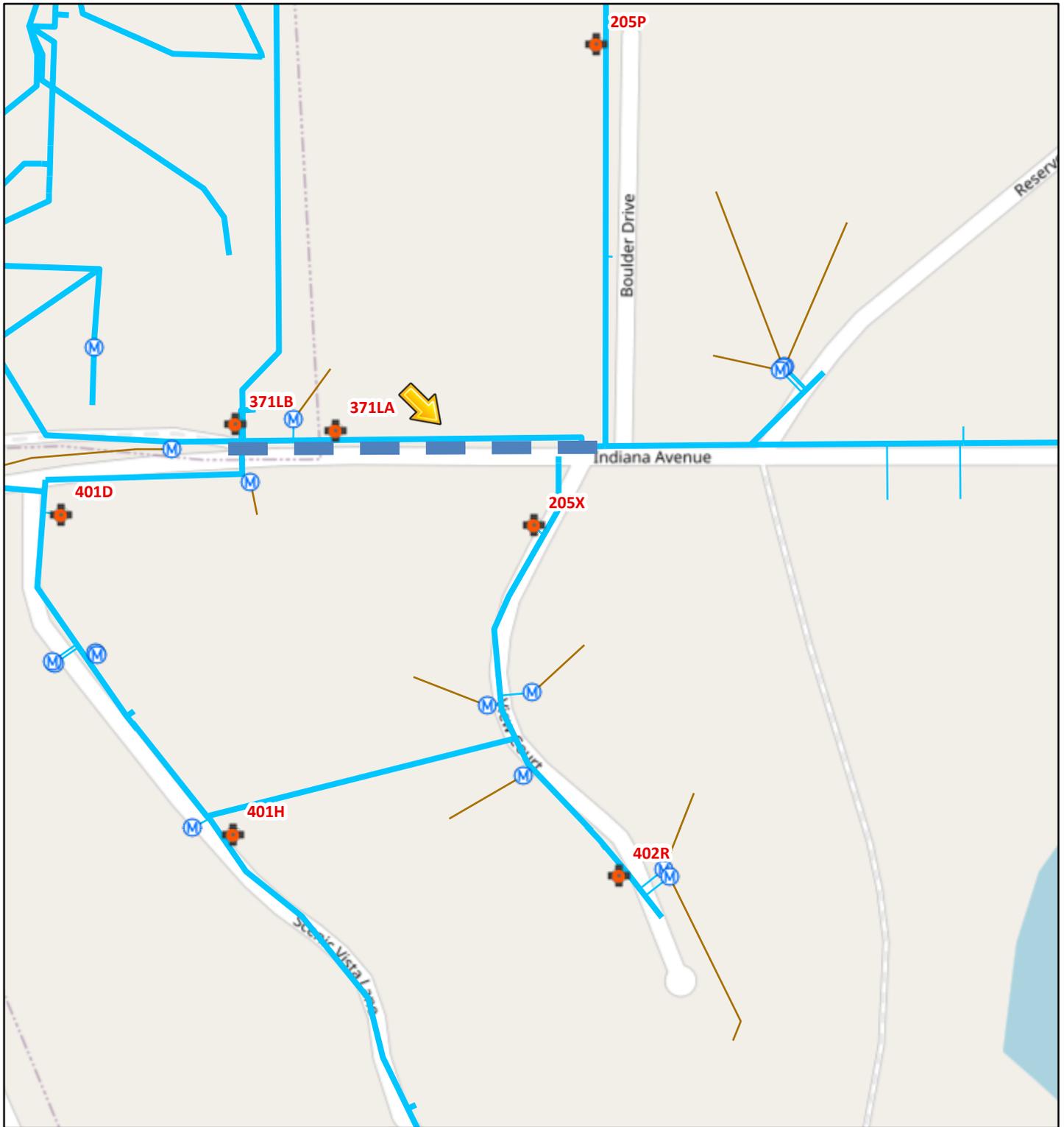
Items noted in blue lettering are projects required by state or federal regulatory agencies.

\* Groundwater Source Development costs not included in engineering calculation.

Current Year  
ITEM NO. 1  
MOUNTAIN LINE REPLACEMENT



# Water Current Year - Item 5 - Indiana Ave. ML Replacement



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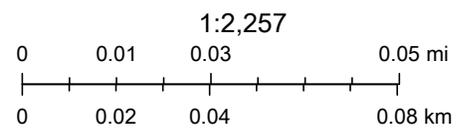
Water Distribution System - wHydrant

Water Distribution System - wServiceConnection

Water Distribution System - wServiceCallout

Water Distribution System - wLateralline

Water Distribution System - wMain



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**BAKER CITY PUBLIC WORKS  
3 YEAR WATER CAPITAL PLAN  
ESTIMATE OF COST  
2022-2023 FISCAL YEAR  
JULY 1, 2022—JUNE 30, 2023**

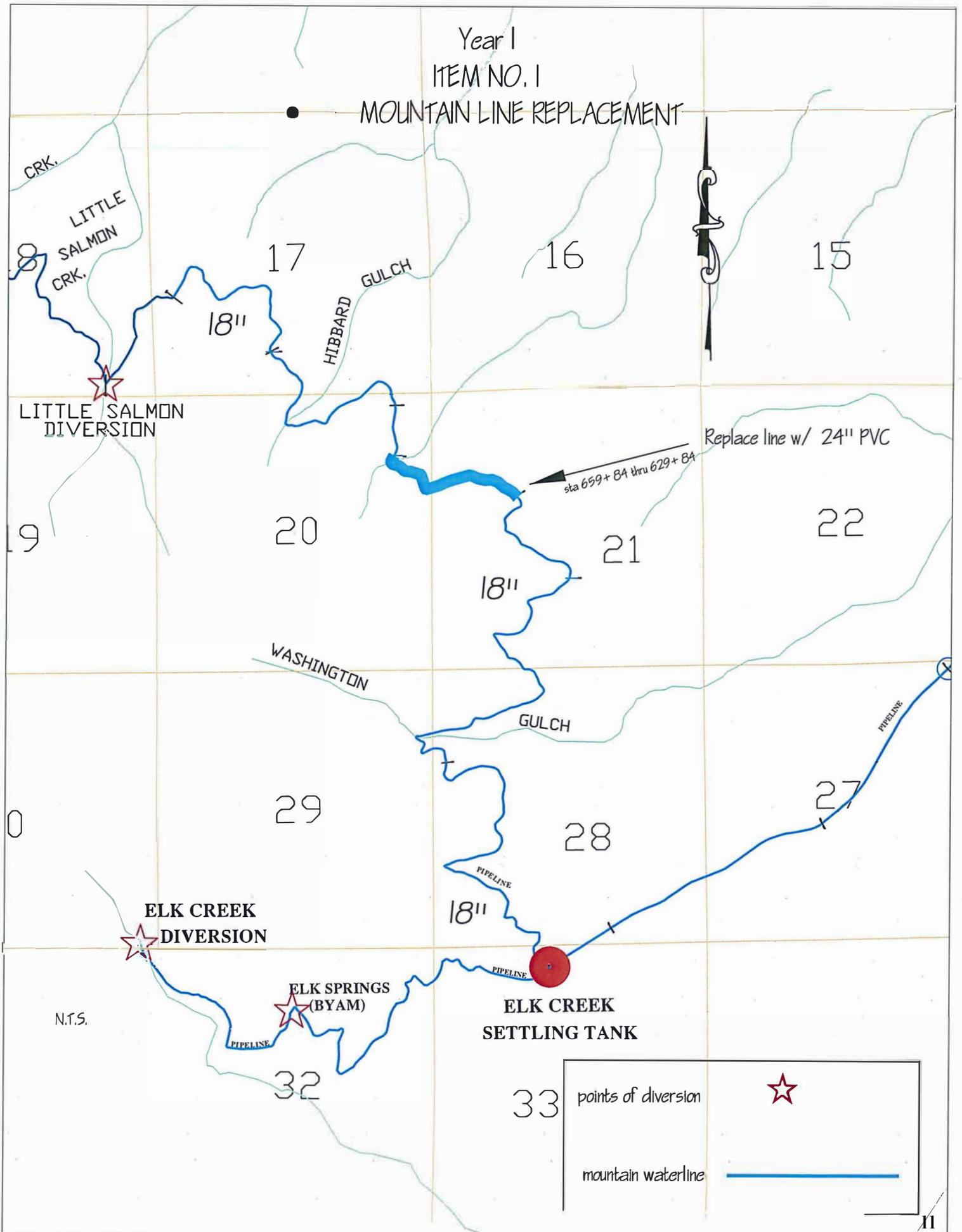
ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Mountain Line Replacement Elk Cr. To Little Salmon Phase IV	3000	Lineal Feet	\$200.00	\$600,000	24" PVC	Purchase, transport and install, 24" C-900 PVC Pipe and fittings, ending at Rock Springs Diversion. (July thru September)
2	Mountain Line Replacement Road Work and Prep	1	Lump Sum	\$30,000.00	\$30,000	N/A	Road and prep work for pipe installation. (May thru June)
3	Replace Hydrants for ODOT ADA Project	7	Each	\$6,000.00	\$42,000	Varies	Replace hydrants as required for ODOT ADA project. Locations to be determined once construction schedule is available.
4	Water Line Extensions	Varies	Lineal Feet	Varies	\$10,000	Varies	Misc. water line extensions.
5	Diversion Structure Improvements (Little Salmon and Finley Springs)	1	Lump Sum	\$10,000.00	\$10,000	N/A	Improve diversions and line basins with concrete to address turbidity issues.
6	Campbell Street ( Main St. to 10 St.)	500	Lineal Feet	\$165.00	\$82,500	8" DI	Install 8" DI pipe to replace aged and under-sized CI pipe in intersections prior to roadway improvements.
7	10th Street ( G St. to H St.)	500	Lineal Feet	\$160.00	\$80,000	8" DI	Install 8" DI pipe to replace 4" CI. and connect to 8 " line in G Street for improved distribution grid and fire flows.
8	Marble Springs Transmission Line Relocation	800	Lineal Feet	\$210.00	\$168,000	12" DI.	Relocate transmission line for improved road access. This is dependent on USFS timeline for work on Marble Creek Road.
9	Groundwater Source Development	1	Lump Sum	\$500,000.00	\$500,000	N/A	Construct well house, pump station, new piping, chlorination system, backup power, telemetry, start up and commissioning. Includes consulting services during construction and start up.
<b>SUBTOTAL</b>					<b>\$1,522,500</b>		
<b>ENGINEERING (10%)*</b>					<b>\$102,250</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$129,980</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$1,754,730</b>		

Items noted in blue lettering are projects required by state or federal regulatory agencies.

