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Water & Wastewater
Case story | Wastewater treatment

3 Millionth Flygt pump sold for the Canada Line transit project in Vancouver, BC

40 Flygt pumps and APP 521 controllers in 11 pumping stations.



A new rapid transit link has been in the planning stage for decades. The new Canada Line will run separated from traffic and on dedicated rails north-south from the emerging transportation hub at Waterfront Centre to the heart of Richmond's civic precinct and to Sea Island, home to YVR the Vancouver International Airport.

When complete, travelers will be able to receive their boarding passes downtown and make the trip to YVR worry-free in 25 minutes or less everyday regardless of bridge traffic and road conditions in 2010 and beyond. This will be a fast, frequent and very reliable service with peak hours train frequency of every 6 minutes.

The Canada Line will provide additional transportation capacity equivalent to 10 major road lanes in a dense corridor where expanding roads and bridges is neither practical nor desirable. From downtown Vancouver to downtown Richmond is one of the busiest transportation corridors in Greater Vancouver and is home to one-third of the region's jobs and 20 percent of its population.

Some facts about the project

1. The Government of Canada and the Government of British Columbia, the Greater Vancouver Transportation Authority (TransLink), and Vancouver Airport Authority are funding the Canada Line, which is also supported by the Cities of Vancouver and Richmond.
2. The project is managed by Canada Line Rapid Transit Inc. (CLCO), a subsidiary of TransLink. The Canada Line is being designed, built and operated under a 35-year contract with InTransitBC, a joint venture company owned by SNC-Lavalin, the Investment Management Corporation of BC (bcIMC) and the Caisse de Dépôt et Placement du Québec.
3. The technology is Automated Light Metro System with an approximate line length of 19 km. There will be 16 stations and an estimated daily riders of 100,000 (2010), equivalent road capacity of 10 major lanes. Cost is approximately \$2 billion (2003). Fixed-price, date-certain contract awarded to InTransitBC for the design, construction, operation, maintenance and partial financing of the Line.
4. The construction began in September 2005 and the target for the Canada Line to be fully in service is Nov 30, 2009. According to regional plans, a line was to be completed by 2006. Canada Line is not an Olympic project, but the Olympic date is important in order for the Greater Vancouver and Whistler to host the 2010 Olympic and Paralympic Winter Games, it must be complete by 2009 in order to avoid major construction during the Games. The addition of the link to the rapid transit network makes a new and different kind of traffic planning possible for the Olympic events.

The planning and design stage

Once the planning and design stage were started, Don Chin and Tony Santos of ITT W&WW approached Mr. Mike Wald - the Canada Line Rapid Transit Mechanical

Engineered for life

Services Project Manager for the design-consultant group SNC-Lavalin. Don and Tony offered the products, services, worldwide experience and expertise that ITT W&WW has for the project.

SNC-Lavalin is an independent transit developer that has a worldwide experience in developing and delivery of cost-effective rail transit systems, and an established international network of permanent offices, allowing for both local knowledge and global scope. SNC-Lavalin can provide services for all phases of its clients' projects, including planning, financing, design, systems integration, project management, construction, testing and commissioning, operations and maintenance.

Flygt pump system for the Canada Line project

The Flygt pumping system was considered by the consultant for all the sewage and storm pumping systems along the line. Considerations for pumping reliability, serviceability, and experience were the criteria as well as its long term Life Cycle Costs, as Canada Line is projected to serve the region for the next 50 to 100 years. The pumping systems consist of the pumps, its accessories and the Flygt APP 521 controller on the majority of the stations.

Canada Line Sewage & Storm Pump Stations

Station name	Flygt equipment	# of wet wells / # of pumps
Waterfront	Pumps & APP 521	2 / 4
Vancouver City Centre	Pumps & APP 521	2 / 4
Yaletown-Roundhouse	Pumps & APP 521	2 / 4
Olympic Village	Pumps & APP 521	2 / 4
Broadway-City Hall	Pump & APP 521	1 / 2
King Edward	Pump & APP 521	1 / 2
Oakridge-41st Ave	Pump & APP 521	1 / 2
Langara & 49th	Pumps & APP 521	3 / 6
Kent Ave	Pump & Controls	1 / 2
Canada Line Bored Tunnel	Pumps & APP 521	4 / 8
YVR-Airport	Pump & Controls	1 / 2
Totals		20 wet wells / 40 pumps

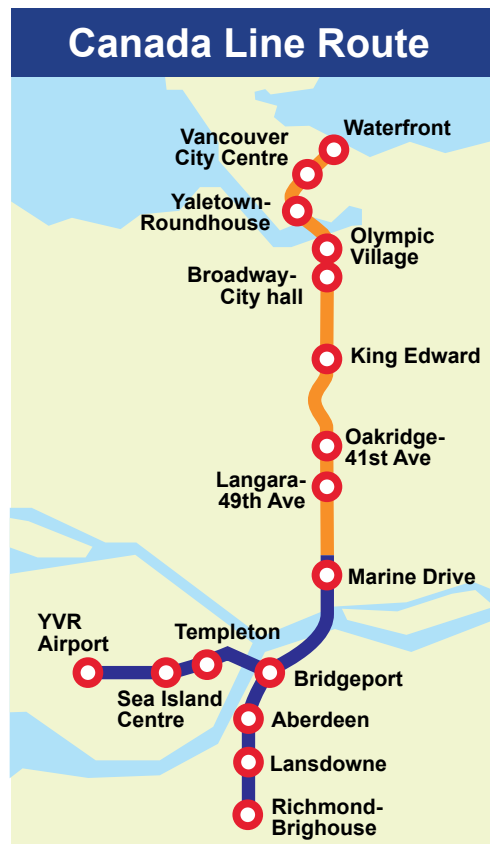
One of the major challenges was the design of the Bored Tunnel pumping stations located in the deepest section of the tunnel underneath False Creek. Two of the four pump stations need to be right below the rail tracks with very limited space. Numerous meetings were arranged between

Mr. Mike Wald and Mr. Brian Au of SNC-Lavalin and Don Chin and Tony Santos of ITT W&WW Vancouver branch to come up with a viable solution. The Flygt 'NZ' configuration was finally chosen and had to be engineered with the assistance of the ITT WWW's Technical Department in Montreal.

Of all the numerous pumping stations throughout the Canada Line, these Bored Tunnel sump stations are the most critical for storm and flood control. The installation is unusual, but befitting of the project is the milestone production of the 3,000,000th Flygt pump that is destined to be used in this Bored Tunnel sump application.

The Canada Line Project will not only be a living legacy of the 2010 Olympic Winter Games, but also a working monument that will serve the Greater Vancouver area for the next 50 to 100 years.

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