PW 17-2019
Appendix B

Niagara Region

Public Works
1815 Sir Isaac Brock Way, Thorold, ON L2V 4T7
905-980-6000 Toll-free: 1-800-263-7215

MEMORANDUM

CWCD 354-2018

Subject: Councillor Information Request – Burgoyne Bridge Replacement Task Force

Date: October 26, 2018

To: Regional Council

From: Ron Tripp, P.Eng., Commissioner of Public Works

This memo has been prepared in response to the following Councillor Information Requests made at Burgoyne Bridge Replacement Project Task Force meeting held on May 1, 2018:

Councillor Information Request	**Status**
Circulate the presentation slides respecting the OPP investigation to all Councillors.	**Completed** **CWCD 171-2018, May 18, 2018**
Circulate the purchasing by-law's corresponding schedule(s) respecting spending authority limits.	**Attached as Appendix A**
Provide information regarding the individuals included on the correspondence respecting purchasing property around the subject area prior to securing funding.	**See Document 8 of Appendix B**
Provide information respecting the third party vendor used by the City of St. Catharines to recover archived records including but not limited to: the Region covering any costs; how the vendor was procured; terms of the agreement; and information respecting the vendor itself, including experience working with confidential records.	**Forwarded to City of St. Catharines for follow-up, in progress**
Copy of the response for the Region to cover the cost of accessing the records.	**Forwarded to City of St. Catharines for follow-up, in progress**

Circulate the Public Works Management Forum report with a list of municipal projects that were removed from the infrastructure Canada listing to allow room for the Burgoyne Bridge project.	**See Document 3 of Appendix B**
Provide information respecting the common practices for storage of archived server records and the security measures used to protect those items.	**Forwarded to City of St. Catharines for follow-up, in progress**
Provide information respecting which firms were used by the general contractor and whether or not any building materials, including scrap metal went missing from the project site.	**Attached Appendix as C & D**
Provide information respecting whether the Ontario Provincial Police engaged with the City of St. Catharines respecting the Burgoyne Bridge project investigation.	**Forwarded to City of St. Catharines for follow-up, in progress**
Provide information respecting the former Pomerleau employee charged with fraud and whether he worked with Niagara Region staff during the foundation work on the Burgoyne Bridge project.	**A request has been made to the Court of Justice of Quebec for responsive documents**
Provide information respecting the period that Premier Dalton McGuinty sat on the Pomerleau Board of Directors.	**Online research has confirmed that Dalton McGuinty has been on the board of Pomerleau since 2015***.*

Although not indicated in the minutes of the meeting of the task force, staff committed to provide a copy of the documents referenced in Mr. Scott's timeline presentation. **Those documents as well as the timeline graphic have been attached as Appendix B.**

Subsequent to the task force meeting Councillor Burroughs requested a financial update on all costs associated with forensic audit(s) of the Burgoyne project. **The following table provides the details of that update:**

Burgoyne Bridge Forensic Audit Costs

	Budget	Committed*	Spent*	Under Review*	Budget Remaining
Region	451,000	-	450,911		89
St. Catharines	100,000	7,601	7,500	59,174	25,725
Total	**551,000**	**7,601**	**458,411**	**59,174**	**25,814**

*inclusive of non-refundable HST

Respectfully submitted and signed by,

_____
Ron Tripp, P.Eng.
Commissioner of Public Works

Appendix A: Bill 02-2016 Schedule “B” Procurement Bylaw
Appendix B: Timeline and supporting documents
Appendix C: PWC-C 13-2017, March 21, 2017
Appendix D: Niagara This Week news article

Bill 02-2016

Authorization Reference: PAC-C 3-2015;
CSD 12-2015 Minute Item 5.2

Schedule "B"

PROCUREMENT BY-LAW
THE REGIONAL MUNICIPALITY OF NIAGARA
PURCHASING AND EXECUTION AUTHOURITY

Method Of Purchasing	Dollar Value	Purchasing Authority*	Document Execution Authority	Payment Release Authority
Low Value (for routine Purchases of low dollar value)	Up to $10,000	Department Manager	Department Director	Department Manager
Informal Quotation (obtain, if possible, 3 written quotations for goods and services)	> $10,000 to $25,000	Department Manager	Department Director	Department Manager
Formal Quotation (formal bid solicitation to obtain quotations from at least 3 suppliers)	> $25,000 to $100,000	Department Manager	Department Commissioner	Department Manager

Bill 02-2016

Authorization Reference: PAC-C 3-2015;
CSD 12-2015 Minute Item 5.2

Schedule "B"

PROCUREMENT BY-LAW
THE REGIONAL MUNICIPALITY OF NIAGARA
PURCHASING AND EXECUTION AUTHOURITY

Method Of Purchasing	Dollar Value	Purchasing Authority*	Document Execution Authority	Payment Release Authority
Request for Tender	> $100,000 to $250,000	Department Director	Department Commissioner	Department Manager
	> $250,000 to $1 million	Department Commissioner	Department Commissioner and Commissioner of Corporate Services/Treasurer	Department Manager
	> $1 million to $5 million	Department Commissioner, and the Commissioner of Corporate Services/Treasurer and the CAO	CAO	Department Director
	> $5 million	Council	Regional Clerk and Regional Chair	Department Commissioner

Bill 02-2016

Authorization Reference: PAC-C 3-2015;
CSD 12-2015 Minute Item 5.2

Schedule "B"

PROCUREMENT BY-LAW
THE REGIONAL MUNICIPALITY OF NIAGARA
PURCHASING AND EXECUTION AUTHOURITY

Method Of Purchasing	Dollar Value	Purchasing Authority*	Document Execution Authority	Payment Release Authority
Request for Proposal	> $10,000 to $25,000	Department Manager	Department Director	Department Manager
	> $25,000 to $100,000	Department Director	Department Commissioner	Department Manager
	> $100,000 to $250,000	Department Director	Department Commissioner	Department Manager
	> $250,000 to $1 million	Department Commissioner	Department Commissioner and Commissioner of Corporate Services/Treasurer	Department Manager
	> $1 million to $5 million	Department Commissioner and Commissioner of Corporate Services/Treasurer and the CAO	CAO	Department Director
	> $5 million	Council	Regional Clerk and Regional Chair	Department Commissioner

Bill 02-2016

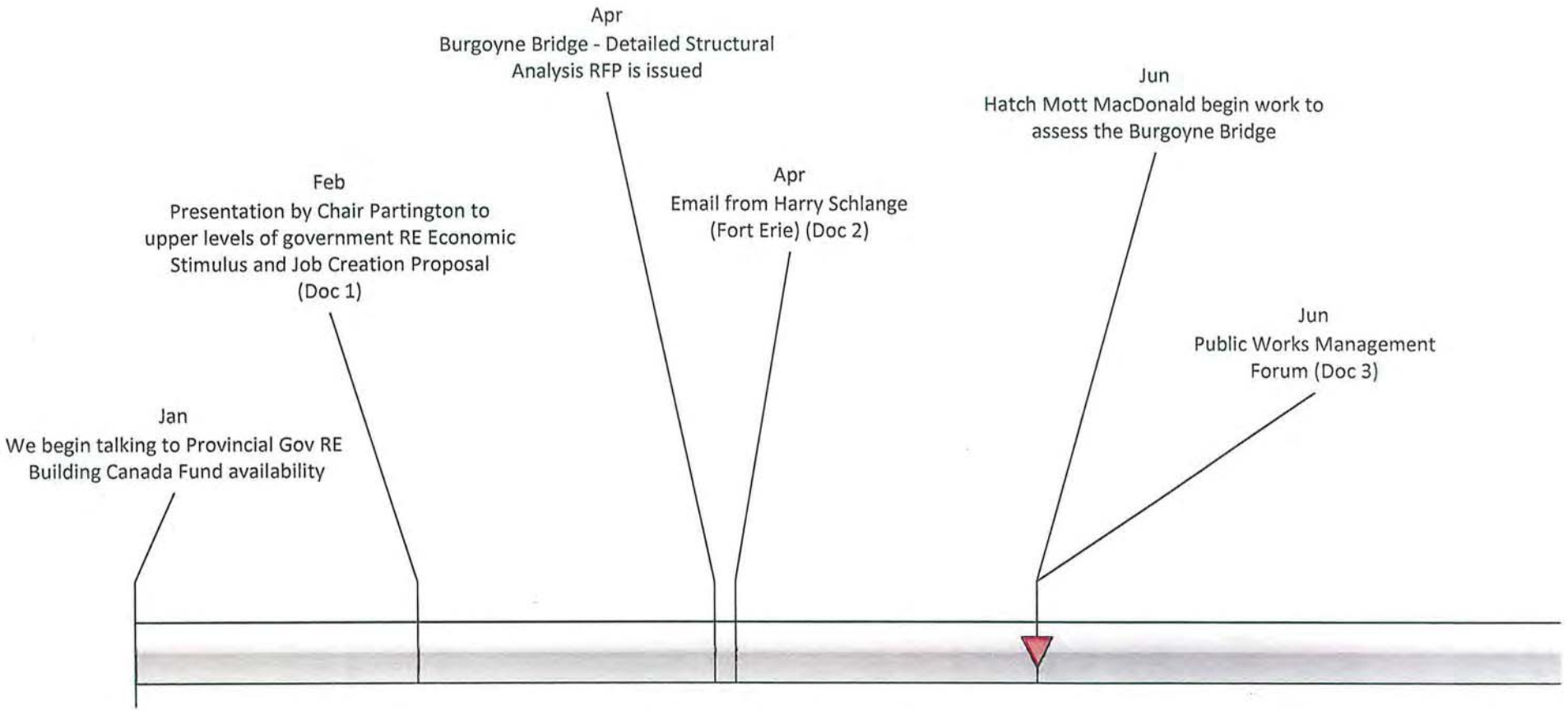
Authorization Reference: PAC-C 3-2015;
CSD 12-2015 Minute Item 5.2

Schedule "B"

PROCUREMENT BY-LAW
THE REGIONAL MUNICIPALITY OF NIAGARA
PURCHASING AND EXECUTION AUTHOURITY

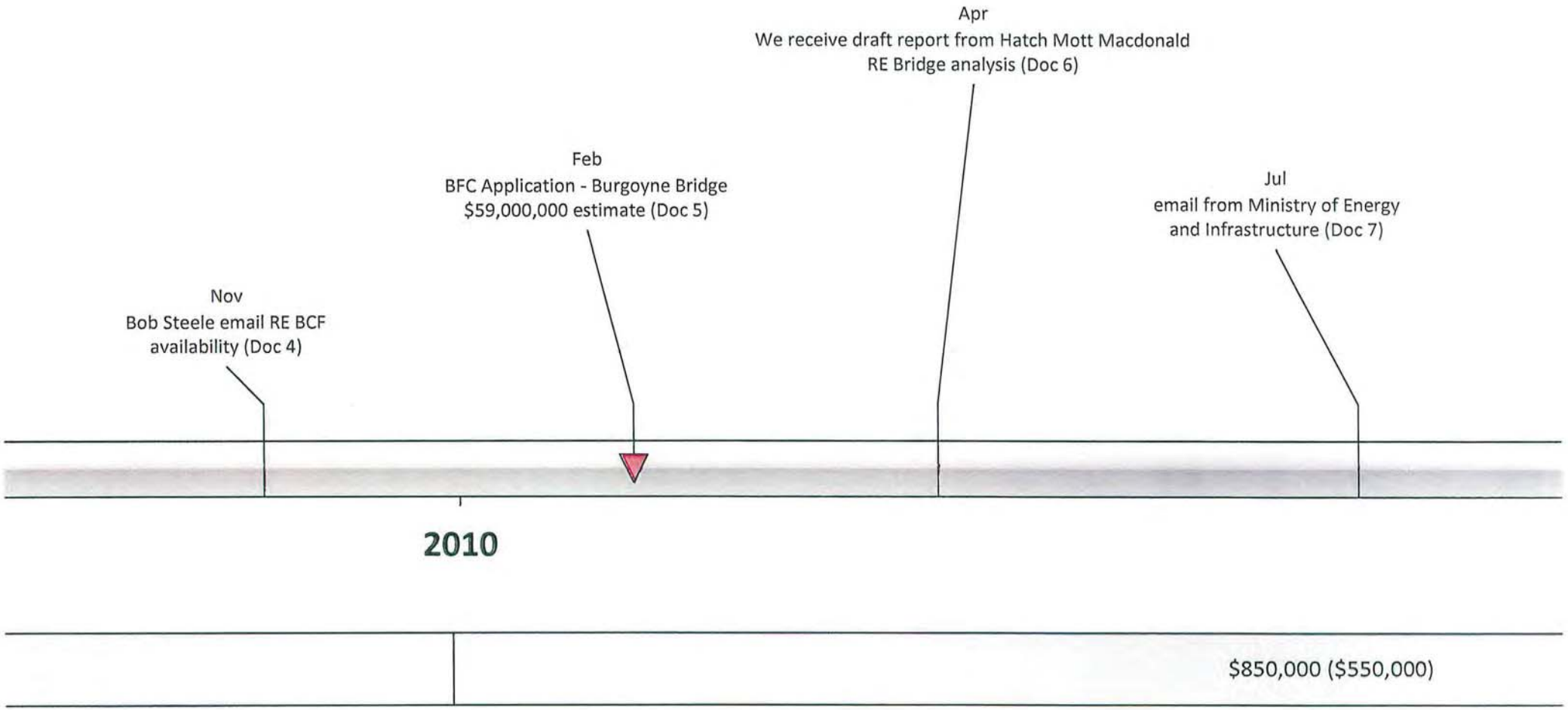
Method Of Purchasing	Dollar Value	Purchasing Authority*	Document Execution Authority	Payment Release Authority
Special Circumstance, Single Source and Negotiation	> $10,000 to $25,000	Department Director	Department Director	Department Manager
	> $25,000 to $100,000	Department Director and the Manager of Procurement and Department Commissioner	Department Commissioner	Department Manager
	> $100,000 to $250,000	Department Director and the Manager of Procurement and Department Commissioner	Department Commissioner and Commissioner of Corporate Services/Treasurer	Department Manager
	>$250,000 to $1,000,000	Department Commissioner and the Director of Procurement and Strategic Acquisitions and Commissioner of Corporate Services/Treasurer	Department Commissioner and CAO	Department Director
	>$1,000,000	Council	Regional Clerk and Regional Chair	Department Commissioner

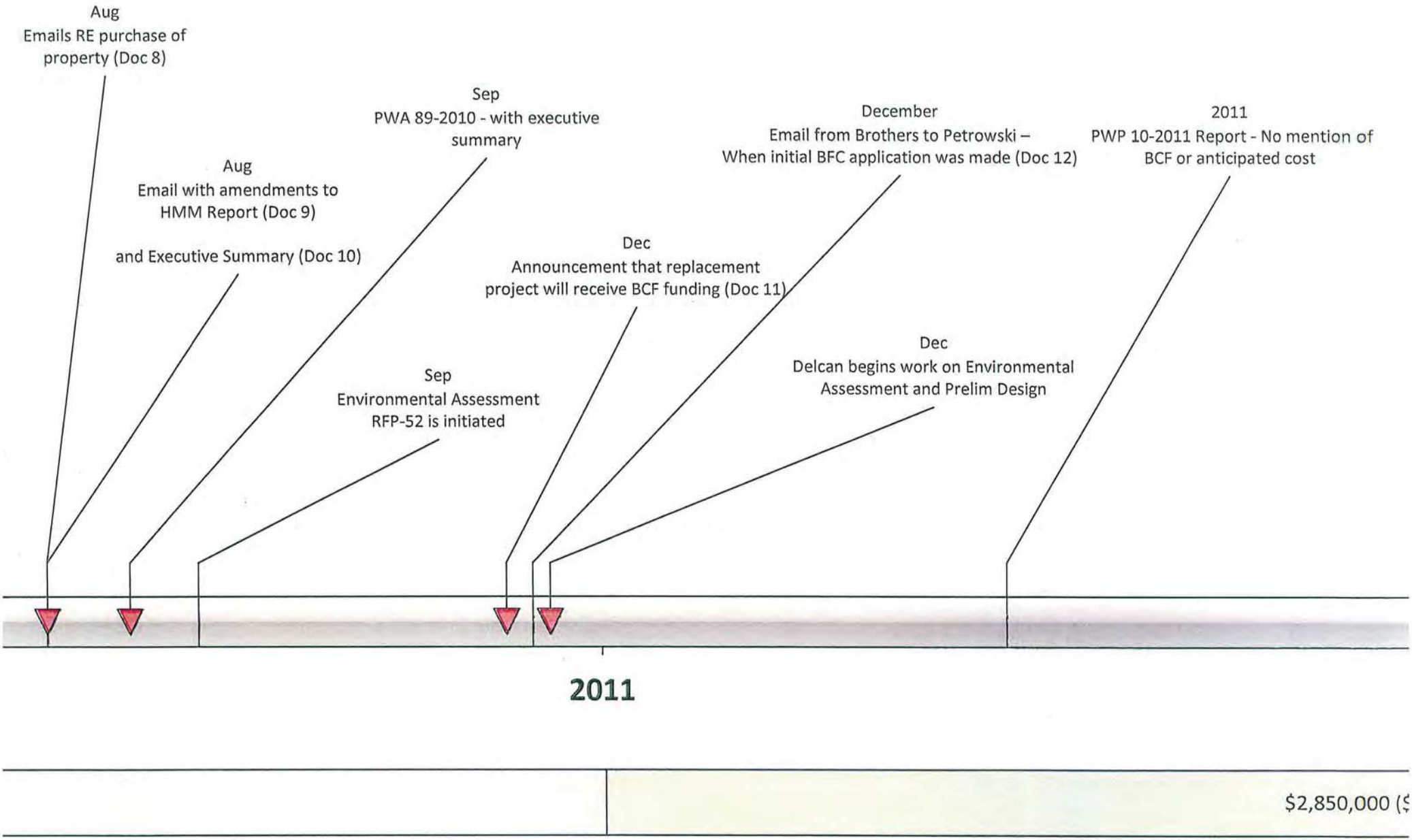
* "Purchasing Authority" means those positions listed, and includes any position which is higher in the Corporation's reporting structure.

