



**POWDER MOUNTAIN WATER AND
SEWER IMPROVEMENT DISTRICT**

Sanitary Sewer System Impact Fee Facility Plan

Powder Mountain, Utah



Revision 0

PWM.015.20

September 13, 2021

Gilson Engineering, Inc.

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Section 1 - Introduction



Impact Fee Certification

Gilson Engineering certifies that this Impact Fee Facilities Plan (IFFP) has been prepared in compliance with Utah Code Title 11 Chapter 36a-306 as follows:

1. IFFP includes only the costs of public facilities that are:
 - a. Allowed under the Impact Fees Act; and
 - b. Actually incurred; or
 - c. Projected to be incurred or encumbered within six years after the day on which the impact fee is paid;
2. IFFP does not include:
 - a. Costs of operation and maintenance of public facilities;
 - b. Costs for qualifying public facilities that will raise level of service that is supported by existing residents; or
 - c. An expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent and generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for the federal grant reimbursement; and
3. IFFP complies with the Impact Fees Act

Project Overview

Development of a long-term plan for the sanitary system is critical in order for the Powder Mountain Water and Sewer Improvement District (PMWSID) to provide sanitary sewer services as development continues within the District. Recommendations presented in this impact fee facility plan will ensure quality services at reasonable rates for current and future residents.

Project Objectives

In order to develop a Impact Fee Facility Plan (IFFP), this report addresses the following:

- Sanitary Sewer System Operation
- Existing Sanitary Sewer Facilities
- Existing Sanitary Sewer Deficiencies
- Future Sanitary Sewer Infrastructure

This IFFP is the basis for the PMWSID Impact Fee Analysis (IFA).

Study Area / Service Area

PMWSID provides sanitary sewer system service to the Powder Mountain Ski Resort and other public developments located within PMWSID boundaries. PMWSID boundaries are located along the Cache County and Weber County line with a peak elevation of 8,900 feet.

For reference throughout this IFFP the service area is divided into the following areas listed in Table 1-1 and shown on Figure 1-1.

Table 1-1 Service Area Development Summary

Service Area	Developments
LOWER VALLEY	
Lower Valley	Sheep Creek, Snowflake
<u>HISTORIC POWDER MOUNTAIN</u>	
Powder Mountain West (Lower)	Powder West, PM 11, Moonridge, Columbine, Aleta Ski Shop, PM Lodge (Timberline), PM Maint., PM Sundown Lodge, and Sundown HOA
Powder Mountain West (Central)	Powder Ridge Lodge, Powder Ridge HOA
Powder Mountain West (Top)	Moyal (Jacob’s Ladder), Hidden Lake Lodge, Summit Sky Lodge
<u>SUMMIT POWDER MOUNTAIN</u>	
Powder Mountain Summit (Top)	Summit Top Homes, SM 1B, SM Horizon Run, SM Ridge Nest
Powder Mountain Summit (East)	PM Village, SM 1A, SM 1C, SM 1D, SM OVERLOOK, SM BOBCAT
Powder Mountain Summit (Other)	SM OTHER

PMWSID Connections

Equivalent Residential Connections (ERC)

For the purpose of calculating sanitary sewer demands for the Study Area an Equivalent Residential Connection (ERC) has been assigned to each existing and future connection to the water system. Sizing calculations assume that one ERC is equivalent to 2.58 people per connection (Average per 2010 U.S. Census). PMWSID maintains a database of connections to the sanitary sewer system as; **Connected, Reserved, or Future.**

The term “Connected” refers to an active connection to which PMWSID provides water. The term “Reserved” refers to a connection which has not physically occurred but the property owner has paid a fee to reserve a connection for PMWSID to provide water. “Future” connections represent a planned future connection to the PMWSID water system. Each Connection represents one (1) ERC. The ERC status for each service area is shown on Table 1-2 and on Figure 1-2.

Table 1-2 Service Area ERC Summary

Service Area	Connected (ERC)	Reserved (ERC)	Future (ERC)	TOTAL (ERC)
Lower Valley	90	76	0	166
Powder Mountain <i>HISTORIC</i>	96	63	106	265
Powder Mountain <i>SUMMIT</i>	36	192	251	479
TOTAL	222	331	357	910

Residential vs. Non-Residential ERCs

Residential and non-residential ERCs are divided into four main categories as shown on Table 1-3 as follows:

Table 1-3 Residential Vs. Non- Residential ERC Summary

Service Area	Connected (ERC)	Reserved (ERC)	Future (ERC)	TOTAL (ERC)
General Residential	118	124	10	252
Summit Residential	36	177	251	464
Commercial/Condo	68	30	96	194
TOTAL	222	331	357	910

Buildout Condition

The condition where all ERCs are developed is referred to as the “buildout” condition in this report. Buildout is assumed to occur at approximately 2058.

As shown in Table 1-2 and Table 1-3 the TOTAL ERC projection for PMWSID is 910 ERC.

IFFP ERC = 910 ERC

Projected ERC Connection Schedule

A projected ERC connection schedule has been developed to provide a recommended schedule of Impact Fee Facility Improvements identified in this report. The projected ERC connection schedule presented in this section is based on historical growth rates.

Consideration of Revenues to Fund Sewer System Improvements

The Impact Fee Facility Plan (IFFP) and Impact Fee Analysis (IFA) separate capital project costs between those that provide new capacity for growth or expansion and projects required for regulatory, maintenance, or for existing users. The future value, considering 3% cost inflation, of all sewer capital improvements total \$28.84M but impact fees will only cover \$13.61M (47%) of this total amount. The remainder will be funded through a combination of District revenue sources including monthly sewer rates, sewer reservation fees, and other non-operational District revenues.

There are also some projects that are very specific to one development and to receive development approval the District may require these developments to fund and construct dedicated improvements. These projects are not included in the proposed impact fees. The District will require additional bond issuance to amortize costs over 20 years or more. The District's financial plans will be updated regularly as projects are constructed, bonds are issued, and development occurs.

REVISION: 09/11/21

POWDER MT. WEST (LOWER)	ERC	Persons	PCF	DFA	DFB
Connected	59	152	15,222 gpd	42.3 gpm	26.4 gpm
Reserved	32	83	8,256 gpd	22.9 gpm	14.3 gpm
2021 Sub-Total	91	235	23,478 gpd	65.2 gpm	40.8 gpm

**PM West (Lower) Area = PM West, PM 11, Moonridge, Columbine, Aleta Ski Shop, Aleta (Future), PM Lodge, PM Maint., PM Sundown Lodge, Sundown Home Owners, and Sundown Petersen

POWDER MT. WEST (CENTRAL)	ERC	Persons	PCF	DFA	DFB
Connected	33	85	8,514 gpd	23.7 gpm	14.8 gpm
Reserved	30	77	7,740 gpd	21.5 gpm	13.4 gpm
2021 Sub-Total	63	163	16,254 gpd	45.2 gpm	28.2 gpm

**PM WEST CENTRAL Area = Powder Ridge Lodge, Powder Ridge HOA (Reserved)

POWDER MT. WEST (TOP)	ERC	Persons	PCF	DFA	DFB
Connected	4	10	1,032 gpd	2.9 gpm	1.8 gpm
Reserved	1	3	258 gpd	.7 gpm	.4 gpm
2021 Sub-Total	5	13	1,290 gpd	3.6 gpm	2.2 gpm

**PM WEST TOP Area = Moyal, Hidden Lake Lodge, Summit Sky Lodge

POWDER MT. HISTORIC	ERC	Persons	PCF	DFA	DFB
Connected	96	248	24,768 gpd	68.8 gpm	43.0 gpm
Reserved	63	163	16,254 gpd	45.2 gpm	28.2 gpm
2021 Sub-Total	159	410	41,022 gpd	114.0 gpm	71.2 gpm

**PM HISTORIC Area = Powder Mountain West (Lower), Powder Mountain West (Central), Powder Mountain Summit (Top)

POWDER MT. SUMMIT (TOP)	ERC	Persons	PCF	DFA	DFB
Connected	20	52	5,160 gpd	14.3 gpm	9.0 gpm
Reserved	14	36	3,612 gpd	10.0 gpm	6.3 gpm
2021 Sub-Total	34	88	8,772 gpd	24.4 gpm	15.2 gpm

**PM TOP Area = Summit Top Homes, SM 1B, SM Horizon Run, SM Ridge Nest

POWDER MT. SUMMIT EAST	ERC	Persons	PCF	DFA	DFB
Connected	16	41	4,128 gpd	11.5 gpm	7.2 gpm
Reserved	178	459	45,924 gpd	127.6 gpm	79.7 gpm
2021 Sub-Total	194	501	50,052 gpd	139.0 gpm	86.9 gpm

**PM EAST Area = PM Village, SM 1A, SM 1C, SM 1D, SM OVERLOOK, SM BOBCAT

POWDER MT. SUMMIT OTHER	ERC	Persons	PCF	DFA	DFB
Connected	0	0	gpd	.0 gpm	.0 gpm
Reserved	0	0	gpd	.0 gpm	.0 gpm
2021 Sub-Total	0	0	gpd	.0 gpm	.0 gpm

**PM OTHER Area = SM OTHER

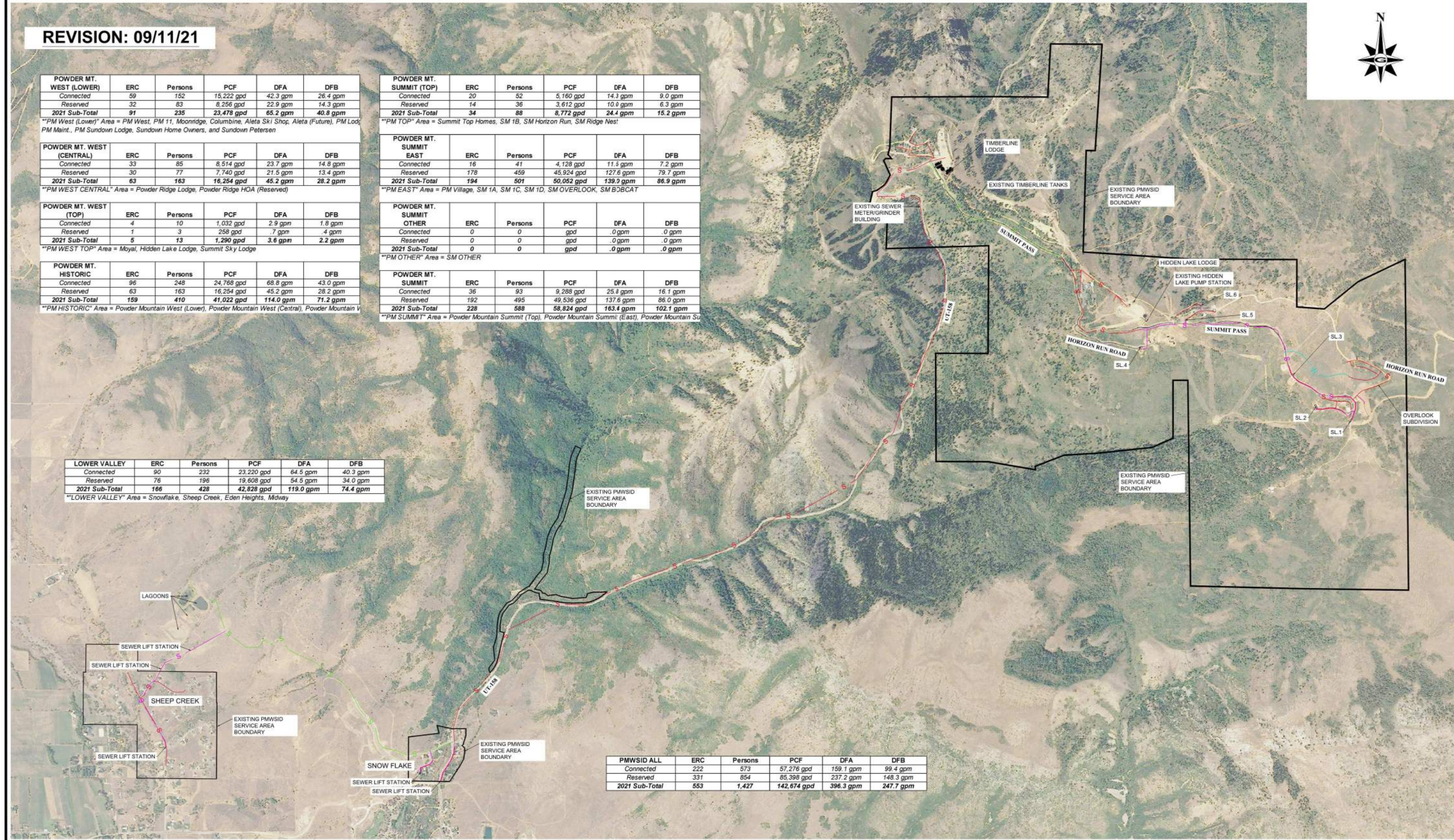
POWDER MT. SUMMIT	ERC	Persons	PCF	DFA	DFB
Connected	36	93	9,288 gpd	25.8 gpm	16.1 gpm
Reserved	192	495	49,536 gpd	137.6 gpm	86.0 gpm
2021 Sub-Total	228	588	58,824 gpd	163.4 gpm	102.1 gpm

**PM SUMMIT Area = Powder Mountain Summit (Top), Powder Mountain Summit (East), Powder Mountain Summit (Other)

LOWER VALLEY	ERC	Persons	PCF	DFA	DFB
Connected	90	232	23,220 gpd	64.5 gpm	40.3 gpm
Reserved	76	196	19,608 gpd	54.5 gpm	34.0 gpm
2021 Sub-Total	166	428	42,828 gpd	119.0 gpm	74.4 gpm

**LOWER VALLEY Area = Snowflake, Sheep Creek, Eden Heights, Midway

PMWSID ALL	ERC	Persons	PCF	DFA	DFB
Connected	222	573	57,276 gpd	159.1 gpm	99.4 gpm
Reserved	331	854	85,398 gpd	237.2 gpm	148.3 gpm
2021 Sub-Total	553	1,427	142,674 gpd	396.3 gpm	247.7 gpm



- LEGEND**
- EXISTING SEWER 8" LINE
 - EXISTING SEWER 12" LINE
 - EXISTING PRESSURE LINE
 - SL.# EXISTING SEWER LIFT STATION

DISCLAIMER NOTE
 UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

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POWDER MOUNTAIN WATER & SEWER IMPROVEMENT DISTRICT

REV. DATE	BY	COMMENTS

DATE: NOVEMBER 2020
 DRAWING NAME: EXISTING SEWER SYSTEM
 DESIGNED/DRAWN BY: JMBP
 CHECKED: APPROVED

REVISIONS

1" SCALE MEASURES 1" ON FULL SIZE SHEET
 ADJUST FOR HALF SIZE SHEETS

PMWSID EXISTING SANITARY SEWER SYSTEM
 APPURTENANCE & EASEMENT
 POWDER MOUNTAIN WATER & SEWER IMPROVEMENT DISTRICT
 WEBER COUNTY, UTAH

REVISION:
 PROJ. # **POW.010**
SEWER 1-2

Section 2 - Sanitary Sewer System Operation

Sanitary System Summary

The sanitary sewer system of PMWSID is composed of wastewater; containment, service laterals, collectors, lift stations, forced main (pressurized sewer), and outfall (see). This section discusses both existing and proposed conditions for the system. The required infrastructure to collect and contain wastewater from new development was determined by merging existing development and infrastructure conditions with future development. Data for the existing sanitary sewer system and improvements to accommodate future development are described in this section including:

- Containment (Lagoons and/or Treatment)
- Service Laterals and Collection Sewers
(Individual Connection and/or Development Collection System)
- Sewer Lift Stations (Pumps)
- Sewer Forced Main (Pressurized Sewer)
- Sewer Outfall

Existing Facilities

Since existing conditions are constantly changing current conditions must be verified upon design of any particular component of the sanitary sewer system. Existing facilities for each of the items listed above are discussed at the beginning of each of the following sub-sections. Existing sanitary sewer facilities are shown on Figure 1-2.

