



TOWN OF EATON

WASTEWATER MASTER PLAN

FEBRUARY 2023 - FINAL

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LIST OF ACRONYMS

208 AWQMP	208 Areawide Water Quality Management Plan
AADF	Annual Average Daily Flow
AAL	Annual Average Load
BMP	Best Management Practices
BOD5	Biochemical Oxygen Demand
C	Celsius
CAFOs	Concentrated Animal Feeding Operations
CB-T	Colorado-Big Thompson
CCTV	Closed-Circuit Television
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
CIP	Capital Improvement Projects
CLEAN	Center for Comprehensive, Optimal, and Effective Abatement of Nutrients
cm ²	square centimeters
D	Dissolved
d/D	Depth of Flow in the Line
DM	Daily Maximum
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
DRCOG	Denver Regional Council of Governments
EPA	Environmental Protection Agency
EWWTf	Eaton Wastewater Treatment Facility
FEMA	Federal Emergency Management Agency
FIRM	FEMA Flood Insurance Map
GMA	Growth Management Area
gpcd	gallons per day per capita
HOA	Homeowners Association
Hp	Horsepower
HVAC	Heating, Ventilation, and Air Conditioning
I&I	Inflow and Infiltration
ICFM	Inlet Cubic Feet Per Minute
LF	Linear Feet
M&E	Monitoring and Evaluation
mg/L	milligrams per liter
MGD	Million Gallons Per Day
mL	Milliliters
MMF	Maximum Monthly Flow
MML	Maximum Month Load
MS4s	Municipal Separate Storm Sewer System
MU	Mixed Used
MWAT	Maximum Weekly Allowable Temperature
N	Total Ammonia
NFRWQPA	North Front Range Water Quality Planning Association
NH ₃	Ammonia
nm	nanometers
NT	New Town Residential
OT	Original Town
PDF	Peak Daily Flow
PELs	Preliminary Effluent Limitations

PFD	Process Flow Diagram
pH, SU	Potential of Hydrogen, Standard Units
PHF	Peak Hour Flow
PHF	Peak Hour Flow
ppd	pounds per day
ppdc	pounds per day per capita
PUD	Planned Unit Development
PVC	Polyvinyl Chloride
RAS	Return Activated Sludge
SCADA	Supervisory Control and Data Acquisition
SFE	Single Family Equivalent
Sq.	Square
T	Total Recoverable
TDH	Total Dynamic Head
TDMS	National Instruments Technical Data Management Streaming format
TKN	Total Kjeldahl Nitrogen
TMDLS	Total Maximum Daily Loads
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
TVS	Table Value Standard per Regulation 31
US	United States
UV	Ultraviolet
VCP	Vitrified Clay Pipe
VFDs	Variable Frequency Drive
WAS	Waste Activated Sludge
WCR	Weld County Road
WQA	Water Quality Assessment
WQCC	Water Quality Control Commission
WQCD	Water Quality Control Division
WRAP	Colorado State University's eRAMS Watershed Rapid Assessment Program
WUSA	Wastewater Utility Service Area
WW	Wastewater
WWTF	Wastewater Treatment Facility
WWTP	Wastewater Treatment Plant

1.0 EXECUTIVE SUMMARY

This Wastewater Utility Plan follows the North Front Range Water Quality Planning Association (NFRWQPA) requirements for a Utility Plan, which replaces the previous requirement under the Clean Water Act Section 201, known as 201 Facility Plans. This Utility Plan will be used by NFRWQPA to aid agencies in obtaining and supporting the regional 208 Areawide Water Quality Management Plan (208 AWQMP).

1.1 PURPOSE

This Wastewater Utility and Master Plan is intended to be a guiding document for the Town of Eaton (Town) to follow as the wastewater system expands to ensure projected wastewater demands and requirements are met. This Plan addresses all critical aspects of the Town's wastewater system, including existing and current conditions, population growth, treatment capacity (flow and load), treatment performance, and an evaluation of treatment, the collection system, and service area improvements. Service area improvements will include capital improvement projects (CIP), project cost estimates, economic analysis, and project financing.

The Town is located approximately seven miles north of the City of Greeley along US Highway 85 and is on the mainline of the Union Pacific Railroad. This has allowed Eaton to become a major processing and shipping center in Northern Colorado. The Town has experienced moderate growth over the last two decades, largely from newer residential developments such as Governor's Ranch and Aspen Meadows. Furthermore, the Town is anticipating two substantial developments called Brown Farm and S. Maplewood. Though this development is still in the early planning stages, this potential 173.5-acre Planned Unit Development (PUD) is expected to add approximately 1,002 mixed-use units to the Town, which is projected to have a nearly 40% increase to the current population.

1.2 SCOPE

The Utility Plan update summarizes the existing wastewater collection and treatment system assets and proposed improvements and expansions to serve short-term (compliance, age of infrastructure, etc.) and long-term (growth and development) wastewater needs within the Town's Wastewater Utility Service Area (WUSA). This Utility Plan update discusses:

- Description of the WUSA
- Existing and future populations, wastewater flows, and loadings
- Capacity and performance evaluations of the existing wastewater collection system and treatment processes
- Water quality characterization
- Short-term and long-term discharge permit limits
- Service area non-point sources
- WWTP consolidations discussions
- Implementation Plan

1.3 PLANNING RECOMMENDATIONS

This Utility Plan accounts for a 20-year planning period (2020 – 2040). During this planning period, the Town anticipates having significant growth within existing Town boundaries that will require expansion to the Wastewater Treatment Facility (WWTF) and lift stations. Population assumptions based on anticipated zoning indicate that the build-out of these two developments will result in an anticipated population of approximately 14,121. by the year 2040. Thus, future demand projections will only reflect the addition of these two developments. Summarized below are the population projections, flows, and loadings serviced by the Town WUSA.

Table 1: Future Population and Residential Single Family Equivalent (SFE) Summary

YEAR	HISTORIC GROWTH (3.3%)		PLANNED DEVELOPMENT GROWTH (4.4% AVERAGE)	
	TOTAL POPULATION	TOTAL SFES* (RESIDENTIAL)	TOTAL POPULATION	TOTAL SFES (RESIDENTIAL)
2020	5,945	2,050	5,945	2,050
2025	7,119	2,454	7,687	2,651
2030	8,374	2,888	9,782	3,373
2035	9,850	3,397	12,005	4,139
2040	11,587	3,996	14,121	4,869

*SFE factor per household is 2.9.

The projected flows and loads are described in the following table and were used as the basis for the project recommendations. They are based on the estimated planning period population projections.

Table 2: Town of Eaton WWTF – Current and Proposed WWTF Design Flows

FLOW	CURRENT DESIGN (MGD)	PROPOSED EXPANSION (MGD)
Rated Max. Month	0.75	1.50
Average Day	0.66	1.33
Peak Day	1.21	2.43
Peak Hour*	1.50	3.00

1.4 PROJECT RECOMMENDATIONS

1.4.1 WASTEWATER TREATMENT FACILITY

Three alternatives were evaluated to determine the best option to increase the capacity of the Town of Eaton Wastewater Treatment Facility (EWWTF). The alternative deemed more reasonable will be discussed as the recommended proposed alternative. The following alternatives were evaluated:

- **Alternative 1WW – No Action**
- **Alternative 2WW – Connect to a Nearby Entity (Consolidation)**
- **Alternative 3WW – Expand the Current Facilities to 1.5 MGD per Original Design**

The analysis showed that Alternative 3WW – Expand the Current Facilities to 1.5 MGD per Original Design is the most feasible option to accommodate the population growth, flows, and loadings expected during the planning period. It will also have the ability, with minor modifications, to treat any new nutrient limitations for nitrogen and phosphorus.

This project will provide the necessary treatment by expanding the secondary activated sludge system. The existing facility was designed with an expansion to 1.5 MGD in mind; therefore, all components except the secondary treatment system were designed and built for this expansion. The new and additional secondary treatment system will accommodate the increase in flow from 0.75 MGD to 1.5 MGD.

1.4.2 COLLECTION SYSTEM ALTERNATIVES

The alternatives evaluated for the collection system include various ways to support existing and anticipated future development south of Collins Street, particularly for the Brown Farm and South Maplewood developments, which are anticipated in the near future. These alternatives are as follows:

- **Alternative 1LS – New S. Maplewood Lift Station to Support Brown Farm and S. Maplewood Developments**
- **Alternative 2LS – New Maplewood Lift Station to Support Brown Farm Development and a New S. Maplewood Lift Station to Support S. Maplewood Development**

Alternative 2LS is recommended.

1.4.3 SOLIDS HANDLING SYSTEM ALTERNATIVES

The solids handling/dewatering system at EWWTF is currently not operational. Liquid sludge is being hauled several times per week, costing approximately \$15,000 per week (\$780,000 per year). Near term alternatives were considered to reduce the current financial burden of hauling liquid sludge. The near-term solutions considered were:

- SOLIDS 1A – Liquid Sludge Hauling and Disposal
- SOLIDS 1B – In kind replacement of existing centrifuge
- SOLIDS 1C – Purchase or lease of small Screw press

The Town is currently hauling liquid sludge (Solids 1A) from the EWWTF to McDonalds Farm and has determined that it is not a feasible solution given the high weekly cost associated with this option. Solids 1C is the recommended near-term alternative as it has the shortest lead time and is similar in cost to alternative 1B. Longer term solutions considered were:

- SOLIDS 2 – New Centrifuge
- SOLIDS 3 – New Screw Press

Given the unfeasible high cost of Solids 1A, Solids 1C is recommended as the near-term solution, while either alternative SOLIDS 2 or 3 will be more viable as a long-term solution to accommodate the expected growth.

1.5 PROJECT FINANCIAL SUMMARY

Table 3: Cost Estimations for Wastewater Treatment Alternatives

ALTERNATIVES	ESTIMATED CAPITAL COST
Alternative 1WW – No Action	\$ --
Alternative 2WW - Consolidation	\$16,774,560
Alternative 3WW – Facility Expansion	\$3,739,000
Solids 2 or 3 (Long Term Solutions)	\$2,300,000
Condition Assessment/In Kind Replacement Projects (All Phases)*	\$ 887,700

Section 2.3.8 below summarizes a lifetime condition assessment of the existing equipment in the EWWTF. It is recommended that the Town do a thorough condition assessment of the equipment as it reaches its lifetime expectancy or shows signs of deterioration. This will determine what equipment needs to be replaced or can be continued to be used. A phased approach to for the replacement projects was used, the estimated remaining life of each equipment was used to group projects into phases.

Table 4: Cost Estimations for Lift Station and Interceptor Alternatives

ALTERNATIVES	ESTIMATED CAPITAL COST
Alternative 1LS	\$ 4,077,000
Alternative 2LS* (Lift Station only)	\$ 850,000

*Alternative assumes that only the new Maplewood Lift Station to support Brown Farm will be built, and the S. Maplewood Lift Station and Pipelines will be determined and priced out by S. Maplewood Development.

1.6 IMPLEMENTATION SCHEDULE

The following table summarizes the estimated implementation schedule of the proposed alternatives, including the design and commissioning of the system.

Table 5: Implementation Schedule for the Proposed Alternatives for the Expansion of WWTF and New Lift Station System

IMPROVEMENT DESCRIPTION	IMPLEMENTATION SCHEDULE
Solids Handling Screw Press (Near Term)	2023
Upsize WWTF - Design	2025
Upsize WWTF - Construction	2031
Upsize WWTF - Commissioning	2032
Lift Station - Design	2023
Lift Station - Construction	2025
Lift Station - Commissioning	2025

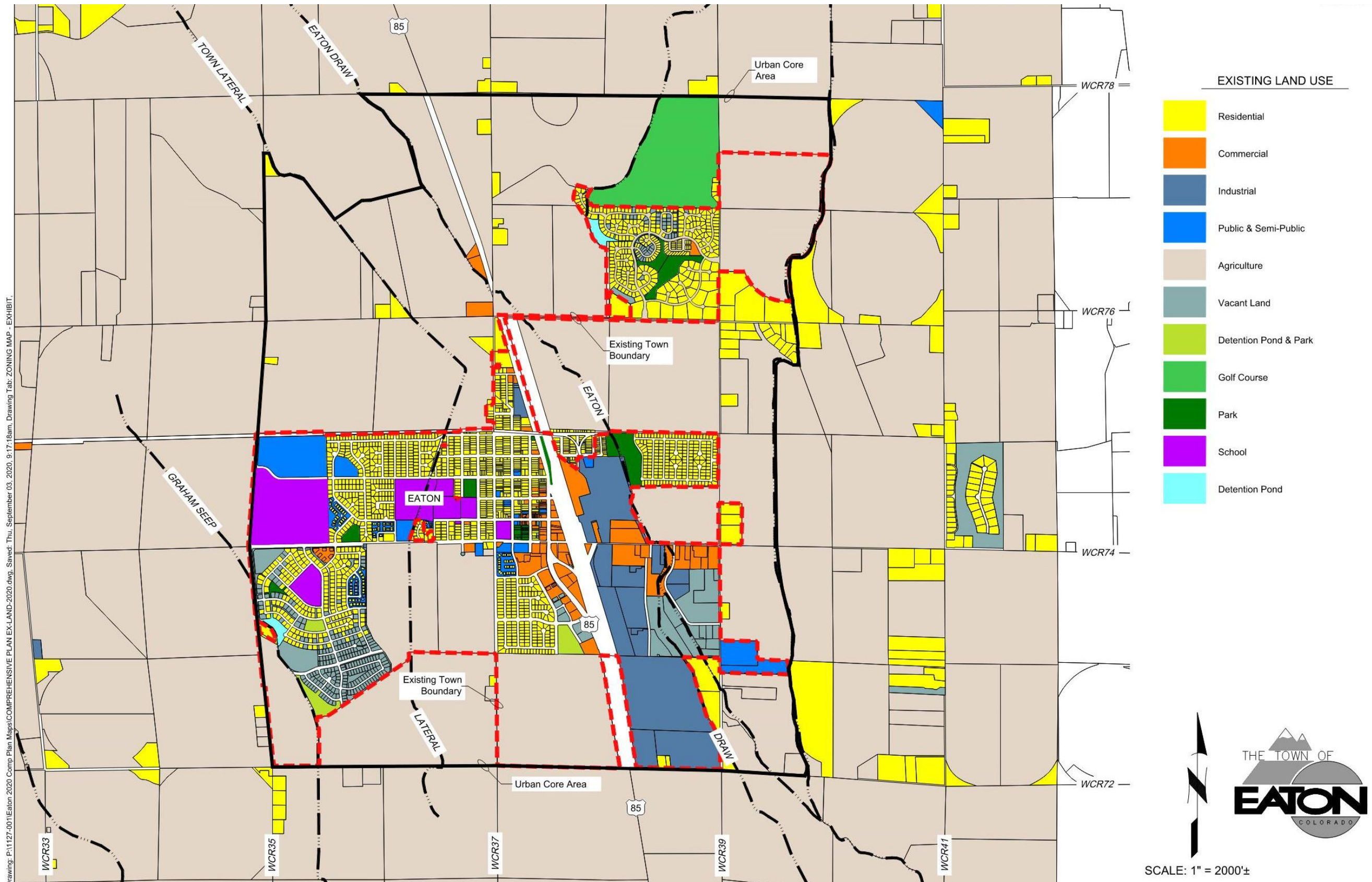
2.0 EXISTING CONDITIONS

2.1 CURRENT PLANNING SERVICE AREA

2.1.1 LAND USE MANAGEMENT

The Town has three square miles within its jurisdictional boundaries. The land is nearly split evenly between the built environment, including residential, commercial, industrial, public, and semi-public facilities, and roads, with the remaining half being parks and vacant land. The existing land use is shown in Exhibit #1 on the following page.

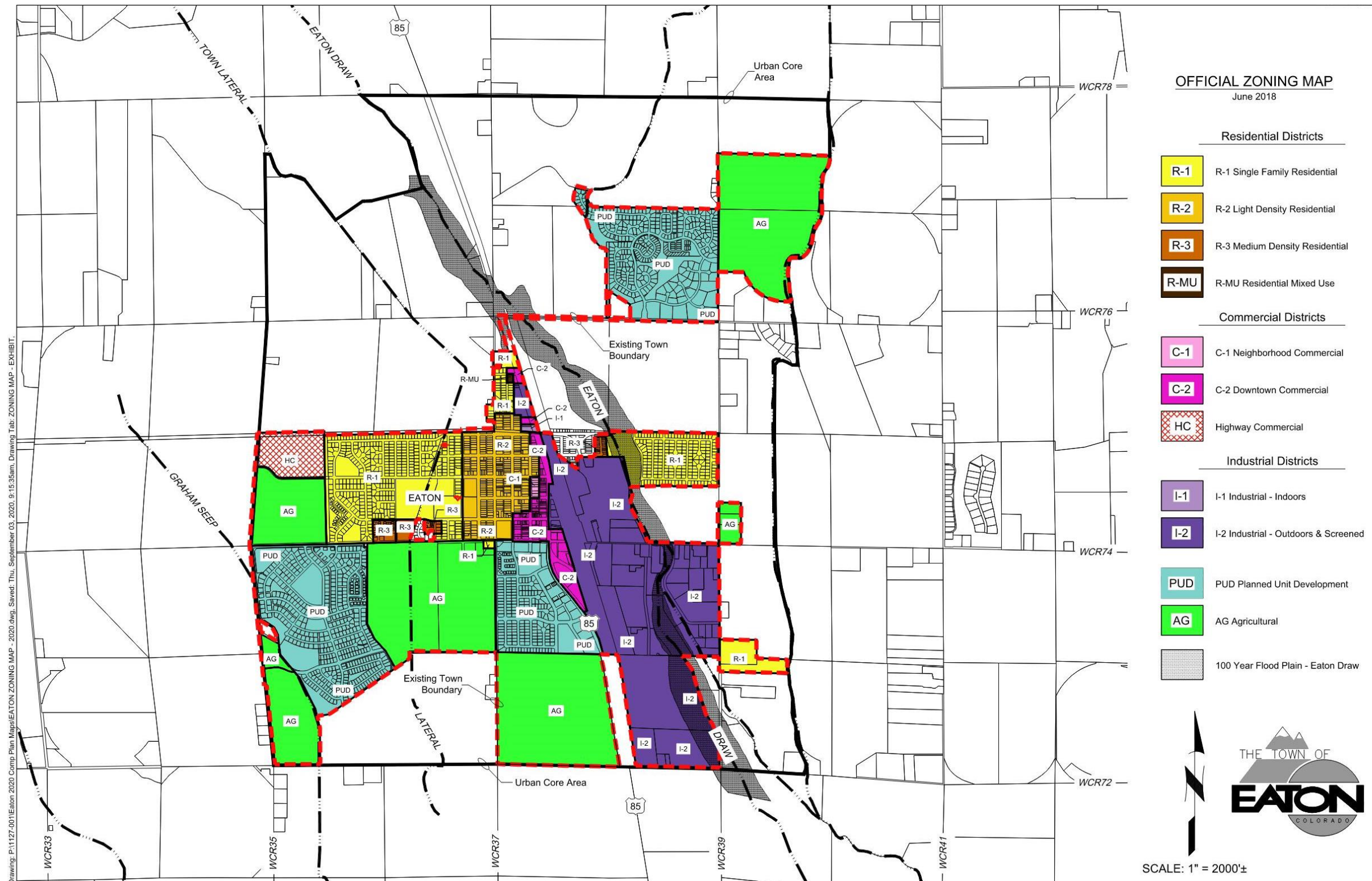
Exhibit 1: Existing Land Use



2.1.2 ZONING

The zoning within the WUSA contains residential, commercial, and industrial districts. Their residential district is comprised of single-family, light-density, medium-density, and residential mixed-use. The commercial district is comprised of neighborhood, downtown, and highway commercial. The industrial district is comprised of indoor, outdoor, screened planned unit development, and agricultural. The zoning map for the Town is shown in Exhibit #2 below.

Exhibit 2: Existing Zoning Map



2.1.3 CURRENT WASTEWATER WUSA AND GMA

The Town's WUSA is generally the area north of Weld County Road (WCR) 72, south of WCR 78, east of WCR 41, and west of WCR 35. The WUSA is referred to as the existing Town boundaries and the Urban Core Area, as shown in Exhibit #3 below. The Urban Growth Area, also referred to as the Growth Management Area (GMA), is also shown in Exhibit #4 on the following page.

Exhibit 3: Existing Wastewater Utility Service Area

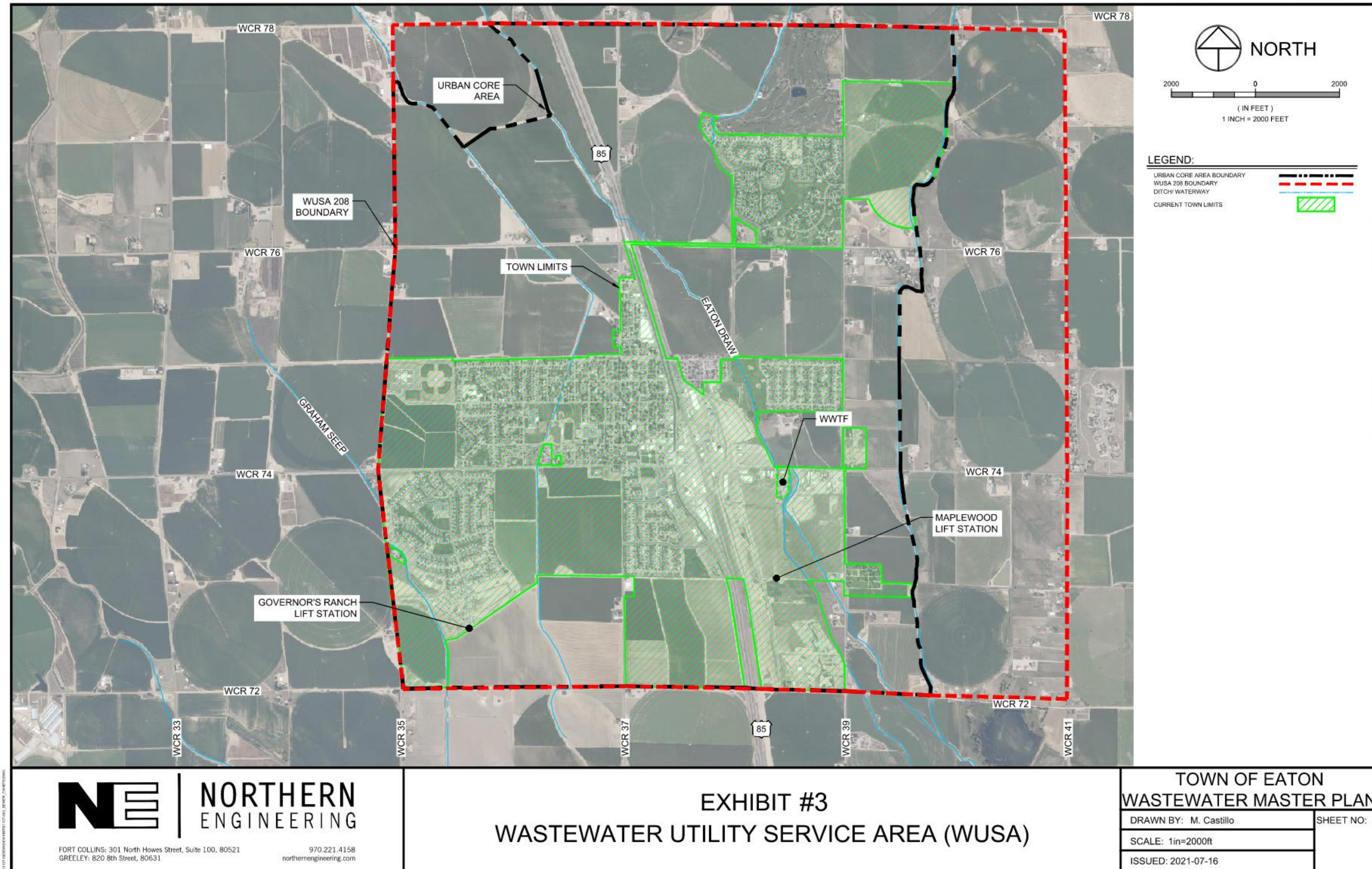
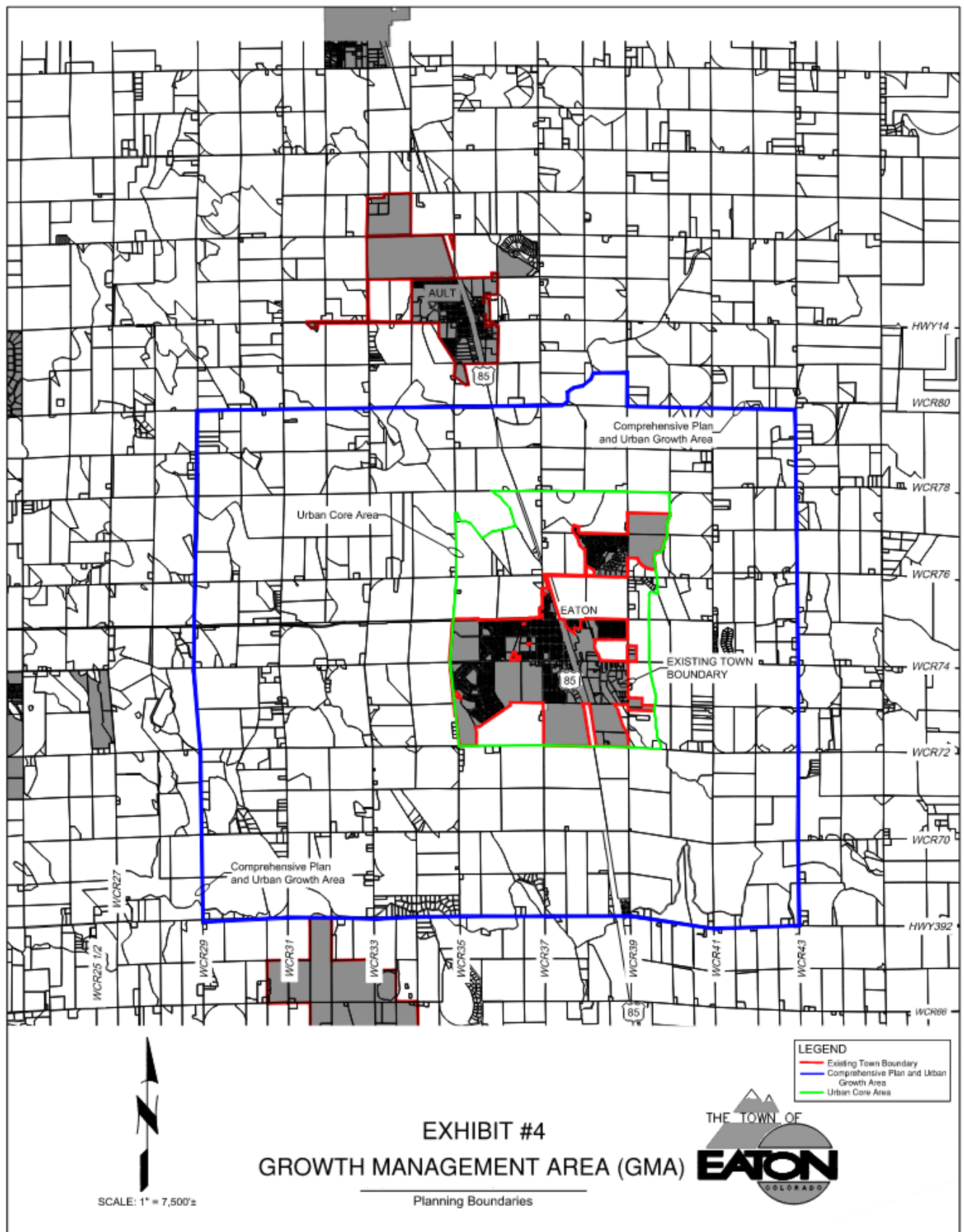


Exhibit 4 - Growth Management Area

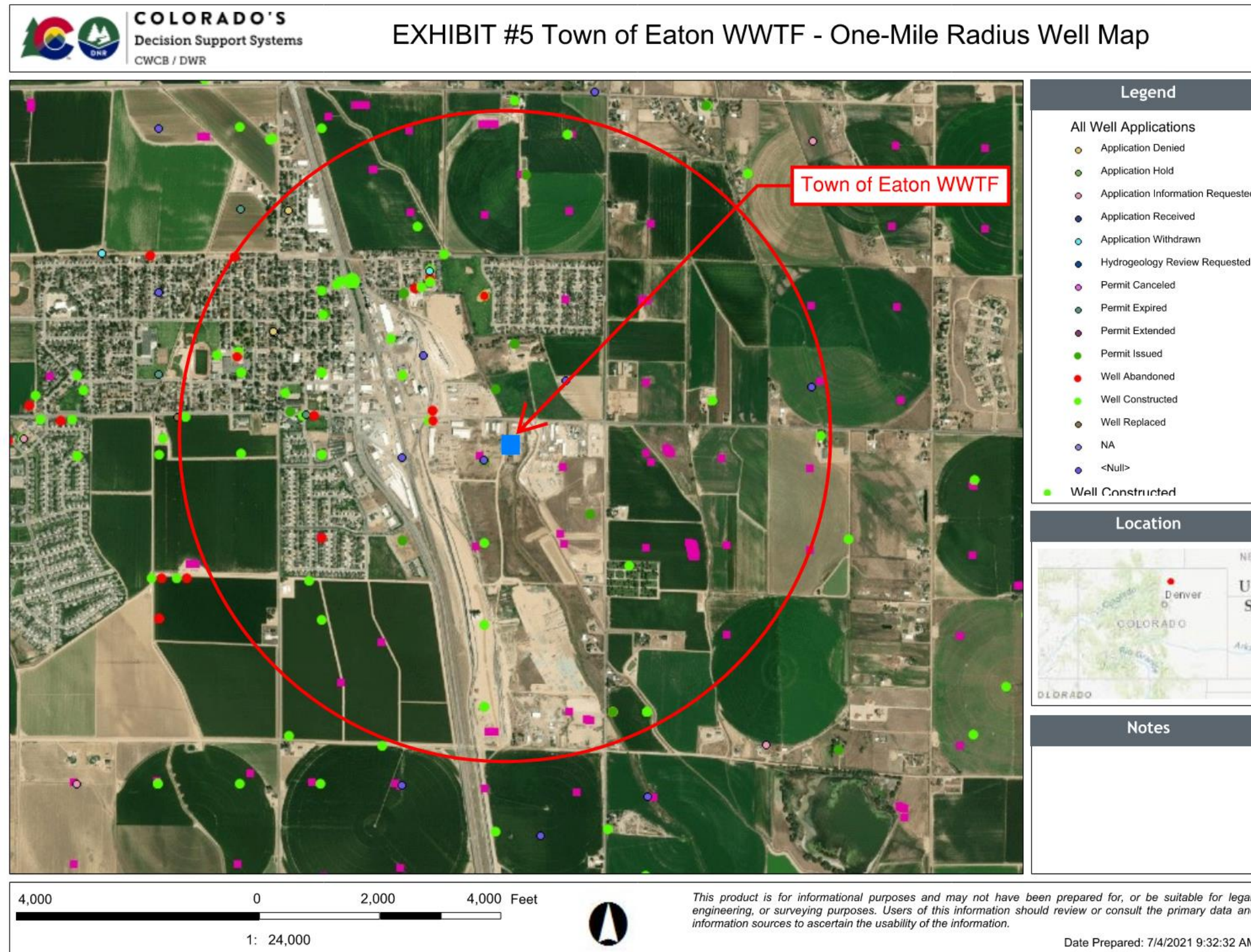


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2.1.4 ONE-MILE RADIUS MAP IDENTIFYING PUBLIC AND PRIVATE WELL SITES

A one-mile radius map designating wells around the Town’s wastewater treatment facility is included in Exhibit #5 below.

Exhibit 5: One-Mile Radius Well Map



2.1.6 CURRENT SERVICE AREA AND POPULATION

The Town's WUSA encompasses approximately nine square miles. The GMA is the area generally south of WCR 80, north of WCR 68/Highway 392, west of WCR 43, and east of WCR 29. Therefore, the GMA encompasses approximately 42 square miles. Thus, the WUSA is smaller in area than the GMA. The WUSA generally includes the Town's WWTP overall service area bound by:

- North of WCR 72
- South of WCR 78
- East of WCR 41
- West of WCR 35

The existing service area population in 2020 is 6,283 people. Historical residential tap data was provided by the Town to determine the people per household or single-family equivalent (SFE). The Town has 2,089 residential accounts within its service area, yielding 2.9 people per household or SFE.

2.2 CURRENT WASTEWATER FLOWS AND LOADS

2.2.1 HISTORICAL INFLUENT FLOW AND LOADING DATA (THREE-YEARS)

Discharge Monitoring Report (DMR) data were downloaded from the NetDMR website with help from the Town. These were used to analyze and evaluate historic hydraulic and organic loading. DMR data from May 2017 to May 2021 is summarized in Table 6.

Table 6: Historical Influent DMR Flows and Loadings

PARAMETER		DMR ¹		TYPICAL/ LITERATURE ²
		MAY 2017 TO MAY 2021		
Flow - Avg. Annual	MGD	0.39	68 gpcd	70 gpcd
Flow - Max. Month		0.44	77 gpcd	
Flow - Peak Daily		0.72	126 gpcd	
Flow - Peak Hour ³		1.51	265 gpcd	
BOD ₅ - Avg. Annual	mg/L (ppd)	269 (879)	0.15 ppdc	0.22 ppdc
BOD ₅ - Max. Month		640 (2167)	0.38 ppdc	
TSS - Ave. Annual	mg/L (ppd)	206 (674)	0.11 ppdc	0.25 ppdc
TSS - Max. Month		448 (1336)	0.23 ppdc	

1 - DMRs from May 2017 to May 2021.

2 - Per Metcalf and Eddy for domestic wastewater daily peaking factors.

2.2.1.1 BIOCHEMICAL OXYGEN DEMAND (BOD) AND TOTAL SUSPENDED SOLIDS (TSS)

- Current WWTF rated capacities:
 - Hydraulic Maximum Month Flow – 0.75 MGD
 - Organic (BOD₅) – 1,876 ppd (300 mg/L at rated flow)
- May 2017 to May 2021:
 - 0.31 MGD – 41% of design capacity
 - 696 ppd BOD₅ Annual Average Loading – 37% of design capacity

The influent flows into the facility decreased during the months of the Coronavirus (COVID-19) pandemic. BOD₅ and TSS loadings seemed to peak in the early months of the pandemic and then dropped. It was mentioned by a Town staff that the flow meters might not have been reading correctly during 2020. The Town performed a flow study in December 2020 and January 2021 to identify any issues with the flow meter. The flow meters have since been calibrated and working effectively after the flow meter study.

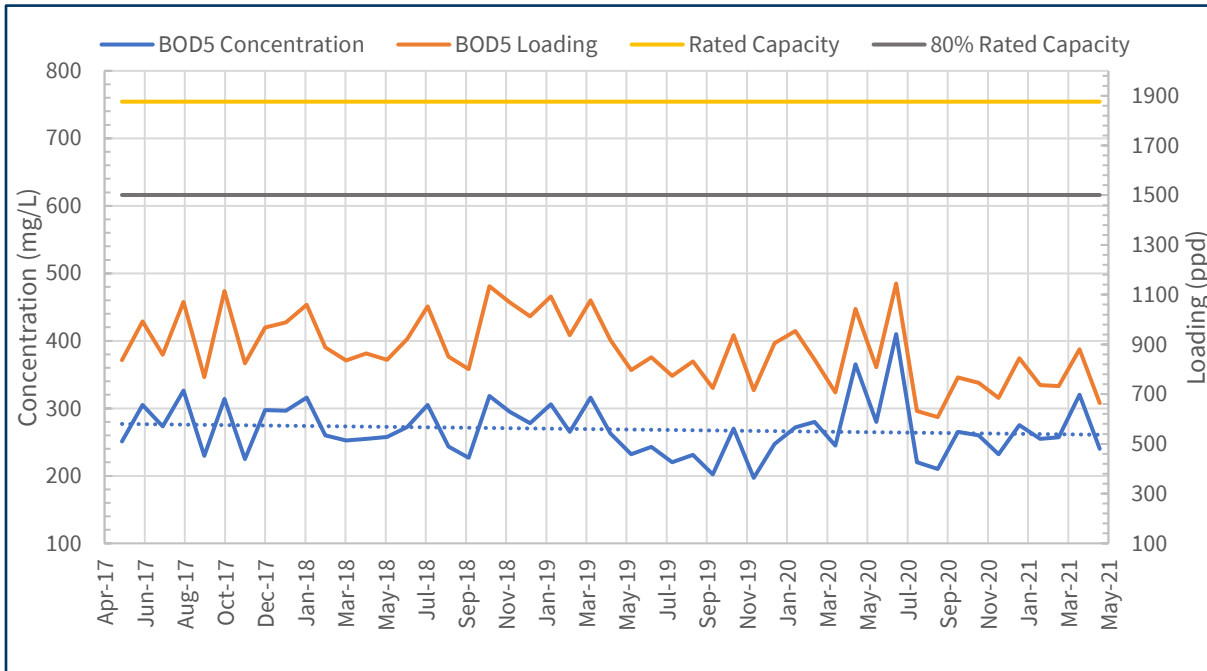


Figure 1: Town of Eaton WWTF – Influent BOD₅

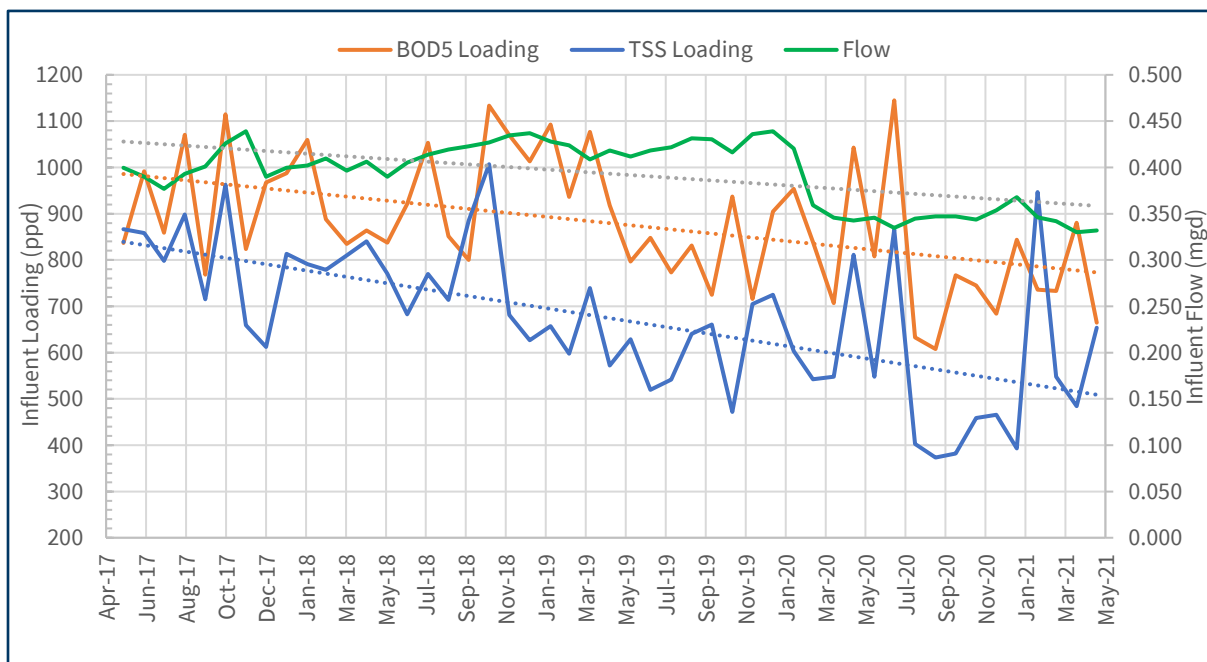


Figure 2: Town of Eaton WWTF – Influent Flows, BOD₅, and TSS Loadings

Per Figure 2 above, average flows into the WWTF have remained consistent, except for the year 2020, which shows a decrease in flows. The flow study performed in December 2020 and January 2021 potentially indicates that the flow meter could be calculating a lower flow than what is entering the facility. The 30-day average for December 2020 per the flow meter is 0.266 MGD, and the flow study indicates the average flow was 0.363 MGD. It is important to note that the flow study began on December 24, 2020, and went through January 18, 2021. For January 2021, the flow meter and flow study show 0.368 MGD and 0.363 MGD, respectively. It is recommended that the Town continue to monitor influent flows as much as possible to identify any potential misreading and need for calibration from influent flow meters.

The WWTF also observed a slight decrease in BOD₅ and TSS loading throughout recent years; however, large peaks in 2021 may indicate this pattern may be changing, and the Town should continue to monitor these parameters. The Town also samples ammonia (NH₃) for their DMRs; the 30-day average is 0.21 mg/L as N. Additional water quality data for September is in Appendix A.

2.2.1.2 PEAKING FACTORS

Flow peaking factors were calculated for maximum month flow (MMF), peak daily flow (PDF), and peak hour flow (PHF). Peaking factors are used to properly size hydraulic and process equipment throughout a facility.

Table 7 shows the peaking factors for the Town of Eaton EWWTF. The MMF was calculated using the highest average monthly flow (0.44 MGD) and dividing that by the overall average monthly flow (0.39 MGD). This calculation results in an MMF peaking factor of 1.13, which is low but acceptable when compared to other WWTFs of this size.

The peak day flow of 0.713 MGD, recorded on January 13, 2021, during the flow study, divided by the overall monthly average results in a PDF factor of 1.83, which is also reasonable.