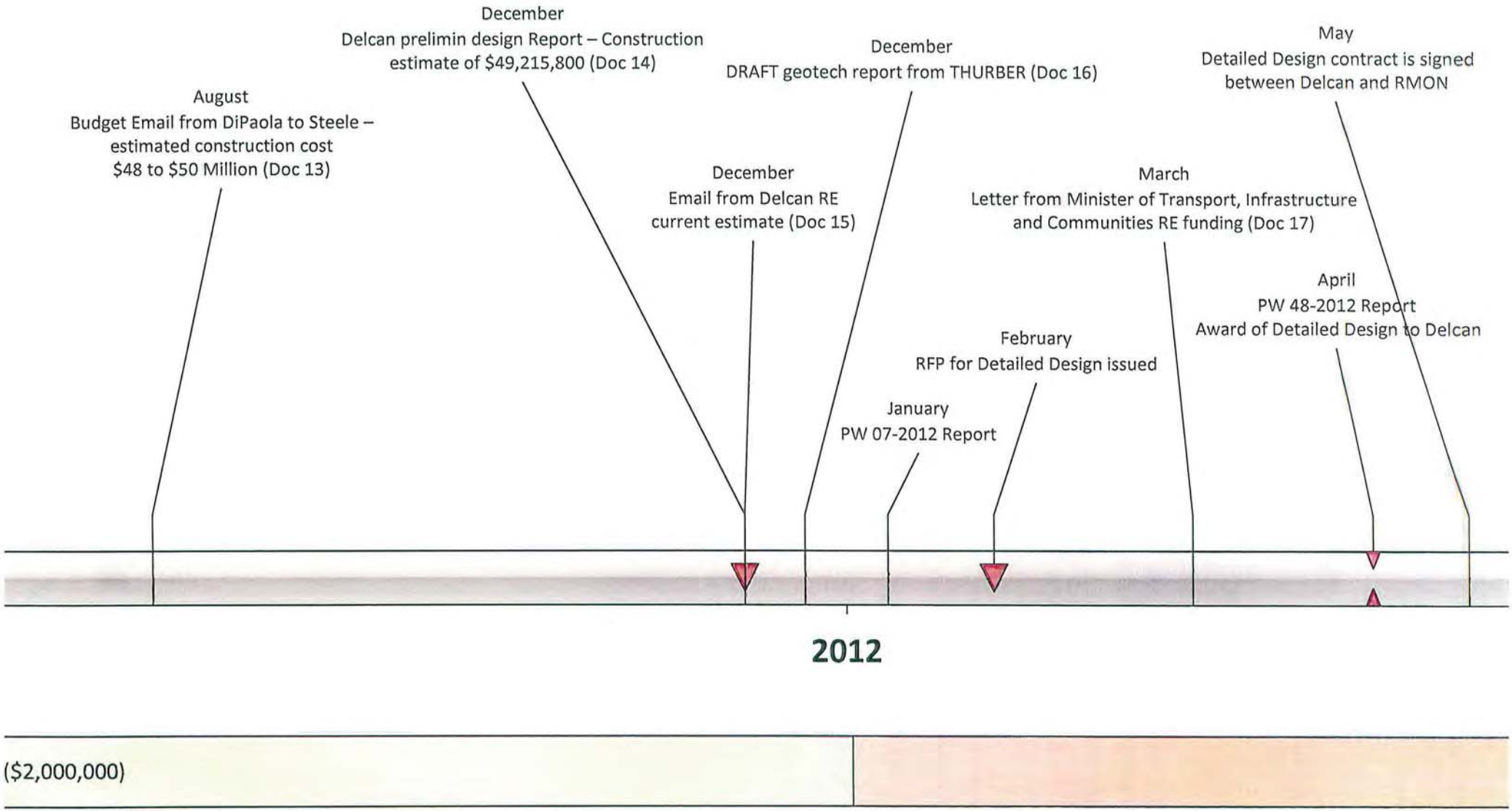


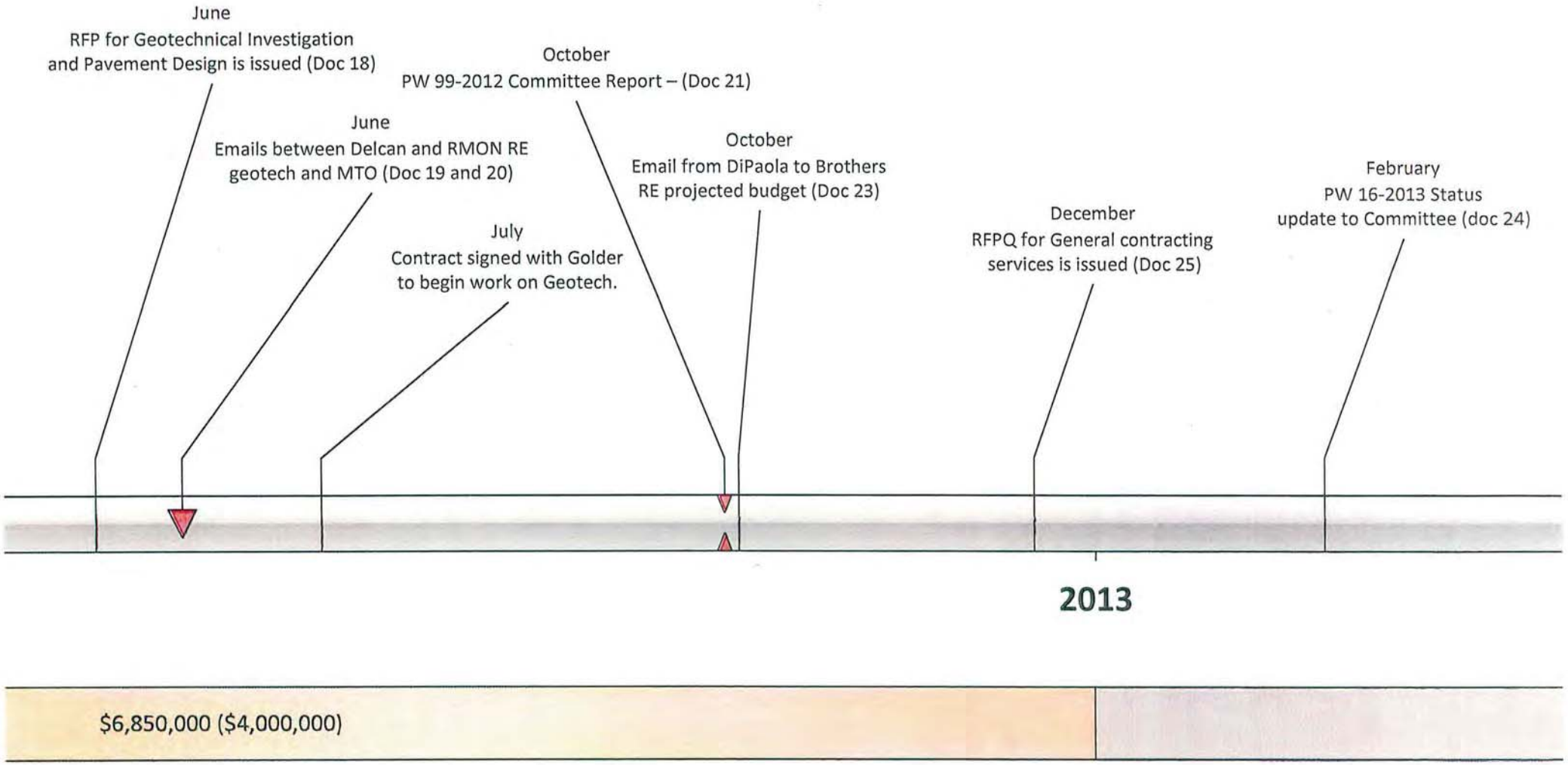
2009-01-01

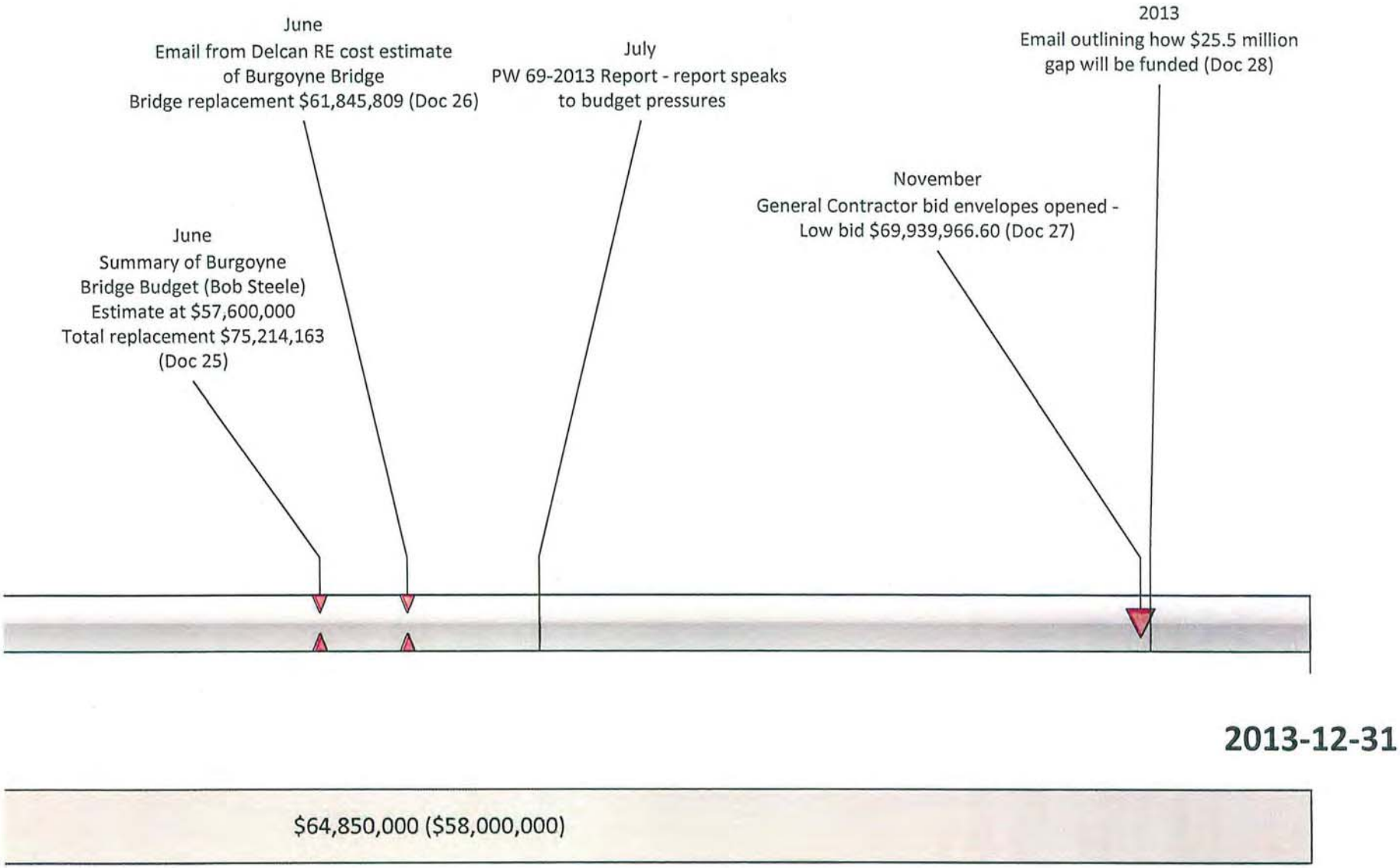
$300,000


Apr
We receive draft report from Hatch Mott Macdonald
RE Bridge analysis (Doc 6)
Feb
BFC Application - Burgoyne Bridge
$59,000,000 estimate (Doc 5)
Jul
email from Ministry of Energy
and Infrastructure (Doc 7)
Nov
Bob Steele email RE BCF
availability (Doc 4)
2010
$850,000 ($550,000)


Aug
Emails RE purchase of property (Doc 8)
Aug
Email with amendments to HMM Report (Doc 9)
and Executive Summary (Doc 10)
Sep
PWA 89-2010 - with executive summary
Sep
Environmental Assessment RFP-52 is initiated
Dec
Announcement that replacement project will receive BCF funding (Doc 11)
December
Email from Brothers to Petrowski – When initial BFC application was made (Doc 12)
Dec
Delcan begins work on Environmental Assessment and Prelim Design
2011
PWP 10-2011 Report - No mention of BCF or anticipated cost
2011
$2,850,000 ($


December
Delcan prelimin design Report – Construction estimate of $49,215,800 (Doc 14)
December
DRAFT geotech report from THURBER (Doc 16)
May
Detailed Design contract is signed between Delcan and RMON
August
Budget Email from DiPaola to Steele – estimated construction cost $48 to $50 Million (Doc 13)
December
Email from Delcan RE current estimate (Doc 15)
March
Letter from Minister of Transport, Infrastructure and Communities RE funding (Doc 17)
April
PW 48-2012 Report
Award of Detailed Design to Delcan
February
RFP for Detailed Design issued
January
PW 07-2012 Report
2012
($2,000,000)


June
RFP for Geotechnical Investigation and Pavement Design is issued (Doc 18)
June
Emails between Delcan and RMON RE geotech and MTO (Doc 19 and 20)
July
Contract signed with Golder to begin work on Geotech.
October
PW 99-2012 Committee Report – (Doc 21)
October
Email from DiPaola to Brothers RE projected budget (Doc 23)
December
RFPQ for General contracting services is issued (Doc 25)
February
PW 16-2013 Status update to Committee (doc 24)
2013
$6,850,000 ($4,000,000)


June
Email from Delcan RE cost estimate
of Burgoyne Bridge
Bridge replacement $61,845,809 (Doc 26)
July
PW 69-2013 Report - report speaks
to budget pressures
2013
Email outlining how $25.5 million
gap will be funded (Doc 28)
November
General Contractor bid envelopes opened -
Low bid $69,939,966.60 (Doc 27)
June
Summary of Burgoyne
Bridge Budget (Bob Steele)
Estimate at $57,600,000
Total replacement $75,214,163
(Doc 25)
2013-12-31
$64,850,000 ($58,000,000)

Document 1

Economic Stimulus & Job Creation Proposal

Presentation By
Peter Partington, Regional Chairman
Niagara Region

Niagara Region

Take Aways

- Accelerate economic stimulus by capital public works initiatives
- Marquee environmental stewardship & growth development projects
- Supporting investments to realize national tourism & cultural benefits

Niagara Regional Economy

- **Manufacturing sector:** 
  - Accelerated job losses: John Deere - 800, Dana Canada - 800, other auto suppliers - 445+
- **Tourism sector:** 
  - Tourism under stress - USA market eroding
  - Fort Erie Racetrack possible closing
- **Lowest median employment income & second highest unemployment rate in Canada (9.6%)**
- **Added stimulus supports overall Niagara Economic Strategy & will have major economic impact**

Niagara Region

Niagara Actions and Stimuli

- **$96 M Regional capital works program for 2009**
- **Accelerated capital works deployment initiative:**
  - Internal process to fast track projects
  - Work with consulting industry & heavy construction association
  - Expedite works program, remove barriers, ID resources
- **$1.6 B, 10-year capital program need in Niagara**
  - $300 M infrastructure deficit gap
- **Cost containment: 0.6% net Tax increase for 2009**

Niagara Region

Accelerated Capital Projects – 120 Days

- **Niagara Region has identified a program of three initiatives for the Federal government to stimulate Niagara's economy and create more immediate jobs:**
  - Grimsby WWTP expansion: $25 M
    (Environment, bi-national waters)
  - Fort Erie trunk sewer (Growth servicing): $6 M
  - Niagara Falls arterial road reconstruction: $2 M
    (Transportation)

  Total Cost: $33 M

- **Niagara transportation rehab and reconstruction projects: $50M**

Niagara Region

New Investment Opportunities: 12 - 24 Months

- **Environmental Stewardship:**
  - 3 CSO, high-rate treatment facilities to achieve 90% capture & treatment of wet-weather flow to bi-national receiving waters using innovative technology: **$45 M**
- **National Tourism & Cultural:**
  - Project Niagara/Parks Canada & NOTL tourism infrastructure support
  - Regional baseline investment of $18 M for WWTP
  - Incremental transportation & WWTP costs: **$49 M**

Niagara Region

Niagara Request

Niagara Commitment	Federal Request
$63 M in Regional capital projects in 2009	Regional Request: - Environmental Stewardship: $45 M - National Tourism & Cultural: $49 M - Niagara Transportation Rehab $50 M
	Accelerated Regional Projects: $33 M
	Total: $177 M
	FEDERAL REQUEST: $ 59 M

Niagara Region

Document 2

Scott, Andrew

m: McQueen, Chris
t: Monday, April 27, 2009 12:34 PM
Steele, Bob;Matthews-Malone, Betty
Cc: Trojan, Mike;Zanatta, Roxanne
Subject: FW: Last comments on the upcoming Funding applications
Attachments: Key Municipal Projects for funding consideration- Apr 24- final (2).doc

Bob/Betty:
Please note the response from Harry S. based on the Friday area CAO discussion – some were discussed at our meeting today.
Chris

Chris McQueen
Director of Administration
Office of the CAO
Regional Municipality of Niagara
(905) 685-4225 Ext. 3716

Building Community. Building Lives.

ective September 30 my e-mail address will be: **chris.mcqueen@niagararegion.ca.** Our w web domain name will be www.niagararegion.ca.