Proposed Facilities

Proposed facilities defined in this section will be required to collect, deliver, contain, and/or treat sanitary sewer wastewater for future development. The proposed construction schedule is identified for each project in this section. An estimated cost for each project is included in the Appendix. All proposed facilities are shown on Figure 2-1.

Sanitary Sewer System

Existing development throughout the District is serviced by PMWSID. A map showing some of the major facilities in the existing sanitary sewer system are shown on Figure 1-2.

Sanitary Sewer Containment

PMWSID currently provides sanitary sewer containment in four (4) existing wastewater Lagoons. Currently only two (2) of the four (4) wastewater lagoons are active. The combined capacity of the existing Lagoons is approximately 19.24 million gallons.

In order to make use of the full existing lagoon capacity several lagoon improvement projects identified in this section will be required.

Lagoon Sizing

According to the Utah State Administrative Rule R317-3, wastewater Lagoons are to be sized to accommodate the full PCF with a detention time of 120 days (at minimum evaporation time (i.e. winter). Based on the projected ERC schedule required sewer lagoon volume will exceed existing capacity (19.24 M-gal) by **2044**.

A demand assessment described in Section 3 - Sewer Demands (page 3-25) was performed to ensure that lagoon sizing requirements are met. A list of proposed improvements required to meet future demands is included in this section.

Per Capita Flow (PCF)=100gpd/person=258gpd/ERC (2.58persons/ERC)

Lagoon Vol "Connected" = 258 gpd x 222 ERC x 120 Days = 6.87 M-gal

Lagoon Vol "Reserved" = 258 gpd x 331 ERC x 120 Days = 10.25 M-gal

Lagoon Vol "Future" = 258 gpd x 357 ERC x 120 Days = 11.05 M-gal

Lagoon Vol "TOTAL" = 258 gpd x 910 ERC x 120 Days = 28.17 M-gal

Lagoon Vol "Existing" = 258 gpd x 621 ERC x 120 Days = 19.24 M-gal

(Existing Volume with Required Improvements Supports 621 ERCs)

It is recommended to complete Lagoon improvement projects to take advantage of existing Lagoon capacity (19.24 M-gal = 621 ERC), construct LUWDS as defined below (82 ERC) and construct a package treatment plant near the Lagoons to service the remaining connections (207 ERC).

A feasibility study should be completed to further investigate these options. Specifically, feasibility to switch a portion or all of wastewater treated at the Lagoons to be treated a package plant should be investigated.

Lagoon Improvements Required

The lagoon containment system is not adequate to handle any additional wastewater flows. The plumbing system must be re-designed and constructed along with other improvements to meet requirements of R317-3. Improvements for the lagoon plumbing system should begin in the 2022 fiscal year with estimated completion by 2027 in order to utilize the existing (19.24 M-gal) containment capacity.

Lagoon Improvement Summary:

- Re-construct Plumbing Network with Bypass Capability
- Assess/Repair Clay Liner
- Clean and Remove Excess Debris
- Install Security Fence
- Add Depth Measurement (SCADA) Capability
- Procure Access ROW
- Access Improvements (Gravel and Asphalt Surfaces)
- Procure Maintenance Yard
- Complete Feasibility Study for Long Term Switch to Full Treatment Facility or Expand Lagoon Capacity
- Begin 2022 Completion 2027

Large Underground Wastewater Disposal Systems (LUWDS)

Some of the future development areas are located such that construction of a gravity sewer will not be feasible. These areas could be serviced by construction of lift stations or an LUWDS. Design and construction of an LUWDS with pre-treatment capability is recommended at these locations. Construction of each LUWDS depends on construction timing of each of these areas. It is estimate that construction of the first LUWDS should begin in the 2032 fiscal year with estimated completion in 2037.

LUWDS Summary:

- Construct LUWDS with Pre-Treatment (See Figure 2-2 For Locations)
- Begin 2032 Completion 2037

Table 2-1 LUWDS Areas

Service Area	Cost Estimate Reference	Connections (ERC)	Per Capita Flow (GPD)
Powder Mountain SUMMIT (South)	F.1	30	7,740
Powder Mountain <i>SUMMIT (East)</i>	F.2	25	6,450
Powder Mountain <i>SUMMIT (North)</i>	F.3	19	4,902
Powder Mountain <i>SUMMIT (West)</i>	F.4	8	2,064
TOTAL	---	82	21,156

Package Treatment Plant

Once developed ERCs exceed capacity of the Sewer Lagoons (621 ERC) and LUWDS (82 ERC) additional package treatment plant volume will be required. It is anticipated that sufficient package treatment plant volume to support 207 ERC (53,406 GPD) will be required. It is recommended to round up package treatment capacity to support 220 ERC (56,760 GPD). Construction of the package treatment plant is recommended to begin in the 2032 fiscal year with estimated completion by 2037. Expected treatment flow and schedule of construction may vary Depending on the Lagoon expansion vs. package treatment plant feasibility study discussed previously.

Package Treatment Plant:

- Construct Package Treatment Plant (*Near Lagoons*)
- Treatment Flow = 56,760 GPD (*Depending on Feasibility Study*)
- Begin 2032 Completion 2037 (*Depending on Feasibility Study*)

Sanitary Sewer Metering Building at Lagoons

PMWSID currently maintains and operates a wastewater metering station at the sewer lagoons. Upgrades to the sewer metering station are required to accommodate wastewater flow from future connections as described in this section. Improvements for the sewer metering building should be completed in the 2022-23 fiscal year.

Sanitary Sewer Metering Building at Lagoons Improvement Summary:

- Install new metering equipment (Parshall Flume)
- Add SCADA to Monitor Entire Network
- Add Heating and Ventilation
- Construct Building Addition for 3-Bay Storage/Office
- 2022-23

Sanitary Sewer Pipeline Sizing

The Design Flow for sanitary sewer pipelines throughout the District should be sized according to R317-3-2 as follows:

1. Design Flow “A” (DFA) = 400 gpd/Person = 1,032gpd/ERC (2.58 persons/ERC): For Laterals and Collector Sewers (i.e. Individual Developments)
2. Design Flow “B” (DFB) = 250 gpd/Person = 645gpd/ERC (2.58 persons/ERC): For Interceptors and Outfall Sewers (i.e. IFFP Improvements)
3. Infiltration should be considered for sanitary sewer pipeline sizing. The minimum infiltration rate to be included = 200 gallons per inch of pipe diameter per length of pipe per day. Additional infiltration may be included on a case by case basis.

Lefty's Sanitary Sewer Gravity Main

It is recommended to design and construct a gravity sewer line to collect wastewater from the majority of development within the PMWSID boundary. As mentioned previously there are currently six (6) main sewer lift stations used in the upper Powder Mountain areas and five (5) used in the Lower Valley areas. The new Lefty's sanitary sewer gravity main will allow for five of the six upper mountain lift stations to be decommissioned and service a large portion of new development. This will greatly enhance operation of the system. Construction of the Lefty's sanitary sewer gravity main should be completed in the 2025-26 fiscal year. No new connections will be allowed until Lefty's gravity sewer is constructed and operational.

Lefty's sanitary sewer gravity main Summary:

- Construct 22,200 L.F. of 8" HDPE Gravity Sewer Main
- Jack and Bore Across UT-158 for Connection to Existing Main
- Construct new Access Maintenance/Recreational Trail/Ski Cat Track over new sewer alignment
- Construct New Sewer Metering and Screening Building at UT-158
- Decommission one (1) Existing Sanitary Sewer Lift Stations
- 2023-24

Lefty's Sanitary Sewer Gravity Branch (SL.2 and SL.3)

The Lefty's sanitary sewer gravity branch (Sewer Lift Station #2 and #3) will connect wastewater flows from existing Lift Station #2 and #3 to the new Lefty's sanitary sewer gravity main line. Construction of this branch will allow for these lift stations to be decommissioned. Construction of the Lefty's sanitary sewer gravity main should be completed in the 2023-24 fiscal year.

Lefty's sanitary sewer gravity branch (SL.2 and SL.3) Summary:

- Construct 2,620 L.F. of 8" HDPE Gravity Sewer Main
- Construct new Access Maintenance/Recreational Trail/Ski Cat Track over new sewer alignment
- Decommission two (2) Existing Sanitary Sewer Lift Stations
- 2023-24

-

Lefty's Sanitary Sewer Gravity Branch (SL.4 and SL.5)

The Lefty's sanitary sewer gravity branch (Sewer Lift Station #4 and #5) will connect wastewater flows from existing Lift Station #4 and #5 to the new Lefty's sanitary sewer gravity main line. Construction of this branch will allow for these lift stations to be decommissioned. Construction of the Lefty's sanitary sewer gravity main should be completed in the 2023-24 fiscal year.

Lefty's sanitary sewer gravity branch (SL.4 and SL.5) Summary:

- Construct 6,100 L.F. of 8" HDPE Gravity Sewer Main
- Construct new Access Maintenance/Recreational Trail/Ski Cat Track over new sewer alignment
- Decommission two (2) Existing Sanitary Sewer Lift Stations
- 2023-24

Lefty's Sanitary Sewer Gravity Branch (Summit Other)

The Lefty's sanitary sewer gravity branch (Summit Other) will connect wastewater flows from future development at the "Summit Other" development to the new Lefty's sanitary sewer gravity main line. Construction of the Lefty's sanitary sewer gravity main should be completed in the 2032-33 fiscal year.

Lefty's sanitary sewer gravity branch (SL.2 and SL.3) Summary:

- Construct 7,400 L.F. of 8" HDPE Gravity Sewer Main
- Construct new Access Maintenance/Recreational Trail/Ski Cat Track over new sewer alignment
- 2032-33

Sheep Creek Improvements

Several sanitary sewer improvements are required for the Sheep Creek development system as summarized below. Sheep Creek system improvements should begin in the 2022 fiscal year with estimated completion by 2030.

Sheep Creek Improvements Summary:

- Re-build Sewer Lift Stations; New Pumps and Storage for New Growth
- Update Electronics and SCADA
- Add Redundant Pump
- Add Backup Generator
- Construct Building Enclosure
- Add Screening
- Evaluate Pipeline Delivery
- Replace Individual Home Injector Pumps with New Lift Station
- Begin 2022 Completion 2030

Snowflake Improvements

Several sanitary sewer improvements are required for the Snowflake development system as summarized below. Alternatively, the Snowflake system could be connected to the Wolf Creek Sanitary Sewer system. Snowflake system improvements should begin in the 2022 fiscal year with estimated completion by 2025.

Snowflake Improvements Summary:

- Re-build Sewer Lift Stations; New Pumps and Storage for New Growth
- Update Electronics and SCADA
- Add Redundant Pump
- Add Backup Generator
- Construct Building Enclosure
- Add Screening
- Evaluate Pipeline Delivery
- Evaluate Feasibility to Connect to Wolf Creek Sewer
- Begin 2022 Completion 2025

Other Sanitary Sewer System Improvements

There are several “Other” sanitary sewer improvements required to maintain operation of the system. Other sanitary sewer system improvements should begin in the 2022 fiscal year with estimated completion by 2030.

Other Sanitary Sewer System Improvements Summary:

- Retrofit Equipment with Freeze Protection
- Manhole Repair; Inspect and Grout Manhole Joints, Align steps, Use double lids etc.
- Lift Station Repair: For Lift Stations That Will Remain Active
- Pressure Main repair: Repair, insulate, and/or remove damaged check valves on pressurized sewer lines.
- Decommission Existing Sanitary Sewer Lift Stations
- Slipline Existing 8" Sewer Pipeline from Horizon Run Road to 1,000' Downstream from Cobabe Well
- Begin 2022 Completion 2030

Section 3 - Sewer Demands

Demand Assessment

Demands Assessment Results and Methods

A demands assessment was performed in order to plan proposed infrastructure for the PMWSID sanitary sewer system.

The following results are based on acceptable practices by the Utah State Division of Environmental Quality (DEQ), wastewater.

System Wide Supply Demand Analysis

Table 3-1 shows a summary of Demand information for the complete system. Demand information for individual service areas are shown in the Appendix.

Table 3-1 System Wide Water Demand Information

PMWSID ALL	ERC	Persons	PCF	DFA	DFB
<i>Connected</i>	222	573	57,276 gpd	159.1 gpm	99.4 gpm
<i>Reserved</i>	331	854	85,398 gpd	237.2 gpm	148.3 gpm
2021 Sub-Total	553	1,427	142,674 gpd	396.3 gpm	247.7 gpm
FUTURE	357	921	92,106 gpd	254.9 gpm	159.9 gpm
GRAND TOTAL	910	2,348	234,780 gpd	651.2 gpm	407.6 gpm

Powder Mountain Water and Sewer Improvement District: Culinary Water System

Proj: PWM.015.20
 Prepared for: PMWSID SEWER IFFP
 Description: Sewer Demand Analysis
 Date: 9/9/2021
 By: JJM



Design Parameters:

	¹ PCF	² DFA	³ DFB
Minimum Sizing Requirements	2.58 Persons/ERC 100 gpd/Person 258 gpd/ERC	"A" Lateral 400 gpd/Person 1,032 gpd/ERC	"B" Outfall 250 gpd/Person 645 gpd/ERC

Existing Pipe	Future Pipe
50,200 ft	48,320 ft

Existing:
Reserved
Future:

Lagoon Detention Time (days): 120

⁴ Required Lagoon Volume (Gallons)			
Connected	Reserved	⁵ Future	TOTAL
6.87 M	10.25 M	11.05 M	28.17 M

⁴Existing Lagoon Capacity = 19.24 M

⁵Additional Required Lagoon Capacity = 8.93 M

Design Summary:

Units Sizing	910 ERC	910 ERC	910 ERC
	2,348 Persons	2,348 Persons	2,348 Persons
	234,780 gpd	939,120 gpd	586,950 gpd

- Per Capita Flow = Annual Average Daily Rate of Flow: Used for wastewater volume requirements (pump vault, treatment, etc.)
- Design Flow "A": Used for Laterals and Collector Sewers sizing design
- Design Flow "B": Used for Interceptors and Outfall Sewers sizing design
- Existing Lagoon Capacity = 19.24 Million Gallons (Note: Improvements are required to make use of full existing capacity)
- Additional Required Lagoon Capacity = 8.93 Million Gallons (Note: Recommendation is to construct package treatment plant in lieu of Lagoon expansion)

Calculations:

