**Section 602.225 Engineer's Report**

Upon request from the Agency, an applicant for a construction permit must submit an Engineer's Report. Types of construction projects for which the Agency may request an Engineer's Report include the construction of a new community water supply, a new source location, or a new water treatment process other than chemical feeding only. The Engineer's Report may be submitted as a preliminary plan under Section 602.205. An Engineer's Report submitted under this Section must contain the information specified by this Section.

a) General information, including:

1) a description of the existing community water supply;

2) a description of the sewerage facilities;

3) a description of the municipality or area to be served; and

4) the name and mailing address of the owner or official custodian of the community water supply.

b) The extent of the community water supply system, including:

1) a map of the area to be served with water and any provisions for extending the community water supply system;

2) maps of additional areas to be served and an appraisal of the future requirements for service; and

3) present and prospective industrial and commercial water supply needs that are likely to be required in the near future.

c) Water consumption data, including:

1) population trends, as indicated by available records;

2) an estimate of the number of consumers, based on population trends, who will be served by the proposed or expanded water supply system 20 years in the future;

3) present and future water consumption values used as the basis of design;

4) present and estimated future yield of the water sources for a community water supply; and

5) estimated water loss in the distribution system based on available records.

d) A justification for the project when two or more solutions exist for providing community water supply facilities, as directed under the Illinois Drinking Water Revolving Loan Funding Process (35 Ill. Adm. Code 662), each of which is feasible and practicable. The Engineer's Report must discuss the alternatives and provide reasons for selecting the one recommended, including financial considerations, operational requirements, operator qualifications, reliability, and water quality considerations.

e) Sources of Water Supply. The Engineer's Report must describe the proposed source or sources of water supply to be developed and the reasons for their selection, and provide information as follows:

1) For surface water sources:

A) hydrological data, stream flow, and weather records;

B) safe yield, including all factors that may affect it;

C) documentation of the structural safety of any spillway or dam to assure that spillway or dam can continue to provide a source of water during extreme weather;

D) description of the watershed, noting any existing or potential sources of contamination (such as highways, railroads, chemical facilities, and land/water use activities) that may affect water quality;

E) summarized quality of the raw water, with special reference to fluctuations in quality and changing meteorological conditions; and

F) source water protection issues or measures, including erosion and siltation control structures, that need to be considered or implemented.

2) For groundwater sources:

A) the sites considered;

B) advantages of the site selected;

C) the elevations above mean sea level of the site selected;

D) the probable character of geologic formations through which the source is to be developed;

E) hydrogeologic conditions affecting the site, such as anticipated interference between proposed and existing wells;

F) sources of possible contamination, such as sewers and sewage treatment/disposal facilities, highways, railroads, landfills, outcroppings of consolidated water-bearing formations, chemical facilities, waste disposal wells, and agricultural uses;

G) the test well depth and method of construction, including placement of liners or screens;

H) test pumping rates and their duration, including water levels and specific yield;

I) test well water quality information; and

J) wellhead protection measures being considered.

f) Project sites, including:

1) a discussion of the various sites considered and the advantages of the chosen one;

2) the proximity of residences, industries, and other establishments; and

3) any potential sources of pollution that may influence the quality of the supply or interfere with the effective operation of the water works system, such as sewage absorption systems, septic tanks, privies, cesspools, sink holes, sanitary landfills, and refuse and garbage dumps.

g) Proposed Treatment Processes. The Engineer's Report must describe all proposed treatment processes necessary to meet the requirements of this Chapter and provide any available supporting data.

h) Automation. The Engineer's Report must provide supporting data justifying automatic equipment, including the servicing and operator training to be provided, and must provide for manual override of any automatic controls.

i) Power. The Engineer's Report must include the following power description:

1) the main source of power;

2) dedicated standby power capable of providing power to operate the community water supply's water source, treatment plant, and distribution facilities during power outages; and

3) outside emergency power sources that are available.

j) Soil characteristics, groundwater conditions, and foundation problems, including:

1) the character of the soil through which water mains are to be laid;

2) the foundation conditions prevailing at sites of proposed structures; and

3) the approximate elevation of groundwater relative to mean sea level at its expected highest level in relation to subsurface structures.

k) Flow requirements, including a hydraulic analysis based on flow demands and pressure requirements.

BOARD NOTE: Fire flows, when fire protection is provided, should meet the recommendations of Insurance Services Office, Inc. (also known as "ISO" or "Verisk") or other similar agency for the service area involved.

l) Water Plant Wastes. When waste treatment facilities are necessary for the addition of a new process or an increase in water treatment plant capacity, those facilities must be included as part of the engineering plans and specifications, and the Engineer's Report must include the following:

1) an estimate of the character and volume of the waste that will be generated and its proposed disposition; and

2) the type of waste treatment, discharge location, and frequency of discharge.

(Source: Amended at 47 Ill. Reg. 7449, effective May 16, 2023)