



# Long Harbour Project Overview

March 2012

## A global leader

Vale operates in more than 30 countries around the world.

Our business lines include: Energy, Logistics, Fertilizers, Mining, and Coal.



## Vale Base Metals

Base Metals commodities include:

- Nickel
- Copper
- Cobalt
- Aluminum
- PGMs
- Other precious metals



## Vale in Canada

Operations currently in production include:

### **Sudbury, Ontario**

100+ year old mining and processing (smelting and refining) operation producing nickel, copper, cobalt and precious metals.

### **Port Colborne, Ontario**

Cobalt refining and precious metals upgrading facility originally commissioned in 1918.

### **Thompson, Manitoba**

Integrated mining, milling, smelting and refining operation since 1961.

### **Voisey's Bay, Labrador**

Nickel and copper mining and milling operation in coastal Labrador since 2005.

## Future investment

Over the next four years, Vale plans to spend \$10 billion in projects within Canada.



# Voisey's Bay Development

# Development Configuration

Two sites separated by 1,200 km

- The mine & concentrator has been established at Voisey's Bay, Labrador
- The hydromet demonstration plant was built at Argentia and the processing plant is being built at Long Harbour

These sites require development of extensive infrastructure such as port facilities, power supply, water supply & roads

The Voisey's Bay site also includes an airport and accommodation complex



# Development Agreement

Legally-binding Agreement with the Government of Newfoundland and Labrador signed in 2002

Sets out specific conditions and timelines for Vale to develop a mine and concentrator and processing facilities in the Province

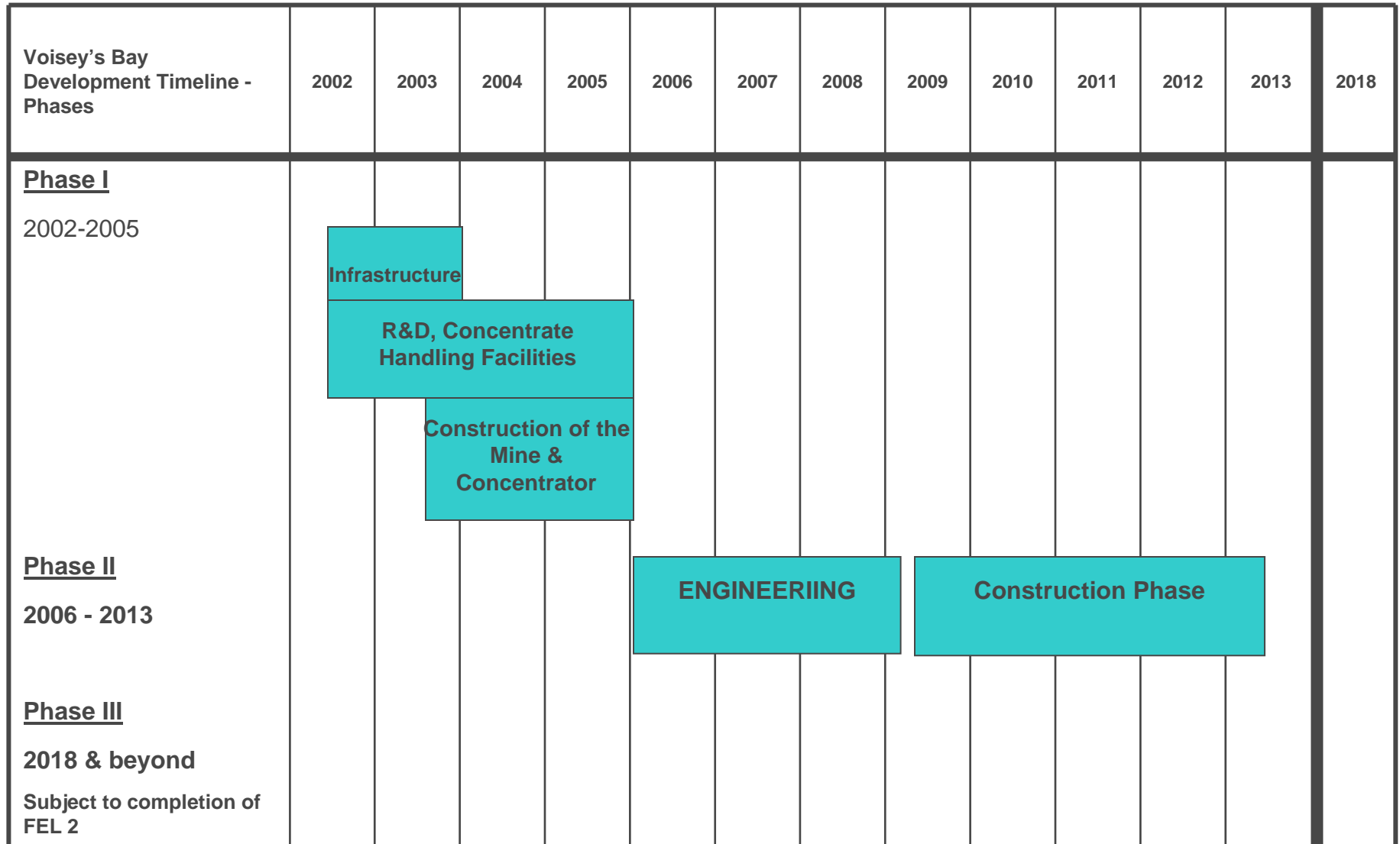
Requires Vale to complete the construction of a processing plant in the Province by 2013

