

**QUICK FACTS****CLIENT:**  
**DISTRICT OF NORTH  
VANCOUVER****START DATE:**  
**APRIL 2014****END DATE:**  
**JUNE 2016****TENDER PRICE:**  
**\$32M****CONSULTING  
ENGINEER:**  
**WSP****LAFARGE'S CONTRACT  
STRUCTURE:**  
**PRIME CONTRACTOR/  
GENERAL CONTRACTOR****PROJECT DESCRIPTION**

The Philip Avenue Overpass was upgraded to minimize road and rail conflicts and reduce traffic congestion in the area.

This area is a critical export gateway to overseas markets, and a substantial economic generator of employment in the marine, rail and trucking industries. Recently, the area has experienced significant growth and is forecast to continue to do so.

The project included the erection of a precast bridge superstructure with girders, and the erection of prefabricated steel bridge components.

As part of early construction works, Lafarge installed a series of piles and stone columns to strengthen the ground around the piers and abutments of the new overpass.

Lafarge was the general contractor on this project, managing 10 major subcontractors and six various trades, responsible for traffic management throughout the construction process, which included temporary road closures for excavation, installation of structural and utility components, grading, and asphalt paving.



Photo: District of North Vancouver

## EFFECTIVE LEADERSHIP

### PROJECT DIRECTOR



**DEREK SANDERSON**

### PROJECT MANAGER



**GORD BIRD**

### PROJECT SUPERINTENDENT



**BRICE BABIUK**

## EFFECTIVE PROJECT MANAGEMENT

Lafarge's role as general contractor included assembling a team of construction, aggregates, asphalt and ready-mix concrete experts to bring the depth and expertise needed on this collaborative project.

Lafarge constructed the entire bridge and roadway elements including prefabricated bridge, the foundation, piers, abutment walls and bridge deck.

We also provided services including: preload removal, earthworks and grading, installation of storm and sewer utilities, and the supply and placement of 65,000 tonnes of aggregates, 2,800 m<sup>3</sup> ready-mix concrete, 6,500 tonnes of asphaltic concrete and 4.5 lane-km of road.

## PROJECT CHALLENGES AND SOLUTIONS

### Schedule Management:

A comprehensive critical path method schedule was developed in conjunction with all stakeholders to ensure the project was delivered on time. During construction, arch ways, decks and prefabricated girders were installed. The construction schedule was accelerated through executing some of the work at night, which allowed for easier excavation related to storm and sewer utilities due to low tide. The project was delivered under budget and on time.

## VOLUME OF MATERIALS

- **Concrete:**  
2,800 m<sup>3</sup>
- **Asphalt:**  
6,500 tons
- **Aggregates:**  
65,000 tons
- **Lane-km of Road:**  
4.5 lane-km

## REFERENCES

- **Company:**  
WSP
- **Name:**  
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- **Title:**  
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## PROJECT CHALLENGES AND SOLUTIONS

### Traffic Management:

The project involved a comprehensive traffic management plan involving multiple stakeholders. Rail, vehicular traffic and pedestrian traffic were impacted.

The key milestone for the project was the safe erection of a prefabricated steel archway over CN and Kinder Morgan rail lines. The bridge's steel components, which weighed approximately 300,000 kilograms, were prefabricated and the archway and deck were assembled on site.

The foundations and abutments were constructed immediately following key utility relocations and ground improvements.