From: Harry Schlange [mailto:HSchlange@town.forterie.on.ca]
Sent: Monday, April 27, 2009 12:31 PM
To: McQueen, Chris; Trojan, Mike
Subject: Last comments on the upcoming Funding applications

Thank you for hosting the session on Friday, your information on what qualifies and does not was very valuable.

As we discussed all participants had one more opportunity to reenforce suggestions for the Regions consideration..so here it goes

Regional Projects

-my input is based on the fact that the Region will not forward projects that exceed the $177M target (since that was pitched in ottawa)
-also that we would need to eliminate those that do not fall into the category of "incrementality"

Suggestions

- i suggest that those that do not fall under the incremental (that i am aware of) are.Baker Road, Frenchmans Creek phase 1, and Hwy 20 (this should free up in excess of $40M)

o based on the needs of Niagara , i would not support Project Niagara....as a TOP priority to accelerate at this time, cultural index is not scoring too bad (recent studies would support this) and the Brock Performing Arts Centre proposal n downtown st. catharines does have of an impact 12 months throughout the year...we are scoring low economically and from environmental perspective and that is where our FOCUS and Priority should be (CAO members should be providing

ICIPAL PROJECTS FOR FUNDING CONSIDERATION AND/OR SUPPORT BY THE REGION OF NIAGARA

ECT DESCRIPTION	PROJECT COST	REQUEST REGION TO APPLY FOR FUNDING	MUNICIPAL SHARE	APPLICABLE STIMULUS FUND	ADDITIONAL COMMENTS
- Niagara-on-the- ter Treatment Plant and Site Servicing	$124.0 Million	$49.0 Million		ISF	- Environmental compliance (lagoons) - International receiving waters - Partnerships with Parks Canada & Project Niagara - Master Plan priority - War of 1812 centennial - State-of-the-art facility - National Tourism & Culture - Marquee Project - 2 years
E - Industrial Park: nan's Creek Trunk Project – Phase I nan's Creek Trunk Project – Phase II	$8 Million $20 Million	$2.67 Million $6.67 Million		ISF ISF	- Environmental Studies – Class EA - Compliance (F-5-5) - Master Servicing Study - CN Watson Economic Impact Analysis - Creation of 3,900 direct jobs - Creation of 1,900 indirect jobs - 142 prime hectare of employment lands on existing transportation corridor - Alignment with Regional Go South Policy - Alignment with Provincial Growth Strategy – Designated Gateway Economic Corridor - Growth - Supported by Regional Planning staff and 5 EDOs as vital location that needs to be shovel ready - 12 months
ARINES - Combined erflow (CSO) Program, St. s & Niagara Falls	$45.0 Million	$15.0 Million		ISF	- Environmental - Compliance (F-5-5) - International receiving waters - 12 months

CIPAL PROJECTS FOR FUNDING CONSIDERATION AND/OR SUPPORT BY THE REGION OF NIAGARA

CT DESCRIPTION	PROJECT COST	REQUEST REGION TO APPLY FOR FUNDING	MUNICIPAL SHARE	APPLICABLE STIMULUS FUND	ADDITIONAL COMMENTS
Baker Road WWTP and Expansion,	$25 Million	$8.3 Million		**ISF**	- Compliance - International receiving waters - Marquee Project - Growth - 120 day
- CSO Project – Thorold	$6.6 Million		$2.2 Million	**ISF**	- Environmental Compliance - International receiving waters - Growth
- Ormond Street ewermain – Thorold	$2.2 Million		$730,000	**BCF**	- Health and Safety
E - North Crescent cipal Service ents d Phase III	$9.1 Million		$2.63 Million	**BCF**	- Master Servicing Plan - Pollution Control Plan - Frenchman's Creek Class EA - Provincial Smart Growth – Intensification - Public Health & Safety - Quality of Life
E - Catherine Street ents	$4.4 Million		$1.47 Million	**BCF**	- Master Servicing Plan - Pollution Control Plan - Public Health & Safety
RINES - Catharines n Replacement	$25.5 Million		$8.5 Million	**ISF**	-

ICIPAL PROJECTS FOR FUNDING CONSIDERATION AND/OR SUPPORT BY THE REGION OF NIAGARA

CT DESCRIPTION	PROJECT COST	REQUEST REGION TO APPLY FOR FUNDING	MUNICIPAL SHARE	APPLICABLE STIMULUS FUND	ADDITIONAL COMMENTS
- Central Avenue placement ** h a modern, aesthetically ucture in order to provide a ficient and reliable on link from the od to the QEW and Peace ll as to convey a favourable ion of Bridgeburg and the ness district	$4 Million	$1.333 Million		**ISF**	- Asset Management: Regional asset that requires attention - Public Health & Safety Factors - Revitalization of core area - Bridgeburg Neighbourhood Plan ** CRITICAL PRIORITY IN URBAN AREA **
- Thompson Road * a modern bridge d redesign the of Thompson Road, and Phipps Street in vide a safe, efficient and nsportation link from the od to the QEW and other n.	$ 6 Million	$2 Million		**ISF**	- Regional asset that requires attention – it is over 70 years old and has undergone some remedial work in the last few years as well as removal of a section of subway carrying Michigan Central Railway tracks overhead. The subway is a part of the Regional road network and through it a connection from Thompson Road is made to Phipps Street. - The subway is restricted with respect to minimum height clearance and a number of traffic accidents have occurred at this site. Sight lines are severely restricted with the junction of three higher-volume Regional roads in close proximity to the subway. - health and safety factors
- Ridge Road ents on Phases I and II include torm sewer, sanitary works and streetscape ts	$5.2 Million		$1.733 Million	**ISF**	- Infrastructure Master Plans - Will result in additional commercial development opportunities, greater private sector investment, opportunities for housing in a mixed use manner along a major transportation corridor promoting pedestrian accessibility, transit operations and more sustainable development aligning with the Province's Places to Grow Strategy

[CIPAL PROJECTS FOR F[illegible]DING CONSIDERATION AND/OR SUPPORT BY THE REGION OF NIAGARA

:CT DESCRIPTION	PROJECT COST	REQUEST REGION TO APPLY FOR FUNDING	MUNICIPAL SHARE	APPLICABLE STIMULUS FUND	ADDITIONAL COMMENTS
· RR-20 (Old Highway ses 1 & 2, Thorold	$8.4 Million	$2.8 Million		ISF	- Economic & social benefits - Sustainability - Public Safety - Growth - 12 months
· 2009 Roads ng Program Niagara-	$9.7 Million	$3.23 Million		ISF	- Compliance - Asset Management - Public Health & Safety - Economic & social benefit - 120 day
RR-101 (Mountain ıases 1, 2 and 3 alls	$8.8 Million	$2.93 Million		ISF	- Compliance - Asset Management - Public Health & Safety - Economic & social benefit - 120 day
RR-77 (Welland ·ines	$4.6 Million	$1.53 Million		ISF	- Compliance - Economic & social benefit - Public health & safety - 12 months
RR-41 (Woodlawn lening, Welland	$2.2 Million	$733,000		ISF	- Compliance - Asset Management - Public Health & Safety - Economic & social benefit - 120 day
O'Reilly's Bridge,	$5.0 Million	$1.66 Million		ISF	- Public safety priority - Bridge closed - Economic & Social Benefits - Asset management - 12 months
RR-77 (Fourth Ave.) ines	$9.0 Million	$3.0 Million		ISF	- Growth: serves new hospital - Economic & social benefit - Public health & safety - 12 months
15 Mile Creek Bridge ent, St. Catharines	$2.3 Million	$766,666		ISF	- Public safety priority - Significant priority: warrants - Economic & Social Benefits - Asset management - 12 months
ıRINES - Niagara rport	$13.1 Million		$4.366 Million	ISF	-

ICIPAL PR[illegible]TS FOR FUNDING CONSIDERATION AND/OR S[illegible]ORT BY THE REGION OF NIAGARA

ECT DESCRIPTION	PROJECT COST	REQUEST REGION TO APPLY FOR FUNDING	MUNICIPAL SHARE	APPLICABLE STIMULUS FUND	ADDITIONAL COMMENTS
- Seburn Road Bridge	$450,000		$150,000	ISF	- Seburn Road Bridge is recommended to have a 5 tonne posting due to the condition of this bridge and the load restriction by-law has been prepared - this bridge has structural deficiencies and has reached an advanced state of deterioration
- Faywell Road Bridge	$776,000		$259,000	ISF	- Faywell Road Bridge is recommended to have a 2 tonne posting due to the condition of the bridge and the associated load restriction by-law has been prepared. - This bridge has structural deficiencies and has reached an advanced state of deterioration
- Thorold Road and Reconstruction ara Street to South oad	TBD		TBD	ISF	- Linked to recommended Regional Road action program contained in the City of Welland Transportation Plan (Delcan 2001) including the following regional roads: South Pelham Road, Rice Road, Niagara Street (completed in 2007) - Linked to overall broader community transportation grid plan linking activity corridors - Additional information/data support contained in the Thorold Road (PCD to South Pelham) EA Study
- River Road and Expansion from t to Woodlawn Road	$2.5 Million		$833,333	ISF	- Linked to proposed construction of new school at south east corner of Woodlawn Road and River Road, development of the Woodlawn Sportsplex and continued development of big box shopping centres on the north side of Woodlawn Road - Additional information/data support contained in the River Road and Ross Street Extension EA study (Jan. 2009)
Reconstruction of t	$5.59 Million		$1.864 Million	BCF	-

'N OF FORT ERIE PROJE..S FOR FUNDING CONSIDERATION AND/OR SUPPORT BY THE REGION OF NIAGARA

:T DESCRIPTION	PROJECT COST	REQUEST REGION TO APPLY FOR FUNDING	MUNICIPAL SHARE	APPLICABLE STIMULUS FUND	ADDITIONAL COMMENTS
Replacement of Fire ? (Fenwick)	$2.97 Million		$999,999	**ISF**	-
Replacement of ? Library Branch	$1.245 Million		$415,000	**ISF**	-
? - Fire Station #2 ? to partner with the rt Erie detachment. Need for Police in Fort Fire Services	$3.5 Million (Town portion)		$1.3	**ISF**	- Unique partnership opportunity, the first in the Province to have Fire and Police co-exist in a shared location - Fire Station Facilities Review Study - takes into account the "one taxpayer" - Huge "PLAQUEABILITY"
- Town Hall ment/Renovation	$6.5 Million		$2.17 Million	**ISF**	-
- Sports Complex	$4.5 Million		$1.5 Million	**BCF**	-
RINES - Fire Halls	$7.52 Million		$2.507 Million	**ISF**	-
RINES - Academic al Centre – St. s/Brock Univ.	$109 Million		$36.3 Million	**BCF – Major Infrastructure**	-

WN OF FOR[illegible]IE PROJECTS FOR FUNDING CONSIDERATION [illegible]/OR SUPPORT BY THE REGION OF NIAGARA

CT DESCRIPTION	PROJECT COST	REQUEST REGION TO APPLY FOR FUNDING	MUNICIPAL SHARE	APPLICABLE STIMULUS FUND	ADDITIONAL COMMENTS
IARINES - Parking	$28 Million		$9.33 Million	ISF	-
- Fenwick vn Revitalization -	$2.321 Million		$773,698	ISF	-
IE - Completion of k and the Greater Circle Route e the Riverwalk project e Niagara River and to a safe and basic trail standard 2.0 connection between and the Niagara River n Trail Extension ace Garden Park Sculpture	$1 Million		$333,333	ISF	- Current Niagara Parks Commission connection is 5' wide deteriorating asphalt sidewalk, inconsistent with the standard of the Niagara River Recreation Trail or Friendship Trail - Partnerships with Niagara Parks Commission, Fort Erie Native Friendship Centre and Black Slave History Committee - Connection with Freedom Park – Black Slave History - Aboriginal impacts (Orchid Site) - Huge Plaqueability
SUBMITTED for Thorold Road 1/3 of total project 1/3 as non-eligible iare (ie. land	$523,972,000	$105,988,666	78,398,663		-

Document 3

Public Works Management Forum

June 23, 2009

Niagara Region

Building Community. Building Lives.

Public Works Management Forum Agenda

Agenda Topic	Time
Project Acceleration & ISF Project Approvals:	9:00-9:30
10-Year Capital Forecast & Guiding Principles:	9:30-10:00
Public Works Divisional Business Plans:	10:00-10:30
Break:	10:30 - 11:00
Accessibility for Ontarians with Disabilities Act:	11:00- Noon

Project Acceleration

- 80% on-street deployment - 2009 projects: $77 million
- Balance in the works: $19 million
- Congratulations to PW staff for a job well done!
- It's all about getting it done
- New challenge: Infrastructure Stimulus Fund

Infrastructure Stimulus Fund

- Niagara Region awarded 88.2 million
- Approx. $30 million from Feds, Province and Region
- Projects selected from 2010 budget
- < 2 years for substantial completion
- After Mar. 31, 201, Region is on its own $$
- We are positioned for success
- How to get it done - Better

Infrastructure Stimulus Fund

Project Name	Project Budget
RR #101 (Mountain Road), Recon. & Storm Drainage	$3.5M
RR # 73 (Fly Road), Reconstruction & Upgrading	$2.7M
Baker Road Wastewater Treatment Plant	$25.0M
Frenchman's Creek Sewage Servicing	$20.0M
Seaway Wastewater Treatment Plant Expansion	$22.0M
CSO - High Rate Treatment at N.F. WWTP	$15.0M
Total	**$88.2M**

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Ontario ISF Regional Comparisons

Region	Total	Fed./Prov.	Per Capita
Peel	$149 M	$99 M	$150
Niagara	$88 M	$59 M	$215*
Halton	$75 M	$50 M	$200
York	$71 M	$47 M	$97
Waterloo	$45 M	$45 M	$109
Durham	$24 M	$16 M	$48

* Disproportionate Fair Share

Niagara Region
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Total ISF Funding Approved in Niagara

- Niagara Region $88.2 million
- Area Municipalities $70.9 million
- Total $159.1 million

Niagara Region
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ISF Project Constraints

- ISF projects have strict and inflexible timelines
- Costs after March 31, 2011 are ineligible
- Therefore, only 18 months to complete
- Unprecedented quarterly project status tracking and reporting
- Project funding may be withdrawn if projects don't proceed within timeframe
- Need to expedite every step: Implementation not a "slam dunk", but a Challenge!