The EWWTF does not record instantaneous peak flow (peak hour); therefore, there is no data available to calculate a peak hour flow. Based on Metcalf and Eddy's Wastewater Treatment, the Hourly peaking factor for domestic wastewater flows, the influent hourly peaking factor is 3.8. The peak hour flow can also be calculated using an equation developed by the Denver Regional Council of Governments (DRCOG) for reviewing utility plans. It is calculated by the following equation:

Equation 1: Hourly Peaking for Domestic Wastewater Flows (Metcalf and Eddy, 2014)

$$\text{Peak Hour Factor} = \frac{3.65}{(\text{Average Total Flow})^{0.167}}$$

This calculation comes out to a PHF factor of 3.83, which is equal to that from Metcalf and Eddy's book.

Table 7: Peaking Factors from Flow Study in December 2020 and January 2021

PEAKING FACTOR - MONTHLY	MMF	1.13
PEAKING FACTOR - DAILY	PDF	1.83
PEAKING FACTOR - HOURLY	PHF	3.83

2.2.1.3 INFLOW & INFILTRATION (I&I) ASSESSMENT

Historical wastewater influent flows and precipitation data were analyzed to determine if a precipitation event had an impact on the influent flows of the facility from one day to another. Figure 3 compares precipitation events and influent monthly values from May 2017 through May 2021. There is no correlation between these two variables due to the nature of the data. Monthly influent data is unlikely to show if precipitation events impact the inflow. Therefore, the data from a flow study from December 2020 through January 2021 was used to determine if there is potential for a correlation. Figure 4 shows, during this flow study period, that after a precipitation and snowfall event, the influent flows increased slightly but not enough of a pattern can be detected to prove a correlation. For the purpose of this master plan, 75 gpcd is used but a more thorough examination of I&I impacts on the treatment system is recommended.

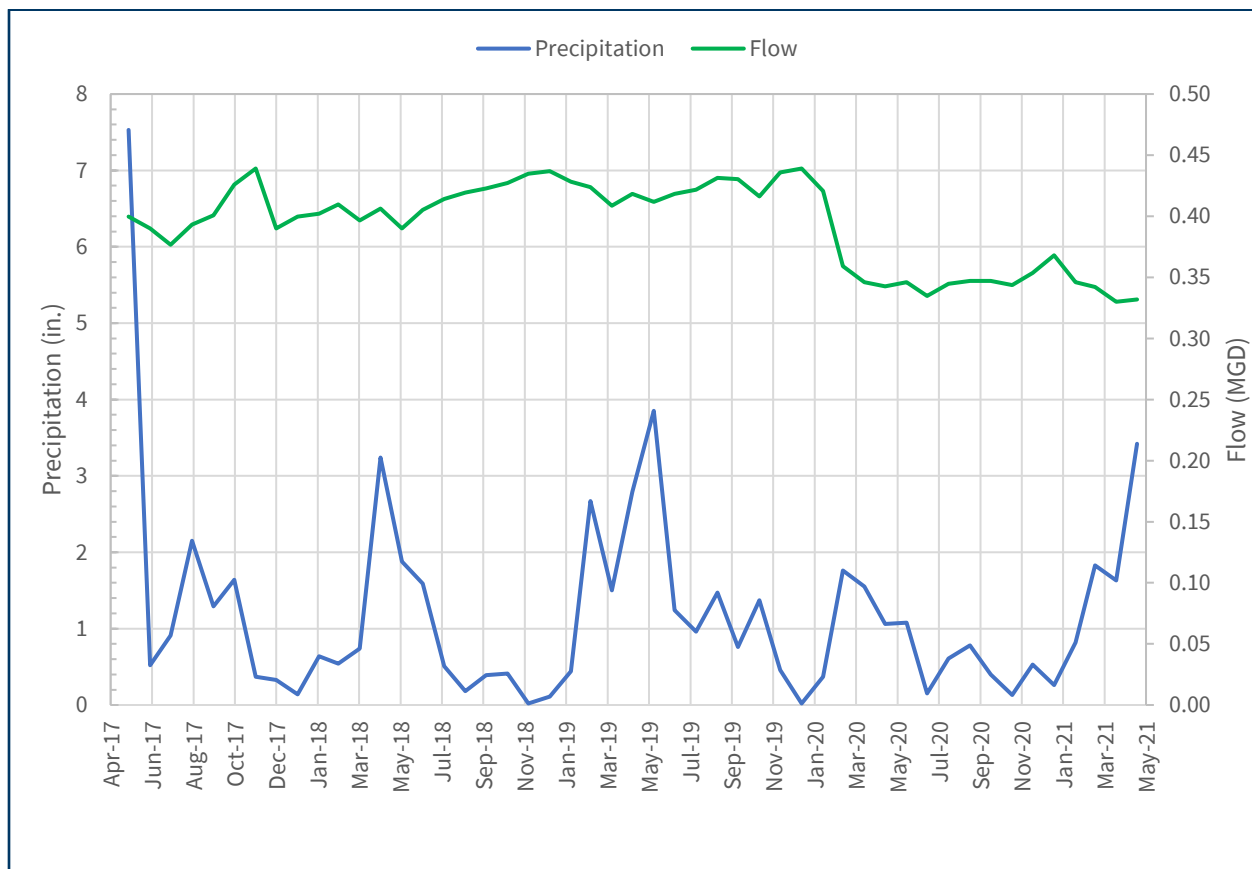


Figure 3: Infiltration & Inflow Analysis for the Town of Eaton WWTF

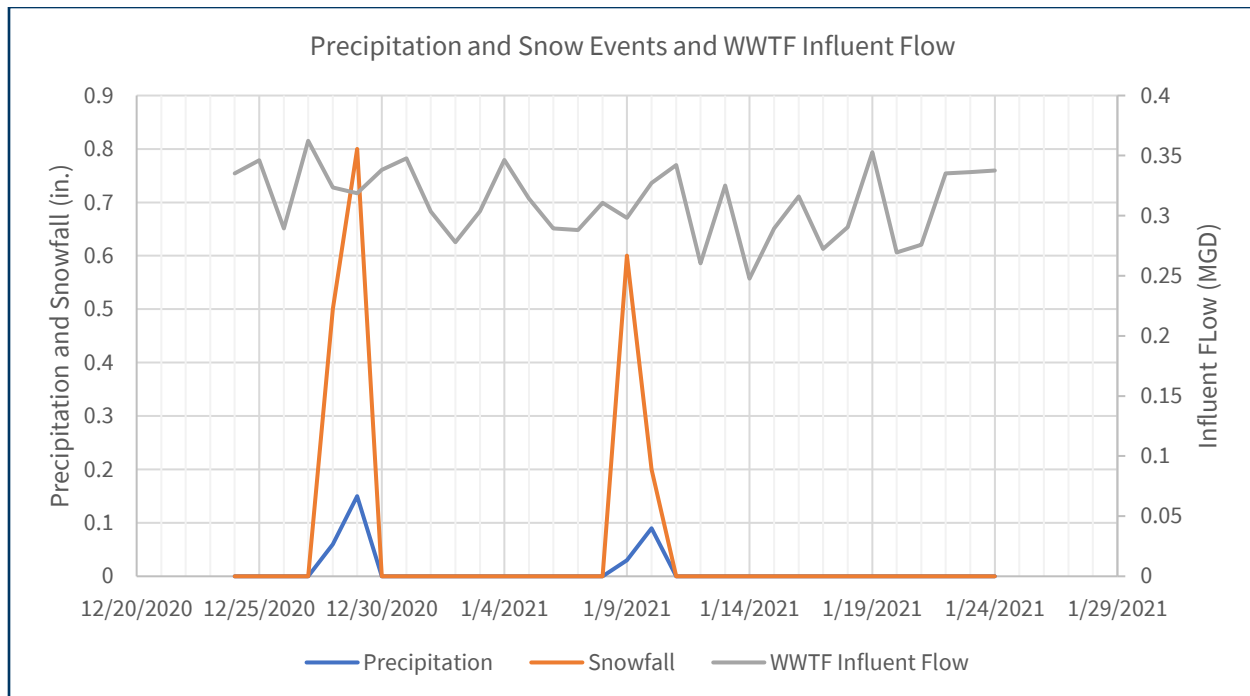


Figure 4: Infiltration & Inflow Analysis for the Town of Eaton WWTF using Daily Influent Data from Flow Study

2.2.2 CURRENT EFFLUENT LIMITATIONS (PELS OR NOA)

The EWWTF is permitted (CDPS permit number COG-581020 and CO0047414) to discharge to the Eaton Draw, stream segment COSPCP13a to Cache La Poudre River. The current discharge permit is summarized in Tables 8 and 9, along with a summarized DMR for comparison of the permitted limitations.

Preliminary Effluent Limitations (PELs) were issued on July 16, 2015, for the upgrade to the Town's WWTF that resulted in an increased discharge design capacity from 0.34 MGD to 0.75 MGD. No new PELs are required at this point, so the PELs from 2015 are presented in Table 9.

Table 8: Town of Eaton WWTF Discharge Limitations (Permit CO0047414) and DMR Summary

EFFLUENT PARAMETER	DESIGN VALUE	PERMIT VALUE	BASIS	DMR DATA (SINCE MAY 2017)			
				AVG.	MAX.	MIN.	EXCEED.
Hydraulic Loading, MGD	0.75	0.75	Design Capacity	0.39	0.44	0.33	0
Organic Loading, ppd BOD ₅	1,876	1,876	Design Capacity	879	1145	608	0
BOD ₅ , mg/L	< 30 45	30 45	30-Day Avg 7-Day Avg	2.74	6.5	1.0	0
TSS, mg/L	< 30 45	30 45	30-Day Avg 7-Day Avg	5.18	12.0	1.0	0
BOD ₅ , % removal	>85	85	Monthly	98.34	99.5	96.8	0
TSS, % removal	>85	85	Monthly	96.54	99.4	93.0	0
E. coli, #/100mL	< 126 252	126 252	30-Day Avg 7-Day Avg	12.3	75.0	5.0	0

EFFLUENT PARAMETER	DESIGN VALUE	PERMIT VALUE	BASIS	DMR DATA (SINCE MAY 2017)			
				AVG.	MAX.	MIN.	EXCEED.
pH, SU	6.5 - 9.0	6.5 - 9.0	Minimum To Maximum	7.11	7.8	6.5	0
Oil and Grease, mg/L Total Residual Chlorine, mg/L	10	10 < 0.011 0.019	Max. Grab 3 Days/Week	No Visual, No Sampling Required No Data, Sampling Not A Condition To Permit			
TOTAL AMMONIA, MG/L							
January	0.5	4.9 24.0	30-Day Avg Daily Max	0.26	0.60	0.11	0
February	0.5	5.2 25.0		0.33	0.60	0.15	0
March	0.5	4.6 24.0		0.28	0.60	0.12	0
April	0.5	4.2 22.0		0.13	0.20	0.10	0
May	0.5	3.7 23.0		0.17	0.20	0.10	0
June	0.5	2.9 19.0		0.17	0.30	0.12	0
July	0.5	2.1 15.0		0.20	0.30	0.10	0
August	0.5	2.5 20.0		0.14	0.20	0.10	0
September	0.5	2.8 20.0		0.23	0.40	0.12	0
October	0.5	3.5 23.0		0.18	0.26	0.10	0
November	0.5	4.1 23.0		0.24	0.50	0.10	0
December	0.5	4.6 23.0		0.31	0.70	0.08	0

Table 9: PELs for the Town of Eaton WWTF, Issued on July 16, 2015, Effective September 1, 2015

EFFLUENT PARAMETER	PERMIT VALUE	BASIS
Hydraulic Loading, MGD	0.75	30-Day Average
Organic Loading, ppd BOD ₅	1,876	30-Day Average
BOD ₅ , mg/L	30 45	30-Day Avg 7-Day Avg
TSS, mg/L	30 45	30-Day Avg 7-Day Avg
BOD ₅ , % removal	85	30-Day Average
TSS, % removal	85	30-Day Average
E. coli, #/100mL	126 252	30-Day Avg 7-Day Avg
pH, SU	6.5 - 9.0	Minimum To Maximum
Oil and Grease, mg/L	10	Daily Max.
Total Residual Chlorine, mg/L	0.011 0.019	30-Day Avg 7-Day Avg
TOTAL AMMONIA, MG/L		
January	4.9 24.0	30-Day Avg Daily Max
February	5.2 25.0	
March	4.6 24.0	
April	4.2 22.0	
May	3.7 23.0	
June	2.9 19.0	

EFFLUENT PARAMETER	PERMIT VALUE	BASIS
July	2.1 15.0	
August	2.5 20.0	
September	2.8 20.0	
October	3.5 23.0	
November	4.1 23.0	
December	4.6 23.0	

The Town's discharge permit was issued on July 16, 2015, with an effective date of September 1, 2015, and is currently administratively extended.

2.2.3 TOTAL MAXIMUM DAILY LOADS

There are no existing Total Maximum Daily Loads (TMDLS) for the EWWTF discharge to Eaton Draw.

2.3 EXISTING WASTEWATER TREATMENT SYSTEM

2.3.1 DESCRIPTION OF EXISTING TREATMENT SYSTEM

Listed below is a description of the existing EWWTF.

- Constructed in 2006
- Rated hydraulic capacity – 0.75 MGD
- Rated organic loading capacity – 1,876 ppd of BOD₅
- Discharges to the Eaton Draw
- Colorado Discharge Permit System (CDPS) No. CO0047414
- Currently under administrative extension
- Stream Segment COSPCP13a with use classifications: Aquatic Life Warm 2, Recreation 1a, and Agriculture (Classification as per Permit).
- The treatment train includes:
 - Collection System → Influent 18" Sewer Main
 - Headworks/Pretreatment
 - Automatic Stair Screen → Wash Press
 - Influent Parshall Flume
 - Aerated Grit Chamber → Grit Classifier and Cyclone
 - Influent Pumps
 - Primary and Secondary Treatment
 - Selector Tank → Primary Aeration → Secondary Aeration → Aerobic Digestion → Dewatering
 - Disinfection and Effluent
 - Effluent Parshall Flume → UV Disinfection → Outfall Discharge

Table 10: Town of Eaton WWTF - Existing Unit Process Capacity Summary

UNIT PROCESS	DESCRIPTION	INFLUENT FLOW CAPACITY	ADEQUATE CAPACITY FOR 1.5 MGD DESIGN
Influent Main	<ul style="list-style-type: none"> 18-inch influent PVC line 0.30% slope Collection Manhole 	2.5 MGD	Yes
Influent Flow Channel	<ul style="list-style-type: none"> 2-ft wide by 6-ft deep concrete channel at 0.35% slope 	3.7 MGD	Yes
Screening	<ul style="list-style-type: none"> Automatic stair screen with wash press Bypass channel with manual bar screen 	3.0 MGD	Yes
Influent Flow Monitoring	<ul style="list-style-type: none"> 9-inch Parshall Flume 	5.7 MGD	Yes
Grit Removal	<ul style="list-style-type: none"> 25.33-ft x 6.67-ft x 14.5-ft concrete aerated grit chamber with 8 coarse bubble diffusers 66.83-ft operating depth Aeration required, 89 scfm Grit pump 200-gpm design flow at 50-ft TDH Grit classifier, 300 gpm max. flow 90% rate of separation Cyclone has 200-gpm design flow 	1.5 MGD	Yes
Influent Pump Station	<ul style="list-style-type: none"> Three Pumps (Two operating, one standby) Each pump rated at 520-gpm at 37-ft TDH 26-ft x 6.67-ft x 14.5-ft concrete wet well 6.33-ft operating depth 	1.5 MGD	Yes
Selector Tank	<ul style="list-style-type: none"> Aero-Mod concrete selector tank to split influent flows and RAS flows between two process trains. 	0.75 MGD	No
Primary and Secondary Aeration	<ul style="list-style-type: none"> Aero-Mod concrete basins made up of two process trains that consist of primary and secondary aeration Aeration processes are supplied air via coarse bubble diffusers 	0.75 MGD	No
Blowers	<ul style="list-style-type: none"> Four 60-hp Roots Blowers can each supply 1294 ICFM of air to aeration process, aerated grit chamber, and two RAS and two WAS airlift pumps Due to operational deficiencies, all existing blowers were recently replaced with upsized 75-hp Roots Blowers that can each supply 1620 ICFM 	0.75 MGD	No
Aerobic Digestion	<ul style="list-style-type: none"> Aero-Mod concrete basins for aerobic digestion for each process train Aeration processes are supplied air via coarse bubble diffusers 	0.75 MGD	No
Effluent Flow Monitoring	<ul style="list-style-type: none"> 9-inch Parshall Flume 	5.7 MGD	Yes
Ultraviolet (UV) Disinfection	<ul style="list-style-type: none"> Two UV banks in series TSS 10 mg/L UV dose of 30,000 microwatts/cm²/second UV Transmittance at 253.7 nm of 65% 	3.0 MGD	Yes ¹

UNIT PROCESS	DESCRIPTION	INFLUENT FLOW CAPACITY	ADEQUATE CAPACITY FOR 1.5 MGD DESIGN
	<ul style="list-style-type: none"> There is an existing bypass channel sized for additional UV banks in same configuration 		
Effluent Discharge Line	<ul style="list-style-type: none"> 12-inch DIP line at 1.46% slope 	1.87 MGD	Yes
Dewatering	<ul style="list-style-type: none"> 1GEA centrifuge rated for 20-gpm to 80-gpm design feed capacity 15% to 25% cake dryness 1.5% to 2% feed solids concentration 96% minimum solids capture One sludge feed pump rated for 20-gpm to 80-gpm but can only operate at maximum of 40-gpm without clogging centrifuge 20 lbs/dry ton polymer addition 50% active polymer percentage 	1.5 MGD	Yes
¹ Existing UV disinfection would meet future design capacity once new UV bank is installed in existing bypass channel.			

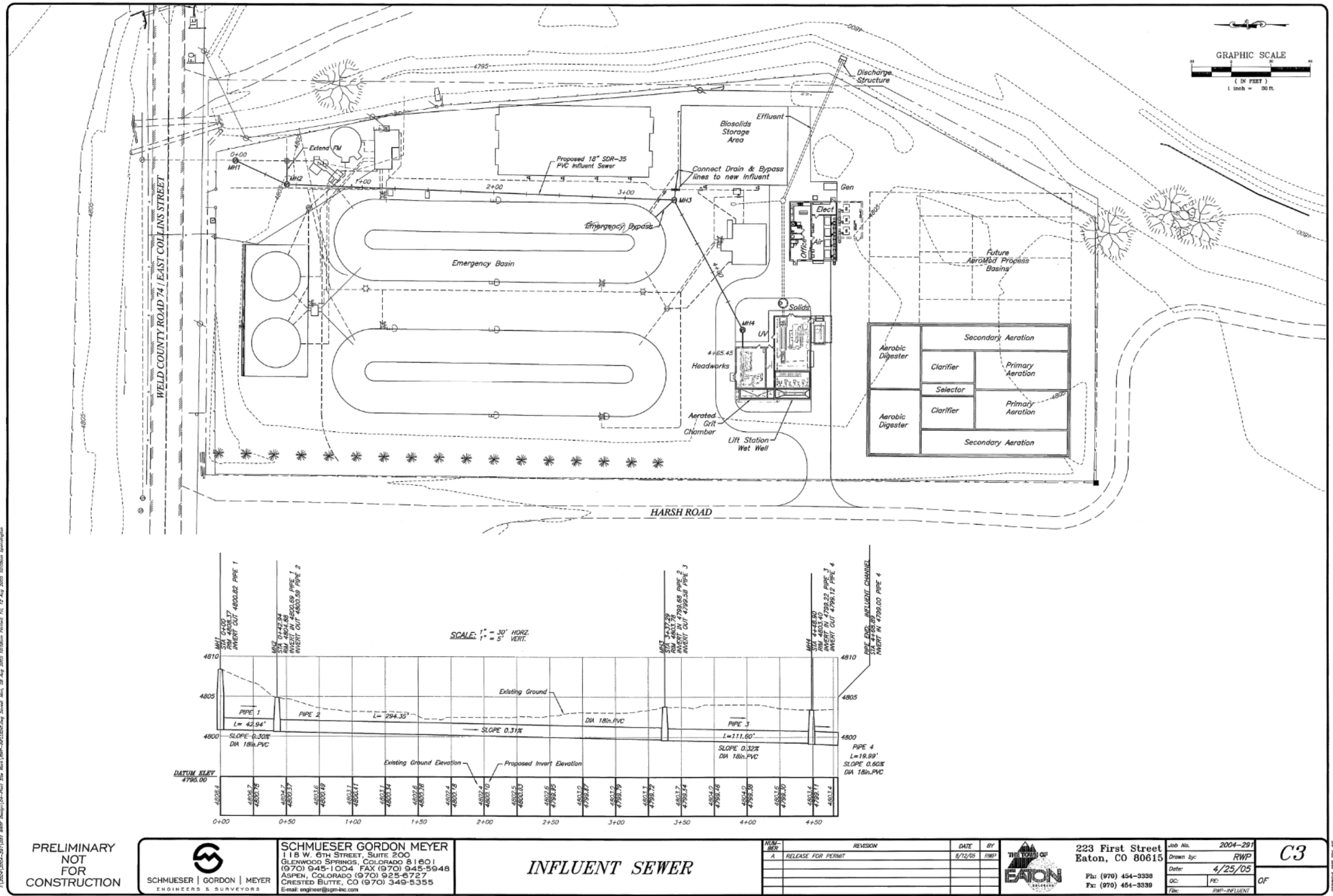


Figure 5: Site Map/Layout of WWTF

Figure 5 above, and Figures 6-7 below, show the plans, layout, and process flow diagram of the EWWTF. Figure 5 shows the old facility components that have since been decommissioned during the 2005 upgrade to the existing facility. The current facility, as seen in Figure 6, includes the Headworks building, dewatering and UV building, electrical and blower building, and the secondary treatment system. The biosolids storage area, emergency basins and any other are decommissioned and no longer in use.



Figure 6: Site Map/Layout of the WWTf with an Aerial Background

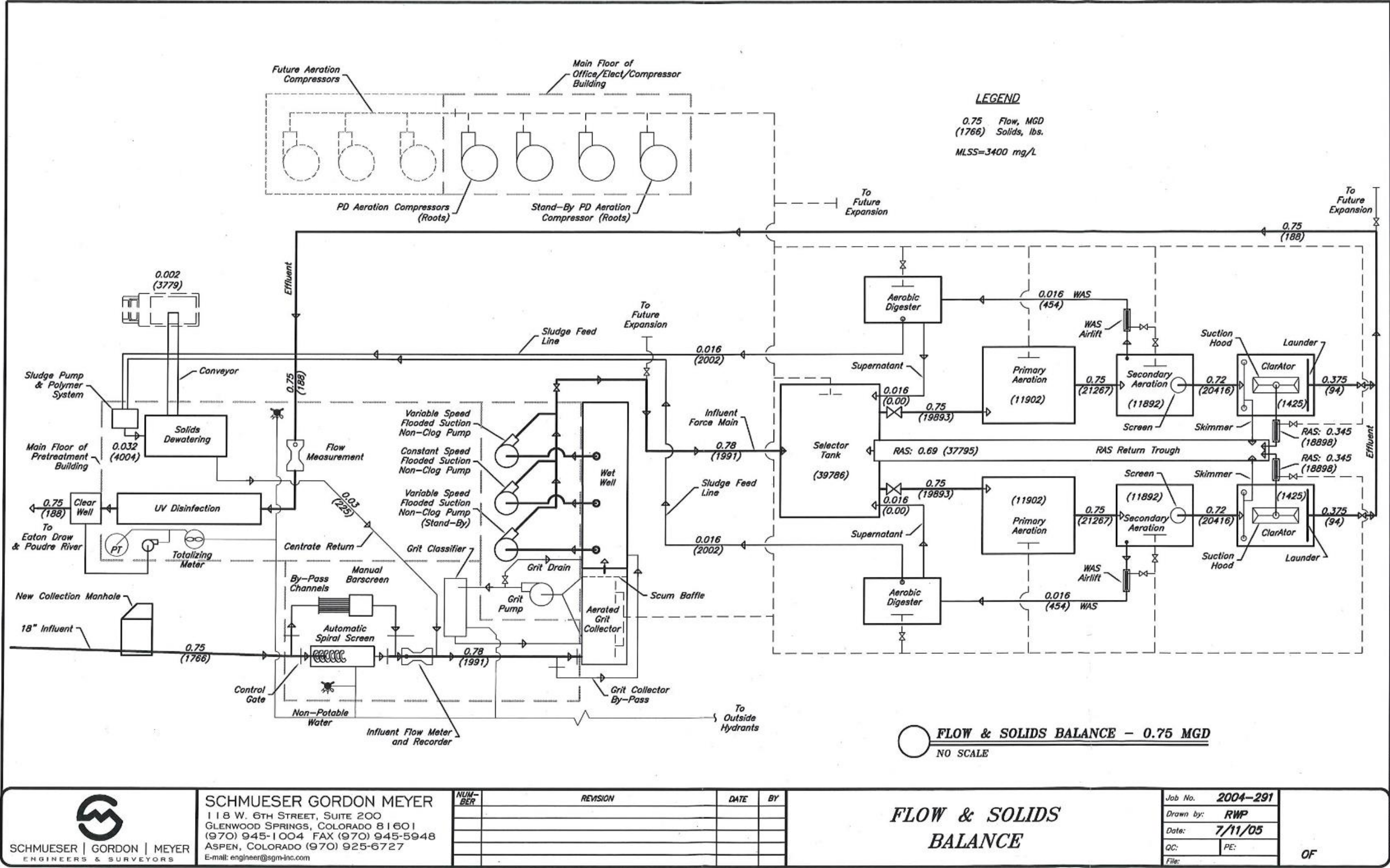


Figure 7: Schematic of the WWTF Process Flow Diagram (PFD)

2.3.2 EFFLUENT PERFORMANCE OF EXISTING SYSTEM (THREE-YEARS)

Figures 8 and 9 highlight that the EWWTP has been below the BOD₅, TSS, and ammonia-N discharge limitations for the past three years (May 2017 through May 2021). Therefore, the facility has remained in compliance with all discharge limitations but will continue to monitor and optimize the facility.

2.3.2.1 BOD AND TSS

Effluent concentrations for BOD₅ and TSS over the past three years, as shown in Figure 8.

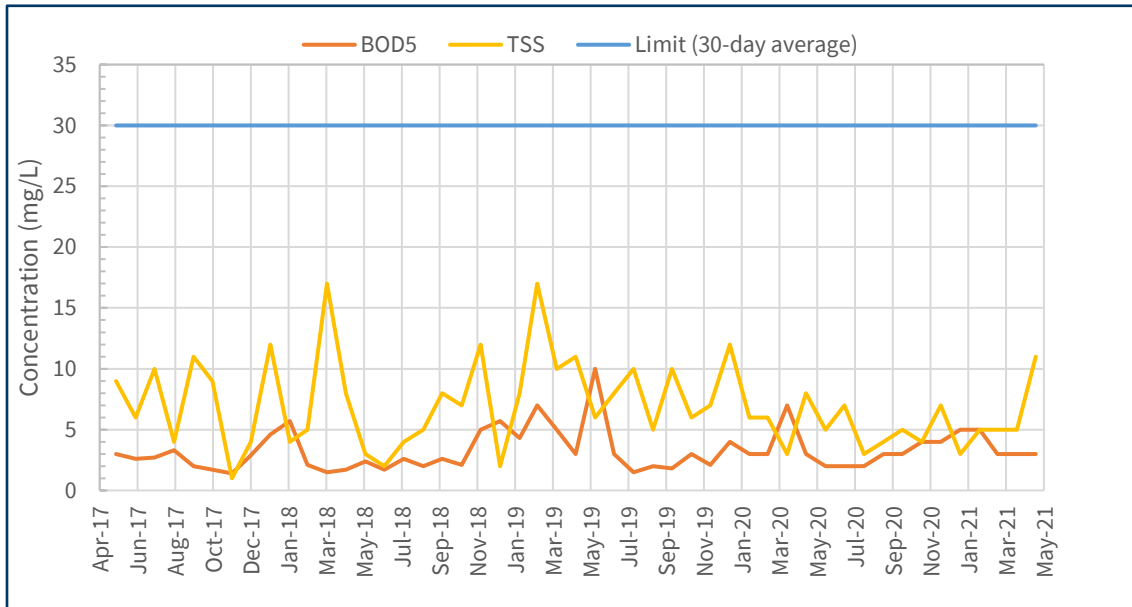


Figure 8: Effluent Performance of BOD₅ and TSS for the Eaton WWTP

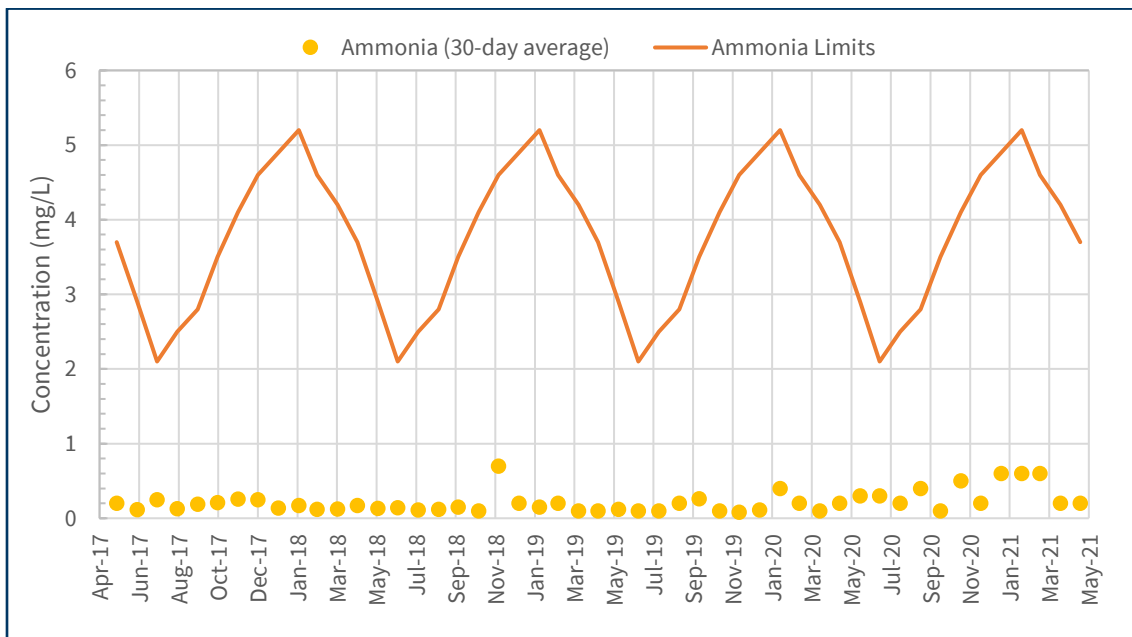


Figure 9: Effluent Performance of Total Ammonia as N

2.3.3 EXISTING AIR QUALITY PERMIT

The EWWTF is classified as an aerated facility with a diffused aeration system and does not have or is required to have an air emissions permit. There are no homes located within 1,000 feet of the system. The headworks building is enclosed with an HVAC system to mitigate any odors. No odors are expected from this facility because it functions aerobically. The State issues air quality permits only to those generating systems that are used daily. Since this facility's generator does not operate daily, an air quality permit is not required.

2.3.4 EXISTING STORMWATER MANAGEMENT PLAN

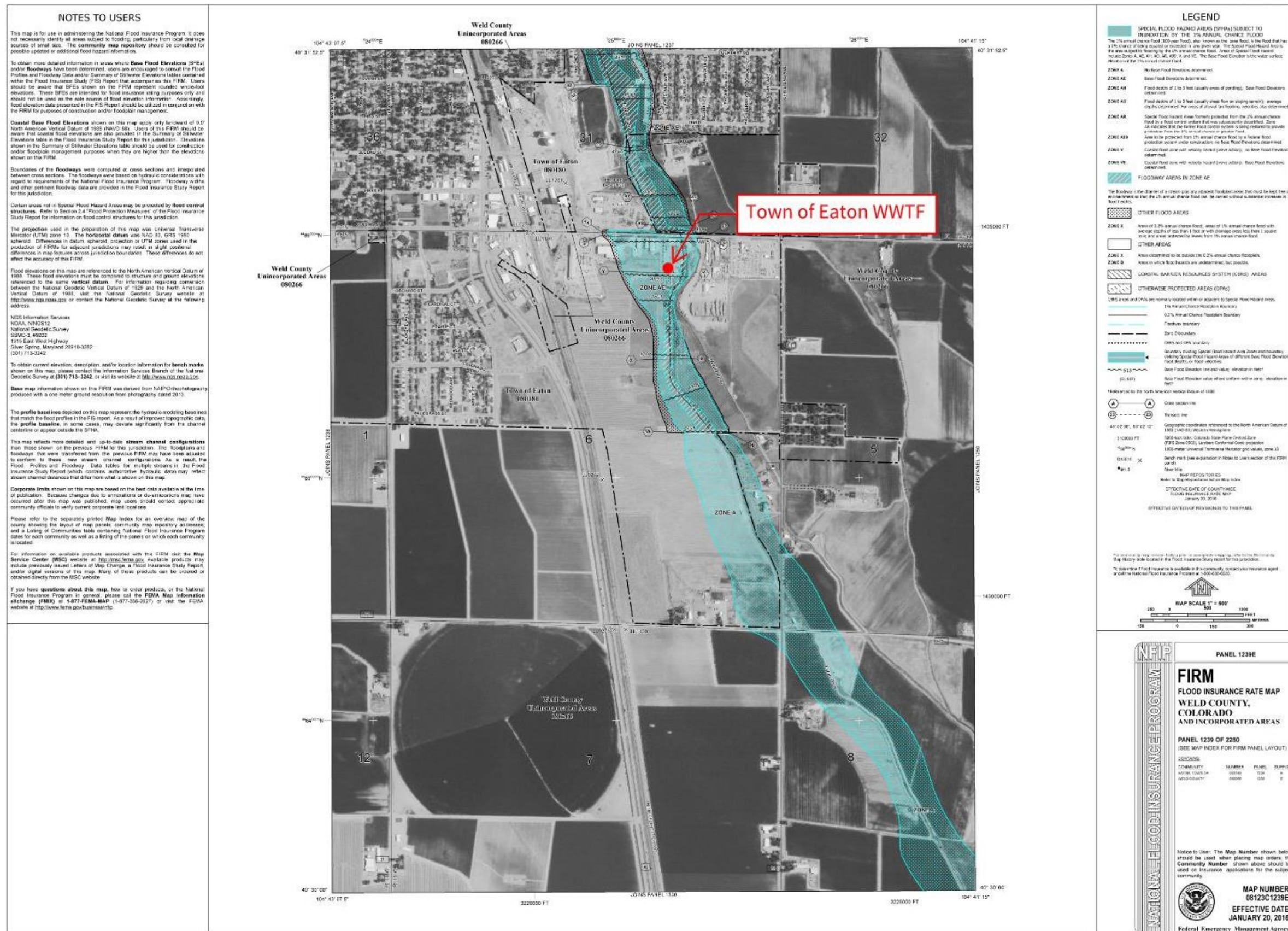
The Town has not been required to have a stormwater management plan for the EWWTF, and there is no record of an existing plan. Currently, stormwater from the EWWTF drains to the Eaton Draw through overland flow. If a stormwater management plan and permit are required in the future, one will be developed.

2.3.5 EXISTING SITE CHARACTERIZATION

The EWWTF is currently located on approximately 3.5-acres immediately adjacent to the Eaton Draw near Highway 74 crossing. The Town experiences dry cold winters to hot, dry summers. The overall climate is dry, with an approximate growing season of 138 days. The site geology consists of nineteen feet of silty clay, gravel, sand, and clay underlain by sandstone. Groundwater was encountered at depths of 8.0- and 9.6-feet during site soil boring.

The treatment facility site is located between the 100- and 500- year flood plain. FEMA describes this area as subject to 100- year flooding with average depths of less than one foot, or where contributing drainage area is less than one square mile or areas protected by levees from the base flood. A copy of the FEMA Flood Insurance Map (FIRM) for this facility is located in Exhibit #7 on the following page. The FEMA map depicts the boundaries of the 100-year flood plain along the eastern property boundary adjacent to Eaton Draw.

Exhibit 7: FEMA FIRM Map



2.3.6 EXISTING FACILITY EMERGENCY RESPONSE PROTOCOLS

The existing Emergency Response Protocol was presented as a section in the Permit Application and is as follows:

- The plant is equipped with a generator that automatically starts when there is a power failure. Currently the generator can power the pumps, lights, screens, and UV system.
- The plant has a SCADA monitoring alert system connected to an auto-dialer that calls the plant operator in the event of an issue. This SCADA system is also connected to the town hall, where staff monitors during office hours and can be notified of alarms. The plant operator can also monitor the system from home. The operator is a Town employee.
- All emergency situations are reported to the plant operator or the Town Administrator.
- All emergency contact numbers are displayed at the plant for agencies such as CDPHE, local utilities, police, and fire.

2.3.7 EXISTING BIOSOLIDS MANAGEMENT PROGRAM AND TENORM DATA

The facility uses aerobic digestion to stabilize the sludge. Sludge is wasted seven (7) days per week. It is currently set to waste 56,000 gallons per day, which comes out to a 15-day sludge age, further breaking it down to 183 minutes per aerobic digester. Prior to centrifuge failure, the sludge was held in the aerobic digesters until fed directly to the centrifuge. The centrifuge ran two (2) times per week, approximately seven (7) to eight (8) hours each time. The Town had a contract with McDonald Farms to haul the cake offsite. Currently, the Town uses a service from McDonald Farms to haul liquid sludge from the digesters to the farm since the centrifuge failure. This option has been deemed too costly for the Town to be considered as a viable alternative for the long term.

2.3.8 CONDITION ASSESSMENT OF EXISTING TREATMENT SYSTEM

2.3.8.1 INTAKE STRUCTURE AND INFLUENT SEWER PIPE

Condition of existing intake structure and influent sewer pipe:

1. The intake structure concrete and grating are in good condition. This facility is fed by gravity through an 18-inch PVC influent sewer pipe at a slope of 0.3%. The operator has noticed increased peak flows during precipitation events that may indicate I&I issues.
2. Given the inaccessibility of this pipe and structure, much of the information was provided by the operator.

2.3.8.2 HEADWORKS CONDITION ASSESSMENT

Condition of existing headworks assets:

1. The 18-inch influent slide gate installed in 2005 is in good condition.
2. The automatic stair screen and control gates are in good condition and were installed in 2015.
3. The wash press, installed in 2019, is in good condition and operates as intended.
4. The influent flow meter is in good condition and has been recently calibrated after a flow study in 2020. The flume is also in good condition.
5. The concrete on the influent channel shows signs of corrosion, about an inch each way before the bar screen. The Town continues to monitor.
6. The bypass gate valve is corroded and in need of replacement.
7. The aerated grit collector, grit pumps, and grit classifier are in good condition and function as intended. However, the grit collector bypass is very corrosive and in need of further evaluation.
8. The wet well located after the grit chamber is in good condition and functions as intended.

9. There is a pump room that houses four pumps. Three pumps are used to move water from the headworks building to the secondary treatment processes. Pump No. 1 has had no work done, Pump No. 2 was rebuilt in 2019, and Pump No. 3 was rebuilt in 2016. The pumps are in good condition and function as intended. They are not on VFDs.
10. The valve to the influent force main is in good condition and functions as intended.
11. An existing emergency generator is capable of supporting the influent pumps, lights, UV and screens as noted in the emergency protocols in Section 2.3.6.

2.3.8.3 SECONDARY (BIOLOGICAL) TREATMENT CONDITION ASSESSMENT

Condition of existing secondary treatment assets:

1. The Town has an Aero-Mod system that is comprised of a selector tank, two primary aeration sections, two secondary aeration sections, two clarifications basins, a RAS return trough, and two aerobic digesters. The Aero-Mod is in good condition and works as intended.
2. The basins and walkways appear in good structural condition with minimal corrosion. The operator gives regular maintenance to the basins, diffusers, and skimmers. The Aero-Mod system was built in 2015.
3. The blowers that supply the air to the aeration basins are currently being replaced by blowers with more capacity, as the current ones were undersized. The blower VFDs are in good condition.

2.3.8.4 DEWATERING FACILITY CONDITION ASSESSMENT

1. The existing centrifuge has stopped working. The solids handling study recommended that the Town replace them with a screw press, which was delivered in January of 2023. Northern Engineering is working with the CDPHE for approval.

2.3.8.5 DISINFECTION AND OUTFALL CONDITION ASSESSMENT

Condition assessment of existing ultraviolet disinfection system and outfall assets:

1. The UV disinfection system is in good condition and functions as intended.
2. The effluent flow meter looks in good condition and is properly sized.
3. The effluent pipe between the flume and outfall per as-built drawings is installed with proper slope and adequately sized.

2.3.9 RECOMMENDATIONS FOR IMPROVEMENTS FOR TREATMENT SYSTEM AND BIOSOLIDS PROGRAM

2.3.9.1 RECOMMENDATIONS FOR TREATMENT SYSTEM AND DEWATERING IMPROVEMENTS

1. Table 10A shows the major equipment age and the remaining expected life. This helps forecast major equipment replacements. However, it is important to take existing daily operational conditions into consideration. This determines if replacement must happen sooner. The sludge handling system is currently not operational (failed in early 2022).
2. Table 10B shows the associated costs for the replacement of the equipment mentioned in Table 10A. The replacements are broken into three (3) phases. A replacement occurs if the equipment fails or replacement is deemed necessary through a condition assessment as it nears its lifetime.