Area	Service Area		PCF			DFA			DFB		
	Connections (ERC)	Capita (Persons)	(gpd)	(gpm)	(cfs)	(gpd)	(gpm)	(cfs)	(gpd)	(gpm)	(cfs)
RESIDENTIAL											
Snowflake (Connected)	16	41	4,128	2.87	0.01	16,512	11.47	0.03	10,320.00	7.17	0.02
Snowflake (Reserved)	10	26	2,580	1.79	0.00	10,320	7.17	0.02	6,450.00	4.48	0.01
Snowflake (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Sheep Creek (Connected)	74	191	19,092	13.26	0.03	76,368	53.03	0.12	47,730.00	33.15	0.07
Sheep Creek (Reserved)	66	170	17,028	11.83	0.03	68,112	47.30	0.11	42,570.00	29.56	0.07
Sheep Creek (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
PMWest (Connected)	24	62	6,192	4.30	0.01	24,768	17.20	0.04	15,480.00	10.75	0.02
PMWest (Reserved)	29	75	7,482	5.20	0.01	29,928	20.78	0.05	18,705.00	12.99	0.03
PMWest (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
PM11 (Connected)	4	10	1,032	0.72	0.00	4,128	2.87	0.01	2,580.00	1.79	0.00
PM11 (Reserved)	3	8	774	0.54	0.00	3,096	2.15	0.00	1,935.00	1.34	0.00
PM11 (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
PM Village (Reserved)	15	39	3,870	2.69	0.01	15,480	10.75	0.02	9,675.00	6.72	0.01
PM Village (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Moyal (Reserved)	1	3	258	0.18	0.00	1,032	0.72	0.00	645.00	0.45	0.00
Moyal (Future)	10	26	2,580	1.79	0.00	10,320	7.17	0.02	6,450.00	4.48	0.01
SM Horizon Run (Connected)	10	26	2,580	1.79	0.00	10,320	7.17	0.02	6,450.00	4.48	0.01
SM Horizon Run (Reserved)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
SM Horizon Run (Future)	21	54	5,418	3.76	0.01	21,672	15.05	0.03	13,545.00	9.41	0.02
SM Ridge Nest (Connected)	6	15	1,548	1.08	0.00	6,192	4.30	0.01	3,870.00	2.69	0.01
SM Ridge Nest (Reserved)	8	21	2,064	1.43	0.00	8,256	5.73	0.01	5,160.00	3.58	0.01
SM Ridge Nest (Future)	2	5	516	0.36	0.00	2,064	1.43	0.00	1,290.00	0.90	0.00
SM Phase 1A (Reserved)	23	59	5,934	4.12	0.01	23,736	16.48	0.04	14,835.00	10.30	0.02
SM Phase 1A (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
SM Phase 1B (Connected)	4	10	1,032	0.72	0.00	4,128	2.87	0.01	2,580.00	1.79	0.00
SM Phase 1B (Reserved)	6	15	1,548	1.08	0.00	6,192	4.30	0.01	3,870.00	2.69	0.01
SM Phase 1B (Future)	3	8	774	0.54	0.00	3,096	2.15	0.00	1,935.00	1.34	0.00
SM Phase 1C (Connected)	16	41	4,128	2.87	0.01	16,512	11.47	0.03	10,320.00	7.17	0.02
SM Phase 1C (Reserved)	23	59	5,934	4.12	0.01	23,736	16.48	0.04	14,835.00	10.30	0.02
SM Phase 1C (Future)	22	57	5,676	3.94	0.01	22,704	15.77	0.04	14,190.00	9.85	0.02
SM Phase 1D (Reserved)	16	41	4,128	2.87	0.01	16,512	11.47	0.03	10,320.00	7.17	0.02
SM Phase 1D (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
SM Overlook (Reserved)	53	137	13,674	9.50	0.02	54,696	37.98	0.08	34,185.00	23.74	0.05
SM Overlook (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
SM Bobcat (Reserved)	48	124	12,384	8.60	0.02	49,536	34.40	0.08	30,960.00	21.50	0.05
SM Bobcat (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Summit Top Homes (Future)	3	8	774	0.54	0.00	3,096	2.15	0.00	1,935.00	1.34	0.00
SM Other (Future)	200	516	51,600	35.83	0.08	206,400	143.33	0.32	129,000.00	89.58	0.20
Monument Development (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Eden Heights (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Lower Valley (Future)	0	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Commercial/Condo											
Hidden Lake Lodge	2	5	516	0.36	0.00	2,064	1.43	0.00	1,290.00	0.90	0.00
Powder Ridge Lodge	33	85	8,514	5.91	0.01	34,056	23.65	0.05	21,285.00	14.78	0.03
Moonridge	8	21	2,064	1.43	0.00	8,256	5.73	0.01	5,160.00	3.58	0.01
Columbine Inn (Elkhorn)	7	18	1,806	1.25	0.00	7,224	5.02	0.01	4,515.00	3.14	0.01
Aleta Ski Shop	2	5	516	0.36	0.00	2,064	1.43	0.00	1,290.00	0.90	0.00
Aleta (Future)	24	62	6,192	4.30	0.01	24,768	17.20	0.04	15,480.00	10.75	0.02
PM Lodge	3	8	774	0.54	0.00	3,096	2.15	0.00	1,935.00	1.34	0.00
Summit Sky Lodge	2	5	516	0.36	0.00	2,064	1.43	0.00	1,290.00	0.90	0.00
PM Sundown Lodge	2	5	516	0.36	0.00	2,064	1.43	0.00	1,290.00	0.90	0.00
PM Maintenance	1	3	258	0.18	0.00	1,032	0.72	0.00	645.00	0.45	0.00
Sundown Home Owners	8	21	2,064	1.43	0.00	8,256	5.73	0.01	5,160.00	3.58	0.01
Sundown Petersen (Future)	72	186	18,576	12.90	0.03	74,304	51.60	0.11	46,440.00	32.25	0.07
Powder Ridge HOA (Reserved)	30	77	7,740	5.38	0.01	30,960	21.50	0.05	19,350.00	13.44	0.03
Total	910	2,347.80	234,780 gpd	163.04 gpm	.363 cfs	939,120 gpd	652.17 gpm	1.45 cfs	586,950 gpd	407.60 gpm	.91 cfs

Section 5 -

**Appendix B – PMWSID
ERC Schedule**

Powder Mountain Water and Sewer Improvement District

Proj: PWM.015.20
 Prepared for: PMWSID SEWER IFFP
 Description: Sewer Demand Analysis: ERC Development Projection to Buildout
 Date: 9/9/2021
 By: JJM



	ERC		CAPITA	PCF	Req'd Lagoon	DFA			DFB		
	Annual	Cummulative	Persons	(gpd)	(M-gal)	(gpd)	(gpm)	(cfs)	(gpd)	(gpm)	(cfs)
2020	---	222	572.76	57276	6.87	229,104	159.10	0.35	143,190	99.44	0.22
2021	10	232	598.56	59856	7.18	239,424	166.27	0.37	149,640	103.92	0.23
2022	10	242	624.36	62436	7.49	249,744	173.43	0.39	156,090	108.40	0.24
2023	10	252	650.16	65016	7.80	260,064	180.60	0.40	162,540	112.88	0.25
2024	10	262	675.96	67596	8.11	270,384	187.77	0.42	168,990	117.35	0.26
2025	15	277	714.66	71466	8.58	285,864	198.52	0.44	178,665	124.07	0.28
2026	15	292	753.36	75336	9.04	301,344	209.27	0.47	188,340	130.79	0.29
2027	15	307	792.06	79206	9.50	316,824	220.02	0.49	198,015	137.51	0.31
2028	15	322	830.76	83076	9.97	332,304	230.77	0.51	207,690	144.23	0.32
2029	15	337	869.46	86946	10.43	347,784	241.52	0.54	217,365	150.95	0.34
2030	15	352	908.16	90816	10.90	363,264	252.27	0.56	227,040	157.67	0.35
2031	20	372	959.76	95976	11.52	383,904	266.60	0.59	239,940	166.63	0.37
2032	20	392	1011.36	101136	12.14	404,544	280.93	0.63	252,840	175.58	0.39
2033	20	412	1062.96	106296	12.76	425,184	295.27	0.66	265,740	184.54	0.41
2034	20	432	1114.56	111456	13.37	445,824	309.60	0.69	278,640	193.50	0.43
2035	20	452	1166.16	116616	13.99	466,464	323.93	0.72	291,540	202.46	0.45
2036	20	472	1217.76	121776	14.61	487,104	338.27	0.75	304,440	211.42	0.47
2037	20	492	1269.36	126936	15.23	507,744	352.60	0.79	317,340	220.38	0.49
2038	20	512	1320.96	132096	15.85	528,384	366.93	0.82	330,240	229.33	0.51
2039	20	532	1372.56	137256	16.47	549,024	381.27	0.85	343,140	238.29	0.53
2040	20	552	1424.16	142416	17.09	569,664	395.60	0.88	356,040	247.25	0.55
2041	20	572	1475.76	147576	17.71	590,304	409.93	0.91	368,940	256.21	0.57
2042	20	592	1527.36	152736	18.33	610,944	424.27	0.95	381,840	265.17	0.59
2043	20	612	1578.96	157896	18.95	631,584	438.60	0.98	394,740	274.13	0.61
2044	20	632	1630.56	163056	19.57	652,224	452.93	1.01	407,640	283.08	0.63
2045	20	652	1682.16	168216	20.19	672,864	467.27	1.04	420,540	292.04	0.65
2046	20	672	1733.76	173376	20.81	693,504	481.60	1.07	433,440	301.00	0.67
2047	20	692	1785.36	178536	21.42	714,144	495.93	1.10	446,340	309.96	0.69
2048	20	712	1836.96	183696	22.04	734,784	510.27	1.14	459,240	318.92	0.71
2049	20	732	1888.56	188856	22.66	755,424	524.60	1.17	472,140	327.88	0.73
2050	20	752	1940.16	194016	23.28	776,064	538.93	1.20	485,040	336.83	0.75
2051	20	772	1991.76	199176	23.90	796,704	553.27	1.23	497,940	345.79	0.77
2052	20	792	2043.36	204336	24.52	817,344	567.60	1.26	510,840	354.75	0.79
2053	20	812	2094.96	209496	25.14	837,984	581.93	1.30	523,740	363.71	0.81
2054	20	832	2146.56	214656	25.76	858,624	596.27	1.33	536,640	372.67	0.83
2055	20	852	2198.16	219816	26.38	879,264	610.60	1.36	549,540	381.63	0.85
2056	20	872	2249.76	224976	27.00	899,904	624.93	1.39	562,440	390.58	0.87
2057	20	892	2301.36	230136	27.62	920,544	639.27	1.42	575,340	399.54	0.89
2058	18	910	2347.8	234780	28.17	939,120	652.17	1.45	586,950	407.60	0.91

Section 6 -

**Appendix C – PMWSID
IFFP Cost Estimates**

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements
PROJECT SUMMARY
Powder Mountain Utah
PROJECT # POW.015

By: JJM
Date: 08/18/21



PROJECTS	DESCRIPTION	Total Cost
A	LEFTY'S MAIN TRUNK LINE (EXISTING LS.1 TO UT-158)	\$4,232,656.00
B	SECONDARY TRUNK LINES (EXISTING LS.2 & LS.3)	\$463,137.25
C	SECONDARY TRUNK LINES (EXISTING LS.4 & LS.5)	\$971,073.75
D	SECONDARY TRUNK LINES (SUMMIT OTHER TO LEFTY'S MAIN)	\$1,155,382.50
E	MAIN PACKAGE TREATMENT PLANT	\$5,045,964.00
F	LARGE UNDERGROUND WASTEWATER DISPOSAL SYSTEMS	\$1,477,746.60
G	SEWER LAGOONS IMPROVEMENTS	\$5,749,290.00
H	EXISTING METERING BUILDING IMPROVEMENTS	\$869,950.00
I	SHEEP CREEK IMPROVEMENTS	\$2,498,090.00
J	SNOWFLAKE IMPROVEMENTS	\$832,485.00
K	OTHER IMPROVEMENTS	\$1,702,525.00
		\$24,998,300.10

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements

Project A: Sanitary Sewer Main Trunk Line

Powder Mountain Utah

PROJECT # POW.015



By: JJM
Date: 08/18/21

No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
A.1	Construct 8-inch HDPE (<i>Butt Fused</i>) Sanitary Sewer, and all appurtenances, complete	L.F.	22,200	\$75.00	\$1,665,000.00	\$166,500.00	\$249,750.00	\$33,300.00	\$2,114,550.00
A.2	Rock excavation along new sewer alignment, complete	L.S.	1	\$400,000.00	\$400,000.00	\$40,000.00	\$60,000.00	\$8,000.00	\$508,000.00
A.3	Jack and Bore for Connection to Existing Sewer Main	L.S.	1	\$60,000.00	\$60,000.00	\$6,000.00	\$9,000.00	\$1,200.00	\$76,200.00
A.4	Furnish and install new 4-ft dia. Sanitary Sewer Manhole, and all appurtenances, @ 1,200-ft O.C., complete	EA.	28	\$7,500.00	\$210,000.00	\$21,000.00	\$31,500.00	\$4,200.00	\$266,700.00
A.5	Construct new Access Maintenance/Recreational Trail/Ski Cat Track over new sewer alignment, complete	L.F.	15,520	\$15.00	\$232,800.00	\$23,280.00	\$34,920.00	\$4,656.00	\$295,656.00
A.6	Construct New Screening & Metering Building @ UT-158	L.S.	1	\$750,000.00	\$750,000.00	\$75,000.00	\$112,500.00	\$15,000.00	\$952,500.00
A.7	Decommission Existing Sanitary Sewer Lift Stations, Complete	L.S.	1	\$15,000.00	\$15,000.00	\$1,500.00	\$2,250.00	\$300.00	\$19,050.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$3,332,800.00	\$333,280.00	\$499,920.00	\$66,656.00	\$4,232,656.00

AREA	ERC	Share (%)
POWDER MOUNTAIN (Historic) (Connected)	0	0%
POWDER MOUNTAIN (Historic) (Res/Future)	0	0%
POWDER MOUNTAIN (Summit) (Connected)	36	9%
POWDER MOUNTAIN (Summit) (Res/Future)	361	91%
LOWER VALLEY (Connected)	0	0%
LOWER VALLEY (Res/Future)	0	0%
TOTAL	397	100%

PROPORTIONATE SHARE ANALYSIS

No.	POWDER MOUNTAIN (HISTORIC)				POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY				Total
	Connected		Reserved/Future		Connected		Reserved/Future		Connected		Reserved/Future		
	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	
A.1	0%	\$0.00	0%	\$0.00	9%	\$190,309.50	91%	\$1,924,240.50	0%	\$0.00	0%	\$0.00	\$2,114,550.00
A.2	0%	\$0.00	0%	\$0.00	9%	\$45,720.00	91%	\$462,280.00	0%	\$0.00	0%	\$0.00	\$508,000.00
A.3	0%	\$0.00	0%	\$0.00	9%	\$6,858.00	91%	\$69,342.00	0%	\$0.00	0%	\$0.00	\$76,200.00
A.4	0%	\$0.00	0%	\$0.00	9%	\$24,003.00	91%	\$242,697.00	0%	\$0.00	0%	\$0.00	\$266,700.00
A.5	0%	\$0.00	0%	\$0.00	9%	\$26,609.04	91%	\$269,046.96	0%	\$0.00	0%	\$0.00	\$295,656.00
A.6	0%	\$0.00	0%	\$0.00	9%	\$85,725.00	91%	\$866,775.00	0%	\$0.00	0%	\$0.00	\$952,500.00
A.7	0%	\$0.00	0%	\$0.00	9%	\$1,714.50	91%	\$17,335.50	0%	\$0.00	0%	\$0.00	\$19,050.00

