



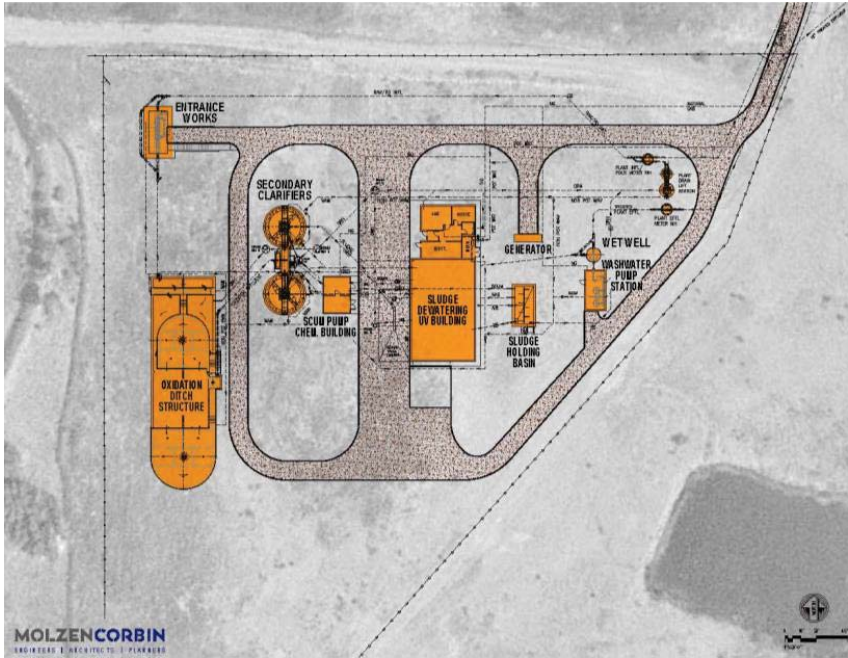
VILLAGE OF CHAMA WWTP

October 2017

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SITE LAYOUT



WWTP CHALLENGES



Phosphorus

- Some biological removal
- Chemical addition effective



Nitrogen

- Removed biologically
- Particulate removal by filtration



Environmental Conditions

- High elevation
- Cold winters
- Top of the watershed
- Inflow & infiltration

CONSTRUCTION CHALLENGES

- Isolated Area
 - Equipment
 - Skilled Labor
 - Lodging

- Limited Construction Season
 - Snow
 - Mud
 - Freezing Temps



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OPERATIONAL CHALLENGES

- Personnel
 - Adequate Staffing
 - Qualified Operators

- Nutrient Removal
 - Dilute Influent Wastewater
 - Low Alkalinity
 - Cold Temperatures

- Equipment Maintenance



**Operational
Challenges**



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SCHEDULE FOR COMPLETION

Start of Construction	April 11, 2016
Substantial Completion	October 28, 2017
Final Completion	November 27, 2017



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FUNDING

- Clean Water State Revolving Fund
 - \$850,000 + \$100,000
- Capital Outlay
 - STB = \$7,000,000
 - AGSF = \$1,000,000
- RIP Loan = \$1.2 M

Phase	Funding Source	Funding Amount
Planning & Design	CWSRF	\$950,000
Construction & Professional Services Fees	SAP – STB	\$7,000,000
	SAP – AGSF	\$1,000,000
	RIP Loan	\$1,200,000

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Village of Chama Wastewater Treatment Plant

Chama faces several challenges at its wastewater treatment plant. Located in a beautiful mountainous area at high elevation, Chama experiences long winters with significant snow fall and cold temperatures that slow biological treatment processes. The Rio Chamita (the river into which the treatment plant discharges) is near the top of the watershed. Environmental studies starting in the 1990s resulted in permit modifications that required pollutant removal that could not be met by the existing lagoon treatment system, constructed in 1986.

Historically, permit modifications resulted in violations of the Village's National Pollutant Discharge Elimination System (NPDES) permit, issued by the Environmental Protection Agency (EPA). For several years, violations added up, resulting in administrative orders, administrative complaints, and fines issued by the EPA and poor compliance evaluations by NMED. A Preliminary Engineering Report (PER) acknowledged that the existing infrastructure was not able to meet the limits of increasingly strict permit limits and recommended a Biological Nutrient Removal (BNR) system designed to treat year-round limits of 10 mg/L and 1 mg/L, respectively for TN and TP. Additional processes including tertiary filtration for phosphorous removal, soda ash addition for nitrogen removal, and grit removal were also suggested to meet the seasonal limits in the NPDES permit. A new WWTP was designed with these recommendations in mind.

Like many northern mountain communities, the Village of Chama has a nominal year-round population and modest financial resources with which to undertake the construction and operation of a new WWTP. In 2014, the Governor and State Legislature allocated \$8 million dollars in capital outlay funding for the Village of Chama to use in design and construction of a new WWTP. A local resident, Mr. Dan Perry, generously donated over three acres of land to the Village for the new WWTP site adjacent to the existing lagoons. Bids for the tertiary filtration, soda ash addition, and grit removal equipment were received but exceeded the Village's available funds. The base BNR plant came within budget and the Village awarded the project in March 2016.

Construction began in April 2016. The Contractor has overcome significant challenges related to weather and other site conditions. Prior to the arrival of winter weather in late 2016, the Contractor erected the sludge dewatering/UV/laboratory complex and was able to continue work indoors to advance equipment installation. Outdoor work was hindered by winter weather and a wet spring for several months before the Contractor was able to resume site work. The WWTP is scheduled for substantial completion in late October 2017, at which time operation of the WWTP will be the responsibility of the Village. Final completion is scheduled for late November.

Going forward, the Village faces several difficulties operating and maintaining the plant. The new WWTP is significantly more advanced than the lagoon system. The Village will need to employ an adequate number of qualified operators. Nutrient removal is complex and requires experienced Operators who know how to optimize the WWTP and create favorable conditions for biological removal of nitrogen and chemical precipitation of phosphorous. The Village will have to support a larger Operations & Maintenance (O&M) budget to fund additional employees, electricity, chemicals, and maintenance. Stringent seasonal nutrient limits will become effective in October 2020 unless the NMED and EPA are able to develop technology-based "alternative limits" or "temporary standards" for nutrients that would provide the Village, and other communities like Chama, with long-term compliance schedules for meeting permit limits.