

CONSTRUCTION OVERVIEW - EVERGREEN LINE

How We Build It - Guideway and Tunnel Construction

The Evergreen Rapid Transit Project - Background

EGRT Construction, the consortium who will design and build the Evergreen Line Rapid Transit Project, has begun construction of the Evergreen Line. Construction of a new SkyTrain includes moving utilities, reconfiguring roads, building at-grade and elevated guideways, tunnels, stations, and installing train operating systems. A general summary of how the elevated guideway, at-grade guideway and tunnel are constructed is outlined below.

Beginning spring 2013, crews and equipment started mobilizing equipment and site trailers, began area clearing, site preparation, excavation, utility relocation, and general roadwork activity in order to commence building the SkyTrain infrastructure. The Evergreen Line will open for service in summer 2016.

The Evergreen Line construction corridor is comprised of three areas:

- Burnaby/Burquitlam
- Port Moody
- Coquitlam

Construction in each of the areas will result in some inconvenience at times, including dust, noise, vibration and traffic pattern changes. Crews will endeavour to minimize the effects of construction, and appreciate your patience and understanding.

Elevated Guideway

The elevated guideway generally consists of building a substructure (foundations and columns) and a superstructure (overhead guideway), followed by trackwork and systems installation.

Construction of the substructure involves a variety of techniques, such as pile driving, drilling shafts or excavating to install foundations, then forming and pouring concrete columns to support the superstructure.



Foundation work in progress

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For the superstructure construction, concrete segments will be pre-cast at an off-site facility. These elevated guideway segments will be transported to the site by low bed trucks and a launching truss will lift the segments, and crews will connect the segments together to form overhead guideway beams spanning from column to column. The truss will advance along the guideway – quite a sight to see from ground level.



Pre-cast concrete segments are lifted into place by a launching truss on the Canada Line

It is anticipated that short stoppages of traffic will be required while crews use cranes to lift concrete segments directly over vehicle lanes or walkways. Traffic control personnel will be on-site to appropriately direct the travelling public.

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At-Grade Guideway

At-grade guideway construction involves ground improvements to compact and strengthen the supporting soil to limit settlement and liquidation of loose soil layers. The next step is to build foundations, the concrete guideway, retaining walls and other wall structures, and perimeter fencing. Finally trackwork and systems are installed.

Tunnel

Tunnel construction will include a section of bored tunnel with cast-in-place concrete transition tunnels at each portal.

The tunnel portal is where the Evergreen Line system and trains transition between above-ground and underground. Portal construction generally includes excavation work, foundation and abutment work, rebar and cast-in-place concrete structures, trackwork and systems installation.



The Tunnel Boring Machine used at the Canada Line

The bored tunnel will be constructed using a 10-metre diameter Tunnel Boring Machine (TBM), which will arrive later this year in many pieces to be assembled in a special 'launch area'. This area is currently under construction on the west side of Barnet Highway in Port Moody. Once the TBM is assembled it will bore into the hillside. The cutter head turns to bring the soil towards an auger which then expels the soil. As it moves into the hillside concrete rings are added creating the tunnel as it progresses.

Bored tunnel construction means there is no disruption to the surface above.

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The tunnel in progress at the Canada Line

Transition tunnel construction generally includes excavation, shoring, rebar installation, concrete foundation slab work to form the tunnel walls, cast-in-place roof, trackwork and systems installation.

A key goal of the Evergreen Line Rapid Transit Project is to minimize construction-related disruption and maximize traffic flow and predictability during construction activities. Drivers and local residents are asked to watch for construction signs and obey traffic control personnel.

ABOUT EGRT CONSTRUCTION

EGRT Construction has been awarded the contract to design and build the Evergreen Line.

For more information about the Evergreen Line Project, please visit www.evergreenline.gov.bc.ca.

CONTACT US

To find out more, or to receive traffic updates:

Traffic Information Line (available 24 hours, 7 days a week): 604-927-2080

Email: info@evergreenline.gov.bc.ca

Facebook: www.facebook.com/evergreenline