Table 10A: Town of Eaton WWTF Condition Assessment Summary

ASSET NAME	CURRENT AGE (YEARS)	FINAL CONDITION RATING	BMP EXPECTED DESIGN SERVICE LIFE (YEARS)	AGE-BASED REMAINING LIFE (YEARS)	CONDITION-BASED REMAINING SERVICE LIFE (YEARS)	YEAR OF FIRST REPLACEMENT
Sludge Polymer System No. 1	16	4	10	-6	4	2023
Dewatering Centrifuge No. 1	6	6	13	7	7.8	2023
Sludge Pump No. 1	16	4	20	4	8	2023
Dewatered Sludge Pump No. 1	16	4	20	4	8	2023
Influent Flow Meter and Recorder	6	9	12	6	10.8	2032
Effluent Flow Meter	6	9	12	6	10.8	2032
Control Gates	6	4	30	24	12	2033
Grit Pump No. 1	16	7	20	4	14	2035
Variable Speed Flooded Suction Non-Clog Pump No. 1	16	7	20	4	14	2035
Variable Speed Flooded Suction Non-Clog Pump No. 2	2	7	20	18	14	2035
Variable Speed Flooded Suction Non-Clog Pump No. 3	5	7	20	15	14	2035
Aerated Grit Collector	6	8	20	14	16	2037
Grit Classifier	6	8.7	20	14	17.4	2039
Aero-Mod - Secondary Aeration No. 1	6	9	20	14	18	2039
Aero-Mod - Secondary Aeration No. 2	6	9	20	14	18	2039
Aero-Mod - Skimmer No. 1	6	9	20	14	18	2039
Aero-Mod - Skimmer No. 2	6	9	20	14	18	2039
Clearwell Pump No. 1	6	9	20	14	18	2039
Solids Conveyor Belt No. 1	6	9	20	14	18	2039
Generator No. 1	16	9	20	4	18	2039
UV Disinfection System	6	7.5	25	19	18.75	2040

Table 10B: Town of Eaton WWTF Condition Assessment Cost Summary

ITEM NO.	EQUIPMENT DESCRIPTION	PHASE	CAPITAL COST
1	Sludge Polymer System	1	\$15,000.00
2	Dewatering Centrifuge No. 1	1	\$150,000.00
3	Sludge Pump No. 1	1	\$85,000.00
4	Dewatering Sludge Pump No. 1	1	\$6,250.00
5	Influent Flow Meter and Recorder	2	\$10,000.00
6	Effluent Flow Meter	2	\$10,000.00
7	Control Gates	2	\$5,000.00
8	Grit Pump No. 1	2	\$4,500.00
9	Variable Speed Flooded Suction Non Clog Pump No. 1	2	\$ 5,000.00
10	Variable Speed Flooded Suction Non Clog Pump No. 2	2	\$5,000.00
11	Variable Speed Flooded Suction Non Clog Pump No. 3	2	\$5,000.00
12	Aerated Grit Collector	3	\$35,000.00
13	Grit Classifier	3	\$ 65,000.00
14	Aero Mod Secondary Aeration No. 1	3	\$115,000.00
15	Aero Mod Secondary Aeration No. 2	3	\$10,000.00
16	Aero mod Skimmer No. 1	3	\$4,000.00
17	Aero mod Skimmer No. 2	3	\$4,000.00
18	Clearwell Pump No. 1	3	\$5,500.00
19	Solids Conveyor Belt No. 1	3	\$15,500.00
20	Generator No. 1	3	\$ 50,000.00
21	UV Disinfection System	3	\$135,000.00

Table 10C: Town of Eaton WWTF Condition Assessment Cost Summary per Phase

PHASE	CAPITAL COST	INSTALLATION COST
Phase 1 - 2023	\$256,250.00	\$51,250.00
Phase 2 - 2034	\$44,500.00	\$8,900.00
Phase 3 - 2039	\$ 439,000.00	\$87,800.00
Total Cost	\$739,750.00	\$147,950.00

*Table 10C does not include capital costs for required expansion projects.

2.4 EXISTING WASTEWATER COLLECTION SYSTEM

2.4.1 DESCRIPTION OF EXISTING COLLECTION SYSTEM

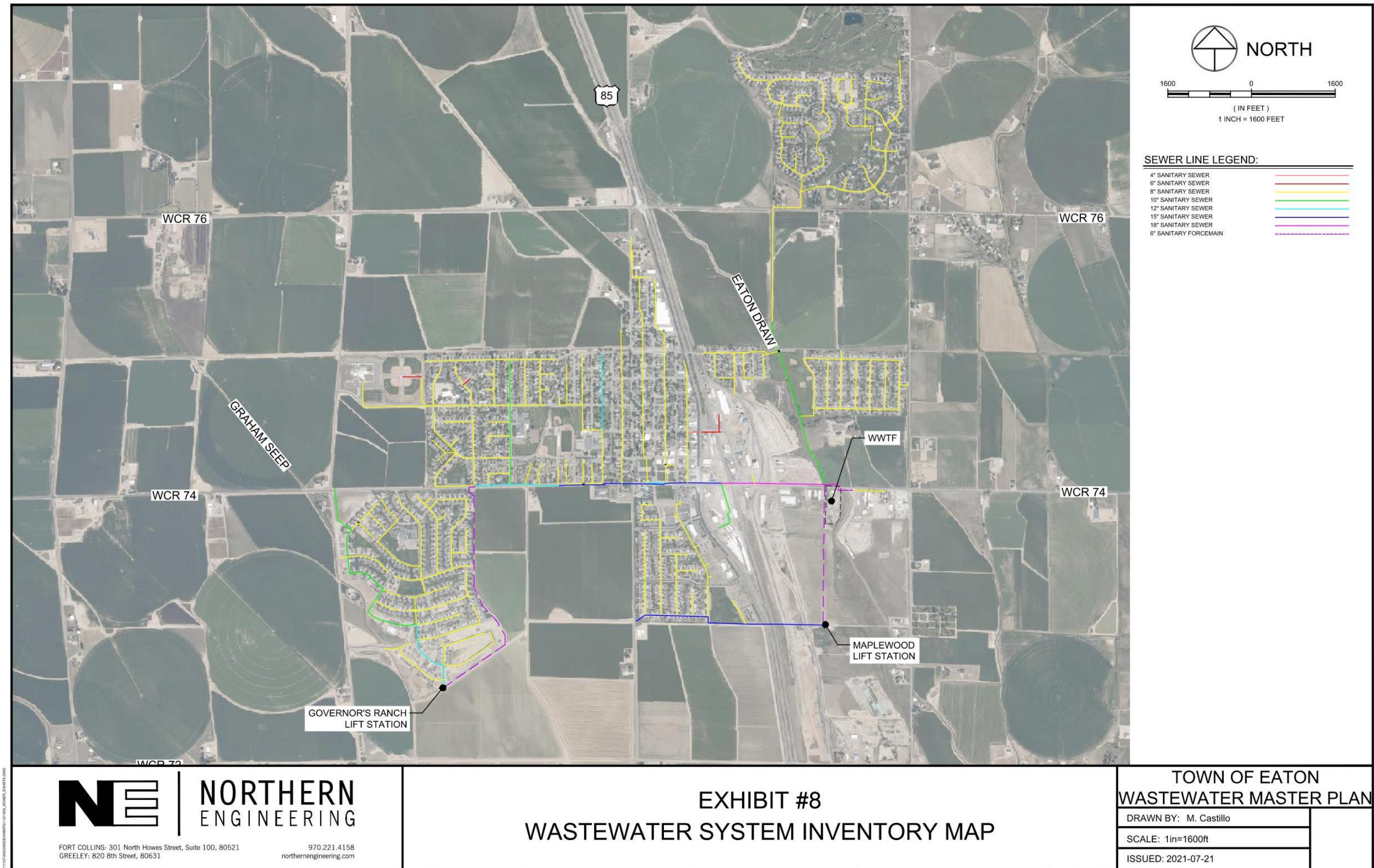
The Town provides service to approximately 2,089 domestic and commercial taps. The collection system is comprised of lines varying in size from four to eight inches in diameter. Exact information on pipe materials is unknown, however due to the age of the town a combination of concrete reinforced pipe, clay, and PVC are expected. Exhibit #8 on the following page shows a detailed map of the collection sewer system. The collection system inventory breaks down as follows:

Table 11: Wastewater Collection System Inventory Summary

PIPE SIZE	4"	6"	8"	10"	12"	15"	18"	TOTAL
Length (feet):	1,309.83	9,098.10	113,792.75	10,787.51	4,921.23	6,907.08	2,349.94	149,166.45

The total footage of the collection system is 149,166.45 feet of sanitary sewer line.

Exhibit #8: Wastewater System Inventory Map



2.4.2 EXISTING LIFT STATIONS

2.4.2.1 CAPACITIES AND PERCENT UTILIZATION OF LIFT STATIONS VS. WWTF CAPACITY

Northern Engineering Services worked on the Sanitary Sewer Flow Monitoring Study for the analysis of existing sanitary sewer line capacities from recorded flows taken between December 24, 2020, and January 24, 2021. Wastewater flows were recorded with two (2) flow meters, each situated within a separate sanitary sewer lift station manhole. A third flow metering device was situated in the influent flow measurement flume at the Wastewater Treatment Plant (WWTP).

The flowmeter points are denoted as Governor's Ranch, Maplewood, and WWTP Influent. Recorded flow results for each location are provided in separate supporting documents by TDMS. A summary of peak and average flow results is provided in the table below.

Table 12: Flow Results and Capacities for Lift Stations and WWTF

METER LOCATION	RECORDED FLOWS	EXISTING PEAK DESIGN CAPACITY	LIMITING FACTOR
Governor's Ranch	Peak: 365.3 gpm Average: 110.8 gpm	385 gpm	Pump Capacity
Maplewood	Peak: 83.3 gpm Average: 29.5 gpm	350 gpm	Pump & Well Capacity
WWTP Influent	Peak: 495.3 gpm Average: 254.1 gpm	0.75 MGD (520 gpm)	Permitted Capacity

2.4.2.2 GOVERNOR'S RANCH LIFT STATION

Pumping Capacity: Assuming the interim lift station Gorman-Rupp pumps, rated for 385 gpm, are still in place at this lift station, the observed peak flows recorded indicate that this lift station is currently operating at 95% of the interim design capacity.

Collins Street Capacity: The Governor's Ranch Lift Station discharges downstream into an existing 12" gravity line at Collins Street. Using $d/D=0.6$ (depth of flow in the line), this gravity line has a design capacity of 500 gpm. Recorded flows supplied by the Governor's Ranch Lift Station show it uses about 73% of this usable capacity.

The full build-out of the Governor's Ranch Lift Station was originally anticipated to supply wastewater flows up to 700 gpm (which included single-family development north of Collins), at which point these flows would be re-routed to the Maplewood Lift Station. However, the recently recorded flows for Governor's Ranch represent the service area is near full build-out. In particular, the recreation Center and new High School, instead of the originally anticipated residential development, indicate these maximum flows of 700 gpm will not be achieved. Thus, minimizing the likelihood of a need to re-route the discharged flows from Collins Street to the Maplewood Lift Station. So, leaving the existing discharge from Governor's Ranch to the Collins Street gravity line leaves approximately 135 gpm of capacity remaining to support future additional flows from such developments as the new Eaton High School, the Recreation Center, and several small multi-family units anticipated on the westside of the Town.

Pump Operations: Additional results received on specific pump performance and operations at the Governor's Ranch Lift Station indicate relatively short runtimes with many starts and stops of both existing pumps, which causes a lot of wear-and-tear pumps and motors. Additionally, the results provided also indicate that the lead pump (Pump 1) in this lift station is drawing nearly double the amount of amperage than Pump 2. This may suggest some electrical or energy loss issues with the lead pump. Given these issues and the fact that the existing lift station is operating at 95% of the interim design capacity, it is suggested that the state and operations of the existing pump system be further investigated to optimize performance.

2.4.2.3 MAPLEWOOD ESTATES LIFT STATION

Pumping Capacity: The current design capacity of the existing Gorman-Rupp pumps at the Maplewood Lift Station is 350 gpm. Observed peak flows from this effort indicate that this lift station is currently operating at 24% of its design capacity. The lower operation was influenced by the type of commercial development that took place. Thus, the Maplewood Lift Station can support additional flows from future developments. Further evaluation shows that it will support 60% of the Brown Farm development. This is further discussed in greater detail in Section 3.5.

Pump Operations: Additional results received on specific pump performance and operations at the Maplewood Estates Lift Station also indicate relatively short runtimes with many starts and stops of both existing pumps, which causes a lot of wear-and-tear pumps and motors. However, the amperage drawn between both pumps is operating within the same range. Thus, it would be recommended that further investigation should be made to optimize the pump performance with the consideration of accepting any additional flows.

2.4.2.4 EMERGENCY RESPONSE PROTOCOLS

The Town staff and operators will operate and maintain the treatment plant and lift stations. All emergency response protocols pertaining to the plant and lift stations are handled by the Town administration and operators.

The lift stations currently feature an alarm system for equipment that indicates failures. Alarms include pump failure and high wet well level at the lift station. Alarms send a signal to the Town's main building, which notifies the operator that there is a system failure.

2.4.2.5 EMERGENCY POWER MANAGEMENT

Both lift stations have generators; therefore, when power is needed, both lift stations rely on the generators. It has been noted by the operator that the transfer switch has failed various times.

2.4.3 EXISTING CONDITION ASSESSMENT OF COLLECTION SYSTEM AND LIFT STATIONS

All sewers in the collection system are composed of PVC pipe and deliver wastewater via gravity and two lift stations to the EWWTP. No significant I&I issues were observed through calculations.

A collection system map has been developed and attached as Exhibit #8. Table 7, shown previously, summarizes the existing collection system pipe sizing throughout the Town. The existing system serves the current needs of the service area.

The collection system seems to be in proper functioning condition. However, it should be more closely monitored if peak flows to the EWWTP occur after a rain event. If so, the sewer lines should be televised for leaks and repaired. The State requires the entire system to be inspected with a camera every three years, and it is recommended to be evaluated.

2.4.4 ENTITY PRETREATMENT PROGRAM DISCUSSION

The Town does not currently have a pretreatment program. Currently, there are no required routine sampling procedures for industrial contributors. Expected waste contributions from new businesses will be reviewed prior to new sewer connections.

2.4.5 RECOMMENDATIONS FOR COLLECTION SYSTEM AND LIFT STATION IMPROVEMENTS

Table 13: Governor's Ranch Lift Station Condition Assessment Summary

ASSET NAME	CURRENT AGE (YEARS)	FINAL CONDITION RATING	BMP EXPECTED DESIGN SERVICE LIFE (YEARS)	AGE-BASED REMAINING LIFE (YEARS)	CONDITION-BASED REMAINING SERVICE LIFE (YEARS)	YEAR OF FIRST REPLACEMENT
Level Control Float - Wet Well	6	6.5	12	6	7.8	2029
Submersible Pump No. 1	6	6.5	15	9	9.75	2031
Submersible Pump No. 2	6	6.5	15	9	9.75	2031
Facility Standby Generator	6	7	20	14	14	2035
Transfer Switch	6	6	25	19	15	2036
Pump Motor No. 1	6	6.5	25	19	16.25	2038
Pump Motor No. 2	6	6.5	25	19	16.25	2038
HOA Pump Motor Control Panel No. 1	6	6.5	25	19	16.25	2038
HOA Pump Motor Control Panel No. 2	6	6.5	25	19	16.25	2038
4" Check Valve	6	6.5	25	19	16.25	2038
4" Plug Valve	6	6.5	25	19	16.25	2038
4" Plug Valve	6	6.5	25	19	16.25	2038

Table14: Maplewood Lift Station Condition Assessment Summary

ASSET NAME	CURRENT AGE (YEARS)	FINAL CONDITION RATING	BMP EXPECTED DESIGN SERVICE LIFE (YEARS)	AGE-BASED REMAINING LIFE (YEARS)	CONDITION-BASED REMAINING SERVICE LIFE (YEARS)	YEAR OF FIRST REPLACEMENT
Level Control Float - Wet Well	6	7.5	12	6	9	2030
Submersible Pump No. 1	6	7.5	15	9	11.25	2033
Submersible Pump No. 2	6	7.5	15	9	11.25	2033
Facility Standby Generator	6	7.5	20	14	15	2036
Transfer Switch	6	6.5	25	19	16.25	2038
Pump Motor No. 1	6	7.5	25	19	18.75	2040
Pump Motor No. 2	6	7.5	25	19	18.75	2040

ASSET NAME	CURRENT AGE (YEARS)	FINAL CONDITION RATING	BMP EXPECTED DESIGN SERVICE LIFE (YEARS)	AGE-BASED REMAINING LIFE (YEARS)	CONDITION-BASED REMAINING SERVICE LIFE (YEARS)	YEAR OF FIRST REPLACEMENT
HOA Pump Motor Control Panel No. 1	6	7.5	25	19	18.75	2040
HOA Pump Motor Control Panel No. 2	6	7.5	25	19	18.75	2040
4" Check Valve	6	7.5	25	19	18.75	2040
4" Plug Valve	6	7.5	25	19	18.75	2040
4" Plug Valve	6	7.5	25	19	18.75	2040

Listed below are the suggested improvements the Town is considering for future capital improvements:

1. Perform routine manhole and closed-circuit television (CCTV) inspections to monitor the conditions of the collection system.
2. Perform routine maintenance on lift stations. Service plans are available.
3. Evaluate in greater detail the electrical and generator system to identify and fix the transfer switch and self-exercise capabilities of the system.
4. Replacements in this section assume no significant developments occur that may trigger expansion of this Lift Station. Depending on projected development, a new lift station may be needed, and these replacements will not be considered.
5. Perform thorough I&I study.

2.5 EXISTING NON-POINT SOURCE CONTRIBUTIONS (1-3 YEARS MINIMUM)

2.5.1 DESCRIPTION OF EXISTING NON-POINT SOURCES AND STORM SEWER MAP

Source data were obtained through the Colorado State University's eRAMS Watershed Rapid Assessment Program (WRAP) and the Center for Comprehensive, Optimal, and Effective Abatement of Nutrients (CLEAN) database in July 2021. Potential non-point sources and information available for the WUSA from the eRAMS WRAP database are shown in Table 2.5.1. The Town of Eaton's WUSA is located in the Cache La Poudre Watershed.

2.5.2 EXISTING NON-POINT SOURCE CONTRIBUTION LOADS

The eRAMS database could not provide any data for nutrient loads due to no monitoring stations existing within Eaton WUSA. However, Cache La Poudre Watershed encompasses the WUSA. Therefore, the Cache La Poudre Watershed was analyzed, and the eRAMS CLEAN database provided both the total nitrogen (TN) and total phosphorus (TP) loading for current urban stormwater conditions. Table 16 presents the data for TN and TP for the Town.

Table 15: Existing Non-Point Sources in the Town of Eaton 208 Boundary

NON-POINT SOURCES	ERAMS DATA
Irrigated Agriculture	6.78 sq. miles
Livestock Operations Excluding CAFOs	No Data Available
Urban Stormwater Excluding Permitted MS4s	No Data Available
Mining Related Activities	0
Possible Saltwater Intrusions	No Data Available
Cumulative Runoff Effects (lbs/yr)	Nitrogen, Phosphorus

Table 16: Existing Total Nitrogen and Total Phosphorus Loading for the Town of Eaton

NUTRIENT	TOTAL LOAD (LBS/YR)	WWTPS IN BOUNDARY (LBS/YR)	NON-POINT SOURCE (LBS/YR)
Total Nitrogen (TN)	19,088	4,600	14,488
Total Phosphorus (TP)	2,940	1,593	1,347

2.5.3 RECOMMENDATIONS FOR EXISTING NON-POINT SOURCE IMPROVEMENTS

It is recommended that the Town creates a Stormwater Master Plan. It is recommended that BMPs are thoroughly reviewed and taken into consideration for pollutants and nutrients, with more emphasis on the ones within the WWTF permit.

3.0 FUTURE CONDITIONS

The Town's 2018 Comprehensive Plan includes predicted land use areas for residential, commercial, and industrial areas that are within the Urban Core Area boundary. However, based on conversations with Town Staff, the anticipated development areas within the 20-year time frame of this Master Plan are all within the existing Town Boundaries. The two major areas anticipated for development are Brown Farm and an existing agricultural area just south of Maplewood Estates. Population assumptions based on anticipated zoning indicate the build-out of these two developments will result in a total anticipated population of 14,121 by the year 2040. Thus, future demand projections will only reflect the addition of these two developments.

3.1 POPULATION AND SINGLE-FAMILY EQUIVALENT PROJECTIONS

3.1.1 WUSA POPULATION PROJECTIONS

Based on population data gathered from the US Census Bureau, the historical average annual growth rate observed for the Town from 2010 to 2020 was 3.3%. However, to account for an anticipated accelerated population growth largely driven by the development of the two areas south of Collins Street, as described previously, future population projections have been derived based on the following assumptions. From discussions with Town staff and planners, the Brown Farm development (currently under review) is expected to reach full build-out by the year 2028, which translates to annual population growth of 5.3% for the next six years. Additionally, it is anticipated that the South Maplewood development, if the development process has started by 2024-2025, could reach full build-out by the year 2034, which translates to an annual growth rate of 4.4% between 2028 and 2034. Following the build-out of these two developments, the Town does not expect any other major developments to occur within the timeframe of this Plan. Thus, it is expected that population growth will return to its historical trend of 3.3% between 2034 and 2040. Figure 10 provides a plot of population projections under both historical and planned development-driven annual growth rates.

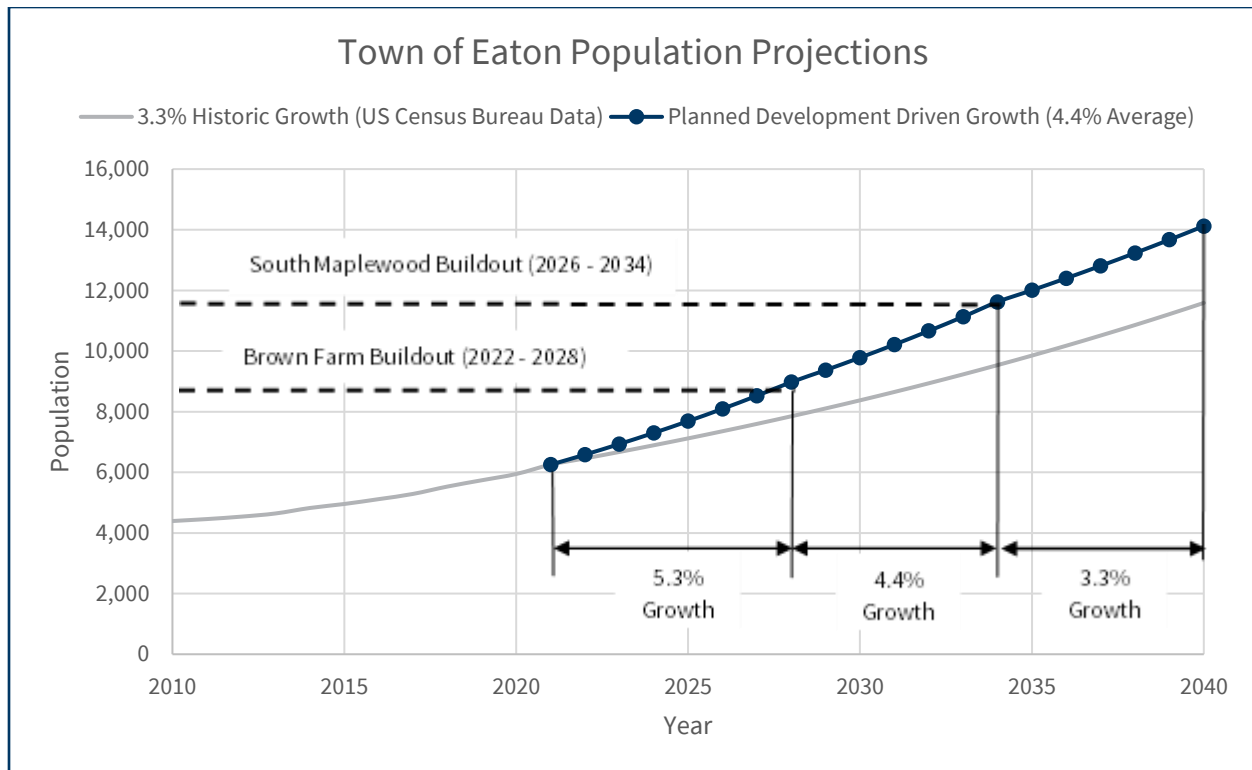


Figure 10: Town of Eaton Population Projections

Comparing the projected population additions of the two future developments described previously with the annual increase projection indicates that the full build-out for Brown Farm is likely to be completed by 2028, and the build-out of the South Maplewood development is likely to be completed between 2034. This justifies projected growth rates within this 20-year Plan are viable assumptions that are aligned with anticipated future developments.

3.1.2 SINGLE-FAMILY EQUIVALENT (SFES) PROJECTIONS

Historical residential tap records provided by the Town were used to determine the number of people per household. The Town has 2,089 residential taps, yielding an average of 2.9 people per household. Average sewer demands from 2017 to 2020 (DMR reports) were used to establish the single-family equivalent for future flows and loading projections. The average per capita demand determined is approximately 73 gpd/capita (212 gpd/SFE).

Table 17 compares the actual Town population growth projections based on the planned SFEs to the population projections based on the historical census growth rates. The table shows that the Town plans to grow faster than historically observed. This anticipated growth is largely due to the two new housing sub-divisions to be built out during this 20-year planning period.

Table 17: Future Population and Residential SFE Summary

YEAR	HISTORIC GROWTH (3.3%)		PLANNED DEVELOPMENT GROWTH (4.4% AVERAGE)	
	TOTAL POPULATION	TOTAL SFES (RESIDENTIAL)	TOTAL POPULATION	TOTAL SFES (RESIDENTIAL)
2020	5,945	2,050	5,945	2,050
2025	7,119	2,455	7,687	2,651
2030	8,374	2,888	9,782	3,373
2035	9,850	3,397	12,005	4,140
2040	11,587	3,996	14,121	4,869

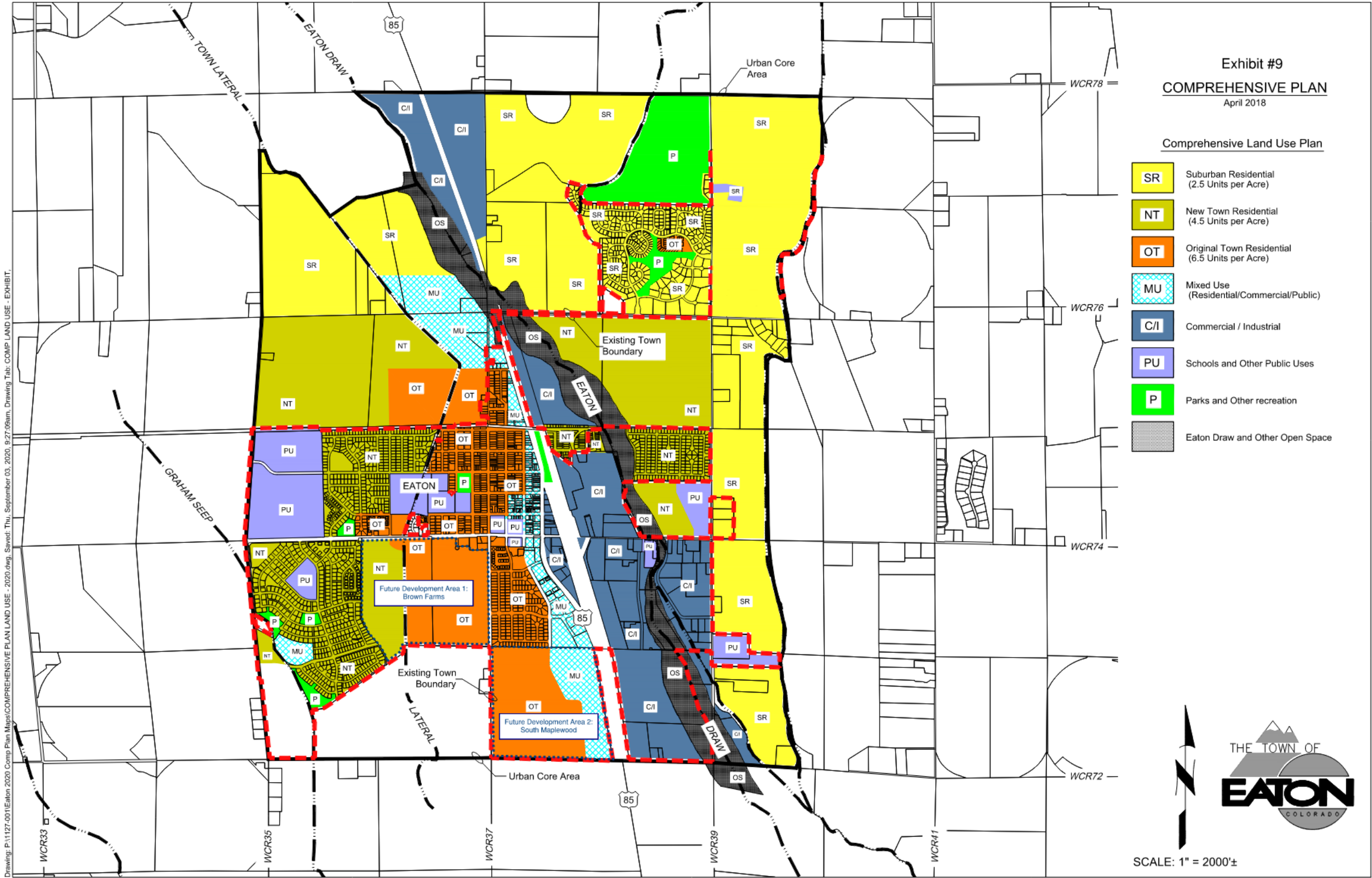
3.2 LAND USE AND ZONING PROJECTIONS

The 2018 Comprehensive Plan describes all future growth occurring within the Urban Core area, as shown in Exhibit #9 on the following page. However, based on conversations with Town staff, future growth within the 20-year time frame of this Plan will likely occur in two areas south of Collins Street, which are within existing Town boundaries.

The first anticipated development is referred to as Brown Farm and is located on a 174-acre lot between the Governor's Ranch and Maplewood subdivisions. Currently, Brown Farm is anticipated to be a mixed-use development that includes single and multi-family residential units and commercial and public use spaces under a PUD zoning. This development is currently under review but is expected to begin construction by 2023. Based on the current land use criteria defined in the 2018 Comprehensive Plan, the maximum anticipated population added by this development is approximately 2,700 people. However, it is important to note that this is the maximum allowable units by current land use, which is not reflective of the proposed planned development that is currently under review.

The second future development is anticipated to occur in a 161-acre area south of the Maplewood Subdivision. The 2018 Comprehensive Plan, with updated Map in 2020 (Exhibit #9), indicates that this lot will be majority Original Town (OT) land use with some Mixed Used (MU) areas to the east along the Highway 85 corridor. Assuming the MU areas are strictly commercial areas with few or no permanent residences, the maximum anticipated population for the development of this area is approximately 2,640 people.

Exhibit #9: Future Land Use Map



A summary of the future development areas, land use criteria, and projected populations is provided in Table 18 below.

Table 18: Population Projections for Anticipated Future Development Areas

FUTURE DEVELOPMENT AREA	LAND USE TYPE	ALLOWABLE LAND USE DENSITY	GROSS AREA (ACRES)	MAXIMUM NO. OF UNITS	POPULATION AT FULL BUILD-OUT
Brown Farm	OT	6.5 units/ac	73.8	480	1,392
	NT	4.5 units/ac	99.8	450	1,305
	TOTAL:		173.5	930	2,697
South Maplewood	OT	4.5 units/ac	111.6	725	2,103
	MU	15 units/ac	48.9	734	532*
	TOTAL:		160.5	1459	2,635

*Assumes 25% of MU population is permanent residences.

3.3 FLOW AND LOAD FORECASTS

The Town's standard is a 212 gpd/SFE flow rate (2.9 capita per SFE) for the future collection system, interceptor, and WWTF improvements. The 212 gpd/SFE flow rate is consistent with Larimer and Weld County's minimum design flow of 211.5 gpd/SFE (75 gpd/capita) and will be used for current and future flow and loading projections.

Peaking factors, including MMF, PDF, and PHF, are important criteria for adequately sizing the hydraulic and treatment capacities of a facility.

- Annual Average Daily Flow (AADF) and Annual Average Load (AAL) – represent the total annual wastewater volume or load divided by 365 days in the year. These values aid in projecting the maximum month and other design conditions.
- Maximum Month Flow (MMF) and Maximum Month Load (MML) – represent the highest 30-day average flow or load expected to be received at the facility (rated capacities of the WWTP). The biological secondary treatment process is typically designed for these conditions.
- Peak Hour Flow (PHF) – Flow rate that is sustained for at least a one-hour duration. This flow is used for unit process design considerations for screens, clarifiers, filters, disinfection, pumping equipment, and equalization tanks.
- Peak Daily Flow (PDF) – This flow is the maximum daily flow observed in a month. This flow is used to estimate the peak daily loading, which is the basis of the aeration system and solids handling.

Facility-provided flow data was compiled and analyzed to establish the peaking factors. The following table summarizes the peaking factors based on historical data. The MMF and PDF were calculated per DMR data, and the PHF was calculated per hourly peaking factor for domestic wastewater treatment facilities found in Metcalf and Eddy 2014.

Table 19: Peaking Factors for Current and Future Flows and Loads

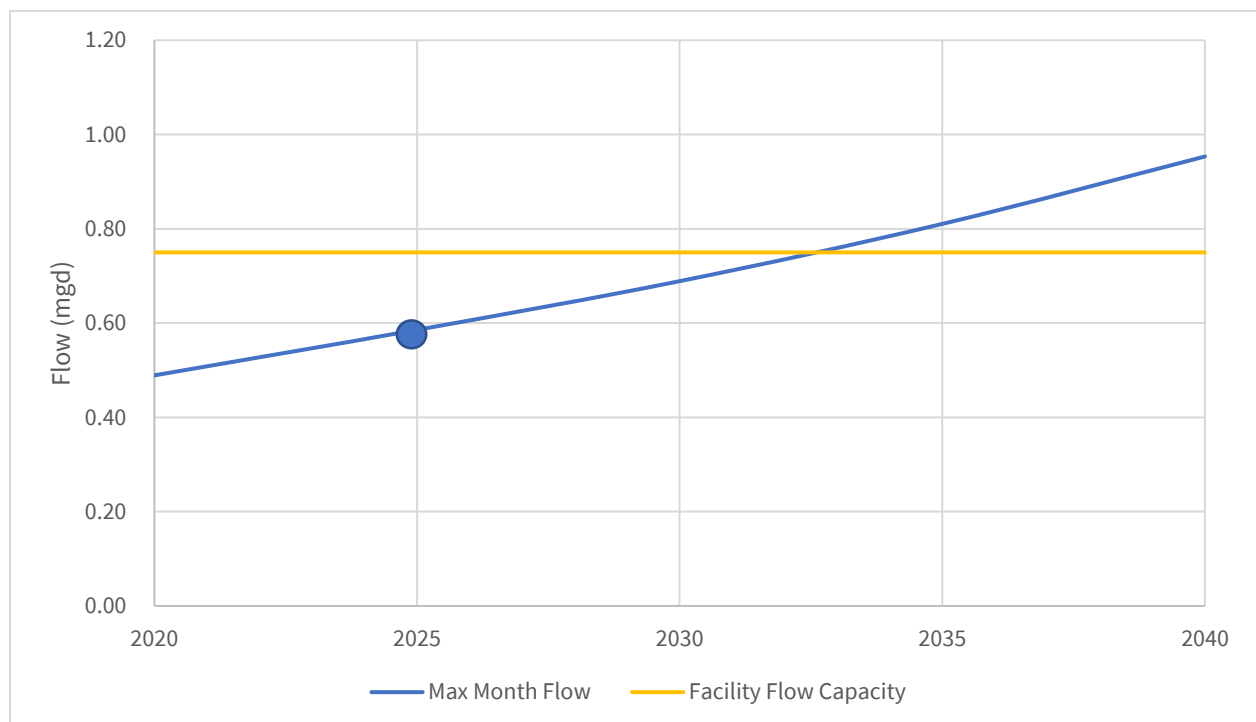
PEAKING FACTOR - MONTHLY	MMF	1.13
PEAKING FACTOR - DAILY	PDF	1.83
PEAKING FACTOR - HOURLY	PHF	3.83

Based on the residential SFEs in Table 1 and peaking factors in Table 19, future wastewater flows are projected. Table 20 summarizes the projected flows in 5-year increments for the 20-year planning period.

Table 20: Wastewater Flow Projections

YEAR	TOTAL SFES	AADF (MGD)	MMF (MGD)	PDF (MGD)	PHF (MGD)
2020	2,050	0.43	0.49	0.79	1.66
2025	2,455	0.52	0.59	0.95	1.99
2030	2,888	0.61	0.69	1.12	2.34
2035	3,397	0.72	0.81	1.31	2.75
2040	3,996	0.85	0.95	1.54	3.24

The flow projections show that the EWWTF will reach 80% hydraulic capacity by 2025. This triggers the need to design for additional capacity in the EWWTF according to the rest of the projections. By 2032, the facility will be operating at 100%, which is when the additional capacity must be ready to be added. Figure 11 shows this trend with the population projections for this planning period.


Figure 11: Flow Projections for the Eaton WWTF (Blue Dot Indicates 80% Capacity)

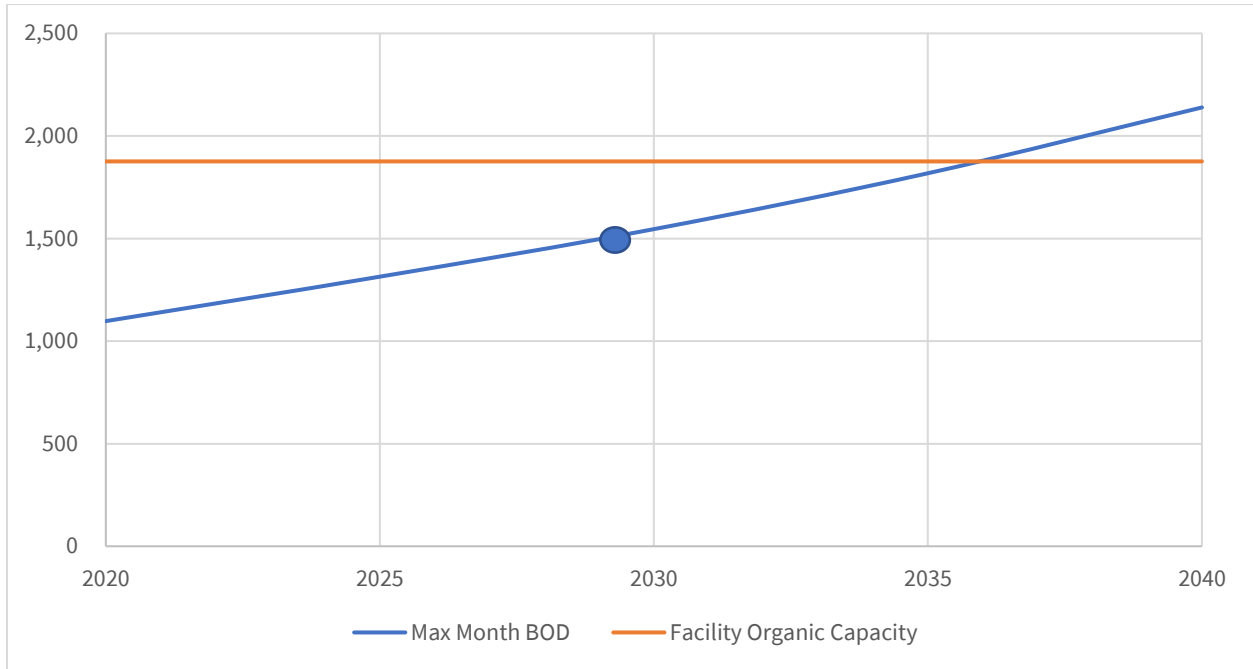


Figure 12: Organic Loading Projections for the Eaton WWTF (Blue Dot Indicates 80% Capacity)

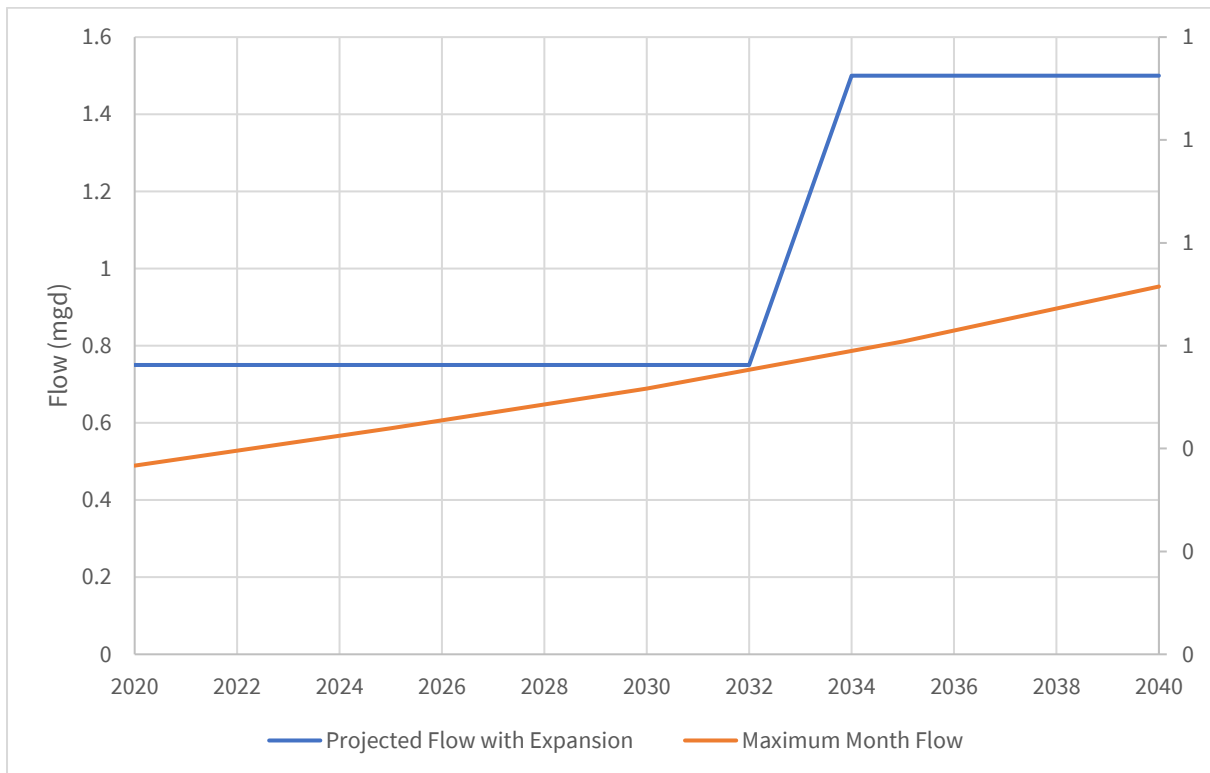


Figure 13: Flow Projections for the Eaton WWTF with Potential Additional Capacity

Figure 13 shows potential future WWTF capacities based on the Town's provided SFE growth projections for this 20-year planning period. The organic loadings are estimated based on the facility's 269 mg/L influent BOD concentration. The potential expansion, if the population growth follows the above trend with Brown Farm and S. Maplewood developments, would occur in 2032 to a 1.5 MGD design and 3,752 ppd BOD loading. Design and planning will commence in 2025, and construction will commence in 2031. Per the discharge permit:

- At the 80% hydraulic or organic capacity thresholds, engineering and financial planning and design shall commence for facility expansions.
- By the 95% capacity threshold, Town shall have begun construction on the future WWTP.

