



Englishtown Ferry Bridge Replacement Option

NSTIR

March 23rd, 2015

Overview



- NSTIR was asked by the Victoria County Council to explore the feasibility of replacing the existing Englishtown Ferry service with a permanent bridge structure.
- A preliminary study determined that if a bridge is to be built, a bridge containing a lift span would be the preferred option.

Site Specifications

- Englishtown Ferry site contains many physical constraints, the most prominent being the deep inlet, the short approach on the Englishtown side, and the fact that the Jersey Cove approach is a sandy shoal that is a marginal elevation above sea-level.
- The site also has important details currently unknown, such as geology in the area, unmapped oceanography, and specific hydraulic, hydrological, and geomorphic conditions.



ENGLISHTOWN FERRY

TORQUIL MACLEAN



ENGLISHTOWN FERRY

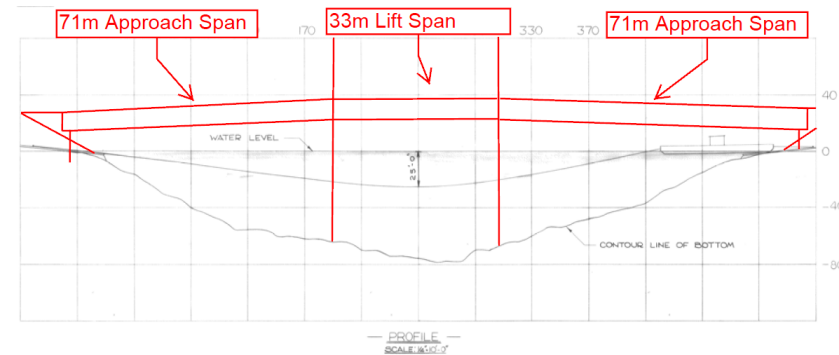
- OPERATES BETWEEN ENGLISHTOWN & JERSEY COVE
- ANNUAL OPERATING COST \$1,254,923
- FEES COLLECTED \$477,200
- VOYAGE LENGTH - 185 METERS
- CROSSING TIME – 90 SECONDS
- VOYAGES – 45,000
- VEHICLE TRAFFIC – 226,000
- PASSENGERS – 470,000
- SAILS ON DEMAND

What type of Bridge will work?

- We know a the bridge needs to be high or have the ability to open to allow Ships to sail into St. Anns Harbour
- Staff considered two moveable type spans, lift span and bascule span along with a non-movable bridge
- A lift bridge is the best solution
- NFL Transportation is currently building a Lift Bridge in Placentia, this is a great comparative structure
- The Placentia structure is costing approx. \$40.67M

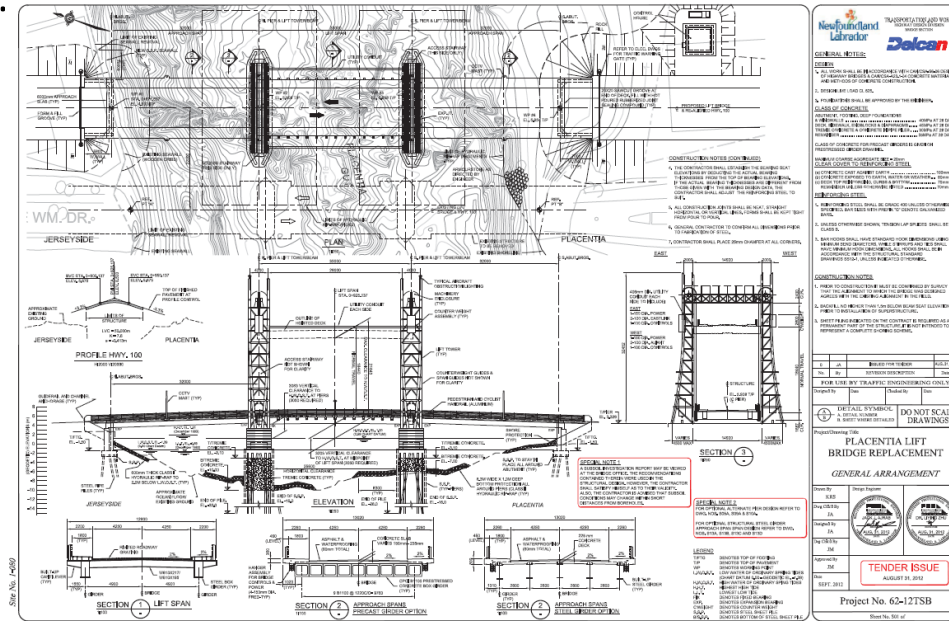
Lift Bridge at Englishtown Site

- Staff used the existing Ferry slip drawings from the 1970's to determine the approximate size of a Bridge
- The structure could include two 71m approach spans, and a 33m lift span
- There would be two piers located on either side of the lift structure
- Its estimated to cost at a min \$45 Million



Detail on the Placentia Lift Bridge

- The bridge contains two 32m approach spans and a 33m lift span.
- The total project cost was awarded at \$40.67 Million, with the lift span itself costing approximately \$34.4 Million.
- To keep the cost estimate relative, the assumed length of the lift span at the Englishtown Ferry site was also 33m.