\$4,232,656.00

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements
 Project B: Sanitary Sewer Secondary Trunk Lines (Existing Lift Station 2&3)
 Powder Mountain Utah
 PROJECT # POW.015



By: JJM
 Date: 08/18/21

No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
B.1	Construct 8-inch HDPE (<i>Butt Fused</i>) Sanitary Sewer, and all appurtenances, complete	L.F.	2,620	\$75.00	\$196,500.00	\$19,650.00	\$29,475.00	\$3,930.00	\$249,555.00
B.2	Rock excavation along new sewer alignment, complete	L.S.	1	\$45,000.00	\$45,000.00	\$4,500.00	\$6,750.00	\$900.00	\$57,150.00
B.3	Furnish and install new 4-ft dia. Sanitary Sewer Manhole, and all appurtenances, @ 1,200-ft O.C., complete	EA.	11	\$7,500.00	\$83,875.00	\$8,387.50	\$12,581.25	\$1,677.50	\$106,521.25
B.4	Construct new Access Maintenance/Recreational Trail/Ski Cat Track over new sewer alignment, complete	L.F.	2,620	\$15.00	\$39,300.00	\$3,930.00	\$5,895.00	\$786.00	\$49,911.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$364,675.00	\$36,467.50	\$54,701.25	\$7,293.50	\$463,137.25

AREA	ERC	Share (%)
(Historic) (Connected)	0	0%
(Historic) (Res/Future)	0	0%
(Summit) (Connected)	36	18%
(Summit) (Res/Future)	161	82%
LOWER VALLEY (Connected)	0	0%
LOWER VALLEY (Res/Future)	0	0%
TOTAL	197	100%

PROPORTIONATE SHARE ANALYSIS													
No.	POWDER MOUNTAIN (HISTORIC)				POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY				Total
	Connected		Reserved/Future		Connected		Reserved/Future		Connected		Reserved/Future		
	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	
B.1	0%	\$0.00	0%	\$0.00	18%	\$44,919.90	82%	\$204,635.10	0%	\$0.00	0%	\$0.00	\$249,555.00
B.2	0%	\$0.00	0%	\$0.00	18%	\$10,287.00	82%	\$46,863.00	0%	\$0.00	0%	\$0.00	\$57,150.00
B.3	0%	\$0.00	0%	\$0.00	18%	\$19,173.83	82%	\$87,347.43	0%	\$0.00	0%	\$0.00	\$106,521.25
B.4	0%	\$0.00	0%	\$0.00	18%	\$8,983.98	82%	\$40,927.02	0%	\$0.00	0%	\$0.00	\$49,911.00
												\$463,137.25	

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements
 Project C: Sanitary Sewer Secondary Trunk Lines (Existing Lift Station 4&5)
 Powder Mountain Utah
 PROJECT # POW.015



By: JJM
 Date: 08/18/21

No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
C.1	Construct 8-inch HDPE (<i>Butt Fused</i>) Sanitary Sewer, and all appurtenances, complete	L.F.	6,100	\$75.00	\$457,500.00	\$45,750.00	\$68,625.00	\$9,150.00	\$581,025.00
C.2	Rock excavation along new sewer alignment, complete	L.S.	1	\$110,000.00	\$110,000.00	\$11,000.00	\$16,500.00	\$2,200.00	\$139,700.00
C.3	Furnish and install new 4-ft dia. Sanitary Sewer Manhole, and all appurtenances, @ 1,200-ft O.C., complete	EA.	14	\$7,500.00	\$105,625.00	\$10,562.50	\$15,843.75	\$2,112.50	\$134,143.75
C.4	Construct new Access Maintenance/Recreational Trail/Ski Cat Track over new sewer alignment, complete	L.F.	6,100	\$15.00	\$91,500.00	\$9,150.00	\$13,725.00	\$1,830.00	\$116,205.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$764,625.00	\$76,462.50	\$114,693.75	\$15,292.50	\$971,073.75

AREA	ERC	Share (%)
(Historic) (Connected)	0	0%
(Historic) (Res/Future)	0	0%
(Summit) (Connected)	36	18%
(Summit) (Res/Future)	161	82%
LOWER VALLEY (Connected)	0	0%
LOWER VALLEY (Res/Future)	0	0%
TOTAL	197	100%

PROPORTIONATE SHARE ANALYSIS													
POWDER MOUNTAIN (HISTORIC)					POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY				Total
Connected		Reserved/Future			Connected		Reserved/Future		Connected		Reserved/Future		
No.	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	
C.1	0%	\$0.00	0%	\$0.00	18%	\$104,584.50	82%	\$476,440.50	0%	\$0.00	0%	\$0.00	\$581,025.00
C.2	0%	\$0.00	0%	\$0.00	18%	\$25,146.00	82%	\$114,554.00	0%	\$0.00	0%	\$0.00	\$139,700.00
C.3	0%	\$0.00	0%	\$0.00	18%	\$24,145.88	82%	\$109,997.88	0%	\$0.00	0%	\$0.00	\$134,143.75
C.4	0%	\$0.00	0%	\$0.00	18%	\$20,916.90	82%	\$95,288.10	0%	\$0.00	0%	\$0.00	\$116,205.00
												\$971,073.75	

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements
 Project D: Sanitary Sewer Secondary Trunk Lines (Summit)
 Powder Mountain Utah
 PROJECT # POW.015



By: JJM
 Date: 08/18/21

No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
D.1	Construct 8-inch HDPE (<i>Butt Fused</i>) Sanitary Sewer, and all appurtenances, complete	L.F.	7,400	\$75.00	\$555,000.00	\$55,500.00	\$83,250.00	\$11,100.00	\$704,850.00
D.2	Rock excavation along new sewer alignment, complete	L.S.	1	\$130,000.00	\$130,000.00	\$13,000.00	\$19,500.00	\$2,600.00	\$165,100.00
D.3	Furnish and install new 4-ft dia. Sanitary Sewer Manhole, and all appurtenances, @ 1,200-ft O.C., complete	EA.	15	\$7,500.00	\$113,750.00	\$11,375.00	\$17,062.50	\$2,275.00	\$144,462.50
D.4	Construct new Access Maintenance/Recreational Trail/Ski Cat Track over new sewer alignment, complete	L.F.	7,400	\$15.00	\$111,000.00	\$11,100.00	\$16,650.00	\$2,220.00	\$140,970.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$909,750.00	\$90,975.00	\$136,462.50	\$18,195.00	\$1,155,382.50

AREA	ERC	Share (%)
(Historic) (Connected)	0	0%
(Historic) (Res/Future)	0	0%
(Summit) (Connected)	0	0%
(Summit) (Res/Future)	118	100%
LOWER VALLEY (Connected)	0	0%
LOWER VALLEY (Res/Future)	0	0%
TOTAL	118	100%

PROPORTIONATE SHARE ANALYSIS													
No.	POWDER MOUNTAIN (HISTORIC)				POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY				Total
	Connected		Reserved/Future		Connected		Reserved/Future		Connected		Reserved/Future		
	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	
D.1	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$704,850.00	0%	\$0.00	0%	\$0.00	\$704,850.00
D.2	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$165,100.00	0%	\$0.00	0%	\$0.00	\$165,100.00
D.3	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$144,462.50	0%	\$0.00	0%	\$0.00	\$144,462.50
D.4	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$140,970.00	0%	\$0.00	0%	\$0.00	\$140,970.00

\$1,155,382.50

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements
 Project E: Sanitary Sewer Pacakage Treatment Plant
 Powder Mountain Utah
 PROJECT # POW.015



By: JJM
 Date: 08/18/21

No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contigency	Engineering	Legal/Admin	
E.1	Construct new Package Treatment Plant for Sanitary Sewer including; site work, building, treatment equipment and all appurtenances, complete	GPD	56,760	\$70.00	\$3,973,200.00	\$397,320.00	\$595,980.00	\$79,464.00	\$5,045,964.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$3,973,200.00	\$397,320.00	\$595,980.00	\$79,464.00	\$5,045,964.00

AREA	ERC	Share (%)
(Historic) (Connected)	0	0%
(Historic) (Res/Future)	0	0%
(Summit) (Connected)	0	0%
(Summit) (Res/Future)	207	100%
LOWER VALLEY (Connected)	0	0%
LOWER VALLEY (Res/Future)	0	0%
TOTAL	207	100%

PROPORTIONATE SHARE ANALYSIS													
POWDER MOUNTAIN (HISTORIC)					POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY				Total
Connected		Reserved/Future			Connected		Reserved/Future		Connected		Reserved/Future		
No.	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	
E.1	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$5,045,964.00	0%	\$0.00	0%	\$0.00	\$5,045,964.00

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements
 Project F: Sanitary Sewer Secondary Trunk Lines
 Powder Mountain Utah
 PROJECT # POW.015



By: JJM
 Date: 08/18/21

No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
F.1	Construct Large Underground Wastewater Disposal System (LUWDS) for <u>Summit Other (South)</u> Low Areas (Including Pre-treatment)	GPD	7,740	\$55.00	\$425,700.00	\$42,570.00	\$63,855.00	\$8,514.00	\$540,639.00
F.2	Construct Large Underground Wastewater Disposal System (LUWDS) for <u>Summit Other (East)</u> Low Areas (Including Pre-treatment)	GPD	6,450	\$55.00	\$354,750.00	\$35,475.00	\$53,212.50	\$7,095.00	\$450,532.50
F.3	Construct Large Underground Wastewater Disposal System (LUWDS) for <u>Summit Other (North)</u> Low Areas (Including Pre-treatment)	GPD	4,902	\$55.00	\$269,610.00	\$26,961.00	\$40,441.50	\$5,392.20	\$342,404.70
F.4	Construct Large Underground Wastewater Disposal System (LUWDS) for <u>Summit Other (West)</u> Low Areas (Including Pre-treatment)	GPD	2,064	\$55.00	\$113,520.00	\$11,352.00	\$17,028.00	\$2,270.40	\$144,170.40
PROJECT TOTAL ESTIMATED CONSTRUCTION COST					\$1,163,580.00	\$116,358.00	\$174,537.00	\$23,271.60	\$1,477,746.60

AREA	ERC	Share (%)
(Historic) (Connected)	0	0%
(Historic) (Res/Future)	0	0%
(Summit) (Connected)	0	0%
(Summit) (Res/Future)	82	100%
LOWER VALLEY (Connected)	0	0%
LOWER VALLEY (Res/Future)	0	0%
TOTAL	82	100%

PROPORTIONATE SHARE ANALYSIS													
	POWDER MOUNTAIN (HISTORIC)				POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY				
	Connected		Reserved/Future		Connected		Reserved/Future		Connected		Reserved/Future		
No.	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	Total
F.1	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$540,639.00	0%	\$0.00	0%	\$0.00	\$540,639.00
F.2	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$450,532.50	0%	\$0.00	0%	\$0.00	\$450,532.50
F.3	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$342,404.70	0%	\$0.00	0%	\$0.00	\$342,404.70
F.4	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$144,170.40	0%	\$0.00	0%	\$0.00	\$144,170.40
												\$1,477,746.60	

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements
 Project G: Sanitary Sewer Lagoons Improvements
 Powder Mountain Utah
 PROJECT # POW.015



By: JJM
 Date: 08/18/21

No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
G.1	RE-CONSTRUCT PLUMBING NETWORK WITH BYPASS	L.S.	1	\$180,000.00	\$180,000.00	\$18,000.00	\$27,000.00	\$3,600.00	\$228,600.00
G.2	ASSESS/REPAIR CLAY LINER	L.S.	1	\$130,000.00	\$130,000.00	\$13,000.00	\$19,500.00	\$2,600.00	\$165,100.00
G.3	CLEAN/REMOVE EXCESS DEBRIS	L.S.	1	\$85,000.00	\$85,000.00	\$8,500.00	\$12,750.00	\$1,700.00	\$107,950.00
G.4	INSTALL SECURITY FENCE	L.S.	1	\$75,000.00	\$75,000.00	\$7,500.00	\$11,250.00	\$1,500.00	\$95,250.00
G.5	ADD DEPTH MEASUREMENT (SCADA)	L.S.	1	\$12,000.00	\$12,000.00	\$1,200.00	\$1,800.00	\$240.00	\$15,240.00
G.6	PROCURE ACCESS ROW	acre	3.2	\$40,000.00	\$128,000.00	\$12,800.00	\$19,200.00	\$2,560.00	\$162,560.00
G.7	ACCESS IMPROVEMENTS (ASPHALT SURFACE)	S.F.	36,000	\$18.00	\$648,000.00	\$64,800.00	\$97,200.00	\$12,960.00	\$822,960.00
G.8	ACCESS IMPROVEMENTS (GRAVEL SURFACE)	S.F.	48,000	\$8.00	\$384,000.00	\$38,400.00	\$57,600.00	\$7,680.00	\$487,680.00
G.9	PROCURE MAINTENANCE YARD	acre	10	\$40,000.00	\$400,000.00	\$40,000.00	\$60,000.00	\$8,000.00	\$508,000.00
G.10	FEASIBILITY STUDY FOR LONG TERM SWITCH TO FULL TREATMENT FACILITY OR EXPAND LAGOON CAPACITY	L.S.	1	\$85,000.00	\$85,000.00	\$8,500.00	\$12,750.00	\$1,700.00	\$107,950.00
G.11	SEWER LAGOON PROPERTY ACQUISITION	acre	60	\$40,000.00	\$2,400,000.00	\$240,000.00	\$360,000.00	\$48,000.00	\$3,048,000.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$4,527,000.00	\$452,700.00	\$679,050.00	\$90,540.00	\$5,749,290.00

AREA	ERC	Share (%)
(Historic) (Connected)	96	15%
(Historic) (Res/Future)	169	27%
(Summit) (Connected)	36	6%
(Summit) (Res/Future)	154	26%
LOWER VALLEY (Connected)	90	14%
LOWER VALLEY (Res/Future)	76	12%
TOTAL	621	100%