If future expansions are required, they will likely coincide with future discharge permit cycles and potential compliance schedule requirements. Per the Town's 20-year development schedule, the year 2040 influent flows and loads to the WWTP are an estimated 0.95 MGD and 2,140 ppd BOD, respectively.

3.4 PROJECTED WASTEWATER FLOW CHARACTERIZATION

The Town has not been required to sample influent constituents other than BOD and TSS; thus, there is no other process data available.

Table 21: Influent Constituent Concentrations and Parameters

PARAMETER	CONCENTRATION (MG/L)		LOADING (PPD)		TYPICAL (PPD)*	
	AVG. ANNUAL	MAX. MONTH	AVG. ANNUAL	MAX. MONTH	AVG./SFE	AVG./SFE
TSS	206	448	674	1,336	0.65	0.67
BOD	269	640	879	2,167	1.10	1.10

*Typical loadings per "Typical with Ground-Up Kitchen Waste" from Wastewater Treatment and Reuse, Metcalf and Eddy, multiplied by 2.9 people per SFE.

3.4.1 PROJECTED I&I ANALYSIS

No excessive I&I issues were seen as a result of the data analysis. However, it is recommended that the Town perform a more detailed study on existing I&I conditions.

3.4.2 TYPICAL WASTEWATER FLOW CONTRIBUTIONS FOR PLANNING PROJECTIONS

Table 22 and Figure 13 demonstrate the need for expansion by the year 2033. By expanding the capacity of the facility in 2033 to 1.5 MGD, the facility is estimated to have adequate capacity through 2040.

Table 22: Town of Eaton WWTF – Current and Proposed WWTF Design Flows

FLOW (MGD)	CURRENT DESIGN	PROPOSED EXPANSION
Rated Max. Month	0.75	1.50
Average Day	0.66	1.33
Peak Day	1.21	2.43
Peak Hour*	1.50	3.00

* Based on peak hour of 2.00 of Max. Month.

3.4.3 FUTURE DESIGN LOADING FOR CONSTITUENTS OF CONCERN

Projected wastewater loadings are proportionally related to the residential growth during the 20-year planning period. Table 23 summarizes the projected loadings for constituents of concern. It is recommended that the Town perform, at a minimum, a two-week sampling study to determine the influent TKN, ammonia, and total phosphorus to project these parameters for this 20-year period.

Table 23: Town of Eaton WWTF – Projected Max. Month Influent Wastewater Loadings

YEAR	BOD ₅ (PPD)	TSS (PPD)
2020	1,097	840
2025	1,314	1,006
2030	1,546	1,184
2035	1,818	1,392
2040	2,139	1,638

Other constituents of concern, such as E. coli, are incorporated into the current discharge permit and are being accounted for in the future planning basis.

3.5 FUTURE COLLECTION SYSTEM INTERCEPTOR ALIGNMENTS & LIFT STATIONS

3.5.1 FUTURE INTERCEPTOR LAYOUT AND SIZING FOR WUSA CHANGES AND GMA AREA

Given the projected developments, the Maplewood Lift Station will only accommodate 60% of the Brown Farm development; therefore, a new lift station at Maplewood will be required past 60% build-out. The South Maplewood development will also require a lift station and pipelines to move the sewer from the development to the WWTF.

3.5.2 LOCATION AND SIZE OF FUTURE LIFT STATIONS (MAPPED)

The new lift station to support Brown Farm is recommended to be located next to the existing Maplewood Lift Station in order to connect to the existing 15” gravity sewer line and the 6” pressurized line to the WWTF. The South Maplewood Lift Station should be located where the development best sees fit within the development boundaries.

3.5.3 TIMELINE FOR STAGING FUTURE COLLECTION SYSTEM IMPROVEMENTS

The new Maplewood Lift Station needs to be commissioned when the development of Brown Farm surpasses 60% build-out. If development follows the current projections, this lift station will need to be built and commissioned by 2025/2026. The South Maplewood Lift Station and pipelines will need to be built at the same time when the S. Maplewood development begins.

3.5.4 EXCESSIVE I&I PLAN OF CORRECTION

No excessive I&I issues were seen as a result of the data analysis. However, it is recommended that the Town perform a more detailed study on existing I&I conditions. For the purpose of this master plan, 75 gpcd was used as a design value.

3.6 FUTURE NON-POINT SOURCE CONTRIBUTIONS (20-YEAR PLANNING HORIZON)

It is anticipated that the future service area will not result in significant changes to non-point source contributions. As the WUSA expands, features that may result in any changes should be evaluated and BMPs considered.

3.6.1 DESCRIBE FUTURE STORMWATER COLLECTION OUTFALLS, BMPS, EXTENSIONS, ETC. (MAPPED)

No changes are expected during this 20-year planning period; however, any new developments will build the required stormwater detention ponds as mandated by local, state, and federal laws.

3.6.2 IRRIGATED AGRICULTURE

There are no additional irrigated agriculture contributions expected in the Town during this 20-year planning period.

3.6.3 LIVESTOCK OPERATIONS EXCLUDING CAFOS

There are no additional livestock operation contributions expected in the Town during this 20-year planning period.

3.6.4 URBAN STORMWATER EXCLUDING PERMITTED MS4S

It is recommended that the Town creates a Stormwater Master plan.

3.6.5 MINING RELATED ACTIVITIES

There are no projected mining-related activities expected in the Town during this 20-year planning period.

3.6.6 POSSIBLE SALTWATER INTRUSIONS

There are no projected saltwater intrusion contributions expected in the Town during this 20-year planning period.

3.6.7 CUMULATIVE RUNOFF EFFECTS (LBS/YR)

No changes are expected during this 20-year planning period.

4.0 RECEIVING STREAM WATER QUALITY

4.1 WATERSHED IDENTIFICATIONS

The Colorado Department of Public Health and Environment last issued a discharge permit for the Eaton WWTF in September 2015 (CO-0047414). The facility discharges into the Eaton Draw, which is a tributary to the Cache la Poudre River (Segment COSPCP13a). Per the 2020 Integrated Water Quality Monitoring and Assessment Report, the beneficial use classifications for Segment COSPCP13a of the Cache la Poudre River include:

- Aquatic Life Warm 1
- Agriculture – Fully Supporting
- Recreation Class E – Fully Supporting
- Water Supply – Fully Supporting

4.1.1 AMBIENT WATER QUALITY: SEGMENT & EPA PROTECTED USE CATEGORIES AND THE RESULTING ASSESSMENT FROM THE 305(B) REPORT, TMDLS

The numeric standards used to develop effluent limitations for the Cache la Poudre River are summarized in the Water Quality Assessment (WQA) per CDPHE WQCD Regulation 38. Numeric standards are developed for each basin and adopted for stream segments by the Water Quality Control Commission (WQCC). These standards are stated in the discharge permit, which can be found in Appendix E. Stream segment standards are presented in Table 24.

Table 24: Eaton WWTF - Cache la Poudre River Stream Standards - COSPCP13a

PHYSICAL AND BIOLOGICAL	MWAT	DM
Temperature (°C) (Mar - Nov)	24.2	29
Temperature (°C) (Dec - Feb)	12.1	14.5
	ACUTE	CHRONIC
Dissolved Oxygen (DO)	-	5 mg/L
pH	6.5 – 9.0	-
E. coli (per 100 mL)	-	126 CFU
INORGANIC (MG/L)	ACUTE	CHRONIC
Ammonia	TVS ¹	TVS
Boron	-	0.75
Chlorine	0.019	0.011
Chloride	-	250
Cyanide	0.005	-
Nitrate	10	-
Nitrite	0.5	-
Sulfide	-	0.002
METALS (MG/L)	ACUTE	CHRONIC
Aluminum (T ³)	TVS	TVS
Arsenic (D ²)	0.34	-
Arsenic (T)	-	0.0002 – 0.01
Cadmium (D)	TVS	TVS
Cadmium (T)	5.0 (Trec)	
Chromium III (D)	0.05	-
Chromium III (T)	TVS	TVS
Chromium VI (D)	TVS	TVS
Copper (D)	TVS	TVS
Iron (D)	-	0.30
Iron (T)	-	1.0
Lead (D)	TVS	TVS
Lead (T)	0.05	-
Manganese (D)	TVS	TVS
Molybdenum (T)	-	0.15
Nickel (D)	TVS	TVS
Nickel (T)	0.10	-
Selenium (D)	TVS	TVS
Silver (D)	TVS	TVS
Zinc (D)	TVS	TVS

¹ TVS: Table Value Standard per Regulation 31

² D: Dissolved

³ T: Total Recoverable

4.1.2 WASTEWATER ISSUES: 303(D) AND/OR M&E LISTINGS

The WQCC's Regulation 93 – Colorado's Section 303(d) List of Impaired Waters and Monitoring Evaluation List establishes the list of impaired surface waters, including those that require monitoring and evaluation (M&E) and TMDLS. Segment COSPCP13a is composed of the "All tributaries to the Cache La Poudre River,

including all wetlands, from the Munroe Gravity Canal/North Poudre Supply canal diversion to the confluence with the South Platte River.” Table 25 summarizes the listings. This stream segment is on the 303(d) list of water quality impacted streams for E. coli and Selenium, but the E. coli listing does not include the Eaton Draw portion of the segment; therefore, it is not considered in this WQA. As for the Selenium, it will be delisted, and therefore, the Division will not add any requirements to the permit. If it is not delisted, the Division may open the permit to add Selenium requirements.

Table 25: Eaton WWTF - Cache la Poudre River - COSPCP13a - 303(d) and M&E Listings

EATON WWTF COSPCP13A	AFFECTED USE	ANALYTE	CATEGORY/ LIST	PRIORITY
	Recreational Use	E. coli	3b. – M&E list	N/A

4.1.3 WATERSHED BASIN MAP (SHOWING WWTF & DISCHARGE LOCATIONS IN/ON THE SEGMENT)

The EWWTF is located in the Cache la Poudre River Basin, as shown in Figure 14. The COSPCP13a stream segment flows south from Eaton into Greeley and combines with the Cache la Poudre River before converging with the South Platte River further east of Greeley.

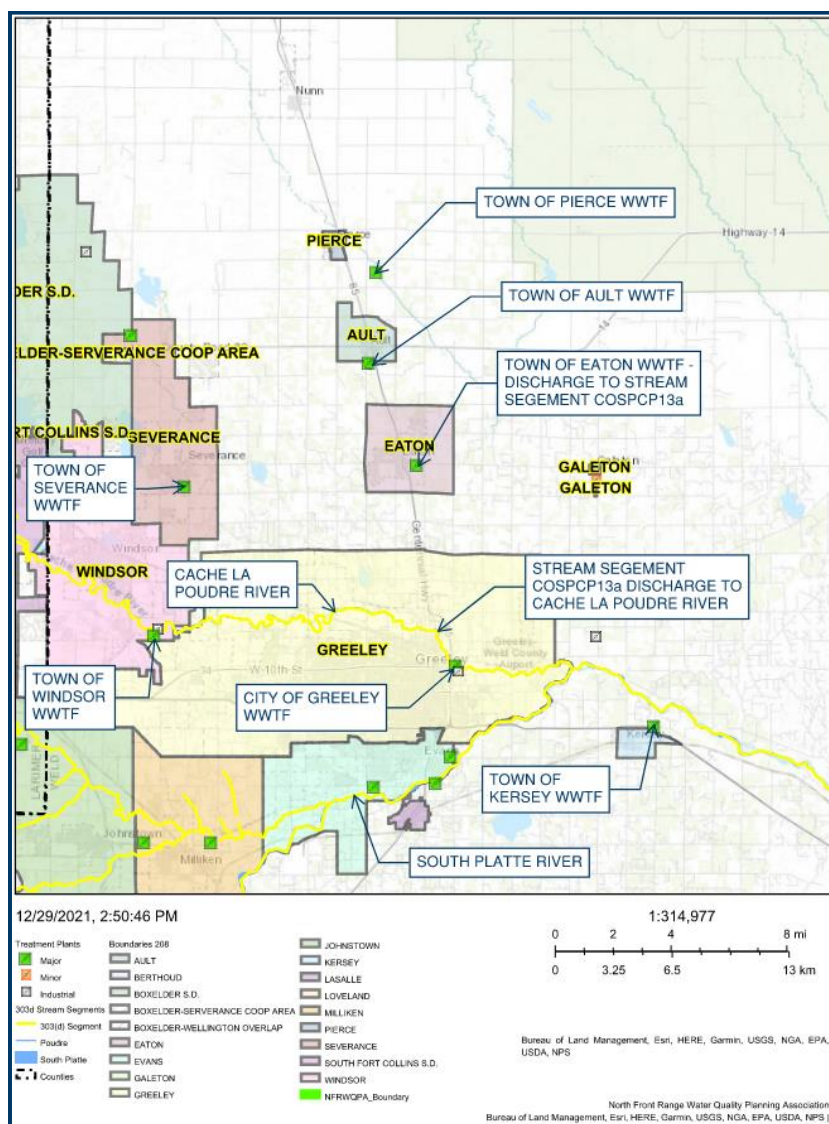


Figure 14: Eaton WWTF – Watershed Basin Map

4.2 TMDLS AND/OR WASTE LOAD ALLOCATIONS OR REDUCTIONS

Currently, the Town of Eaton does not have TMDLS requirements imposed.

4.2.1 LISTED IMPAIRMENT PARAMETERS

As mentioned in Section 4.1.2, the Eaton Draw is not included in the impairment listing for E. coli; therefore, it is not considered in this WQA. However, pending the delisting of Selenium, added requirements for this constituent may be added to the existing discharge permit in the future. As for E. coli, the existing EWWTF discharge permit already includes E. coli limitations.

4.2.2 NATURALLY OCCURRING OR HUMAN ACTIVITY

The E. coli bacteria found in streams is derived from a variety of sources, including animal waste and/or failed septic system leach fields. Therefore, E. coli can be an indicator of fecal contamination and the possible presence of fecal pathogens.

4.3 FUTURE LEVEL OF TREATMENT REQUIRED

4.3.1 DIVISION ISSUED PELS

The division issued PELS for the EWWTF are shown in Table 26.

Table 26: PELS for the Town of Eaton WWTF, Issued on July 16, 2015, Effective September 1, 2015

EFFLUENT PARAMETER	PERMIT VALUE	BASIS
Hydraulic Loading, MGD	0.75	30-Day Average
Organic Loading, ppd BOD ₅	1,876	30-Day Average
BOD ₅ , mg/L	30 45	30-Day Avg 7-Day Avg
TSS, mg/L	30 45	30-Day Avg 7-Day Avg
BOD ₅ , % removal	85	30-Day Average
TSS, % removal	85	30-Day Average
E. coli, #/100mL	126 252	30-Day Avg 7-Day Avg
pH, SU	6.5 - 9.0	Minimum To Maximum
Oil and Grease, mg/L	10	Daily Max.
Total Residual Chlorine, mg/L	0.011 0.019	30-Day Avg 7-Day Avg
TOTAL AMMONIA, MG/L		
January	4.9 24.0	30-Day Avg Daily Max
February	5.2 25.0	
March	4.6 24.0	
April	4.2 22.0	
May	3.7 23.0	
June	2.9 19.0	
July	2.1 15.0	
August	2.5 20.0	
September	2.8 20.0	
October	3.5 23.0	
November	4.1 23.0	
December	4.6 23.0	

4.3.2 DIVISION ISSUED NOA

Currently, the Town does not have division issued NOA requirements.

4.3.3 WATER QUALITY PLANNING TARGETS DISCUSSION

CDPHE has adopted a phased approach to developing nutrient standards. Regulation 85: *Nutrients and Management Control Regulation* establishes technology-based total phosphorus (TP) and total inorganic nitrogen (TIN) permit limits for a new wastewater discharger. Regulation 31: The Basic Standards and Methodologies for Surface Water will govern the implementation of future nutrient control requirements. A summary of the Regulation 85 and 31 effluent parameter limitations for WWTFs, is summarized in Table 27.

Table 27: Regulation 85 TIN and TP Limitations and Future Regulation 31 TN and TP Limitations

PARAMETER	PARAMETER LIMITATIONS	
	ANNUAL MEDIAN ¹	95TH PERCENTILE ²
Reg. 85 - Total Phosphorus	1.0 mg/L	2.5 mg/L
Reg. 85 - Total Inorganic Nitrogen as N ³	15 mg/L	20 mg/L
Reg. 31 – Total Phosphorus	0.17 mg/L	-
Reg. 31 – Total Nitrogen	2.01 mg/L	-

(1) Rolling Annual Median: The median of all samples taken in the most recent 12 calendar months.

(2) The 95th percentile of all samples taken in the most recent 12 calendar months.

(3) Determined as the sum of nitrate as N, nitrite as N, and ammonia as N.

A new permit renewal is expected, which will conduct a routine review of the current permit and implement current regulations, policies and practices. While the new WWTF will be designed to handle more phosphorus and nitrogen removal, it is recommended that the Town participates in the Regulation 85 VIP Program to delay implementation of Regulation 31.

The CDPHE plans to propose revised standards for phosphorus and nitrogen for rivers and streams in 2027. At the same time, the division will develop tools to evaluate the feasibility of treatment for the mentioned parameters. Therefore, participation in the Regulation 85 VIP Program to delay Regulation 31, is highly recommended for the Town.

4.4 POINT AND NON-POINT CONTRIBUTIONS ON THE RIVER BASIN

4.4.1 WWTF POINT SOURCE CONTRIBUTIONS (LBS/YR) (THREE-YEARS)

Information or data regarding total inorganic nitrogen and total phosphorus is not available as the EWWTF is not required to sample these nutrients as part of their discharge permit. Table 28 shows the EWWTF's point source contribution per their DMR data.

Table 28: WWTF Point Source Contributions for Five Years

YEAR	EFFLUENT FLOW	AVERAGE BOD ₅	AVERAGE TSS	EFFLUENT NH ₃
	(MGD)	(LBS/YR)	(LBS/YR)	
2017	0.31	1,680	3,775	189
2018	0.32	2,091	4,722	175
2019	0.33	3,196	6,175	142
2020	0.27	2,610	4,232	208
2021	0.34	3,765	5,857	460

4.4.2 SERVICE AREA NON-POINT SOURCE CONTRIBUTIONS (LBS/YR) (THREE-YEARS)

Since all projected Town growth within the 20-year timeframe of this Plan will occur within the existing 208 Boundary, all existing non-point source contributions described in Section 2.5.2 are anticipated to remain the same for future planning conditions. However, if new monitoring stations are implemented within Eaton WUSA, future non-point source contributions shall be addressed once more information becomes available in the eRAMS CLEAN database.

Table 29: Future Non-Point Sources in the Town of Eaton 208 Boundary

NON-POINT SOURCES	ERAMS DATA
Irrigated Agriculture	6.67 sq. miles
Livestock Operations Excluding CAFOs	No Data Available
Urban Stormwater Excluding Permitted MS4s	No Data Available
Mining Related Activities	0
Possible Saltwater Intrusions	No Data Available
Cumulative Runoff Effects (lbs/yr)	Nitrogen, Phosphorus

Table 30: Future Total Nitrogen and Total Phosphorus Loading for the Town of Eaton from CLEAN Report

YEAR	TOTAL NITROGEN (LBS/YR)			TOTAL PHOSPHORUS (LBS/YR)		
	TOTAL LOAD	WWTPS IN BOUNDARY	NON-POINT SOURCE	TOTAL LOAD	WWTPS IN BOUNDARY	NON-POINT SOURCE
5-Year Projection	125.8	125.8	0	43.6	43.6	0
10-Year Projection	265.7	265.7	0	91.9	91.9	0
15-Year Projection	410.1	410.1	0	141.93	141.93	0
20-Year Projection	557.2	557.2	0	192.9	192.9	0

4.4.3 MS4 PERMITS

Currently, there is no official stormwater management agency encompassing the WUSA. Maps for Weld County designating MS4 permit areas are included in Appendix F. The current and 20-year predicted population of the Town is such that no MS4 permits are required.

5.0 WASTEWATER TREATMENT & COLLECTION SYSTEM IMPROVEMENTS

5.1 DEVELOPMENT AND SCREENING OF TREATMENT AND COLLECTION SYSTEM ALTERNATIVES

5.1.1 FEASIBILITY FOR OPTIMIZING EXISTING FACILITIES – TO MEET LIMITS – TMDLS

Although the Town currently meets limits and operates the plant well below the limits, the below two options for optimization could help reduce operating costs.

- Adding DO probes within the aerated tanks of the Aero-mod system to help with optimizing the amount of DO in the tanks. This could reduce the amount of air going into the basins, therefore, decreasing operational costs. These probes do require constant calibration, so they should be easily accessible.
- The facility could benefit from a maintenance plan on the centrifuge, on the solids process. It is currently not operating at the intended capacity and probably producing higher water content sludge, resulting in greater volumes to be hauled. If operating at a better capacity, it can reduce the sludge hauled, directly reducing the cost of hauling.

5.1.2 REGIONAL CONSOLIDATION AS AN ALTERNATIVE

Given the proximity of Eaton to the Town of Ault and the City of Greeley, there are two potential opportunities for regional consolidation in the near- and long-term. Consolidation with the Town of Ault would be a near-term opportunity since the distance between each Town's WWTP is within a five-mile radius, while consolidation with Greeley is considered a long-term opportunity since there has been speculation of this in the 2020 Greeley Sewer Master plan document. These options are further discussed below. Documentation of consolidation discussion can be found in Appendix B.

5.1.2.1 CONSOLIDATION WITH TOWN OF AULT

While at this point, consolidation with the Town of Ault is not feasible due to high infrastructure costs, discussions are ongoing for potential long-term collaboration, which could expand to the City of Greeley, Town of Pierce and Town of Nunn. It is recommended that the Town continue communication on potential long term collaboration with other Town's along Highway 85 corridor.

5.1.2.2 CONSOLIDATION WITH CITY OF GREELEY

Discussion with the City of Greeley is ongoing for potential long-term collaborations for the City of Greeley to provide wastewater services to Eaton's growth area, as explained in the City of Greeley's Sewer Master Plan 2021. Eaton has provided information to Greeley regarding future development. Greeley and Eaton will evaluate the flow requirements for the area. The anticipated gravity sewer pipe size for this flow is conceptually estimated at 36" and would require a separate detailed evaluation, including routing to the plant.

Based on distance alone, a pipeline to connect to the City of Greeley is roughly \$13M, this does not include any lift stations, easements, and any fees that Greeley would charge. The EWWTF expansion to 1.5 mgd is expected to cost \$3.74M. Due to the high cost and other unknowns of consolidation with Greeley, the Town has determined this is not feasible at the moment but will continue long term conversations with Town's along the Highway 85 corridor.

5.1.3 ALTERNATIVES FOR WASTEWATER RE-USE OPPORTUNITIES (FLOWS & LOAD REDUCTIONS)

There has been no planning for wastewater re-use; however, the Town will soon begin evaluating water rights and the potential to reclaim treated wastewater. Currently, the Town uses CB-T water, which is single-use and cannot be re-used. However, if the Town gets a different source of water, in addition to CB-T, this could become a possibility.

5.1.4 TREATMENT AND COLLECTION SYSTEM ALTERNATIVES (NEW OR UPGRADING)

5.1.4.1 TREATMENT ALTERNATIVES

Alternatives to keep the Town in compliance with regulations and the population growth projections include the following:

- **Alternative 1WW – No Action**
- **Alternative 2WW – Connect to a Nearby Entity (Consolidation)**
- **Alternative 3WW – Expand the Current facilities to 1.5 MGD per Original Design**

5.1.4.2 ALTERNATIVE 1WW – NO ACTION

Alternative 1WW will not be further evaluated because the district's current wastewater treatment cannot accommodate or meet the projected flows and loadings by 2033. The current wastewater treatment facility currently complies with regulations and operates well under its

permit; therefore, no action is required until it reaches 80% in 2027, where design for expansion will be required. All other alternatives will be investigated to determine their overall feasibility and efficiency. This alternative is deemed not practical and will not be further discussed.

5.1.4.3 ALTERNATIVE 2WW – CONNECT TO A NEARBY ENTITY (CONSOLIDATION)

The nearest municipality with a treatment facility is the Town of Ault, located approximately five miles north of the Town's facility. The Town has contacted Grant Ruff, Public Works Director for the Town of Ault, to discuss potential consolidation and/or collaborations of WWTFs. At the moment, both towns agree that short-term collaboration is too costly.

The Town has been contacted by the Town of Galeton, approximately six miles away, to send its wastewater to the Town's facility. However, this alternative was not selected by the Town of Galeton given its extremely high required user fee increase to support the capital cost of infrastructure to convey wastewater to Eaton, as well as the tap fees and ongoing monthly fees.

5.1.4.4 ALTERNATIVE 3WW – EXPAND THE CURRENT FACILITIES TO 1.5 MGD PER ORIGINAL DESIGN

The intent of the Town's existing WWTF design is to be able to double the existing capacity to 1.5 MGD. The facilities at the plant are oversized to allow for this expansion. This expansion will continue helping the Town meet its limits as the population grows. It is currently determined that the design for this expansion shall commence in 2027, with construction beginning around 2032 and a completion date of 2033. The Town currently meets its permit requirements with this facility and likes the ease of operation of the Aero-mod system.

This alternative would support the Town with its projected population growth and maintain compliance with its limits. The Town is also familiar with its operation and would fit the intent of the original design.

5.1.4.5 SOLIDS HANDLING UPGRADES

The Solids Handling Analysis Memorandum (2022) looked at five distinct alternatives for solids management through build-out. The alternatives were:

- SOLIDS 1A – Liquid Sludge Hauling and Disposal
- SOLIDS 1B – In kind replacement of existing centrifuge
- SOLIDS 1C - Purchase or lease of small screw press from McDonald Farms

The Town is currently hauling liquid sludge (Solids 1A) from the EWWTF to McDonalds Farm and has determined that it is not a feasible solution given the high weekly cost associated with this option. Solids 1C has been the recommended near-term alternative as it has the shortest lead time and is similar in cost to alternative 1B.

- Longer term solutions considered were:
 - SOLIDS 2 – New Centrifuge
 - SOLIDS 3 – New Screw Press

Capital cost budget for solids handling expansion is estimated to be \$2.3M for either a centrifuge or a screw press to handle the WWTF influent flow of 1.5 mgd. The Town is proceeding with a temporary screw press project which will help them determine the right technology for the plant expansion.

5.1.4.6 ESTIMATED COSTS FOR TREATMENT ALTERNATIVES

Table 31 shows the estimated capital costs for the above-mentioned alternatives.

Table 31: Cost Estimations for Wastewater Treatment Alternatives

ALTERNATIVES	ESTIMATED CAPITAL COST
Alternative 1WW	\$ --
Alternative 2WW	\$ 16,774,560
Alternative 3WW	\$ 3,739,000
Solids 2 or 3 Handling Expansion	\$ 2,300,000
Condition Assessment/In Kind Replacement Projects (All Phases)*	\$ 887,700

5.1.4.7 COLLECTION SYSTEM ALTERNATIVES

The alternatives evaluated in this section are various ways to support existing and anticipated future development south of Collins Street, particularly for the Brown Farm and South Maplewood developments. These alternatives are as follows:

- **Alternative 1LS – New S. Maplewood Lift Station to Support Brown Farm and S. Maplewood Developments**
- **Alternative 2LS – New Maplewood Lift Station to Support Brown Farm Development and New S. Maplewood Lift Station to Support S. Maplewood Development**

5.1.4.8 ALTERNATIVE 1LS – NEW S. MAPLEWOOD LIFT STATION TO SUPPORT BROWN FARM AND S. MAPLEWOOD DEVELOPMENTS

This alternative proposes that a new lift station near the South Maplewood area will be designed to serve future anticipated flows from the Brown Farm and South Maplewood development. This would eliminate the need for improvements to the existing Maplewood Lift Station. For this to be accomplished, the following improvements must be made:

1. Construction of a new lift station and force main for near South Maplewood development to be designed to accommodate a peak flow of 1,360-gpm. S. Maplewood development accounts for a peak hour of 780 gpm of the total peak flow. The new force main would need to be connected to the existing gravity line in Collins Street downstream of the Maplewood force main connection.
2. Construction of a new 15-inch gravity line from Brown Farm and S. Maplewood development to feed this new South Maplewood Lift Station.
3. Upsize of existing 18-inch gravity line in Collins Street to a minimum 21-inch line (or 24-inch if the slope is below 0.12%) downstream of the new force main connection.

5.1.4.9 ALTERNATIVE 2LS – NEW MAPLEWOOD LIFT STATION TO SUPPORT BROWN FARM AND NEW LIFT STATION FOR S. MAPLEWOOD

This alternative proposes that all existing flows and anticipated future flows strictly from the Brown Farm development will be served by the new Maplewood Lift Station, and a new S. Maplewood Lift Station and force main -would be constructed to only serve the South Maplewood development. For this to be accomplished, the following improvements must be made:

1. Construction of a new lift station and force main for near South Maplewood development to be designed to accommodate a peak flow of 780-gpm. The new force main would need to be connected to the existing gravity line in Collins Street downstream of the Maplewood force main connection.
2. Construction of a new Maplewood Lift Station wet well and pumps to accommodate the Brown Farm peak flow of 580-gpm and existing peak flow of 100 gpm. The new lift station is to be built and commissioned prior to Brown Farm development surpassing 60% completion. This would also require a minimum six-inch upsize of the existing force main.
3. Upsize of existing 18-inch gravity line in Collins Street to a minimum 21-inch line (or 24-inch if the slope is below 0.12%) downstream of the new South Maplewood Lift Station force main connection.
4. Brown Farm can use the existing Maplewood Lift Station until development surpasses 60% of planned growth. The new Maplewood Lift Station would accommodate existing and all of Brown Farm flows. This would be the least disruptive way to build the new lift station while allowing Brown Farm to begin construction of the development.

5.1.4.10 ESTIMATED COSTS FOR LIFT STATION ALTERNATIVES

Table 32 shows the capital costs to construct new lift stations and upsize piping. It should be noted that Alternative 2LS only shows the estimated capital costs for the addition of the Maplewood Lift Station to support Brown Farm and existing peak flows. The S. Maplewood development should determine the placement of the lift station and connecting lines and their associated costs.

Table 32: Cost Estimations for Lift Stations and Sewer Lines Alternatives

ALTERNATIVES	ESTIMATED CAPITAL COST
Alternative 1LS	\$ 4,077,000
Alternative 2LS*	\$ 850,000

*Alternative assumes that only the new Maplewood Lift Station to support Brown Farm will be built, and the S. Maplewood Lift Station and pipelines will be determined and priced out by S. Maplewood Development.

5.2 TREATMENT OR COLLECTION SYSTEM EVALUATION MATRIX

5.2.1 TREATMENT SYSTEM EVALUATIONS MATRIX

Table 33 presents the evaluation criteria utilized to assess and evaluate the Alternatives 1-3 presented within this master plan. On July 21, 2022, the draft Plan and Executive Summary was presented to the Board with no deviation to the Alternative Recommendation as described in Section 1.4.1, herein.

Table 33: Treatment System Alternatives Evaluation Matrix

TREATMENT EVALUATION CRITERIA
Capital Cost
Effluent Quality
Ease of Operation
Ease of Implementation (Constructability)
Land Requirement
Environmental Impact
Feasibility

5.2.2 COLLECTION SYSTEM EVALUATIONS MATRIX

Table 34 the evaluation criteria utilized to assess and evaluate the Alternatives 1-2 presented within this master plan. On July 21, 2022, the draft Plan and Executive Summary was presented to the Board with no deviation to the Alternative Recommendation as described in Section 1.4.2, herein.

Table 34: Lift Station and Pipeline System Alternatives Evaluation Matrix

COLLECTIONS EVALUATION CRITERIA
Capital Cost
Ease of Operation
Ease of Implementation (Constructability)
Land Requirement
Environmental Impact
Feasibility

5.3 TREATMENT OR COLLECTION IMPROVEMENT ALTERNATIVE SELECTION

5.3.1 ALTERNATIVE PLAN SELECTION MATRIX PROCESS

The Town evaluated the alternatives presented within this Master Plan and used the presented evaluation matrix to score the alternatives.

5.3.2 THE SELECTED TREATMENT OR COLLECTION SYSTEM PLAN DESCRIPTION

5.3.2.1 TREATMENT CAPABILITIES – CURRENT & FUTURE

The current facility's capabilities meet the Town's permit requirements. The recommended facility expansion includes the addition of a secondary Aero-mod process. In summary, the recommended expansion project includes:

- Capacity addition to the Secondary Activated Sludge/Aero-mod Process
- Short term screw press purchase to accommodate solids handling post centrifuge failure.
- Capacity addition to solids handling facilities.

5.3.2.2 BIOSOLIDS TREATMENT AND DISPOSAL PROCESS

The proposed improvements and solids handling plan recommend a short term solution to add a readily available screw press and a long term plan to upsize the solids handling processes in the facility.

5.3.2.3 GREEN ELEMENTS TO BE INCORPORATED

The existing footprint of the facility will be used during the expansion. The only addition to the structures is a concrete basin for the new Aero-mod system. Other controls, like DO probes, will be added to improve system efficiency and efficacy.

5.3.3 EMERGENCY STANDBY POWER SYSTEM OF THE ALTERNATIVE PLAN SELECTED

The plan recommends to perform a condition assessment of the existing generator and replacing it if deemed necessary. Emergency response protocols shall be revised as necessary for the expanded WWTF. Current facility improvements include SCADA upgrades to monitor and notify the Town of facility status and emergency situations.

5.3.4 ODOR CONTROL CONSIDERATIONS OF THE ALTERNATIVE PLAN SELECTED

The WQCD requires odor control measures unless a setback distance of 1,000 feet is provided from any habitable structure to be proposed to the WWTF. No habitable structures are anticipated within 1,000 feet of the facility, and odor control is not required at this time.

5.3.5 AIR QUALITY REQUIREMENTS OF THE ALTERNATIVE PLAN SELECTED

The design capacity is less than 10 MGD. No air requirements are applicable to this project.

5.3.6 SITE STORMWATER MANAGEMENT PLAN OF THE ALTERNATIVE PLAN SELECTED

The Town has not been required to have a stormwater management plan for the EWWTF, and there is no record of an existing plan.

5.3.7 SITE LAYOUT MAP & FLOW SCHEMATIC HIGHLIGHTING THE ALTERNATIVE PLAN SELECTED

Figure 15 shows the site layout with the proposed alternative to keep the plant in compliance. Figure 16 shows the process flow diagram for the proposed alternative.



Figure 15: Eaton WWTF - Proposed Layout

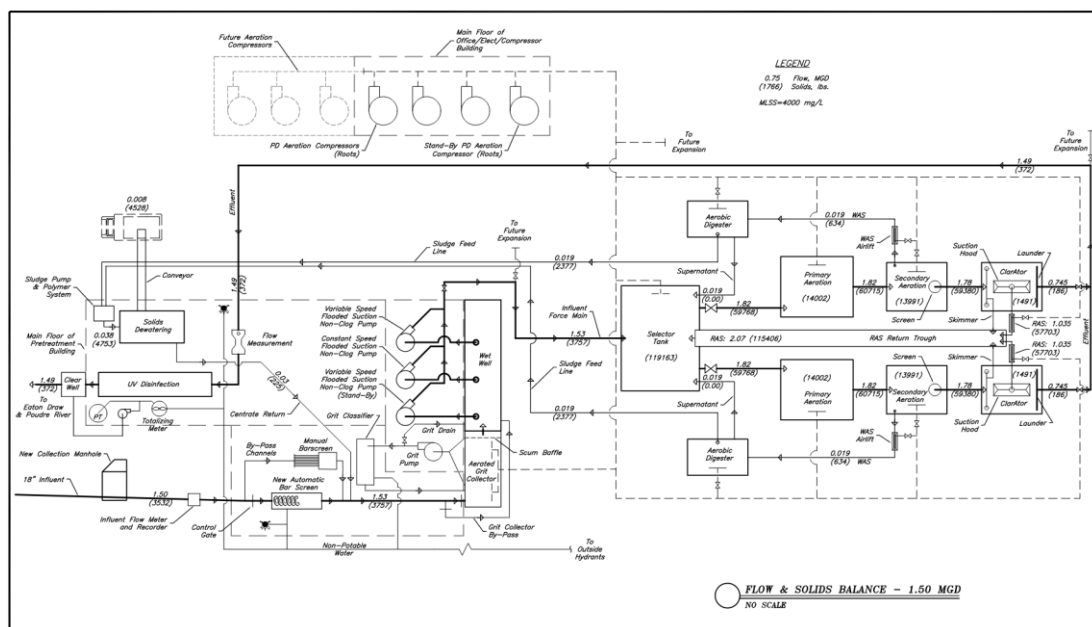


Figure 16: Eaton WWTF - PFD at 1.5 MGD

5.3.8 SITE CHARACTERISTICS OF THE ALTERNATIVE PLAN SELECTED

The EWWTF is currently located on approximately 3.5-acres immediately adjacent to the Eaton Draw near Highway 74 crossing. The Town experiences dry cold winters to hot, dry summers. The overall climate is dry, with an approximate growing season of 138 days. The site geology consists of nineteen feet of silty clay, gravel, sand, and clay underlain by sandstone. Groundwater was encountered at depths of 8.0- and 9.6-feet during site soil boring.

The treatment facility site is located between the 100- and 500- year flood plain. FEMA describes this area as subject to 100- year flooding with average depths of less than one foot, or where contributing drainage area is less than one square mile or areas protected by levees from the base flood. A copy of the FEMA flood insurance map (FIRM) for this facility is located in Exhibit #7, shown earlier. The FEMA map depicts the boundaries of the 100-year flood.

5.3.9 RECORD OF PUBLIC PARTICIPATION IN ALTERNATIVE PLAN SELECTION

The alternatives recommended within this master plan were presented to the Town Board and no deviations from the recommendations were taken. Therefore, the Town will use the recommended alternatives for the 20 year plan.

6.0 SERVICE AREA NON-POINT SOURCE IMPROVEMENTS

The current service area non-point source contributions are not known to be a significant problem, and there are no expected changes within this 20-year planning period; therefore, it will not be addressed as part of this project.

7.0 SYSTEM MANAGEMENT AND FINANCIAL PLAN

7.1 WASTEWATER MANAGEMENT PLAN

7.1.1 MANAGEMENT STRUCTURE OF THE ENTITY OR AGENCY

Table 35: Town of Eaton Management Structure

POSITION	PERSON IN CHARGE
Town Manager	Wesley LaVanchy
Assistant Town Manager	Greg Brinck
Public Work Director	Juan Romero
Plant Operator	Dominic Braccio
Finance Director	Faith Smith

7.1.2 PROPOSED IMPLEMENTATION SCHEDULE

Table 36: Town of Eaton Improvements Implementation Schedule.

IMPROVEMENT DESCRIPTION	IMPLEMENTATION SCHEDULE
Upsize WWTF - Design	2025
Upsize WWTF - Construction	2031
Upsize WWTF - Commissioning	2032
Lift Station - Design	2023
Lift Station - Construction	2024/2025
Lift Station - Commissioning	2025

7.2 ARRANGEMENTS FOR PLAN IMPLEMENTATION

7.2.1 CONTROL OF SITE-OWNERSHIP DOCUMENTATION (DEED OR TITLE)

The Warranty Property Deed from 1968 establishes the transfer of the property from Haythorn Farms to the Town of Eaton. The tract contains 3.46 acres more or less.