"How To" Measures to Expedite Projects

- Public Works /Corporate Services collaborative workshops to expedite project acceleration and completion
- Improvements identified to expedite purchasing process
- Council adopted new Purchasing By-law last week
- Delegated Council Authority to CAO during August recess period
- Immediate ISF projects "initiation"

Project Acceleration Tools

- One year pilot for Public Works spending & D.A.
- Primary changes to authorizations & delegation
- Delegations to lower management levels of higher $ expenditures
- Reduced project cycle time to engage contractors and consultants
- Need to cut time in half & manage double the capital program
- "We almost got what we asked for": 2X capital

Revised Purchasing Authority

Method of Procurement:	Previous Purchasing Authority	New Purchasing Authority
Informal Quotations (>$10,000 to $25,000)	Commissioner or Designate	Dept. Manager
Formal Quotations (>$25,000 to $100,000)	Commissioner or Designate and Commissioner of Corporate Services	Dept. Associate Director or Designate
Request for Tender (>$5 million)	**>$100,000 to $5 million** Commissioner, Commissioner of Corporate Services and CAO **>$5 million** Council	**>$100,000 to $250,000** Dept. Director or Designate **>$250,000 to $1 million** Dept. Commissioner or Designate, and Purchasing Manager **>$1 million to $5 million** Dept. Commissioner or Designate and Treasurer or CAO **> $5,000,000** Council

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Revised Purchasing Authority : RFP

Method of Procurement	Previous Purchasing Authority	New Purchasing Authority
Request for Proposal	**> $10,000 to $25,000** Commissioner or Designate	**>$10,000 to $25,000** Department Manager
	> $25,000 to $100,000 Commissioner or Designate and CS Commissioner	**>$25,000 to $100,000** Associate Director or Designate
	> $100,000 to $1,000,000 Commissioner (not Designate) and CS Commissioner and CAO	**$100,000 to $250,000** Director or designate **>$250,000 to $1 million** Commissioner or designate, and Purchasing Manager
	> $1 Million Council	**>$1 million to $5 million** Commissioner or designate and Treasurer or CAO **> $5 million** Council

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Revised Purchasing Authority : Sole Source & Negotiation

Method of Procurement	Previous Purchasing Authority	New Purchasing Authority
Special Circumstance, Single Source and Negotiation	> $10,000 to $25,000 Commissioner (not designate)	>$10,000 to $25,000 Associate Director or designate
	> $25,000 to $100,000 Commissioner (not Designate) and CS Commissioner	>$25,000 to $50,000 Director or designate
	> $100,000 to $1,000,000 Commissioner (not Designate) and CS Commissioner and CAO	>$100,000 to $250,000 Commissioner or designate and Treasurer or CAO
		>$250,000 to $1,000,000 Commissioner or designate, and CS Commissioner
	> $1 Million Council	> $1 Million Council

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PW Alignment with Corporate Business Plan

Divisional Business Plans:

- Waste Management
- Water & Wastewater
- Transportation
- Development Services

Corporate Objective A: Responsive Region

Niagara Region will be known for its effective decision-making, strong partnerships, clear accountability and service excellence

Contributing Departmental Objectives:

3. Proactive Stakeholder Engagement, 4. Financial Accountability, 5. Responsive Governance and 6. Effective & Efficient Service & Project Delivery

Waste Management Services

Strategies & Policies:

- Waste Diversion Strategy – 65% diversion by 2012
- Financing strategy
- Best practices benchmarking
- Extended producer responsibility

Programs & Projects:

- OMBI
- Rate study: Utility Model
- Collection Level Of Service review
- IC&I/ multi-residential Review
- Collection service delivery standardization
- In-House waste diversion programs

Corporate Objective B: Community and Social Well Being

Niagara Region will support a safe, healthy, diverse, culturally rich community where people of all ages and incomes enjoy a high quality of life

Contributing Departmental Objectives:

1. Sustainable Asset Management, 3. Proactive Stakeholder Involvement

Waste Management Services

Strategies & Policies:

- Compliance/ Enforcement By-Law
- Waste Diversion Strategy – 65% Diversion by 2012
- Optimizing Waste Collection Efficiencies
- Long Term Landfill Utilization Strategy

Programs & Projects:

- Public Space Recycling
- Illegal Dumping Working Group
- Environmental Monitoring System
- Level of Service Review
- Collection Services RFP

Corporate Objective C: Economic Prosperity

Niagara Region will become a prime destination for investment and encourage the growth of a diversified and sustainable economic base.

Contributing Departmental Objectives:

1. Sustainable Asset Management, 4. Financial Accountability, and 5. Responsive Governance

Waste Management Services

Strategies & Policies:

- Financing strategy
- Affordability analysis
- Extended producer responsibility

Programs & Projects:

- Rate study - Utility Model
- Sustainable financing assessment
- Blue Box Funding – Continuous Improvement Fund
- Provincial & Federal funding
- Waste electronics, tires, HHW Stewardship Program
- Computerized Maintenance Management System

Corporate Objective D: Environmental Stewardship

Niagara Region will increase the health and sustainability of its physical infrastructure and natural environment for current and future generations.

Contributing Departmental Objectives:

2. Environmental Stewardship

Waste Management Services

Strategies & Policies:

- Maximize 3Rs & Composting
- Waste Diversion Strat.
- Extended Producer Responsibility
- Long-term Landfill Utilization: Maximize Owned Landfill Capacity
- Disposal Technologies: Landfill Alternatives

Programs & Projects:

- Level of Service Review
- Waste Diversion Policy (biweekly)
- HHW & Reuse Centres
- Organics Processing Capacity
- Walker Landfill Agree't.
- Disposal Capacity Projects
- Perpetual Landfill Care
- New Disposal Technologies
- Public Space Recycling
- Waste Electronics & Tire Recycling Programs

Document 4

Scott, Andrew

...n: Steele, Bob
...t: Tuesday, November 24, 2009 8:30 AM
To: Roberts, Neal
Cc: Brothers, Ken
Subject: RE: Information

Thank you for the funding advisory, Neal. With regard to the BCF & ISF programs, we will very likely pursue $ for some big ticket PW infrastructure projects. However, past review indicates that the Region is not eligible for the Community Adjustment Fund (CAF), for which only communities with a population of less than 250K are eligible.
Best regards,
Bob

From: Roberts, Neal
Sent: Monday, November 23, 2009 2:19 PM
To: Steele, Bob
Cc: Brothers, Ken; Trojan, Mike; Weir, Mike
Subject: FW: Information

Bob:

FYI

Executive Officer to the Regional Chairman
2201 St. David's Road
Thorold, Ontario
L2V 4T7
office: 905-685-1571 ext. 3341
fax: 905-685-6243
cell: 905-658-3173
email: neal.roberts@niagararegion.ca

From: Michelle Mackenzie [mailto:mmackenzie@ensightcanada.com]
Sent: Friday, November 20, 2009 12:09 PM
To: Roberts, Neal

Subject: RE: Information

Hi Neal. The current programs pertaining to infrastructure funding that would be applicable to bridge and road work are the Building Canada Fund (Communities Component), Infrastructure Stimulus Fund (ISF) and Community Adjustment Fund (CAF). At the current time, all of these programs are in between intakes and not accepting applications.

CAF is expected to announce a new intake in January. My understanding is that the deadline would be after the March 2... deadline that we are all now so familiar with.

The ISF may take more applications as a result of money coming back on-stream from projects that cannot be completed by the March 2011 deadline. Any projects funding under this pot of money would need to be complete by March 2011.

Let me know if you need anything else.

Michelle

From: Roberts, Neal [mailto:neal.roberts@niagararegion.ca]
Sent: Thursday, November 19, 2009 9:30 AM
To: 'Michelle Mackenzie'
Subject: Information

Michelle:

Can a member of your staff provide our office with the following information:

- Current funding programs that are available for bridge repairs/replacement.
- When the funds are taking applications
- When the project must be completed by.

Thanks,

Neal

Executive Officer to the Regional Chairman
2201 St. David's Road
Thorold, Ontario
L2V 4T7
office: 905-685-1571 ext. 3341
fax: 905-685-6243
cell: 905-658-3173
email: neal.roberts@niagararegion.ca

Building Canada Fund Major Infrastructure Component:
Project Overview Requirements for Culture Projects

The Building Canada Fund (BCF) is designed to increase investment in public infrastructure and contribute to broad federal objectives: economic growth, a cleaner environment and strong and prosperous communities. In addition, in recognition of the Government of Canada's commitment to accelerate infrastructure investments to stimulate the economy, the BCF will give greater consideration to funding initiatives that can be materially constructed in 2009-2010 and 2010-2011. In order to ensure these program objectives are achieved, all projects must be supported by a project overview that includes an assessment of the proposed project. This document provides the minimum information requirements for Culture project proposals under the Major Infrastructure Component (MIC) of the BCF.

Eligible Recipients

To be eligible under the MIC, the funding recipient must be one of the following:

a. A province or a local or regional government established by or under provincial statute;
b. A public sector body that is established by or under provincial statute or by regulation or is wholly owned by a province or municipality; or,
c. A private sector body, including not-for-profit organizations, either alone or in partnership with a province or a government referred to above, which includes First Nations.

Culture Subcategories

To be eligible under the Culture category, projects must fall under one or more of the following eligible project subcategories:

- Museums[1] and Science Centers;
- The preservation of designated heritage sites that are duly recognized by[2]:
  - UNESCO;
  - Canadian government as per the national federal register of historic places;
  - Provincial or local government.
- Provincial, territorial and local government-owned libraries and archives.
- Facilities for the creation, production and presentation of the arts.
- Infrastructure in support of the creation of a cultural precinct within an urban core.

Culture Project Assessment Criteria:

Proponents of MIC Culture projects will be required to provide the following information to federal officials as part of their project overview.

1. Project Overview

1.1 A detailed overview of the project design and work to be carried out, including maps and diagrams showing the location, characteristics and phases (if project is part of larger master plan or project).

1.2 The estimated start date and completion date of the project components.

2. Financial and Legal Requirements.

2.1 Identification of the project components and their total estimated eligible and ineligible costs (see Annex A for the list of eligible and ineligible costs).

2.2 Identification of the proposed funding sources and the expenditure profile reflecting total eligible costs.

2.3 Indication as to the level of confidence, degree of accuracy and level of contingency of the proposed cost estimates.

2.4 Assurance of capacity to operate and maintain the service or investment on a sustainable, long term basis, where appropriate for complex projects and when the recipient is a not-for-profit organization or the private sector.

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1 A museum is a non-profit making, permanent institution in the service of society and of its development, and open to the public, which acquires, conserves, researches, communicates and exhibits, for purposes of study, education and enjoyment, artifacts related to people and their environment.

2 Excludes private residences and religious sites.

2.5 Demonstration that the project will adhere to all applicable federal legislation and obtain all necessary federal permits and authorizations required for the project.

2.6 Status and plan to complete environmental assessment and First Nations consultations, where required.

2.7 Confirmation and assurance that the contract award process for eligible costs to be funded under the project is competitive, fair, transparent and consistent with the Agreement on Internal Trade.

3. Project Benefits.

3.1 The proponent must demonstrate how the project provides benefits to Canadians in support of one or more of the following outcomes:

- Increases community use of facilities or gives the facilities a multipurpose dimension, increased audiences/users;
- Enhances ability of communities to express, preserve, develop and promote their cultural heritage within Canada;
- Generates economies of scale, spinoff activities, and supports the larger economic priorities of the community and of governments;

4. Risk Mitigation

4.1 Identification of significant risks and outlining of the measures and/or the proponent's capacity to mitigate these risks (e.g. cost increases, project delays, risk of scope change due to results of environmental assessment).

4.2 For non-governmental recipients, provision of assurance of appropriate governance structure, capacity, track-record managing large projects, and capacity to obtain non-federal funding for the project.

5. Minimum Federal Requirements

5.1 Demonstration that newly constructed or materially rehabilitated infrastructure intended for use by the public must ensure appropriate access for persons with disabilities, including meeting the requirements of the Canadian Standards Association Technical Standard Accessible Design for the Built Environment (CAN/CSA B651-04) for new construction.

5.2 Newly constructed or materially rehabilitated buildings must meet or exceed the energy efficiency requirements of the Model National Energy Code for Building, where applicable.

5.3 Beginning April 1, 2011 proponents of projects with a proposed federal contribution of above $50 million must demonstrate how they will use Public-

Private Partnership (P3) procurement, or if the project is not pursuing P3 opportunities, the proponent must provide an explanation of how P3s were considered and why they were not pursued.

ANNEX A
Eligible and Ineligible Costs

Eligible costs will be all direct costs that are, in Canada's opinion, properly and reasonably incurred and paid by an eligible recipient for an eligible investment under a contract for goods or services necessary for the implementation of a project. Eligible costs include only the following:

- The capital costs of acquiring, constructing or renovating a tangible capital asset, as defined and determined according to accounting principles generally accepted in Canada;
- The costs of joint communication activities (press releases, press conferences, translation, etc.) and road signage recognition set out in the Communication Protocol that will form part of the federal-provincial contribution agreement;
- All planning (including plans and specifications) and assessment costs specified in the agreement such as the costs of environmental planning, surveying, engineering, architectural supervision, testing and management consulting services. Canada will contribute no more than 15% of its contribution to this cost;
- The costs of engineering and environmental reviews, including environmental assessments and follow-up programs as defined in the *Canadian Environmental Assessment Act* and the costs of remedial activities, mitigation measures and follow-up identified in any environmental assessment;
- Costs of project-related signage, lighting, project markings and utility adjustments;
- Costs of aboriginal consultation;
- The costs of developing and implementing innovative techniques for carrying out the Project;
- Recipient audit and evaluation costs as specified in the agreement; and
- Other costs that, in the opinion of Canada, are considered to be direct and necessary for the successful implementation of the Project and have been approved in writing prior to being incurred.

Eligible project costs can begin to accrue effective as of the date indicated by the Minister of Transport, Infrastructure and Communities in writing to the proponent following the Minister's approval-in-principle of the project. However, all eligible costs outlined above can be reimbursed to the recipient only following the signing of the contribution agreement in respect of the project.

The following are deemed **ineligible costs:**

- Costs incurred before the date indicated by the Minister of Transport, Infrastructure and Communities in writing to the proponent following the Minister's approval of the project;
- Costs incurred after the project completion date;
- The cost of developing a business case or proposal for funding;
- The cost of purchasing land and associated real estate and other fees;
- Financing charges and interest payments on loans;
- Leasing land, buildings, equipment and other facilities;
- General repairs and maintenance of a project work and related structures, unless they are part of a larger capital expansion project tied to capital expansion;
- Services or works normally provided by the recipient, incurred in the course of implementation of the project, except those specified as eligible costs;
- The cost of any goods and services which are received through donations or in kind;
- Employee wages and benefits, overhead costs as well as other direct or indirect operating, maintenance and administrative costs incurred by the recipient, and more specifically costs relating to services delivered directly by permanent employees of the recipient, or of a Crown Corporation or corporation owned and controlled by the recipient, except for other costs that, in the opinion of Canada, are considered to be direct and necessary for the successful implementation of the project and have been approved in writing prior to being incurred, or in cases where the recipient can demonstrate value for money and that the costs are incremental;
- Provincial sales tax and Goods and Services Tax, for which the recipient is eligible for a rebate, and any other costs eligible for rebates; and
- Legal fees.

Building Canada Fund Major Infrastructure Component:
Project Overview Requirements for Wastewater Projects

The Building Canada Fund (BCF) is designed to increase investment in public infrastructure and contribute to broad federal objectives: economic growth, a cleaner environment and strong and prosperous communities. In addition, in recognition of the Government of Canada's commitment to accelerate infrastructure investments to stimulate the economy, the BCF will give greater consideration to funding initiatives that can be materially constructed in 2009-2010 and 2010-2011. In order to ensure these program objectives are achieved, all projects must be supported by a project overview that includes an assessment of the proposed project. This document provides the minimum information requirements for Wastewater project proposals under the Major Infrastructure Component (MIC) of the BCF.

Eligible Recipients

To be eligible under the MIC, the funding recipient must be one of the following:

a. A province or a local or regional government established by or under provincial statute;
b. A public sector body that is established by or under provincial statute or by regulation or is wholly owned by a province or municipality; or,
c. A private sector body, including not-for-profit organizations, either alone or in partnership with a province or a government referred to above, which includes First Nations.

Wastewater Subcategories

To be eligible under the Wastewater category, projects must fall under one or more of the following eligible project subcategories:

- Wastewater collection systems and/or wastewater treatment facilities or systems (which may include grey water reuse).
- Separation of combined sewers and/or combined sewer overflow control, including real-time control and system optimization.
- Separate storm water collection systems and/or storm water treatment facilities or systems.
- Wastewater sludge treatment and management systems.

Wastewater Project Assessment Criteria:

Proponents of MIC Wastewater projects will be required to provide the following information to federal officials as part of their project overview.

1. Project Overview

1.1 A detailed overview of the project design and work to be carried out, including maps and diagrams showing the location, characteristics and phases (if project is part of larger master plan or project).

1.2 The estimated start date and completion date of the project components.

2. Financial and Legal Requirements.

2.1 Identification of the project components and their total estimated eligible and ineligible costs (see Annex A for the list of eligible and ineligible costs).

2.2 Identification of the proposed funding sources and the expenditure profile reflecting total eligible costs.

2.3 Indication as to the level of confidence, degree of accuracy and level of contingency of the proposed cost estimates.

2.4 Assurance of capacity to operate and maintain the service or investment on a sustainable, long term basis, where appropriate for complex projects and when the recipient is a not-for-profit organization or the private sector.

2.5 Demonstration that the project will adhere to all applicable federal legislation and obtain all necessary federal permits and authorizations required for the project.

2.6 Status and plan to complete environmental assessment and First Nations consultations, where required.

2.7 Confirmation and assurance that the contract award process for eligible costs to be funded under the project is competitive, fair, transparent and consistent with the Agreement on Internal Trade.

