SANITARY SEWER SYSTEM ASSESSMENT

GENERAL INFORMATION

CHECKLIST COMPLETED BY: ☐ CITY STAFF ☐ CONTRACTOR/VENDOR

_____ _____
Name Date

_____
Contact Information

UTILITY CONTACT INFORMATION

Utility Name
_____

MAILING ADDRESS	**CONTACT INFORMATION**
_____ Street Address	_____ Name
_____ Street Address (continued)	_____ Title
_____ City State Zip	_____ Email
	_____ Phone Fax

GENERAL INFORMATION

PERMITTED TREATMENT & COLLECTION FACILITIES

NPDES or STATE PERMIT #	PERMITTEE/ CO-PERMITTEE/JURISDICTIONS	CHECK WHICH UTILITIES HAVE PERMIT COVERAGE		
		WWTP Effluent	Collection System	Wet-Weather Facility
	_____ _____ _____	☐	☐	☐
	_____ _____ _____	☐	☐	☐
	_____ _____ _____	☐	☐	☐
	_____ _____ _____	☐	☐	☐

GENERAL INFORMATION

What class is the system or facility? **A** ☐ **B** ☐ **C** ☐ **D** ☐

Does appropriate person(s) on city staff have proper wastewater operating license(s) as required by the Minnesota Pollution Control Agency? (*See below)* **YES** ☐ **NO** ☐

Which type of certificate(s) does the operator(s) on city staff hold? (*Check all that apply*)

A ☐ **B** ☐ **C** ☐ **D** ☐

SA ☐ **SB** ☐ **SC** ☐ **SD** ☐

Class A Certificate: Operator must have been certified as a Class B operator for at least two years, and have a high school diploma or equivalent with at least eight years experience in the operation of a Class A or B system or facility; or a bachelor's degree in an appropriate branch of engineering or in a physical or biological science, and satisfactory evidence of at least four years of responsible experience in the operation, including at least two years as a part of the management of a Class A or B system.

Class B Certificate: Operator must have been certified as a Class C operator for at least one year; and have a high school diploma or equivalent with at least six years experience in the operation of a Class A, B, or C system or facility; or a bachelor's degree in an appropriate branch of engineering or in a physical or biological science, and satisfactory evidence of at least two years of responsible experience in the operation of a Class A, B, or C system.

Class C Certificate: Operator must have a high school diploma or equivalent with at least three years experience in the operation of a Class A, B, C, or D system or facility; or a bachelor's degree in an appropriate branch of engineering or in a physical or biological science, and satisfactory evidence of at least one year of responsible experience in the operation of a Class A, B, C, or D system.

Class D Certificate: Operator must have a high school diploma or equivalent, and have at least one year experience in the operation of a Class A, B, C, or D system; or satisfactorily completed a postsecondary program of courses in water or wastewater technology.

Type S Certificate: Operator must possess the same education and experience required for a regular wastewater certificate in the same class, except experience must have been gained in a facility or type S facility and an applicant for an S-A type certificate must have been certified as an S-B or B facility operator for at least two years; or an applicant for a type S-B certificate must have been certified as an S-C or C facility operator for at least one year.

COLLECTION SYSTEM DESCRIPTION

SYSTEM INVENTORY (ONLY COMPLETE IF MUNICIPAL FACILITY)

Does the utility have a treatment facility? **YES** ☐ **NO** ☐

If no, where does the waste go?

_____

TREATMENT FACILITIES

_____ Number — Treatment Facilities

_____ MGD — WWTP design capacity

COLLECTION FACILITIES

_____ MGD — Average daily flow

_____ MGD — Peak flow

_____ MGD — Average dry weather flow

_____

ACCESS & MAINTENANCE

Manholes _____ Number

Air vacuum relief valves _____ Number

CONVEYANCE & PUMPING

	Gravity Sewers	Force Mains	Pump Stations
Pipes & pumps Length/quantity	_____ Feet	_____ Feet	_____ Number
Age of system 0-25 years old	_____ Feet	_____ Feet	_____ Number
26-50 years old	_____ Feet	_____ Feet	_____ Number
51-75 years old	_____ Feet	_____ Feet	_____ Number
>76 years old	_____ Feet	_____ Feet	_____ Number
	_____ Feet	_____ Feet	_____ Number

Number of inverted siphons _____

COLLECTION SYSTEM DESCRIPTION

SERVICE AREA CHARACTERISTICS

Service area _____ Sq Miles

Service population _____ People

Annual precipitation _____ Inches

Number of Service Connections

Residential		Non-Residential		TOTAL
_____ Number	+	_____ Number	=	_____ Number

At what point in the system is the utility responsible for maintenance and repair related to service laterals? (*check one*) *Definition*: The service lateral is constructed by a private owner for sewer service to a private property. The service lateral is the extension that connects a private sewer to the city sewer.