\* Groundwater Source Development costs not included in engineering calculation.

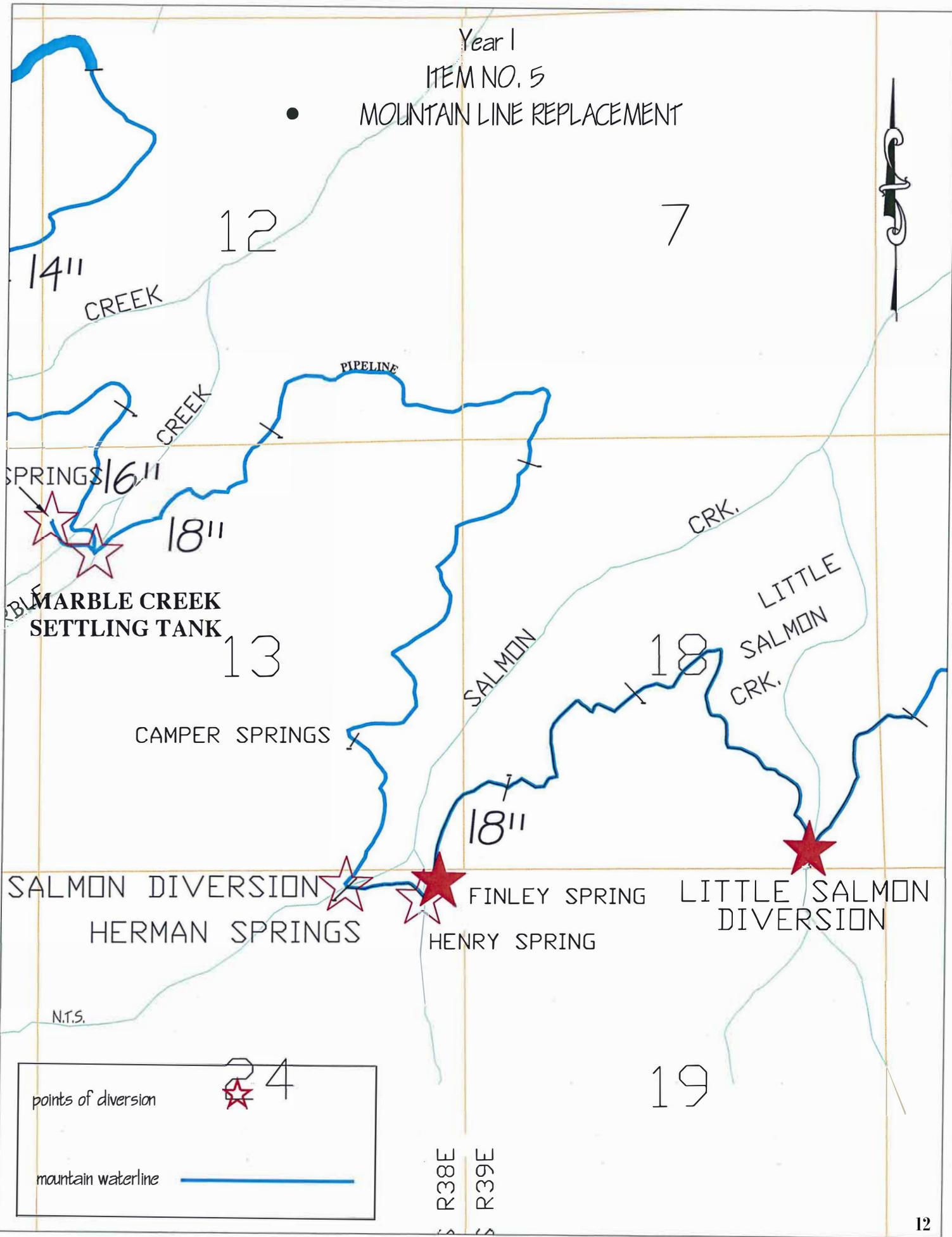
Year I  
ITEM NO. 1

MOUNTAIN LINE REPLACEMENT



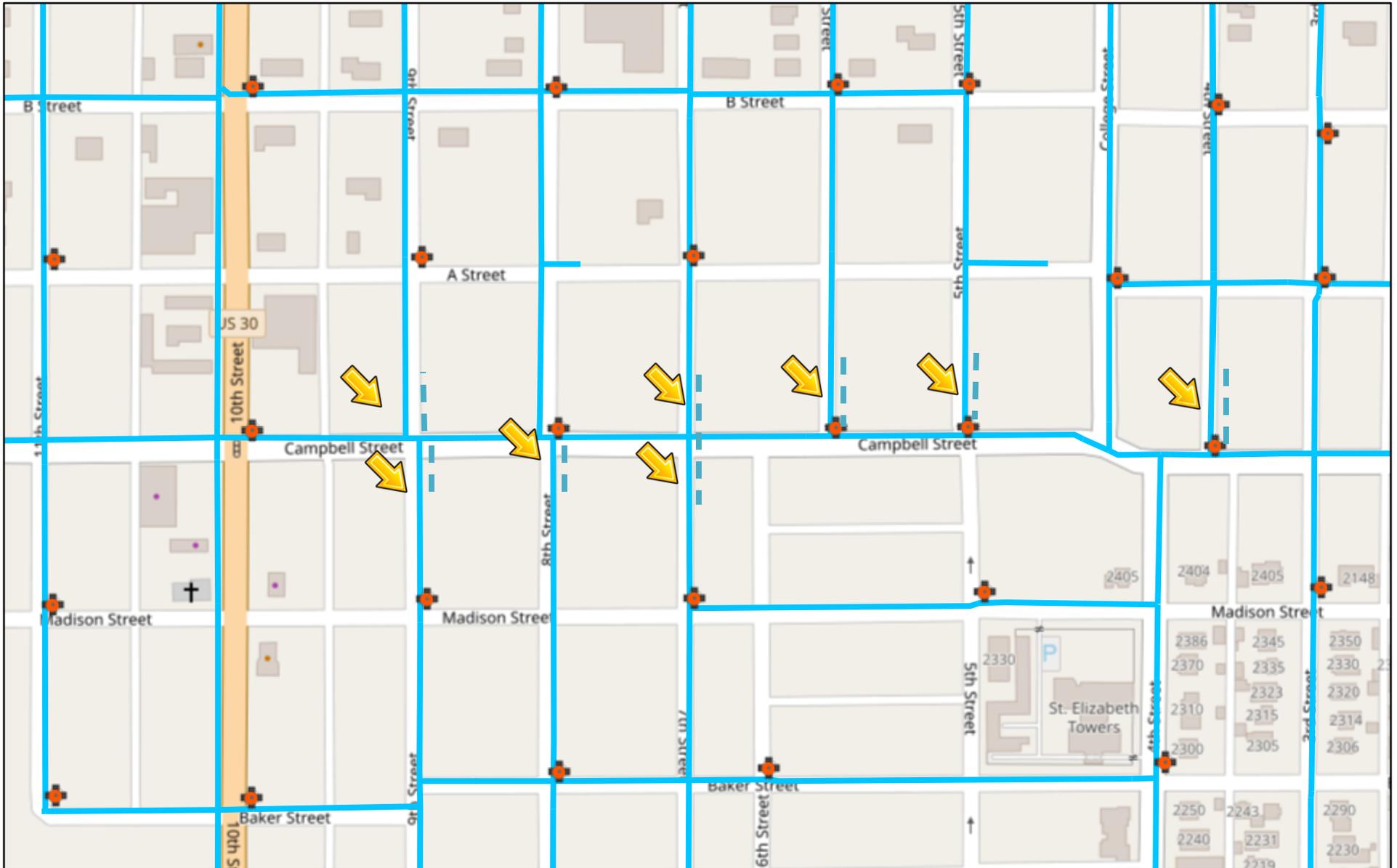
points of diversion	☆
mountain waterline	—

Year 1  
ITEM NO. 5  
MOUNTAIN LINE REPLACEMENT



points of diversion		24
mountain waterline		

# Water Year 1 - Item 6 - Campbell St. - Replace ML @ Intersections



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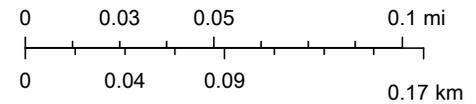
Lines