Caps the amount of contained nickel in concentrate that Vale can export from the Province

Requires Vale to replace all contained nickel in concentrate that is exported from the Province



# Three Phased Development



# Hydromet R&D

## Long Harbour Project Phases of Development

Develop a new, more efficient process of treating and recovering nickel from the Voisey's Bay nickel concentrate.

\$200 million R&D program in three phases.

Design and construct a hydrometallurgical facility to produce 50,000 tonnes per year of nickel metal and associated copper and cobalt.

Projected project completion and start in 2013

# Hydrometallurgy

“A process that uses water-based chemicals to extract and recover metals from minerals.”

- Has become widely accepted in the metal processing industry over the last 50 years

Hydromet advantages:

- No SO<sub>2</sub>
- Increase nickel and cobalt recovery
- Reduced energy demands compared to conventional smelting & refining

mining



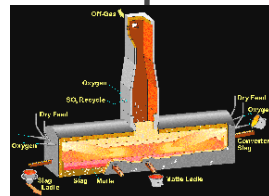
Ni Ore (2%)

milling



Concentrate (20%)

smelting



Matte (70%)

hydrometallurgy



refining

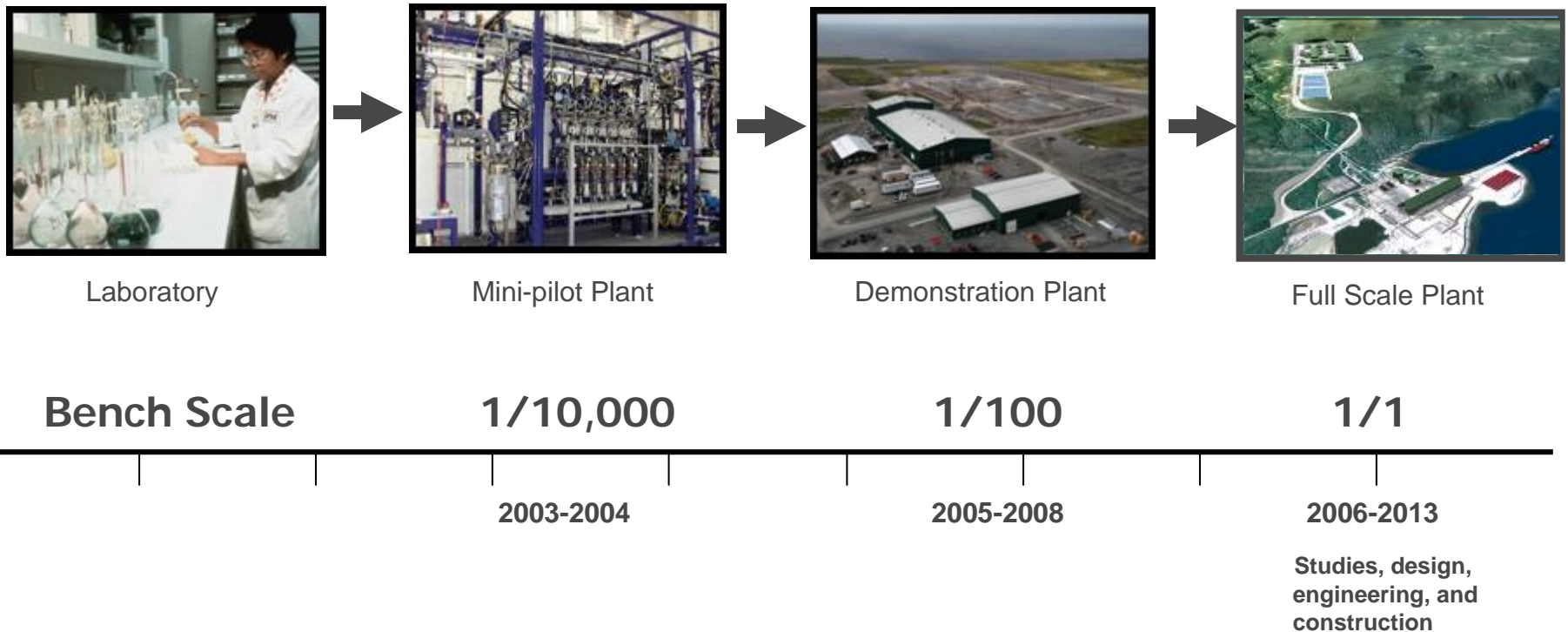


Ni Metal



## Research and Development

A multi-phased US\$200 million R&D program was conducted to extend the application of hydromet technology to process Voisey's Bay nickel concentrate



