COLORADO
Department of Public Health & Environment

Water Pollution Control Project Needs Assessment (PNA) Form
Water Quality Control Division

1. Applicant Information:

Entity Name	City of Sterling				
Facility Name:	STERLING, CITY OF			Original ID:	799
Mailing Address 1:	421 N. 4th Street P.O. Box 4000	Mailing Address 2:		County:	
City:	Sterling	State:	CO	Zip Code:	80751
Property Address 1:	421 N 4th St	Property Address 2:		County:	
City:	Sterling	State:	CO	Zip Code:	80751
Latitude :	39.7517291	Longitude :	-104.992107		
Name of Project:	Sterling Wastewater System Improvements Project				

Type of Project (Check all that apply)

- ☑ Treatment
- ☐ Construction project resulting in increase or decrease in design capacity of existing wastewater treatment plant
- ☐ Modification of wastewater treatment plant that will not result in a change to treatment capacity
- ☐ New or relocated wastewater treatment plant outfall
- ☐ New or expansion of lift station
- ☐ Collection system (gravity sewer mains less than 24-inches in diameter)
- ☐ New interceptor (24-inch diameter or larger pipeline)
- ☐ In-Kind Replacement (Replacement of any process or hydraulic treatment conveyance component with an identical or similar component. Usually in cases where equipment has reached end of life and replacement is necessary to maintain compliance)
- ☐ Stormwater
- ☐ Non-Point Source Discharge

Please enter the following information for your organization if you have it. Visit http://fedgov.dnb.com/webform and https://www.sam.gov/portal/public/SAM/ for details. Note: you will be required to obtain both of these items prior to loan execution.

Owner Information:

First Name:	Don	Middle Name:		Last Name:	Saling
Phone Number:	970-522-9700				
Mailing Address1:	P.O. Box 4000 421 North 4th Street		Mailing Address2:		
City:	Sterling	State:	CO	Zip Code:	80751
E-mail:	saling@sterlingcolo.com				

Consulting Engineer Information:

First Name:	Rob	Middle Name:		Last Name:	Demis

Phone Number:	303-723-5075				
Mailing Address1:	143 Union Suite 1000		Mailing Address2:		
City:	Lakewood	State:	CO	Zip Code:	80228
E-mail:	rob.demis@mottmac.com				

Self-Certification:

☐ Yes ☑ No Does the system intend to self-certify all or a portion of the project?

Streamlined Review:

☐ Yes ☑ No Does the system intend to use the streamlined review process for all or a portion of the project?

If yes, please identify the portions of the project that the system will utilize streamlined review process.

☐ Wastewater treatment new construction or modifications that do not include an alternative technology

Yes No Does the system intend to use the streamlined review process for all or a portion of the project?

2. Executive Summary

The existing wastewater treatment facility (WWTF) will be expanded to 3.0 mgd to meet future wastewater flow based upon projected population growth for year 2040. Project work will take place in three areas: (1) headworks, (2) force main, and (3) WWTF.

1. Headworks:
-Rehabilitate existing building and install new equipment in the upper level.
-Replace existing screen, washer compactor, grit system, and classifier.
-Construct new wet well / dry pit influent pump station.
-Install new electrical equipment, generator, VFDs and controls.
-Abandon existing influent pump station.

2. Force Main:
-Slipline existing 20-inch force main with 16-inch pipe and construct new parallel 16-inch force main, including interconnects.
-Abandon existing pig launch station.

3. WWTF:
-Construct a 30-million-gallon wastewater storage basin (Cell #2), provide new influent piping, flow metering and effluent piping.
-Construct new anaerobic, anoxic, aeration, and IFAS media reactors inside the footprint of one of the existing aeration basins.
-Construct two new 70-ft diameter secondary clarifiers and RAS/WAS Building with pump systems.
-Construct chemical system for phosphorus removal located inside new RAS/WAS Building.
-Construct UV disinfection system with a disinfection contact basin for redundancy.