3. Project Benefits.

3.1 The proponent must demonstrate how the project provides benefits to Canadians in support of one or more of the following outcomes:

- A measurable and quantifiable reduction in volume and/or improvement in the level of treatment of wastewater effluent;
- Increased number of households, industries, commercial establishments, and institutions with untreated wastewater connected to sanitary sewer systems;

- Reduced volume and incidents of discharge of untreated wastewater effluent as a result of sanitary sewer and combined sewer overflow events;
- Improved quality of stormwater effluent;
- Implementation of full life cycle cost accounting and full cost recovery (where possible) for wastewater infrastructure assets;
- Improvement to the reliability or performance of the wastewater collection and/or treatment system; and
- Improved wastewater sludge treatment and management.

4. Risk Mitigation

4.1 Identification of significant risks and outlining of the measures and/or the proponent's capacity to mitigate these risks (e.g. cost increases, project delays, risk of scope change due to results of environmental assessment).

4.2 For non-governmental recipients, provision of assurance of appropriate governance structure, capacity, track-record managing large projects, and capacity to obtain non-federal funding for the project.

5. Minimum Federal Requirements

5.1 Demonstration that newly constructed or materially rehabilitated infrastructure intended for use by the public must ensure appropriate access for persons with disabilities, including meeting the requirements of the Canadian Standards Association Technical Standard Accessible Design for the Built Environment (CAN/CSA B651-04) for new construction.

5.2 Newly constructed or materially rehabilitated buildings must meet or exceed the energy efficiency requirements of the Model National Energy Code for Building, where applicable.

5.3 Beginning April 1, 2011 proponents of projects with a proposed federal contribution of above $50 million must demonstrate how they will use Public-Private Partnership (P3) procurement, or if the project is not pursuing P3 opportunities, the proponent must provide an explanation of how P3s were considered and why they were not pursued.

5.4 Projects for the construction of new or material rehabilitation or expansion of existing wastewater treatment facilities must result in wastewater effluent that meets national standards as established by the Canadian Council of Ministers for the Environment. In the absence of these, the following standards shall apply:

- Carbonaceous Biochemical Oxygen Demand (CBOD): a maximum of 25. mg/L based on a periodic average.

- Total Suspended Solids (TSS): a maximum of 25 mg/L based on a periodic average.
- Total Residual Chlorine (TRC): a maximum of 0.02 mg/L based on a periodic average, or applicable provincial facility license requirements, which ever is more stringent.

5.5 Projects for the construction of new, or material rehabilitation or expansion of existing wastewater sludge treatment and management systems must treat sludge to the equivalent of USEPA Class "A" standard (40 CFR Part 503 Rule), or provincial equivalent, whichever is more stringent..

ANNEX A
Eligible and Ineligible Costs

Eligible costs will be all direct costs that are, in Canada's opinion, properly and reasonably incurred and paid by an eligible recipient for an eligible investment under a contract for goods or services necessary for the implementation of a project. Eligible costs include only the following:

- The capital costs of acquiring, constructing or renovating a tangible capital asset, as defined and determined according to accounting principles generally accepted in Canada;
- The costs of joint communication activities (press releases, press conferences, translation, etc.) and road signage recognition set out in the Communication Protocol that will form part of the federal-provincial contribution agreement;
- All planning (including plans and specifications) and assessment costs specified in the agreement such as the costs of environmental planning, surveying, engineering, architectural supervision, testing and management consulting services. Canada will contribute no more than 15% of its contribution to this cost;
- The costs of engineering and environmental reviews, including environmental assessments and follow-up programs as defined in the *Canadian Environmental Assessment Act* and the costs of remedial activities, mitigation measures and follow-up identified in any environmental assessment;
- Costs of project-related signage, lighting, project markings and utility adjustments;
- Costs of aboriginal consultation;
- The costs of developing and implementing innovative techniques for carrying out the Project;
- Recipient audit and evaluation costs as specified in the agreement; and
- Other costs that, in the opinion of Canada, are considered to be direct and necessary for the successful implementation of the Project and have been approved in writing prior to being incurred.

Eligible project costs can begin to accrue effective as of the date indicated by the Minister of Transport, Infrastructure and Communities in writing to the proponent following the Minister's approval-in-principle of the project. However, all eligible costs outlined above can be reimbursed to the recipient only following the signing of the contribution agreement in respect of the project.

The following are deemed **ineligible costs:**

- Costs incurred before the date indicated by the Minister of Transport, Infrastructure and Communities in writing to the proponent following the Minister's approval of the project;
- Costs incurred after the project completion date;
- The cost of developing a business case or proposal for funding;
- The cost of purchasing land and associated real estate and other fees;
- Financing charges and interest payments on loans;
- Leasing land, buildings, equipment and other facilities;
- General repairs and maintenance of a project work and related structures, unless they are part of a larger capital expansion project tied to capital expansion;
- Services or works normally provided by the recipient, incurred in the course of implementation of the project, except those specified as eligible costs;
- The cost of any goods and services which are received through donations or in kind;
- Employee wages and benefits, overhead costs as well as other direct or indirect operating, maintenance and administrative costs incurred by the recipient, and more specifically costs relating to services delivered directly by permanent employees of the recipient, or of a Crown Corporation or corporation owned and controlled by the recipient, except for other costs that, in the opinion of Canada, are considered to be direct and necessary for the successful implementation of the project and have been approved in writing prior to being incurred, or in cases where the recipient can demonstrate value for money and that the costs are incremental;
- Provincial sales tax and Goods and Services Tax, for which the recipient is eligible for a rebate, and any other costs eligible for rebates; and
- Legal fees.

Document 5

Table 2: Estimated Project Components & Costs

Cost of Bridge Replacement: Burgoyne Bridge Components	Est. Cost
Environmental Assessment, Studies & Approvals	$1,500,000
Property Acquisition	$5,000,000
Utility Relocation	$1,500,000
New Bridge Structure (9200 m^2 of Deck Area @ $3,500 / m^2)	$34,000,000
Construction of New Roadway Approaches	$3,000,000
Temporary Works to Maintain Access & Construction Staging	$3,000,000
Slope Stabilization	$2,000,000
Demolition & Removal of Existing Structure	$1,000,000
Engineering	$3,500,000
Contingency	$4,500,000
Total:	**$59,000,000**

9. Project Site Impacts

Niagara Region will conduct a Class Environmental Assessment (Schedule C), in accordance with the Ontario Environmental Assessment Act, to identify potential environmental effects of the proposed undertaking.

Recognizing that the EA and supporting these studies have yet to commence, Niagara Region will carry out all recommended mitigation strategies related to the planning, preparation, construction, implementation, operation and maintenance identified in such studies.

10. Infrastructure Project Benefits

Significant local, regional, provincial and national benefits will be realized from the implementation of the Burgoyne Bridge project, as a result of the financial support given by the Government of Canada under the Building Canada Fund, as summarized below. The new Burgoyne Bridge would:

- Eliminate potential for the structural & functional failure of the bridge
- Remove current load restrictions that limit the load capacity of vehicles entering and leaving the Central Business District (CBD) of St. Catharines

Scott, Andrew

From: Weir, Mike
Sent: Wednesday, February 10, 2010 7:42 PM
To: Brothers, Ken;Roberts, Neal
Subject: Fw: Contact

Fyi

From: Weir, Mike
To: 'saad.rafi@ontario.ca' <saad.rafi@ontario.ca>
Sent: Wed Feb 10 17:30:53 2010
Subject: Contact

Hi Saad - hope you are well. We are working on something big, Big, BIG - really BIG! Who on the Minister's side is the point for Building Canada Funding. (I know - there's none left).....but this is BIG I tell you!

Do you see the boys around at all.....Ernie, Frank, Giannekos?

Talk soon

anks

Mike

Document 6

6 REHABILITATION/REPLACEMENT

The options to rehabilitate or replace the bridge will be looked at in further detail in this section. This section is limited to looking at the bridge from a structural engineering perspective. As with all major projects in Ontario, a Class Environmental Assessment must be undertaken to determine the best solution for the bridge considering all other issues involved.

6.1 Rehabilitation

Rehabilitation of the bridge would involve several different and mutually exclusive tasks. As noted during the inspection of the structure the rehabilitation would need to address:

(a) Replacement of concrete deck, drainage system, sidewalk, railings, lights etc.

- The concrete deck has exceeded its service life and must be replaced. It was last replaced in 1962. The condition survey of the deck has not yet been completed, but areas of corrosion on the buckle plate drain holes indicate probable cracking of the concrete allowing water to migrate to the underside of the bridge. The modified latex concrete overlay has exceeded its service life and must be replaced. It was placed in 1978. Sidewalk concrete has been identified as having several deficiencies making it a potential safety concern and must be replaced. The roadway and sidewalk repairs would require the replacement of drainage systems, railing, lighting, etc.

(b) Deteriorated structural steel

- The structure shows several areas of severe corrosion, section loss and deformation. Strictly based on the inspection of the structure condition, several steel members would require replacement. This includes the entire lower chord of the truss spans which have reached a level of corrosion that can no longer be deemed acceptable. Along with the significant deformation of the member, it is questionable as to how much of its original load-carrying capacity still exists. The exterior portion of upper chord of the truss is severely corroded at the concrete interface and would require rehabilitation or replacement. Similar corrosion exists at the fascia girder/concrete interface. The fascia girder shows signs of deformation. It would most likely have to be replaced on both sides of the bridge along the entire length. It would have to be investigated if the recently installed emergency repair sidewalk brackets could be salvaged. The floor stringers, although generally in good condition along their length, have significant section loss where they bear against the transverse floor beams. A significant number of these stringers may require replacement or rehabilitation.

(c) Strengthening of structural steel members

- Several areas of section loss exist on the structure. This includes gusset plate connections of the lower chord. This gusset plates may require strengthening. Several other members may also require strengthening.

(d) Replacement of bearings

- Most of the bearings show signs of heavy corrosion. This has led to severe rust jacking and deformation of gusset plates. Some bearings also show signs of significant displacement. In addition, the pins at the bearings are heavily corroded and the gusset plates they connect to have been deformed in several cases. All of the bearings on the bridge require replacement. The bearings were last replaced in 1975.

(e) Recoating of structural steel

- The structure has only been recoated twice in its 95 year lifespan. The entire bridge would require re-coating. The last re-coating of the bridge was performed in 1991 and obvious corrosion has occurred.

(f) Improvements to deck drainage

- All expansion joints exhibit leakage causing corrosion of underside bridge elements. Drainage and waterproofing are necessary to prevent this.

(g) Slope stabilization

- The south embankment was shown to have global stability issues. The south abutment has already been tied to the next bent. Possible movement of the north abutment has occurred as bearings at the expansion joint at Bents #13/14 show movements of over 75mm. Further study and probable slope stability may be required for both the south and the north embankments.

(h) Substructure repairs

- Much of the concrete repairs that have been done in the past to restore bearing area to concrete pedestals have failed. These pedestals would have to be repaired. Significant cracking and concrete deterioration has occurred at several concrete supports.

(i) Traffic control/detours/diversions

- If replacement of structural members is undertaken, the bridge will have to be closed to traffic on a temporary basis for extended periods of time. All deck/sidewalk work would require long term lane closures. Apart from full bridge closure, traffic on the bridge would be reduced to one lane for the majority of the construction.

(j) Utility relocation

- Utility ducts currently under the east sidewalk would have to relocated or replaced.

Under this section, it would need to be determined what the replaced cross section would include. As the rehabilitation would extend the life of the structure by 35-50 years, consideration must be given for increased capacity, as well as improvements for cycling and pedestrians. It is assumed the minimum cross section would be comprised of:

- 0.3 m railing
- 1.8 m sidewalk
- 0.3 m traffic barrier
- 1.8 m cycling lane
- 3.75 m lane
- 3.75 m lane
- 1.8 m cycling lane
- 0.3 m traffic barrier
- 1.8 m sidewalk
- 0.3 m railing

This results in an overall width of 15.9 m. It should be noted this width does not make any provisions for additional traffic lanes/capacity which may be required pending findings from traffic forecasts/studies.

6.1.1 Cost

A preliminary cost along with anticipated work has been included below. While it is difficult to anticipate every cost encountered during rehabilitation, the costs listed are the known costs. An allowance for contingency to cover minor items has been listed separately from a contingency. The costs have been based on recent bridge contracts throughout Southern Ontario and have been escalated into 2010 dollars. It must be noted that construction costs have historically been increasing at 5-8% annually. Accordingly a line has been added to show the anticipated cost to year of expenditure.

Rehabilitation Item	Quantity	Unit	Unit Cost	Cost per Item
Mobilization	1	LS	$ 500,000	$ 500,000
Traffic control	1	LS	$ 500,000	$ 500,000
Remove deck	4625	m^2	$ 200	$ 925,000
Concrete Deck	1588	m^3	$ 1,300	$ 2,064,933
Concrete Barrier Walls	133	m^3	$ 1,500	$ 199,800
Concrete in Sidewalks	444	m^3	$ 1,300	$ 577,200
Rebar/GFRP	1222	Tonne	$ 3,500	$ 4,278,084
Traffic Railing	740	m	$ 75	$ 55,500
Pedestrian Handrail	740	m	$ 200	$ 148,000
Lighting	1	LS	$ 50,000	$ 50,000
Waterproofing	4292	m^2	$ 75	$ 321,900
Asphalt	8241	Tonne	$ 125	$ 1,030,080
Approach Repairs	2	Ea	$ 50,000	$ 100,000
Bearings	12	LS	$ 7,500	$ 90,000
Concrete Piers Repairs	1	LS	$ 75,000	$ 75,000
Reface abutments	2	Ea	$ 100,000	$ 200,000
Slope stability	2	Ea	$ 15,000	$ 30,000
Expansion Joints	60	m	$ 2,000	$ 120,000
Structural Steel Repairs	125	Tonne	$ 8,500	$ 1,062,500
Structural Steel Recoating	1	LS	$ 7,000,000	$ 7,000,000
Access	8	Ea	$ 50,000	$ 400,000
			Subtotal	$ 19,727,997
Contingency	20%			$ 3,945,599
Engineering	15%			$ 2,959,200
Conversion to 2013	16%		2013 Dollars	$ 3,109,626
			Total Rehabilitation Cost	**$ 29,742,422**

6.1.2 Schedule

In 2010, emergency repairs were undertaken to strengthen the sidewalk overhang brackets due to their condition and their substandard capacity. In designing and detailing of these repairs it was noted that the service life should be five years. Accordingly any repairs to the structural steel need to occur by 2015.

$ This number is changed in final report.

Document 7

Scott, Andrew

m: Trojan, Mike
t: Thursday, July 08, 2010 8:55 AM
To: Weir, Mike
Cc: Zanatta, Roxanne;Brothers, Ken;Roberts, Neal
Subject: FW: Regional Priorities for the Building Canada Plan

Mike Could you please check with Ken and the Chairmans office to determine our response to this .

From: Jerschow, Oliver (MEI) [mailto:Oliver.Jerschow@ontario.ca]
Sent: Thursday, July 08, 2010 8:25 AM
To: Trojan, Mike
Cc: Hughes, Bill (MEI)
Subject: Regional Priorities for the Building Canada Plan

Hello Mike,

I'm writing to request confirmation of Niagara Region's priorities with respect to funding under the Building Canada Plan - Major Infrastructure Component (BCF-MIC). We have a letter from Chairman Partington from February of this year indicating that the Region wanted both the NOTL Wastewater Treatment Plant and the Burgoyne Bridge projects to be considered for funding. We have heard recently, however, that the Region no longer intends to pursue the relocation of the NOTL plant in the near term, and that the Burgoyne Bridge is now the Region's exclusive priority and request for funding consideration under BCF-MIC. Rather than rely on second hand information, I was hoping that you could provide us with either clarification or confirmation so that we can continue with our due diligence work appropriately.

Many thanks,

Oliver

Oliver Jerschow
Manager
Inter-Governmental Policy
Ministry of Energy and Infrastructure

Email: oliver.jerschow@ontario.ca
Tel: 416-325-3764
Fax: 416-326-9845

Document 8

Scott, Andrew

n: DiPaola, Mike
t: Friday, August 27, 2010 9:51 AM
To: Marr, Jason
Subject: Re: Burgoyne Bridge

Sure....make sure you sent Hatch's Exec Summary too (if you get it).

Make sure your memo to Joe mentions holding off on property. I see many issues with that, but unfortunately I shouldn't comment on it, as I don't want my comments to be perceived as a conflict of interest.

From: Marr, Jason
To: DiPaola, Mike
Sent: Fri Aug 27 09:23:39 2010
Subject: RE: Burgoyne Bridge

I'll send Joe an email summarizing everything this morning. Ill copy you on it as well. Do you think we are going to be able to get the staff report done for September? I'm not going to work on the report any further until I get something in writing from Phil? Do you want me to send through what I have completed to date?