Bridge Vs Ferry

Bridge

- \$45 Million initial capital cost
- Life span of 75yrs
- The bridge will require staff to operate the lift span
- Requires maintenance on a regular basis
 - \$5M every 25yrs
 - \$1M every 5 yrs at 30 yrs

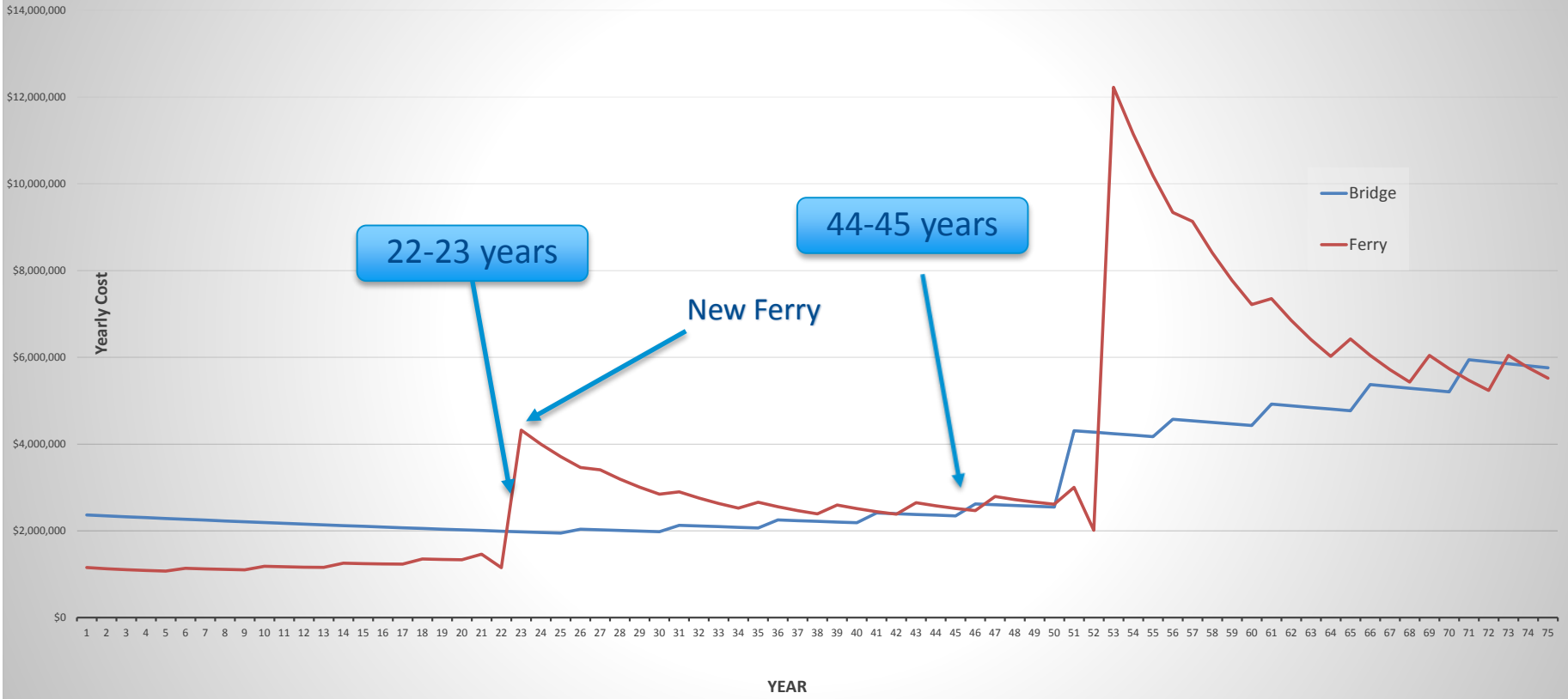
Ferry

- The current ferry will need to be replaced in 20 yrs
- Ferry's have a 30 year life span
- A new ferry is estimated to cost \$8M in 2015 dollars
- They require dry docking every 4 yrs, cost of \$400,000

Costing factors

- CPI used is 1.88%
- Cost of borrowing is 4% (30 year bonds)
- Amortization on the bridge is at 5%
- Amortization on the Ferry is at 15%
- Current ferry has a book value of 2.5M
- 4% is the rate used to determine future cost (FV)

Englishtown Bridge vs Ferry



Conclusions

- The yearly cost of the bridge is more expensive until year 22-23 when the ferry is replaced.
- At year 44-45 the overall costs of either option is equal.
- At year 53 the bridge shows a positive cost comparison due to the acquisition of a new ferry.
- At year 75 a new bridge would be required which is not shown in the comparison.