The existing discharge permit for the Sterling WWTF contains current and upcoming limits for discharges to: (1) surface water and (2) groundwater recharge basins. A daily maximum total inorganic nitrogen (TIN) limit of 10 mg/L must be met in the downstream monitoring wells beginning November 1, 2017, as required by Regulation No. 41 for groundwater discharge. Additionally, the Sterling WWTF will be required to meet future effluent nutrient limits per Regulation 85 and Regulation 31. Regulation 85 includes annual median effluent limits of 1 mg/L for total phosphorus and 15 mg/L for TIN. Improvements to the WWTF will be designed to achieve compliance with the proposed surface water limits.

3.System Structure and Operation

3.1 Legal Ownership of System (TMF: Managerial-1)

First Name: City of Sterling

Mailing Address1: P.O. Box 4000 421 North 4th Street Mailing Address2:

City: Sterling State: CO Zip Code: 80751

Phone Number: 970-522-9700 Fax: 970-521-0632

3.2 Organizational Chart

Include an Organizational Chart as Attachment 2.

3.3 Current Operator in Responsible (ORC) Charge

First Name: Scott Middle Name: W Last Name: Legg

Certification Number: 16427 Certification Expiration Date: 04/20/2021

Operator Certification Level (check one) ☑ Staff Operator ☐ Contract Operator

Treatment ☐ Class D ☐ Class C ☐ Class B ☑ Class A

Distribution ☐ Class 4 ☐ Class 3 ☐ Class 2 ☐ Class 1

Combined Treatment/Distribution ☐ Class S

3.4 Operator Certification

☑ Yes ☐ No Do the system operators have adequate operator certification levels for the proposed project as defined by Regulation 100 Water and Wastewater Facility Operators Certification Requirements?

Explain the impact of the proposed project on the required operator in responsible charge (ORC) certification level and other predicted staffing changes.

Improvements do not have specialized staffing requirements.

3.5 20-year cash flow projection

Include a copy of the 20-year cash flow projection as Attachment 4.

4. Project Purpose and Need

Discuss the issue or concern that the proposed project will address. Specific issues are outlined below. All issues must be discussed in each sub section below even if they are not the project driver.

4.1 Compliance

Summarize the system's compliance status that necessitates the proposed project.

The existing discharge permit for the Sterling WWTF contains current and upcoming limits for discharges to: (1) surface water (South Platte River) and (2) groundwater recharge basins. A daily maximum total inorganic nitrogen (TIN) limit of 10 mg/L must be met in the downstream monitoring wells beginning November 1, 2017, as required by Regulation No. 41 for groundwater discharge. Activities to achieve the TIN limit are listed in a compliance schedule in Part 6 of the existing discharge permit. Additionally, the Sterling WWTF will be required to meet future effluent nutrient limits per Regulation 85 and Regulation 31. Improvements to the WWTF will be designed to achieve compliance with the proposed surface water limits.

4.2 Existing facility limitations

Summarize existing water system facility(ies) limitations that necessitate the proposed project.

CDPHE requires that at 80% of treatment capacity engineering and financial planning for expansion of the facility must begin. Within the last five years the influent flow has exceeded 80% of the permitted flow for three months. These three months are: July 2011, May 2015 (exceeded the permitted capacity of the WWTP), and June 2015. In addition, the current treatment process is unable to meet the TIN limit of 10 mg/L and will not be able to meet future nutrient limits established in Regulation 85 and 31.

4.3 Operations and Maintenance Issues

Summarize operational and maintenance (O&M) issues with the existing water facilities.

-Due to multiple flooding events of the headworks and influent pump station from high infiltration and inflow (I&I), Sterling must address the increased wastewater flows quickly to reduce future flooding events, wastewater spills, and costly repairs to the headworks and influent pump station. High I&I can be difficult to locate and expensive to correct and the time required to make corrections can take years. Sterling does not have the time or funding to perform a multi-year analysis and rehabilitation program for the collection system.
-Pig launch gate valves are currently inoperable and staff can no longer clean the force main through pigging. As a result, the force main flow capacity appears to be degrading.
-The existing lift station presents significant operational challenges and hazards and is classified as a confined space requiring the use of a tripod and harness, hazardous gas monitoring and a multiple person crew when operations staff must enter the dry well to unclog pumps, perform maintenance or service electrical equipment. City staff reported multiple accidents within the dry well lift station. Electrical panels, switches, controls and power cables in the below grade dry well present a significant electrocution hazard if a leak develops in the dry well.
-A sealed hatch in the existing Microscreen building has flooded multiple times due to hydraulic issues.