☐ At main line connection only

☐ At the building

☐ At the property line or easement

☐ Other: _____

Combined Sewer Systems
Is any part of the system served by combined sewers (i.e., sanitary sewage and storm water in the same pipe)?

YES ☐ **NO** ☐

COLLECTION SYSTEM DESCRIPTION

Note the number of feet of the following kinds of pipe in the city's sanitary sewer system:

PIPE DIAMETER			
GRAVITY SEWERS		**FORCE MAINS**	
8 inches or less	_____ Feet	2 inches or less	_____ Feet
>8 – 12 inches	_____ Feet	>2 – 4 inches	_____ Feet
>12 – 20 inches	_____ Feet	>4 – 6 inches	_____ Feet
>20 inches	_____ Feet	>6 – 8 inches	_____ Feet
		Other	_____ Feet

PIPE MATERIAL			
GRAVITY SEWERS		**FORCE MAINS**	
Vitrified clay pipe (VCP)	_____ Feet	Ductile Iron Pipe (DIP)	_____ Feet
Polyvinyl Chloride (PVC)	_____ Feet	Polyvinyl Chloride (PVC)	_____ Feet
High density polyethylene (HDPE)	_____ Feet	High density polyethylene (HDPE)	_____ Feet
Reinforced concrete pipe (RCP)	_____ Feet	Other (*Explain*) _____ _____ _____	_____ Feet
Pre-stressed concrete cylinder pipe (PCCP)	_____ Feet		
Other (*Explain*) _____ _____ _____	_____ Feet		

LIFT STATIONS (LS)

	YES	NO
LS-01 Are Standard Operating Procedures (SOPs) and Standard Maintenance Procedures (SMPs) used for each pump station?	☐	☐

Components of SOPs and SMPs include:

- Easy availability of original manuals that contain the manufacturers recommended maintenance schedules for all lift station equipment
- Operating procedures for manipulating pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows
- Setting wet well operating levels to limit pump start/stops
- Cleaning wet well
- Calibrating flow meters or conducting draw down tests
- Regular rotation of lead, lag, and backup pumps
- Maintenance of operation logs and general records for all lift station activities, including inspections

3. Clean force mains
4. Identify problem areas/components

LS-02 Does the utility record the number of lift stations, their location, date of installation, and capacity of each pump station?	☐	☐

ALARM SYSTEMS

Number of lift stations _____ Number

LS-03 What type of alarm system(s) does the lift station(s) have?

☐ Telemetered ■ How many? _____

☐ Audiovisual only ■ How many? _____

	YES	NO
LS-04 Is the alarm system monitored 24 hours per day?	☐	☐
LS-05 Is there a 24 hour notification of alarms?	☐	☐
LS-06 Does the utility know who manufactured the alarm?	☐	☐

LS-07 Which of the following methods does the utility use when loss of power occurs? (*Check all that apply*)

☐ On-site electrical generators ☐ Portable electric generators ☐ Alternate power source

☐ Vacuum trucks to bypass pump stations ☐ Portable bypass pump ☐ Other

LIFT STATIONS (LS)

The following assessment can be used to identify the utility's lift stations and how often the alarm systems are monitored. This checklist recognizes that some communities might have a large number of grinder pumps. If this is the case, you could group the number of grinder pumps together and list their monitoring frequency as a whole (e.g. grinder pumps 1-37 are monitored quarterly).

ALARM SYSTEMS (*continued*)	
Lift Station	**MONITORING FREQUENCY**
Name ________________ Location ______________	☐ Daily ☐ Weekly ☐ Other (*explain*) ___________________________
Name ________________ Location ______________	☐ Daily ☐ Weekly ☐ Other (*explain*) ___________________________
Name ________________ Location ______________	☐ Daily ☐ Weekly ☐ Other (*explain*) ___________________________
Name ________________ Location ______________	☐ Daily ☐ Weekly ☐ Other (*explain*) ___________________________
Name ________________ Location ______________	☐ Daily ☐ Weekly ☐ Other (*explain*) ___________________________
Name ________________ Location ______________	☐ Daily ☐ Weekly ☐ Other (*explain*) ___________________________
Name ________________ Location ______________	☐ Daily ☐ Weekly ☐ Other (*explain*) ___________________________
Name ________________ Location ______________	☐ Daily ☐ Weekly ☐ Other (*explain*) ___________________________
Name ________________ Location ______________	☐ Daily ☐ Weekly ☐ Other (*explain*) ___________________________

