Terms of Reference for Water System Assessments

Assessments provide an important basis for negotiating and decision-making. For this reason, they need to be comprehensive, and should be carried out by professionals who can be held accountable for the quality and accuracy of the analysis. An assessment process can have a variety of intentions. For example:

- To ensure regulatory compliance and develop plans for water system upgrades;
- To evaluate water system security and vulnerability;
- For asset management purposes;
- For source water protection;
- For risk management; and,
- For public health protection.

This Terms of Reference contains a list of topics that should be addressed in an assessment of the suitability of a water system for CSRD acquisition. The list does not address all assessment requirements of the Drinking Water Protection Act. The goals of this assessment process are to:

- Provide a description of the existing water system, including general information regarding the system and the existing infrastructure, as well as operational, management and financial information;
- Assess the water system to determine whether it meets current legislation, CSRD requirements, and best practices. This includes implications for water quality, system reliability, current/future needs, administrative/operational/maintenance activities;
- Identify implications for CSRD risk; and
- Determine the financial implications for both the CSRD and its water users through the development of a plan for system upgrades, and an assessment of the financial viability of the system.

The assessment process can often be limited by a lack of information regarding the system, including a lack of design/construction/operational records. This is further exacerbated because water system infrastructure is mainly buried/not readily visible for inspection.

The level of detail required in the assessment process therefore needs to be balanced with the benefit that will be gained by the assessment. For example, in cases where the existing infrastructure does not appear to meet CSRD standards/current best practices, then the physical assessment process does not need to be extensive.

It is therefore recommended that the assessment process consider the following:

Taking Stock of the Existing Situation

Location, History and Service Area

- Location of the system
- History of system
- Service area
- Number and type of connections (existing/build-out), population served, range of uses served Governance

Ownership of System (ID, private utility, WUC)

- Bylaws
- Method Representation/Elections
- Public Accountability Provisions
- Administration

Staffing and organization of staff

- Certification of operators and EOCP classification of water system
- Salaries and benefits of staff
- Office facilities, works yards and ownership
- Risk Management

Nature and extent of insurance coverage

- Underwriter
- Premiums
- Emergency response plans

Communications systems

- SCADA
- Method of data recording, alarms

Permits and Licenses

- Construction Permit (IHA)
- Operating Permit (IHA) conditions of permit
- Water license(s) (MoE)
- Highway permits (MoT)
- CPCN (if private utility)
- Easements
- IHA boil orders or advisories-incidence, duration

Financial

- Existing costs (administrative, operational, debt service)
- Sources of revenue and method of cost recovery (taxes, charges, fees, development charges)
- Reserves, trust and other financial assets
- Current annual budget
- Existing rates
- Capital plan

Assets

 Nature and value of physical assets including the system itself, real property, equipment and supplies

Operations

- Sampling, testing and reporting protocols frequency, methods
- Emergency response procedures
- Standards and specifications for infrastructure and operations
- Maintenance planning and maintenance activities
- Contracting—existing contracts, types of activities contracted out

System Description

- General record drawings, design reports, geotechnical or other information, monitoring/maintenance records (e.g. flows, water quality, pump hours)
- Source (primary, secondary)
- If surface source-description of watershed including existing uses, tenures
- Intake (if surface source)-description, age and capacity Well description, age, capacity, reports: hydrogeological/pump test/wellhead protection
- Treatment facilities-(nature of treatment-disinfection, filtration; age, capacity)
- Storage facilities-location, type, age, capacity, reports: geotechnical/structural/leakage investigation/inspection, frequency of cleaning
- Distribution system (pipe material, location, size; pump stations, PRVs)

Land Use Plans/Regulations

- Official Community Plan status
- Area covered by Zoning Bylaw

Infrastructure Assessment

- Description of design standards used in analysis (standards in the CSRD's Subdivision Servicing Bylaw must be used)
- Assessment of source based on existing and projected future demand:
 - Adequacy of watershed protection plans and measures (surface source)
 - Adequacy of groundwater protection plan -Source water quality (past trends, existing quality)
 - Security of well (groundwater) -Risk to well from flooding or seepage/impact by adjacent stream or lake (groundwater)
 - Adequacy of source to supply existing and projected future demand (both)
- Assessment of condition and adequacy of intake works (intake, pump station) to meet existing and projected future demand (surface), and Fisheries requirements
- Condition and adequacy of existing treatment facilities including level of treatment achieved and consistency with DWPR and Canadian Drinking Water Standards
- · Condition and adequacy of storage facilities to meet existing and projected future demand
- Condition and ability of pumping facilities and PRVs to provide for existing and projected future demand
- Condition and adequacy of existing distribution system to meet existing and projected future demand
- Condition and adequacy of operator safety equipment and review of what is required to meet
- WorkSafe BC legislation

Assessment of Financial Position and Practices

- · Adequacy of rates to recover full cost of operations after CSRD acquisition
- Adequacy of reserves and contingencies to fund replacement and repairs
- Budget process
- Overall financial position of system

Assessment of Easements/Rights-of-way

• Determine whether system facilities are protected by required easements and rights-of-way

Assessment of Permits and Licenses

• Review of licenses and permits to ensure validity, etc.

Land Use Management

• Determine the need for land use planning and regulations in view of potential upgrading of system

Plans and Programs

Infrastructure Upgrading Plan

 Identification of upgrading required to bring (water) system into conformity with CSRD standards and specifications, IHA operating permit, WCB requirements for operator safety equipment, and other relevant standards. The deficiencies noted in the assessment should be addressed by the recommended works. The plan should include the preparation of capital cost estimates and a recommended phasing plan (in consultation with the CSRD). **Operations and Maintenance Requirements**

- Recommended restources vanderskills the eded to Abperate Kand maintain the system in consideration of CSRD capacity
- Calculation of operation and maintenance cost for proposed upgraded system Recommended training program for operator(s)

Financial Plan - to be completed by the CSRD

- Preparation of a 5 year capital plan including staging of capital projects and proposed sources of capital revenue for each project
- Confirmation of operation and maintenance costs
- Annual costs and required revenues
- Implications for reserve and trust funds
- Implications for user fees, tax rates and tariffs