General Operations Overview

- Formed in 1960 as a component of Provincial government

- New beginning (April 2003)
  - Ceased being a Crown Corporation
  - Stood up as an independently managed company; Coastal Ferry Act and Coastal Ferry Services Contract
  - Province is sole owner

- Operating 25 routes to 47 terminals, using 35 vessels
  - Moving approximately 20 million passengers and 7.7 million vehicles annually
  - Conducting approximately 184,000 sailings annually; 500+ daily

Original crew of MV Sidney - 1960
Our Fleet

Wide Ranging Fleet
• 18 Classes of Vessels

Smallest is Nimpkish:
- 16 vehicles, 133 passengers

Largest are ‘Spirits’:
- 470 vehicles, 2,100 passengers
Our Fleet - Newer Vessels

Coastal Inspiration

Island Sky

Northern Expedition
Fuelling the Fleet

• Currently consume approximately 120 Million liters of fuel annually within the fleet

• Use ultra low sulphur marine diesel

• 5% biodiesel blend

• Fuel costs are major portion of our operational budget and are second only to Labour costs
Why is LNG attractive

• Considerable price advantage of LNG over marine diesel (approximately 50% at current prices)

• LNG has some very favourable environmental gains over diesel

• LNG should result in lower through life maintenance costs for the fleet
Transition to LNG

Two Options for BC Ferries

• New Ship Builds (Vessel Replacement Program)

• Conversion of the current vessels at mid life upgrades (20 year point of 40 year vessel life)
Vessel Replacement - New Ships

• Well on our way with the largest vessel replacement plan in the company’s history

• Replacing 11 more vessels over the next 10 years

• Seven new vessels added between 2007-2009

• Announced in December 2013 our intention to proceed with powering our next class of vessel (Intermediate Class Ferry) with Dual Fuel (LNG or Marine Diesel Oil)
Why Dual Fuel?

We have every intention to operate new vessels on LNG but the ability to operate on Diesel as well (Dual Fuel) has the following benefits:

• Reduces our overall corporate risk if there is an interruption to supply of LNG and allows vessels to be interoperable in remote regions

• Provides corporate stability if pricing changes significantly for either Diesel or LNG

• Allows BC Ferries to do a “soft start” into LNG operations ensuring we have adequate supply as well as proper training of our shipboard teams

• This next class of vessels will be Dual Fuelled but we are not ruling out future classes of vessels being fuelled by LNG only (Single Fuelled)
Bleeding Edge or Leading Edge?

• We will most likely not be the first ferry operator in Canada with LNG fuelling (STQ is building 3 new ferries for Quebec)

• Norway has been leading the way with dozens of LNG fuelled ferries in service over past 10 years and over a million operational hours

• LNG as a marine industry fuel is inherently safe and has been in service worldwide for over 30 years

• BC Ferries will build under Class Society Rules (DNV, Lloyds or ABS) and meet all regulatory requirements (Transport Canada)

• BC Ferries first LNG fuelled vessel will most likely be ready for service in Spring 2016
Viking Grace (Dual Fuel)
LNG Tanks
Viking Grace
Fjord1 (Single Fuel)
Fleet Conversion to LNG?

• BC Ferries has decided that LNG fuelled ships will be first introduced into the fleet under the Vessel Replacement Program (New Builds), we will look at conversions of existing vessels once we have a new LNG vessel into service.

• Our largest two ships (Spirit Class) will be entering their Mid Life Upgrade in the fall of 2016 and the second vessel in the fall of 2017. These two vessels alone represent a major portion of our fuel usage.

• We are currently exploring the feasibility of converting these two vessels onto LNG. We will be making that decision within the next 12-18 months.

• Conversions can present more technical challenges and risk than a new build.

• Most likely ships within their last 15 years of life would not be considered for conversion.
Overall Challenges

- LNG fuelled ferries are not new to the industry but are relatively new to Canada and new to BC Ferries
- Working with Class and Regulatory authorities to understand all the requirements to both build new and also to convert existing vessels
- Understanding the training requirements to properly train our operators on a LNG Fuelled ferry
- Making sure industry is capable of delivering LNG to our ferries and developing safe and reliable bunkering procedures
- Getting over some of the unfounded information about the safety of LNG
- Developing ship building and ship repair expertise on LNG Propulsion for ferries
Summary

• BC Ferries will be introducing LNG fuelled ferries into the fleet in 2016

• LNG has some significant advantages over diesel as a marine propulsion fuel source

• Making the transition to LNG for BC Ferries has some very large potential to significantly reduce overall operating costs!
Questions?