SEWER CLEANING (CLN)

	YES	NO
CLN-01 Does the utility have a written schedule in place for routine inspecting/cleaning of the system?	☐	☐
CLN-02 Does the utility have a documented inspection and cleaning program of problem areas?	☐	☐
CLN-03 Does the utility have a documented root control program?	☐	☐
CLN-04 Does the utility have a documented fats, oils, and grease (FOG) program? (FOG usually comes from food service or production industries, but may stem from residential homes and/or other businesses.)	☐	☐
CLN-05 Are stoppages plotted on maps and correlated with other data such as pipe size and material or location?	☐	☐
CLN-06 Does the city televise private lines?	☐	☐

CLN-07 When does the city televise city lines? *(Check all that apply.)*

- ☐ Before cleaning backup,
- ☐ After a claim has been made
- ☐ When pipe is identified as having a history of backups, or other possible problem identified during maintenance
- ☐ After cleaning routine
- ☐ During weather event
- ☐ On a regular schedule
- ☐ After weather event

CLN-08 Which of the following information is included in the sewer cleaning records? (*Check all that apply*.)

- ☐ Manhole inspection
- ☐ Method of cleaning
- ☐ Public line
- ☐ Date and time
- ☐ Location of stoppage or routine cleaning activity
- ☐ Private line
- ☐ Cause of stoppage necessary/initiated
- ☐ Further actions
- ☐ Identity of cleaning crew
- ☐ Materials removed from the line (rags, grease, etc.)

	YES	NO
CLN-09 Does the city contract (vendor, contractor, other city) for sewer cleaning?	☐	☐

If you answered YES to CLN-09, please complete the following:

CLN-10 What services are contracted? _____

CLN-11 Has the current contract between the city and the contractor been reviewed by the League of Minnesota Cities Insurance Trust?	☐	☐
	☐	☐

CLN-12 Does the contractor televise the lines before and after cleaning?

CLN-13 Does the city receive a copy of the video and a written report summarizing findings and observations before and after lines are cleaned? ☐ ☐

RECORD KEEPING (RK)

For purposes of this checklist, the term "backup" is defined as an overflow or accumulation in the system due to a stoppage, malfunction, etc. The term "bypass" is defined as the removal of sanitary sewage or storm water within the system for purposes of placing elsewhere.

		YES	NO
RK-01	Does the utility have a record keeping system in place for tracking maintenance activities? (*Either electronic or good paper files*.)	☐	☐
RK-02	Are records maintained for a minimum of at least six years? (*Claims brought more than six years after the date of accident or injury are likely to be barred by the statute of limitations set forth in Minn. Stat. 541.05, Subd.1*.)	☐	☐
RK-03	Does the utility keep track of all backup events?	☐	☐

RK-04 Which of the following have a program management or tracking system in place? (*Check all that apply*.)

☐ Work orders	☐ Scheduled inspections	☐ Equipment/tools tracking
☐ Public Education	☐ Safety incidents	☐ Parts inventory
☐ Scheduled maintenance	☐ Scheduled monitoring/sampling	☐ Public backups
☐ Standard operating procedures	☐ Compliance/overflow tracking	☐ Private backups

RK-05 How often are your records updated? (*Check one*.)

☐ Immediately (within one business day)	☐ Within one week of the "incident"
☐ Monthly	☐ As time permits

NEW SYSTEM CONSTRUCTION (NSC)

		YES	NO
NSC-01	Are construction sites inspected by qualified personnel to ensure construction is taking place in accordance with plans and specs?	☐	☐
NSC-02	Are new lines televised prior to being hooked into city system?	☐	☐
NSC-03	Are the televised records retained for a minimum of at least 12 years? (*Claims brought more than 12 years after the date a system was constructed or modified are likely to be barred by the "improvement to real property" statute of limitations as set forth in Minn. Stat. 541.051, Subd.1.*)	☐	☐

OVERFLOW EMERGENCY RESPONSE PLAN (OERP)

		YES	NO
OERP-01	Does the utility have a documented OERP available for utility staff to use?	☐	☐

Components of an OERP include:

- A detailed description of specific responsibilities for personnel who respond to emergencies
- Ongoing training and drills for staff who respond to emergency situations
- Prompt access for work crews to tools and equipment during emergencies
- Standard procedures for notifying state agencies, duty officers, local health departments, the NPDES authority, the public, and drinking water authorities of overflow events
- A public notification plan
- Procedures to limit public access to and contact with areas affected with SSOs (*Procedures can be delegated to another authority.)*
- Containment techniques to protect the storm drainage systems

OERP-02	Is the OERP reviewed and updated at least once a year?	☐	☐
OERP-03	Does the utility keep track of the names, titles, phone numbers, and responsibilities of all personnel involved in emergency situations?	☐	☐
OERP-04	Are hazardous material or petroleum spills reported to the Minnesota Duty Officer at 800-422-0798 in a timely manner (i.e. within 24 hours)?	☐	☐

OERP-06 What information is included in the city's overflow records? (*Check all that apply.)*

☐ Date and time	☐ Location	☐ Any corrective efforts/actions
☐ Cause(s)	☐ How it was stopped	☐ Estimated flow/volume discharged
☐ Name(s) of affected receiving water(s)	☐ Name(s) of employee(s) responding	☐ Duration of overflow
☐ Weather/rainfall		☐ Overflow treatment provided

SAFETY (SAF)

	YES	NO
SAF-01 Does the utility/city have an active safety program (i.e. safety committee, regular safety meetings, safety training program, records of employee safety training)?	☐	☐
SAF-02 Does the utility have a written safety policy that is reviewed and/or revised at least once a year?	☐	☐

SAF-03 Does the utility have written safety procedures for the following? *(Check all that apply)*

	YES	NO	N/A		YES	NO	N/A
Lockout/tagout	☐	☐	☐	Biological hazards in wastewater	☐	☐	☐
Material safety data sheets (MSDS)	☐	☐	☐	Traffic control and work site	☐	☐	☐
Chemical handling	☐	☐	☐	Electrical and mechanical systems	☐	☐	☐
Confined space entry	☐	☐	☐	Pneumatic and hydraulic systems	☐	☐	☐
Trenching and excavations	☐	☐	☐				

SAF-04 Are the following equipment items available and in adequate supply?

	YES	NO	N/A		YES	NO	N/A
Confined space ventilation equipment	☐	☐	☐	Portable crane/hoist	☐	☐	☐
Respirators and/or self contained breathing apparatus	☐	☐	☐	Fire extinguishers	☐	☐	☐
5-minute escape breathing devices	☐	☐	☐	Traffic/public access control equipment	☐	☐	☐
Atmospheric testing equipment and gas detectors	☐	☐	☐	Protective clothing (PPE)	☐	☐	☐
Full body harness	☐	☐	☐	Fiberglass or aluminum ladders	☐	☐	☐
Tripods or non-entry rescue equipment	☐	☐	☐	Antibacterial soap and first aid kit	☐	☐	☐

SYSTEM MAPPING (MAP)

	YES	NO
MAP-01 Are "as built" plans (record drawings) or maps available for use in the office and in the field?	☐	☐
MAP-02 Is there a procedure to record changes or inaccuracies in the maps and update the mapping system?	☐	☐
MAP-03 Do the maps show the date the map was drafted and the date of the last revision?	☐	☐
MAP-04 Is there a numbering and identification method established to identify manholes, sewer lines, and other items (pump stations, etc.)?	☐	☐

MAP-05 Do you require new "as built" plans to include the following? This recognizes that older as-built plans may not have all the following components. (*Check all that apply*.)

- ☐ Scale
- ☐ North arrow
- ☐ Date the map was drafted
- ☐ Date of last revision
- ☐ Service area boundaries
- ☐ Property lines
- ☐ Other landmarks (roads, water bodies, etc.)
- ☐ Location of building laterals
- ☐ Pipe material
- ☐ Street names
- ☐ Flow monitor location
- ☐ Force mains
- ☐ Pump stations
- ☐ Lined sewers
- ☐ Main, trunk, and interceptor sewers
- ☐ Easement lines and dimensions
- ☐ Separate/combined sewer
- ☐ Condition of pipe
- ☐ Slope
- ☐ Pipe diameter
- ☐ Installation date
- ☐ Age of manhole
- ☐ Manhole depth
- ☐ Manhole coordinates
- ☐ Manhole inverts/drops
- ☐ Distance between manholes
- ☐ Manhole and other access points
- ☐ Manhole material