399
222

PROPORTIONATE SHARE ANALYSIS													
	POWDER MOUNTAIN (HISTORIC)				POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY				
	Connected		Reserved/Future		Connected		Reserved/Future		Connected		Reserved/Future		
No.	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	Total
G.1	15%	\$34,290.00	27%	\$61,722.00	6%	\$13,716.00	26%	\$59,436.00	14%	\$32,004.00	12%	\$27,432.00	\$228,600.00
G.2	15%	\$24,765.00	27%	\$44,577.00	6%	\$9,906.00	26%	\$42,926.00	14%	\$23,114.00	12%	\$19,812.00	\$165,100.00
G.3	15%	\$16,192.50	27%	\$29,146.50	6%	\$6,477.00	26%	\$28,067.00	14%	\$15,113.00	12%	\$12,954.00	\$107,950.00
G.4	15%	\$14,287.50	27%	\$25,717.50	6%	\$5,715.00	26%	\$24,765.00	14%	\$13,335.00	12%	\$11,430.00	\$95,250.00
G.5	15%	\$2,286.00	27%	\$4,114.80	6%	\$914.40	26%	\$3,962.40	14%	\$2,133.60	12%	\$1,828.80	\$15,240.00
G.6	15%	\$24,384.00	27%	\$43,891.20	6%	\$9,753.60	26%	\$42,265.60	14%	\$22,758.40	12%	\$19,507.20	\$162,560.00
G.7	15%	\$123,444.00	27%	\$222,199.20	6%	\$49,377.60	26%	\$213,969.60	14%	\$115,214.40	12%	\$98,755.20	\$822,960.00
G.8	15%	\$73,152.00	27%	\$131,673.60	6%	\$29,260.80	26%	\$126,796.80	14%	\$68,275.20	12%	\$58,521.60	\$487,680.00
G.9	15%	\$76,200.00	27%	\$137,160.00	6%	\$30,480.00	26%	\$132,080.00	14%	\$71,120.00	12%	\$60,960.00	\$508,000.00
G.10	15%	\$16,192.50	27%	\$29,146.50	6%	\$6,477.00	26%	\$28,067.00	14%	\$15,113.00	12%	\$12,954.00	\$107,950.00
G.11	15%	\$457,200.00	27%	\$822,960.00	6%	\$182,880.00	26%	\$792,480.00	14%	\$426,720.00	12%	\$365,760.00	\$3,048,000.00

\$5,749,290.00

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements
 Project G: Sanitary Sewer Metering Building @ Lagoons Improvements
 Powder Mountain Utah
 PROJECT # POW.015

By: JJM
 Date: 08/18/21



No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Construction Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
H.1	INSTALL NEW METERING (PARSHALL FLUME)	L.S.	1	\$120,000.00	\$65,000.00	\$6,500.00	\$9,750.00	\$1,300.00	\$82,550.00
H.2	ADD SCADA TO MONITOR ENTIRE NETWORK	L.S.	1	\$150,000.00	\$120,000.00	\$12,000.00	\$18,000.00	\$2,400.00	\$152,400.00
H.3	ADD HEATING AND VENTILATION	L.S.	1	\$180,000.00	\$80,000.00	\$8,000.00	\$12,000.00	\$1,600.00	\$101,600.00
H.4	CONSTRUCT BUILDING ADDITION (3-BAY STORAGE/OFFICE)	L.S.	1	\$420,000.00	\$420,000.00	\$42,000.00	\$63,000.00	\$8,400.00	\$533,400.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$685,000.00	\$68,500.00	\$102,750.00	\$13,700.00	\$869,950.00

AREA	ERC	Share (%)
(Historic) (Connected)	96	12%
(Historic) (Res/Future)	169	20%
(Summit) (Connected)	36	4%
(Summit) (Res/Future)	361	44%
LOWER VALLEY (Connected)	90	11%
LOWER VALLEY (Res/Future)	76	9%
TOTAL	828	100%

PROPORTIONATE SHARE ANALYSIS													
POWDER MOUNTAIN (HISTORIC)					POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY				Total
Connected		Reserved/Future			Connected		Reserved/Future		Connected		Reserved/Future		
No.	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	
H.1	12%	\$9,906.00	20%	\$16,510.00	4%	\$3,302.00	44%	\$36,322.00	11%	\$9,080.50	9%	\$7,429.50	\$82,550.00
H.2	12%	\$18,288.00	20%	\$30,480.00	4%	\$6,096.00	44%	\$67,056.00	11%	\$16,764.00	9%	\$13,716.00	\$152,400.00
H.3	12%	\$12,192.00	20%	\$20,320.00	4%	\$4,064.00	44%	\$44,704.00	11%	\$11,176.00	9%	\$9,144.00	\$101,600.00
H.4	12%	\$64,008.00	20%	\$106,680.00	4%	\$21,336.00	44%	\$234,696.00	11%	\$58,674.00	9%	\$48,006.00	\$533,400.00
													\$869,950.00

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements

Project I: Sheep Creek Improvements
 Powder Mountain Utah
 PROJECT # POW.015



By: JJM
 Date: 08/18/21

No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
I.1	RE-BUILD SEWER LIFT STATIONS (PLUMBING)	EA.	3	\$30,000.00	\$90,000.00	\$9,000.00	\$13,500.00	\$1,800.00	\$114,300.00
I.2	ADD NEW PUMP(S) TO ACCOMMODATE GROWTH	EA.	3	\$50,000.00	\$150,000.00	\$15,000.00	\$22,500.00	\$3,000.00	\$190,500.00
I.3	ADD STORAGE TO ACCOMMODATE GROWTH	EA.	3	\$85,000.00	\$255,000.00	\$25,500.00	\$38,250.00	\$5,100.00	\$323,850.00
I.4	UPDATE ELECTRONICS AND SCADA	EA.	3	\$60,000.00	\$180,000.00	\$18,000.00	\$27,000.00	\$3,600.00	\$228,600.00
I.5	ADD REDUNDANT PUMP	EA.	3	\$50,000.00	\$150,000.00	\$15,000.00	\$22,500.00	\$3,000.00	\$190,500.00
I.6	ADD BACKUP GENERATOR	EA.	3.2	\$60,000.00	\$192,000.00	\$19,200.00	\$28,800.00	\$3,840.00	\$243,840.00
I.7	CONSTRUCT BUILDING ENCLOSURE	EA.	3	\$75,000.00	\$225,000.00	\$22,500.00	\$33,750.00	\$4,500.00	\$285,750.00
I.8	ADD SCREENING	EA.	3	\$65,000.00	\$195,000.00	\$19,500.00	\$29,250.00	\$3,900.00	\$247,650.00
I.9	EVALUATE PIPELINE DELIVERY	L.S.	10	\$18,000.00	\$180,000.00	\$18,000.00	\$27,000.00	\$3,600.00	\$228,600.00
I.10	REPLACE INDIVIDUAL HOME INJECTOR PUMPS WITH NEW LIFT STATION	EA.	1	\$350,000.00	\$350,000.00	\$35,000.00	\$52,500.00	\$7,000.00	\$444,500.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$1,967,000.00	\$196,700.00	\$295,050.00	\$39,340.00	\$2,498,090.00

AREA	ERC	Share (%)
(Historic) (Connected)	0	0%
POWDER MOUNTAIN (Historic) (Res/Future)	0	0%
(Summit) (Connected)	0	0%
(Summit) (Res/Future)	0	0%
LOWER VALLEY (Connected)	74	100%
LOWER VALLEY (Res/Future)	66	89%
TOTAL	74	100%

PROPORTIONATE SHARE ANALYSIS											
No.	POWDER MOUNTAIN (HISTORIC)				POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY		Total
	Connected		Reserved/Future		Connected		Reserved/Future		Connected		
	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	
I.1	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$114,300.00	\$114,300.00
I.2	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$190,500.00	\$190,500.00
I.3	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$323,850.00	\$323,850.00
I.4	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$228,600.00	\$228,600.00
I.5	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$190,500.00	\$190,500.00
I.6	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$243,840.00	\$243,840.00
I.7	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$285,750.00	\$285,750.00
I.8	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$247,650.00	\$247,650.00
I.9	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$228,600.00	\$228,600.00
I.10	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$444,500.00	\$444,500.00

\$2,498,090.00

Engineers Opinion of Cost

Sanitary Sewer CFP Improvements
 Project J: Snowflake Improvements
 Powder Mountain Utah
 PROJECT # POW.015

By: JJM
 Date: 08/18/21



No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
J.1	RE-BUILD SEWER LIFT STATIONS (PLUMBING)	EA.	2	\$20,000.00	\$40,000.00	\$4,000.00	\$6,000.00	\$800.00	\$50,800.00
J.2	ADD NEW PUMP(S) TO ACCOMMODATE GROWTH	EA.	2	\$40,000.00	\$80,000.00	\$8,000.00	\$12,000.00	\$1,600.00	\$101,600.00
J.3	ADD STORAGE TO ACCOMMODATE GROWTH	EA.	2	\$50,000.00	\$100,000.00	\$10,000.00	\$15,000.00	\$2,000.00	\$127,000.00
J.4	UPDATE ELECTRONICS AND SCADA	EA.	2	\$45,000.00	\$90,000.00	\$9,000.00	\$13,500.00	\$1,800.00	\$114,300.00
J.5	ADD REDUNDANT PUMP	EA.	2	\$40,000.00	\$80,000.00	\$8,000.00	\$12,000.00	\$1,600.00	\$101,600.00
J.6	ADD BACKUP GENERATOR	EA.	2	\$30,000.00	\$60,000.00	\$6,000.00	\$9,000.00	\$1,200.00	\$76,200.00
J.7	CONSTRUCT BUILDING ENCLOSURE	EA.	2	\$65,000.00	\$130,000.00	\$13,000.00	\$19,500.00	\$2,600.00	\$165,100.00
J.8	ADD SCREENING	EA.	2	\$25,000.00	\$50,000.00	\$5,000.00	\$7,500.00	\$1,000.00	\$63,500.00
J.9	EVALUATE PIPELINE DELIVERY	L.S.	1	\$10,500.00	\$10,500.00	\$1,050.00	\$1,575.00	\$210.00	\$13,335.00
J.10	FEASIBILITY TO CONNECT TO WOLF CREEK SEWER	EA.	1	\$15,000.00	\$15,000.00	\$1,500.00	\$2,250.00	\$300.00	\$19,050.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$655,500.00	\$65,550.00	\$98,325.00	\$13,110.00	\$832,485.00

AREA	ERC	Share (%)
(Historic) (Connected)	0	0%
(Historic) (Res/Future)	0	0%
(Summit) (Connected)	0	0%
(Summit) (Res/Future)	0	0%
LOWER VALLEY (Connected)	16	100%
LOWER VALLEY (Res/Future)	10	63%
TOTAL	16	100%

PROPORTIONATE SHARE ANALYSIS											
No.	POWDER MOUNTAIN (HISTORIC)				POWDER MOUNTAIN (SUMMIT)				LOWER VALLEY		Total
	Connected		Reserved/Future		Connected		Reserved/Future		Connected		
	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	
J.1	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$50,800.00	\$50,800.00
J.2	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$101,600.00	\$101,600.00
J.3	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$127,000.00	\$127,000.00
J.4	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$114,300.00	\$114,300.00
J.5	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$101,600.00	\$101,600.00
J.6	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$76,200.00	\$76,200.00
J.7	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$165,100.00	\$165,100.00
J.8	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$63,500.00	\$63,500.00
J.9	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$13,335.00	\$13,335.00
J.10	0%	\$0.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	100%	\$19,050.00	\$19,050.00
											\$832,485.00

Engineers Opinion of Cost

**Sanitary Sewer CFP Improvements
Project K: Sanitary Sewer Secondary Trunk Lines
Powder Mountain Utah
PROJECT # POW.015**



**By: JJM
Date: 08/18/21**

No.	DESCRIPTION	Unit	Quantity	Cost per Unit	Total Cost	10%	15%	2%	Total
						Construction Contingency	Engineering	Legal/Admin	
K.1	Retrofit Equipment with Freeze Protection	EA.	25	\$3,000.00	\$75,000.00	\$7,500.00	\$11,250.00	\$1,500.00	\$82,500.00
K.2	Manhole Repair; Inspect and Grout Manhole Joints, Align steps, Use double lids etc.	EA.	50	\$1,200.00	\$60,000.00	\$6,000.00	\$9,000.00	\$1,200.00	\$66,000.00
K.3	Lift Station Repair: Construct Structures Over Lift Stations and Equipment, Repair Generators, Propane Fill Valves, Address electrical code issues, Re-grade site to address drainage, etc.	EA.	1	\$100,000.00	\$100,000.00	\$10,000.00	\$15,000.00	\$2,000.00	\$110,000.00
K.4	Pressure Main repair: Repair, insulate, and/or remove damaged check valves on pressurized sewer lines.	EA.	6	\$2,500.00	\$15,000.00	\$1,500.00	\$2,250.00	\$300.00	\$16,500.00
K.5	Construct Improvements at Existing Grinder Building; Building Addition, Heating and Ventilation, Screening & Metering, Site Access Improvements	L.S.	1	\$250,000.00	\$250,000.00	\$25,000.00	\$37,500.00	\$5,000.00	\$275,000.00
K.6	Slipline Existing 8" Sewer Pipeline from Horizon Run Road to 1,000' Downstream from Cobabe Well	L.F.	13,200	\$50.00	\$660,000.00	\$66,000.00	\$99,000.00	\$13,200.00	\$726,000.00
K.7	Video Inspection of Existing Gravity Sewer from End of Sliplining to Lagoons	L.F.	24,400	\$2.50	\$61,000.00	\$6,100.00	\$9,150.00	\$1,220.00	\$67,100.00
K.8	Misc. Repairs Along Existing Gravity Sewer from End of Sliplining to Lagoons	L.F.	4,880	\$50.00	\$244,000.00	\$24,400.00	\$36,600.00	\$4,880.00	\$268,400.00
K.9	GPS Capable Logging Equipment	LUMP	LUMP	\$7,750.00	\$7,750.00	\$775.00	\$1,162.50	\$155.00	\$8,525.00
K.10	Create Capital Infrastructure Database (GIS)	LUMP	LUMP	\$75,000.00	\$75,000.00	\$7,500.00	\$11,250.00	\$1,500.00	\$82,500.00
TOTAL ESTIMATED BUDGET CONSTRUCTION COST					\$1,547,750.00	\$154,775.00	\$232,162.50	\$30,955.00	\$1,702,525.00

Notes:

1. Five (5) Lift Station Repair Items Have Been Omitted Assuming Lift Stations Are Decommissioned.

	K.1, K.2, K.4		K.3		K.5, K.7		K.6, K.8		K.9, K.10	
AREA	ERC	Share (%)	ERC	Share (%)	ERC	Share (%)	ERC	Share (%)	ERC	Share (%)
(Historic) (Connected)	0	0%	0	0%	96	17%	96	73%	96	11%
(Historic) (Res/Future)	0	0%	0	0%	76	13%	0	0%	169	19%
(Summit) (Connected)	36	100%	36	100%	36	6%	36	27%	36	4%
(Summit) (Res/Future)	0	0%	0	0%	361	64%	0	0%	443	48%
LOWER VALLEY (Connected)	0	0%	0	0%	0	0%	0	0%	90	10%
LOWER VALLEY (Res/Future)	0	0%	0	0%	0	0%	0	0%	76	8%
TOTAL	36	100%	36	100%	569	100%	132	100%	910	100%