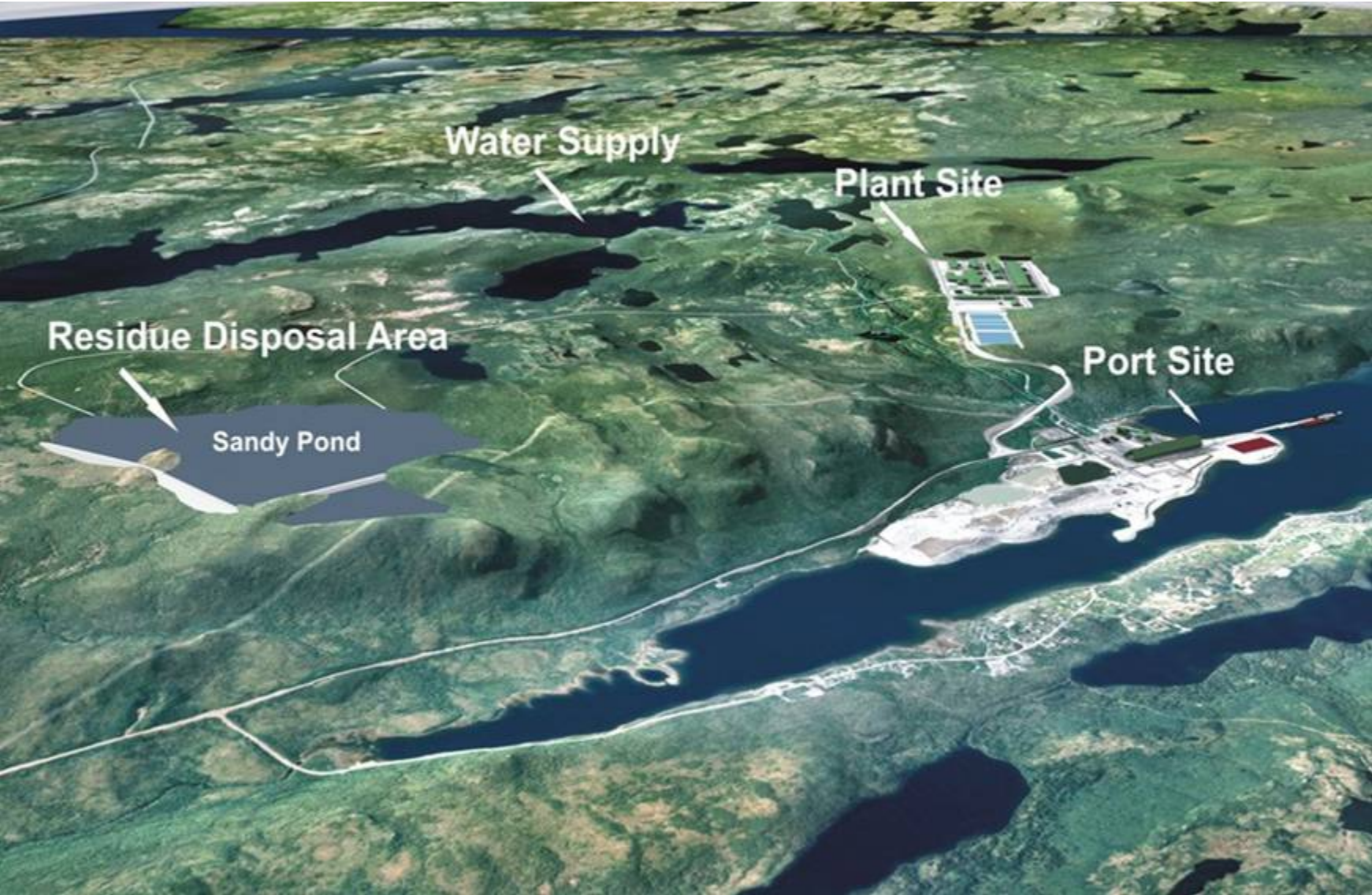
# Long Harbour



- New processing technology developed by Vale in Canada
- Significant Capital Investment ~ US\$ 3.5 billion
- Construction Phase Employment ~ 10 million person-hours
- ~ 500 permanent job expected upon completion in 2013