 Override 2

 Water Distribution System - wHydrant

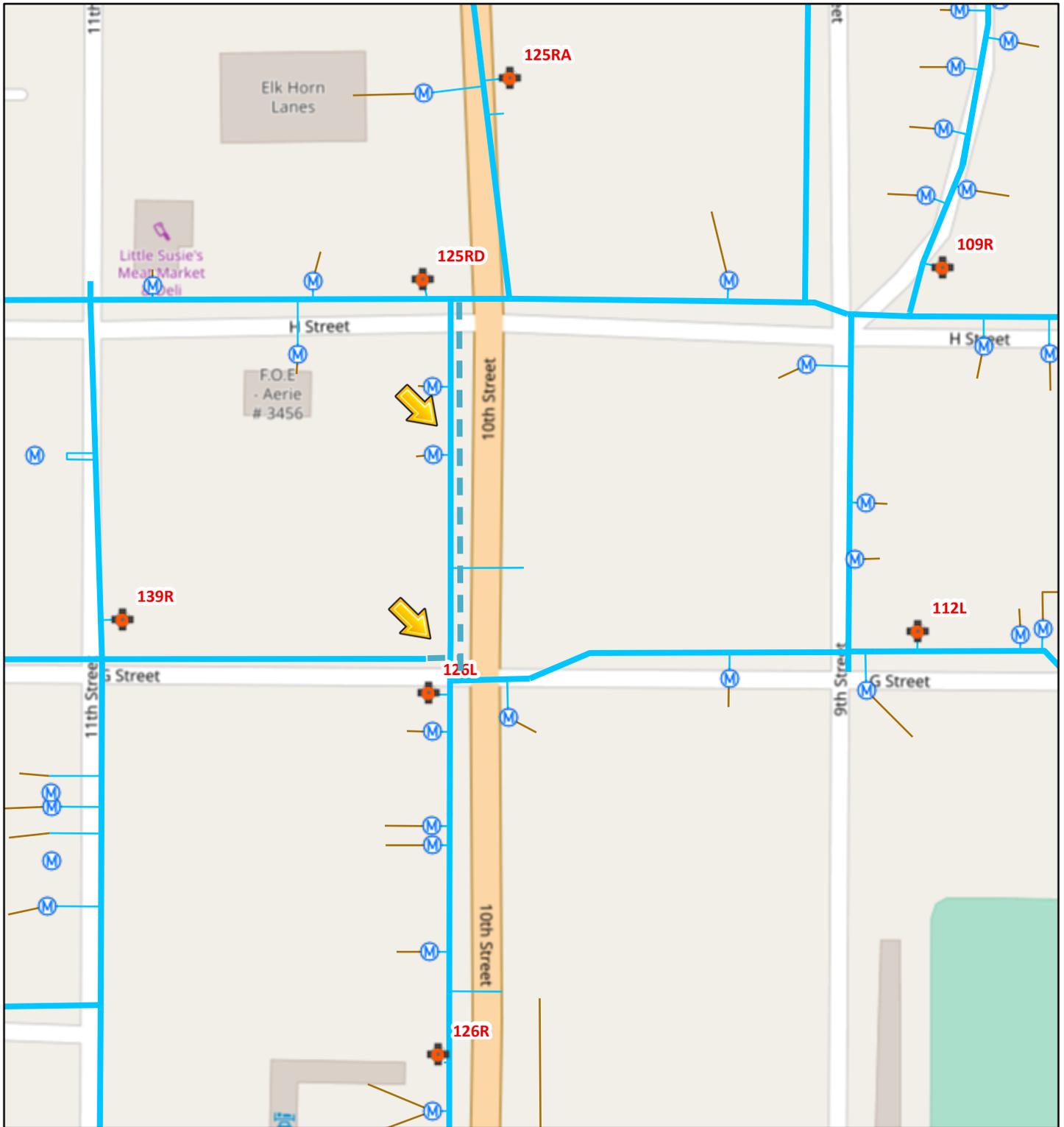
 Water Distribution System - wMain

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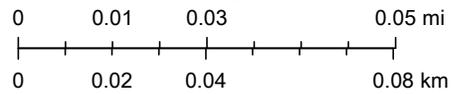
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# Water Year 1 - Item 7 - 10th St. - Replace ML



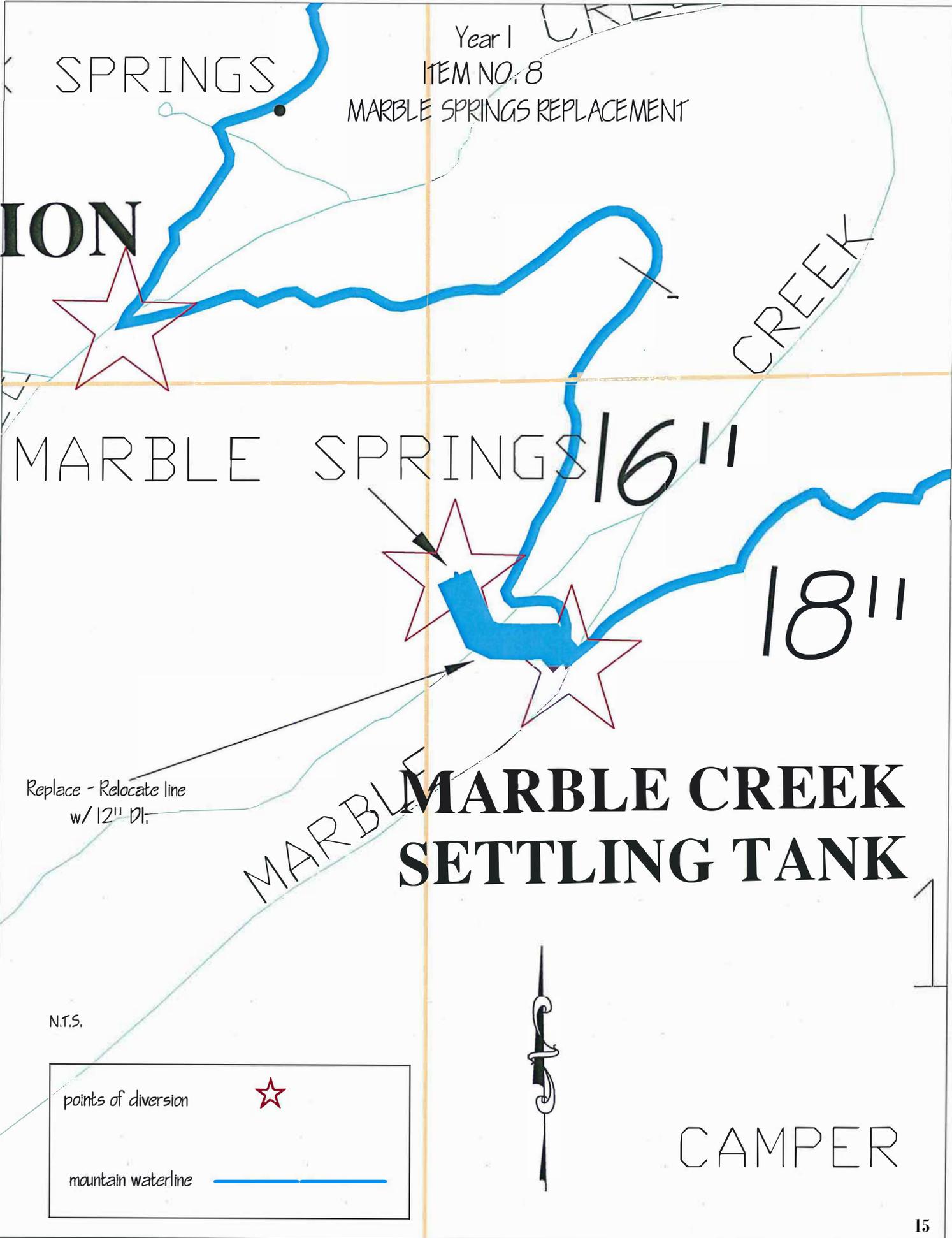
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-  Water Distribution System - wServiceConnection
-  Water Distribution System - wServiceCallout
-  Water Distribution System - wLateralline
-  Water Distribution System - wMain
-  Water Distribution System - wHydrant

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Year 1  
ITEM NO. 8  
MARBLE SPRINGS REPLACEMENT

SPRINGS

ION

CREEK

MARBLE SPRINGS 16"

18"

# MARBLE CREEK SETTLING TANK

Replace - Relocate line  
w/ 12" DI.

MARBLE

CAMPER

N.T.S.

points of diversion	☆
mountain waterline	—

**BAKER CITY PUBLIC WORKS**  
**3 YEAR WATER CAPITAL PLAN**  
**ESTIMATE OF COST**  
**2023-2024 FISCAL YEAR**  
**JULY 1, 2023—JUNE 30, 2024**