PROPORTIONATE SHARE ANALYSIS													
POWDER MOUNTAIN (HISTORIC)													
POWDER MOUNTAIN (SUMMIT)													
LOWER VALLEY													
No.	Connected		Reserved/Future		Connected		Reserved/Future		Connected		Reserved/Future		Total
	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	%	Proportionate Cost	
K.1	0%	\$0.00	0%	\$0.00	100%	\$82,500.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	\$82,500.00
K.2	0%	\$0.00	0%	\$0.00	100%	\$66,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	\$66,000.00
K.3	0%	\$0.00	0%	\$0.00	100%	\$110,000.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	\$110,000.00
K.4	0%	\$0.00	0%	\$0.00	100%	\$16,500.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	\$16,500.00
K.5	17%	\$46,750.00	13%	\$35,750.00	6%	\$16,500.00	64%	\$176,000.00	0%	\$0.00	0%	\$0.00	\$275,000.00
K.6	73%	\$529,980.00	0%	\$0.00	27%	\$196,020.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	\$726,000.00
K.7	17%	\$11,407.00	13%	\$8,723.00	6%	\$4,026.00	64%	\$42,944.00	0%	\$0.00	0%	\$0.00	\$67,100.00
K.8	73%	\$195,932.00	0%	\$0.00	27%	\$72,468.00	0%	\$0.00	0%	\$0.00	0%	\$0.00	\$268,400.00
K.9	11%	\$937.75	19%	\$1,619.75	4%	\$341.00	48%	\$4,092.00	10%	\$852.50	8%	\$682.00	\$8,525.00
K.10	11%	\$9,075.00	19%	\$15,675.00	4%	\$3,300.00	48%	\$39,600.00	10%	\$8,250.00	8%	\$6,600.00	\$82,500.00

\$1,702,525.00

Section 7 -

**Appendix D – PMWSID
Boundary Exhibits**

POWDER MOUNTAIN WATER AND SEWER IMPROVEMENT DISTRICT BOUNDARY

A PART OF THE SOUTH HALF OF SECTION 5, SOUTH HALF AND NORTHWEST QUARTER AND THE SOUTH HALF OF SECTION 6, NORTH HALF OF SECTION 7, ALL OF SECTION 8, TOWNSHIP 7 NORTH, RANGE 2 EAST, A PART OF THE NORTH AND THE EAST HALF OF SECTION 1, SOUTHEAST QUARTER OF SECTION 10, SOUTHWEST QUARTER OF SECTION 11, NORTHEAST QUARTER OF SECTION 12, NORTHWEST QUARTER OF SECTION 14, THE EAST HALF AND THE SOUTHWEST QUARTER OF SECTION 15, EAST HALF OF SECTION 17, THE WEST HALF OF SECTION 18, TOWNSHIP 7 NORTH, RANGE 1 EAST, A PART OF THE SOUTHEAST QUARTER OF SECTION 36, TOWNSHIP 8 NORTH, RANGE 1 EAST, A PART OF THE SOUTHWEST QUARTER OF SECTION 31, TOWNSHIP 8 NORTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN. U.S. SURVEY: WEBER AND CACHE COUNTIES, UTAH
DECEMBER 2019

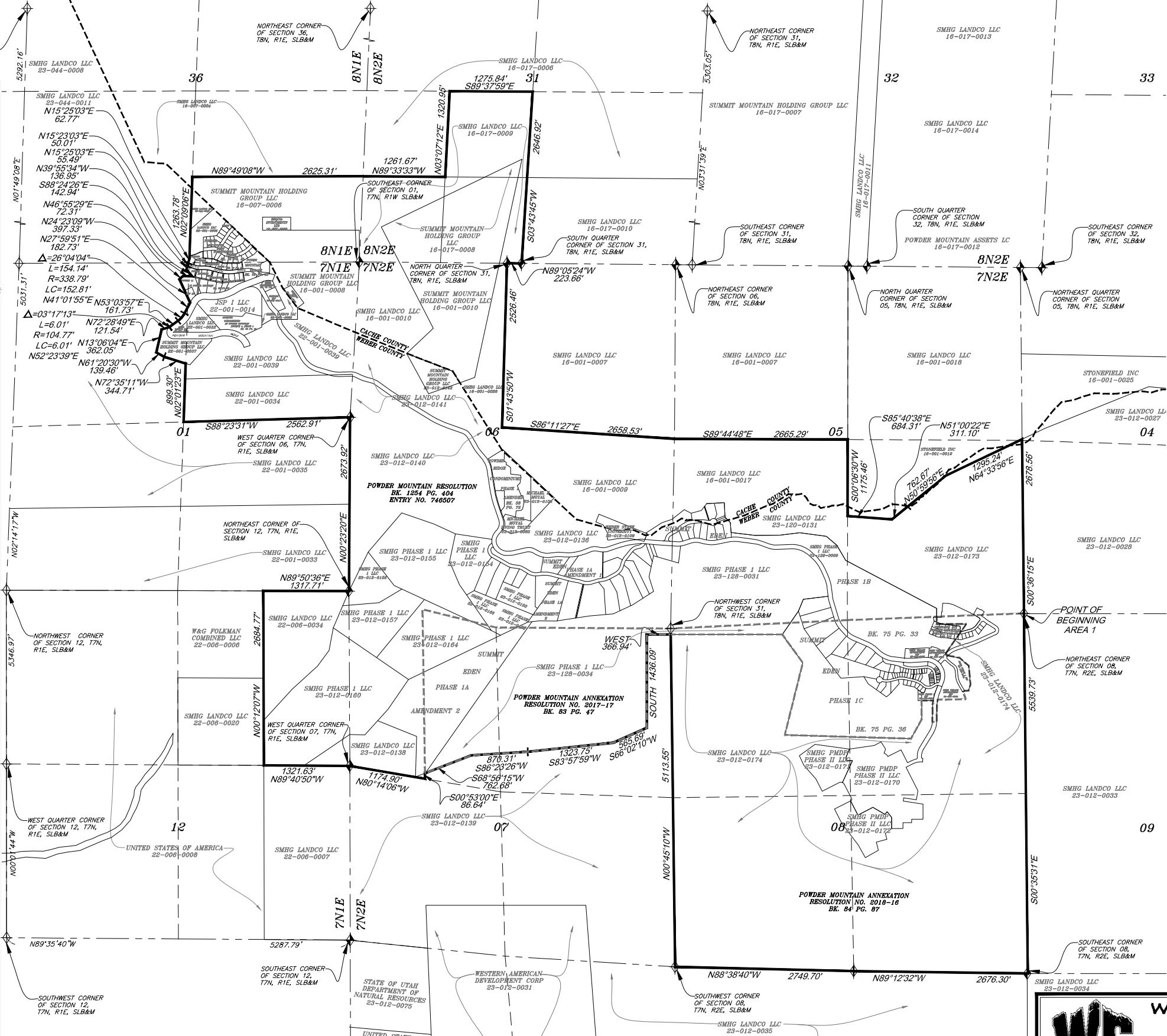
SCALE: 1" = 800'

POWDER MOUNTAIN WATER AND SEWER IMPROVEMENT DISTRICT BOUNDARY DESCRIPTION AREA 1

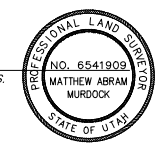
A PART OF THE SOUTH HALF OF SECTION 5, THE SOUTH HALF AND THE NORTHWEST QUARTER OF SECTION 6, THE NORTH HALF OF SECTION 7, ALL OF SECTION 8, TOWNSHIP 7 NORTH, RANGE 2 EAST; A PART OF THE NORTH HALF OF SECTION 1, NORTHEAST QUARTER OF SECTION 12, TOWNSHIP 7 NORTH, RANGE 1 EAST; A PART OF THE SOUTHWEST QUARTER OF SECTION 36, TOWNSHIP 8 NORTH, RANGE 1 EAST; A PART OF THE SOUTHWEST QUARTER OF SECTION 31, TOWNSHIP 8 NORTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN U.S. SURVEY:

BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 8, RUNNING THENCE THE FOLLOWING FOUR (4) COURSES AND DISTANCES ALONG SAID SECTION 8 AND THE EXISTING POWDER MOUNTAIN WATER AND SEWER IMPROVED DISTRICT BOUNDARY (EXISTING PMSWIS) AS SHOWN IN ANNEXATION RESOLUTION NO. 2018-16 AND AS RECORDED IN BOOK 84 AT PAGE 87 AT THE WEBER COUNTY RECORDER'S OFFICE: (1) SOUTH 00°35'31" EAST 5539.73 FEET; (2) NORTH 88°12'32" WEST 2676.30 FEET; (3) NORTH 88°38'40" WEST 2749.70 FEET; (4) NORTH 00°45'10" WEST 5113.55 FEET TO THE EXISTING PMSWIS AND ANNEXATION NO. 2017-17 AS RECORDED IN BOOK 83 AT PAGE 47 IN THE WEBER COUNTY RECORDER'S OFFICE; THENCE THE FOLLOWING SIX (6) COURSES AND DISTANCES ALONG SAID ANNEXATION: (1) WEST 389.94 FEET; (2) SOUTH 1438.09 FEET; (3) SOUTH 68°02'10" WEST 365.69 FEET; (4) SOUTH 83°57'59" WEST 1323.75 FEET; (5) SOUTH 86°23'26" WEST 870.31 FEET; (6) SOUTH 68°56'15" WEST 762.68 FEET TO THE EXISTING PMSWIS AS SHOWN IN POWDER MOUNTAIN RESOLUTION ENTRY NO. 748507 AS RECORDED IN BOOK 1254 IN PAGE 404; THENCE THE REMAINING COURSES AND DISTANCES ALONG SAID RESOLUTION; THENCE SOUTH 00°53'00" EAST 86.64 FEET TO THE SOUTH LINE OF THE NORTHWEST QUARTER OF SECTION 7; THENCE NORTH 80°14'08" WEST 1174.90 FEET ALONG SAID SOUTH LINE TO THE WEST LINE OF SAID SECTION WHICH IS ALSO THE WEST LINE OF TOWNSHIP 7 NORTH, RANGE 1 EAST; THENCE NORTH 89°40'50" WEST 1321.63 FEET ALONG THE SOUTH LINE OF THE NORTHEAST QUARTER OF SECTION 12 TO THE EAST LINE OF THE WEST HALF OF SAID NORTHEAST QUARTER; THENCE NORTH 00°12'07" WEST 2684.77 FEET ALONG SAID EAST LINE TO THE NORTH LINE OF SAID SECTION 12; THENCE NORTH 89°50'36" EAST 1317.71 FEET ALONG SAID NORTH LINE TO THE SOUTHEAST CORNER OF SECTION 1; THENCE NORTH 00°23'20" EAST 2673.92 FEET ALONG THE EAST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 1 TO THE SOUTHWEST CORNER OF SAID QUARTER SECTION; THENCE SOUTH 88°23'31" WEST 2562.91 FEET ALONG THE NORTH LINE OF SAID QUARTER SECTION TO THE CENTER OF SAID SECTION 1; THENCE NORTH 02°01'23" EAST 899.30 FEET ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 1 TO THE SOUTH LINE OF THAT PROPERTY WITH TAX ID NO. 22-001-0037; THENCE THE FOLLOWING FIVE (5) COURSES AND DISTANCES ALONG SAID PROPERTY: (1) NORTH 72°35'11" WEST 344.71 FEET; (2) NORTH 61°20'30" WEST 139.46 FEET; (3) NORTH 15°00'04" EAST 362.05 FEET; (4) NORTH 72°24'49" EAST 121.54 FEET TO A POINT OF CURVATURE WITH A 104.77 FOOT RADIUS CURVE TO THE LEFT; (5) 6.01 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 03°17'13" (CHORD BEARS NORTH 52°23'39" EAST 6.01 FEET) TO THE NORTH RIGHT-OF-WAY LINE OF POWDER MOUNTAIN ROAD; THENCE THE FOLLOWING THREE (3) COURSES AND DISTANCES ALONG SAID RIGHT-OF-WAY LINE: (1) NORTH 53°03'57" EAST 161.73 FEET TO A POINT OF CURVATURE WITH A 338.79 FOOT RADIUS CURVE TO THE LEFT; (2) 154.14 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 26°04'04" (CHORD BEARS NORTH 14°10'55" EAST 152.54 FEET); (3) NORTH 27°59'51" EAST 182.73 FEET TO THE SOUTHWEST CORNER OF LOT 1R OF POWDER 11 AT POWDER MOUNTAIN SUBDIVISION AS RECORDED IN BOOK 60 IN PAGE 97 AT THE WEBER COUNTY RECORDER'S OFFICE; THENCE THE FOLLOWING THREE (3) COURSES AND DISTANCES ALONG SAID SUBDIVISION: (1) NORTH 24°23'09" WEST 397.33 FEET; (2) SOUTH 46°55'29" EAST 72.31 FEET; (3) SOUTH 88°24'26" EAST 142.94 FEET TO A SOUTHWEST CORNER ON POWDER MOUNTAIN WEST SUBDIVISION PHASE 3 AS RECORDED IN BOOK 39 AT PAGE 59 IN THE WEBER COUNTY RECORDER'S OFFICE; THENCE THE FOLLOWING TWO (2) COURSES AND DISTANCES ALONG SAID SUBDIVISION: (1) NORTH 39°55'34" WEST 136.95 FEET; (2) NORTH 15°25'03" EAST 55.49 FEET TO THE SOUTH RIGHT-OF-WAY LINE OF ASPEN DRIVE; THENCE NORTH 15°23'03" EAST 50.01 FEET TO THE NORTH RIGHT-OF-WAY LINE OF SAID ASPEN DRIVE AND THE SOUTHWEST CORNER OF POWDER MOUNTAIN WEST SUBDIVISION PHASE 2 AS RECORDED IN BOOK 36 AT PAGE 81 IN THE WEBER COUNTY RECORDER'S OFFICE; THENCE NORTH 15°23'03" EAST 62.77 FEET ALONG THE WEST LINE OF SAID SUBDIVISION TO THE EAST LINE OF THE SOUTHWEST QUARTER OF SECTION 36 IN TOWNSHIP 8 NORTH, RANGE 1 EAST; THENCE NORTH 02°08'06" EAST 1263.78 FEET ALONG SAID EAST LINE TO THE NORTH LINE OF THE SOUTH HALF OF THE SOUTHWEST QUARTER OF SAID SECTION; THENCE NORTH 89°49'08" WEST 2625.31 FEET ALONG SAID NORTH LINE TO THE EAST LINE OF SAID SECTION 36; SAID LINE ALSO BEING THE WEST LINE OF TOWNSHIP 8 NORTH, RANGE 2 EAST; THENCE NORTH 89°33'33" WEST 1261.67 FEET TO THE CENTER OF THE SOUTHWEST QUARTER OF SECTION 31; THENCE NORTH 03°07'12" EAST 1320.95 FEET ALONG THE EAST LINE OF THE NORTHWEST QUARTER OF SECTION 31 TO THE NORTHWEST CORNER OF SAID SECTION 31; THENCE SOUTH 89°37'59" EAST 1275.84 FEET ALONG SAID NORTH LINE TO THE CENTER OF SAID SECTION 31; THENCE SOUTH 03°43'45" WEST 2646.92 FEET ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER TO THE SOUTH LINE OF SAID SECTION 31 AND THE NORTH LINE OF TOWNSHIP 7 NORTH, RANGE 2 EAST; THENCE NORTH 89°06'24" WEST 223.66 FEET ALONG SAID NORTH LINE TO THE NORTH QUARTER CORNER OF SECTION 6; THENCE SOUTH 14°43'08" WEST 2526.46 FEET ALONG THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 6; TO THE CENTER OF SAID SECTION 6; THENCE SOUTH 86°11'27" EAST 2658.53 ALONG THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 6; TO THE EAST LINE OF SAID SECTION 6; THENCE SOUTH 89°44'48" EAST 2665.29 FEET ALONG THE NORTH LINE OF THE SOUTHWEST QUARTER OF SECTION 5 TO THE CENTER OF SAID SECTION 5, WHICH IS ALSO ON THE EAST LINE OF RECORD OF SURVEY NO. 4425 AS RECORDED IN THE WEBER COUNTY SURVEYOR'S OFFICE; THENCE THE FOLLOWING FIVE (5) COURSES AND DISTANCES ALONG SAID RECORD OF SURVEY: (1) SOUTH 00°08'30" WEST 1175.46 FEET; (2) SOUTH 85°40'38" EAST 684.31 FEET; (3) NORTH 51°00'22" EAST 311.10 FEET; (4) NORTH 50°59'56" EAST 762.67 FEET; (5) NORTH 64°33'56" EAST 1295.24 FEET TO THE EAST LINE OF SAID SECTION 5; THENCE SOUTH 00°36'15" EAST 2678.56 FEET ALONG SAID EAST LINE TO THE POINT OF BEGINNING.