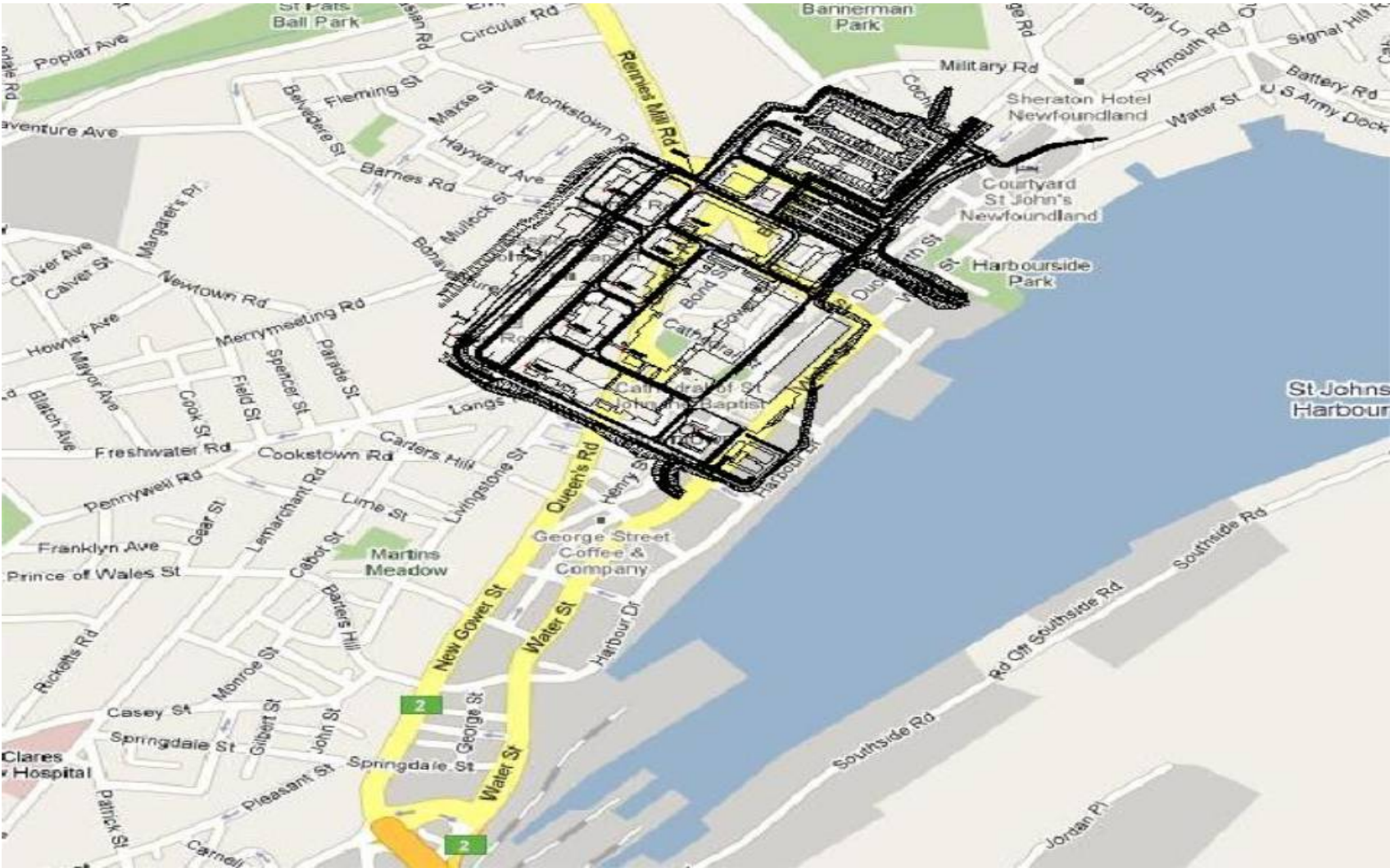


# Site Layout





# Main Processing Plant Superimposed Over Downtown St. John's



# Project Status

Project released from Environmental Assessment by the Federal Government in July 2008

Initial Construction began April 2009

Federal regulatory (MMER) amendment completed (Gazette II) in June 2009

Overall Project completion **XX%**

- Engineering: **XX %**
- Construction: **XX%**
- >9 million person-hours of employment generated since initial work began in April 2009
  - 76% of person-hours in Newfoundland & Labrador
- Skilled trades availability is a major concern

Employment by region:

- +2400 at construction site
- ~150 in St. John's engineering and Project Management Office

Procurement

- Majority of packages awarded
  - Deliveries in progress modules, equipment and materials