5. Existing Facilities Analysis

5.1 Existing Source Water– Section required for treatment and supply projects

☐ Not applicable (for collection system piping, lift stations, interceptors, only)

Existing Permitted Treatment Capacity: Flow: 2.68 MGD Loading: 13,300 Pounds per Day BOD5

5.1.1 Area Discharge Permits

Identify all other discharge permits for facilities discharging to the same stream segment as the existing treatment facilities.

N/A

5.1.2 Service Area

Describe the existing service area including residential, commercial and industrial users, as well as flows and loads from the service area.

The service area is a combination of residential, commercial, and industrial users. City staff is not aware of future changes to the wastewater service area or of plans for new large industrial, commercial, or other non-residential customers currently. Land use has been consistent for Sterling over the last 10 years and changes in land use are not anticipated. The City currently has two significant non-residential customers: The Sterling Correctional Facility and the City of Sterling Water Treatment Plant. Current influent wastewater flow to the plant is reported to be 1.7 mgd and 4,000 ppd BOD5.

5.1.3 Facilities Layout and Description

Describe existing facilities including design capabilities and conditions of existing treatment processes including treatment processes used and major design parameters (e.g. process capacities, unit loading rates, side stream flows, and solids handling).

The existing processes consist of: an extended aeration activated sludge secondary treatment process, including two 2.6-million gallon lined earthen aeration basins, four hopper bottom secondary clarifiers, and a blower building; a 10.4-million gallon polishing pond used to equalize flow and provide additional solids removal; a chlorine/sulfur dioxide disinfection and dechlorination process; a 55-million gallon lagoon used for waste solids treatment, waste solids storage and treatment of peak influent flows.

5.1.4 Existing Process Flow Diagram

Provide a process flow diagram of the existing treatment system as Attachment 5.

5.1.5 Wastewater Flows

Please describe the existing wastewater flows and influent characteristics (including toxic pollutants), discharge permit limits, and overload conditions. Discuss and analyze the average, peak, dry, and wet weather flows. Describe flow contributions from residential, commercial, and industrial users, as well as infiltration and inflow.

Sterling owns and operates a WWTP with a permitted peak month hydraulic capacity of 2.68 million gallons per day (mgd) and an organic loading of 13,300 pounds per day (ppd) BOD5. Current influent wastewater flow to the plant is reported to be 1.7 mgd and 4,000 ppd BOD5, which is approximately 65% and 30% of the WWTP's permitted capacity respectively. In 2015, the peak month and peak day flows were 3.08 and 5.32 mgd, respectively. The peak pumping capacity at the headworks facility is approximately 5.3 mgd. It is anticipated that during extreme wet weather events that flood the headworks due to high I&I, the flow has reached approximately 8 mgd.

5.1.6 Appropriateness of Treatment Technologies

Discuss if the existing treatment process(es) are appropriate to meet the current discharge permit considering existing influent quality and discharge permit limits.

Current treatment processes are unable to meet the discharge limit of total inorganic nitrogen (TIN). Sterling's current wastewater discharge permit (Amendment #1 July 1, 2013) required meeting a TIN of 10 mg/L-N (daily maximum) by November 1, 2017. In addition, the Colorado WQCC Regulations 31 and 85 will have an impact on the permitted nutrient concentrations in the City's WWTF effluent discharged to the South Platte River. Although the timing of ultimate compliance is several years in the future, the City is prudently planning for meeting the potential requirements.

5.1.7 Capacity of Treatment Technologies

☐ Yes ☑ No Is the capacity of the existing wastewater treatment system appropriate to accommodate wastewater flows through the next 20 years?

Please explain:

Within the last five years the influent flow has exceeded 80% of the permitted flow for three months. In general, these three periods can be associated with flooding of the South Platte River or significant storm events. The City of Sterling faces significant challenges due to aging infrastructure and the resulting I&I that results in flooding of the headworks and high hydraulic loading at the WWTP. The average flow in 2040 is projected to be 2.25 mgd. In year 2015 and 2025 the peak month flow exceeds 80% of current permitted peak month capacity of 2.68 mgd, although flooding in year 2015 is an extraordinary event. In year 2040 the peak month flow exceeds the current permitted peak month capacity of 2.68 mgd.