Additionally, the Quit Claim Deed made in 1985 between Hydraulics Unlimited Mfg. and Eaton transfers a strip of land 30 feet wide by 300 feet long. See Appendix D.

7.3 FINANCIAL MANAGEMENT PLAN

Financial planning to support the costs and schedules of the recommended capital improvement projects are beyond the scope of this master plan and will not be presented. However, the Town has already made efforts to contract with Northern Engineering to prepare a separate document that will address these financial planning elements. As such, a supplemental addendum to this master plan will be provided once made available. Budget for 2021 and YTD budget as of September 2022 are included in Appendix C.

7.3.1 USER CHARGE RATE STUDIES

It is strongly recommended that a new rate study is to be performed following the acceptance and approval of this Master/Utility Plan. The rate study will utilize this Master/Utility Plan to develop revenues, O&M and CIP project expenditures, and required yearly increases over the 10-year project horizon. A preliminary evaluation was prepared in Table 37 that shows operating revenue, expenses, PIF's, Debt, CIP's until 2040.

Table 37: Town of Eaton 20 Year Horizon Revenue, Expenses, PIF, Debt and CIP.

	2022	2023	2024	2025	2026	2027
Operating Revenue	\$868,090	\$906,286	\$946,163	\$987,794	\$1,031,257	\$1,076,632
Operating Expenses	\$1,025,611	\$1,056,379	\$1,088,071	\$1,120,713	\$1,154,334	\$1,188,964
PIF	\$270,600	\$282,506	\$294,937	\$307,914	\$321,462	\$335,606
Debt	\$315,668	\$315,668	\$315,668	\$315,668	\$315,668	\$315,668
CIP	-	\$256,250	-	-	-	-
Balance	\$1,760,453	\$1,320,948	\$1,158,309	\$1,017,636	\$900,353	\$807,959

	2028	2029	2030	2031	2032	2033
Operating Revenue	\$1,124,004	\$1,173,460	\$1,225,092	\$1,278,996	\$1,335,272	\$1,394,024
Operating Expenses	\$1,224,633	\$1,261,372	\$1,299,213	\$1,338,190	\$1,378,335	\$1,419,685
PIF	\$350,373	\$365,790	\$381,884	\$398,687	\$416,229	\$434,544
Debt	-	-	-	-	-	-
CIP	-	-	-	-	-	-
Balance	\$1,057,703	\$1,335,580	\$1,643,344	\$1,982,837	\$2,356,004	\$2,764,886

	2034	2035	2036	2037	2038	2039	2040
Operating Revenue	\$1,455,361	\$1,519,397	\$1,586,251	\$1,656,046	\$1,728,912	\$1,804,984	\$1,884,403
Operating Expenses	\$1,462,276	\$1,506,144	\$1,551,329	\$1,597,869	\$1,645,805	\$1,695,179	\$1,746,034
PIF	\$453,663	\$473,625	\$494,464	\$516,221	\$538,934	\$562,647	\$587,404
Debt	-	-	-	-	-	-	-
CIP	\$6,933,500	-	-	-	-	\$439,000	-
Balance	(\$3,721,865)	(\$3,234,988)	(\$2,705,602)	(\$2,131,204)	(\$1,509,163)	(\$1,275,710)	(\$ 549,937)

7.3.2 SEWER TAP (PIFS) RATE STUDIES

It is strongly recommended that a new rate study is to be performed following the acceptance and approval of this Master/Utility Plan.

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APPENDIX A / Reports and Special Studies

TOWN SEPTEMBER WATER QUALITY REPORT

**DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**1555 North 17th Avenue
Greeley, CO 80631

www.weldhealth.org

**Public Health**
Prevent. Promote. Protect.**Health Administration
Vital Records**Tele: 970-304-6410
Fax: 970-304-6412**Public Health &
Clinical Services**Tele: 970-304-6420
Fax: 970-304-6416**Environmental Health
Services**Tele: 970-304-6415
Fax: 970-304-6411**Communication,
Education & Planning**Tele: 970-304-6470
Fax: 970-304-6452**Emergency Preparedness
& Response**Tele: 970-304-6420
Fax: 970-304-6469

Our vision: Together with the communities we serve, we are working to make Weld County the healthiest place to live, learn, work, and play.

Customer: TOWN OF EATON
223 FIRST ST
EATON, CO 80615**PWSID: CO0162233**
NPDES: CO0047414
Facility:**Analysis Report****Report Number: ENSG220921-008****Sample Group Comment:****Lab ID: ENS220921-018****Collected: 9/21/2022 12:00 PM****Received: 9/21/2022 1:02 PM****Sample Site: 800 East Collins Street****Purpose:****Sample Point: Effluent Outfall****Sample Point ID:****Facility ID:****PWSID:****Collected By: Customer, Contract****Temp Upon Receipt, C: 8.3-9.1****Sample Comment:**

Result Name	Result	Unit	Flag	MDL	MQL	MCL	Method	Analyst	Date Analyzed	Limit	Comment
Ammonia as N	0.10	mg/L		0.08	0.4		4500NH3BDE	CKA	9/23/2022 8:00 AM		
Total PO4 as Phosphorus	4.38	mg/L		0.02	0.02		Hach 8190	CKA	9/21/2022 3:01 PM		
<i>Total Phosphorus is expressed as Total Ortho-Phosphate as Phosphorus(P)</i>											
Total Inorganic Nitrogen	6.65	mg/L					Calculated	CKA	9/23/2022 3:45 PM		
<i>TIN=(Ammonia as N)+(Nitrate as N)+(Nitrite as N)</i>											
TKN	1.11	mg/L		0.11	0.57		SM 4500-Norg B	CKA	9/23/2022 8:00 AM		
Total Nitrogen	7.66	mg/L					Calculated	CKA	9/23/2022 3:45 PM		
<i>TN=(TKN)+(Nitrate as N)+ (Nitrite as N)</i>											
Total Organic Nitrogen	1.01	mg/L					Calculated	CKA	9/23/2022 3:46 PM		
<i>TON=(TKN)-(Ammonia as N)</i>											
Nitrate as N	6.43	mg/L		0.02	0.40	10	EPA 300.0	CKA	9/21/2022 4:14 PM		
Free Chlorine by Customer on COC	0.00	mg/L					EPA 300.0	CKA	9/21/2022 4:14 PM		
Nitrite as N	0.12	mg/L	<MQL	0.01	0.40	1	EPA 300.0	CKA	9/21/2022 4:14 PM		

Laboratory
Manager:**APPROVED**

Department of Public Health and Environment

'Approved' means that data has met laboratory Quality Assurance/Quality Control criteria.
Neither Weld County nor its affiliates shall be responsible for the use of this information.

Report Key: MDL=Minimum Detection Limit

MQL=Minimum Quantitation Limit

MCL=Maximum Contamination Level

MONTHLY LOG - TOWN OF EATON W.W.T.P.										PERMIT #: CO 0047414		PERMIT DATA		MONTH: September		YEAR: 2022			
RAW INFLUENT										FINAL TREATED EFFLUENT									
D	T	Total	Susp.	5-day	5-day	INF	Total	Susp.	pH	5-day	E-Coli	Flow	Oil & Grease	BOD	TSS	NH3	Appear	DO	
A	e	Susp.	Solids	BOD	BOD	Flow	Solids	Solids		mg/l	#/100ml	EFF	Visual	%			Visual	mg/l	
Y	pH	mg/l	mg/l	lb/day	MGD	MGD	mg/l	mg/l										(GRB)	
S	p	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l										(GRB)	
1						0.327			6.9			0.333	Ø				CIR	5.3	
2						0.323			6.9			0.341	Ø				CIR	5.2	
3						0.323			7.0			0.341	Ø				CIR	5.4	
4						0.323			7.0			0.341	Ø				CIR	5.4	
5						0.323			6.9			0.341	Ø				CIR	5.5	
6						0.327			6.9			0.336	Ø				CIR	5.2	
7	7.2	68	168	270	754	0.335	5		6.9	1	35	0.315	Ø	99	98	0.1	CIR	5.1	
8						0.316			6.8			0.336	Ø				CIR	5.2	
9						0.353			6.8			0.365	Ø				CIR	5.3	
10						0.353			6.9			0.365	Ø				CIR	5.5	
11						0.353			6.9			0.365	Ø				CIR	5.5	
12						0.333			6.9			0.330	Ø				CIR	3.3	
13						0.327			6.9			0.328	Ø				CIR	3.2	
14						0.326			6.9			0.315	Ø				CIR	3.7	
15						0.339			6.9			0.352	Ø				CIR	4.5	
16						0.338			6.9			0.341	Ø				CIR	5.2	
17						0.338			6.9			0.341	Ø				CIR	5.4	
18						0.338			7.0			0.341	Ø				CIR	5.4	
19						0.338			6.9			0.349	Ø				CIR	5.2	
20						0.312			6.9			0.303	Ø				CIR	5.3	
21	7.4	67	136	240	820	0.339	2		6.9	1	30	0.340	Ø	99	98	0.1	CIR	5.0	
22						0.318			6.9			0.317	Ø				CIR	5.4	
23						0.330			6.8			0.342	Ø				CIR	5.4	
24						0.330			6.9			0.342	Ø				CIR	5.3	
25						0.330			6.8			0.342	Ø				CIR	5.4	
26						0.358			6.9			0.322	Ø				CIR	5.2	
27						0.318			6.9			0.315	Ø				CIR	5.1	
28						0.330			6.9			0.321	Ø				CIR	5.0	
29						0.313			6.9			0.310	Ø				CIR	4.3	
30						0.340			6.8			0.337	Ø				CIR	5.0	
31																			
MN						0.313			6.8					REG 85 Result	0.1				
MX			168	290	820	0.358	7		7.0	1	35	0.365							
AV			152	280	787	0.331	4			1	33	0.335		99	98	0.1			
										COMMENT: SIGNATURE: DATE:									

APPENDIX B / Reports and Special Studies

CONSOLIDATION DISCUSSION

Town of Eaton
November 09, 2022

On June 23, 2021, Northern Engineering Services met with Grant Ruff, Public Works Director for the Town of Ault, to discuss the potential for consolidation of wastewater treatment facilities within a five-mile radius. Grant highlighted that this had been brought to his attention several times and he worked with nearby towns to discuss this possibility; however, with the presentation of the cost to pipe and upgrade the consolidated treatment facilities it proved too costly for the Town.

On July 26, 2021, Northern Engineering Services met with Wesley LaVanchy and Juan Romero to discuss the potential for consolidation of wastewater treatment facilities within a five-mile radius. Both Wesley and Juan brought up the same point as the Town of Ault did. It would be too costly for the Town, and consolidation has been discussed several times throughout the years.

In conclusion, Eaton and the towns within a five-mile radius of Eaton have had several discussions around the topic of consolidation but have all concluded it is currently too costly for each Town. It was agreed to be discussed on an as needed basis in the upcoming planning years.

APPENDIX C / Reports and Special Studies

TOWN FINANCIALS

TOWN OF EATON
SEWER FUND-2022 BUDGET

	2021 BUDGET	2021 ACTUAL	2022 BUDGET	2022 ESTIMATE
REVENUES:				
SEWER SERVICE CHARGES	\$809,750	\$829,785	\$831,504	\$831,504
SEWER TAP FEES	150,000	80,959	90,000	9,000
INTEREST & MISC	300	74	300	647
TOTAL CURRENT REVENUES	\$960,050	\$910,818	\$921,804	\$841,151
 JANUARY 1 BALANCE	 1,925,636	 1,925,636	 1,760,453	 1,760,453
TOTAL AVAILABLE FUNDS	\$2,885,686	\$2,836,454	\$2,682,257	\$2,601,604

EXPENDITURES:				
PLANT OPERATORS	\$85,562	\$81,526	\$166,000	\$138,240
UTILITY BILLING CLERK			\$10,800	\$8,100
EMPLOYEE BENEFITS	22,246	13,724	43,160	38,048
FUEL				3,000
IT				5,245
OFFICE SUPPLIES	1,680	2,171	4,000	4,000
OPERATING SUPPLIES	51,000	32,388	52,530	40,000
TRAINING				
NPDES PERMIT FEES	4,850	4,630	4,996	4,630
INSURANCE	35,000	29,478	37,800	30,000
PROFESSIONAL SERVICES	34,650	47,498	36,000	100,000
ENGINEERING	1,200	67,839	10,000	59,000
UNIFORMS	250	170	1,000	1,000
UTILITIES	88,200	81,346	92,610	85,000
REPAIRS & MAINTENANCE	103,000	119,835	106,090	101,000
SCADA SYSTEM	5,000	93,663	7,250	50,000
EQUIPMENT PURCHASES	6,000	8,861	6,000	9,000
CAPITAL PROJECTS	250,500	154,474	409,875	150,225
TRANSFERS OUT - ADMIN	26,000	26,000	37,500	37,500
LOAN EXPENSE (P&I)	312,398	312,398	315,668	315,668
TOTAL EXPENDITURES	\$1,027,536	\$1,076,001	\$1,341,279	\$1,179,656

ENDING BALANCE	\$1,858,150	\$1,760,453	\$1,340,979	\$1,421,948
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TOWN OF EATON

SEWER FUND-2022 BUDGET

ACCOUNT TITLE	PERIOD	YEAR TO DATE	BUDGET	BUDGET VARIANCE	PERCENT USED
REVENUE					
Sewer Service Fees	72,522.30	642,147.33	831,504.00	189,356.67	77.23%
Sewer Tap Fees	-	9,000.00	90,000.00	81,000.00	10.00%
Miscellaneous Revenue	-	-	-	-	
Interest Revenue	687.87	1,371.80	300.00	(1,071.80)	457.27%
TOTAL REVENUE	73,210.17	652,519.13	921,804.00	269,284.87	70.79%
EXPENDITURES					
Fuel	637.75	1,953.82	-	(1,953.82)	
IT	853.51	3,100.56	-	(3,100.56)	
SALARIES	14,488.40	103,988.12	176,800.00	72,811.88	59%
Employee Benefits	1,274.47	2,817.14	43,160.00	40,342.86	7%
FICA/ME Tax ER Paid	-	4,279.96	-	(4,279.96)	
Health/Vision Insurance ER Pd	-	3,611.78	-	(3,611.78)	
Employee Supplemental ER Pd	-	-	-	-	
Pension ER Pd	-	2,552.92	-	(2,552.92)	
Employment Taxes ER Pd	-	134.41	-	(134.41)	
Office Supplies	48.08	3,500.11	4,000.00	499.89	88%
Operating Supplies	903.56	17,950.69	52,530.00	34,579.31	34%
NPDES Permit Fees	-	4,630.00	4,996.00	366.00	93%
Training	950.00	950.00	-	(950.00)	
Insurance	-	12,573.15	37,800.00	25,226.85	33%
Professional Services	58,303.12	212,109.00	36,000.00	(176,109.00)	589%
Engineering Services	7,744.50	36,554.50	10,000.00	(26,554.50)	366%
Uniforms	249.98	825.86	1,000.00	174.14	83%
Utilities	86.06	40,253.33	92,610.00	52,356.67	43%
Repairs & Maintenance	12,888.11	33,148.21	106,090.00	72,941.79	31%
Depreciation Expense	-	-	-	-	

Bond Premium					
Amortization	-	-	-	-	
Lease Payments	-	-	-	-	
Interest Expense	-	-	-	-	
Loan Interest					
Expense	-	315,667.99	315,668.00	0.01	100%
Scada System	-	41,477.21	7,250.00	(34,227.21)	572%
Equipment					
Acquisition	-	1,099.82	6,000.00	4,900.18	18%
Capital Projects	1,250.00	126,475.04	409,875.00	283,399.96	31%
Transfers Out -					
Administration	-	-	37,500.00	37,500.00	0%
TOTAL					
EXPENDITURES	99,677.54	969,653.62	1,341,279.00	371,625.38	72%
NET SURPLUS					
(DEFICIT)	(26,467.37)	(317,134.49)	(419,475.00)		

TOWN FEE SCHEDULE

(All fees are subject to change.)

<u>ANIMAL LICENSES</u>		Fees
Dog Fertile - 1 year	annual	\$10.00
Dog Neutered/Spayed - 1 year	annual	\$5.00
Chicken Permit	one time fee	\$10.00
<u>AUCTION LICENSE</u>		Fees
Regular auction room/business license	1 year	\$50.00
General license	6 months	\$30.00
One day or more	Per day	\$25.00
<u>BULK WATER</u>		Fees
Effective: 01 01 2022		
Water Station	Billed monthly per 1,000 gallons	\$13.97
Hydrant Meter Rental	per 1,000 gallons per day	\$13.97 \$10.00
<u>BUSINESS LICENSE</u>		Fees
New Application	yearly	\$20.00
Renewal Application	yearly	\$20.00
<u>FACILITY RENTALS</u>		Fee
Park Pavilions ~ City Park & Town Square	Deposit Fees	
Without Electricity	\$0.00	No charge
With Electricity	\$0.00	\$10.00
<u>NOTARY SERVICE FEE</u>		Fee
Notarize documents	per document	\$5.00
<u>NSF FEE</u>		Fee
Non sufficient funds	per occurrence	\$25.00
<u>REPRODUCTIONS OF BUSINESS ITEMS</u>		Fees
Copies (8.5x11)	page	\$0.25
Voice Recorded Tapes	per tape	\$10.00
Verbatim Transcripts	per page	\$15.00
<u>REPORTS AND PUBLICATIONS</u>		Fees
Budget	each	\$10.00
Audit	each	\$10.00
Zoning Ordinance	each	\$10.00
Construction Standards	each	\$10.00
Subdivision Regulations	each	\$5.00
Comprehensive Plan	each	\$10.00
City Maps	per map	\$0.50
<u>STREET VENDOR LICENSE</u>		Fee
License	yearly	\$25.00

ANNEXATION, SUBDIVISION/PUD & ZONING FEE

Ordinance No. 600 & 601

BUILDING DEPARTMENT FEES

Valuations will be based on provided labor and material costs or the most current ICC BVD Data table to get an accurate value. Use tax will be calculated based on 50% of the calculated cost or provided material cost whichever is greater

BUILDING PERMIT FEES**PERMIT FEE****PLAN REVIEW FEE**

RESIDENTIAL CONSTRUCTION	APPENDIX L 2018 IRC	65% OF PERMIT FEE
NON-RESIDENTIAL CONSTRUCTION	APPENDIX L 2018 IRC	65% OF PERMIT FEE
MANUFACTURE HOMES (IRC)	APPENDIX L 2018 IRC	65% OF PERMIT FEE
RESIDENTIAL - MOVED BUILDINGS	APPENDIX L 2018 IRC	65% OF PERMIT FEE
SIGN	APPENDIX L 2018 IRC	65% OF PERMIT FEE
RESIDENTIAL - REPEAT MASTER PLAN REVIEW FEE		\$200.00
RESIDENTIAL - MASTER PLAN REVIEW ONLY PERMIT	APPENDIX L 2018 IRC	65% OF PERMIT FEE

OVER THE COUNTER ONE-STOP FEES ~ RESIDENTIAL**Fees**

AIR CONDITIONING	\$125.00
FURNACE REPLACEMENT	\$125.00
DEMOLITION	\$125.00
GAS METER/GAS TEST	\$125.00
HOT WATER HEATER	\$125.00
REROOF	\$125.00

OTHER/MISC FEES**Fees**

INVESTIGATION/VIOLATION FEE	2 X PERMIT FEE
PRE-MOVE INSPECTION FEE	\$300.00
RE-INSPECTION FEE (PER INSPECTION)	\$85.00
WATER AND SEWER INSPECTION	\$100.00

ELECTRICAL PERMIT FEES**Fees****RESIDENTIAL CREATING NEW LIVING SPACE - BASED ON SQUARE FOOTAGE**

0 TO 1000 SF	\$200.00
1001 TO 1500 SF	\$250.00
1501 TO 2000 SF	\$300.00
OVER 2000 SF	\$300.00 + \$15.00 FOR EACH ADDITIONAL 100 SF

ALL OTHER - BASED ON VALUATION**Fees**

\$1.00 TO \$2,000.00	\$100.00
OVER \$2,000.00	\$200.00 + \$10.00 FOR EACH ADDITIONAL \$1,000.00

ALL OTHER - BASED ON VALUATION**Fees**

RE-INSPECTION FEE	\$85.00
TEMPORARY CONSTRUCTION METER	\$85.00
PERMANENT METER INSPECTION	\$85.00
RESIDENTIAL SOLAR INSTALLATION	\$500.00
COMMERCIAL SOLAR INSTALLATION <2MW	\$1,000.00
COMMERCIAL SOLAR INSTALLATION > 2MW	\$1,000.00 + NON-RESIDENTIAL ELECTRICAL FEE + 65% PLAN REVIEW FEE

BUILDING DEPARTMENT FEES CONTINUED**ELECTRICAL PLAN REVIEW**

		Fees
RESIDENTIAL	OF ELECTRICAL PERMIT FEE	65%
NON-RESIDENTIAL	OF ELECTRICAL PERMIT FEE	65%

ELECTRICAL PERMIT FEES WILL BE ADDED TO ALL PERMITS WHERE ELECTRICAL WORK IS INVOLVED.

ADMINISTRATION FEES**Res. No. 2022-13**

		Fees
CONTRACTOR FEE	PER YEAR	\$50.00
PLUMBERS AND ELECTRICIANS ARE EXEMPT FROM CONTRACTOR FEE		
OVER THE COUNTER ONE-STOP ADMIN FEE		\$25.00
RESIDENTIAL ADMIN FEE		\$50.00
NON-RESIDENTIAL ADMIN FEE		\$50.00
CREDIT/DEBIT CARD PERMIT PAYMENT	OF PERMIT TOTAL	3%
ACH CHECK PAYMENT	PER TRANSACTION	\$1.25

Sprinkler System Permit

	Fee
Potable Water Only	\$15.00

IMPACT FEES*

*Legislatively adopted but set forth here on this schedule for easy reference.

Town Impact Fees ~ Residential

	Fees
Community Park	\$254.00
Neighborhood Park	\$575.00
Police	\$131.00
Municipal & Equipment	\$740.00

School Impact Fees ~ Residential

	Fees
Single family detached home	\$2,253.00
Single Family Attached residential unit	\$1,149.00
Multifamily residential - per unit	\$612.00

IMPACT FEES*

*Legislatively adopted but set forth here on this schedule for easy reference.

Police Impact Fees ~ Commercial

	Fees
<i>Development Type</i>	Fee/1,000 sq ft
Com/Shop Ctr 75,000 SF or less	\$295.00
Com/Shop Ctr 75,000 - 150,000 SF	\$230.00
Com/Shop Ctr over 150,000 SF	\$180.00
Office 17,500 SF or less	\$147.00
Office 17,501 - 75,000 SF	\$119.00
Office over 75,000 SF	\$101.00
Industrial Park	\$43.00
Warehousing	\$25.00
Manufacturing	\$32.00

BUILDING DEPARTMENT FEES CONTINUED**WATER TAPS**

Size	No. of Units	Fees
3/4"	2	\$10,200.00
1"	4	\$17,300.00
1.5"	10	\$33,500.00
2"	25	\$53,800.00
3"	45	\$111,500.00
4"	90	\$172,400.00

WATER TAPS**Res. No. 2022-12****Effective: 8/1/2022**

Size	No. of Units	Fees
3/4"	2	\$13,494.00
1"	4	\$17,300.00
1.5"	10	\$33,500.00
2"	25	\$53,800.00
3"	45	\$111,500.00
4"	90	\$172,400.00

SEWER TAPS

Size based on Water Tap Size	Fees
3/4"	\$3,000.00
1"	\$5,095.00
1.5"	\$9,892.00
2"	\$15,886.00
3"	\$32,972.00
4"	\$50,957.00

UTILITY RATES FOR WATER, SEWER & TRASH

Water Service

<i>Potable Water Rates</i>	Billed monthly	Fees
First 4,000 gallons		\$44.65
Over 4,000 gallons	per 1,000 gallons	\$7.26
Delinquent Disconnect / Reconnect	Each occurrence	\$25.00/\$25.00
Transfer of Ownership (From Owner to buyer, add to final bill.)		\$50.00
Tenant Move In (Add fee to billing account.)		\$25.00

Non-Potable Water Rates

<i>Residential Lot Size</i>		Fees
0-4,000 sq ft		\$16.70
4,001 - 8,000 sq ft		\$18.70
8,001 - 12,000 sq ft		\$20.70
12,001 and greater		\$22.70
Large commercial or industrial areas and private parks (not owned by Eaton) and large greenbelt areas, in subdivisions	per 100 sq ft of landscaped area	\$0.21

Sewer Service (No fee increase in 2022.)

<i>Sewer Rate ~ Residential</i>		Fees
		\$26.50
<i>Sewer Rate ~ Commercial</i>		
Class I ~ Users that do not fit into the other classes	per 1,000 gallons	14.00 + 3.70
Class II ~ Includes all schools	per student	\$1.32
Class III ~ Includes all laundromats	per washer machine	\$21.50
Class IV ~ Users who do not receive metered water	per tap	\$26.50
Industrial Class	negotiate with Town Administrator	Based on discharge.

Residential Sanitation Service

Weekly Trash & Bi-Monthly Recycling	Monthly bill	Fee
1 Trash & 1 Recycle Tote		\$23.48

CEMETERY FEES	Effective: 06 16 2022	Fees
Adult/Child/Baby Space/Plot/for Full Burial and/or Cremains		\$1,400.00
Baby Section Space/Plot/for Full Burial and/or Cremains		\$300.00
Open & Closing ~ Adult ~ Full Burial ~ Regular Business Day		\$1,000.00
Open & Closing ~ Adult ~ Full Burial ~ Saturday AM		\$1,300.00
Open & Closing ~ Baby ~ Full Burial ~ Regular Business Day		\$250.00
Open & Closing ~ Baby ~ Full Burial ~ Saturday AM		\$450.00
Open & Closing ~ Cremains ~ Regular Business Day		\$450.00
Open & Closing ~ Cremains ~Saturday AM		\$600.00
Cremational Garden*		\$1,600.00
Includes space(s), stone engraving & 1 opening & closing.		
Additional Fee for Saturday AM		\$100.00
Columbarium ~ Single		\$1,300.00
Columbarium ~ Double		\$1,700.00
Includes space(s), engraving & opening & closing.		
Additional Fee for-Saturday AM		\$100.00
Disinterment - Adult ~ Full Burial*		\$2,500.00
Disinterment - Infant ~ Full Burial*		\$600.00
Disinterment - Cremains*		\$700.00
Disinterment - Cremational Garden*		\$700.00
Disinterment - Columbarium*		\$100.00
* Disinterment during regular business days only.		
Delayed Arrival at Cemetery		\$200.00
Deed/Interment Agreement Transfer Service Fee		\$60.00

LIQUOR LICENSE FEES**See CO Department of Revenue Fee Schedule for all fees & updates**

	Local Fees	State Fees
Application Fee	\$1,000.00	\$1,550.00
Application Fee with Concurrent Review	\$1,000.00	\$1,650.00
Application Fee Transfer of Ownership	\$750.00	\$1,550.00
Annual Renewal Application Fee	\$100.00	\$0.00
Retail License Fees	Local Fees	State Fees
Beer & Wine	\$48.75	\$351.25
Brew Pub	\$75.00	\$750.00
Distillery Pub	\$75.00	\$750.00
Hotel & Restaurant	\$75.00	\$500.00
Retail Liquor Store	\$22.50	\$227.50
Tavern	\$75.00	\$500.00
Fermented Malt Beverage On Premises	\$3.75	\$96.25
Fermented Malt Beverage Off Premises	\$3.75	\$96.25
Fermented Malt Beverage On/Off Premises	\$3.75	\$96.25
Local & State Issued Permit Fees		
Special Event Permit	Local Fees	State Fees
Malt, Vinous & Spirituous Liquor	\$100.00	\$25.00/day
Fermented Malt Beverage (3.2%)	\$100.00	\$10.00/day

POLICE SERVICE FEES

		Fees
<i>Photographic Reproductions ~ Accidents</i>		
Printed ~ 4 photos per page	per page	\$2.00
Sex Offender Registration		\$20.00
Vin Verifications		\$10.00
Police reports and records ~ First Page		\$2.00
Police reports and records ~ Each Additional Page		\$0.25
NSF Fee	per occurrence	\$25.00

Court Costs and Surcharges**Effective: 11 18 2021**

In addition to fines for any violation, the Court may assess the following costs and fees as applicable:

		Fees
Court Costs		\$25.00
Traffic Calming Surcharge on fines under \$50.00		\$15.00
Traffic Calming Surcharge on fines \$50.00 and above		\$30.00
Show Cause Order		\$25.00
Deferred Sentence/Prosecution		\$50.00
Payment plan/SOE		\$25.00
Seal records request		\$65.00
Jury		\$25.00
Warrant		\$50.00
OJW		\$30.00
Default		\$25.00
Warning letter (FTA/FTC)		\$25.00
Trial Transcript	minimum deposit	\$200.00
Copies of recordings	per CD or audio file	\$35.00
Certified copy of any Municipal Court Criminal Justice Record		\$15.00
Municipal Court Criminal Justice Records Act requests	includes search, retrieval and copy/download of up to 10 pages of records	\$10.00
	per page thereafter	\$0.10
Any search and retrieval requiring redaction or more than 15 minutes	per hour, deposit for estimated amount paid prior to search	\$45.00

Fee Schedule for Criminal Justice Records Retrieval**Effective: 04 21 2022**

Fees are non-refundable.

Victims of crimes have a right to receive the initial police report(s) at no charge but are subject to fees for any subsequent police reports resulting from further investigation after the initial report(s). This does not include evidence, body worn camera footage, and 911 recordings. All parties are subject to fees for these items.

Fees are due before the reports may be released.

Acceptable methods of payment: Cash, Money Order, Check or Credit/Debit Card.

All records requests must be accompanied by a signed Application for Release of Criminal Records form.

Requests may be submitted in person, by mail to Eaton Police Department, 224 1st St., Eaton, CO 80615, or via email at epdreportsrequest@eatonco.org

Item	Cost	Information
Search & Retrieval Fee	\$4.00	
Redaction/Extended Research/Retrieval	\$11.25 per 15 minutes/\$45.00 per hour	Cumulative staff time to retrieve, redact, reproduce, and mail, email or fax records exceeding 10 minutes
Copies	50¢	Black and white printed copy (per standard 8 ½ " x 11" page)
Clearance Letters/Record Checks	\$10.00 in person \$10.50 by mail	1" clearance letter free Fee after is per letter
Notary or Authentication Fee	\$5.00	Per notarized document or authentication
Document Viewing	\$18.00 per 15 minutes/\$72.00 per hour	Per 15 minutes. Cumulative staff time
Fax Fee	30¢ per page	Fee includes any long distance fees incurred
Evidence Fees		Cost
Evidence Viewing	\$40.00 per hour/½ hour minimum	
Copies	50¢ per page	
Digital Evidence (Non BWC)	\$15.00 per disc	
Body Worn Camera Footage Fees		Cost
Initial Research Fee	\$20.00 per hour, one hour minimum	
Redaction Fee	\$45.00 per hour, per recording (not per incident)	
8GB Thumb Drive	\$8.00 per thumb drive (only if NO access to email)	
Mailing Fee	Actual Cost	

Updated for November 18, 2021 & January 1, 2022 & February 17, 2022 & April 21, 2022 & June 16, 2022

APPENDIX D

WARRANTY DEED/ QUIT CLAIM DEED

1508

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595

WARRANTY DEED - CORPORATION

Recorded at 315 o'clock P.M. JUN 10 1968

Rec. No. 1517356 Ann Spomer, Recorder

HAYTHORN FARMS, INC., a corporation duly organized and existing under and by virtue of the laws of the State of Colorado, for and in consideration of other consideration and Ten (\$10.00) Dollars in hand paid, does hereby sell and convey to TOWN OF EATON, WELD COUNTY, COLORADO of the County of Weld and State of Colorado, the following real property situate in the County of Weld and State of Colorado, to-wit:

A tract of land located in the Northeast Quarter (NE 1/4) of Section 6, Township 6 North, Range 65 West of the Sixth Principal Meridian, Weld County, Colorado, being more particularly described as follows:

Beginning at the Northwest Corner of the existing Town of Eaton Sewage Disposal Plant property as platted and recorded in the Records of Weld County, Colorado; thence Southerly along the West boundary of said Disposal Plant property, 450.00 feet; thence Easterly along the South boundary of said Disposal Plant property, 100.00 feet to the Southeast Corner of said Disposal Plant boundary; thence Southerly on an extension of the East boundary of said Disposal Plant property, 62.0 feet; thence South 27° 20' West, 184.7 feet, more or less; thence Westerly parallel to the South boundary of said Disposal Plant property, 215.00 feet; thence Northerly parallel to the West boundary of said Disposal Plant property, 676.0 feet; thence Easterly parallel to the North line of said Northeast Quarter (NE 1/4) 200.00 feet to the true point of beginning.

The above described tract of land contains 3.46 acres, more or less.

with all its appurtenances, and warrants the title to the same, subject to the 1968 taxes due and payable in 1969 which have been pro-rated, easements and rights of way of record, and except for all water stock and water rights which would otherwise be considered a part of or appurtenant to the above described real property which ownership of said water stock and water rights is specifically reserved unto Haythorn Farms, Inc.

IN WITNESS WHEREOF said corporation has caused its corporate name to be hereunto subscribed by its President, and its corporate seal to be hereunto affixed, and attested by its Secretary this 25th day of May A.D. 1968.



HAYTHORN FARMS, INC.

Name

Secretary

President

STATE OF COLORADO } ss.

The foregoing instrument was acknowledged before me this 25th day of May A.D. 1968, by John Haythorn as

President, and John R. Haythorn as Secretary of Haythorn Farms, Inc. a corporation.



I witness my hand and official seal.

Commission Expires: January 11, 1971

Notary Public

State Documentary Fee Date JUN 10 1968 \$ 6.00

89-10-68 00106 61-9

1508

QUIT CLAIM DEED

RECORDER'S STAMP

THIS DEED, Made this 20 day of March, 19 85,
between
Hydraulics Unlimited Mfg. Co., a Colorado
Corporation
of the Weld County of Weld and State of
Colorado, grantor(s); and
Town of Eaton, a Colorado Municipality

whose legal address is P. O. Box 946, Eaton, CO 80615-0946

of the Weld County of Weld and State of Colorado, grantee(s),

WITNESSETH, That the grantor(s), for and in consideration of the sum of
Other Good and Valuable Considerations and One and no/100--- DOLLARS
the receipt and sufficiency of which is hereby acknowledged, has remised, released, sold, conveyed and QUIT CLAIMED, and by
these presents does remise, release, sell, convey and QUIT CLAIM unto the grantee(s), its heirs, successors and assigns,
forever, all the right, title, interest, claim and demand which the grantor(s) has in and to the real property, together with
improvements, if any, situate, lying and being in the Weld County of Weld and State of
Colorado, described as follows:

A parcel of land located in the Northeast Quarter (NE1/4) of Section
6, Township 6 North, Range 65 West of the 6th P.M., Town of Eaton,
Weld County, Colorado, consisting of the South Half of the right-of-
way for East Collins Street (formerly Weld County Road 74), being
more particularly described as follows:

A strip of land, 30 feet wide by 300 feet long, lying North of and
adjacent to the Town of Eaton Wastewater Treatment Plant site as
described in Book 595 Reception No. 1517356 and Book 1021 Page 86
of the Weld County Public Records.

also known by street and number as:

TO HAVE AND TO HOLD the same, together with all and singular the appurtenances and privileges thereunto belonging or in
anywise thereunto appertaining, and all the estate, right, title, interest and claim whatsoever, of the grantor(s), either in law or equity, to
the only proper use, benefit and behoof of the grantee(s), its heirs and assigns forever.

IN WITNESS WHEREOF, The grantor(s) has executed this deed on the date set forth above.

Attest: [Signature] Assistant Secretary
By: [Signature] President
Hydraulics Unlimited Mfg. Co., a
Colorado Corporation

STATE OF COLORADO,

County of Weld

ss.

The foregoing instrument was acknowledged before me in the
State of Colorado, this 20 day of March, 1985,
by [Signature], as President and [Signature], Jr. Assistant Secretary of
Hydraulics Unlimited Mfg. Co., a Colorado Corporation.
My commission expires March 20, 1985. Witness my hand and official seal.

Commission Expires March 20, 1985

[Signature]
Notary Public
Eaton, Co.
Address

*If in Denver, insert "City and."

APPENDIX E

DISCHARGE PERMIT



**Colorado Department
of Public Health
and Environment**

**AUTHORIZATION TO DISCHARGE UNDER THE
COLORADO DISCHARGE PERMIT SYSTEM
PERMIT NUMBER CO0047414**

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended), for both discharges to surface and ground waters, and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), for discharges to surface waters only, the

Town of Eaton

is authorized to discharge from the town's wastewater treatment plant located in the NW 1/4, Section T6N, R65W. 800 E. Collins Street, Eaton, CO, 80615; Latitude: 40.528611, Longitude: -104.701667

to **Eaton Draw**

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

The applicant may demand an adjudicatory hearing within thirty (30) calendar days of the date of issuance of the final permit determination, per the Colorado State Discharge Permit System Regulation 61.7(1). Should the applicant choose to contest any of the effluent limitations, monitoring requirements or other conditions contained herein, the applicant must comply with Section 24-4-104 CRS 1973 and the Colorado State Discharge Permit System Regulations. Failure to contest any such effluent limitation, monitoring requirement, or other condition, constitutes consent to the condition by the applicant.

This permit and the authorization to discharge shall expire at midnight, August 31, 2020

Issued and Signed this 16th day of July 2015

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Janet Kieler, Permits Section Manager
Water Quality Control Division

ISSUED AND SIGNED: JULY 16, 2015
EFFECTIVE: SEPTEMBER 1, 2015

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PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Permitted Feature(s)

Beginning no later than the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from, and self monitoring samples taken in accordance with the monitoring requirements shall be obtained from permitted feature(s):

Outfall 001A, following disinfection and prior to mixing with the receiving stream. 40.528611, -104.701667

The location(s) provided above will serve as the point(s) of compliance for this permit and are appropriate as they are located after all treatment and prior to discharge to the receiving water. Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited.

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Section 62.4, and the Colorado Discharge Permit System Regulations, Section 61.8(2), 5 C.C.R. 1002-61, the permitted discharge shall not contain effluent parameter concentrations which exceed the following limitations specified below or exceed the specified flow limitation.

2. Limitations, Monitoring Frequencies and Sample Types for Effluent Parameters

In order to obtain an indication of the probable compliance or noncompliance with the effluent limitations specified in Part I.A, the permittee shall monitor all effluent parameters at the frequencies and sample types specified below. Such monitoring will begin immediately and last for the life of the permit unless otherwise noted. The results of such monitoring shall be reported on the Discharge Monitoring Report form (See Part I.D.)

Self-monitoring sampling by the permittee for compliance with the effluent monitoring requirements specified in this permit, shall be performed at the location(s) noted in Part I.A.1 above. If the permittee, using an approved analytical method, monitors any parameter more frequently than required by this permit, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (DMRs) or other forms as required by the Division. Such increased frequency shall also be indicated.

Percentage Removal Requirements (BOD₅ and TSS Limitations) - If noted in the limits table(s), the arithmetic mean of the BOD₅ and TSS concentrations for effluent samples collected during the DMR reporting period shall demonstrate a minimum of eighty-five percent (85%) removal of both BOD₅ and TSS, as measured by dividing the respective difference between the mean influent and effluent concentrations for the DMR monitoring period by the respective mean influent concentration for the DMR monitoring period, and multiplying the quotient by 100.

Oil and Grease Monitoring: For every outfall with oil and grease monitoring, in the event an oil sheen or floating oil is observed, a grab sample shall be collected and analyzed for oil and grease, and reported on the appropriate DMR under parameter 03582. In addition, corrective action shall be taken immediately to mitigate the discharge of oil and grease. A description of the corrective action taken should be included with the DMR.

Total Residual Chlorine: Monitoring for TRC is required only when chlorine is in use.

Flow Recording Device: For this facility, a single flow recording device is provided and is located at the point of inflow to the treatment plant. Since effluent flows will not be significantly different from influent flows, the single flow measurement device will be used for the recording and reporting of both influent and effluent flows. Reported influent flows will be used to monitor compliance with the effluent flow limitation.

Outfall 001A Limit Set

<u>ICIS Code</u>	<u>Effluent Parameter</u>	<u>Effluent Limitations Maximum Concentrations</u>			<u>Monitoring Requirements</u>	
		<u>30-Day Average</u>	<u>7-Day Average</u>	<u>Daily Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
50050	Flow (MGD)	0.75		Report	Continuous	Recorder
00400	pH (su)			6.5-9	5 Days/Week	Grab
51040	<i>E. coli</i> (#/100 ml)	126	252		Monthly	Grab
50060	TRC (mg/l)	0.011		0.019	3 Days/Week	Grab
00610	Total Ammonia as N (mg/l)					
	January	4.9		24	Monthly	Composite
	February	5.2		25	Monthly	Composite
	March	4.6		24	Monthly	Composite
	April	4.2		22	Monthly	Composite
	May	3.7		23	Monthly	Composite
	June	2.9		19	Monthly	Composite
	July	2.1		15	Monthly	Composite
	August	2.5		20	Monthly	Composite
	September	2.8		20	Monthly	Composite
	October	3.5		23	Monthly	Composite
	November	4.1		23	Monthly	Composite
	December	4.6		23	Monthly	Composite
00310	BOD5 (mg/l)	30	45		Monthly	Composite
81010	BOD5 (% removal)	85 (min)			Monthly	Calculated
00530	TSS (mg/l)	30	45		Monthly	Composite
81011	TSS (% removal)	85 (min)			Monthly	Calculated
84066	Oil and Grease (visual)			Report	Daily	Visual
03582	Oil and Grease (mg/l)			10	Contingent	Grab

3. Monitoring Frequency and Sample Type Influent Parameters

Regardless of whether or not an effluent discharge occurs and in order to obtain an indication of the current influent loading as compared to the approved capacity specified in Part I.A.3 and Part I.B.2; the permittee shall monitor influent parameters at the following required frequencies, the results to be reported on the Discharge Monitoring Report (See Part I.D):

If the permittee monitors any parameter more frequently than required by the permit, using an approved test procedure or as specified in the permit, the result of this monitoring shall be included in the calculation and reporting of data to the Division.