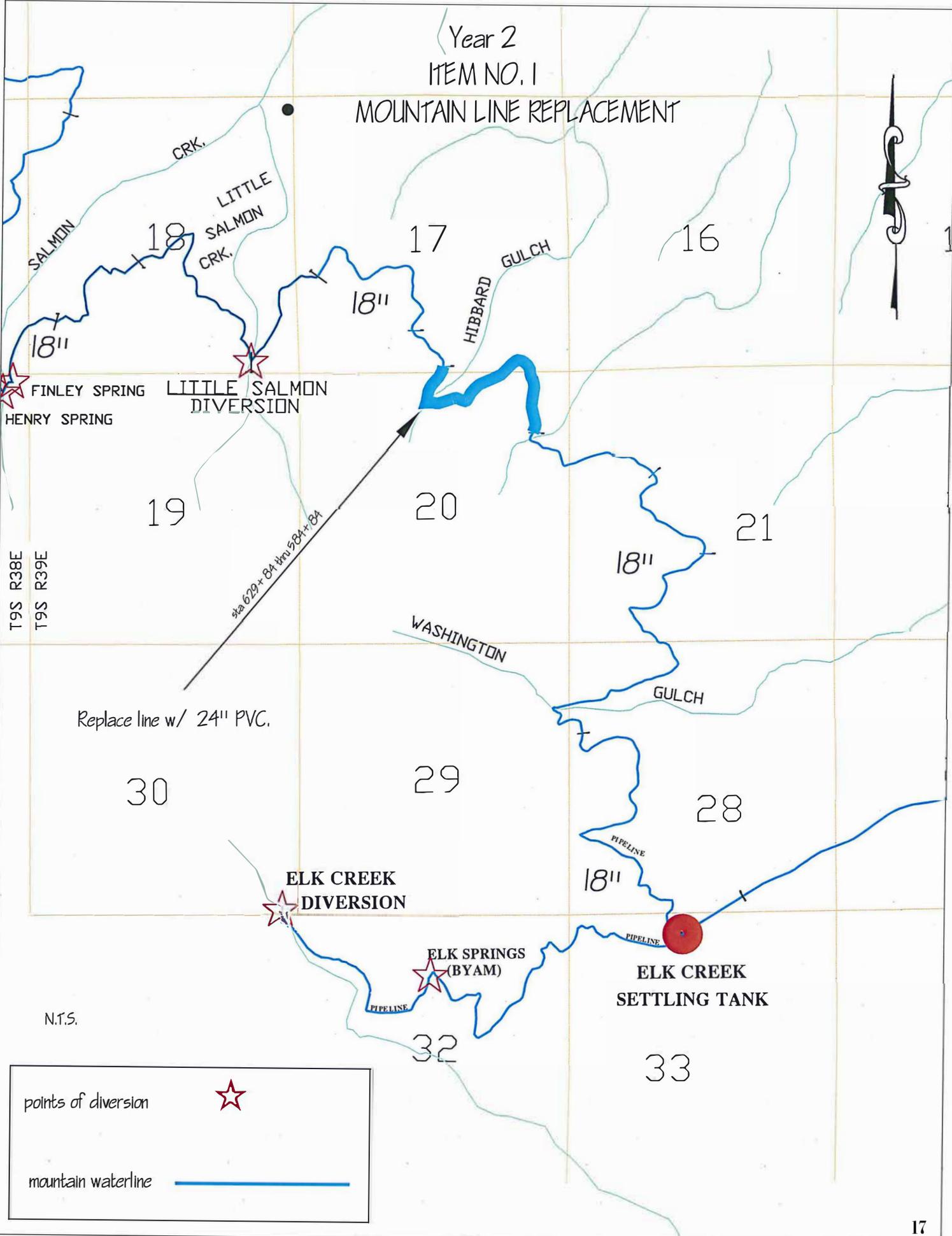
ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Mountain Line Replacement Elk Cr to Little Salmon Phase V	4500	Lineal Feet	\$220.00	\$990,000	24" PVC	Purchase, transport and install, 24" C-900 PVC Pipe and fittings. (July thru October)
2	Mountain Line Replacement Road Work and Prep	1	Lump Sum	\$50,000.00	\$50,000	N/A	Road and prep work for pipe installation. (May thru June)
3	Replace Hydrants	5	Each	\$6,000.00	\$30,000	Varies	Replace or rebuild hydrants at Cedar/ D St., 2nd / E St., 19th / Baker, Oak St. / Court and Ash / Spring Garden
4	Water Line Extensions	Varies	Lineal Feet	Varies	\$10,000	Varies	Misc. water line extensions.
5	Carter Street Design	1	Lump Sum	\$50,000.00	\$50,000	12" DI	Design for replacing leaking cast iron line.
6	Chlorine System Upgrade Design	1	Lump Sum	\$150,000.00	\$150,000	N/A	Design improvements to upgrade disinfection system.
<b>SUBTOTAL</b>					<b>\$1,280,000</b>		
<b>ENGINEERING (10%)*</b>					<b>\$108,000</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$111,040</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$1,499,040</b>		

Items noted in blue lettering are projects required by state or federal regulatory agencies.

\* Contract design costs not included in engineering calculation.

Year 2  
ITEM NO. 1

### MOUNTAIN LINE REPLACEMENT



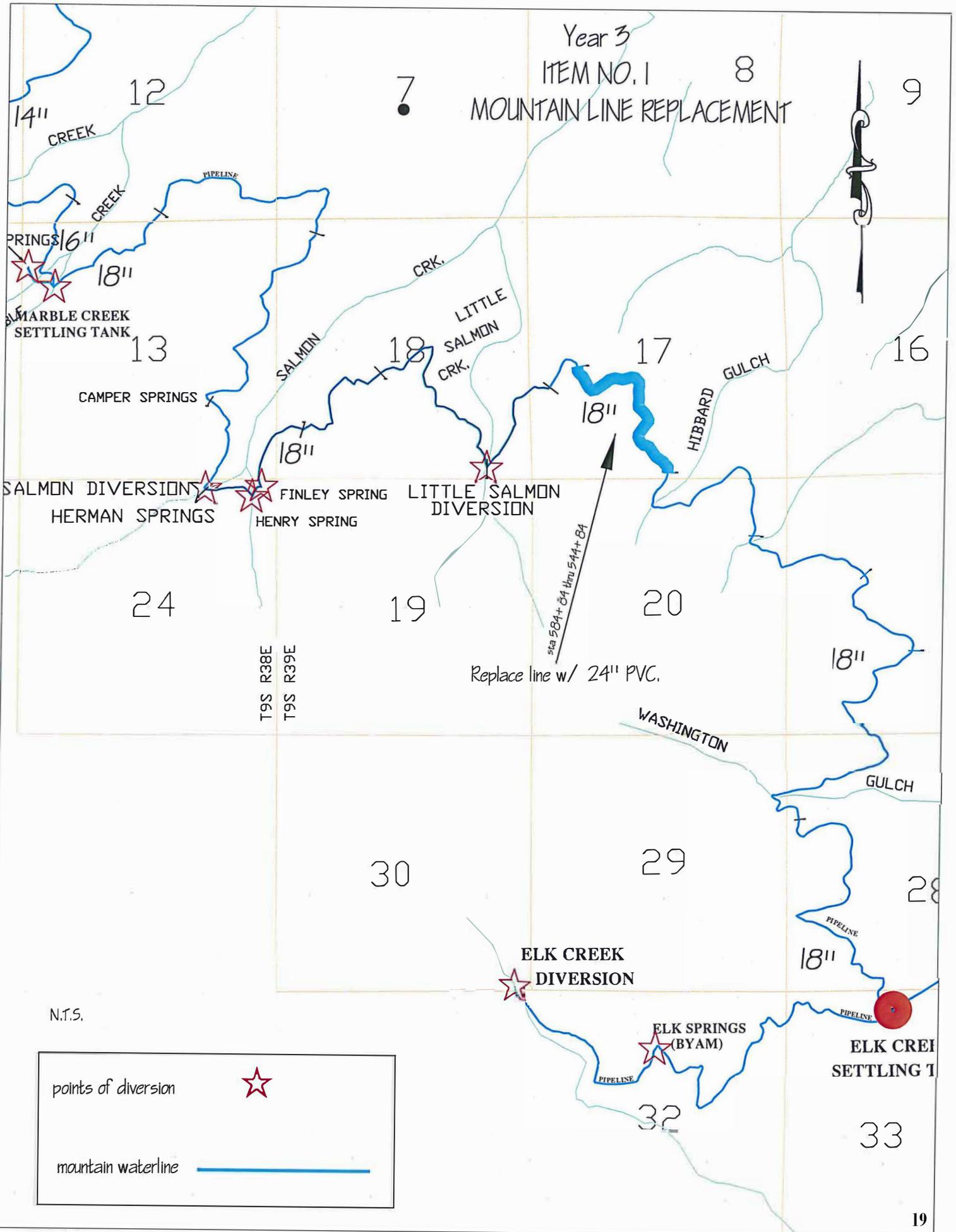
points of diversion	☆
mountain waterline	—

**BAKER CITY PUBLIC WORKS  
3 YEAR WATER CAPITAL PLAN  
ESTIMATE OF COST  
2024-2025 FISCAL YEAR  
JULY 1, 2024—JUNE 30, 2025**

ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Mountain Line Replacement Elk Cr. To Little Salmon Phase VI	4000	Lineal Feet	\$220.00	\$880,000	24" PVC	Purchase, transport and install, 24" C-900 PVC Pipe and fittings. (July thru October)
2	Mountain Line Replacement Road Work and Prep	1	Lump Sum	\$50,000.00	\$50,000	N/A	Road and prep work for pipe installation. (May thru June)
3	Replace Hydrants	5	Each	\$6,000.00	\$30,000	Varies	Replace hydrants at Elm / Estes, Cedar / H St.(650'North), Fourth / Colorado, 10th / H St. and 10th / D St.
4	Water Line Extensions	Varies	Lineal Feet	Varies	\$10,000	Varies	Misc. water line extensions.
5	Place Street (13th St. to 17th St.)	1190	Lineal Feet	\$135.00	\$160,650	8" DI	Install 8" DI pipe to improve distribution grid, fire flows and eliminate spaghetti service lines.
6	Reservoir Well Rehabilitation	1	Lump Sum	\$110,000.00	\$110,000	N/A	Remove encrustation on well liner.
7	Carter Street	600	Lineal Feet	\$175.00	\$105,000	12" DI	Replacement of leaking cast iron line.
<b>SUBTOTAL</b>					<b>\$1,345,650</b>		
<b>ENGINEERING (10%)*</b>					<b>\$134,565</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$118,417</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$1,598,632</b>		

Items noted in blue lettering are projects required by state or federal regulatory agencies.