5.1.8 Operational Controls

Describe if the existing treatment processes have appropriate operational controls.

1. The Return Activated Sludge (RAS) is air lifted from clarifiers and lacks the necessary controls to regulate return volume and does not meet current CDPHE design criteria.
2. Clarifiers are of rectangular/hopper bottom design and are difficult to operate do to "mounding" of sludge at different intervals do to design issues with RAS air lifts.

5.2 Collection - Required for collection system, lift station, and interceptor projects only

☑ Not applicable (for treatment and outfall projects, only)

6.Facility Planning Analysis

6.1 Planning Area Description

6.1.1 Project Area Map
Provide a map or maps showing the current and projected service area for the 20-year planning period; identify environmental features such as streams, lakes, wetlands, and floodplains for the entire planning area. On the map, identify the locations of municipal and industrial treatment plants, sludge management areas and facilities, pretreatment plants, lift station sites and any significantly developed areas served by onsite or unconventional systems. Include the map as Attachment 7.

6.1.2 208 Plan Coordination

☐ Yes ☑ No Is the project within or near the boundaries of a 208 Agency or regional council of governments (COG)?

6.1.3 Local and Regional Issues

☑ Yes ☐ No Were local and regional planning efforts considered?

Please describe.

-Sterling Master Plan Update 2013
-Dispersed systems in the region
-Septage receiving in Logan County
-Grease receiving in Logan County

☐ Yes ☑ No Was consolidation with another wastewater system / treatment facility considered?

Please describe.

The Sterling WWTF is the largest in Logan County and is too far from other cities for consolidation to be considered reasonable.

6.2 Population and Water Demand Projections (TMF: Technical-2)

For a 20 year planning period, forecast the population growth, projected increase in Equivalent Residential Taps (ERT), and projected drinking water demands.

Current SFEs - As Calculated in the Prequalification Form: 9359.48

Population and Demand Projections - The department generally accepts two methodologies for projecting water flows over the 20 year planning period. Other methodologies are acceptable with a clear explanation and all assumptions and parameters listed:

☑ Method 1: Population based projections. Recommended for primarily residential systems and/or for systems without potable water meter data.

☐ Method 2: Equivalent Residential Unit (EQR) Analysis. Recommended for systems with a high multifamily, commercial, and industrial users.

Method 1 and 2 templates can be found at the end of this form.
Attach the population projection as Attachment 8.

Discuss supporting data and reasons for projected future growth during the 20 year planning period.
Note: Projects designed solely to serve future development or population growth are not eligible for State Revolving Fund financing.

The City of Sterling has experienced little growth over the recent years. Historic growth (through 2014) was obtained from DOLA. DOLA projects population for Colorado by county; therefore, the population projections for Sterling are based on projections for Logan County. Population projections for the City of Sterling were developed using the same growth rate projected by DOLA for Logan County. DOLA population growth projections for Logan County for years 2015 to 2040 varies by year, but averages to approximately 1.08% for the period of 2015 to 2040. This projected growth rate is higher than Sterling's average growth of 0.24% that has occurred in the previous 10 years (2004 to 2014). Based upon the DOLA population growth projections for Logan County, projected growth for the City of Sterling in 2025 and 2040 is 15,817 and 18,785, respectively.

Identify waste load projections for major effluent parameters such as BOD, TSS, ammonia, phosphorus, metals, etc.

The average influent wastewater load projections are as follows:
BOD: 225 mg/L
TSS: 245 mg/L
TKN: 33 mg/L
Total P: 7 mg/L

7.Assessment of Alternatives

This section should contain a description of the reasonable alternatives that were considered in planning a solution to meet the identified needs. If the proposed project includes new technology then the please discuss whether or not the technology is covered in the CDPHE Design Criteria.

7.1 Alternatives

For each alternative, please provide:
1. A description of the alternative addressing the issues identified in Section 4: Project Purpose and Need. (TMF: Technical-7)
2. Capital cost estimates and annual operation and maintenance costs.
3. Advantages and Disadvantages of each alternative.

Alternative 1 Title : Convert Aeration Basins to Add Pre- & Post-anoxic Zones

Alternative 1 Description (2000 character limit):

Convert existing aeration basins to add pre-anoxic and post-anoxic zones through the use of concrete walls. This option utilizes the existing aeration basins and blower capacity while requiring new construction inside the basins for the installation of internal concrete divider walls.