Self-monitoring samples taken in compliance with the monitoring requirements specified below shall be taken at the following location(s): **Outfall 300I, at a representative point prior to biological treatment.**

Permitted Feature 300I

ICIS Code	Parameter	Discharge Limitations Maximum Concentrations			Monitoring Frequency	Sample Type
		30-Day Average	7-Day Average	Daily Max.		
50050 G	Flow, mgd	Report		Report	Continuous	Recorder
00180 G	Plant Capacity (% of Capacity - Hydraulic) ¹	Report			Monthly	Calculated ¹
00310 G	BOD ₅ , mg/l	Report	Report		Monthly	Composite
00310 G	BOD ₅ , lbs/day	Report	Report		Monthly	Calculated
00180 G	Plant Capacity (% of Capacity - Organic) ¹	Report			Monthly	Calculated ¹
00530G	Total Suspended Solids, mg/l	Report	Report		Monthly	Composite

¹ The % capacity is to be reported against the listed capacities of 0.75 MGD for the hydraulic capacity and 1876 lbs. BOD₅ per day for the organic capacities as noted in Site Approval #4793. The percentage should be calculated using the 30-day average values divided by the corresponding capacity, times 100.

B. TERMS AND CONDITIONS

1. Service Area

All wastewater flows contributed in the service area may be accepted by the Town of Eaton WWTF for treatment at the permittee's wastewater treatment plant provided that such acceptance does not cause or contribute to an exceedance of the throughput or design capacity of the treatment works or the effluent limitations in Part I.A, or constitute a substantial impact to the functioning of the treatment works, degrade the quality of the receiving waters, or harm human health, or the environment.

In addition, the permittee shall enter into and maintain service agreements with any municipalities that discharge into the wastewater treatment facility. The service agreements shall contain all provisions necessary to protect the financial, physical, and operational integrity of the wastewater treatment works.

2. Design Capacity

Based on Site Approval #4793, the design capacity of this domestic wastewater treatment works is **0.75 million gallons per day (MGD)** for hydraulic flow (30-day average) and **1876 lbs. BOD₅ per day** for organic loading (30-day average).

3. Expansion Requirements

Pursuant to Colorado Law, C.R.S. 25-8-501 (5 d & e), the permittee is required to initiate engineering and financial planning for expansion of the domestic wastewater treatment works whenever throughput reaches eighty (80) percent of the treatment capacity. Such planning may be deemed unnecessary upon a showing that the area served by the domestic wastewater treatment works has a stable or declining population; but this provision shall not be construed as preventing periodic review by the Division should it be felt that growth is occurring or will occur in the area.

The permittee shall commence construction of such domestic wastewater treatment works expansion whenever throughput reaches ninety-five (95) percent of the treatment capacity or, in the case of a municipality, either commence construction or cease issuance of building permits within such municipality until such construction is commenced; except that building permits may continue to be issued for any construction which would not have the effect of increasing the input of wastewater to the sewage treatment works of the municipality involved.

Where unusual circumstances result in throughput exceeding 80% of treatment capacity, the permittee may, in lieu of initiating planning for expansion, submit a report to the Division that demonstrates that it is unlikely that the event will reoccur, or even if it were to reoccur, that 95% of the treatment capacity would not be exceeded.

Where unusual circumstances result in throughput exceeding 95% of the treatment capacity, the permittee may, in lieu of initiating construction of the expansion, submit a report to the Division that demonstrates that the domestic wastewater treatment works was in compliance at all times during the events and that it is extremely unlikely that the event will reoccur.

Where the permittee submits a report pursuant to unusual circumstances, and the Division, upon review of such report, determines in writing to the permittee that the report does not support the required findings, the permittee shall initiate planning and/or construction of the domestic wastewater treatment works as appropriate.

4. Facilities Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control including all portions of the collection system and lift stations owned by the permittee (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective performance, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems when installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

Any sludge produced at the wastewater treatment facility shall be disposed of in accordance with State and Federal regulations. The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.

5. Pretreatment Program - Industrial Waste Management

- a. The Permittee has the responsibility to protect the Domestic Wastewater Treatment Works (DWTW), as defined at section 25.8.103(5) of the Colorado Water Quality Control Act, or the Publicly-Owned Treatment Works (POTW), as defined at 40 CFR section 403.3(q) of the federal pretreatment regulations, from pollutants which would cause pass through or interference, as defined at 40 CFR 403.3(p) and (k), or otherwise be incompatible with operation of the treatment works including interference with the use or disposal of municipal sludge.
- b. Pretreatment Standards (40 CFR Section 403.5) developed pursuant to Section 307 of the Federal Clean Water Act (the Act) require that the Permittee shall not allow, under any circumstances, the introduction of the following pollutants to the DWTW from any source of non-domestic discharge:
 - i. Pollutants which create a fire or explosion hazard in the DWTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in 40 CFR Section 261.21;
 - ii. Pollutants which will cause corrosive structural damage to the DWTW, but in no case discharges with a pH of lower than 5.0 s.u., unless the treatment facilities are specifically designed to accommodate such discharges;
 - iii. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the DWTW, or otherwise interfere with the operation of the DWTW;
 - iv. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with any treatment process at the DWTW;
 - v. Heat in amounts which will inhibit biological activity in the DWTW resulting in Interference, but in no case heat in such quantities that the temperature at the DWTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit) unless the Approval Authority, upon request of the DWTW, approves alternate temperature limits;

- vi. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;
 - vii. Pollutants which result in the presence of toxic gases, vapors, or fumes within the DWTW in a quantity that may cause acute worker health and safety problems;
 - viii. Any trucked or hauled pollutants, except at discharge points designated by the DWTW; and
 - ix. Any specific pollutant that exceeds a local limitation established by the Permittee in accordance with the requirements of 40 CFR Section 403.5(c) and (d).
 - x. Any other pollutant which may cause Pass Through or Interference.
- c. EPA shall be the Approval Authority and the mailing address for all reporting and notifications to the Approval Authority shall be: USEPA 1595 Wynkoop St. 8ENF-W-NP, Denver, CO 80202-1129. Should the State be delegated authority to implement and enforce the Pretreatment Program in the future, the Permittee shall be notified of the delegation and the state permitting authority shall become the Approval Authority.
- d. In addition to the general limitations expressed above, more specific Pretreatment Standards have been and will be promulgated for specific industrial categories under Section 307 of the Act (40 CFR Part 405 et. seq.).
- e. The Permittee must notify the state permitting authority and the Approval Authority, of any new introductions by new or existing industrial users or any substantial change in pollutants from any industrial user within sixty (60) calendar days following the introduction or change. Such notice must identify:
- i. Any new introduction of pollutants into the DWTW from an industrial user which would be subject to Sections 301, 306, or 307 of the Act if it were directly discharging those pollutants; or
 - ii. Any substantial change in the volume or character of pollutants being introduced into the DWTW by any industrial user;
 - iii. For the purposes of this section, adequate notice shall include information on:
 - (A) The identity of the industrial user;
 - (B) The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge to be introduced into the DWTW; and
 - (C) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids or sludge produced at such DWTW.
 - iv. For the purposes of this section, an industrial user shall include:
 - (A) Any discharger subject to Categorical Pretreatment Standards under Section 307 of the Act and 40 CFR chapter I and subchapter N;
 - (B) Any discharger which has a process wastewater flow of 25,000 gallons or more per day;
 - (C) Any discharger contributing five percent or more of the average dry weather hydraulic or organic capacity of the DWTW treatment plant;
 - (D) Any discharger who is designated by the Approval Authority as having a reasonable potential for adversely affecting the DWTWs operation or for violating any Pretreatment Standard or requirements;
- f. At such time as a specific Pretreatment Standard or requirement becomes applicable to an industrial user of the Permittee, the state permitting authority and/or Approval Authority may, as appropriate:

- i. Amend the Permittee's CDPS discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national Pretreatment Standards;
 - ii. Require the Permittee to specify, by ordinance, order, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the Permittee's DWTW for treatment. Such requirement shall be imposed in a manner consistent with the program development requirements of the General Pretreatment Regulations at 40 CFR Part 403; and/or,
 - iii. Require the Permittee to monitor its discharge for any pollutant which may likely be discharged from the Permittee's DWTW, should the industrial user fail to properly pretreat its waste.
- g. The state permitting authority and the Approval Authority retains, at all times, the right to take legal action against any source of nondomestic discharge, whether directly or indirectly controlled by the Permittee, for violations of a permit, order or similar enforceable mechanism issued by the Permittee, violations of any Pretreatment Standard or requirement, or for failure to discharge at an acceptable level under national standards issued by EPA under 40 CFR, chapter I, subchapter N. In those cases where a CDPS permit violation has occurred because of the failure of the Permittee to properly develop and enforce Pretreatment Standards and requirements as necessary to protect the DWTW, the state permitting authority and/or Approval Authority shall hold the Permittee and/or industrial user responsible and may take legal action against the Permittee as well as the Industrial user(s) contributing to the permit violation.

C. DEFINITION OF TERMS

1. "Acute Toxicity" - The acute toxicity limitation is exceeded if the LC50 is at any effluent concentration less than or equal to the IWC indicated in this permit.
2. "Antidegradation limits" – See "Two (2) - Year Rolling Average".
3. "Chronic toxicity", which includes lethality and growth or reproduction, occurs when the NOEC and IC25 are at an effluent concentration less than the IWC indicated in this permit.
4. "Composite" sample is a minimum of four (4) grab samples collected at equally spaced two (2) hour intervals and proportioned according to flow. For a SBR type treatment system, a composite sample is defined as sampling equal aliquots during the beginning, middle and end of a decant period, for two consecutive periods during a day (if possible).
5. "Continuous" measurement, is a measurement obtained from an automatic recording device which continually measures the effluent for the parameter in question, or that provides measurements at specified intervals.
6. "Daily Maximum limitation" for all parameters (except temperature, pH and dissolved oxygen) means the limitation for this parameter shall be applied as an average of all samples collected in one calendar day. For these parameters the DMR shall include the highest of the daily averages. For pH and dissolved oxygen, this means an instantaneous maximum (and/or instantaneous minimum) value. The instantaneous value is defined as the analytical result of any individual sample. For pH and dissolved oxygen, DMRs shall include the maximum (and/or minimum) of all instantaneous values within the calendar month. Any value beyond the noted daily maximum limitation for the indicated parameter shall be considered a violation of this permit. For temperature, see Daily Maximum Temperature.
7. "Daily Maximum Temperature (DM)" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as the highest two-hour average water temperature recorded during a given 24-hour period. This will be determined using a rolling 2-hour maximum temperature. If data is collected every 15 minutes, a 2 hour maximum can be determined on every data point after the initial 2 hours of collection. Note that the time periods that overlap days (Wednesday night to Thursday morning) do not matter as the reported value on the DMR is the greatest of all the 2-hour averages.

For example data points collected at:

08:15, 08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, would be averaged for a single 2 hour average data point
08:30, 08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, would be averaged for a single 2 hour average data point
08:45, 09:00, 09:15, 09:30, 09:45, 10:00, 10:15, 10:30, would be averaged for a single 2 hour average data point

This would continue throughout the course of a calendar day. The highest of these 2 hour averages over a month would be reported on the DMR as the daily maximum temperature. At the end/beginning of a month, the collected data should be used for the month that contains the greatest number of minutes in the 2-hour maximum. Data from 11 pm to 12:59 am, would fall in the previous month. Data collected from 11:01 pm to 1:00 am would fall in the new month.

8. "Dissolved (D) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a water and suspended sediment sample which passed through a 0.40 or 0.45 UM (micron) membrane filter. Determinations of "dissolved" constituents are made using the filtrate. This may include some very small (colloidal) suspended particles which passed through the membrane filter as well as the amount of substance present in true chemical solution.
9. "Geometric mean" for *E. coli* bacteria concentrations, the thirty (30) day and seven (7) day averages shall be determined as the geometric mean of all samples collected in a thirty (30) day period and the geometric mean of all samples taken in a seven (7) consecutive day period respectively. The geometric mean may be calculated using two different methods. For the methods shown, a, b, c, d, etc. are individual sample results, and n is the total number of samples.

Method 1:

Geometric Mean = $(a*b*c*d*...)^{(1/n)}$ "*" - means multiply

Method 2:

Geometric Mean = antilog ([log(a)+log(b)+log(c)+log(d)+...]/n)

Graphical methods, even though they may also employ the use of logarithms, may introduce significant error and may not be used.

In calculating the geometric mean, for those individual sample results that are reported by the analytical laboratory to be "less than" a numeric value, a value of 1 should be used in the calculations. If all individual analytical results for the month are reported to be less than numeric values, then report "less than" the largest of those numeric values on the monthly DMR. Otherwise, report the calculated value.

For any individual analytical result of "too numerous to count" (TNTC), that analysis shall be considered to be invalid and another sample shall be promptly collected for analysis. If another sample cannot be collected within the same sampling period for which the invalid sample was collected (during the same month if monthly sampling is required, during the same week if weekly sampling is required, etc.), then the following procedures apply:

- i. A minimum of two samples shall be collected for coliform analysis within the next sampling period.
- ii. If the sampling frequency is monthly or less frequent: For the period with the invalid sample results, leave the spaces on the corresponding DMR for reporting coliform results empty and attach to the DMR a letter noting that a result of TNTC was obtained for that period, and explain why another sample for that period had not been collected.

If the sampling frequency is more frequent than monthly: Eliminate the result of TNTC from any further calculations, and use all the other results obtained within that month for reporting purposes. Attach a letter noting that a result of TNTC was obtained, and list all individual analytical results and corresponding sampling dates for that month.

10. "Grab" sample, is a single "dip and take" sample so as to be representative of the parameter being monitored.
11. "IC25" or "Inhibition Concentration" is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g. growth or reproduction) calculated from a continuous model (i.e. interpolation method). IC25 is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.
12. "In-situ" measurement is defined as a single reading, observation or measurement taken in the field at the point of discharge.
13. "Instantaneous" measurement is a single reading, observation, or measurement performed on site using existing monitoring facilities.

14. "LC50" or "Lethal Concentration" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.
15. "Maximum Weekly Average Temperature (MWAT)" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as an implementation statistic that is calculated from field monitoring data. The MWAT is calculated as the largest mathematical mean of multiple, equally spaced, daily temperatures over a seven-day consecutive period, with a minimum of three data points spaced equally through the day. For lakes and reservoirs, the MWAT is assumed to be equivalent to the maximum WAT from at least three profiles distributed throughout the growing season (generally July-September).

The MWAT is calculated by averaging all temperature data points collected during a calendar day, and then averaging the daily average temperatures for 7 consecutive days. This 7 day averaging period is a rolling average, i.e. on the 8th day, the MWAT will be the averages of the daily averages of days 2-8. The value to be reported on the DMR is the highest of all the rolling 7-day averages throughout the month. For those days that are at the end/beginning of the month, the data shall be reported for the month that contains 4 of the 7 days.

Day 1: Average of all temperature data collected during the calendar day.
Day 2: Average of all temperature data collected during the calendar day.
Day 3: Average of all temperature data collected during the calendar day.
Day 4: Average of all temperature data collected during the calendar day.
Day 5: Average of all temperature data collected during the calendar day.
Day 6: Average of all temperature data collected during the calendar day.
Day 7: Average of all temperature data collected during the calendar day.

1st MWAT Calculation as average of previous 7 days

Day 8: Average of all temperature data collected during the calendar day.

2nd MWAT Calculation as average of previous 7 days

Day 9: Average of all temperature data collected during the calendar day.

3rd MWAT Calculation as average of previous 7 days

16. "NOEC" or "No-Observed-Effect-Concentration" is the highest concentration of toxicant to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms (i.e. the highest concentration of toxicant in which the values for the observed responses are not statistically different from the controls). This value is used, along with other factors, to determine toxicity limits in permits.
17. "Potentially dissolved (PD) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a constituent measured from the filtrate of a water and suspended sediment sample that was first treated with nitric acid to a pH of 2 or less and let stand for 8 to 96 hours prior to sample filtration using a 0.40 or 0.45-UM (micron) membrane filter. Note the "potentially dissolved" method cannot be used where nitric acid will interfere with the analytical procedure used for the constituent measured.
18. "Practical Quantitation Limit (PQL)" means the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration. The use of PQL in this document may refer to those PQLs shown in Part I.D of this permit or the PQLs of an individual laboratory.
19. "Quarterly measurement frequency" means samples may be collected at any time during the calendar quarter if a continual discharge occurs. If the discharge is intermittent, then samples shall be collected during the period that discharge occurs.
20. "Recorder" requires the continuous operation of a chart and/or totalizer (or drinking water rotor meters or pump hour meters where previously approved.)
21. SAR and Adjusted SAR - The equation for calculation of SAR-adj is:

$$SAR-adj = \frac{Na^{+}}{\sqrt{\frac{Ca_x + Mg^{++}}{2}}}$$

Where:

Na+ = Sodium in the effluent reported in meq/l

Mg++ = Magnesium in the effluent reported in meq/l

Cax = calcium (in meq/l) in the effluent modified due to the ratio of bicarbonate to calcium

The values for sodium (Na+), calcium (Ca++), bicarbonate (HCO₃⁻) and magnesium (Mg++) in this equation are expressed in units of milliequivalents per liter (meq/l). Generally, data for these parameters are reported in terms of mg/l, which must then be converted to calculate the SAR. The conversions are:

$$\text{meq/l} = \frac{\text{Concentration in mg/l}}{\text{Equivalent weight in mg/meq}}$$

Where the equivalent weights are determined based on the atomic weight of the element divided by the ion's charge:

Na+ = 23.0 mg/meq (atomic weight of 23, charge of 1)

Ca++ = 20.0 mg/meq (atomic weight of 40.078, charge of 2)

Mg++ = 12.15 mg/meq (atomic weight of 24.3, charge of 2)

HCO₃⁻ = 61 mg/mep (atomic weight of 61, charge of 1)

The EC and the HCO₃⁻/Ca++ ratio in the effluent (calculated by dividing the HCO₃⁻ in meq/l by the Ca++ in meq/l) are used to determine the Cax using the following table.

Table – Modified Calcium Determination for Adjusted Sodium Adsorption Ratio

HCO ₃ /Ca Ratio And EC 1, 2, 3													
Salinity of Effluent (EC)(dS/m)													
		0.1	0.2	0.3	0.5	0.7	1.0	1.5	2.0	3.0	4.0	6.0	8.0
Ratio of HCO ₃ /Ca	.05	13.20	13.61	13.92	14.40	14.79	15.26	15.91	16.43	17.28	17.97	19.07	19.94
	.10	8.31	8.57	8.77	9.07	9.31	9.62	10.02	10.35	10.89	11.32	12.01	12.56
	.15	6.34	6.54	6.69	6.92	7.11	7.34	7.65	7.90	8.31	8.64	9.17	9.58
	.20	5.24	5.40	5.52	5.71	5.87	6.06	6.31	6.52	6.86	7.13	7.57	7.91
	.25	4.51	4.65	4.76	4.92	5.06	5.22	5.44	5.62	5.91	6.15	6.52	6.82
	.30	4.00	4.12	4.21	4.36	4.48	4.62	4.82	4.98	5.24	5.44	5.77	6.04
	.35	3.61	3.72	3.80	3.94	4.04	4.17	4.35	4.49	4.72	4.91	5.21	5.45
	.40	3.30	3.40	3.48	3.60	3.70	3.82	3.98	4.11	4.32	4.49	4.77	4.98
	.45	3.05	3.14	3.22	3.33	3.42	3.53	3.68	3.80	4.00	4.15	4.41	4.61
	.50	2.84	2.93	3.00	3.10	3.19	3.29	3.43	3.54	3.72	3.87	4.11	4.30
	.75	2.17	2.24	2.29	2.37	2.43	2.51	2.62	2.70	2.84	2.95	3.14	3.28
	1.00	1.79	1.85	1.89	1.96	2.01	2.09	2.16	2.23	2.35	2.44	2.59	2.71
	1.25	1.54	1.59	1.63	1.68	1.73	1.78	1.86	1.92	2.02	2.10	2.23	2.33
	1.50	1.37	1.41	1.44	1.49	1.53	1.58	1.65	1.70	1.79	1.86	1.97	2.07
	1.75	1.23	1.27	1.30	1.35	1.38	1.43	1.49	1.54	1.62	1.68	1.78	1.86
	2.00	1.13	1.16	1.19	1.23	1.26	1.31	1.36	1.40	1.48	1.54	1.63	1.70
	2.25	1.04	1.08	1.10	1.14	1.17	1.21	1.26	1.30	1.37	1.42	1.51	1.58
	2.50	0.97	1.00	1.02	1.06	1.09	1.12	1.17	1.21	1.27	1.32	1.40	1.47
	3.00	0.85	0.89	0.91	0.94	0.96	1.00	1.04	1.07	1.13	1.17	1.24	1.30
	3.50	0.78	0.80	0.82	0.85	0.87	0.90	0.94	0.97	1.02	1.06	1.12	1.17
	4.00	0.71	0.73	0.75	0.78	0.80	0.82	0.86	0.88	0.93	0.97	1.03	1.07
	4.50	0.66	0.68	0.69	0.72	0.74	0.76	0.79	0.82	0.86	0.90	0.95	0.99
	5.00	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.80	0.83	0.88	0.93

	7.00	0.49	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.64	0.67	0.71	0.74
	10.00	0.39	0.40	0.41	0.42	0.43	0.45	0.47	0.48	0.51	0.53	0.56	0.58
	20.00	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.35	0.37
	30.00	0.18	0.19	0.20	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.27	0.28

1 Adapted from Suarez (1981).

2 Assumes a soil source of calcium from lime (CaCO₃) or silicates; no precipitation of magnesium, and partial pressure of CO₂ near the soil surface (PCO₂) is 0.0007 atmospheres.

3 Cax, HCO₃⁻, Ca are reported in meq/l; EC is in dS/m (deciSiemens per meter).

Because values will not always be quantified at the exact EC or HCO₃⁻ /Ca⁺⁺ ratio in the table, the resulting Cax must be determined based on the closest value to the calculated value. For example, for a calculated EC of 2.45 dS/m, the column for the EC of 2.0 would be used. However, for a calculated EC of 5.1, the corresponding column for the EC of 6.0 would be used. Similarly, for a HCO₃⁻ /Ca⁺⁺ ratio of 25.1, the row for the 30 ratio would be used.

The Division acknowledges that some effluents may have electrical conductivity levels that fall outside of this table, and others have bicarbonate to calcium ratios that fall outside this table. For example, some data reflect HCO₃⁻ /Ca⁺⁺ ratios greater than 30 due to bicarbonate concentrations reported greater than 1000 mg/l versus calcium concentrations generally less than 10 mg/l (i.e., corresponding to HCO₃⁻ /Ca⁺⁺ ratios greater than 100). Despite these high values exceeding the chart's boundaries, it is noted that the higher the HCO₃⁻ /Ca⁺⁺ ratio, the greater the SAR-adj. Thus, using the Cax values corresponding to the final row containing bicarbonate/calcium ratios of 30, the permittee will actually calculate an SAR-adj that is less than the value calculated if additional rows reflecting HCO₃⁻ /Ca⁺⁺ ratios of greater than 100 were added.

22. "Seven (7) day average" means, with the exception of fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected in a seven (7) consecutive day period. Such seven (7) day averages shall be calculated for all calendar weeks, which are defined as beginning on Sunday and ending on Saturday. If the calendar week overlaps two months (i.e. the Sunday is in one month and the Saturday in the following month), the seven (7) day average calculated for that calendar week shall be associated with the month that contains the Saturday. Samples may not be used for more than one (1) reporting period. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).**
23. "Thirty (30) day average" means, except for fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected during a thirty (30) consecutive-day period, which represents a calendar month. The permittee shall report the appropriate mean of all self-monitoring sample data collected during the calendar month on the Discharge Monitoring Reports. Samples shall not be used for more than one (1) reporting period. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).**
24. Toxicity Identification Evaluation (TIE) is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.
25. "Total Inorganic Nitrogen (T.I.N.)" is an aggregate parameter determined based on ammonia, nitrate and nitrite concentrations. To determine T.I.N. concentrations, the facility must monitor for total ammonia and total nitrate plus nitrite (or nitrate and nitrite individually) on the same days. The calculated T.I.N. concentrations in mg/L shall then be determined as the sum of the analytical results of same-day sampling for total ammonia (as N) in mg/L, and total nitrate plus nitrite (as N) in mg/L (or nitrate as N and nitrite as N individually). From these calculated T.I.N. concentrations, the daily maximum and thirty (30) day average concentrations for T.I.N. shall be determined in the same manner as set out in the definitions for the daily maximum and thirty (30) day average. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).**
26. "Total Metals" means the concentration of metals determined on an unfiltered sample following vigorous digestion (Section 4.1.3), or the sum of the concentrations of metals in both the dissolved and suspended fractions, as described in Manual of Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979, or its equivalent.
27. "Total Recoverable Metals" means that portion of a water and suspended sediment sample measured by the total recoverable analytical procedure described in Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979 or its equivalent.

28. Toxicity Reduction Evaluation (TRE) is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.
29. "Twenty four (24) hour composite" sample is a combination of at least eight (8) sample aliquots of at least 100 milliliters, collected at equally spaced intervals during the operating hours of a facility over a twenty-four (24) hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the wastewater or effluent flow at the time of sampling or the total wastewater or effluent flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.
30. "Twice Monthly" monitoring frequency means that two samples shall be collected each calendar month on separate weeks with at least one full week between the two sample dates. Also, there shall be at least one full week between the second sample of a month and the first sample of the following month.
31. "Two (2) -Year Rolling Average" (Antidegradation limits)- the average of all monthly average data collected in a two year period. Collection of the data required to calculate a two-year rolling average shall start immediately upon the effective date of the permit, but the data is not reported on a DMR until two years after the effective date of the permit. To calculate a two-year rolling average, add the current monthly average to the previous 23 monthly averages and divide the total by 24. This methodology continues on a rolling basis for the permit term (i.e., in the first reporting period use data from month 1 to month 24, in the second reporting period use data from month 2 to month 25, then month 3 to month 26, etc).
Example: Two year rolling average = $(MA_C + MA_1 + MA_2 + \dots + MA_{23}) \div 24$
 MA_C = Current monthly average
 MA_1 = First prior month's monthly average
 MA_2 = Second prior month's monthly average
 MA_{23} = Twenty third prior month's monthly average

Note, if there is not a discharge from the facility in a month during a two year period **do not use zero (0) to represent the data for that month in the calculation**, but do consider that month as part of the two year time span. The denominator in the two-year rolling average calculation will change to represent the actual number of months there was a discharge.

Example: Two year rolling average = $(30 + 45 + \dots + 25) \div 22$
Current monthly average= 30 mg/l
First prior month's monthly average= no discharge
Second prior month's monthly average= no discharge
Third prior month's monthly average=45 mg/l
Twenty third prior month's monthly average= 25 mg/l

For ammonia, two-year rolling averages may be set up for individual months, or may be grouped together for several months. When individual months have a specific limit, calculate the two-year rolling average as follows:

Example: Permit is effective Jan 2010 and there is a two-year rolling average limit specific to the month of January.
January 2010 DMR – Nothing to Report
January 2011 DMR – Two-year rolling average = $(MA_C + MA_1) \div 2$
 MA_C = January 2011 monthly average
 MA_1 = January 2010 monthly average
January 2012 DMR – Two-year rolling average = $(MA_C + MA_1) \div 2$
 MA_C = January 2012 monthly average
 MA_1 = January 2011 monthly average

Where several months are grouped together and have the same limit, calculate the two-year rolling average as follows:

Example: Permit is effective January 2010 and there is a two-year rolling average limit specific to the months of January, February, and June.
January, February, June 2010 DMR- Nothing to Report
1st Reportable DMR – *June 2011 DMR*:
Two year rolling average = $(MA_C + MA_1 + MA_2 + MA_3 + MA_4 + MA_5) \div 6$
 MA_C = June 2011 monthly average
 MA_1 = February 2011 monthly average
 MA_2 = January 2011 monthly average

MA₃ = June 2010 monthly average
MA₄ = February 2010 monthly average
MA₅ = January 2010 monthly average
2nd Reportable DMR – January 2012 DMR:
Two year rolling average = (MA_C + MA₁ + MA₂ + MA₃ + MA₄ + MA₅) ÷ 6
MA_C = January 2012 monthly average
MA₁ = June 2011 monthly average
MA₂ = February 2011 monthly average
MA₃ = January 2011 monthly average
MA₄ = June 2010 monthly average
MA₅ = February 2010 monthly average

(See the “Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.5 for guidance on calculating averages and reporting analytical results that are less than the PQL).

32. "Visual" observation is observing the discharge to check for the presence of a visible sheen or floating oil.
33. "Water Quality Control Division" or "Division" means the state Water Quality Control Division as established in 25-8-101 et al.)

Additional relevant definitions are found in the Colorado Water Quality Control Act, CRS §§ 25-8-101 et seq., the Colorado Discharge Permit System Regulations, Regulation 61 (5 CCR 1002-61) and other applicable regulations.

D. GENERAL MONITORING, SAMPLING AND REPORTING REQUIREMENTS

1. Routine Reporting of Data

Reporting of the data gathered in compliance with Part I.A or Part I.B shall be on a **monthly** basis. Reporting of all data gathered shall comply with the requirements of Part I.D. (General Requirements). Monitoring results shall be summarized for each calendar month and reported on Division approved discharge monitoring report (DMR) forms (EPA form 3320-1).

The permittee must submit these forms either by mail, or by using the Division's Net-DMR service (when available). If mailed, one form shall be mailed to the Division, as indicated below, so that the DMR is received no later than the 28th day of the following month (for example, the DMR for the first calendar quarter must be received by the Division by April 28th). If no discharge occurs during the reporting period, "No Discharge" shall be reported.

The original signed copy of each discharge monitoring report (DMR) shall be submitted to the Division at the following address:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

The Discharge Monitoring Report forms shall be filled out accurately and completely in accordance with requirements of this permit and the instructions on the forms. They shall be signed by an authorized person as identified in Part I.D.8.

2. Annual Biosolids Report

The permittee shall provide the results of all biosolids monitoring and information on management practices, land application sites, site restrictions and certifications. Such information shall be provided no later than **February 19th** of each year. Reports shall be submitted addressing all such activities that occurred in the previous calendar year. If no biosolids were applied to the land during the reporting period, "no biosolids applied" shall be reported. Until further notice, biosolids monitoring results shall be reported on forms, or copies of forms, provided by the Division. Annual Biosolids Reports required herein, shall be signed and certified in accordance with the Signatory Requirements, Part I.D.1, and submitted as follows:

The original copy of each form shall be submitted to the following address:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT,
WATER QUALITY CONTROL DIVISION
WQCD-PERMITS-B2
4300 CHERRY CREEK DRIVE SOUTH
DENVER, COLORADO 80246-1530

A copy of each form shall be submitted to the following address:

EPA BIOSOLIDS CENTER
EPA REGION 7
WWPD/WENF
11201 RENNER BOULEVARD
LENEXA, KANSAS 66219

3. Representative Sampling

Samples and measurements taken for the respective identified monitoring points as required herein shall be representative of the volume and nature of: 1) all influent wastes received at the facility, including septage, biosolids, etc.; 2) the monitored effluent discharged from the facility; and 3) biosolids produced at the facility. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the influent, effluent, or biosolids wastestream joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and prior approval by the Division.

4. Influent and Effluent Sampling Points

Influent and effluent sampling points shall be so designed or modified so that: 1) a sample of the influent can be obtained after preliminary treatment and prior to primary or biological treatment and 2) a sample of the effluent can be obtained at a point after the final treatment process and prior to discharge to state waters. The permittee shall provide access to the Division to sample at these points.

5. Analytical and Sampling Methods for Monitoring and Reporting

The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. All sampling shall be performed by the permittee according to specified methods in 40 C.F.R. Part 136; methods approved by EPA pursuant to 40 C.F.R. Part 136; or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 C.F.R. Part 136.

Numeric Limits

If the permit contains a numeric effluent limit for a parameter, the analytical method and PQL selected for all monitoring conducted in accordance with this permit for that parameter shall be the one that can measure at or below the numeric effluent limit. If all specified analytical methods and corresponding PQLs are greater than the numeric effluent limit, then the analytical method with the lowest PQL shall be used.

When the analytical method which complies with the above requirements has a PQL greater than the permit limit, and the permittee's analytical result is less than the PQL (the PQL achieved by the lab), the permittee shall report "BDL" on the DMR. Such reports will not be considered as violations of the permit limit, as long as the PQL obtained is lower or equal to the PQL in the table below.

When the analytical method which complies with the above requirements has a PQL that is equal to or less than the permit limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

Report Only Limits

If the permit contains a report only requirement for a parameter, the analytical method and PQL chosen shall be one that can measure at or below the potential numeric effluent limit(s) (maximum allowable pollutant concentration as shown in the WQA or fact sheet). If all analytical methods and corresponding PQLs are greater than the potential numeric effluent limit(s), then the analytical method with the lowest PQL shall be used.

When the analytical method which complies with the above requirements has a PQL that is equal to or less than the potential numeric effluent limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

Interim Report Only Followed By a Numeric Limit

If the permit contains an interim effluent limitation (a limit is report until such time as a numeric effluent limit becomes effective) for a parameter, the analytical method and PQL chosen for all monitoring conducted in accordance with this permit for the parameter shall be one that can measure to the final numeric effluent limit. If all analytical methods and corresponding PQLs are greater than the final numeric effluent limit (s), then the analytical method with the lowest PQL shall be used.

While the report only limit is effective, the reporting requirements shall follow those under the Report Only Limits section. Once the numeric limit is effective, the reporting requirements shall follow the numeric limits reporting requirements.

T.I.N.

For parameters such as TIN, the analytical methods chosen shall be those that can measure to the potential or final numeric effluent limit, based on the sum of the PQLs for nitrate, nitrite and ammonia.

Calculating Averages

In the calculation of average concentrations (i.e. daily average, 7- day average, 30-day average, 2-year rolling average) any individual analytical result that is less than the PQL shall be considered to be zero for the calculation purposes. When reporting:

If all individual analytical results are less than the PQL, the permittee shall report either "BDL" or "<X" (where X = the actual PQL achieved by the laboratory), following the guidance above.

If one or more individual results is greater than the PQL, an average shall be calculated and reported. Note that it does not matter if the final calculated average is greater or less than the PQL, **it must be reported as a value.**

Note that when calculating T.I.N. for a single sampling event, any value less than the PQL (for total ammonia, total nitrite, or total nitrate) shall be treated as zero. The T.I.N. concentration for a single sampling event shall then be determined as the sum of the analytical results (zeros if applicable) of same day sampling for total

ammonia and total nitrite and total nitrate. From these calculated T.I.N. concentrations, the daily maximum and thirty day average concentrations shall be calculated and must be reported as a value.

Note that *E.coli* should be calculated and reported as defined under Geometric Mean in Part I.C.9, and that the appropriate value for less than the PQL should be 1.

PQLs

The PQLs for specific parameters, as determined by the State Laboratory (November 2008) are provided below for reference. If the analytical method cannot achieve a PQL that is less than or equal to the permit limit, then the method, or a more precise method, must achieve a PQL that is less than or equal to the PQL in the table below. A listing of the PQLs for further organic parameters that must meet the above requirement can be found in the Division's Practical Quantitation Limitation Guidance Document, July 2008. This document is available on the Division's website at www.coloradowaterpermits.com.

These limits apply to the total recoverable or the potentially dissolved fraction of metals.

For hexavalent chromium, samples must be unacidified so dissolved concentrations will be measured rather than potentially dissolved concentrations.

Effluent Parameter	Practical Quantitation Limits	Effluent Parameter	Practical Quantitation Limits
Aluminum	50 µg/l		
Arsenic	1 µg/l	N-Ammonia	1 mg/l
Barium	5 µg/l	N-Ammonia (low-level)	50 µg/l
Beryllium	1 µg/l	N-Nitrate/Nitrite	0.5 mg/l
BOD / CBOD	1 mg/l	N-Nitrate	0.5 mg/l
Boron	50 µg/l	N-Nitrite	10 µg/l
Cadmium	1 µg/l	Total Nitrogen	0.5 mg/l
Calcium	20 µg/l	Total Phosphorus	10 µg/l
Chloride	2 mg/l		
Chlorine	0.1 mg/l	Radium 226	1 pCi/l
Total Residual Chlorine		Radium 228	1 pCi/l
DPD colorimetric	0.10 mg/l	Selenium	1 µg/l
Amperometric titration	0.05 mg/l	Silver	0.5 µg/l
Chromium	20 µg/l	Sodium	0.2 mg/l
Chromium, Hexavalent	20 µg/l	Sulfate	5 mg/l
Copper	5 µg/l	Sulfide	0.2 mg/l
Cyanide (Direct / Distilled)	10 µg/l	Total Dissolved Solids	10 mg/l
Cyanide, WAD+A47	10 µg/l	Total Suspended Solids	10 mg/l
Fluoride	0.1 mg/l	Thallium	1 µg/l
Iron	10 µg/l	Uranium	1 µg/l
Lead	1 µg/l	Zinc	10 µg/l
Magnesium	20 µg/l		
Manganese	2 µg/l	Phenols	15 µg/l
Mercury	0.1 µg/l	Nonylphenol D7065	10 µg/l
Mercury (low-level)	0.003 µg/l		
Nickel	50 µg/l		

6. Records

- a. The permittee shall establish and maintain records. Those records shall include, but not be limited to, the following:
 - i. The date, type, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) the analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - vii. Any other observations which may result in an impact on the quality or quantity of the discharge as indicated in 40 CFR 122.44 (i)(1)(iii).
- b. The permittee shall retain for a minimum of three (3) years records of all monitoring information, including all original strip chart recordings for continuous monitoring instrumentation, all calibration and maintenance records, copies of all reports required by this permit and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or Regional Administrator.

7. Flow Measuring Devices

Unless exempted in Part I.A of this permit, flow metering at the headworks shall be provided to give representative values of throughput and treatment of the wastewater system. The metering device shall be equipped with a local flow indication instrument and a flow indication-recording-totalization device suitable for providing permanent flow records, which should be in the plant control building.

For mechanical facilities, where influent flow metering is not practical and the same results may be obtained from metering at the effluent end of the treatment facility, this type of flow metering arrangement will be considered, and if approved, noted in Part I.A of this permit. For lagoons, an instantaneous or continuous effluent flow measuring device shall be required in addition to the above described influent flow measuring device.

At the request of the Division, the permittee must be able to show proof of the accuracy of any flow-measuring device used in obtaining data submitted in the monitoring report. The flow-measuring device must indicate values within ten (10) percent of the actual flow being measured.

8. Signatory Requirements

- a. All reports and other information required by the Division, shall be signed and certified for accuracy by the permittee in accord with the following criteria:
 - i) In the case of corporations, by a responsible corporate officer. For purposes of this section, the responsible corporate officer is responsible for the overall operation of the facility from which the discharge described in the form originates;
 - ii) In the case of a partnership, by a general partner;
 - iii) In the case of a sole proprietorship, by the proprietor;
 - iv) In the case of a municipal, state, or other public facility, by either a principal executive officer, or ranking elected official. For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates;
 - v) By a duly authorized representative of a person described above, only if:
 - 1) The authorization is made in writing by a person described in i, ii, iii, or iv above;

- 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,
 - 3) The written authorization is submitted to the Division.
- b. If an authorization as described in this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

The permittee, or the duly authorized representative shall make and sign the following certification on all such documents:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

PART II

A. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements under this section shall be directed as follows:

- a. Oral Notifications, during normal business hours shall be to:

Water Quality Protection Section - Domestic Compliance Program
Water Quality Control Division
Telephone: (303) 692-3500

- b. Written notification shall be to:

Water Quality Protection Section - Domestic Compliance Program
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

2. Change in Discharge

The permittee shall give advance notice to the Division, in writing, of any planned physical alterations or additions to the permitted facility. Notice is required only when:

- a. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged, or;
- b. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported pursuant to an approved land application plan.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations.

3. Noncompliance Notification

The permittee shall give advance notice to the Division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

- a. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in this permit, the permittee shall, at a minimum, provide the Division with the following information:
- i) A description of the noncompliance and its cause;
- ii) The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and
- iii) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.
- b. The permittee shall report the following circumstances **orally within twenty-four (24) hours** from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the information requested in Part II.A.4 (a) **within five (5) working days** after becoming aware of the following circumstances:

- i) Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;
 - ii) Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;
 - iii) Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;
 - iv) Daily maximum violations for any of the pollutants limited by Part I.A of this permit as specified in Part III of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.
- c. Unless otherwise indicated in this permit, the permittee shall report instances of non-compliance which are not required to be reported within 24-hours at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in sub-paragraph (a) of this section.

