



TO: Town Council
Town of Alpine
Alpine, WY 83128

October 9, 2024

RE: Water & Sewer Capacity Summary

Mayor and Council Members,

The Town's water and sewer utility systems capacity was analyzed last month and below is a high level summary of each system.

Sewer Utility

The existing wastewater treatment plant is currently running at 39% of its permitted capacity. When all current residents and approved annexations are built the treatment plant is conservatively projected to run at 92% capacity. This basis includes maximum development flows from submitted applications. Based on the current growth rate of the Town's population, full capacity of the wastewater treatment plant would be 20 to 30-years. Current cost of expanding the wastewater treatment plant to accommodate double the existing capacity is \$20.4M.

Water Utility

The existing domestic water utilities Maximum Day flow rate data shows it's at 90% of capacity. This single day maximum flow rate capacity is misleading since we know the (3) Greys River water wells are at 100% capacity during the Summer (the pumps don't turn off during July and August).

Below are the seasonal water capacities;

100% = Summer

~33% = Spring / Fall

~10% = Winter

The above seasonal water capacity rates show the Town's water systems need to be upgraded to provide more Summer capacity and resilience for the good of its citizens

The below items will build needed capacity and resilience into the water utility;

- A) **Mega-Well**: the Town has another well on the North side of Town called the Mega-Well due to is large flow rated capacity. This Mega-Well is not currently tied into the greater Town of Alpine water system. This connection to the greater Town system needs to be designed and grant monies found for the construction.

Budget install cost is;

\$753k = Construction

\$56k = Design

\$35k = Controls

\$15k = Larger Well Pump

\$808k = Total

- B) Storage Tank: the largest south hillside storage tank, 500,000 gallons, currently can only be filled to ~½ capacity. This fill level is tied to how the distribution system is installed. A tank level vault system needs to be designed so the full storage capacity can be utilized. Grant monies will need to be found for this distribution capacity work.

Budget install cost is;

\$150k = Construction

\$25k = Controls

\$53k = Design

\$228k = Total

- C) Back-Up Generators; the (3) water wells have one generator that can run (1) well pump. If the Town has a power outage longer than the storage tank capacity (~24-hours) they will need to go into a special emergency “conserve water policy” to provide domestic water for its users. Musgrove Engineering is finishing up a design for a larger generator to run all (3) water wells and to move the existing generator to the Mega-Well location. Grant monies will need to be found for the back-up generator systems.

Budget install cost is;

\$350k = Generators

\$5k = Design

\$405k = Total

In Summary;

Sewer utility system is currently below capacity and will not reach full capacity for another 20 to 30-years, dependent on the pace of the build-out of the Town.

Water utility system needs increased capacity for Summer usage and to build resiliency into the system. The Mega-Well connection, Storage Tank and the Generator work is budgeted to be \$1.44M. Currently the domestic water system is at full capacity during the Summer months. If there is prolonged power outage or a well has a mechanical/electrical failure during the Summer the Town will have to take emergency conservation action. With the Mega-Well connected full water capacity will not be reached for another 10 to 20-years, dependent on the pace of the build-out of the Town.

Please contact me with any questions or concerns you may have regarding this utility summary.