Year 3  
ITEM NO. 1  
MOUNTAIN LINE REPLACEMENT

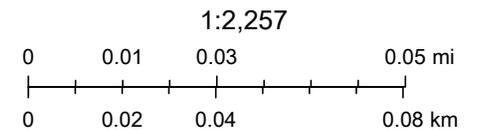


# Water Year 3 - Item 5 - Place St ML Installation



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- Water Distribution System - wHydrant
- Water Distribution System - wServiceConnection
- Water Distribution System - wServiceCallout
- Water Distribution System - wLateralLine
- Water Distribution System - wMain
- Taxlots (House Number)

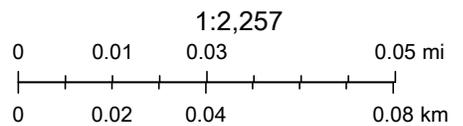


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# Water Year 3 - Item 7 - Carter St ML Replacement



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-  Water Distribution System - wServiceCallout
-  Water Distribution System - wLateralLine
-  Water Distribution System - wMain
-  Water Distribution System - wHydrant
-  Water Distribution System - wServiceConnection
-  Taxlots (House Number)

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# WASTEWATER IMPROVEMENT PROJECT

## INFO & FACTS

What does the wastewater facility consist of?

### Main Lagoon:

- 1 main treatment lagoon
- 3 smaller holding lagoons

### Storage Pond:

- Completed in 2021
- 26.5 acres

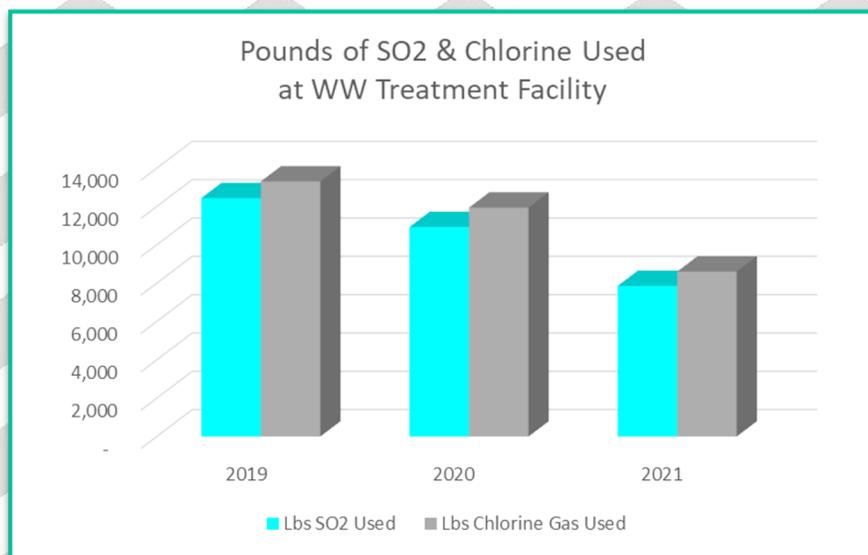
### Transfer Pipeline:

- Connects the main lagoon & storage pond
- Approximately 7 miles long

Effluent will move through the pipeline to the storage pond using gravity flow, where it will then be stored for the winter. In the warmer months the treated effluent will be pumped for irrigation to multiple fields nearby.

Improvements are being made at the Main Lagoon; A 1/4" perforated screen designed to fit within the existing concrete vault will be installed to replace the grinder. The screen is a more effective way to remove inorganics such as rags, wipes & plastics.

The Wastewater Improvement Project is nearing completion. In 2021 the new storage pond located near Sunny Slope and Lee Lane was constructed, and lined with a HDPE Liner to eliminate leakage from the pond. The transfer pipeline which is approximately 7 miles long, consists of 16" diameter PVC and high-density polyethylene pipe. The pipeline was bored under the Powder River and I-84 to flow east along Lee Lane to connect the Storage Pond to the Main Lagoon. The purpose of the Storage Pond is to eliminate discharge of treated effluent into the Powder River. This new process will also reduce chemical usage, and eliminate the need to treat effluent with Sulfur Dioxide. As you can see in the chart below the amount of SO<sub>2</sub> and Chlorine Gas used has decreased since 2019.



## WHAT'S HAPPENING NEXT...

The next phase in the Wastewater Improvement project is Biosolid Waste Removal. Pond A will be dewatered, biosolids will then be removed from the bottom of the cell and relocated to a 40 acre field adjacent to the lagoon. The biosolids will be dried until the moisture is less than 70%. Once dried, the biosolids can be used as fertilizer for lands used for livestock grazing and irrigated crop farming.



# ALL ABOUT SEWER LATERALS

The City of Baker City Wastewater Department has noticed an increase in wastewater lateral repairs & replacements (See Chart below.) There are many reasons laterals would need to be replaced.

**The most common reasons include: poor condition of the pipe, pipe collapse and tree roots in the pipe.**

## The most common sewer pipe types:

**Terracotta (clay pipe)** - Common type of pipe used for sewer piping prior to 1940

-Typically last 50-60 years

**Pros:** Is chemical resistant

**Cons:** Difficult to install (brittle), subject to root intrusion

**Cast Iron**-This type of pipe has been used for decades.

-Typically lasts 30-50 years

**Pros:** Durable and strong

**Cons:** Prone to rusting and corrosion, due to the metallic surfaces constant contact with moisture, rusting inside the pipe leads to reduced flow

**Orangeburg**- Began being used during WWII due to shortage of cast iron

-Typically lasts 30 years

-Nearly impossible to maintain due to being made out of wood fibers bound using water-resistant adhesive, then filled with liquified coal tar pitc<sup>α</sup>

**Pros:** Inexpensive

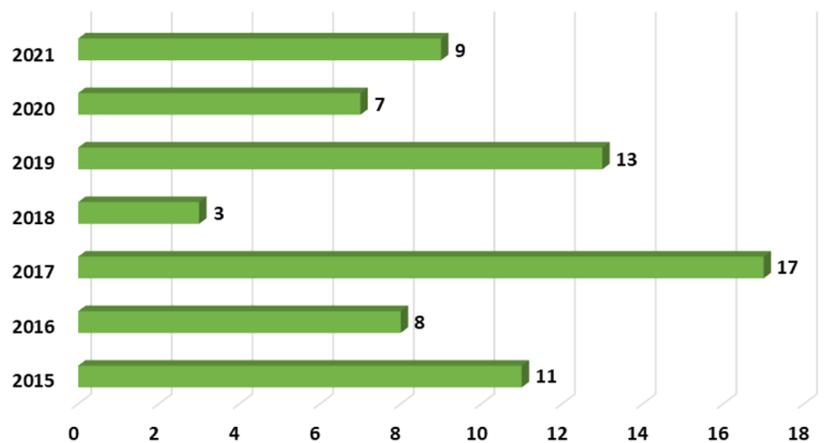
**Cons:** Lightweight & brittle, absorbs moisture and deforms under pressure

**PVC**- Easiest piping to install

**Pros:** Versatile, lightweight, flexible & affordable. Resistant to chemicals & corrosion. It's smooth surface provides better flow characteristics

**Cons:** Unable to support heavy weight like cast iron or clay pipes

Number of WW Laterals Replaced/Repaired



Orangeburg



Terracotta



Cast Iron



PVC

**BAKER CITY PUBLIC WORKS  
3 YEAR WASTEWATER CAPITAL PLAN  
ESTIMATE OF COST  
2021-2022 FISCAL YEAR  
JANUARY 1, 2022—JUNE 30, 2022**

ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Various Locations	Varies	Lineal Feet	Varies	\$150,000	Varies	Install CIPP (Cured In Place Pipe) lining to prevent leakage & improve structural & flow characteristics of deteriorating sewage lines.
2	*Wastewater Treatment Facility	N/A	Lump Sum	\$4,000,000.00	\$4,000,000	N/A	Finish construction of effluent storage pond and piping project. Also upgrade current system to include grit removal, screening, valve replacement, Scada update and discharge piping.
3	* Wastewater Treatment Facility	N/A	Lump Sum	\$500,000.00	\$500,000	N/A	Bio solids removal from pond A.
<b>SUBTOTAL</b>					<b>\$4,650,000</b>		
<b>ENGINEERING (10%)**</b>					<b>\$15,000</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$213,200</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$5,378,200</b>		