CONTAINS 2,087 ACRES MORE OR LESS.



SURVEYORS CERTIFICATE
I, MATTHEW ABRAM MURDOCK, A LICENSED PROFESSIONAL LAND SURVEYOR, AS PRESCRIBED BY THE LAWS OF THE STATE OF UTAH IN ACCORDANCE WITH TITLE 58, CHAPTER 22, AND HOLDING LICENSE NO. 6541909, DO HEREBY CERTIFY THAT THIS ANNEXATION TO THE ROY WATER CONSERVANCY DISTRICT BOUNDARY HAS BEEN MADE UNDER MY DIRECTION AND IN ACCORDANCE WITH SECTION 11-23-20 AND HAS BEEN CORRECTLY DRAWN TO THE DESIGNATED SCALE AND IS A TRUE AND CORRECT REPRESENTATION OF THE FOLLOWING DESCRIPTION OF LANDS INCLUDED IN SAID ANNEXATION BOUNDARY BASED ON DATA COMPILED FROM THE RECORDS IN THE WEBER COUNTY RECORDERS OFFICE.
SIGNED THIS _____ DAY OF _____, 2019.



LEGEND
 — ANNEXATION PARCEL
 - - - COUNTY LINE
 - - - RESOLUTION LINES
 - - - SECTION LINE
 - - - QUARTER SECTION LINE
 - - - PARCEL LINES
 ◆ FOUND SECTION CORNER
 ◆ SECTION CORNER

WEBER COUNTY SURVEYOR
I HEREBY CERTIFY THAT THE WEBER COUNTY SURVEYOR'S OFFICE HAS REVIEWED THIS PLAN AND ALL CONDITIONS FOR APPROVAL BY THIS OFFICE HAVE BEEN SATISFIED. THE APPROVAL OF THIS PLAN BY THE WEBER COUNTY SURVEYOR DOES NOT RELIEVE THE LICENSED LAND SURVEYOR WHO EXECUTED THIS PLAN FROM THE RESPONSIBILITIES AND/OR LIABILITIES ASSOCIATED THEREWITH.
SIGNED THIS _____ DAY OF _____, 2019.

REFERENCES
WEBER COUNTY AND CACHE COUNTY RECORDER'S OFFICE TAX MAPS, DESCRIPTIONS, RECORD DOCUMENTS, & RECORDED SUBDIVISIONS.
WEBER COUNTY AND CACHE COUNTY SURVEYOR SECTION CORNER TIE SHEETS & RECORD OF SURVEYS.

SURVEYOR'S NOTES
1. BEARINGS AND DISTANCES GIVEN ARE DERIVED FROM RECORD INFORMATION WHERE AVAILABLE.
2. AT NO TIME WAS A SURVEY ON THE GROUND PERFORMED TO VERIFY THE ACCURACY OF THE BEARINGS AND DISTANCES NOR WERE ANY TIES TO EXISTING RECORD OF SURVEYS, PLATS, SECTION CORNERS, AND THE SHEETS CONDUCTED. THIS ANNEXATION PLAT IS TO SERVE AS A BOUNDARY LINE TO ESTABLISH THE DISTRICT LIMITS OF ROY WATER CONSERVANCY FOR TAXATION PURPOSES ONLY.
3. BEARINGS AND DISTANCES WITHIN THIS DOCUMENT ARE PROVIDED FOR MAPPING PURPOSES ONLY. AT NO TIME NOW AND FOREVER DOES THIS PROPOSED DISTRICT BOUNDARY LINE DETERMINE THE LOCATION OF ANY PROPERTY LINE REPRESENTED ON THIS MAP.

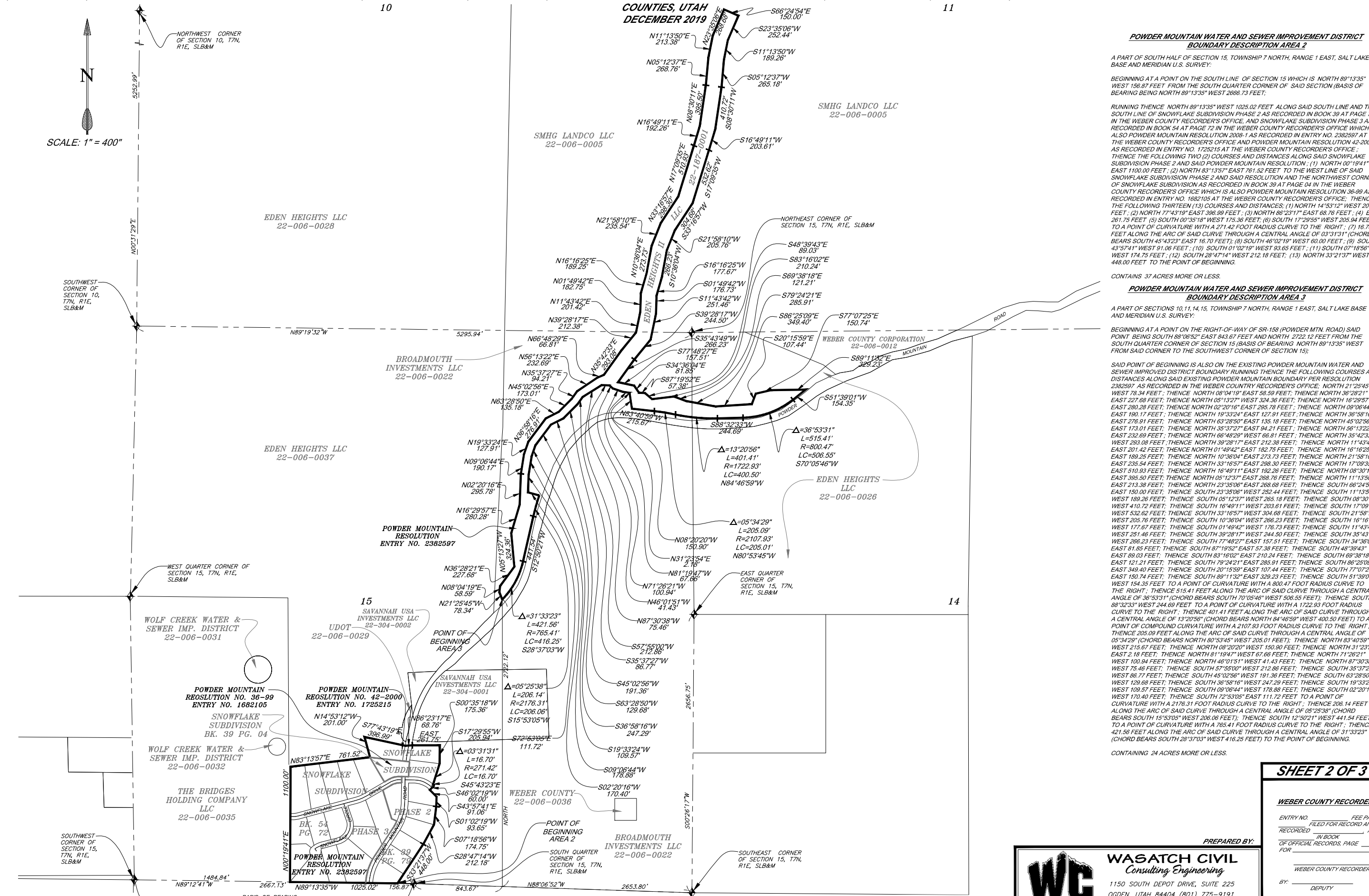
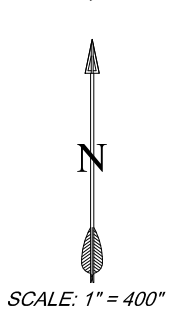
SHEET 1 OF 3

WEBER COUNTY RECORDER
ENTRY NO. _____ FEE PAID _____
FILED FOR RECORD AND RECORDED _____ AT _____
IN BOOK _____ OF OFFICIAL RECORDS, PAGE _____ FOR _____
WEBER COUNTY RECORDER
BY: _____ DEPUTY

WASATCH CIVIL
Consulting Engineering
1150 SOUTH DEPOT DRIVE, SUITE 225
OGDEN, UTAH 84404 (801) 775-9191

POWDER MOUNTAIN WATER AND SEWER IMPROVEMENT DISTRICT BOUNDARY

A PART OF THE SOUTH HALF OF SECTION 5, SOUTH HALF AND NORTHWEST QUARTER AND THE SOUTH HALF OF SECTION 6, NORTH HALF OF SECTION 7, ALL OF SECTION 8, TOWNSHIP 7 NORTH, RANGE 2 EAST, A PART OF THE NORTH AND THE EAST HALF OF SECTION 1, SOUTHEAST QUARTER OF SECTION 10, SOUTHWEST QUARTER OF SECTION 11, NORTHEAST QUARTER OF SECTION 12, NORTHWEST QUARTER OF SECTION 14, THE EAST HALF AND THE SOUTHWEST QUARTER OF SECTION 15, EAST HALF OF SECTION 17, THE WEST HALF OF SECTION 18, TOWNSHIP 7 NORTH, RANGE 1 EAST, A PART OF THE SOUTHEAST QUARTER OF SECTION 36, TOWNSHIP 8 NORTH, RANGE 1 EAST, A PART OF THE SOUTHWEST QUARTER OF SECTION 31, TOWNSHIP 8 NORTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN. U.S. SURVEY: WEBER AND CACHE



POWDER MOUNTAIN WATER AND SEWER IMPROVEMENT DISTRICT BOUNDARY DESCRIPTION AREA 2

A PART OF SOUTH HALF OF SECTION 15, TOWNSHIP 7 NORTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN U.S. SURVEY:

BEGINNING AT A POINT ON THE SOUTH LINE OF SECTION 15 WHICH IS NORTH 89°13'35" WEST 156.67 FEET FROM THE SOUTH QUARTER CORNER OF SAID SECTION (BASIS OF BEARING BEING NORTH 89°13'35" WEST 266.73 FEET);

RUNNING THENCE NORTH 89°13'35" WEST 1025.02 FEET ALONG SAID SOUTH LINE AND THE SOUTH LINE OF SNOWFLAKE SUBDIVISION PHASE 2 AS RECORDED IN BOOK 39 AT PAGE 79 IN THE WEBER COUNTY RECORDER'S OFFICE, AND SNOWFLAKE SUBDIVISION PHASE 3 AS RECORDED IN BOOK 54 AT PAGE 72 IN THE WEBER COUNTY RECORDER'S OFFICE WHICH IS ALSO POWDER MOUNTAIN RESOLUTION 2008-1 AS RECORDED IN ENTRY NO. 2382597 AT THE WEBER COUNTY RECORDER'S OFFICE AND POWDER MOUNTAIN RESOLUTION 42-2000 AS RECORDED IN ENTRY NO. 1725215 AT THE WEBER COUNTY RECORDER'S OFFICE; THENCE THE FOLLOWING TWO (2) COURSES AND DISTANCES ALONG SAID SNOWFLAKE SUBDIVISION PHASE 2 AND SAID POWDER MOUNTAIN RESOLUTION: (1) NORTH 00°19'41" EAST 1100.00 FEET; (2) NORTH 83°13'57" EAST 761.52 FEET TO THE WEST LINE OF SAID SNOWFLAKE SUBDIVISION PHASE 2 AND SAID RESOLUTION AND THE NORTHWEST CORNER OF SNOWFLAKE SUBDIVISION AS RECORDED IN BOOK 39 AT PAGE 04 IN THE WEBER COUNTY RECORDER'S OFFICE WHICH IS ALSO POWDER MOUNTAIN RESOLUTION 36-89 AS RECORDED IN ENTRY NO. 1682105 AT THE WEBER COUNTY RECORDER'S OFFICE; THENCE THE FOLLOWING THIRTEEN (13) COURSES AND DISTANCES: (1) NORTH 14°53'12" WEST 201.00 FEET; (2) NORTH 77°43'19" EAST 396.98 FEET; (3) NORTH 86°23'17" EAST 68.76 FEET; (4) EAST 261.75 FEET; (5) SOUTH 00°35'18" WEST 175.36 FEET; (6) SOUTH 17°29'55" WEST 205.94 FEET TO A POINT OF CURVATURE WITH A 271.42 FOOT RADIUS CURVE TO THE RIGHT; (7) 16.70 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 03°31'31" (CHORD BEARS SOUTH 45°43'23" EAST 16.70 FEET); (8) SOUTH 46°02'19" WEST 80.00 FEET; (9) SOUTH 43°57'41" WEST 91.08 FEET; (10) SOUTH 01°02'19" WEST 93.65 FEET; (11) SOUTH 07°18'50" WEST 174.75 FEET; (12) SOUTH 28°47'14" WEST 212.18 FEET; (13) NORTH 33°21'37" WEST 448.00 FEET TO THE POINT OF BEGINNING.

CONTAINS .37 ACRES MORE OR LESS.