Respectfully,



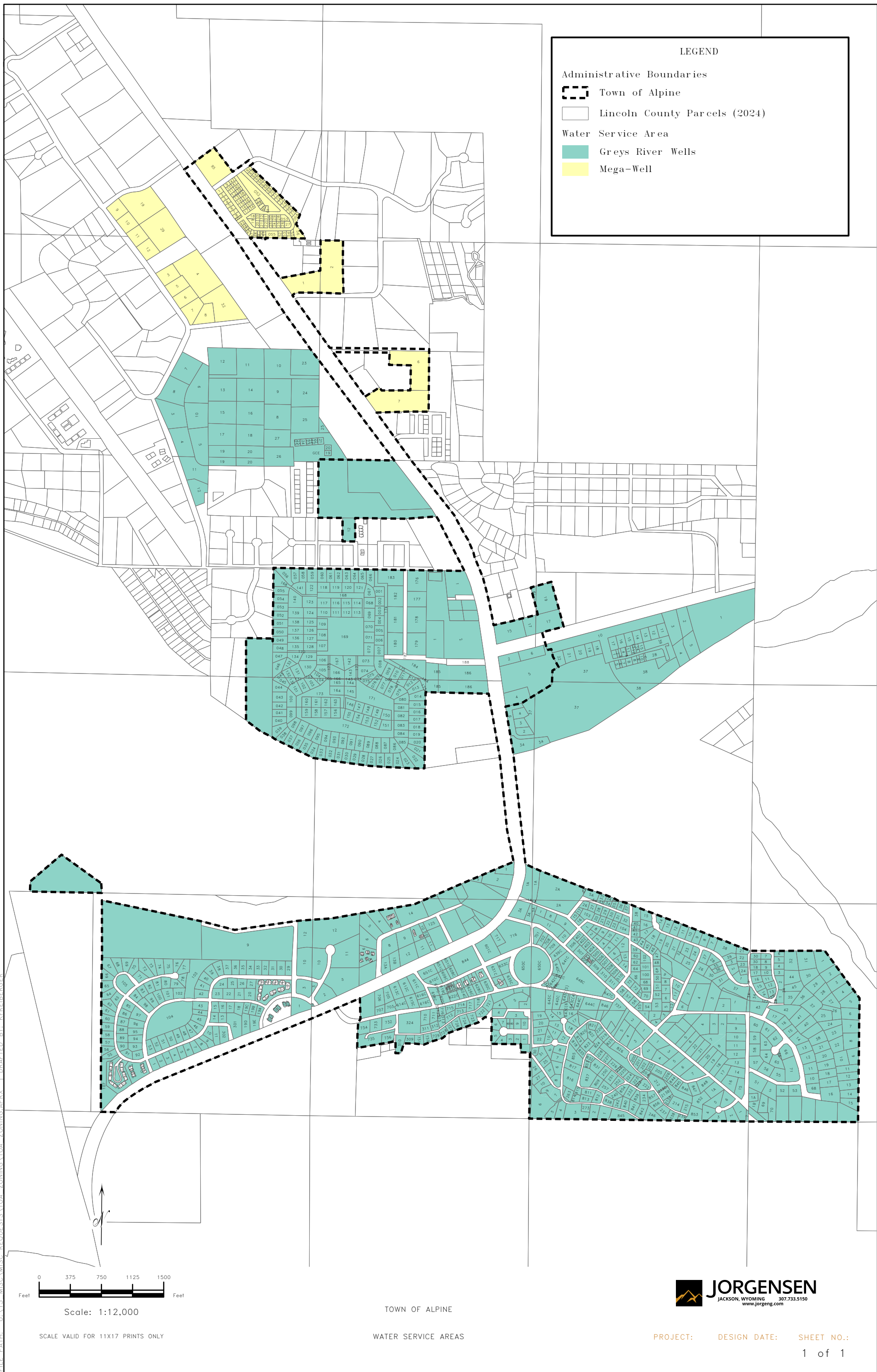
Kevin Meagher
Sr. Project Manager

Enclosures:

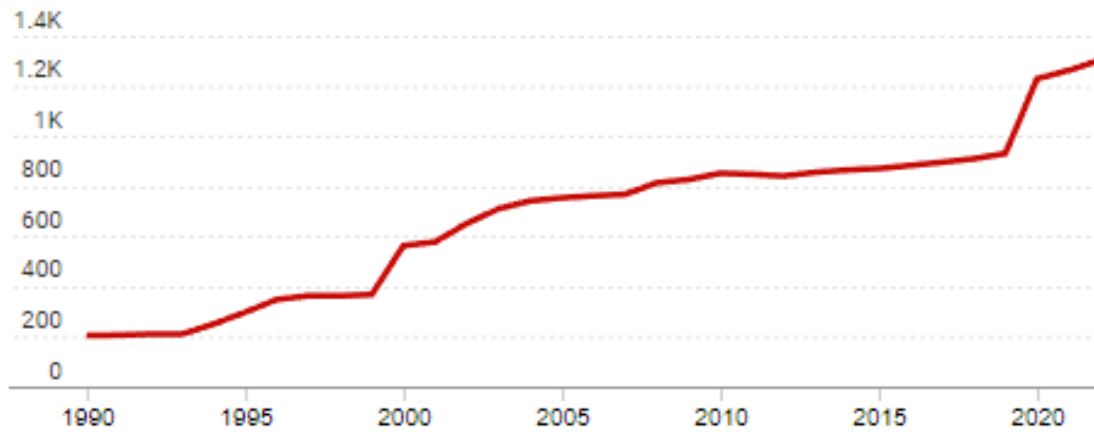
Water Service Map

Census Data

Water and Sewer Capacity Data



Population in Alpine

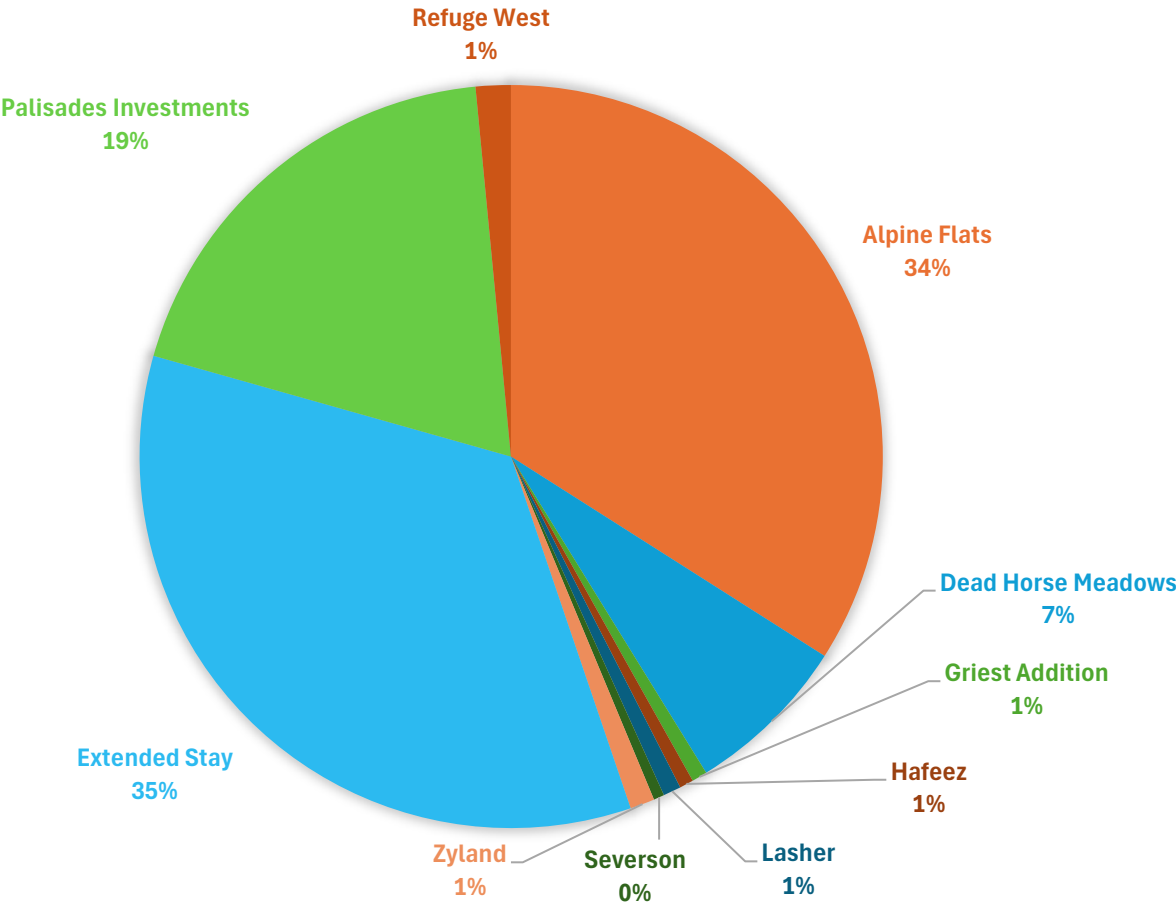


Data from www2.census.gov via Data Commons

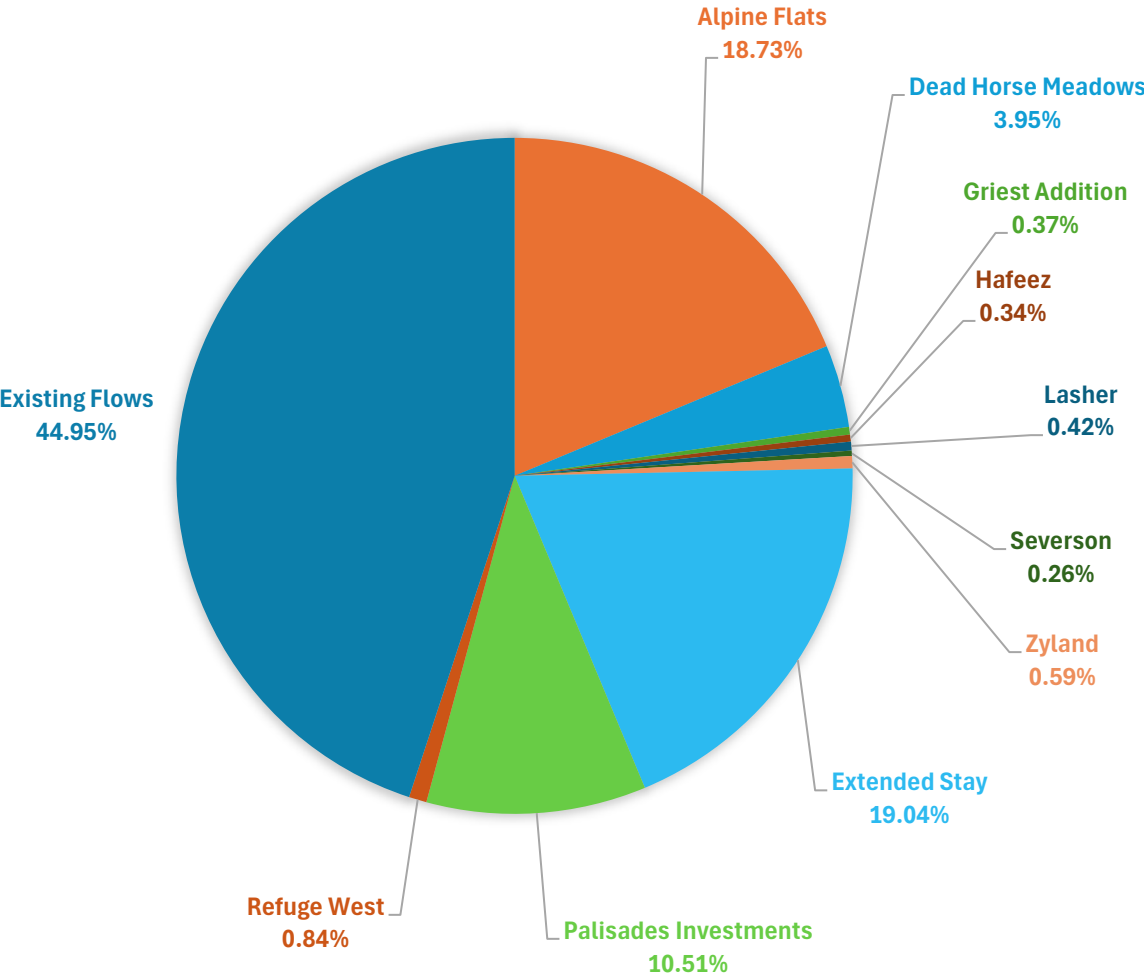
Population	Year
204	1990
205	1991
209	1992
209	1993
249	1994
296	1995
347	1996
362	1997
362	1998
367	1999
562	2000
577	2001
651	2002
709	2003
741	2004
753	2005
761	2006
767	2007
813	2008
826	2009
851	2010
847	2011
840	2012
855	2013
864	2014
870	2015
882	2016
895	2017
909	2018
930	2019
1228	2020
1262	2021
1304	2022