Alternative 1 Capital and Operation and Maintenance Costs (2000 character limit):

Capital Costs*: $14,100,000
O&M Costs: $1,600,000

*Capital cost does not include improvements of the headworks and force main.

Alternative 1 Advantages and Disadvantages (2000 character limit):

Advantages: capable of meeting TIN limit, utilizes existing aeration basins and blower capacity, lower capital cost.

Disadvantages: limited operational control and flexibility, poor geometry, high capital cost for an alternative with poor operational control, not suitable for expansion to meet Regulation 31.

Alternative 2 Title : Construct Anoxic Basins Outside of Existing Aeration Basins

Alternative 2 Description (2000 character limit):

Alternative 2 includes two options. Option 2A includes constructing new concrete pre-anoxic basins outside the existing aeration basins. This option utilizes the existing aeration basins as aerobic zones in the formation of an MLE process for denitrification utilizing the existing blower capacity. Option 2B includes constructing new concrete pre-anoxic, post-anoxic basins and secondary aeration basins outside the existing aeration basins. This option utilizes the existing aeration basins as primary aerobic zones in a 4-stage Bardenpho process utilizing the existing blower capacity.

Alternative 2 Capital and Operation and Maintenance Costs (2000 character limit):

Option 2A Capital Costs*: $14,100,000
Option 2A O&M Costs: $1,600,000

Option 2B Capital Costs*: $16,000,000
Option 2B O&M Costs: $1,600,000

*Capital cost does not include improvements of the headworks and force main.

Alternative 2 Advantages and Disadvantages (2000 character limit):

Advantages: capable of meeting TIN limit, use of existing aeration basins and blower capacity, new anoxic basins could be segmented and allow for future operational flexibility, lower capital cost for Option 2A.

Disadvantages: higher capital cost for Option 2B, additional footprint required.

Alternative 3 Title : Construct New Pre-Anoxic, Aeration, & Hybas Reactors

Alternative 3 Description (2000 character limit):

Construct new pre-anoxic, aeration and Hybrid Biofilm Activated Sludge (Hybas) media reactors inside the footprint of one of the existing aeration basins. This integrated fixed film activated sludge (IFAS) system would be phased to include a future post-anoxic reactor and aerobic non-media reactor. This option would also require new blowers and medium bubble diffusers. This system has a proposed phasing plan to incorporate levels of treatment to meet limits as they become necessary.

Alternative 3 Capital and Operation and Maintenance Costs (2000 character limit):

Capital Costs*: $18,400,000
O&M Costs: $1,600,000

*Capital cost does not include improvements of the headworks and force main.

Alternative 3 Advantages and Disadvantages (2000 character limit):

Advantages: capable of meeting TIN limit, high reliability of treatment, use of existing aeration basin footprint, greater ability to resist washout due to high I&I events, flexibility for future development.

Disadvantages: highest capital cost.

Provide discussions of additional alternatives as Attachment 19.

8. Selected Alternative

8.1 Justification of Selected Alternative

Please demonstrate why the selected alternative best meets system needs based on both monetary and non-monetary considerations.

Based on input received from City of Sterling operators and staff during the June 7, 2016 workshop meeting, Alternative 3 was selected for further development due to reliability and level of treatment, greater ability to resist washout due to high I&I events, as well as flexibility for future development.

8.2 Technical Description and Design Parameters

For the selected alternative, please describe all proposed project components and assumed design parameters.

The proposed improvements include: rehabilitation of the headworks; dual 16-inch force mains; new influent pump station; 30-million gallon emergency storage, new flow metering, new pre-anoxic, aeration, and IFAS media reactors inside the footprint of one of the existing aeration basins; two new 70-foot diameter secondary clarifiers; new RAS/WAS building; chemical system for phosphorus removal; UV disinfection with a liquid chemical system for redundancy; and a new control building. The design criteria are included with Attachment 10.

8.3 Proposed Process Flow Diagram

Include a proposed treatment facility process flow diagram or map of the collection system, lift station, or interceptor, as applicable as Attachment 10.