Jason Marr, P. Eng.
Senior Transportation Project Engineer
Niagara Region Public Works Department
Transportation Engineering Division
2201 St. David's Road, P.O. Box 1042
Thorold, ON L2V 4T7
Phone: (905) 685-4225 ext. 3552 Fax: (905) 685-0013
Email: jason.marr@niagararegion.ca

From: DiPaola, Mike
Sent: Friday, August 27, 2010 9:14 AM
To: Marr, Jason
Subject: Re: Burgoyne Bridge

You better let Joe know

From: Marr, Jason
To: DiPaola, Mike
Sent: Fri Aug 27 09:08:22 2010
Subject: RE: Burgoyne Bridge

Ken is afraid of jeopardizing the EA. Yesterday he said that we should hold off on buying any property. I told Nelson to hold off until he gets back from holidays and we can discuss the issue further.

Jas Marr, P. Eng.
Transportation Project Engineer
Niagara Region Public Works Department
Transportation Engineering Division
2201 St. David's Road, P.O. Box 1042

Thorold, ON L2V 4T7
Phone: (905) 685-4225 ext. 3552 Fax: (905) 685-0013
Email: jason.marr@niagararegion.ca

From: DiPaola, Mike
Sent: Friday, August 27, 2010 9:05 AM
To: Marr, Jason
Subject: Re: Burgoyne Bridge

??

From: Marr, Jason
To: Lau, Nelson
Cc: DiPaola, Mike
Sent: Fri Aug 27 09:03:05 2010
Subject: RE: Burgoyne Bridge

Based on our conversation yesterday with Ken we may be holding off on purchasing any property until after an EA is completed. Just keep everything on hold right know and we can discuss the issue further when you get back from holidays.

Jason Marr, P. Eng.
Senior Transportation Project Engineer
Niagara Region Public Works Department
Transportation Engineering Division
2201 St. David's Road, P.O. Box 1042
Thorold, ON L2V 4T7
Phone: (905) 685-4225 ext. 3552 Fax: (905) 685-0013
Email: jason.marr@niagararegion.ca

From: Lau, Nelson
Sent: Thursday, August 26, 2010 4:43 PM
To: Marr, Jason
Cc: DiPaola, Mike; Moffatt, Bill
Subject: RE: Burgoyne Bridge

Hi Jason,

Since I'm on vacation, I have until September 13th to get back with Mr. McArthur. With the current revelation, when do you think you'll be able to give me authorization to proceed with a Council report and when do you think is the earliest opportunity I'll have to close on the property?

Thanks,
Nelson

From: Marr, Jason
Sent: Thursday, August 26, 2010 10:11 PM
To: Lau, Nelson
Cc: DiPaola, Mike; Moffatt, Bill
Subject: Burgoyne Bridge

Nelson,

Please put on hold any purchase of property with respect to the above project until we complete our report to council. Ken thinks that this may prejudice the EA Process. I'm not sure where you stand with respect to the purchase of the McArther property but let's put it on hold until the middle of next week after we meet with HMM and receive the final report.

Jason Marr, P. Eng.
Senior Transportation Project Engineer
Niagara Region Public Works Department
Transportation Engineering Division
2201 St. David's Road, P.O. Box 1042
Thorold, ON L2V 4T7
Phone: (905) 685-4225 ext. 3552 Fax: (905) 685-0013
Email: jason.marr@niagararegion.ca

Document 9

Scott, Andrew

F n: Steele, Bob
Thursday, August 26, 2010 4:57 PM
To: Marr, Jason
Subject: RE: Burgoyne Bridge report

Good summary, Jason. Can you ask Phil to forward a general outline or Hatch's PPP in order for us to determine how it will fit into the overall PWC presentation, how long it might take and how the PW component should be tailored to compliment Hatch's technical findings?
Best regards,
Bob

From: Marr, Jason
Sent: Thursday, August 26, 2010 1:50 PM
To: Steele, Bob
Subject: Burgoyne Bridge report

BOB, I AM GOING TO SEND THIS EMAIL TO PHIL AT HMM. PLEASE REVIEW TO SEE IF I'VE MISSED SOMETHING BEFORE I SEND IT.

Phil,

ot out of a meeting with Ken Brothers and Bob Steele concerning the Burgoyne Bridge Report. He had concerns a t the financial considerations and risks associated with the rehabilitation option vs. replacement – similar to the concerns that we discussed on Friday's conference call.

He wants to make a stronger case that the preferred option is the replacement of the bridge both from a financial engineering perspective and a constructability perspective (can a rehab actually be performed from your engineering perspective?). We need to expand on/ clarify the associated costs and risks with the rehabilitation option over the replacement option. We need to focus on Financial Considerations, Servicing timelines (bridge closures), community impacts, and other associated risks.

In the financial section for the rehab we need to consider the residual value of the new structure after the 50 year life cycle cost analysis period. We need to take into consideration that the bridge (if rehabilitated) will eventually need to be replaced (maybe we need to look further than 50 years in the lifecycle cost analysis). Finally, with the uncertainty of the feasibility of rehabilitating the structure we need to include contingency amounts to cover off this issue or any issue that may present itself. In a nutshell, Ken feels that the financial section does not give a convincing argument that replacement is the preferred option.

Ken Brothers wants to take this report to committee on September 14th and wants to meet with selected Regional Councilors and City of St. Catharine's representatives before this date. When will we have a copy of the executive summary for review (Note: I think the Executive Summary should include the findings of the Financial Section and include risks of rehabilitation (ie. Maybe expand on the paragraph that is in the current Exec Summary)? Also, we need a draft copy of the presentation you plan to give on Tuesday as promised.

ontinuing to draft a Staff report that I need to submit by tomorrow for an initial review. Ken understands that some of the content may change based on the findings in you r final report. I plan to submit a copy of this report to Ken

by tomorrow afternoon for comments. I would like to send it through to you as well for comment. The sooner you can provide me with some information the better.

Thanks. If you have any questions do not hesitate to call.

Jason Marr, P. Eng.
Senior Transportation Project Engineer
Niagara Region Public Works Department
Transportation Engineering Division
2201 St. David's Road, P.O. Box 1042
Thorold, ON L2V 4T7
Phone: (905) 685-4225 ext. 3552 Fax: (905) 685-0013
Email: jason.marr@niagararegion.ca

Document 10

Scott, Andrew

From: Marr, Jason
Sent: Monday, August 30, 2010 11:06 AM
To: Brothers, Ken;Steele, Bob;Cousins, Joe;DiPaola, Mike;Scholz, Ralph
Cc: 'Murray, Philip'
Subject: FW: Burgoyne Bridge - Executive Summary
Attachments: Executive-Summary.pdf

Please find attached a copy of the Executive Summary received from Hatch on Friday for your review.

Ken: Following our meeting on Thursday, August 26th, I forwarded an email to Hatch requesting that the Report and Executive Summary reflect the following changes:

1) Make a stronger case for the Replacement Option based on Financial and Constructability considerations.
2) Perform a more detailed "risk" assessment associated with the Rehabilitation Option (i.e. financial impacts, serviceability timeframes, community impact, etc).
3) Expand on the life cycle cost analysis for the Rehabilitation Option to include eventual replacement of the existing structure in the future and contingency amounts associated with the rehabilitation of the structure (i.e. may need to look further than 50 years into the future). Also, include "residual values" of the replacement structure in the calculation of NPV.

Please review the attached Executive Summary. Hatch will be able to answer any questions or concerns following the presentation tomorrow afternoon.

Jason Marr, P. Eng.
Senior Transportation Project Engineer
Niagara Region Public Works Department
Transportation Engineering Division
2201 St. David's Road, P.O. Box 1042
Thorold, ON L2V 4T7
Phone: (905) 685-4225 ext. 3552 Fax: (905) 685-0013
Email: jason.marr@niagararegion.ca

From: Pasqualino, Claudio [mailto:Claudio.Pasqualino@hatchmott.com]
Sent: Friday, August 27, 2010 11:30 AM
To: Marr, Jason
Cc: DiPaola, Mike; Murray, Philip
Subject: Burgoyne Bridge - Executive Summary

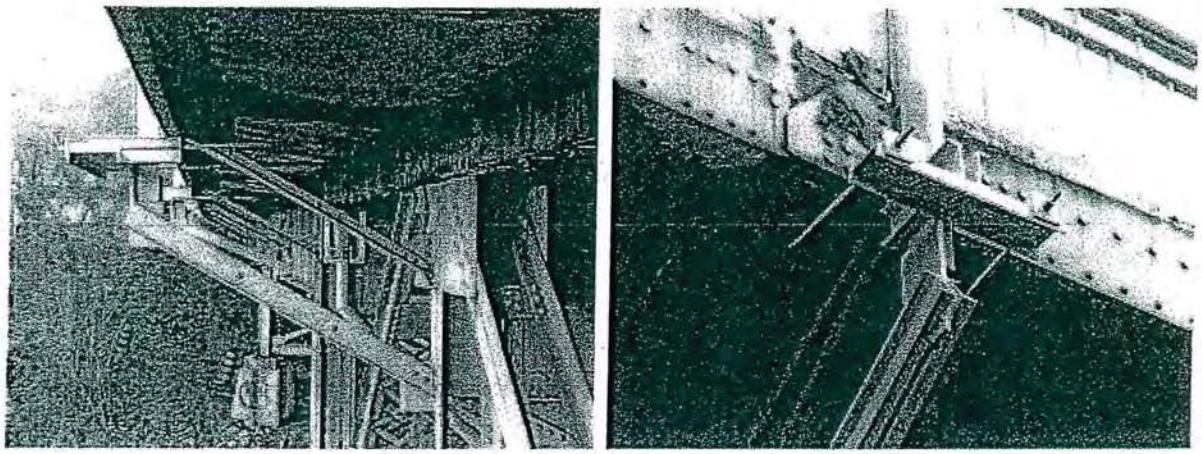
Hi Jason,

Please find attached the Executive Summary for the Burgoyne Bridge report. Please let me know if you have any questions.

Thanks

Claudio Pasqualino, P.Eng
Hatch Mott MacDonald
Hatch Mott MacDonald
2800 Speakman Drive

Sheridan Science & Technology Park
Mississauga, ON
Canada, L5K 2R7
905.403.3722 Direct Phone
905.855.2010 General Inquiries
905.855.2607 Fax



Typical emergency repair sidewalk bracket assembly

6 REHABILITATION/REPLACEMENT

The options to rehabilitate or replace the bridge will be looked at in further detail in this section. This section is limited to looking at the bridge from a structural engineering perspective. As with all major projects in Ontario, a Class Environmental Assessment (EA) must be undertaken to determine the best solution for the bridge considering all other issues involved.

During the EA all factors would be looked at and reviewed in detail including adding capacity if the replacement was undertaken and will address the requirements of the bridge under the Ontario Heritage Bridge Program.

6.1 Rehabilitation

Rehabilitation of the bridge would involve several different and mutually exclusive tasks. Any repair undertaken would address the condition of the steel and the capacity deficiencies. Repairs on the structure would have a service life of about 30 years when the structure would require replacement.

Undertaking a significant rehabilitation of this structure will cause the structure to undergo stresses it was not previously designed for. This redistribution of forces will occur when the deck is replaced (traffic loading on one side), during steel repairs and bearing replacements.

As noted during the inspection of the structure the rehabilitation would need to address:

(a) Replacement of concrete deck, drainage system, sidewalk, railings, lights etc.

- The concrete deck has exceeded its service life and must be replaced. It was last replaced in 1962. The condition survey of the deck indicates several areas of concern. The modified latex concrete overlay has exceeded its service life, and must be replaced as it was placed in 1978. Sidewalk concrete has been identified as having several deficiencies making it a potential safety concern and must be replaced. The roadway and sidewalk repairs would require the replacement of drainage systems, railing, lighting, etc.

(b) Deteriorated structural steel

- The structure shows several areas of severe corrosion, section loss and deformation. Strictly based on the inspection of the structure condition, several steel members would require replacement, including much of the lower chord of the truss spans which have reached a level of corrosion. Along with the significant deformation of the member load-carrying capacity has been reduced. The exterior portion of upper chord of the truss is severely corroded at the concrete interface and would require rehabilitation or replacement. Similar corrosion exists at the fascia girder/concrete interface. The fascia girder shows signs of deformation. It would most likely have to be replaced on both sides of the bridge along the entire length. It is unlikely, but would be investigated, the recently installed emergency repair sidewalk brackets could be salvaged. The floor stringers, although generally in good condition along their length, have significant section loss where they bear against the transverse floor beams. A significant number of these stringers may require replacement or rehabilitation.

(c) Strengthening of structural steel members

- Several areas of section loss exist on the structure. This includes gusset plate connections of the lower chord. This gusset plates may require strengthening. Several other members may also require strengthening. During replacement of the bottom chord, strengthening of this member would be undertaken.

(d) Replacement of bearings

- Most of the bearings show signs of heavy corrosion. This has led to severe rust jacking and deformation of gusset plates. Some bearings also show signs of significant displacement. In addition, the pins at the bearings are heavily corroded and the gusset plates they connect to have been deformed in several cases. All of the bearings on the bridge require replacement. The bearings were last replaced in 1975.

(e) Recoating of structural steel

- The structure has only been recoated twice in its 95 year lifespan. The entire bridge would require re-coating. The last re-coating of the bridge was performed in 1991 and significant corrosion has occurred since then.

(f) Improvements to deck drainage

- All expansion joints exhibit leakage causing corrosion of underside bridge elements. Drainage improvements and waterproofing are necessary to prevent this.

(g) Slope stabilization

- The south embankment was shown to have global stability issues. The south abutment has already been tied to the next bent. Possible movement of the north abutment has occurred as bearings at the expansion joint at Bents #13/14 show movements of over 75mm. Further study and probable slope stability may be required for both the south and the north embankments.

(h) Substructure repairs

- Much of the concrete repairs that have been done in the past to restore bearing area to concrete pedestals have failed. These pedestals would have to be repaired. Significant cracking and concrete deterioration has occurred at several concrete supports.

(i) Traffic control/detours/diversions

- If replacement of structural members is undertaken, the bridge will have to be closed to traffic on a temporary basis for extended periods of time. All deck/sidewalk work would require long term lane closures. Apart from full bridge closure, traffic on the bridge would be reduced to one lane for the majority of the construction.

(j) Utility relocation

- Utility ducts currently under the east sidewalk would have to relocated or replaced.

(k) Risks of Rehabilitation – Scope creep

- During rehabilitation, scope creep and repairs caused by unforeseen conditions is a major risk. This is further complicated on steel structures when members have deformed under a deteriorated or over stressed condition.

Under this section, it would need to be determined what the replaced cross section would include. As the rehabilitation would extend the life of the structure by 30 years, consideration must be given for increased capacity, as well as improvements for cycling and pedestrians. It is assumed the minimum cross section would be comprised of:

- 0.3 m railing
- 1.8 m sidewalk
- 0.3 m traffic barrier
- 1.8 m cycling lane
- 3.75 m lane
- 3.75 m lane
- 1.8 m cycling lane
- 0.3 m traffic barrier
- 1.8 m sidewalk
- 0.3 m railing

This results in an overall width of 15.9 m. It should be noted this width does not make any provisions for additional traffic lanes/capacity which may be required pending findings from traffic forecasts/studies during the environmental assessment. Any ***increase*** in width larger than the current bridge would require ***substantial*** additional strengthening.

6.1.1 Schedule

In 2009/2010, emergency repairs were undertaken to strengthen the sidewalk overhang brackets due to their condition and their substandard capacity. In designing and detailing of these repairs it was noted that the service life should be five years. Accordingly any repairs to the structural steel need to occur by 2015.

The magnitude and complexity of the work, suggests a construction schedule spanning multiple years would be required. This assumes the structure cannot be closed to traffic during construction and that a single lane of traffic must be maintained.

Task	Timeframe
Environmental Assessment	November 2010 – December 2011
Detailed Design	January 2012 – December 2012
Tender	January 2013 – March 2013
Contractor Mobilization/Construction Start	April 2013
Construction Complete	October 2015

6.1.2 Risks

With the rehabilitation option, there are several key issues that need to be identified and resolved prior to moving ahead with rehabilitation option. The largest risk is the ***constructability of the rehabilitation/strengthening and the stability of the existing structure***. Over the life span of the structure there have been numerous modifications, repairs and general repairs to the bridge. During our review of the structure, it was noted that members have been gouged, cut, and bent, with no documentation. These actions have modified the way the structure behaves. During rehabilitation of the bridge, unbalanced loading conditions at deck level will exist as a result of the staged concrete deck replacement. A structural analysis and detailed engineering calculations has yet to be completed looking at this loading condition, but our experience has been that this can create loads that have greater impacts on the bridge as members under loads not designed for. In addition, the overall ability to actually undertake some of the required repairs poses a challenge. The repairs required on the Burgoyne Bridge are highly complicated and require non-standard approaches to complete the work. Significant steel work including replacement/modification of the bottom chord of the truss and bearing replacements are required. This work requires major scaffolding below the bridge along with unique re-shoring of the bridge during repairs. This presents a significant scope and schedule risk.

Another risk is the ***scope of work required for the areas that could not be inspected***. HMM took several approaches to the inspection of the structure. A specialized bridge inspection unit and rope access steel inspection crews were used to climb and access the structure. However, the top chords are encased in concrete, and their condition could not be verified. In addition, the soffit of the structure can not be inspected as stay-in-place steel deck pans were used in its construction. The exact scope of work may not be known until the contractor is in place. This presents both a scope and schedule risk.