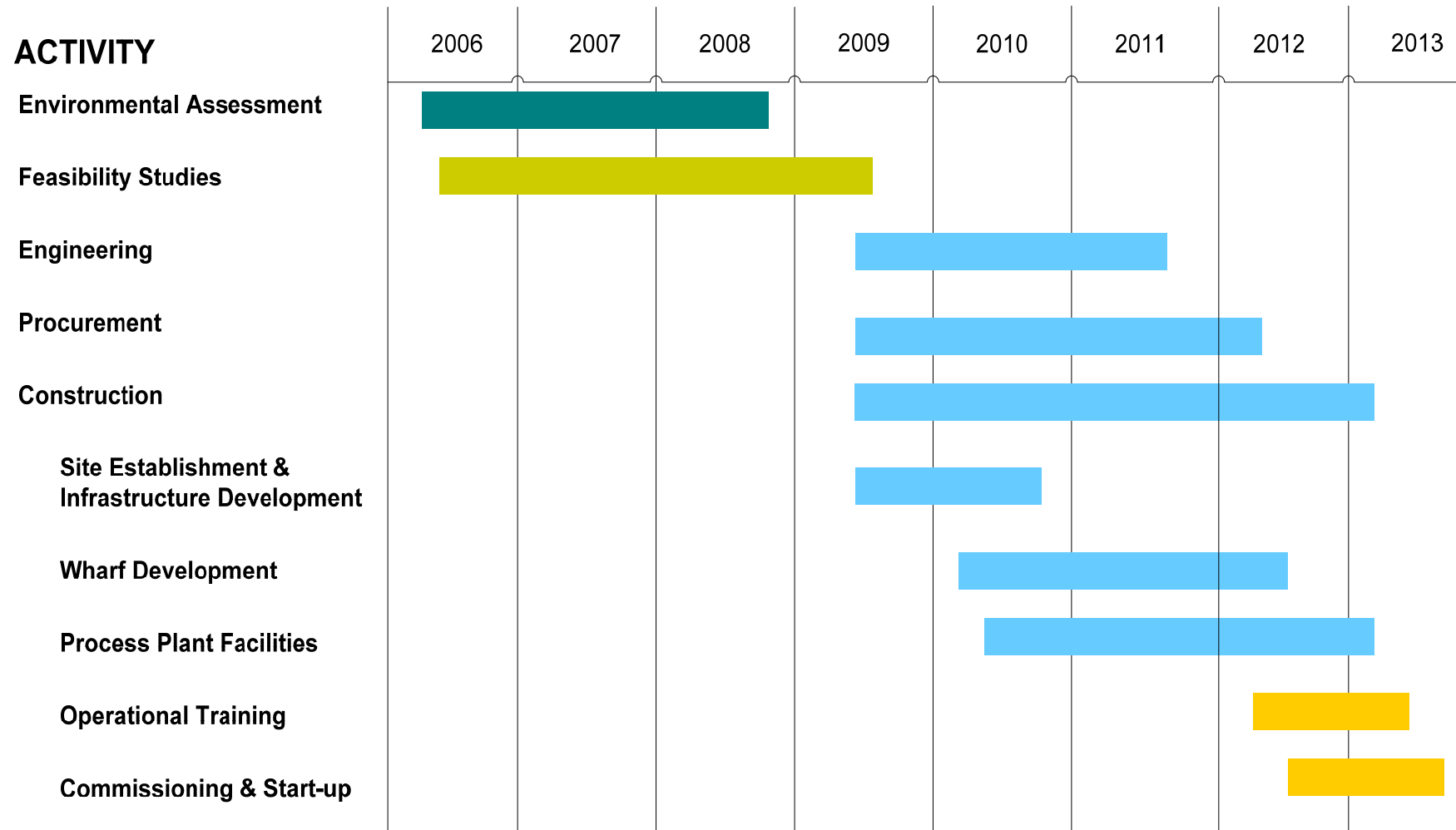
## Safety Performance

### Project operates under a 'Zero Harm' target

Significant efforts are undertaken such as planning, training and mentoring to maximize maintain highest standards of safety

Long Harbour Project	
Project hours worked	9,303,759
Person hours worked (Site)	6,678,858
Hours without Lost Time	3,744,265
Frequencies Comparisons	
Provincial Frequency 2009	
Long Harbour Lost Time (LT)	1.8
Provincial Construction Lost Time (LT)	2.5