8.4 Appropriateness of Treatment Technologies

Discuss appropriateness of the proposed treatment process(es) to meet proposed discharge limits considering anticipated influent wastewater quality.

The treatment process improvements have the ability to produce effluent that meets future anticipated standards, provide improved flexibility to meet future requirements and the ability to add processes to meet future standards, increase system reliability and reduction in damage due to flooding, and provide improved water quality for downstream users.

8.5 Environmental Impacts

Describe direct and indirect impacts on floodplains, wetlands, wildlife habitat, historical and archaeological properties, etc., including any projected permits and certifications. Indicate the need for a stormwater permit application, 401/404 permit applications, and CDOT and railroad permit applications.

A floodplain permit may be required for temporary stockpile storage. A Cultural Resource Survey and Environmental Assessment have been drafted by ERO Resources Corporation. Sections of the existing and proposed force main are within wetlands. The draft Cultural Resource Survey provided a determination of "no historic properties adversely affected". Dewatering Discharge, Section 404, and Railroad permits will be required.

8.6 Land Requirements

Identify all necessary sites and easements, permits and certifications, and specify if the properties are currently owned, to be acquired, or leased by the applicant.

A majority of the land is owned by the City of Sterling, including the headworks site, sections of the force main, and the WWTF site. The force main will require new permanent easements, temporary construction easements, a Railway Pipeline License, and a Conditional Use Permit for work in the County road.

8.7 Construction Challenges

Discuss construction challenges such as subsurface rock, high water table, limited access, or other conditions that may affect cost of construction or operation of a facility.

The draft Geotechnical Report provided by Terracon Consultants Inc. indicates that loose soils will be present, a high water table that will require extensive dewatering, and excavations into the on-site sand soils may require significant slopes, benching, or shoring.

8.8 Operational Aspects

Discuss the operator staffing requirements, operator certification level requirements, the expected basic operating configuration and process control complexities, and the operational controls and equipment that allows operational personnel to respond to routine and unanticipated treatment challenges, such as flow rate, fluctuations in influent quality, process monitoring and chemical feed dosing.

Improvements do not have specialized staffing requirements. A Class A operator certification level will be required for the ORC. The addition of a process control and monitoring system will be necessary as the new process will be more operationally complex. New or replacement lab equipment may also be necessary for staff to perform daily operations.

8.9 Costs

Summarize the capital costs associated with the selected alternative. The 20 year cash flow projection included in Attachment 4 must reflect the capital and operation and maintenance costs associated with the selected alternative.

The capital cost of the WWTF alternative is $18,400,000. The overall project capital cost is $37,000,000; including construction of the headworks, force main, and WWTF improvements; construction overhead and profit; and administration, engineering, and legal fees. The opinion of probable project costs are an AACE Class 3 Cost Range of -20% to +30%.

Current Equivalent Residential Taps (ERT)

Secondary Treatment (Category I)	100
Advanced Treatment (Category II)	0
Infiltration/Inflow (Category IIIA)	0
Sewer System Rehabilitation (Category IIIB)	0
New Collector Sewers (Category IVA)	0
New Interceptors (Category IVB)	0

CSO Correction (Category V)	0
Storm Sewers (Category VI)	0
Recycle Water Distribution (Category X)	0
Nonpoint Source Pollution Control Activities (Category VII)	0
TOTAL: (should total 100%)	100

Please include an estimate of the projected increase in and total average monthly user charges. Does the user charge system allow for billing, collection, and enforcement?

8.10 Green Project Reserve

Check one or more green category that applies to the project:

☐ Green Infrastructure ☐ Water Efficiency ☑ Energy Efficiency ☑ Environmentally Innovative

Describe any green components incorporated into the selected alternative.

The eligibility for the GPR is still being evaluated. The new control building is anticipated to be LEED Certified and the energy savings from the denitrification process is under evaluation.

The system must reference the most recent copy of the EPA Green Project Reserve guidance and procedures. These references are available on the CDPHE WQCD GLU website under "Green Project Reserve": https://www.colorado.gov/pacific/cdphe/wq-green-project-reserve
Include a business case for the project as Attachment 11, if applicable.

8.11 Environmental Checklist

Include the Environmental Checklist for the Selected Alternative as Attachment 12.

