



*The water booster station was needed to service future development in the Town of Innisfil.*

## Lakeshore Water Supply Zone 2 Booster Station Town of Innisfil

In January 2007, the Town of Innisfil awarded the Ainley Group an engineering contract to design and provide construction administration/site observation services for a new water booster station in Alcona. The increased water pressure will provide services for proposed future development of Alcona.

A Design Brief for the proposed works was completed in June of 2007. The Town's existing Lakeshore distribution system computer model, completed by others using WaterCAD, was used to confirm the operation, size and pressures produced by the proposed facility.

The Zone 2 area is a closed water system, which will service approximately 6,600 future residents. The booster station's design included four vertical turbine, high-lift pumps with the following capacity ratings:

- Jockey pump equipped with variable frequency drive to satisfy the average day demand range of between 10 and 31 L/s at a pressure boost of 56 m (550 kPa)
- Two duty pumps equipped with variable frequency drives, each sized to meet the maximum day demand of 62 L/s at a pressure boost of 56 m and capable of providing a flow range of between 20 and 62 L/s

### Project Facts

**Client:** Town of Innisfil

#### Scope of Work:

- Detailed Design:
  - SCADA system Expansion
  - Architectural
  - HVAC
  - site servicing
  - driveway access and landscaping
  - stand-by power
- Construction administration
- Site observation.

#### Key Design Criteria:

- Services population of approximately 6,600
- Max Day Demand = 62 L/s
  - 2 pumps @ 62 L/s
  - 1 pump @ 92 L/s
  - 1 pump @ 31 L/s

#### Project Cost:

Construction: **\$1,500,000** (2007)

Engineering: **\$178,000**

- Maximum demand pump sized to deliver a flow rate of 92 L/s in conjunction with one of the duty pumps such that max day demand plus fire flow can be provided simultaneously (152 L/s at a pressure boost of 56 m)

A diesel driven engine provides stand-by power (125 kW D.G. set). The pressures in the system control the pumps. The design includes an expansion of the Town's existing SCADA system, HVAC, site servicing, driveway access and landscaping.

The construction contract was awarded to Levison Construction Corporation. Construction of the station began in December 2007 with substantial completion scheduled for July 2008.