A similar risk is ***scope creep*** that results from bridge rehabilitations. Scope creep is not quantifiable and usually results from the "well we're here so we might as well fix that." On steel truss bridges, scope creep can become a significant cost overrun as many members are corroded/deteriorated and the conditions by which a member is to be replaced needs to be clear and concise.

Staging of rehabilitation is important. It is anticipated that there will be a desire from public to maintain a single lane during construction. This will significantly extend the project schedule affecting local business, residents and general transportation in and around the structures. In addition, full closures may be required to undertake some of the steel repairs. All of these impacts will be reviewed during the EA phase. **Cost for economic impact and user delay costs have not been included.**

6.1.3 Cost

A preliminary cost along with anticipated work has been included below. While it is difficult to anticipate every cost encountered during rehabilitation, the costs listed are the known costs. An allowance for contingency to cover minor items has been listed separately from a contingency. The costs have been based on recent bridge contracts throughout Southern Ontario and have been pro-rated to 2010 dollars. It must be noted that construction costs have historically been increasing at approximately 5% annually. Accordingly a line has been added to show the anticipated cost to year of expenditure.

Rehabilitation Item	Quantity	Unit	Unit Cost	Cost per Item
Mobilization	1	LS	$500,000	$500,000
Traffic control	1	LS	$500,000	$500,000
Remove deck	5920	m^2	$300	$1,776,000
Concrete Deck	1776	m^3	$1,600	$2,841,600
Concrete Barrier Walls	177.6	m^3	$2,000	$355,200
Concrete in Sidewalks	555	m^3	$1,500	$832,500
Rebar/GFRP	400	Tonne	$4,000	$1,600,000
Traffic Railing	740	m	$75	$55,500
Pedestrian Handrail	740	m	$500	$370,000
Lighting	1	LS	$250,000	$250,000
Drainage	1	LS	$150,000	$150,000
Waterproofing	4255	m^2	$75	$319,125
Asphalt	850	Tonne	$125	$106,250
Approach Repairs	2	Ea	$50,000	$100,000
Bearings	12	LS	$7,500	$90,000
Concrete Piers Repairs	1	LS	$150,000	$150,000
Reface abutments	2	Ea	$100,000	$200,000
Slope stability	2	Ea	$250,000	$500,000
Expansion Joints	60	m	$5,850	$351,000
Structural Steel Repairs	250	Tonne	$28,500	$7,125,000
Structural Steel Recoating	1	LS	$7,800,000	$7,800,000
Utility Relocation	1	LS	$700,000	$700,000
Monitoring Equipment	1	LS	$150,000	$150,000
Access/Temporary Supports	8	Ea	$200,000	$1,600,000
			Subtotal	**$28,422,175**

Contingency	20%			$5,684,000
Engineering	15%			$4,263,000
Inflation	7.8%		2013 Dollars	$3,070,000
		Total Rehabilitation Cost		**$41,439,175**

6.2 Replacement

Replacement of the existing Burgoyne Bridge would be designed to current standards, primarily the Canadian Highway Bridge Design Code (CHBDC) CAN/CSA S6-06, the MTO Structural Manual and other standards as required. Geometry, side clearances, pedestrian access, bike lanes will all be as per Regional, and Provincial standards in addition to the Transportation Association of Canada (TAC) geometric design manual. Structural design should be undertaken with a minimum of 75 years design life, minimize the use of conventional black reinforcing steel, encourage the use of Fibre Reinforce Polymer (FRP) bars, stainless steel bars and high strength high durable concrete. Given the location and nature of this structure, the MTO's Aesthetic Manual shall be used with "Level 1 – High" classification, and particular attention given to LED illumination of the structure.

Preliminary replacement concepts are depicted in Appendix E. These concepts are based on the geographical layout of the land, HMM's experience with long span high level structures, but do not address issues associated with the environment, utilities, and ground conditions.

At this feasibility stage and to address future issues associated with capacity requirements and loading, the proposed cross section is:

- 0.3 m railing
- 2.0 m sidewalk
- 0.3 m traffic barrier
- 1.8 m cycling lane
- 3.75 m lane
- 3.75 m auxiliary lane
- 3.75 m lane
- 1.8 m cycling lane
- 0.3 m traffic barrier
- 2.0 m sidewalk
- 0.3 m railing

This results in an overall width of 20.05 m a slightly wider cross section than for the rehabilitated option. This proposed cross section needs to be verified for projected future traffic (pedestrian, cyclist, vehicular) capacity requirements. In addition, consideration should be given to design the substructure for increased capacity or change in usage as required.

Based on the anticipated public opinion to keep the existing structure open during construction of a new bridge, it is expected the replacement structure will be built adjacent to the existing bridge. Due to the approach roads on either side of the structure, historical buildings on the northwest corner, it appears the best alignment would be located on the east side which could result in a curved horizontal alignment. Horizontal alignments will have an impact on which structure type is ultimately chosen as will subsurface conditions. However, a new bridge could be constructed adjacent to the existing while still maintaining traffic on the existing structure.

The construction of a new crossing at this location, provides and opportunity to leave a legacy for the future as well as an opportunity to create a gateway for the wine region. Structure types which can be explored to cater to this unique or signature type crossing include:

(a) Cast-in-place concrete segmental

(b) Pre-cast concrete box segmental

(c) Concrete or steel arch

(d) Cable stayed

(e) Concrete girder

(f) Steel box girder

Some of these options are shown in Figures 14 to 17 and also in Appendix F. Advantages and disadvantages to each option are outlined below:

Bridge Type	Advantages	Disadvantages
Cast-in-place Concrete Segmental	• Easily adapt to geometric requirements • Uses technology available in Ontario • Can be balance cantilever or cast on forms • Aesthetically pleasing	• Unique construction • Small cost premium (15%)
Pre-cast Concrete Box Segmental	• Expedites project schedule • High quality • Aesthetically pleasing	• Not efficient for short bridge • Requires separate precasting yard • Difficult to construct on a curved horizontal bridge • Small cost premium (15%)
Concrete/Steel Arch	• Fits in with valley topography • Cost effective • Aesthetically pleasing • Signature bridge	• Unique construction • Difficult with horizontally curved bridges • Steel arch requires recoating
Cable Stayed	• Fits in with valley topography • Aesthetically pleasing • Signature bridge	• Unique construction • Difficult with horizontally curved bridges • Cost premium of 75%
Concrete Girder	• Cost effective, less efficient for high level bridges • Easy to construct	• Basic non aesthetically pleasing • Multiple foundations required
Steel Box Girder	• Cost effective, less efficient for high level bridges • Easy to construct	• Susceptible to costs of steel • Self weathering steel is not aesthetically pleasing or steel coating becomes maintenance issue

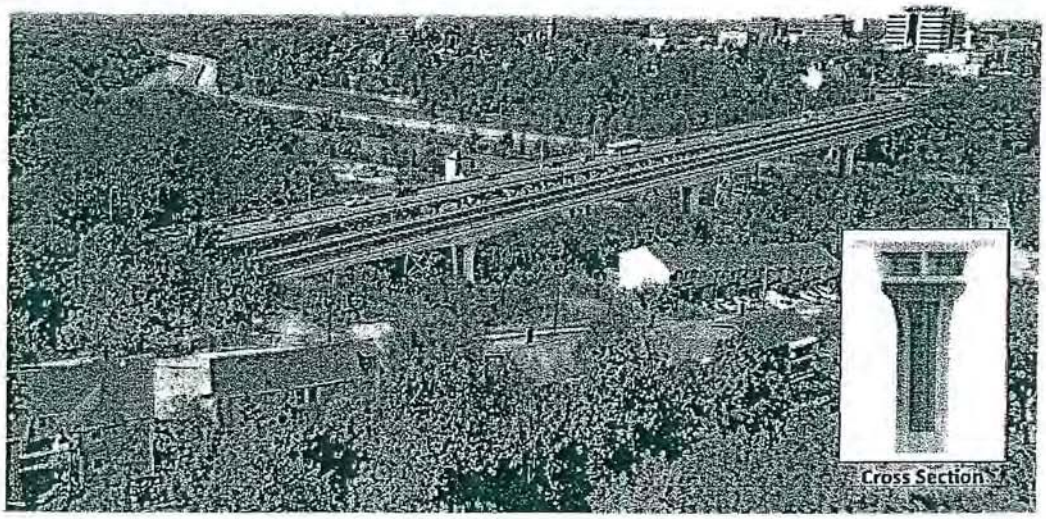


Figure 14 – Cast-in-Place Concrete Segmental Option

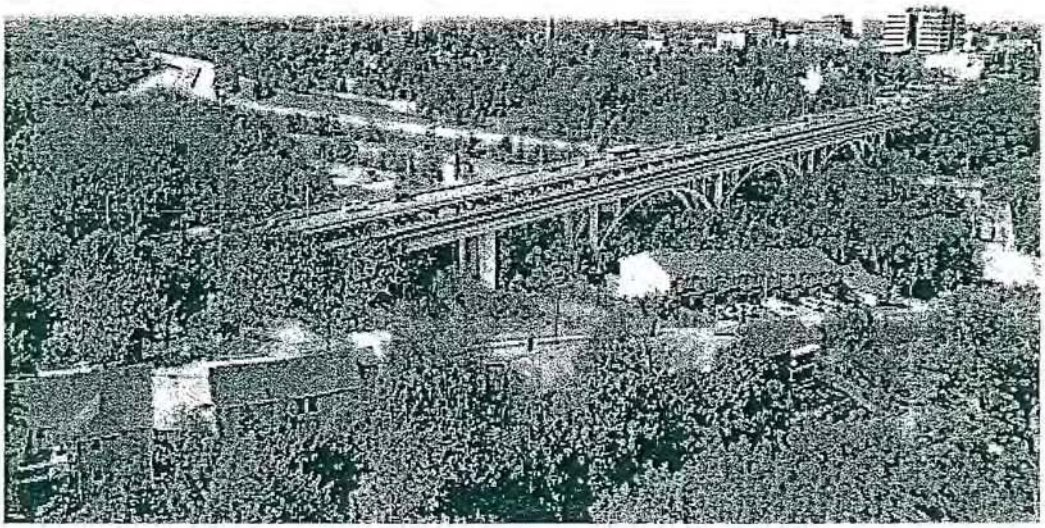


Figure 15 – Concrete Arch Option

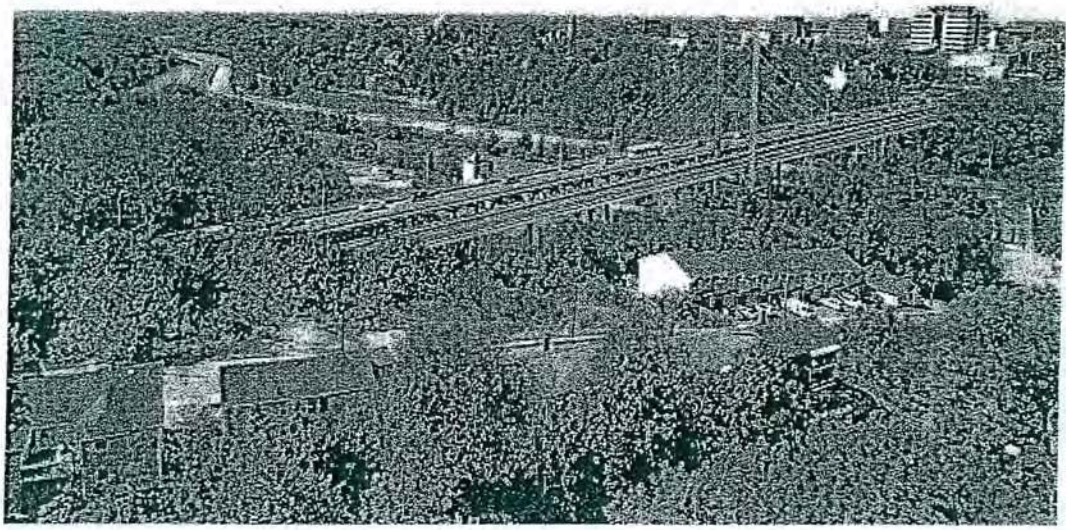


Figure 16 – Cable Stayed Option

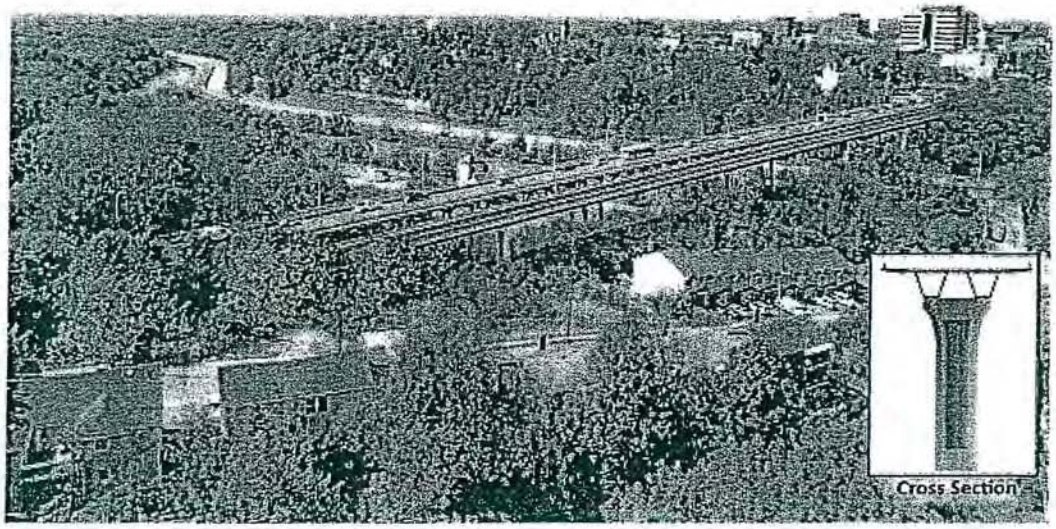


Figure 17 – Steel Box Girder Option

At the initial concept development, particular attention needs to be given to the subsurface conditions and utilities to determine where the foundations can be located. For example, below the existing bridge to the east is a pumping station which could preclude the location of foundation work in this area. With many of the structure types above, the importance of having sound foundations can not be over emphasized. The loads on these foundations are substantially greater than the existing foundations and will require bearing on bedrock. This is further complicated on the Cable Stayed and Arch alternatives. At this stage, sufficient information does not exist to facilitate choosing one option over another.

For valley crossings, each of the above alternatives are suitable from structural and aesthetic perspectives. Advantages and disadvantages listed above can be mitigated during the detailed design phase.

6.2.1 Schedule

In 2009/2010, emergency repairs were undertaken to strengthen the sidewalk overhang brackets due to their condition and their substandard capacity. In designing and detailing of these repairs it was noted that the service life should be five years. Accordingly any repairs to the structural steel need to occur by 2015.

As with the rehabilitation project, the magnitude and complexity of the work, suggests a construction schedule spanning multiple years would be required. However, the much of the new work can occur during winter months. Construction of the foundations and substructure can occur year round, with the super structure being the most sensitive to seasonal construction restrictions. The ultimate schedule would be dependant on the type of structure chosen, but would generally take two to three years to complete.

Task	Timeframe
Environmental Assessment	November 2010 – December 2011
Detailed Design	January 2012 – June 2013
Property/Utilities	January 2012 – December 2013
Tender	July 2013 – September 2013
Contractor Mobilization/Construction Start	October 2013
New Bridge Complete	December 2015
Removal of Existing Bridge	January 2016 – March 2016
Construction Complete	June 2016

6.2.2 Risks

With the replacement option, there is generally less risk than with the rehabilitation option since the problems associated with upgrading a deteriorated structure are avoided. Apart from the higher cost and construction time, there are a few risks that can be identified. One such risk is the issue of ***property acquisition***. A new bridge would be constructed to the east of the existing while traffic remains open. This area is currently occupied by a residential development that may conflict with the new bridge location. Property acquisition may also be required at the south end of the bridge where a new horizontal alignment would most likely conflict with existing homes. The Environmental Assessment would have to identify alternatives to deal with property conflicts. Another risk of bridge replacement is ***conflicts with the adjacent Regional facility*** located immediately east of the existing bridge. This structure may pose issues with the location of footings and may affect the type of bridge that is chosen. This would require further investigation. An additional risk is the delay as a result of the need to undertake an Environmental

Document 11

Canada

Ontario

CANADA AND ONTARIO SUPPORT BURGOYNE BRIDGE REPLACEMENT PROJECT

December 10, 2010

St. Catharines, Ontario — The Burgoyne Bridge in St. Catharines is one step closer to reality thanks to the joint support of the governments of Canada and Ontario.

This announcement was made today by Rick Dykstra, Member of Parliament for St. Catharines, on behalf of the Honourable Chuck Strahl, Minister of Transport, Infrastructure and Communities; Jim Bradley, Member of Provincial Parliament for St. Catharines, on behalf of the Honourable Bob Chiarelli, Ontario Minister of Infrastructure; and Gary Burroughs, Regional Chair of the Regional Municipality of Niagara.