4. Transfer of Ownership or Control

The permittee shall notify the Division, in writing, thirty (30) calendar days in advance of a proposed transfer of the permit.

- a. Except as provided in paragraph b. of this section, a permit may be transferred by a permittee only if the permit has been modified or revoked and reissued as provided in Section 61.8(8) of the Colorado Discharge Permit System Regulations, to identify the new permittee and to incorporate such other requirements as may be necessary under the Federal Act.
- b. A permit may be automatically transferred to a new permittee if:
 - i) The current permittee notifies the Division in writing 30 calendar days in advance of the proposed transfer date; and
 - ii) The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and
 - iii) The Division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.
 - iv) Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

5. Other Notification Requirements

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on the date listed in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.

The permittee's notification of all anticipated noncompliance does not stay any permit condition.

All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Division as soon as they know or have reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - i) One hundred micrograms per liter (100 µg/l);
 - ii) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and one milligram per liter (1.0 mg/l) for antimony;
 - iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Section 61.4(2)(g).

- iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - i) Five hundred micrograms per liter (500 µg/l);
 - ii) One milligram per liter (1 mg/l) for antimony; and
 - iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application.
- iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

6. Bypass Notification

If the permittee knows in advance of the need for a bypass, a notice shall be submitted, at least ten (10) calendar days before the date of the bypass, to the Division. The bypass shall be subject to Division approval and limitations imposed by the Division. Violations of requirements imposed by the Division will constitute a violation of this permit.

7. Bypass

- a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- b. Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:
 - i) The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii) There were no feasible alternatives to bypass such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - iii) Proper notices were submitted in compliance with Part II.A.5.
- c. "Severe property damage" as used in this Subsection means substantial physical damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- d. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance or to assure optimal operation. These bypasses are not subject to the provisions of paragraph (a) above.
- e. The Division may approve an anticipated bypass, after considering adverse effects, if the Division determines that the bypass will meet the conditions specified in paragraph (a) above.

8. Upsets

- a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- b. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of paragraph (b) of this section are met. No determination made during administrative review of claims

that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

- i) An upset occurred and that the permittee can identify the specific cause(s) of the upset; and
- ii) The permitted facility was at the time being properly operated and maintained; and
- iii) The permittee submitted proper notice of the upset as required in Part II.A.4. of this permit (24-hour notice); and
- iv) The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

d. Burden of Proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

9. Submission of Incorrect or Incomplete Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Division, the permittee shall promptly submit such facts or information.

B. RESPONSIBILITIES

1. Reduction, Loss, or Failure of Treatment Facility

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, control sources of wastewater, or all discharges, until the facility is restored or an alternative method of treatment is provided. This provision also applies to power failures, unless an alternative power source sufficient to operate the wastewater control facilities is provided.

It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Inspections and Right to Entry

The permittee shall allow the Division and/or the authorized representative, upon the presentation of credentials:

- a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and
- c. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect and/or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or non compliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing of any person having knowledge related to the discharge permit or

alleged violation, access to any and all facilities or areas within the permittee's premises that may have any affect on the discharge, permit, or alleged violation. Such entry is also authorized for the purpose of inspecting and copying records required to be kept concerning any effluent source.

- d. The permittee shall provide access to the Division to sample the discharge at a point after the final treatment process but prior to the discharge mixing with state waters upon presentation of proper credentials.

In the making of such inspections, investigations, and determinations, the Division, insofar as practicable, may designate as its authorized representatives any qualified personnel of the Department of Agriculture. The Division may also request assistance from any other state or local agency or institution.

3. Duty to Provide Information

The permittee shall furnish to the Division, within a reasonable time, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

4. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.5(4), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division and the Environmental Protection Agency.

The name and address of the permit applicant(s) and permittee(s), permit applications, permits and effluent data shall not be considered confidential. Knowingly making false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Clean Water Act, and Section 25-8-610 C.R.S.

5. Modification, Suspension, Revocation, or Termination of Permits By the Division

The filing of a request by the permittee for a permit modification, revocation and reissuance, termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

- a. A permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:
 - i) Violation of any terms or conditions of the permit;
 - ii) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit; or
 - iii) Materially false or inaccurate statements or information in the permit application or the permit.
 - iv) A determination that the permitted activity endangers human health or the classified or existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.
- b. A permit may be modified in whole or in part for the following causes, provided that such modification complies with the provisions of Section 61.10 of the Colorado Discharge Permit System Regulations:
 - i) There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.
 - ii) The Division has received new information which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of different permit conditions at the time of issuance. For permits issued to new sources or new dischargers, this cause includes information derived from effluent testing required under Section 61.4(7)(e) of the Colorado Discharge Permit System Regulations. This provision allows a modification of the permit to include conditions that are less stringent than the existing permit only to the extent allowed under Section 61.10 of the Colorado Discharge Permit System Regulations.

- iii) The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause only as follows:
 - (A) The permit condition requested to be modified was based on a promulgated effluent limitation guideline, EPA approved water quality standard, or an effluent limitation set forth in 5 CCR 1002-62, § 62 et seq.; and
 - (B) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based, or has approved a Commission action with respect to the water quality standard or effluent limitation on which the permit condition was based; and
 - (C) The permittee requests modification after the notice of final action by which the EPA effluent limitation guideline, water quality standard, or effluent limitation is revised, withdrawn, or modified; or
 - (D) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations or effluent limitation guidelines, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee in accordance with this Regulation, within ninety (90) calendar days of judicial remand.
- iv) The Division determines that good cause exists to modify a permit condition because of events over which the permittee has no control and for which there is no reasonable available remedy.
- v) Where the Division has completed, and EPA approved, a total maximum daily load (TMDL) which includes a wasteload allocation for the discharge(s) authorized under the permit.
- vi) The permittee has received a variance.
- vii) When required to incorporate applicable toxic effluent limitation or standards adopted pursuant to § 307(a) of the Federal act.
- viii) When required by the reopener conditions in the permit.
- ix) As necessary under 40 C.F.R. 403.8(e), to include a compliance schedule for the development of a pretreatment program.
- x) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under Section 61.8(2) of the Colorado Discharge Permit System Regulations.
- xi) To establish a pollutant notification level required in Section 61.8(5) of the Colorado Discharge Permit System Regulations.
- xii) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions, to the extent allowed in Section 61.10 of the Colorado State Discharge Permit System Regulations.
- xiii) When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
- xiv) When another State whose waters may be affected by the discharge has not been notified.
- xv) For any other cause provided in Section 61.10 of the Colorado Discharge Permit System Regulations.
- c. At the request of a permittee, the Division may modify or terminate a permit and issue a new permit if the following conditions are met:
 - i) The Regional Administrator has been notified of the proposed modification or termination and does not object in writing within thirty (30) calendar days of receipt of notification,

- ii) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modifications or termination;
 - iii) Requirements of Section 61.15 of the Colorado Discharge Permit System Regulations have been met, and
 - iv) Requirements of public notice have been met.
- d. For permit modification, termination, or revocation and reissuance, the Division may request additional information from the permittee. In the case of a modified permit, the Division may require the submission of an updated application. In the case of revoked and reissued permit, the Division shall require the submission of a new application.
- e. Permit modification (except for minor modifications), termination or revocation and reissuance actions shall be subject to the requirements of Sections 61.5(2), 61.5(3), 61.6, 61.7 and 61.15 of the Colorado Discharge Permit System Regulations. The Division shall act on a permit modification request, other than minor modification requests, within 180 calendar days of receipt thereof. Except for minor modifications, the terms of the existing permit govern and are enforceable until the newly issued permit is formally modified or revoked and reissued following public notice.
- f. Upon consent by the permittee, the Division may make minor permit modifications without following the requirements of Sections 61.5(2), 61.5(3), 61.7, and 61.15 of the Colorado Discharge Permit System Regulations. Minor modifications to permits are limited to:
- i) Correcting typographical errors; or
 - ii) Increasing the frequency of monitoring or reporting by the permittee; or
 - iii) Changing an interim date in a schedule of compliance, provided the new date of compliance is not more than 120 calendar days after the date specific in the existing permit and does not interfere with attainment of the final compliance date requirement; or
 - iv) Allowing for a transfer in ownership or operational control of a facility where the Division determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees has been submitted to the Division; or
 - v) Changing the construction schedule for a discharger which is a new source, but no such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge; or
 - vi) Deleting a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.
 - vii) Incorporating conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 (or a modification thereto that has been approved in accordance with the procedures in 40 CFR 403.18) as enforceable conditions of the POTW's permits.
- g. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.
- h. The filing of a request by the permittee for a permit modification, revocation and reissuance or termination does not stay any permit condition.
- i. All permit modifications and reissuances are subject to the antibacksliding provisions set forth in 61.10(e) through (g).
- j. If cause does not exist under this section, the Division shall not modify or revoke and reissue the permit.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act. Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

8. Permit Violations

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Except as provided elsewhere in this permit, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance (40 CFR 122.41(a)(1)).

9. Severability

The provisions of this permit are severable. If any provisions or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

10. Confidentiality

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this Subsection (12) shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

11. Fees

The permittee is required to submit payment of an annual fee as set forth in the 2005 amendments to the Water Quality Control Act. Section 25-8-502 (1) (b), and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S. 1973 as amended.

12. Duration of Permit

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications. If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Part II.B.4.

13. Section 307 Toxics

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

14. Effect of Permit Issuance

- a. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.
- b. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.

- c. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.
- d. Compliance with a permit condition which implements a particular standard for biosolid use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standard for biosolid use or disposal.

PART III

Table I—Testing Requirements for Organic Toxic Pollutants by Industrial Category for Existing Dischargers

<u>Industry Category</u>	
Adhesives and sealants	Ore mining
Aluminum forming	Organic chemicals manufacturing
Auto and other laundries	Paint and ink formulation
Battery manufacturing	Pesticides
Coal mining	Petroleum refining
Coil coating	Pharmaceutical preparations
Copper forming	Photographic equipment and supplies
Electrical and electronic components	Plastics processing
Electroplating	Plastic and synthetic materials manufacturing
Explosives manufacturing	Porcelain enameling
Foundries	Printing and publishing
Gum and wood chemicals	Pulp and paper mills
Inorganic chemicals manufacturing	Rubber processing
Iron and steel manufacturing	Soap and detergent manufacturing
Leather tanning and finishing	Steam electric power plants
Mechanical products manufacturing	Textile mills
Nonferrous metals manufacturing	Timber products processing

Table II—Organic Toxic Pollutants in Each of Four Fractions in Analysis by Gas Chromatography/Mass

Volatiles	Acid Compounds	Base/Neutral	Pesticides
1V acrolein	1A 2-chlorophenol	1B acenaphthene	1P aldrin
2V acrylonitrile	2A 2,4-dichlorophenol	2B acenaphthylene	2P alpha-BHC
3V benzene	3A 2,4-dimethylphenol	3B anthracene	3P beta-BHC
5V bromoform	4A 4,6-dinitro-o-cresol	4B benzidine	4P gamma-BHC
6V carbon tetrachloride	5A 2,4-dinitrophenol	5B benzo(a)anthracene	5P delta-BHC
7V chlorobenzene	6A 2-nitrophenol	6B benzo(a)pyrene	6P chlordane
8V chlorodibromomethane	7A 4-nitrophenol	7B 3,4-benzofluoranthene	7P 4,4'-DDT
9V chloroethane	8A p-chloro-m-cresol	8B benzo(ghi)perylene	8P 4,4'-DDE
10V 2-chloroethylvinyl ether	9A pentachlorophenol	9B benzo(k)fluoranthene	9P 4,4'-DDD
11V chloroform	10A phenol	10B bis(2-chloroethoxy)methane	10P dieldrin
12V dichlorobromomethane	11A 2,4,6-trichlorophenol	11B bis(2-chloroethyl)ether	11P alpha-endosulfan
14V 1,1-dichloroethane		12B bis(2-chloroisopropyl)ether	12P beta-endosulfan
15V 1,2-dichloroethane		13B bis (2-ethylhexyl)phthalate	13P endosulfan sulfate
16V 1,1-dichloroethylene		14B 4-bromophenyl phenyl ether	14P endrin
17V 1,2-dichloropropane		15B butylbenzyl phthalate	15P endrin aldehyde
18V 1,3-dichloropropylene		16B 2-chloronaphthalene	16P heptachlor
19V ethylbenzene		17B 4-chlorophenyl phenyl ether	17P heptachlor epoxide
20V methyl bromide		18B chrysene	18P PCB-1242
21V methyl chloride		19B dibenzo(a,h)anthracene	19P PCB-1254
22V methylene chloride		20B 1,2-dichlorobenzene	20P PCB-1221
23V 1,1,2,2-tetrachloroethane		21B 1,3-dichlorobenzene	21P PCB-1232
24V tetrachloroethylene		22B 1,4-dichlorobenzene	22P PCB-1248
25V toluene		23B 3,3'-dichlorobenzidine	23P PCB-1260
26V 1,2-trans-dichloroethylene		24B diethyl phthalate	24P PCB-1016
27V 1,1,1-trichloroethane		25B dimethyl phthalate	25P toxaphene
28V 1,1,2-trichloroethane		26B di-n-butyl phthalate	
29V trichloroethylene		27B 2,4-dinitrotoluene	
31V vinyl chloride		28B 2,6-dinitrotoluene	
		29B di-n-octyl phthalate	
		30B 1,2-diphenylhydrazine (as azobenzene)	
		31B fluoranthene	
		32B fluorene	
		33B hexachlorobenzene	
		34B hexachlorobutadiene	
		35B hexachlorocyclopentadiene	
		36B hexachloroethane	
		37B indeno(1,2,3-cd)pyrene	
		38B isophorone	
		39B naphthalene	
		40B nitrobenzene	
		41B N-nitrosodimethylamine	
		42B N-nitrosodi-n-propylamine	
		43B N-nitrosodiphenylamine	
		44B phenanthrene	
		45B pyrene	
		46B 1,2,4-trichlorobenzene	

Table III—Other Toxic Pollutants (Metals and Cyanide) and Total Phenols

Antimony, Total
Arsenic, Total
Beryllium, Total
Cadmium, Total
Chromium, Total
Copper, Total
Lead, Total
Mercury, Total
Nickel, Total
Selenium, Total
Silver, Total
Thallium, Total
Zinc, Total
Cyanide, Total
Phenols, Total

Table IV—Conventional and Nonconventional Pollutants Required To Be Tested by Existing Dischargers if Expected to be Present

Bromide
Chlorine, Total Residual
Color
Fecal Coliform
Fluoride
Nitrate-Nitrite
Nitrogen, Total Organic
Oil and Grease
Phosphorus, Total
Radioactivity
Sulfate
Sulfide
Sulfite
Surfactants
Aluminum, Total
Barium, Total
Boron, Total
Cobalt, Total
Iron, Total
Magnesium, Total
Molybdenum, Total
Manganese, Total
Tin, Total
Titanium, Total

Table V—Toxic Pollutants and Hazardous Substances Required To Be Identified by Existing Dischargers if Expected To Be Present**Toxic Pollutants**

Asbestos

Hazardous Substances

Acetaldehyde	Isopropanolamine Dodecylbenzenesulfonate
Allyl alcohol	Kelthane
Allyl chloride	Kepone
Amyl acetate	Malathion
Aniline	Mercaptodimethur
Benzonitrile	Methoxychlor
Benzyl chloride	Methyl mercaptan
Butyl acetate	Methyl methacrylate
Butylamine	Methyl parathion
Captan	Mevinphos
Carbaryl	Mexacarbate
Carbofuran	Monoethyl amine
Carbon disulfide	Monomethyl amine
Chlorpyrifos	Naled
Coumaphos	Napthenic acid
Cresol	Nitrotoluene
Crotonaldehyde	Parathion
Cyclohexane	Phenolsulfonate
2,4-D (2,4-Dichlorophenoxy acetic acid)	Phosgene
Diazinon	Propargite
Dicamba	Propylene oxide
Dichlobenil	Pyrethrins
Dichlone	Quinoline
2,2-Dichloropropionic acid	Resorcinol
Dichlorvos	Strontium
Diethyl amine	Strychnine
Dimethyl amine	Styrene
Dinitrobenzene	2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)
Diquat	TDE (Tetrachlorodiphenylethane)
Disulfoton	2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]
Diuron	Trichlorofan
Epichlorohydrin	Triethanolamine dodecylbenzenesulfonate
Ethion	Triethylamine
Ethylene diamine	Trimethylamine
Ethylene dibromide	Uranium
Formaldehyde	Vanadium
Furfural	Vinyl acetate
Guthion	Xylene
Isoprene	Xylenol
	Zirconium



Colorado Department
of Public Health
and Environment

**COLORADO DISCHARGE PERMIT SYSTEM (CDPS)
FACT SHEET FOR PERMIT NUMBER CO0047414
TOWN OF EATON, TOWN OF EATON WWTF
WELD COUNTY**

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I. TYPE OF PERMIT

- A. Permit Type:** Domestic - Minor Municipal, Mechanical Plant, First Renewal
- B. Discharge To:** Surface Water

II. FACILITY INFORMATION

- A. SIC Code:** 4952 Sewerage Systems
- B. Facility Location:** 800 E. Collins Street, 80615,
40.528611, -104.701667
- C. Permitted Feature:** Outfall 001A, Following disinfection and prior to mixing with the
receiving stream. 40.528611, -104.701667

The location(s) provided above will serve as the point(s) of compliance for this permit and are appropriate as they are located after all treatment and prior to discharge to the receiving water.

- D. Facility Flows:** 0.75 MGD

E. Major Changes From Last Renewal:

- The receiving water designation will change from Use Protected to Reviewable as of January 1, 2016.

III. RECEIVING STREAM

A. Waterbody Identification: COSPCP13a, Eaton Draw

B. Water Quality Assessment:

An assessment of the stream standards, low flow data, and ambient stream data has been performed to determine the assimilative capacities for Eaton Draw for potential pollutants of concern. This information, which is contained in the Water Quality Assessment (WQA) for this receiving stream(s), also includes an antidegradation review, where appropriate. The Division's Permits Section has reviewed the assimilative capacities to determine the appropriate water quality-based effluent limitations as well as potential limits based on the antidegradation evaluation, where applicable. The limitations based on the assessment and other evaluations conducted as part of this fact sheet can be found in Part I.A of the permit.

Outfall 001A will be the authorized discharge point to the receiving stream.

IV. FACILITY DESCRIPTION

A. Infiltration/Inflow (I/I)

No infiltration/inflow problems have been documented in the service area.

B. Lift Stations

Table IV-1 summarizes the information provided in the renewal application for the lift stations in the service area.

Table IV-1 – Lift Station Summary

Station Name/#	Firm Pump Capacity (gpm)	Peak Flows (gpd)	% Capacity (based on peak flow)
Maplewood	2-11 HP @ 350 gpm	30,333 gpd	3.01%
Governor's Ranch	2-27 HP @ 700 gpm	6,455 gpd	0.32%

C. Chemical Usage

The permittee stated in the application that they utilize one chemical in their treatment process. The MSDS sheets have been reviewed and the following chemicals have been approved for use and are summarized in the following table.

Table IV-2 – Chemical Additives

Chemical Name	Purpose	Constituents of Concern
Hydrofloc748E	Processing Aid	Thermal decomposition may produce Nitrogen Oxides, Carbon Oxides, Hydrogen Chloride Gas

Chemicals deemed acceptable for use in waters that will or may be discharged to waters of the State are acceptable only when used in accordance with all state and federal regulations, and in strict accordance with the manufacturer's site-specific instructions.

D. Treatment Facility, Facility Modifications and Capacities

The facility consists of an automatic and manual bar screen, aerated grit chamber, influent and effluent flow measurement devices, two aeration tanks followed by two clarifiers, aerobic digestion and UV disinfection prior to discharge to Eaton Draw. The permittee has not performed any construction at this facility that would change the hydraulic capacity of 0.75 MGD or the organic capacity of 1876 lbs BOD₅/day, which were specified in Site Approval 4793. That document should be referred to for any additional information.

Pursuant to Section 100.5.2 of the Water and Wastewater Facility Operator Certification Requirements, this facility will require a certified operator. If the facility has a question on the level of the certified operator it needs then the facility will need to contact the Engineering Section of the Division.

E. Biosolids Treatment and Disposal

Biosolids are dewatered onsite with a Westfalia Solids separator, collected and stored within the existing drying beds. Leachate from the stored biosolids flows within the existing under-drains into the facility influent line and is processed. When sufficient biosolids are accumulated, A-1 Compost loads and transports the biosolids to their composting facility. Biosolids are treated to Class B onsite through aerobic digestion and further composted offsite to Class A.

1. EPA Regulation

The Facility is required under the Direct Enforceability provision of 40 CFR §503.3(b) to meet the applicable requirements of the regulation.

2. Biosolids Regulation (Regulation No. 64, Colorado Water Quality Control Commission)

Colorado facilities that land apply biosolids must comply with requirements of Regulation No. 64, such as the submission of annual reports as discussed later in this fact sheet.

V. PERFORMANCE HISTORY

A. Monitoring Data

1. Discharge Monitoring Reports – The following tables summarize the effluent data reported on the Discharge Monitoring Reports (DMRs) for the previous permit term, from March 2010 through March 2015.

Table V-1 – Summary of DMR Data for Outfall 001A

<i>Parameter</i>	<i># Samples or Reporting Periods</i>	<i>Reported Average Concentrations Avg/Min/Max</i>	<i>Reported Maximum Concentrations Avg/Min/Max</i>	<i>Previous Avg/Max/AD Permit Limit</i>	<i>Number of Limit Excursions</i>
<i>Influent Flow (MGD)</i>	61	0.3/0.27/0.32	0.34/0.3/0.39	Report/Report	
<i>Effluent Flow (MGD)</i>	61	0.29/0.00028/0.32	0.34/0.0004/0.4	0.75/NA	
<i>pH (su)</i>	61	7.2/6.9/7.6	7.7/7.3/8.6	6.5 - 9	
<i>E. coli (#/100 ml)</i>	61	14/5/39	34/5/150	126/252	
<i>TRC (mg/l)</i>	0	NA/NA/NA	NA/NA/NA	0.011/0.019	
<i>NH3 as N, Tot (mg/l)</i>	61	0.18/0.06/0.41	0.31/0.08/1.4	NA/NA	
<i>NH3 as N, Tot (mg/l) Jan</i>	5	0.16/0.12/0.21	0.27/0.21/0.38	9.8/18	
<i>NH3 as N, Tot (mg/l) Feb</i>	5	0.17/0.13/0.23	0.35/0.17/0.73	8.1/16	
<i>NH3 as N, Tot (mg/l) Mar</i>	6	0.16/0.08/0.27	0.26/0.1/0.59	8.8/18	
<i>NH3 as N, Tot (mg/l) Apr</i>	5	0.18/0.085/0.37	0.27/0.13/0.66	8.8/20	
<i>NH3 as N, Tot (mg/l) May</i>	5	0.2/0.08/0.41	0.31/0.15/0.73	8.5/21	
<i>NH3 as N, Tot (mg/l) Jun</i>	5	0.23/0.14/0.38	0.51/0.19/1.4	7.1/21	
<i>NH3 as N, Tot (mg/l) Jul</i>	5	0.2/0.11/0.32	0.35/0.18/0.73	5.7/21	
<i>NH3 as N, Tot (mg/l) Aug</i>	5	0.21/0.12/0.37	0.36/0.17/1	4.1/18	
<i>NH3 as N, Tot (mg/l) Sep</i>	5	0.19/0.13/0.32	0.3/0.15/0.45	4.2/17	
<i>NH3 as N, Tot (mg/l) Oct</i>	5	0.15/0.1/0.2	0.22/0.13/0.43	8.8/21	
<i>NH3 as N, Tot (mg/l) Nov</i>	5	0.17/0.1/0.31	0.27/0.12/0.47	5.6/15	
<i>NH3 as N, Tot (mg/l) Dec</i>	5	0.14/0.06/0.23	0.2/0.08/0.34	12/21	
<i>BOD5 (mg/l)</i>	61	2.4/0.8/5.1	3.5/1.2/7.4	NA/NA/	
<i>BOD5, influent (mg/l)</i>	61	249/137/385	309/205/465	NA/NA/	
<i>BOD5, influent (lbs/day)</i>	61	616/336/941	890/592/1348	NA/NA/	
<i>BOD5, effluent (mg/l)</i>	61	2.4/0.8/5.1	3.5/1.2/7.4	30/45/	
<i>BOD5 (% removal)</i>	61	98/96/100	NA/NA/NA	85/NA/	
<i>TSS (mg/l)</i>	61	6.3/1/19	9.9/1/26	NA/NA/	
<i>TSS, influent (mg/l)</i>	61	225/170/277	287/182/452	NA/NA/	
<i>TSS, effluent (mg/l)</i>	61	6.3/1/19	9.9/1/26	30/45/	

B. Compliance With Terms and Conditions of Previous Permit

1. Effluent Limitations – The data shown in the preceding table(s) indicates compliance with the numeric limitations of the previous permit.

In accordance with 40 CFR Part 122.41(a), any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

2. Other Permit Requirements – The permittee has been in compliance with all other aspects of the

previous permit.

VI. DISCUSSION OF EFFLUENT LIMITATIONS

A. Regulatory Basis for Limitations

1. Technology Based Limitations

- a. Federal Effluent Limitation Guidelines – The Federal Effluent Limitation Guidelines for domestic wastewater treatment facilities are the secondary treatment standards. These standards have been adopted into, and are applied out of, Regulation 62, the Regulations for Effluent Limitations.
- b. Regulation 62: Regulations for Effluent Limitations – These Regulations include effluent limitations that apply to all discharges of wastewater to State waters and are shown in Section VIII of the WQA. These regulations are applicable to the discharge from the Town of Eaton WWTF.

2. Numeric Water Quality Standards - The WQA contains the evaluation of pollutants limited by water quality standards. The mass balance equation shown in Section VI of the WQA was used for most pollutants to calculate the potential water quality based effluent limitations (WQBELs), M_2 , that could be discharged without causing the water quality standard to be violated. For ammonia, the AMMTOX Model was used to determine the maximum assimilative capacity of the receiving stream. A detailed discussion of the calculations for the maximum allowable concentrations for the relevant parameters of concern is provided in Section VI of the Water Quality Assessment developed for this permitting action.

The maximum allowable pollutant concentrations determined as part of these calculations represent the calculated effluent limits that would be protective of water quality. These are also known as the water quality-based effluent limits (WQBELs). Both acute and chronic WQBELs may be calculated based on acute and chronic standards, and these may be applied as daily maximum (acute) or 30-day average (chronic) limits.

3. Narrative Water Quality Standards - Section 31.11(1)(a)(iv) of The Basic Standards and Methodologies for Surface Waters (Regulation No. 31) includes the narrative standard that State surface waters shall be free of substances that are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life.
 - a. Whole Effluent Toxicity - The Water Quality Control Division has established the use of WET testing as a method for identifying and controlling toxic discharges from wastewater treatment facilities. WET testing is being utilized as a means to ensure that there are no discharges of pollutants "in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life" as required by Section 31.11 (1) of the Basic Standards and Methodologies for Surface Waters. The requirements for WET testing are being implemented in accordance with Division policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010). Note that this policy has recently been updated and the permittee should refer to this document for additional information regarding WET.

4. Water Quality Regulations, Policies, and Guidance Documents

- a. Antidegradation - Since the receiving water is Data to be merged must be entered on this row, an antidegradation review is required pursuant to Section 31.8 of The Basic Standards and Methodologies for Surface Water. As set forth in Section VII of the WQA, an antidegradation evaluation was conducted for pollutants when water quality impacts occurred and when the impacts were significant. Based on the antidegradation requirements and the reasonable potential analysis discussed below, antidegradation-based average concentrations (ADBACs) may be applied.

According to Division procedures, the facility has three options related to antidegradation-based effluent limits: (1) the facility may accept ADBACs as permit limits (see Section VII of the WQA); (2) the facility may select permit limits based on their non-impact limit (NIL), which would result in the facility not being subject to an antidegradation review and thus the antidegradation-based average concentrations would not apply (the NILs are also contained in Section VII of the WQA); or (3) the facility may complete an alternatives analysis as set forth in Section 31.8(3)(d) of the regulations which would result in alternative antidegradation-based effluent limitations.

The effluent must not cause or contribute to an exceedance of a water quality standard and therefore the WQBEL must be selected if it is lower than the NIL. Where the WQBEL is not the most restrictive, the discharger may choose between the NIL or the ADBAC: the NIL results in no increased water quality impact; the ADBAC results in an “insignificant” increase in water quality impact. The ADBAC limits are imposed as two-year average limits.

- b. As the receiving water will be designated Reviewable as of January 1, 2016, and the Division has performed an antidegradation evaluation in accordance with the Antidegradation Guidance, the antibacksliding requirements in Regulation 61.10 have been met.
- c. Determination of Total Maximum Daily Loads (TMDLs) –The receiving stream to which the Town of Eaton WWTF discharges is currently listed on the State’s 303(d) list for development of TMDLs for Selenium and *E. Coli*. However, the *E.coli* listing does not include Eaton Draw and selenium is likely to be removed from the list. Therefore, no action has been taken for this section.
- d. Colorado Mixing Zone Regulations – Pursuant to section 31.10 of The Basic Standards and Methodologies for Surface Water, a mixing zone determination is required for this permitting action. The Colorado Mixing Zone Implementation Guidance, dated April 2002, identifies the process for determining the meaningful limit on the area impacted by a discharge to surface water where standards may be exceeded (i.e., regulatory mixing zone). This guidance document provides for certain exclusions from further analysis under the regulation, based on site-specific conditions.

The guidance document provides a mandatory, stepwise decision-making process for determining if the permit limits will not be affected by this regulation. Exclusion, based on Extreme Mixing Ratios, may be granted if the ratio of the facility design flow to the chronic low flow (30E3) is greater than 2:1 or if the ratio of the chronic low flow to the design flow is greater than 20:1. Since the ratio of the chronic low flow to the design flow is 0:1, the permittee must

not perform additional studies to determine if further requirements apply.

- e. Reasonable Potential Analysis – Using the assimilative capacities contained in the WQA, an analysis must be performed to determine whether to include the calculated assimilative capacities as WQBELs in the permit. This reasonable potential (RP) analysis is based on the Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential, dated December, 2002. This guidance document utilizes both quantitative and qualitative approaches to establish RP depending on the amount of available data.

A qualitative determination of RP may be made where ancillary and/or additional treatment technologies are employed to reduce the concentrations of certain pollutants. Because it may be anticipated that the limits for a parameter could not be met without treatment, and the treatment is not coincidental to the movement of water through the facility, limits may be included to assure that treatment is maintained.

A qualitative RP determination may also be made where a federal ELG exists for a parameter, and where the results of a quantitative analysis results in no RP. As the federal ELG is typically less stringent than a limitation based on the WQBELs, if the discharge was to contain concentrations at the ELG (above the WQBEL), the discharge may cause or contribute to an exceedance of a water quality standard.

To conduct a quantitative RP analysis, a minimum of 10 effluent data points from the previous 5 years, should be used. The equations set out in the guidance for normal and lognormal distribution, where applicable, are used to calculate the maximum estimated pollutant concentration (MEPC). For data sets with non-detect values, and where at least 30% of the data set was greater than the detection level, MDLWIN software is used consistent with Division guidance to generate the mean and standard deviation, which are then used to establish the multipliers used to calculate the MEPC. If the MDLWIN program cannot be used the Division's guidance prescribes the use of best professional judgment.

For some parameters, recent effluent data or an appropriate number of data points may not be available, or collected data may be in the wrong form (dissolved vs total) and therefore may not be available for use in conducting an RP analysis. Thus, consistent with Division procedures, monitoring will be required to collect samples to support a RP analysis and subsequent decisions for a numeric limit. A compliance schedule may be added to the permit to require the request of an RP analysis once the appropriate data have been collected.

For other parameters, effluent data may be available to conduct a quantitative analysis, and therefore an RP analysis will be conducted to determine if there is RP for the effluent discharge to cause or contribute to exceedances of ambient water quality standards. The guidance specifies that if the MEPC exceeds the maximum allowable pollutant concentration (MAPC), limits must be established and where the MEPC is greater than half the MAPC (but less than the MAPC), monitoring must be established. Table VI-1 contains the calculated MEPC compared to the corresponding MAPC, and the results of the reasonable potential evaluation, for those parameters that met the data requirements. The RP determination is discussed for each parameter in the text below.

Table VI-1 – Reasonable Potential Analysis

Parameter	30-Day Average			7-Day Ave or Daily Max		
	MEPC	WQBEL (MAPC)	Reasonable Potential	MEPC	WQBEL (MAPC)	Reasonable Potential
E. coli (#/100 ml)	43	126	Yes (Qual)	165	252	Yes (Qual)
TRC (mg/l)	NA	0.011	Yes (Qual)	NA	0.019	Yes (Qual)
NH ₃ as N, Tot (mg/l) Jan	0.21	4.9	Yes (Qual)	0.38	24	Yes (Qual)
NH ₃ as N, Tot (mg/l) Feb	0.23	5.2	Yes (Qual)	0.73	25	Yes (Qual)
NH ₃ as N, Tot (mg/l) Mar	0.27	4.6	Yes (Qual)	0.59	24	Yes (Qual)
NH ₃ as N, Tot (mg/l) Apr	0.37	4.2	Yes (Qual)	0.66	22	Yes (Qual)
NH ₃ as N, Tot (mg/l) May	0.41	3.7	Yes (Qual)	0.73	23	Yes (Qual)
NH ₃ as N, Tot (mg/l) Jun	0.38	2.9	Yes (Qual)	1.4	19	Yes (Qual)
NH ₃ as N, Tot (mg/l) Jul	0.32	2.1	Yes (Qual)	0.73	15	Yes (Qual)
NH ₃ as N, Tot (mg/l) Aug	0.37	2.5	Yes (Qual)	1	20	Yes (Qual)
NH ₃ as N, Tot (mg/l) Sep	0.32	2.8	Yes (Qual)	0.45	20	Yes (Qual)
NH ₃ as N, Tot (mg/l) Oct	0.2	3.5	Yes (Qual)	0.43	23	Yes (Qual)
NH ₃ as N, Tot (mg/l) Nov	0.31	4.1	Yes (Qual)	0.47	23	Yes (Qual)
NH ₃ as N, Tot (mg/l) Dec	0.23	4.6	Yes (Qual)	0.34	23	Yes (Qual)

B. Parameter Evaluation

BOD₅ - The BOD₅ concentrations in Regulation 62 are the most stringent effluent limits and are therefore applied. The removal percentages for BOD₅ also apply based on the Regulations for Effluent Limitations.

These limitations are the same as those contained in the previous permit and are imposed upon the effective date of this permit.

Total Suspended Solids - The TSS concentrations in Regulation 62 are the most stringent effluent limits and are therefore applied. The removal percentages for TSS also apply based on the Regulations for Effluent Limitations.

These limitations are the same as those contained in the previous permit and are imposed upon the effective date of this permit.

Oil and Grease - The oil and grease limitations from the Regulations for Effluent Limitations are applied as they are the most stringent limitations.

This limitation is the same as those contained in the previous permit and is imposed upon the effective date of this permit.

pH - This parameter is limited by the water quality standards of 6.5-9.0 s.u., as this range is more stringent than other applicable standards.

This limitation is the same as that contained in the previous permit and is imposed upon the effective date of this permit.

E. coli -The limitations for *E. coli* are based upon the WQBELs and NIL as described in the WQA. A qualitative determination of RP has been made as the treatment facility has been designed to treat specifically for this parameter. Previous monitoring as shown in Table V-1 indicate that this limitation

can be met and is therefore imposed upon the effective date of the permit.

Total Residual Chlorine (TRC) - The limitations for TRC are based upon the WQBELs and NIL as described in the WQA. A qualitative determination of RP has been made as chlorine may be used in the treatment process. Previous monitoring as shown in Table V-1 indicate that this limitation can be met and is therefore imposed upon the effective date of the permit.

Ammonia - The limitations for total ammonia are based upon the WQBELs as described in the WQA. Previous monitoring as shown in Table V-1 indicate that this limitation can be met and is therefore effective immediately.

Temperature - Based on the information presented in the WQA, this facility is exempt from the temperature requirements based on flow ratios.

Organics - The effluent is not expected or known to contain organic chemicals, and therefore, limitations for organic chemicals are not needed in this permit.

Whole Effluent Toxicity (WET) Testing – The Town of Eaton WWTF does not receive a significant volume of toxic waste and, in accordance with Section 61.8(2)(b)(i)(B) of the Colorado Discharge Permit System Regulations, the discharge does not have the reasonable potential to cause, or measurably contribute to, an excursion above any narrative standards for water quality. Therefore, WET testing is not a requirement of this permit. However, the Division reserves the right to reopen the permit to include WET testing, should facility conditions change or if new information becomes available.

The permittee should read the WET testing section of Part I of the permit carefully, as this information has been updated in accordance with the Division's updated policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010) . The permit outlines the test requirements and the required follow-up actions the permittee must take to resolve a toxicity incident. The permittee should also read the above mentioned policy which is available on the Permit Section website. The permittee should be aware that some of the conditions outlined above may be subject to change if the facility experiences a change in discharge, as outlined in Part II.A.2. of the permit. Such changes shall be reported to the Division immediately.

VII. ADDITIONAL TERMS AND CONDITIONS

A. Monitoring

Effluent Monitoring – Effluent monitoring will be required as shown in the permit document. Refer to the permit for locations of monitoring points. Monitoring requirements have been established in accordance with the frequencies and sample types set forth in the Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities. This policy includes the methods for reduced monitoring frequencies based upon facility compliance as well as for considerations given in exchange for instream monitoring programs initiated by the permittee. Table VII-1 shows the results of the reduced monitoring frequency analysis for Outfall 001A, based upon compliance with the previous permit.

Table VII-1 – Monitoring Reduction Evaluation

<i>Parameter</i>	<i>Proposed Permit Limit</i>	<i>Average of 30-Day (or Daily Max) Average Conc.</i>	<i>Standard Deviation</i>	<i>Long Term Characterization (LTC)</i>	<i>Reduction Potential</i>
<i>pH (su) Minimum</i>	<i>min 6.5</i>	7.2	0.15	6.9	<i>1 Step</i>
<i>pH (su) Maximum</i>	<i>max 9.0</i>	7.7	0.15	8	
<i>E. coli (#/100 ml)</i>	126	11	8	27	<i>3 Levels</i>
<i>NH₃ as N, Tot (mg/l)</i>	2.1	0.15	0.05	0.25	<i>3 Levels</i>
<i>BOD₅, effluent (mg/l)</i>	30	1.8	0.59	2.98	<i>3 Levels</i>
<i>TSS, effluent (mg/l)</i>	30	4.8	1.1	7	<i>3 Levels</i>

B. Reporting

1. Discharge Monitoring Report – The Town of Eaton WWTF must submit Discharge Monitoring Reports (DMRs) on a monthly basis to the Division. These reports should contain the required summarization of the test results for all parameters and monitoring frequencies shown in Part I.A.2 of the permit. See the permit, Part I.D for details on such submission.
2. Special Reports – Special reports are required in the event of an upset, bypass, or other noncompliance. Please refer to Part II.A. of the permit for reporting requirements. As above, submittal of these reports to the US Environmental Protection Agency Region VIII is no longer required.

C. Signatory and Certification Requirements

Signatory and certification requirements for reports and submittals are discussed in Part I.D.8. of the permit.

D. Economic Reasonableness Evaluation

Section 25-8-503(8) of the revised (June 1985) Colorado Water Quality Control Act required the Division to "determine whether or not any or all of the water quality standard based effluent limitations are reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons, and are in furtherance of the policies set forth in sections 25-8-192 and 25-8-104."

The Colorado Discharge Permit System Regulations, Regulation No. 61, further define this requirement under 61.11 and state: "Where economic, environmental, public health and energy impacts to the public and affected persons have been considered in the classifications and standards setting process, permits written to meet the standards may be presumed to have taken into consideration economic factors unless:

- a. A new permit is issued where the discharge was not in existence at the time of the classification and standards rulemaking, or
- b. In the case of a continuing discharge, additional information or factors have emerged that were not anticipated or considered at the time of the classification and standards rulemaking."

The evaluation for this permit shows that the Water Quality Control Commission, during their proceedings to adopt the Colorado Discharge Permit System Regulations, considered economic reasonableness.

Furthermore, this is not a new discharger and no new information has been presented regarding the classifications and standards. Therefore, the water quality standard-based effluent limitations of this permit are determined to be reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons and are in furtherance of the policies set forth in Sections 25-8-102 and 104. If the permittee disagrees with this finding, pursuant to 61.11(b)(ii) of the Colorado Discharge Permit System Regulations, the permittee should submit all pertinent information to the Division during the public notice period.

Patrick Nicholson
6/11/2015

VIII. REFERENCES

- A. Colorado Department of Public Health and Environment, Water Quality Control Division Files, for Permit Number CO0047414.
- B. Basic Standards and Methodologies for Surface Water, Regulation No. 31, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective January 31, 2013.
- C. Colorado Discharge Permit System Regulations, Regulation No. 61, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective January 30, 2015.
- D. Regulations for Effluent Limitations, Regulation No. 62, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective July 30, 2012.
- E. Biosolids Regulation, Regulation No. 64, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2014.
- F. Section 303(d) List of Water Quality Limited Segments Requiring TMDLs, Regulation No 93, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective March 30, 2012.
- G. Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List, Regulation No 93, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective March 30, 2012.
- H. Antidegradation Significance Determination for New or Increased Water Quality Impacts, Procedural Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective December 2001.
- I. Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential, Policy Number CW-1, Colorado Department of Public Health and Environment, Water Quality Control Division, effective November 18, 2013.