\*Current rate structure does not provide adequate funding for this project

\*\*Wastewater Treatment Facility projects not included in engineering costs

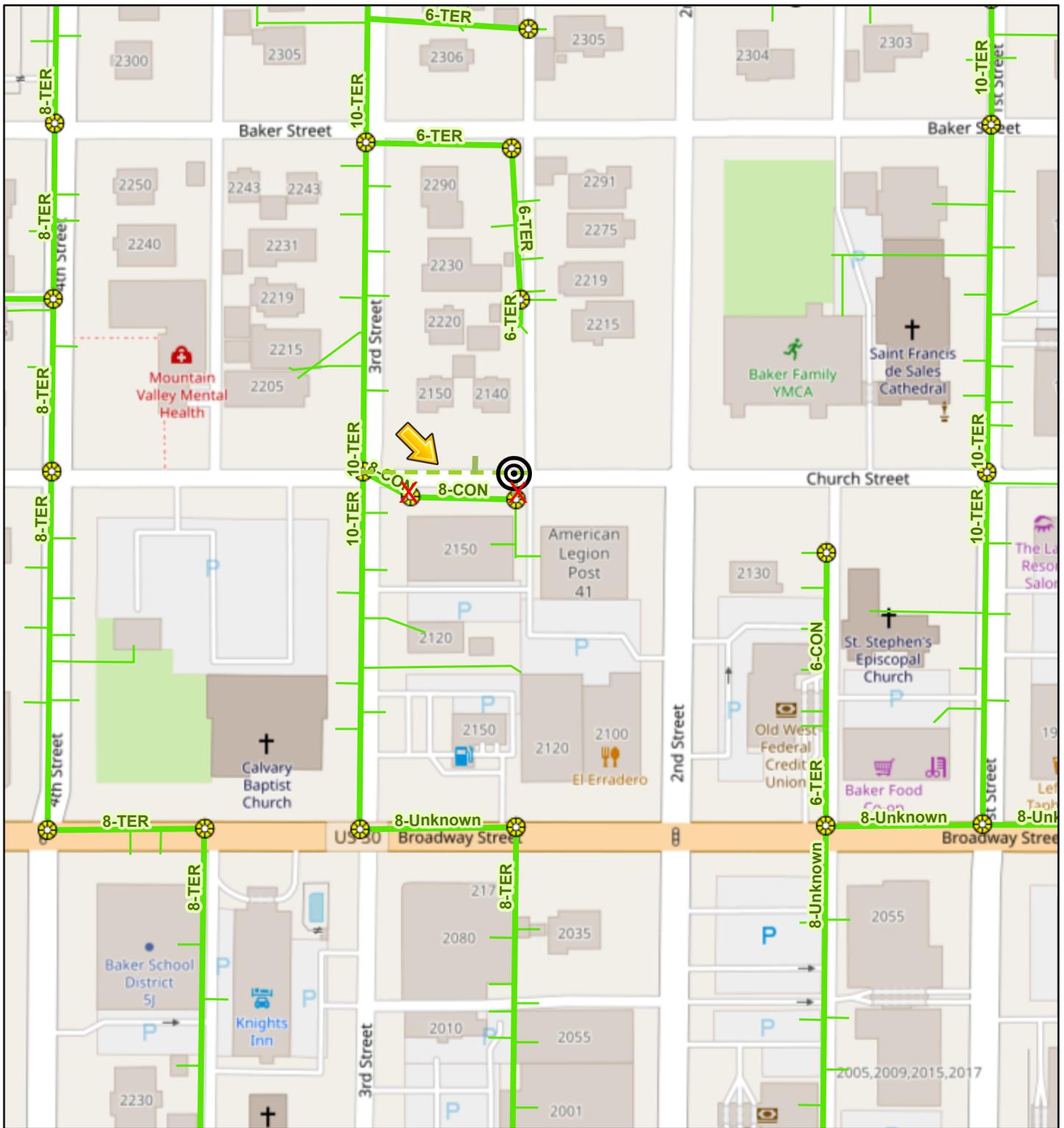
**BAKER CITY PUBLIC WORKS**  
**3 YEAR WASTEWATER CAPITAL PLAN**  
**ESTIMATE OF COST**  
**2022-2023 FISCAL YEAR**  
**JULY 1, 2022—JUNE 30, 2023**

ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Various Locations	Varies	Lineal Feet	Varies	\$150,000	Varies	Install CIPP (Cured In Place Pipe) lining to prevent leakage & improve structural & flow characteristics of deteriorating sewage lines.
2	Church Street (2nd St. - 3rd St.)	200	Lineal Feet	\$160.00	\$32,000	8" PVC	Replace old and deteriorating terra cotta sewer main to improve flow and reduce blockages
3	17th Street Manhole Installation	1	Lump Sum	\$10,000.00	\$10,000	N/A	Install manhole in 17th or on YMCA property street to eliminate long service lines that are unable to be maintained.
4	*Wastewater Treatment Facility	N/A	Lump Sum	\$500,000.00	\$500,000	N/A	Bio solids removal from small cells B, C and D.
<b>SUBTOTAL</b>					<b>\$692,000</b>		
<b>ENGINEERING (10%)**</b>					<b>\$19,200</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$56,896</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$768,096</b>		

\*Current funding / rate structure does not provide adequate funding for this project

\*\*Wastewater Treatment Facility projects not included in engineering costs

# Wastewater Year 1 - Item 2 - Church St. - Replace ML

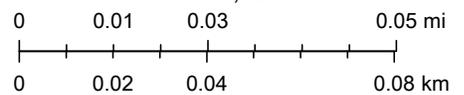


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Lines

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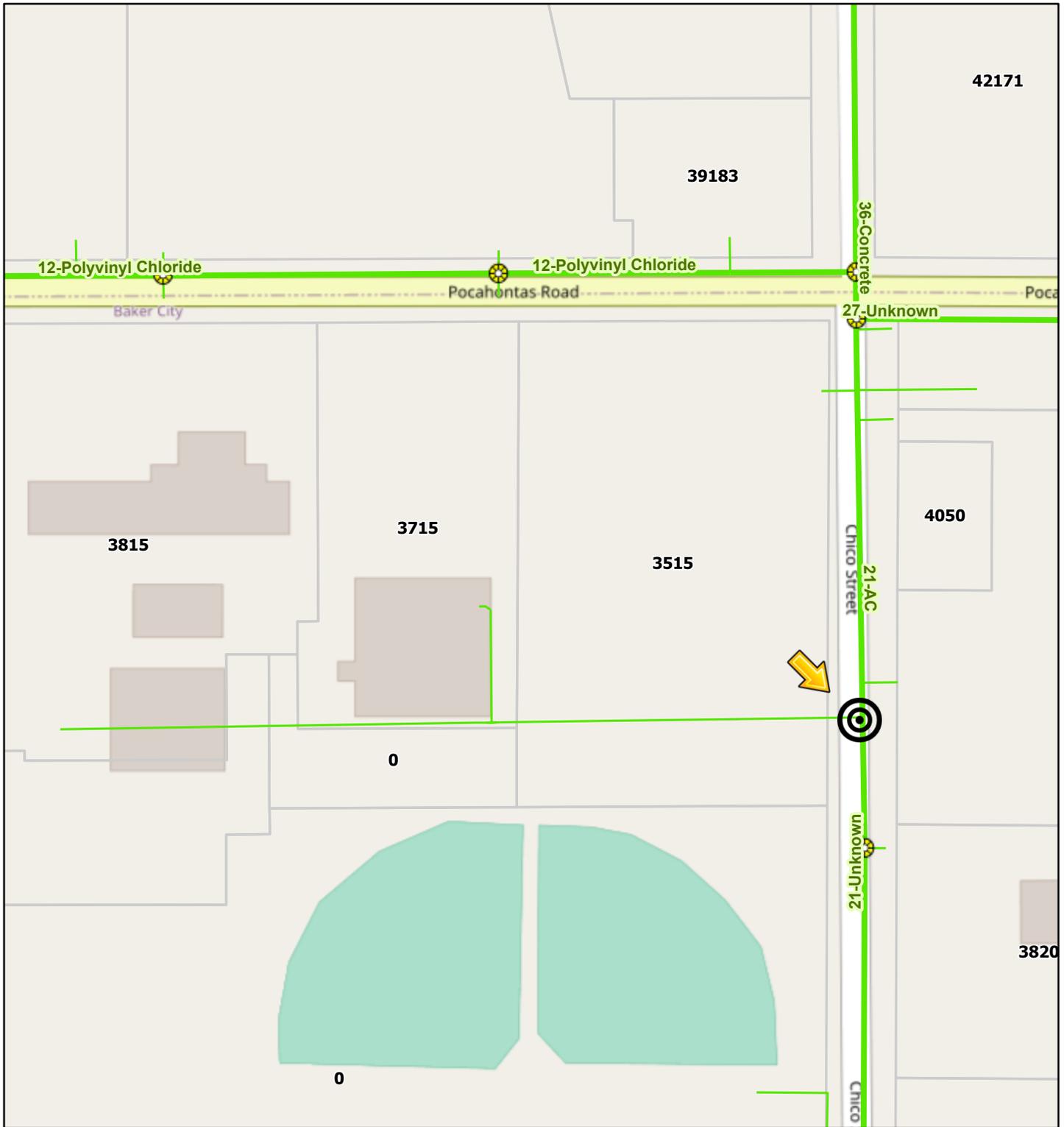
- ssLateralLine —
- ssGravityMain —



- ssManhole

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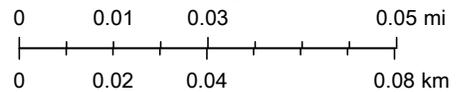
# Wastewater Year 1 - Item 3 - 17th Street - Install Manhole



2/18/2022, 11:47:44 AM

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-  ssManhole
-  ssLateralLine
-  ssGravityMain
-  Taxlots (House Number)

