



ROADS & INTERCHANGES

QUICK FACTS

**AVERAGE ANNUAL
DAILY TRAFFIC:**
125,000

**STRUCTURES
(AREA IN M²):**
46 BRIDGE
STRUCTURES
TOTALING OVER
10,000 M²

PROJECT VALUE:
\$1,800,000,000

**CONSTRUCTION
VALUE:**
\$1,300,000,000

**PROCUREMENT
MODEL:**
P3 DBFOM

LAFARGE'S ROLE:
P3 JOINT VENTURE
PARTNER,
ROADWORKS
CONTRACTOR

**LANE KILOMETRES
CONSTRUCTED:**
189 LANE-KM OF
DIVIDED ROADWAY

COMPLETION DATE:
2016

NORTHEAST ANTHONY HENDAY DRIVE RING ROAD

EDMONTON, AB

PROJECT OVERVIEW

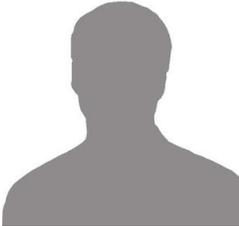
The Northeast Anthony Henday Drive (NEAHD) project is a \$1,300,000,000 P3 project to complete Edmonton's ring road. Construction of bridges over old mines, numerous major pipeline relocations, the North Saskatchewan River crossing, replacement of interchange and rail bridges while maintaining service were challenges faced by Lafarge as a member of the project design build joint venture. At award, this was the largest transportation contract ever signed by the Alberta Government.

The project consisted of 27km of eight-lane divided freeway with 189 lane-km of roadway, nine service interchanges, seven grade separations, 46 bridge structures with 12 bridges constructed during roadway operation, 103 overhead sign structures, and 70 impacted wetlands.



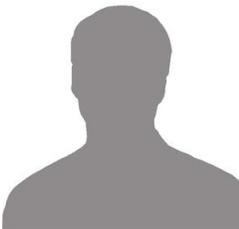
EFFECTIVE LEADERSHIP

PROJECT MANAGER



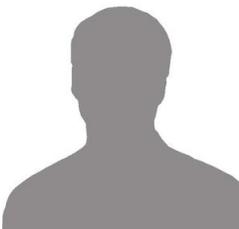
ANDREW
MELNYCHUK

GENERAL SUPERINTENDENT



JOHN DANIELE

SUPERINTENDENT (ROADS)



KEVIN DEY

NORTHEAST ANTHONY HENDAY DRIVE

A MULTI-DISCIPLINE, COMPLEX PROJECT

The Northeast Anthony Henday Drive project was based in a large Western Canadian municipality, utilizing a DBFOM P3 funding model. It is one of Alberta's largest projects with high levels of staging, management, and complexity. The job was massive not just in scope, but also covered a large area, spanning 20km from north to south and 8km from east to west.

Design leads, construction management, and operations and maintenance representatives and concession managers were co-located on site. Lafarge discussed design challenges with the designers daily to produce constructible, technically-compliant designs. Formal contractor reviews were completed on all design packages at 4 stages during the design development, and weekly meetings were held with Alberta Transportation to review submittal packages.

UTILITY COORDINATION

Over 500 utilities, including major pipelines, needed protection or relocation - requiring close coordination between the design disciplines, Lafarge, and the many utility companies. An extensive hydrovac program was undertaken and designs were modified to avoid conflicts as often as possible.

Utility relocations and crossings within the NEAHD Transportation and Utility Corridor were one of the most strenuously managed scopes due to their impacts on scheduling. The site included 500+ existing utility obstacles, and crews were required to relocate and/or protect nearly 300. The entire team had to collaborate to establish innovative designs and traffic-accommodation strategies to ensure that utility delays did not stand in the way of opening to traffic in October 2016.



QUALITY ACROSS SCOPES

- STAKEHOLDER ENGAGEMENT VIA MEANINGFUL COMMUNICATION
- ALIGNMENT OF QUALITY MANAGEMENT PLANS WITH ENVIRONMENTAL MANAGEMENT PLANS
- PROJECT SPECIFIC HEALTH AND SAFETY PLAN
- ENVIRONMENTAL IMPACT MITIGATION THROUGH DESIGN

NORTHEAST ANTHONY HENDAY DRIVE RING ROAD

QUALITY MANAGEMENT FOR LONG TERM PROTECTION

NEAHD traversed areas of undeveloped greenfield, with embankment design that significantly altered surface water flow - requiring extensive hydraulic engineering. The new crossing of the North Saskatchewan River and massive in-stream cofferdams created additional environmental complexities.

Coordination with our engineering partner provided hydrological and hydraulic modeling for naturalized stormwater management facilities that function as constructed wetlands. Alongside, Lafarge's environmental experts developed a highly rigorous and detailed project-specific Environmental Management System (EMS) that included:

- development, implementation, and training for all project personnel for our Environmental Construction Operation Plan with specific environmental management requirements for all construction personnel,
- weekly monitoring of construction activities for runoffs or localized impact,
- rare plant protection program to relocate plants at risk in the right-of-way, and
- clearing and stripping plans noting environmental concerns and mitigative measures.



UNIQUE CHALLENGES:

- COMPLEX AQUARIAN SPECIES HABITAT
- HIGH VOLUME URBAN TRAFFIC AREAS
- EFFECTIVE CLOSURE TECHNIQUES
- ONGOING PUBLIC ENGAGEMENT
- LONG-TERM PLANNING DESIGN



NORTHEAST ANTHONY HENDAY DRIVE

ENVIRONMENTALLY SENSITIVE



The NEAHD project team was required to secure a Fisheries Act Authorization to compensate for the Harmful Alteration, Disturbance or Destruction of fish habitat associated with cofferdam marine construction in the North Saskatchewan River, as well as surface embankments impacting runoff. The project team worked with regulators and Alberta Transportation to devise appropriate mitigation and compensation strategies, as well as to develop the comprehensive Environmental Management System and Environmental Protection Plan.

PARTNERSHIP BETWEEN VARIED PROJECT INTERESTS

Early on, the entire project team committed to core principles. The design and construction team worked together to optimise bridge deck areas, plan foundation construction over abandoned coal mines, optimize pavement designs and implement environmental mitigation measures. Constructibility considerations were integrated into every phase of the project's design.



PROJECT IMAGES

NORTHEAST ANTHONY HENDAY DRIVE





PROJECT IMAGES

NORTHEAST ANTHONY HENDAY DRIVE