POWDER MOUNTAIN WATER AND SEWER IMPROVEMENT DISTRICT BOUNDARY DESCRIPTION AREA 3

A PART OF SECTIONS 10, 11, 14, 15, TOWNSHIP 7 NORTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN U.S. SURVEY:

BEGINNING AT A POINT ON THE RIGHT-OF-WAY OF SR-158 (POWDER MTN. ROAD) SAID POINT BEING SOUTH 88°06'52" EAST 843.67 FEET AND NORTH 2722.12 FEET FROM THE SOUTH QUARTER CORNER OF SECTION 15 (BASIS OF BEARING NORTH 89°13'35" WEST FROM SAID CORNER TO THE SOUTHWEST CORNER OF SECTION 15);

SAID POINT OF BEGINNING IS ALSO ON THE EXISTING POWDER MOUNTAIN WATER AND SEWER IMPROVED DISTRICT BOUNDARY RUNNING THENCE THE FOLLOWING COURSES AND DISTANCES ALONG SAID EXISTING POWDER MOUNTAIN BOUNDARY PER RESOLUTION 2382597 AS RECORDED IN THE WEBER COUNTY RECORDER'S OFFICE: NORTH 21°25'45" WEST 78.34 FEET; THENCE NORTH 08°04'19" EAST 58.59 FEET; THENCE NORTH 36°28'21" EAST 227.68 FEET; THENCE NORTH 05°13'27" WEST 324.36 FEET; THENCE NORTH 16°29'57" EAST 280.28 FEET; THENCE NORTH 02°20'19" EAST 285.18 FEET; THENCE NORTH 08°06'44" EAST 190.17 FEET; THENCE NORTH 19°33'24" EAST 127.91 FEET; THENCE NORTH 36°58'16" EAST 276.91 FEET; THENCE NORTH 63°28'50" EAST 135.18 FEET; THENCE NORTH 45°02'56" EAST 173.01 FEET; THENCE NORTH 35°37'27" EAST 94.21 FEET; THENCE NORTH 56°13'22" EAST 232.69 FEET; THENCE NORTH 66°48'29" WEST 66.81 FEET; THENCE NORTH 35°42'33" WEST 283.08 FEET; THENCE NORTH 39°28'17" EAST 212.38 FEET; THENCE NORTH 11°43'42" EAST 201.42 FEET; THENCE NORTH 01°49'42" EAST 182.75 FEET; THENCE NORTH 16°16'25" EAST 189.25 FEET; THENCE NORTH 10°36'04" EAST 273.73 FEET; THENCE NORTH 21°58'10" EAST 235.54 FEET; THENCE NORTH 33°16'57" EAST 288.30 FEET; THENCE NORTH 11°09'35" EAST 510.83 FEET; THENCE NORTH 16°49'11" EAST 192.26 FEET; THENCE NORTH 08°30'11" EAST 395.50 FEET; THENCE NORTH 05°12'37" EAST 288.76 FEET; THENCE NORTH 11°13'50" EAST 213.38 FEET; THENCE NORTH 23°35'06" EAST 288.68 FEET; THENCE SOUTH 66°24'54" EAST 150.00 FEET; THENCE SOUTH 23°35'06" WEST 252.44 FEET; THENCE SOUTH 11°13'50" WEST 189.26 FEET; THENCE SOUTH 05°12'37" WEST 265.18 FEET; THENCE SOUTH 08°30'11" WEST 410.72 FEET; THENCE SOUTH 16°49'11" WEST 203.61 FEET; THENCE SOUTH 17°09'35" WEST 532.62 FEET; THENCE SOUTH 33°16'57" WEST 304.68 FEET; THENCE SOUTH 21°58'10" WEST 205.76 FEET; THENCE SOUTH 10°36'04" WEST 266.23 FEET; THENCE SOUTH 16°16'25" WEST 177.67 FEET; THENCE SOUTH 01°49'42" WEST 170.73 FEET; THENCE SOUTH 11°43'42" WEST 251.46 FEET; THENCE SOUTH 39°28'17" WEST 244.80 FEET; THENCE SOUTH 35°43'49" WEST 266.23 FEET; THENCE SOUTH 77°48'27" EAST 157.51 FEET; THENCE SOUTH 34°36'04" EAST 81.85 FEET; THENCE SOUTH 87°19'52" EAST 57.38 FEET; THENCE SOUTH 48°39'43" EAST 89.03 FEET; THENCE SOUTH 83°16'02" EAST 210.24 FEET; THENCE SOUTH 69°38'18" EAST 121.21 FEET; THENCE SOUTH 79°24'21" EAST 285.91 FEET; THENCE SOUTH 86°25'09" EAST 349.40 FEET; THENCE SOUTH 20°15'59" EAST 107.44 FEET; THENCE SOUTH 77°07'25" EAST 150.74 FEET; THENCE SOUTH 89°11'32" EAST 329.23 FEET; THENCE SOUTH 51°39'01" WEST 154.35 FEET TO A POINT OF CURVATURE WITH A 800.47 FOOT RADIUS CURVE TO THE RIGHT; THENCE 516.41 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 36°53'31" (CHORD BEARS SOUTH 70°05'46" WEST 506.55 FEET); THENCE SOUTH 88°32'33" WEST 244.89 FEET TO A POINT OF CURVATURE WITH A 1722.93 FOOT RADIUS CURVE TO THE RIGHT; THENCE 401.41 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 13°20'56" (CHORD BEARS NORTH 84°46'59" WEST 400.50 FEET); THENCE 205.09 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 05°34'29" (CHORD BEARS NORTH 80°53'45" WEST 205.01 FEET); THENCE NORTH 83°40'59" WEST 215.67 FEET; THENCE NORTH 08°20'20" WEST 150.90 FEET; THENCE NORTH 31°23'54" EAST 212.18 FEET; THENCE NORTH 81°10'47" WEST 67.66 FEET; THENCE NORTH 11°29'21" WEST 100.94 FEET; THENCE NORTH 46°01'51" WEST 41.43 FEET; THENCE NORTH 87°30'38" WEST 75.46 FEET; THENCE SOUTH 45°02'56" WEST 191.36 FEET; THENCE SOUTH 63°28'50" WEST 129.68 FEET; THENCE SOUTH 36°58'16" WEST 247.29 FEET; THENCE SOUTH 19°33'24" WEST 109.57 FEET; THENCE SOUTH 09°06'44" WEST 178.88 FEET; THENCE SOUTH 02°20'19" WEST 170.40 FEET; THENCE SOUTH 72°53'05" EAST 111.72 FEET TO A POINT OF CURVATURE WITH A 2176.31 FOOT RADIUS CURVE TO THE RIGHT; THENCE 206.14 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 05°28'38" (CHORD BEARS SOUTH 15°53'05" WEST 206.06 FEET); THENCE SOUTH 12°50'21" WEST 441.54 FEET TO A POINT OF CURVATURE WITH A 765.41 FOOT RADIUS CURVE TO THE RIGHT; THENCE 421.56 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 31°33'23" (CHORD BEARS SOUTH 28°37'03" WEST 416.25 FEET) TO THE POINT OF BEGINNING.

CONTAINING 24 ACRES MORE OR LESS.

SHEET 2 OF 3

WEBER COUNTY RECORDER	
ENTRY NO. _____	FEE PAID _____
RECORDED _____ AT _____	IN BOOK _____
OF OFFICIAL RECORDS, PAGE _____	FOR _____
WEBER COUNTY RECORDER	
BY: _____ DEPUTY	

WASATCH CIVIL
Consulting Engineering

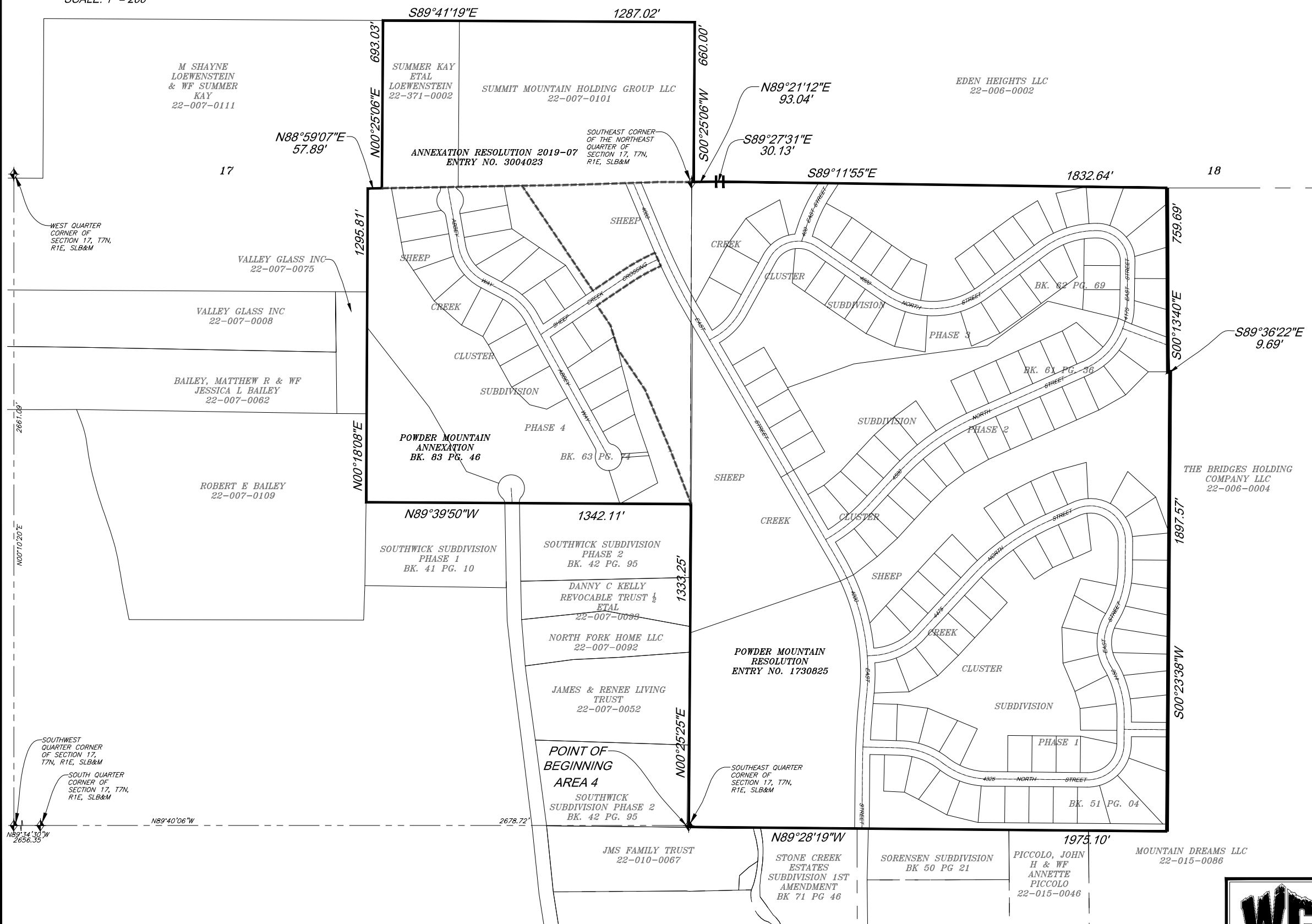
1150 SOUTH DEPOT DRIVE, SUITE 225
OGDEN, UTAH 84404 (801) 775-9191

POWDER MOUNTAIN WATER AND SEWER IMPROVEMENT DISTRICT BOUNDARY

A PART OF THE SOUTH HALF OF SECTION 5, SOUTH HALF AND NORTHWEST QUARTER AND THE SOUTH HALF OF SECTION 6, NORTH HALF OF SECTION 7, ALL OF SECTION 8, TOWNSHIP 7 NORTH, RANGE 2 EAST, A PART OF THE NORTH AND THE EAST HALF OF SECTION 1, SOUTHEAST QUARTER OF SECTION 10, SOUTHWEST QUARTER OF SECTION 11, NORTHEAST QUARTER OF SECTION 12, NORTHWEST QUARTER OF SECTION 14, THE EAST HALF AND THE SOUTHWEST QUARTER OF SECTION 15, EAST HALF OF SECTION 17, THE WEST HALF OF SECTION 18, TOWNSHIP 7 NORTH, RANGE 1 EAST, A PART OF THE SOUTHEAST QUARTER OF SECTION 36, TOWNSHIP 8 NORTH, RANGE 1 EAST, A PART OF THE SOUTHWEST QUARTER OF SECTION 31, TOWNSHIP 8 NORTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN. U.S. SURVEY: WEBER AND CACHE COUNTIES, UTAH
DECEMBER 2019



SCALE: 1" = 200'



**POWDER MOUNTAIN WATER AND SEWER IMPROVEMENT DISTRICT
BOUNDARY DESCRIPTION AREA 4**

A PART OF EAST HALF OF SECTION 17 AND THE WEST HALF OF SECTION 18, TOWNSHIP 7 NORTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN U.S. SURVEY:
BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION 17; RUNNING THENCE NORTH 00°25'00" EAST 1333.25 FEET ALONG THE WEST LINE OF SHEEP CREEK CLUSTER SUBDIVISION PHASE 1 AS RECORDED IN BOOK 51 AT PAGE 04 IN THE WEBER COUNTY RECORDER'S OFFICE AND SHEEP CREEK CLUSTER SUBDIVISION PHASE 2 AS RECORDED IN BOOK 61 AT PAGE 36 IN THE WEBER COUNTY RECORDER'S OFFICE WHICH IS ALSO A POWDER MOUNTAIN RESOLUTION AS RECORDED IN ENTRY NO. 1730825; THENCE THE FOLLOWING THREE (3) COURSES AND DISTANCES ALONG SHEEP CREEK CLUSTER SUBDIVISION PHASE 4 AS RECORDED IN BOOK 63 AT PAGE 74 IN THE WEBER COUNTY RECORDER'S OFFICE: (1) NORTH 89°39'50" WEST 1342.11 FEET; (2) NORTH 00°18'08" EAST 1295.81 FEET; (3) NORTH 88°59'07" EAST 57.89 FEET TO THE WEST LINE OF ANNEXATION RESOLUTION NO. 2019-07 AS RECORDED IN ENTRY NO. 3004023 IN THE WEBER COUNTY RECORDER'S OFFICE; THENCE THE FOLLOWING THREE (3) COURSES AND DISTANCES ALONG SAID RESOLUTION: (1) NORTH 00°25'06" EAST 693.03 FEET; (2) SOUTH 89°41'19" EAST 1287.02 FEET; (3) SOUTH 00°25'06" WEST 660.00 FEET TO THE NORTH LINE OF SHEEP CREEK CLUSTER SUBDIVISION PHASE 3 AS RECORDED IN BOOK 62 PAGE 69; THENCE THE FOLLOWING THREE (3) COURSES AND DISTANCES ALONG SAID SUBDIVISION: (1) NORTH 89°21'12" EAST 93.04 FEET; (2) SOUTH 89°27'31" EAST 30.13 FEET; (3) SOUTH 89°11'55" EAST 1832.64 FEET; THENCE SOUTH 00°13'40" WEST 759.69 FEET ALONG THE EAST LINE OF SAID SHEEP CREEK CLUSTER SUBDIVISION PHASE 3 AND SAID SHEEP CREEK CLUSTER SUBDIVISION PHASE 2 TO THE NORTH LINE OF SAID SHEEP CREEK CLUSTER SUBDIVISION PHASE 1; THENCE THE FOLLOWING THREE (3) COURSES AND DISTANCES ALONG SAID SHEEP CREEK CLUSTER SUBDIVISION PHASE 1: (1) SOUTH 89°36'22" EAST 9.69 FEET; (2) SOUTH 00°23'38" WEST 1897.57 FEET; (3) NORTH 89°28'19" WEST 1975.10 FEET TO THE POINT OF BEGINNING.
CONTAINING 181 ACRES MORE OR LESS.

SHEET 3 OF 3

WEBER COUNTY RECORDER
ENTRY NO. _____ FEE PAID _____
FILED FOR RECORD AND _____ AT _____
RECORDED _____ IN BOOK _____
OF OFFICIAL RECORDS, PAGE _____
FOR _____

PREPARED BY:

WC WASATCH CIVIL
Consulting Engineering
1150 SOUTH DEPOT DRIVE, SUITE 225
OGDEN, UTAH 84404 (801) 775-9191

WEBER COUNTY RECORDER
BY: _____
DEPUTY