8.12 Project Implementation

8.12.1 Proposed Schedule

Request for PELs	08/22/2018	Site Application Submittal Date	11/15/2018
Process Design Report/Basis of Design Report Submittal Date	11/15/2018		
Final Plans and Specifications Submittal Date (for Non-Streamlined Review only)	04/15/2019		
Discharge Permit	09/30/2018	Miscellaneous Permits	05/31/2019
Public Meeting Date		Loan Application Submittal Date	04/15/2019
Advertisement for Bids Publication Date	06/01/2019	Construction Contract Award Date	08/01/2019
Construction Start Date	09/01/2019	Construction Completion Date	05/01/2021

8.12.2 Public Meeting

Provide documentation of a public meeting held or describe when and where the meeting will be held. The meeting must be noticed for 30 days. Provide the public notice, proof of publication, sign in sheet, and agenda as Attachment 14 or provide to your project manager in the Grants and Loans Unit after the meeting has taken place.

☐ Include the public meeting documentation as Attachment 14.

Or, will be provided to the Grants and Loans Unit project manager after the meeting takes place.

9. Projecting Water Flows Method 1: Population based projections

Assumptions/Data		Information Source
Current System Population	_____ People	_____
Current Service Area Population (If providing water to neighboring community)	_____ People	_____
Population Growth Rates	_____ % increase/year	_____
Average Daily per Capita Flow Rate	_____ Gallons per capita day	_____
Average Day Maximum Month per Capita Flow Rate	_____ Gallons per capita day	_____
Maximum Daily per Capita Flow Rate	_____ Gallons per capita day	_____
Peak Hour Factor	_____	_____
Average Influent BOD5 Concentration	_____ mg/L	_____
Average Day Maximum Month Influent BOD5 Concentration	_____ mg/L	_____

Year	System Population	Service Area Population (if different)	Average Daily Flow	Maximum Daily Flow	Peak Hour Flow	Average BOD5 Loading (pounds per day)
+0	0	0				
+5						
+10						
+15						
+20						

10. Projecting Water Flow Method 2: Equivalent Residential Taps (ERT)

Current Equivalent Residential Taps (ERT)			
A	Number of active residential taps:	0	Units
B	Total Annual Potable Water Use less Irrigation Usage (gallons per year) – Residential	0	
C	Estimated equivalent residential potable water usage Annual flow per EQR = A/B	0	Gallons per SFE

D	Wastewater flow from commercial users	0	Gallons per ft2
E	Equivalent EQRs per 1000 ft2 of commercial space EQRs per 1000 ft2=D*1000/C	0	SFEs per 1000 ft2
F	Commercial space in service area	0	1000 ft2
G	Commercial EQRs Commercial EQRs = F*E	0	SFEs
H	Wastewater flow from industrial users	0	1000 ft2
I	Equivalent EQRs per 1000 ft2 of industrial space EQRs per 1000 ft2 = H*1000/C	0	1000 ft2
J	Industrial space in service area	0	1000 ft2
K	Industrial EQRs Industrial EQRs = H*J	0	1000 ft2
L	Length of sewer pipe in collection system	0	1000 ft2
M	Infiltration/Inflow contribution per 1000 feet of sewer pipe	0	1000 ft2
N	Equivalent EQRs per 1000 feet of sewer pipe EQRs per 1000 LF=M/C	0	1000 ft2
O	Infiltration/Inflow EQRs Infiltration/Inflow EQRs = L/1000*N	0	1000 ft2
P	Total EQR = A + G + K + N	0	1000 ft2

Population and Flow Assumptions / Data			Information Source
Current System Population	_____	People	_____
Current Service Area Population (If providing water to neighboring community)	_____	People	_____
Population Growth Rates	_____	% increase/year	_____
Average daily flow per ERT	_____	Gallons per capita day	_____
Maximum daily flow per ERT	_____	Gallons per capita day	_____
Peak Hour Factor	_____	Gallons per capita day	_____

Year	System Population	Service Area Population (if different)	Residential Taps (ERTs)	Multifamily Residential Taps (ERTs)	Commercial/ Industrial Taps (ERTs)	Irrigation Taps (ERTs)	Total Taps (ERTs)	Average Daily Flow	Maximum Daily Flow	Peak Hour Flow
+0										
+5										
+10										
+15										
+20										