- J. Water and Wastewater Facility Operator Certification Requirements, Regulation No. 100, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective June 30, 2012.

Patrick Nicholson
6/10/2015

IX. PUBLIC NOTICE COMMENTS

The public notice period was from 6/13/2015 to 7/13/2015. No comments were received during the public notice period.

Patrick Nicholson
7/16/2015



Water Quality Assessment Eaton Draw Town of Eaton WWTF

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I. Water Quality Assessment Summary

Table A-1 includes summary information related to this WQA. This summary table includes key regulatory starting points used in development of the WQA such as: receiving stream information; threatened and endangered species; 303(d) and Monitoring and Evaluation listings; low flow and facility flow summaries; and a list of parameters evaluated.



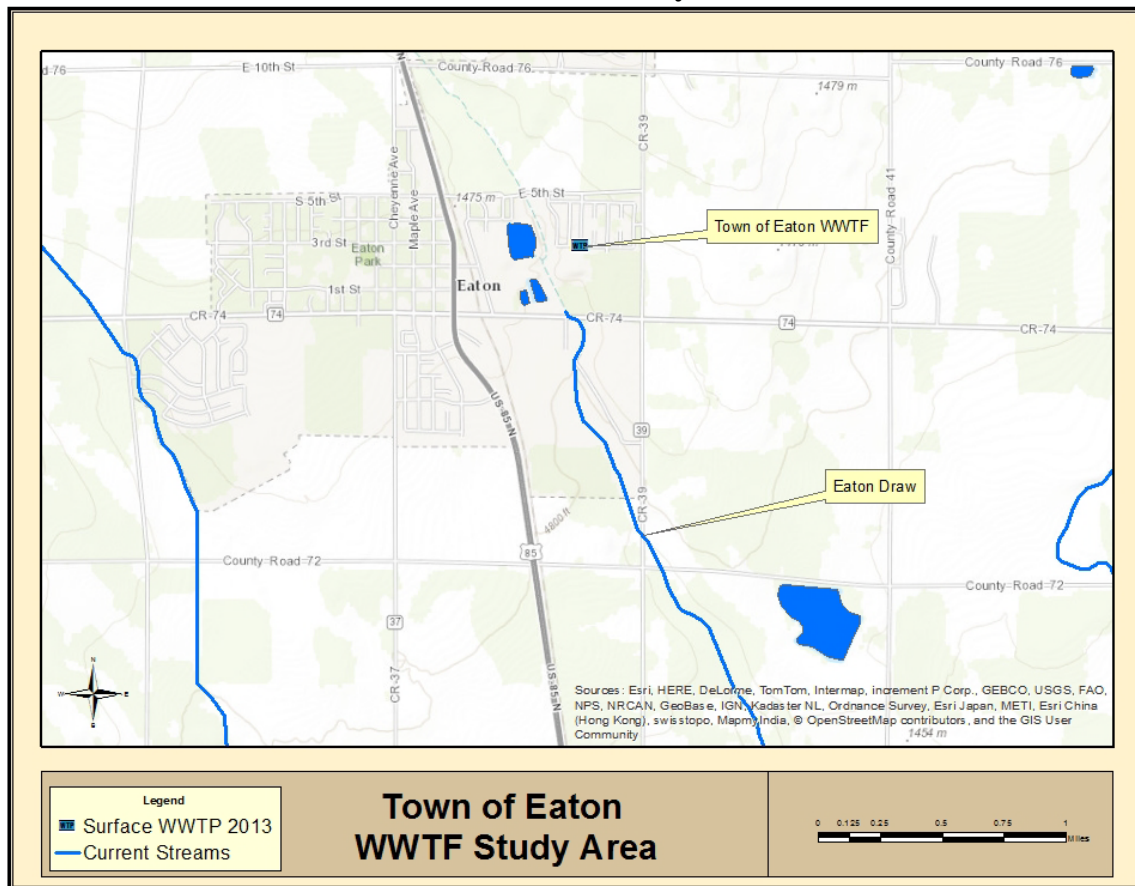
Table A-1 WQA Summary					
Facility Information					
Facility Name		Permit Number	Design Flow (max 30-day ave, MGD)	Design Flow (max 30-day ave, CFS)	
Town of Eaton WWTF		CO0047414	0.75	1.2	
Receiving Stream Information					
Receiving Stream Name	Segment ID	Designation	Classification(s)		
Eaton Draw	COSPCP13a	Undesignated	Aquatic Life Warm 2 Recreation Class E Agriculture, Water Supply		
Low Flows (cfs)					
Receiving Stream Name	1E3 (1-day)	7E3 (7-day)	30E3 (30-day)	Ratio of 30E3 to the Design Flow (cfs)	
Eaton Draw	0	0	0	0:1	
Regulatory Information					
T&E Species	303(d) (Reg 93)	Monitor and Eval (Reg 93)	Existing TMDL	Temporary Modification(s)	Control Regulation
No	E. coli**, *Selenium	No	No	None	85
Pollutants Evaluated					
F1: Ammonia, <i>E. coli</i> , TRC					

* Selenium will potentially be removed from the 303(d) listing based on communication with the WQCD EDU

**Eaton Draw is not included in the listing

II. Introduction

The water quality assessment (WQA) of Eaton Draw near the Town of Eaton WWTF located in Weld County, is intended to determine the assimilative capacities available for pollutants found to be of concern. This WQA describes how the water quality based effluent limits (WQBELs) are developed. These parameters may or may not appear in the permit with limitations or monitoring requirements, subject to other determinations such as reasonable potential analysis, evaluation of federal effluent limitation guidelines, implementation of state-based technology based limits, mixing zone analyses, 303(d) listings, threatened and endangered species listing, or other requirements as discussed in the permit rationale. Figure A-1 contains a map of the study area evaluated as part of this WQA.

**FIGURE A-1. Study Area**

The Town of Eaton WWTF discharges to Eaton Draw, which is stream segment COSPCP13a. This means the South Platte Basin, Cache La Poudre Sub-basin, Stream Segment 13a. This segment is composed of all tributaries to the Cache La Poudre River, including all wetlands, from the Monroe Gravity Canal/North Poudre Supply canal diversion to the confluence with the South Platte River, except for specific listings in Segments 6, 7, 8, 13b and 13c. Stream segment COSPCP13a is classified for Aquatic Life Warm 2, Recreation Class E, Water Supply, and Agriculture.

Information used in this assessment includes data gathered from the Eaton WWTF by the Division, Riverwatch, the U.S. Geological Survey (USGS), and communications with the local water commissioner. The data used in the assessment consist of the best information available at the time of preparation of this WQA analysis.

III. Water Quality Standards

Narrative Standards

Narrative Statewide Basic Standards have been developed in Section 31.11(1) of the regulations, and apply to any pollutant of concern, even where there is no numeric standard for that pollutant. Waters of the state shall be free from substances attributable to human-caused point source or nonpoint source discharges in amounts, concentrations or combinations which:



for all surface waters except wetlands;

(i) can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludge, mine slurry or tailings, silt, or mud; or (ii) form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or (iii) produce color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or (iv) are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or (v) produce a predominance of undesirable aquatic life; or (vi) cause a film on the surface or produce a deposit on shorelines; and

for surface waters in wetlands;

(i) produce color, odor, changes in pH, or other conditions in such a degree as to create a nuisance or harm water quality dependent functions or impart any undesirable taste to significant edible aquatic species of the wetland; or (ii) are toxic to humans, animals, plants, or aquatic life of the wetland.

In order to protect the Basic Standards in waters of the state, effluent limitations and/or monitoring requirements for any parameter of concern could be put in CDPS discharge permits.

Standards for Organic Parameters and Radionuclides

Radionuclides: Statewide Basic Standards have been developed in Section 31.11(2) and (3) of The Basic Standards and Methodologies for Surface Water to protect the waters of the state from radionuclides and organic chemicals.

In no case shall radioactive materials in surface waters be increased by any cause attributable to municipal, industrial, or agricultural practices or discharges to as to exceed the following levels, unless alternative site-specific standards have been adopted. Standards for radionuclides are shown in Table A-2.

Table A-2 Radionuclide Standards	
Parameter	Picocuries per Liter
Americium 241*	0.15
Cesium 134	80
Plutonium 239, and 240*	0.15
Radium 226 and 228*	5
Strontium 90*	8
Thorium 230 and 232*	60
Tritium	20,000

*Radionuclide samples for these materials should be analyzed using unfiltered (total) samples. These Human Health based standards are 30-day average values.

Organics: The organic pollutant standards contained in the Basic Standards for Organic Chemicals Table are applicable to all surface waters of the state for the corresponding use classifications, unless



alternative site-specific standards have been adopted. These standards have been adopted as “interim standards” and will remain in effect until alternative permanent standards are adopted by the Commission. These interim standards shall not be considered final or permanent standards subject to antibacksliding or downgrading restrictions. Although not reproduced in this WQA, the specific standards for organic chemicals can be found in Regulation 31.11(3).

In order to protect the Basic Standards in waters of the state, effluent limitations and/or monitoring requirements for radionuclides, organics, or any other parameter of concern could be put in CDPS discharge permits.

The aquatic life standards for organics apply to all stream segments that are classified for aquatic life. The water supply standards apply only to those segments that are classified for water supply. The water + fish standards apply to those segments that have a Class 1 aquatic life and a water supply classification. The fish ingestion standards apply to Class 1 aquatic life segments that do not have a water supply designation. The water + fish and the fish ingestion standards may also apply to Class 2 aquatic life segments, where the Water Quality Control Commission has made such determination.

Because the Eaton Draw is classified for Aquatic Life Warm 2, with a water supply designation, the water supply and aquatic life standards apply to this discharge.

Nutrients

Phosphorus and Total Inorganic Nitrogen: Regulation 85, the *Nutrients Management Control Regulation* has been adopted by the Water Quality Control Commission and became effective September 30, 2012. This regulation contains requirements for phosphorus and Total Inorganic Nitrogen (TIN) concentrations for some point source dischargers. Limitations for phosphorus and TIN may be applied in accordance with this regulation.

Temperature

Temperature shall maintain a normal pattern of diurnal and seasonal fluctuations with no abrupt changes and shall have no increase in temperature of a magnitude, rate, and duration deemed deleterious to the resident aquatic life. This standard shall not be interpreted or applied in a manner inconsistent with section 25-8-104, C.R.S.

Segment Specific Numeric Standards

Numeric standards are developed on a basin-specific basis and are adopted for particular stream segments by the Water Quality Control Commission. The standards in Table A-3 have been assigned to stream segment COSPCP13a in accordance with the *Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin*.



Table A-3	
In-stream Standards for Stream Segment COSPCP13a	
<i>Physical and Biological</i>	
Dissolved Oxygen (DO) = 5 mg/l, minimum	
pH = 6.5 - 9 su	
E. coli chronic = 126 colonies/100 ml	
Temperature March-Nov = 24.2° C MWAT and 29° C DM	
Temperature Dec-Feb = 12.1° C MWAT and 14.5° C DM	
<i>Inorganic</i>	
Total Ammonia acute and chronic = TVS	
Chlorine acute = 0.019 mg/l	
Chlorine chronic = 0.011 mg/l	
Free Cyanide acute = 0.005 mg/l	
Sulfide chronic = 0.002 mg/l	
Boron chronic = 0.75 mg/l	
Nitrite acute = 0.5 mg/l	
Nitrate acute = 10 mg/l	
Chloride chronic = 250 mg/l	
Sulfate chronic = For WS, the greater of ambient water quality as of January 1, 2000 or 250 mg/l	
Chla=150 mg/m ²	
P=170ug/l (tot)	
<i>Metals</i>	
Total Recoverable Aluminum acute and chronic = TVS	
Dissolved Arsenic acute = 340 µg/l	
Total Recoverable Arsenic chronic = 0.02-10 µg/l	
Dissolved Cadmium acute and chronic = TVS	
Total Recoverable Cadmium acute=5.0(Trec)	
Total Recoverable Trivalent Chromium acute = 50 µg/l	
Dissolved Trivalent Chromium chronic = TVS	
Dissolved Hexavalent Chromium acute and chronic = TVS	
Dissolved Copper acute and chronic = TVS	
Dissolved Iron chronic = For WS, the greater of ambient water quality as of January 1, 2000, or 300 µg/l	
Total Recoverable Iron chronic = 1000 µg/l	
Dissolved Lead acute and chronic = TVS	
Total Recoverable Lead acute=50 µg/l	
Dissolved Manganese chronic = For WS, the greater of ambient water quality as of January 1, 2000, or 50 µg/l	
Dissolved Manganese acute and chronic = TVS	
Total Recoverable Molybdenum chronic = 150 µg/l	
Dissolved Nickel acute and chronic = TVS	
Total Recoverable Nickel acute= 100 µg/l	
Dissolved Selenium acute and chronic = TVS	
Dissolved Silver acute and chronic = TVS	
Dissolved Zinc acute and chronic = TVS	

Table Value Standards and Hardness Calculations

As metals with standards specified as TVS are not included as parameters of concern for this facility, the hardness value of the receiving water and the subsequent calculation of the TVS equations is inconsequential and is therefore omitted from this WQA. Note that Selenium will not be evaluated due to its potential 303(d) delisting. In case it is not delisted, the Division may open the permit and add selenium requirement in the permit.



Total Maximum Daily Loads and Regulation 93 – Colorado’s Section 303(d) List of Impaired Waters and Monitoring and Evaluation List

This stream segment is on the 303(d) list of water quality impacted streams for *E. Coli* (May – Oct) and Selenium. But, *E.coli* listing does not include Eaton Draw portion of the segment therefore, it is not considered in this WQA. As for the selenium, it will be delisted and therefore the Division will not add any requirements in the permit. But, if it is not delisted, the Division may open the permit to add selenium requirements.

IV. Receiving Stream Information

Low Flow Analysis

The Colorado Regulations specify the use of low flow conditions when establishing water quality based effluent limitations, specifically the acute and chronic low flows. The acute low flow, referred to as 1E3, represents the one-day low flow recurring in a three-year interval, and is used in developing limitations based on an acute standard. The 7-day average low flow, 7E3, represents the seven-day average low flow recurring in a 3 year interval, and is used in developing limitations based on a Maximum Weekly Average Temperature standard (MWAT). The chronic low flow, 30E3, represents the 30-day average low flow recurring in a three-year interval, and is used in developing limitations based on a chronic standard.

Although there is periodic flow in Eaton Draw upstream of the Town of Eaton WWTF, the 1E3 and 30E3 monthly low flows are set at zero based on information provided by the local Water Commissioner. For this analysis, low flows are summarized in Table A-4.

Table A-4													
Low Flows for Eaton Draw at the Town WWTF													
<i>Low Flow (cfs)</i>	<i>Annual</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
1E3 Acute	0	0	0	0	0	0	0	0	0	0	0	0	0
7E3 Chronic	0	0	0	0	0	0	0	0	0	0	0	0	0
30E3 Chronic	0	0	0	0	0	0	0	0	0	0	0	0	0

The ratio of the low flow of Eaton Draw to the Town of Eaton WWTF design flow is 0:1.

Note that since the low flow has been determined to be zero, the ambient water quality discussion is unnecessary and has therefore been deleted in this WQA. This is explained in more detail under the Technical Information discussion in Section VI.

**Mixing Zones**

The amount of the available assimilative capacity (dilution) that may be used by the permittee for the purposes of calculating the WQBELs may be limited in a permitting action based upon a mixing zone analysis or other factor. These other factors that may reduce the amount of assimilative capacity available in a permit are: presence of other dischargers in the vicinity; the presence of a water diversion downstream of the discharge (in the mixing zone); the need to provide a zone of passage for aquatic life; the likelihood of bioaccumulation of toxins in fish or wildlife; habitat considerations such as fish spawning or nursery areas; the presence of threatened and endangered species; potential for human exposure through drinking water or recreation; the possibility that aquatic life will be attracted to the effluent plume; the potential for adverse effects on groundwater; and the toxicity or persistence of the substance discharged.

Unless a facility has performed a mixing zone study during the course of the previous permit, and a decision has been made regarding the amount of the assimilative capacity that can be used by the facility, the Division assumes that the full assimilative capacity can be allocated. Note that the review of mixing study considerations, exemptions and perhaps performing a new mixing study (due to changes in low flow, change in facility design flow, channel geomorphology or other reason) is evaluated in every permit and permit renewal.

If a mixing zone study has been performed and a decision regarding the amount of available assimilative capacity has been made, the Division may calculate the water quality based effluent limitations (WQBELs) based on this available capacity. In addition, the amount of assimilative capacity may be reduced by T&E implications.

Since the receiving stream has a zero low flow as calculated above, the WQBELs would be equal to the WQS, and therefore consideration of full or reduced assimilative capacity is inconsequential.

Ambient Water Quality

The Division evaluates ambient water quality based on a variety of statistical methods as prescribed in Section 31.8(2)(a)(i) and 31.8(2)(b)(i)(B) of the *Colorado Department of Public Health and Environment Water Quality Control Commission Regulation No. 31*, and as outlined in the Division's Policy for Characterizing Ambient Water Quality for Use in Determining Water Quality Standards Based Effluent Limits (WQP-19). The ambient water quality was not assessed for Eaton Draw because the background in-stream low flow condition is zero.

V. Facility Information and Pollutants Evaluated**Facility Information**

The Town WWTF is located in the NW 1/4, Section 6, T6N, R65W in Weld County. The current design capacity of the facility is 0.75 MGD (1.2 cfs). Wastewater treatment is accomplished a mechanical wastewater treatment process. The technical analyses that follow include assessments of the assimilative capacity based on this design capacity.



An assessment of Division records indicate that there are no facilities discharging to the same stream segment or other stream segments immediately upstream or downstream from this facility.

Due to the in-stream low flow of zero, the assimilative capacities during times of low flow are not affected by nearby contributions. Therefore, modeling nearby facilities in conjunction with this facility was not necessary.

Pollutants of Concern

Pollutants of concern may be determined by one or more of the following: facility type; effluent characteristics and chemistry; effluent water quality data; receiving water quality; presence of federal effluent limitation guidelines; or other information. Parameters evaluated in this WQA may or may not appear in a permit with limitations or monitoring requirements, subject to other determinations such as a reasonable potential analysis, mixing zone analyses, 303(d) listings, threatened and endangered species listings or other requirement as discussed in a permit rationale.

There are no site-specific in-stream water quality standards for BOD₅ or CBOD₅, TSS, percent removal, and oil and grease for this receiving stream. Thus, assimilative capacities were not determined for these parameters. The applicable limitations for these pollutants can be found in Regulation No. 62 and will be applied in the permit for the WWTF.

The following parameters were identified by the Division as pollutants to be evaluated for this facility:

- Total Residual Chlorine
- *E. coli*
- Ammonia
- Nutrients

Based upon the size of the discharge, the lack of industrial contributors, dilution provided by the receiving stream and the fact that no unusually high metals concentrations are expected to be found in the wastewater effluent, metals are not evaluated further in this water quality assessment.

According to the *Rationale for Classifications, Standards and Designations of the South Platte*, stream segment COSPCP13a is designated a water supply, but because there is no active water supply intake downstream from the Eaton WWTF the nitrate standard is not further evaluated for this permit cycle. During assessment of the facility, nearby facilities, and receiving stream water quality, no additional parameters were identified as pollutants of concern.

VI. Determination of Water Quality Based Effluent Limitations (WQBELs)

Technical Information

Note that the WQBELs developed in the following paragraphs, are calculations of what an effluent limitation may be in a permit. The WQBELs for any given parameter, will be compared to other potential limitations (federal effluent limitations guidelines, state effluent limitations, or other applicable limitation) and typically the more stringent limit is incorporated into a permit. If the



WQBEL is the more stringent limitation, incorporation into a permit is dependent upon a reasonable potential analysis.

In-stream background data and low flows evaluated in Sections II and III are used to determine the assimilative capacity of Eaton Draw near the Town WWTF for pollutants of concern, and to calculate the WQBELs. For all parameters except ammonia, it is the Division's approach to calculate the WQBELs using the lowest of the monthly low flows (referred to as the annual low flow) as determined in the low flow analysis. For ammonia, it is the standard procedure of the Division to determine monthly WQBELs using the monthly low flows, as the regulations allow the use of seasonal flows.

The Division's standard analysis consists of steady-state, mass-balance calculations for most pollutants and modeling for pollutants such as ammonia. The mass-balance equation is used by the Division to calculate the WQBELs, and accounts for the upstream concentration of a pollutant at the existing quality, critical low flow (minimal dilution), effluent flow and the water quality standard. The mass-balance equation is expressed as:

$$M_2 = \frac{M_3 Q_3 - M_1 Q_1}{Q_2}$$

Where,

Q_1 = Upstream low flow (1E3 or 30E3)

Q_2 = Average daily effluent flow (design capacity)

Q_3 = Downstream flow ($Q_1 + Q_2$)

M_1 = In-stream background pollutant concentrations at the existing quality

M_2 = Calculated WQBEL

M_3 = Water Quality Standard, or other maximum allowable pollutant concentration

When Q_1 equals zero, Q_2 equals Q_3 , and the following results:

$$M_2 = M_3$$

Because the low flow (Q_1) for Eaton Draw is zero, the WQBELs for Eaton Draw for the pollutants of concern are equal to the in-stream water quality standards.

A more detailed discussion of the technical analysis is provided in the pages that follow.

Calculation of WQBELs

Using the mass-balance equation provided in the beginning of Section VI, the acute and chronic low flows set out in Section IV, ambient water quality as discussed in Section IV, and the in-stream standards shown in Section III, the WQBELs were calculated. The data used and the resulting WQBELs, M_2 , are set forth in Table A-5a for the chronic WQBELs and A-5b for the acute WQBELs.



Where a QBEL is calculated to be a negative number and interpreted to be zero the Division standard procedure is to allocate the water quality standard to prevent further degradation of the receiving waters.

Chlorine: There are no point sources discharging total residual chlorine within one mile of the Town of Eaton WWTF. Because chlorine is rapidly oxidized, in-stream levels of residual chlorine are detected only for a short distance below a source. Ambient chlorine was therefore assumed to be zero.

E. coli: For *E. coli*, the Division establishes the 7-day geometric mean limit as two times the 30-day geometric mean QBEL and also includes maximum limits of 2,000 colonies per 100 ml (30-day geometric mean) and 4,000 colonies per 100 ml (7-day geometric mean). This 2000 colony limitation also applies to discharges to ditches.

Temperature: The 7E3 low flow is 0, so the discharge is to an effluent dependent (ephemeral stream without the presence of wastewater) water therefore in accordance with Regulation 31.14(14), no temperature limitations are required.

A QBEL for temperature can only be calculated if there is representative data, in the proper form, to determine what the background Maximum Weekly Average Temperature and Daily Maximum ambient temperatures are. As this data is not available at this time, the temperature limitation will be set at the water quality standard and will be revisited in the future when representative temperature data becomes available.

Table A-5a
Chronic QBELs

<i>Parameter</i>	<i>Q₁ (cfs)</i>	<i>Q₂ (cfs)</i>	<i>Q₃ (cfs)</i>	<i>M₁</i>	<i>M₃</i>	<i>M₂</i>
E. Coli (#/100 ml)	0	1.2	1.2	1	126	126
TRC (mg/l)	0	1.2	1.2	0	0.011	0.011

Table A-5b
Acute QBELs

<i>Parameter</i>	<i>Q₁ (cfs)</i>	<i>Q₂ (cfs)</i>	<i>Q₃ (cfs)</i>	<i>M₁</i>	<i>M₃</i>	<i>M₂</i>
E. coli (#/100 ml)	0	2.4	2.4	2	252	252
TRC (mg/l)	0	1.2	1.2	0	0.019	0.019

Ammonia: The Ammonia Toxicity Model (AMMTOX) is a software program designed to project the downstream effects of ammonia and the ammonia assimilative capacities available to each discharger based on upstream water quality and effluent discharges. To develop data for the AMMTOX model, an in-stream water quality study should be conducted of the upstream receiving



water conditions, particularly the pH and corresponding temperature, over a period of at least one year.

There was no temperature data available for Eaton Draw or for the Town of Eaton WWTF that could be used as adequate input data for the AMMTOX model. Therefore, the Division standard procedure is to rely on statistically-based, regionalized data for temperature compiled from similar facilities and receiving waters. Effluent pH data were available from the Town of Eaton WWTF and were used to establish the average facility contributions in the AMMTOX model.

Upstream ammonia data for each month were not available to represent monthly ambient water quality concentrations for the AMMTOX. Thus, the value of 0.01mg/l was used to reflect upstream ambient ammonia concentration found in Eaton Draw .

The AMMTOX may be calibrated for a number of variables in addition to the data discussed above. The values used for the other variables in the model are listed below:

- Stream velocity = $0.3Q^{0.4d}$
- Default ammonia loss rate = 6/day
- pH amplitude was assumed to be medium
- Default times for pH maximum, temperature maximum, and time of day of occurrence
- pH rebound was set at the default value of 0.2 su per mile
- Temperature rebound was set at the default value of 0.7 degrees C per mile.

The results of the ammonia analyses for the Town WWTF are presented in Table A-6.

Table A-6 AMMTOX Results for Eaton Draw at the Town of Eaton WWTF		
<i>Month</i>	<i>Total Ammonia Chronic (mg/l)</i>	<i>Total Ammonia Acute (mg/l)</i>
January	4.9	24
February	5.2	25
March	4.6	24
April	4.2	22
May	3.7	23
June	2.9	19
July	2.1	15
August	2.5	20
September	2.8	20
October	3.5	23
November	4.1	23
December	4.6	23

VII. Antidegradation Evaluation

As set out in *The Basic Standards and Methodologies for Surface Water*, Section 31.8(2)(b), an antidegradation analysis is required except in cases where the receiving water is designated as “Use Protected.” Note that “Use Protected” waters are waters “that the Commission has determined do not warrant the special protection provided by the outstanding waters designation or the antidegradation review process” as set out in Section 31.8(2)(b). The antidegradation section of the regulation became effective in December 2000, and therefore antidegradation considerations are applicable to this WQA analysis.

Introduction to the Antidegradation Process

The antidegradation process conducted as part of this water quality assessment is designed to determine if an antidegradation review is necessary and if necessary, to complete the required calculations to determine the limits that can be selected as the antidegradation-based effluent limit (ADBEL), absent further analyses that must be conducted by the facility.

As outlined in the *Antidegradation Significance Determination for New or Increased Water Quality Impacts, Procedural Guidance* (AD Guidance), the first consideration of an antidegradation evaluation is to determine if new or increased impacts are expected to occur. This is determined by a comparison of the newly calculated WQBELs verses the existing permit limitations in place as of September 30, 2000, and is described in more detail in the analysis. Note that the AD Guidance refers to the permit limitations as of September 30, 2000 as the existing limits.

If a new or increased impact is found to occur, then the next step of the antidegradation process is to go through the significance determination tests. These tests include: 1) bioaccumulative toxic pollutant test; 2) temporary impacts test; 3) dilution test (100:1 dilution at low flow) and; 4) a concentration test.

As the determination of new or increased impacts, and the bioaccumulative and concentration significance determination tests require more extensive calculations, the Division will begin the antidegradation evaluation with the dilution and temporary impact significance determination tests. These two significance tests may exempt a facility from further AD review without the additional calculations.

Note that the antidegradation requirements outlined in *The Basic Standards and Methodologies for Surface Water* specify that chronic numeric standards should be used in the antidegradation review; however, where there is only an acute standard, the acute standard should be used. The appropriate standards are used in the following antidegradation analysis.

Significance Tests for Temporary Impacts and Dilution

This is not a temporary discharge and therefore exclusion based on a temporary discharge cannot be granted and the AD evaluation must continue.



The ratio of the chronic (30E3) low flow to the design flow is 0:1, and is less than the 100:1 significance criteria. Therefore this facility is not exempt from an AD evaluation based on the dilution significance determination test, and the AD evaluation must continue.

For the determination of a new or increased impact and for the remaining significance determination tests, additional calculations are necessary. Therefore, at this point in the antidegradation evaluation, the Division will go back to the new or increased impacts test. If there is a new or increased impact, the last two significance tests will be evaluated.

New or Increased Impact and Non Impact Limitations (NILs)

To determine if there is a new or increased impact to the receiving water, a comparison of the new WQBEL concentrations and loadings verses the concentrations and loadings as of 1/1/2016, needs to occur. If either the new concentration or loading is greater than 1/1/2016 concentration or loading, then a new or increased impact is determined.

Note that the AD Guidance document includes a step in the New or Increased Impact Test that calculates the Non-Impact Limit (NIL). The permittee may choose to retain a NIL if certain conditions are met, and therefore the AD evaluation for that parameter would be complete. As the NIL is typically greater than the ADBAC, and is therefore the chosen limit, the Division will typically conclude the AD evaluation after determining the NIL. Where the NILs are very stringent, or upon request of a permittee, the Division will calculate both the NIL and the AD limitation so that the limitations can be compared and the permittee can determine which of the two limits they would prefer, one which does not allow any increased impact (NIL), or the other which allows an insignificant impact (AD limit).

The non impact limit (NIL) is defined as the limit which results in no increased water quality impact (no increase in load or limit over the January 1, 2016 load or limit). The NIL is calculated as the January 1, 2016 loading, divided by the new design flow, and divided by a conversion factor of 8.34. If there is no change in design flow, then the NIL is equal to the January 1, 2016 permit limitation.

If the facility was in place, but did not have a limitation for a particular parameter in the January 1, 2016 permit, the Division may substitute an implicit limitation. Consistent with the First Update to the AD Guidance of April 2002, an implicit limit is determined based on the approach that specifies that the implicit limit is the maximum concentration of the effluent from October 1998 to January 1, 2016, if such data is available. If this data is unavailable, the Division may substitute more recent representative data, if appropriate, on a case by case basis. Note that if there is a change in design flow, the implicit limit/loading is subject to recalculation based on the new design flow. For parameters that are undisclosed by the permittee, and unknown to the Division to be present, an implicit limitation may not be recognized.

This facility was in place as a discharger prior to September 30, and therefore the new or increased impacts test must be conducted. As the design flow for this facility is the same as it was in January 1, 2016, the NILs are equal to the permit limitations as of January 1, 2016.

For total residual chlorine, *E. Coli*, and total ammonia the limitations as of January 1, 2016 were used in the evaluation of new or increased impacts.



Calculation of Loadings for New or Increased Impact Test

The equations for the loading calculations are given below. Note that the AD requirements outlined in *The Basic Standards and Methodologies for Surface Water* specify that chronic numeric standards should be used in the AD review; however, where there is only an acute standard, the acute standard should be used. Thus, the chronic low flows will be used later in this AD evaluation for all parameters with a chronic standard, and the acute low flows will be used for those parameters with only an acute standard.

$$\begin{aligned} \text{Previous permit load} &= M_{\text{permitted}} (\text{mg/l}) \times Q_{\text{permitted}} (\text{mgd}) \times 8.34 \\ \text{New WQBELs load} &= M_2 (\text{mg/l}) \times Q_2 (\text{mgd}) \times 8.34 \end{aligned}$$

Where,

$$\begin{aligned} M_{\text{permitted}} &= \text{January 1, 2016 permit limit (mg/l)} \\ Q_{\text{permitted}} &= \text{design flow as of January 1, 2016 (mgd)} \\ Q_2 &= \text{current design flow (same as used in the WQBEL calculations)} \\ M_2 &= \text{new WQBEL concentration (mg/l)} \\ 8.34 &= \text{unit conversion factor} \end{aligned}$$

Table A-10 shows the results of these calculations and the determination of a new or increased impact.

Calculation of Non-Impact Limitations

The design flow of this facility as of September 30, 2000 was 0.75 MGD. The new design flow of this facility is 0.75 MGD. To determine if new or increased impacts are to occur, the January 1, 2016 permit concentrations need to be adjusted for this new design flow. The equations are shown below.

$$\begin{aligned} \text{January 1, 2016 permit load} &= M_{\text{permitted}} \times Q_{\text{permitted}} \times 8.34 \\ \text{Non Impact Limit (NIL)} &= \text{January 1, 2016 permitted load} \div \text{New Design Flow} \div 8.34 \end{aligned}$$

Where,

$$\begin{aligned} M_{\text{permitted}} &= \text{January 1, 2016 permit limit (mg/l)} \\ Q_{\text{permitted}} &= \text{January 1, 2016 design flow (mgd)} \\ Q_2 &= \text{new or current design flow (mgd)} \\ 8.34 &= \text{Unit conversion factor} \end{aligned}$$

Table A-7 shows the results of these calculations and the determination of a new or increased impact.



Table A-7 Determination of New or Increased Impacts						
<i>Pollutant</i>	<i>Sept 2000 Permit Limit</i>	<i>Sept 2000 Permit Load (lbs/day)</i>	<i>NIL</i>	<i>New WQBEL</i>	<i>New WQBEL Load (lbs/day)</i>	<i>New or Increased Impact</i>
<i>E. coli</i> (#/100 ml)	126	788	126	126	788	No
TRC (mg/l)	0.011	0.069	0.011	0.011	0.069	No
NH ₃ , Tot as N (mg/l), Jan	9.8	61	9.8	4.9	31	No
NH ₃ , Tot as N (mg/l), Feb	8.1	51	8.1	5.2	33	No
NH ₃ , Tot as N (mg/l) Mar	8.8	55	8.8	4.6	29	No
NH ₃ , Tot as N (mg/l) Apr	8.8	55	8.8	4.2	26	No
NH ₃ , Tot as N (mg/l) May	8.5	53	8.5	3.7	23	No
NH ₃ , Tot as N (mg/l) Jun	7.1	44	7.1	2.9	18	No
NH ₃ , Tot as N (mg/l) Jul	5.7	36	5.7	2.1	13	No
NH ₃ , Tot as N (mg/l) Aug	4.1	26	4.1	2.5	16	No
NH ₃ , Tot as N (mg/l) Sep	4.2	26	4.2	2.8	18	No
NH ₃ , Tot as N (mg/l) Oct	8.8	55	8.8	3.5	22	No
NH ₃ , Tot as N (mg/l) Nov	5.6	35	5.6	4.1	26	No
NH ₃ , Tot as N (mg/l) Dec	12	75	12	4.6	29	No

As shown in Table A-9, there are no new or increased impacts to the receiving stream based on the new WQBELS, and therefore the AD evaluation is complete, and AD limitations are not necessary. The WQBELs are the final result of this WQA.

VIII. Technology Based and Control Based Limitations

Federal Effluent Limitation Guidelines

The Federal Effluent Limitation Guidelines for domestic wastewater treatment facilities are the secondary treatment standards. These standards have been adopted into, and are applied out of, Regulation 62, the Regulations for Effluent Limitations.

Regulations for Effluent Limitations

Regulation No. 62, the Regulations for Effluent Limitations, includes effluent limitations that apply to all discharges of wastewater to State waters, with the exception of storm water and agricultural return flows. These regulations are applicable to the discharge from the proposed discharge.

Table A-8 contains a summary of the applicable limitations for pollutants of concern at this facility.



Table A-8			
Regulation 62 Based Limitations			
Parameter	30-Day Average	7-Day Average	Instantaneous Maximum
BOD ₅	30 mg/l	45 mg/l	NA
BOD ₅ Percent Removal	85%	NA	NA
TSS, mechanical plant	30 mg/l	45 mg/l	NA
TSS Percent Removal	85%	NA	NA
Total Residual Chlorine	NA	NA	0.5 mg/l
pH	NA	NA	6.0-9.0 s.u.
Oil and Grease	NA	NA	10 mg/l

Nutrient Effluent Limitation Considerations

WQCC Regulation No. 85, the new *Nutrients Management Control Regulation*, includes technology based effluent limitations for total inorganic nitrogen and total phosphorus that currently, or will in the future, apply to many domestic wastewater discharges to State surface waters. These effluent limits for dischargers are to start being implemented in permitting actions as of July 1, 2013, and are shown in the two tables below:

Effluent Limitations Table at 85.5(1)(a)(iii)

For all Domestic Wastewater Treatment Works not identified in subsections (a)(i) or (ii) above (in Reg. 85) and discharging prior to May 31, 2012 or for which a complete request for preliminary effluent limits has been submitted to the Division prior to May 31, 2012, the following numeric limits shall apply:

Parameter	Parameter Limitations	
	Annual Median ¹	95th Percentile ²
Total Phosphorus	1.0 mg/l	2.5 mg/l
Total Inorganic Nitrogen ³	15 mg/l	20 mg/l

1 Running Annual Median: The median of all samples taken in the most recent 12 calendar months.

2 The 95th percentile of all samples taken in the most recent 12 calendar months.

3 Determined as the sum of nitrate as N, nitrite as N, and ammonia as N.

Effluent Limitations Table at 85.5(1)(b)

For New Domestic Wastewater Treatment Works which submit a complete request for preliminary effluent limits to the Division on or after May 31, 2012, the following numeric limits shall apply:

Parameter	Parameter Limitations	
	Annual Median ¹	95th Percentile ²
Total Phosphorus	0.7 mg/l	1.75 mg/l
Total Inorganic Nitrogen ³	7 mg/l	14 mg/l

1 Running Annual Median: The median of all samples taken in the most recent 12 calendar months.

2 The 95th percentile of all samples taken in the most recent 12 calendar months.

3 Determined as the sum of nitrate as N, nitrite as N, and ammonia as N.

Requirements in Reg. 85 also apply to non-domestic wastewater for industries in the Standard Industrial Class 'Major Group 20,' and any other non-domestic wastewater where the facility is expected, without treatment, to discharge total inorganic nitrogen or total phosphorus concentrations in excess of the numeric limits listed in 85.5 (1)(a)(iii). The facility must investigate, with the Division's approval, whether different considerations should apply.



All permit actions based on this WQA will occur after the July 1, 2013 permit implementation date of Reg. 85. Therefore, total inorganic nitrogen and total phosphorus effluent limitations potentially imposed because of Reg. 85 must be considered. However, also based on Reg. 85, there are direct exemptions from these limitations for smaller domestic facilities that discharge less than or equal to 1 million gallons per day (MGD), or are a domestic facility owned by a disadvantaged community.

Delayed implementation (until 5/31/2022) is also specified in Reg. 85 to occur for domestic WWTFs that discharge more than 1 MGD, and less than or equal to 2.0 MGD, or have an existing watershed control regulations (such as WQCC Reg.'s 71-74), or where the discharge is to waters in a low-priority 8-digit HUC.

The Division will consider this proposed WWTF to be an existing WWTF, as the previous facility was discharging and permitted prior to May 31, 2012. Also, since the proposed design capacity of the Town of Eaton WWTF is 0.75 MGD, the facility is not currently required to address the new technology based effluent limits as of 5/7/2015.

However, the Division does not intend these results to discourage this new WWTF from working on nutrient control with the other dischargers within the Cache La Poudre River watershed. These dischargers upstream and downstream of the proposed Town of Eaton WWTF have the potential to create future nutrient issues in the Eaton Draw and the Cache La Poudre River. The Division encourages these entities to all work together to create the most efficient and cost effective solutions for nutrient control in the Cache La Poudre River watershed.

Supplemental Reg. 85 Nutrient Monitoring

Reg. 85 also requires that some monitoring for nutrients in wastewater effluent and streams take place, independent of what nutrient effluent limits or monitoring requirements may be established in a discharge permit. The requirements for the type and frequency of this monitoring are set forth in Reg. 85 at 85.6. This nutrient monitoring is not currently required by a permitting action, but is still required to be done by the Reg. 85 nutrient control regulation. Nutrient monitoring for the Reg. 85 control regulation is currently required to be reported to the WQCD Environmental Data Unit.

IX. References

Regulations:

The Basic Standards and Methodologies for Surface Water, Regulation 31, Colorado Department Public Health and Environment, Water Quality Control Commission, effective January 31, 2013.

Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin, Regulation No. 38, Colorado Department Public Health and Environment, Water Quality Control Commission, effective June 30, 2014.

Regulations for Effluent Limitations, Regulation 62, CDPHE, WQCC, effective July 30, 2012.

Nutrients Management Control Regulation, Regulation 85, Colorado Department Public Health and

Environment, Water Quality Control Commission, effective September 30, 2012.

Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List, Regulation 93, Colorado Department Public Health and Environment, Water Quality Control Commission, effective March 30, 2012.

Policy and Guidance Documents:

Antidegradation Significance Determination for New or Increased Water Quality Impacts, Procedural Guidance, Colorado Department Public Health and Environment, Water Quality Control Division, December 2001.

Memorandum Re: First Update to (Antidegradation) Guidance Version 1.0, Colorado Department Public Health and Environment, Water Quality Control Division, April 23, 2002.

Rationale for Classifications, Standards and Designations of Segments of the South Platte, Colorado Department Public Health and Environment, Water Quality Control Division, effective June, 2009.

Policy Concerning Escherichia coli versus Fecal Coliform, CDPHE, WQCD, July 20, 2005.

Colorado Mixing Zone Implementation Guidance, Colorado Department Public Health and Environment, Water Quality Control Division, effective April 2002.

Policy for Conducting Assessments for Implementation of Temperature Standards in Discharge Permits, Colorado Department Public Health and Environment, Water Quality Control Division Policy Number WQP-23, effective July 3, 2008.

Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops, Colorado Department Public Health and Environment, Water Quality Control Division Policy Number WQP-24, effective March 10, 2008.

Policy for Characterizing Ambient Water Quality for Use in Determining Water Quality Standards Based Effluent Limits, Colorado Department Public Health and Environment, Water Quality Control Division Policy Number WQP-19, effective May 2002.

APPENDIX F

MS4 PERMIT MAP

MS4 Permit Areas: Weld County Jurisdiction