# Project Schedule

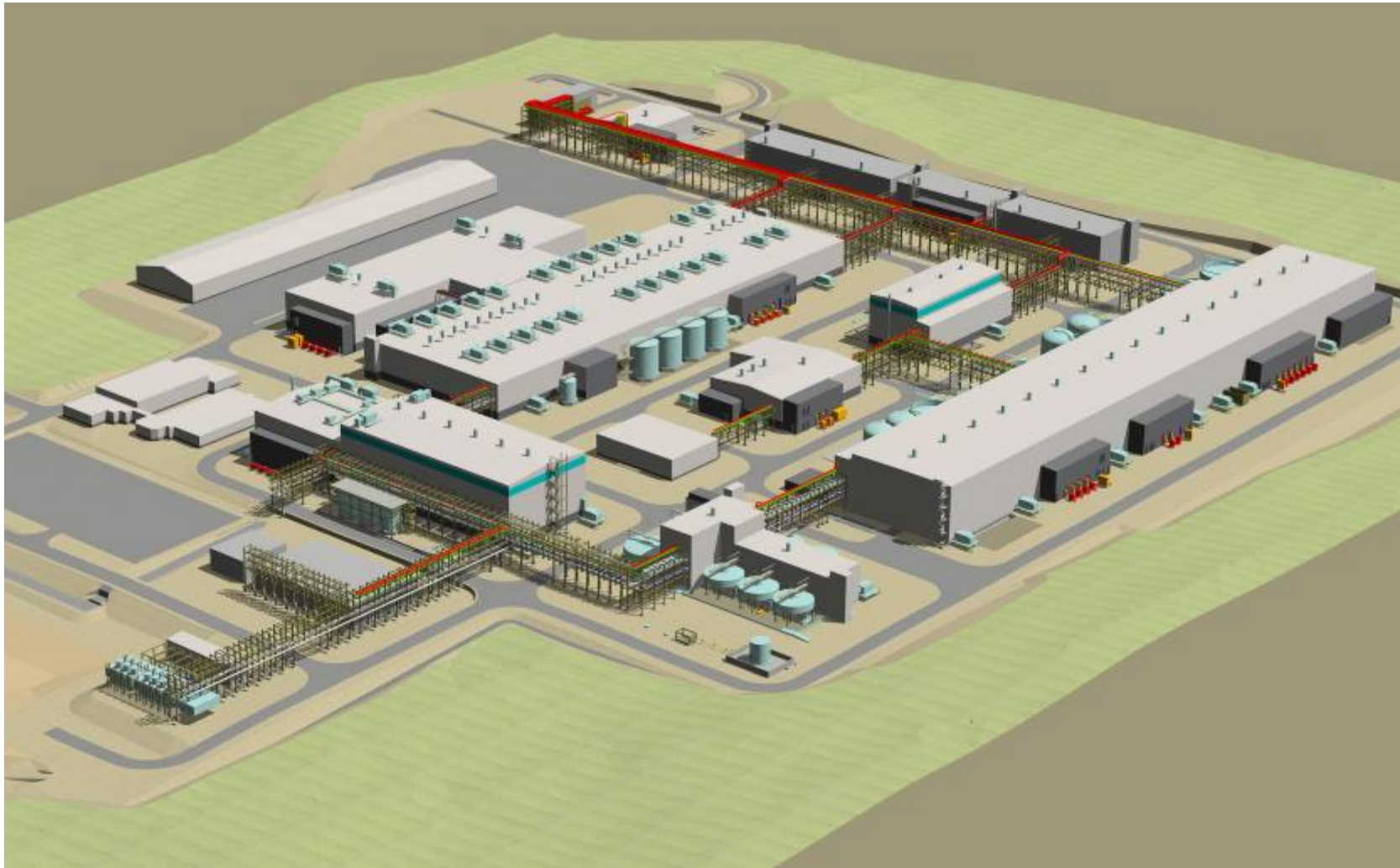


# Port Facility





# Processing Plant



Construction progress



## Long Harbour Site – pre 2009



## Long Harbour Site – May 2010





## Construction Site



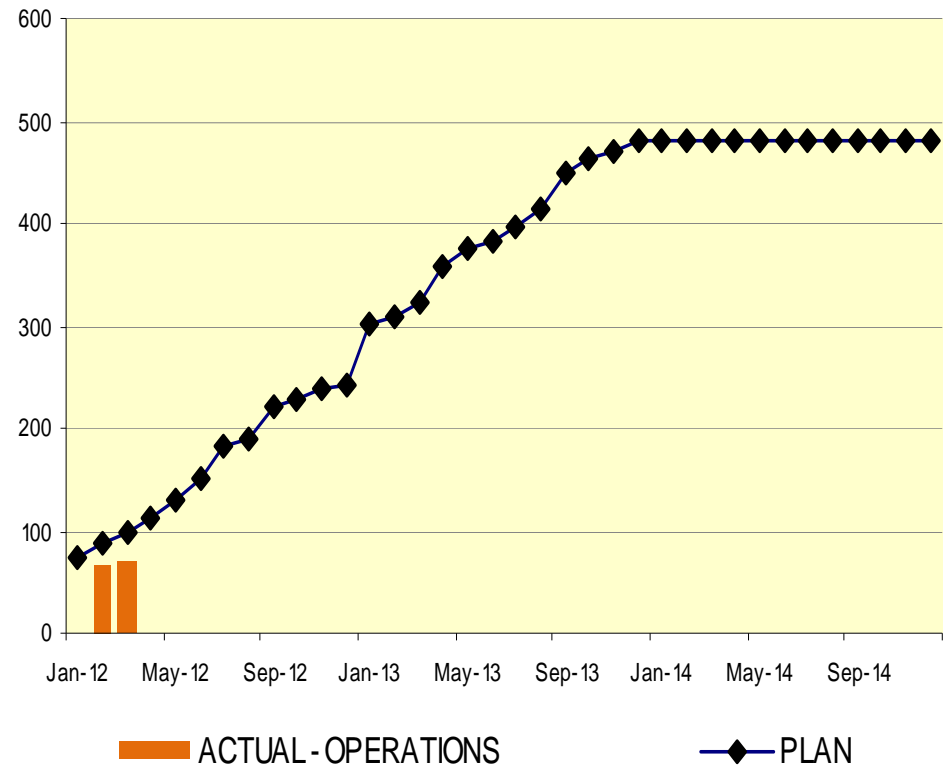
**Upper Tier  
February 2012**

# Operations Planning

# Operating Planning

- ~ 500 full time direct jobs
- Start-up in 2013
- Recruitment effort underway
  - > 60 people currently hired
  - Information sessions scheduled across the Province

# Workforce Ramp-up



# Community Investments

## We have established strong Community Partnerships in Newfoundland and Labrador

- \$21.5 million to Memorial University
- \$1.5 million to Innu Healing Foundation
- \$2.2 million to Town of Placentia
- \$2 million to Argentia Management Authority
- \$200,000 to the Bliss Murphy Cancer Care Centre
- \$850,000 to various Health Campaigns in partnership with RDC
- \$1.7 million Diversity Fund in partnership with the RDC
- \$280,000 to fund scholarships at the College of the North Atlantic
- \$750,000 for new Fire Hall in Town of Long Harbour
- \$3 million for new community centre in Town of Long Harbour

Thank you!





VALE