PROJECTED SEWER GENERATION FROM RECENT ANNEXATIONS/WILL SERVES



SEWER GENERATION - PROJECTED AND EXISTING

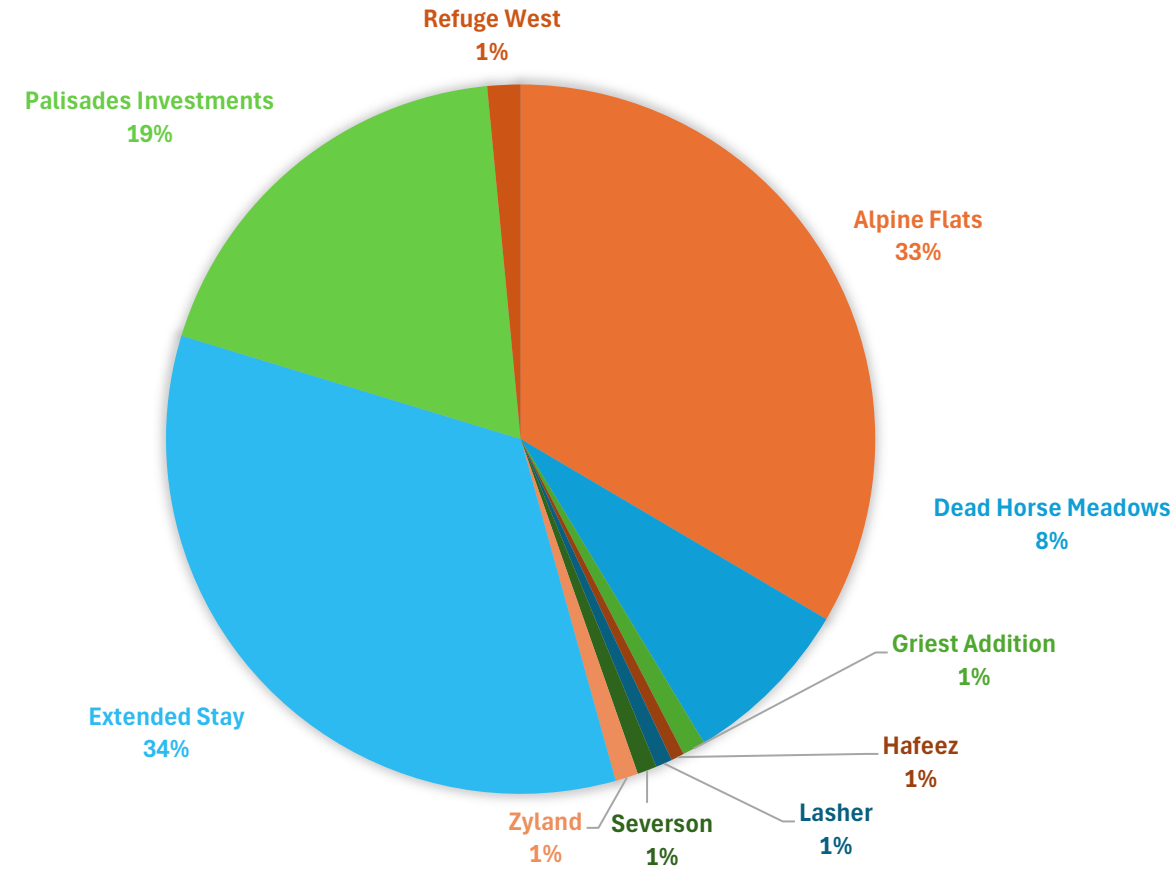


Wastewater Treatment Plant Capacity

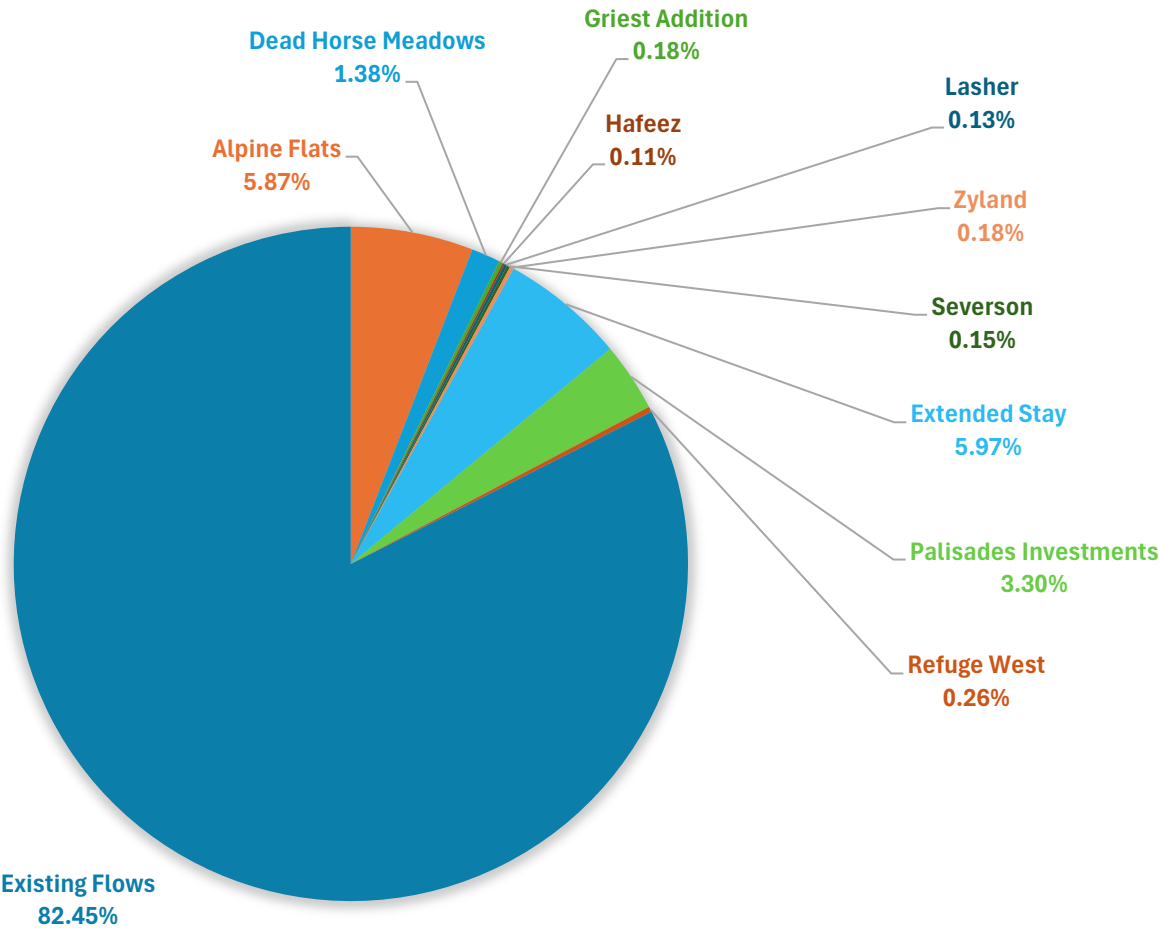
Time Frame	Existing Flows (Gal)	Annexed/Will Serve (Gal)	Projected Flow	Permitted Flow	Current % Capacity	Projected % Capacity	Remaining Capacity
Avg. Month	3,499,851	4,286,697	7,786,548	12,400,000	28%	63%	37%
Avg. Day	115,064	140,933	255,997	400,000	29%	64%	36%
Max Day 7.3.2023	157,298	211,487	368,785	400,000	39%	92%	8%
2023	41,998,207	-	-	146,000,000	29%	-	71%
2024	-	-	42,000,000	146,000,000	-	-	-



PROJECTED WATER DEMAND FROM RECENT ANNEXATIONS/WILL-SERVES



WATER DEMAND - PROJECTED AND EXISTING



Water System Capacity

Time Frame	Existing Flows (Gal)	Annexed/Will Serve (Gal.)	Projected Flow	Production Max Flow*	Current % Capacity	Projected % Capacity	Remaining Capacity
Avg. Month	20,504,101	4,357,568	24,861,669	43,200,000	47%	58%	42%
Avg. Day	673,114	143,263	816,377	1,440,000	47%	57%	43%
Max Day (Estimated)	1,300,000	401,632	1,701,632	1,440,000	90%	118%	-18%

* Production Rate without Mega Well