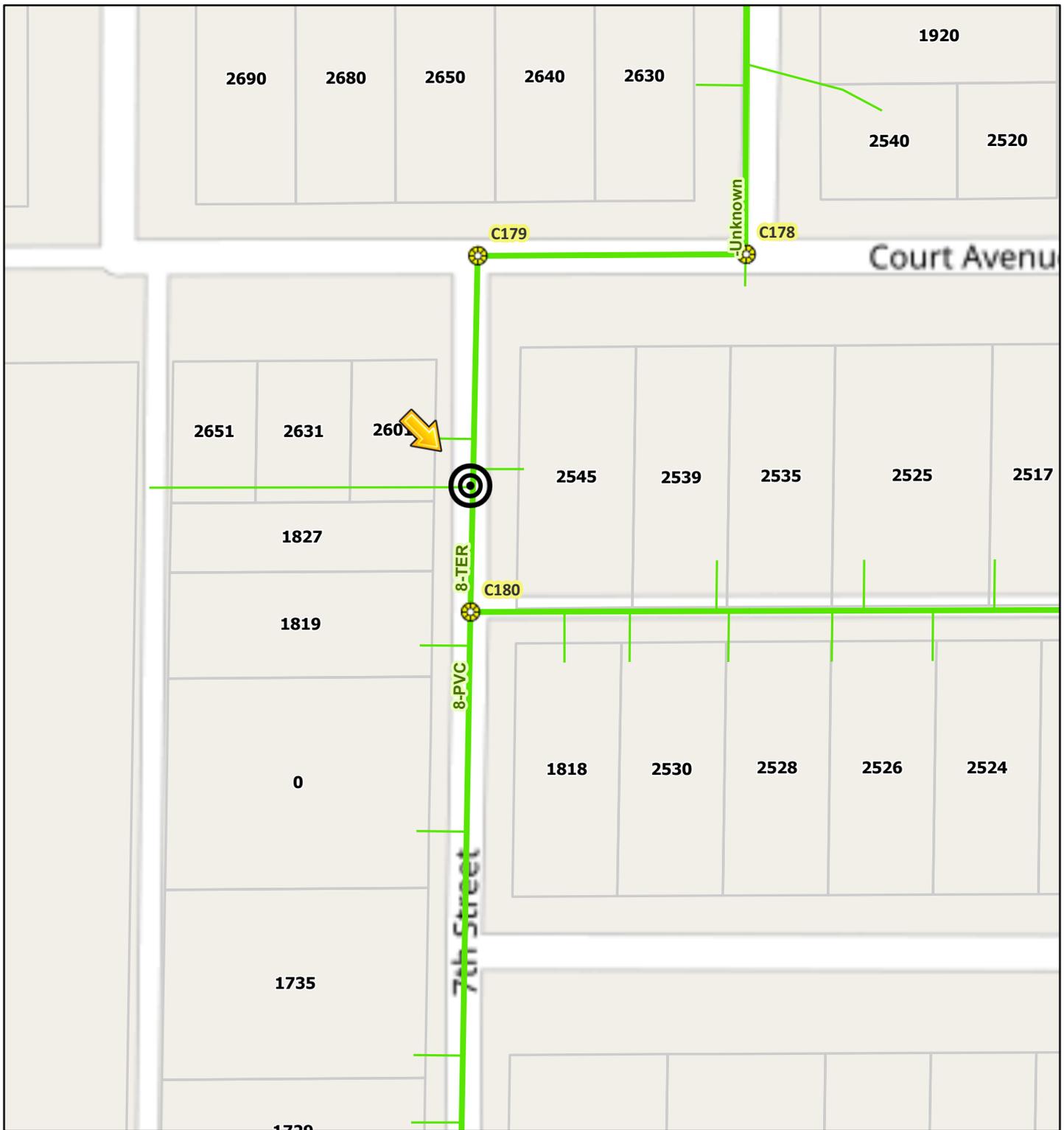


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**BAKER CITY PUBLIC WORKS**  
**3 YEAR WASTEWATER CAPITAL PLAN**  
**ESTIMATE OF COST**  
**2023-2024 FISCAL YEAR**  
**JULY 1, 2023 - JUNE 30, 2024**

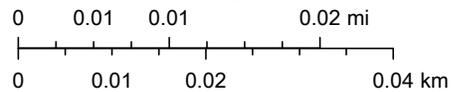
ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Various Locations	Varies	Lineal Feet	Varies	\$150,000	Varies	Install CIPP (Cured In Place Pipe) lining to prevent leakage & improve structural & flow characteristics of deteriorating sewage lines.
2	7th Street Manhole	1	Lump Sum	N/A	\$20,000	Varies	Install manhole in 7th Street between Valley and Court Avenues to eliminate multiple services that are unable to be maintained.
<b>SUBTOTAL</b>					<b>\$170,000</b>		
<b>ENGINEERING (10%)</b>					<b>\$17,000</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$14,960</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$201,960</b>		

# Wastewater Year 2 - Item 2 - 7th Street - Install Manhole



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1:1,128



-  ssManhole
-  ssLateralLine
-  ssGravityMain
-  Taxlots (House Number)

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**BAKER CITY PUBLIC WORKS**  
**3 YEAR WASTEWATER CAPITAL PLAN**  
**ESTIMATE OF COST**  
**2024-2025 FISCAL YEAR**  
**JULY 1, 2024 - JUNE 30, 2025**

ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Various Locations	Varies	Lineal Feet	Varies	\$150,000	Varies	Install CIPP (Cured In Place Pipe) lining to prevent leakage & improve structural & flow characteristics of deteriorating sewage lines.
<b>SUBTOTAL</b>					<b>\$150,000</b>		
<b>ENGINEERING (10%)</b>					<b>\$15,000</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$13,200</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$178,200</b>		

# STORMWATER MANAGEMENT

1,074 Catch Basins were cleaned by Public Works Crews in 2021

## Stormwater Catch Basins Cleaned



### Why is Storm Water Management Important?

Effective stormwater management provides environmental, economical and local community benefits.

### When stormwater systems are done well:

- Streams, rivers and lakes are cleaner
- Risk of flooding is reduced
- Costs due to flood damage decrease

The City of Baker City utilizes a system of stormwater mainlines that drain into the Powder River and irrigation ditches.

Due to this system, it is very important to ensure that the City's stormwater system is not contaminated. To prevent contamination and keep waterways clean, the City asks that citizens follow the below rules:

- ◆ Do not clean out paint trays or put chemicals into gutters or storm drains.
- ◆ Do not dump motor oil or other petroleum products into the storm drains.



Some other ways that Baker City Public Works ensures that the City's stormwater system is clean include:

- ◆ Sweeping streets to remove debris before it enters the stormwater system.
- ◆ Routinely cleaning catch basins & irrigation ditches.

**BAKER CITY PUBLIC WORKS**  
**3 YEAR STORM WATER CAPITAL PLAN**  
**ESTIMATE OF COST**  
**2021-2022 FISCAL YEAR**  
**JANUARY 1, 2022 - JUNE 30, 2022**

ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	TV Inspection of Storm Mainlines	Lump	Lump Sum	\$5,000.00	\$5,000	Varies	Inspect condition of existing storm mainlines.
<b>SUBTOTAL</b>					<b>\$5,000</b>		
<b>ENGINEERING (10%)</b>					<b>\$500</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$440</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$5,940</b>		

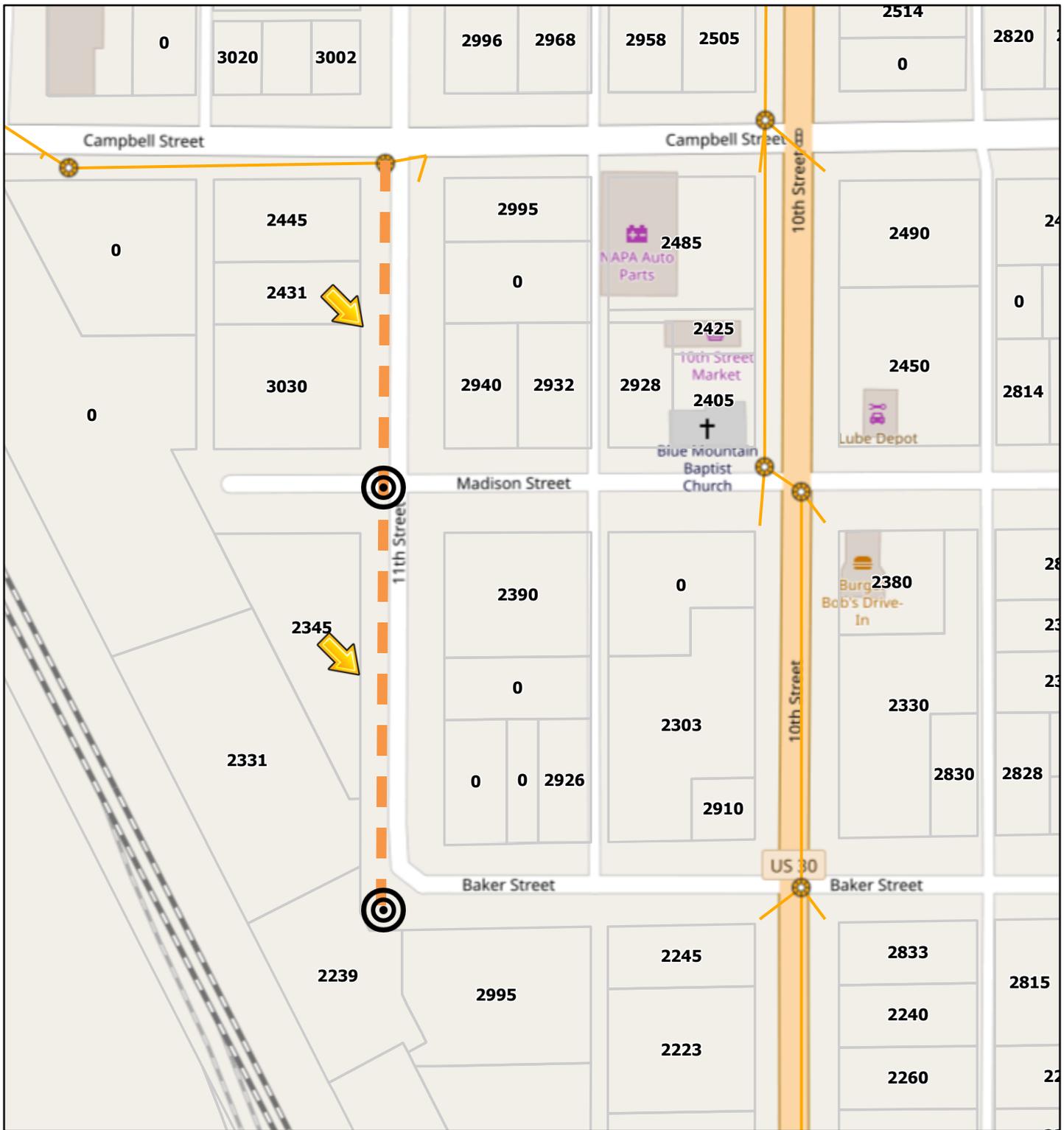
Items noted in orange lettering are projects required by state or federal regulatory agencies.

**BAKER CITY PUBLIC WORKS  
3 YEAR STORM WATER CAPITAL PLAN  
ESTIMATE OF COST  
2022-2023 FISCAL YEAR  
JULY 1, 2022 - JUNE 30, 2023**

ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Locations to be Determined	500	Lineal Feet	\$54.00	\$27,000	Varies	Install CIPP (Cured In Place Pipe) lining to prevent leakage & improve structural & flow characteristics of deteriorating storm lines.
2	11th Street (Baker St. to Campbell St.)	700	Lineal Feet	\$90.00	\$63,000	12" PVC	Install a new 12" PVC mainline and pre-cast catch basin to improve drainage in the area.
3	Campbell St. (Main St. to 1st St.)	250	Lineal Feet	\$100.00	\$25,000	12" PVC	Upsize existing 8" mainline to 12" PVC mainline to address drainage issues.
4	TV Inspection of Storm Mainlines	Lump	Lump Sum	\$5,000.00	\$5,000	Varies	Inspect condition of existing storm mainlines.
<b>SUBTOTAL</b>					<b>\$120,000</b>		
<b>ENGINEERING (10%)</b>					<b>\$12,000</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$10,560</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$142,560</b>		

Items noted in orange lettering are projects required by state or federal regulatory agencies.

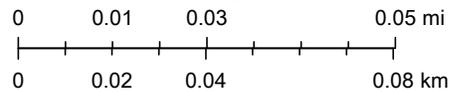
# Stormwater Year 1 - Item 2 - 11th Street - Install 12" Mainline



2/18/2022, 12:02:41 PM

1:2,257

- Override 1
- StormwaterSystem - swManhole
- StormwaterSystem - swGravityMain
- Taxlots (House Number)

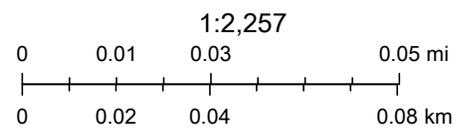


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# Stormwater Year 1 - Item 3 - Campbell St. - Upsize Existing ML to 12"



2/18/2022, 12:44:54 PM



-  StormwaterSystem - swManhole
-  StormwaterSystem - swGravityMain
-  Taxlots (House Number)

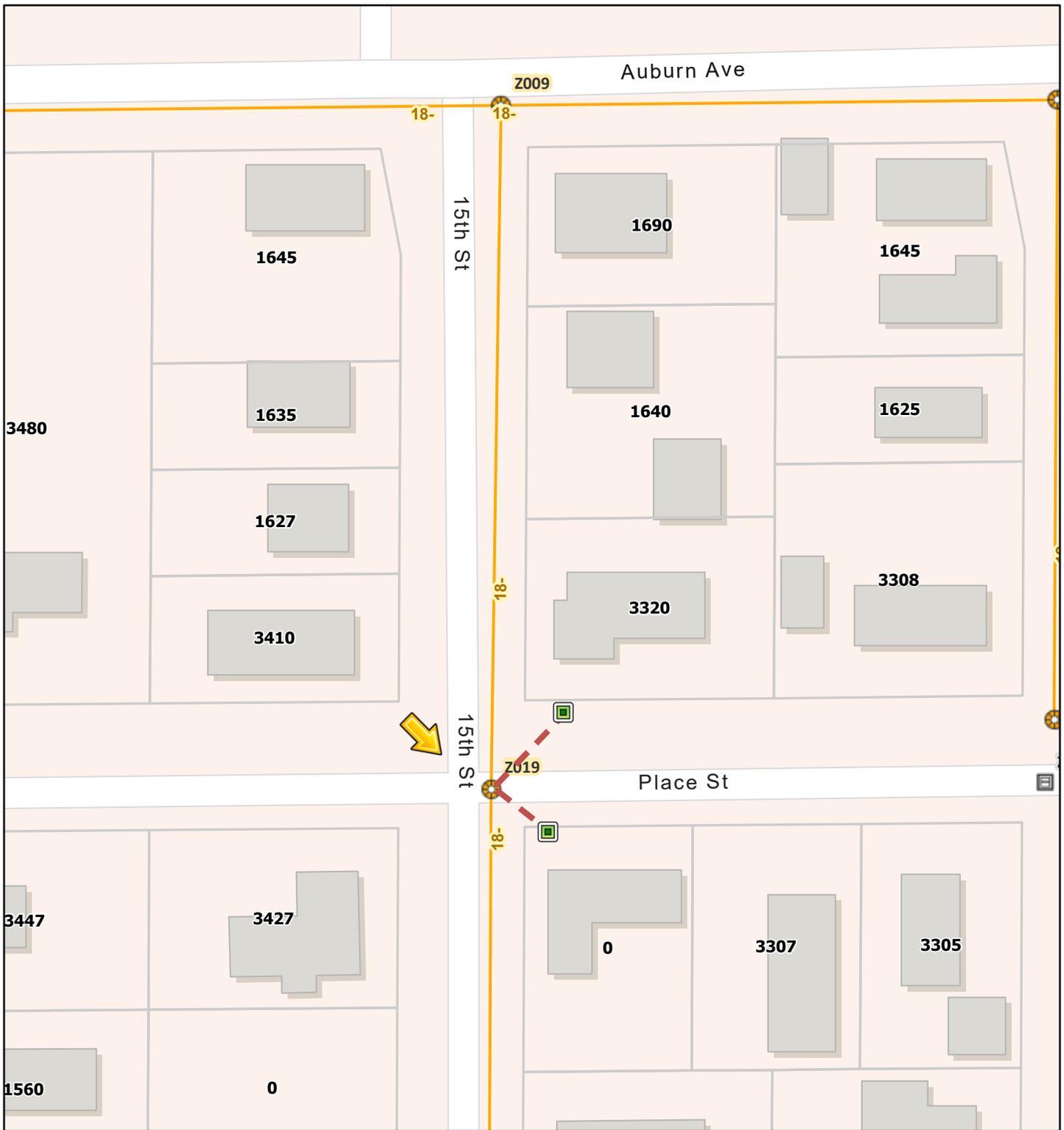
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**BAKER CITY PUBLIC WORKS**  
**3 YEAR STORM WATER CAPITAL PLAN**  
**ESTIMATE OF COST**  
**2023-2024 FISCAL YEAR**  
**JULY 1, 2023 - JUNE 30, 2024**

ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Locations to be Determined	500	Lineal Feet	\$56.00	\$28,000	Varies	Install CIPP (Cured In Place Pipe) lining to prevent leakage & improve structural & flow characteristics of deteriorating storm lines.
2	TV Inspection of Storm Mainlines	Lump	Lump Sum	\$5,000.00	\$5,000	Varies	Inspect condition of existing storm mainlines.
3	15th and Place St Intersection Catch Basins	2	Each	\$3,000.00	\$6,000	Varies	Install two catch basins in the intersection to improve drainage in the area.
<b>SUBTOTAL</b>					<b>\$39,000</b>		
<b>ENGINEERING (10%)</b>					<b>\$3,900</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$3,432</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$46,332</b>		

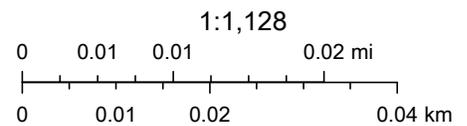
Items noted in orange lettering are projects required by state or federal regulatory agencies.

# Stormwater Year 2 - Item 3 - 15th & Place St. - Install Catchbasins



2/25/2022, 9:18:10 AM

-  swInlet
-  swManhole
-  swGravityMain
-  Taxlots (House Number)



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**BAKER CITY PUBLIC WORKS**  
**3 YEAR STORM WATER CAPITAL PLAN**  
**ESTIMATE OF COST**  
**2024-2025 FISCAL YEAR**  
**JULY 1, 2024 - JUNE 30, 2025**

ITEM #	LOCATION	QUANTITY	UNIT	UNIT COST	ESTIMATED TOTAL COST	SIZE TYPE	OBJECTIVE
1	Locations to be Determined	500	Lineal Feet	\$56.00	\$28,000	Varies	Install CIPP (Cured In Place Pipe) lining to prevent leakage & improve structural & flow characteristics of deteriorating storm lines.
2	TV Inspection of Storm Mainlines	Lump	Lump Sum	\$5,000.00	\$5,000	Varies	Inspect condition of existing storm mainlines.
3	13th Street (D St to B St.)	650	Lineal Feet	\$80.00	\$52,000	8" PVC	Install 8" PVC Mainline and precast concrete catch basins to improve drainage along 13th street.
<b>SUBTOTAL</b>					<b>\$85,000</b>		
<b>ENGINEERING (10%)</b>					<b>\$8,500</b>		
<b>ADMINISTRATIVE CHARGE (8%)</b>					<b>\$7,480</b>		
<b>TOTAL ESTIMATED COST</b>					<b>\$100,980</b>		

Items noted in orange lettering are projects required by state or federal regulatory agencies.

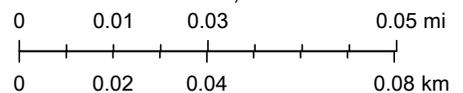
# Stormwater Year 3 - Item 3 - 13th (D St to B St) - Install 8" Mainline



2/25/2022, 9:58:59 AM

1:2,257

-  swDischargePoint
-  swManhole
-  swGravityMain
-  Taxlots (House Number)
-  swInlet



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2022

*City of Baker City*

**CAPITAL PLAN**