"This bridge is a critical component of our transportation system. It ties both sides of the city together in St. Catharines and Niagara, and after 95 years it is time for a new bridge," said MP Dykstra. "Our Government is proud to support projects that will create jobs and help improve the quality of life for residents in the region for years to come."

"The replacement of this bridge will not only improve a vital east-west transportation link for businesses, residents and for tourists visiting the Niagara wine region, but will also help create construction jobs for Niagara workers," said MPP Bradley. "Ontario's investment is part of our Open Ontario plan that will help build a stronger community and provide economic stimulus to the area."

"The Burgoyne Bridge is a critical transportation link for residents and visitors to the Niagara region," said Chairman Burroughs. "Replacing this bridge is essential to our region's continued growth and economic development, and we are pleased to be partnering with the Governments of Ontario and Canada to make this project a success."

The governments of Canada and Ontario are each setting aside one-third of eligible project costs, up to a maximum contribution of $18,167,000 each. The Regional Municipality of Niagara will provide the remaining funding. The total eligible cost of this project is estimated at $54.5 million. This project has been identified by federal and provincial governments as a priority for funding consideration under the Building Canada Fund - Major Infrastructure Component.

Federal and provincial funding towards this project is conditional on the successful completion of federal and provincial due diligence review of the project, including analysis of the project business case, and the successful negotiation of a contribution agreement.

Once complete, the new bridge will replace the original structure built in 1915. The proposed replacement project includes: construction of a new concrete structure adjacent to the existing bridge and removal of the existing bridge; construction of an approach road to the realigned structure; reconstruction of two access roads beneath the new bridge; and landscaping and restoration of the construction area in accordance with Niagara Peninsula Conservation Authority's requirements. The Region plans to start construction in 2013 and complete the project by the end of 2014.

Demonstrating their commitment to stimulating the economy and creating jobs, the governments of Canada and Ontario are moving forward with a number of large scale infrastructure programs to assist Ontarians when they need it most. Both governments have jointly invested close to $6.9 billion towards just over 1,900 projects through the Infrastructure Stimulus Fund (ISF), and the Building Canada Fund – Major Infrastructure and Communities Components. These historic investments will help support job creation and strengthen Ontario's economy.

- 30 -

LEARN MORE

Learn how the Government of Canada is investing in Ontario infrastructure.

Learn how the Government of Ontario is helping to build and revitalize infrastructure across the province.

Contact

Constituency Office of Rick Dykstra, MP, 905-934-6767
Seirge LeBlanc, Office of the Honourable Bob Chiarelli, 416-212-6020
Neal Roberts, Regional Municipality of Niagara, 905-658-3173

bcfontario.ca

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Document 12

Scott, Andrew

From: Brothers, Ken
Sent: Thursday, December 16, 2010 5:38 PM
To: Andy W. Petrowski
Subject: RE: Commendations reply

Andy:

Our initial submission was January 18, 2010. We have had numerous follow-up meetings in Ottawa and Queen's Park, as well as with senior staff at the Federal and Provincial levels.

Thanks for your comments. This was a big win for us.

Best regards,

Ken

-----Original Message-----
From: Andy W. Petrowski [mailto:apetrowski@distributel.net]
Sent: Thursday, December 16, 2010 1:31 PM
To: Brothers, Ken
Cc: Trojan, Mike
Subject: Commendations

Good afternoon, Ken.

Unfortunately due to some confusion with the initial communications, I was not able to attend the Burgoyne Bridge announcement last Friday; however, I want to extend my commendation to you personally for being instrumental in securing the significant amount of outside funding for this project. The people of Niagara will benefit greatly from this financial assistance.

I understand that you were able to turn this opportunity around in very short order. When was the Region's official application for this funding submitted?

See you both this evening.

Sincerely,
Andy

Document 13

Scott, Andrew

From: DiPaola, Mike
Sent: Thursday, August 04, 2011 2:33 PM
To: Steele, Bob
Cc: Marr, Jason; DiPaola, Mike
Subject: Burgoyne Bridge Project

Hi Bob

As you requested the following is a list of Purchase Orders (or authorization / agreements) that we have currently in place for the Burgoyne Bridge Project:

- Environmental Assessment Study & Preliminary Design – Awarded to Delcan Corporation in Dec 2010 (Phase 1 & 2 of EA) & March 2011 (Phase 3 & 4 of EA) – Total Value $600,000
- Preliminary Geotechnical Investigation – Awarded to Thurber Engineering in June 2011 – Total Value $94,000
- Cemetery Investigation – Awarded to Delcan Corporation in June 2011 – Total Value of $20,000

It is important to note that the above Purchase Orders totaling approximately $714,000 have all been awarded after the December 10th 2010 funding announcement, but prior to receiving the official "Approval In-Principle" letter (which we are still waiting to receive). Therefore the above commitments are not eligible for funding.

The next steps or Requests for Proposals and/or Tenders for this project are summarized below, along with the estimated costs and preliminary award dates:

- Detailed Design – Q4 of 2010 or Q1 of 2012 – estimated value of $1,500,000 to $2,000,000
- Geotechnical Investigation – Q1 of 2012 – estimated value of $250,000 to $500,000
- Archeological Assessments & Other Studies to acquire approvals from various Agencies (Ministry of Culture, Ministry of Environment, Niagara Peninsula Conservation Authority, MTO, DFO, Transport Canada, Navigable Waters, etc...) – Q1 and Q2 of 2012 – estimated value of $250,000 to 500,000
- Utility Relocation – Q4 2012 – estimated value of $1,000,000 to $1,500,000
- Construction - Q1 of 2013 – estimated value of $48,000,000 to $50,000,000

In addition to the above, we will also be spending money sometime in 2012 to acquire property. Since property acquisition is considered ineligible cost for funding, I did not include it in the list above.

Let me know if you need anything further or if you have any questions.

Thanks,

Mike DiPaola, P.Eng
Associate Director Transportation Engineering
Public Works - Transportation Division
mike.dipaola@niagararegion.ca

Tel 905-984-3644
Fax 905-685-0013

Mailing Address:
Niagara Region
2201 St. David's Road
P.O. Box 1042
Thorold, Ontario, L2V 4T7
www.niagararegion.ca

Document 14

BURGOYNE BRIDGE REPLACEMENT

Preliminary Design Report

Submitted to:

The Regional Municipality of Niagara

Prepared by:

Delcan

December 2011

BT3305

TABLE OF CONTENTS

1. INTRODUCTION

The current preliminary design assignment initiated by the Regional Municipality of Niagara includes the structural design of a new bridge to replace the existing Burgoyne Bridge.

2. PROJECT LOCATION

The structure will be located in the City of St. Catharines, north of the intersection of Regional Road 81 (St. Paul Street West) and Henrietta Street. The new bridge will be constructed to carry Regional Road 81 over Twelve Mile Creek and Highway 406 (Figure 1).

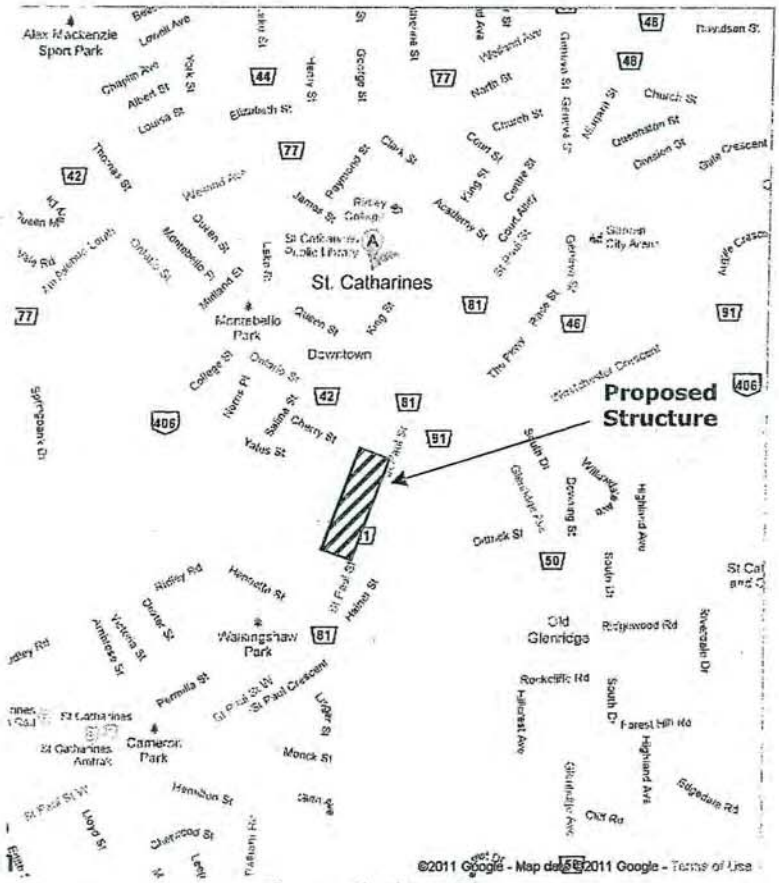


Figure 1: Key Plan

3. DESIGN CRITERIA

3.1 Design Code

The design of the new structure will be in accordance with the latest edition of the *Canadian Highway Bridge Design Code* (CHBDC) - CAN/CSA-S6-06 and its 2010 supplements, and the Ministry of Transportation of Ontario (MTO) *Structural Manual*.

3.2 Number of Traffic Lanes

The basic bridge design is for two vehicular lanes of traffic, two sidewalks, and two bicycle lanes. The bridge is also capable of being converted to carry four lanes of vehicular traffic.

3.3 Construction Specifications

The construction will be carried out in accordance with the latest edition of the Ontario Provincial Standard Specifications (OPSS).

4. TRAFFIC, ROADWAY ALIGNMENTS, PROFILES, AND CLEARANCES

4.1 General

A review of the current roadway, bridge and intersection geometrics within the study area was performed. This review helped determine the bridge configuration and identify/mitigate any sightline or alignment issue that may be present due to the fact that a number of roadways intersect with St. Paul Street West at skewed angles. These intersection configurations can create issues with sightlines or turning movements.

For the purpose of analyzing the traffic operations within the study corridor and determining an appropriate bridge configuration, Delcan reviewed existing and future forecast 2016 and 2026 traffic volumes along with collision data for the study area that was received from the Region of Niagara. This data was used to establish the current and future roadway needs of the bridge and the adjacent study area roadways.

4.2 Traffic Data and Analysis

The existing traffic volumes for the study area were established from both turning movement count data (TMC's) and traffic volume model plots obtained from the Region of Niagara. Based on this data it was determined that the weekday PM peak hour has the highest travel demands on the roadway network. During the PM peak hour a two-way traffic volume of approximately 1550 vehicles is present with a directional split of 55% (850 vehicles) northbound and 45% (700 vehicles) southbound.

The future 2016 and 2026 forecast traffic volumes were obtained from traffic volume model plots provided by the Region of Niagara. From these model plots the two-way future 2016 traffic volume is forecast to be approximately 1600 vehicles during the Weekday PM peak hour while the future PM 2026 two-way traffic volume is approximately 1650 vehicles. The directional split of these volumes is 50/50.

The future traffic volumes are similar to the existing traffic volume indicating that future additional lane capacity is not required and a two-lane roadway bridge will still be sufficient to accommodate future travel demands. The similarity in the existing and future traffic volumes is not out of the ordinary due to the fact that the study area is already a mature, built up area. Additionally, there is very little room for future roadway infrastructure improvements. Although the travel patterns within the area remain consistent based on the model plots and a two-lane roadway can accommodate the traffic volumes, consideration should be given to provide proper provisions for widening the bridge structure from two lanes to four lanes in the event that significant changes in travel patterns do occur in the distant future. This will ensure that the necessary capacity could be provided within the corridor if needed.

4.3 Horizontal Alignment

The cross section of the proposed bridge structure is 22.8m while the existing bridge structure is only about 12.0m wide. This additional width is accommodated on the east side of the existing bridge structure.

The alignment of the north approach road remains largely unaffected, however the south approach road, which includes a curve immediately to the south of the bridge structure, required realignment. A skew in the bridge alignment at the south end, to the east, helps ensure the curve does not significantly impact the adjacent properties.

Yates Street, which intersects with St. Paul Street West, at the north end of the bridge structure is proposed to be closed to vehicular traffic. This not only improves the traffic conflicts in the area, but was welcomed by the area residents. However, pedestrian and emergency access will be maintained on Yates Street.

By realigning the bridge to the east, the geometrics (particularly the curve radii) of the south approach improve considerably. The existing 60m radii curve of the south approach was increased to 175m radii including a 2% super-elevation. This revised curve meets the minimum design standards for a posted speed of 50km/h (design speed of 60 km/h) as per the Transportation Association of Canada's Geometric Design Guidelines. Shifting the south approach alignment east resulted in the need to close Bellevue Terrace for safety reasons. Additionally, Henrietta Street has been realigned to create a perpendicular intersection with St. Paul Street West.

4.4 Vertical Profile

The proposed bridge structure is to maintain the existing vertical profile, as such vertical profile of the approach roads and other area roadways will remain essentially unchanged.

4.5 Cross-fall

The proposed structure consists of a traffic lane, bicycle lane, and sidewalk on each side of the structure. The normal cross-fall of 2% over the traffic lane and bicycle lane drains towards the sidewalk/curb. The sidewalk cross-fall of 2% drains away from the barrier, towards the roadway.

4.6 Vertical and Horizontal Clearances

The alignment of St. Paul Street West crosses over St. Joseph Street at the southern limit of the bridge where a minimum clearance of approximately 3.3m will be provided between the bottom of the bridge structure and the surface of the roadway. A minimum of 1.2m horizontal clearance will be provided between the edge of pavement of St. Joseph Street and the face of the bridge abutments and/or piers.

4.7 Navigational Clearance

Transport Canada's navigational water clearance requirements for Twelve Mile Creek are 1.5m by 2.0m.

5. GEOTECHNICAL INVESTIGATION AND RECOMMENDATIONS

5.1 Site Geology

The site geology is discussed in the foundation investigation and design report produced by Thurber Engineering Ltd.

From published geological information, the area surrounding the bridge site is situated within the physiographic region known as the Iroquois Plain. The bridge site is located at

the Niagara Peninsula within a strip of land between Lake Ontario to the north and the Niagara Escarpment to the south. In this area, a deposit of glaciolacustrine clay to silty clay overlies silty clay glacial till which is in turn underlain by shale bedrock of the Queenston Formation.

5.2 Subsurface Conditions

The subsurface conditions are discussed in the foundation investigation and design report produced by Thurber Engineering Ltd.

In general, the site was found to be underlain by topsoil or loose to compact cohesionless fill overlying an extensive deposit of firm to stiff silty clay which is interlayered with loose to compact sands and silts. Deposits of very loose to loose sand and gravel are present within the floodplain. Glacial tills consisting mainly of very stiff to hard silty clay and occasional clayey silt and sandy silt underlie the above soils. The overburden is underlain by shale bedrock of the Queenston Formation.

5.3 Foundation Design Recommendations

The following *Lateral Earth Pressure* parameters are recommended for design:

Parameter	OPSS Granular A and Granular B, Type II
Bulk Unit Weight, γ (kN/m^3)	22.8
Effective Friction Angle, ϕ' (Degrees)	35°
Horizontal Backfill	
Coefficient of Active Earth Pressure (K_a)	0.27
Coefficient of Earth Pressure at Rest (K_o)	0.43
Coefficient of Passive Earth Pressure (K_p)	3.7
Backfill Sloped at 3H:1V (18.4 Degrees)	
Coefficient of Active Earth Pressure (K_a)	0.31
Coefficient of Passive Earth Pressure (K_p)	3.7

The following *Combined Coefficients of Static and Seismic Earth Pressure* are recommended for design:

Parameter	OPSS Granular A and Granular B, Type II
Yielding Wall, Horizontal Backfill	
Coefficient of Active Earth Pressure (K_{AE})	0.29
Coefficient of Passive Earth Pressure (K_{PE})	3.6
Yielding Wall, Backfill Sloped at 3H:1V (18.4 Degrees)	
Coefficient of Active Earth Pressure (K_{AE})	0.40
Coefficient of Passive Earth Pressure (K_{PE})	3.6
Non-Yielding Wall, Horizontal Backfill	
Coefficient of At-Rest Earth Pressure (K_{OE})	0.65

5.4 Embankment Design Recommendations

The existing river valley slopes are moderately vegetated with grass, brushes, shrubs and small trees. Available contours indicate that the river slopes at the north and south abutments have overall inclinations of approximately 4H : 1V and 3H : 1V, respectively. Both valley slopes are formed in the silty clay deposit.

New fill will need to be placed at the proposed abutment locations. Preliminary information indicates that the new abutments will require placement of a trapezoidal wedge of new fill with a maximum height of 3 m immediately behind the abutment wall. The global stability of the approach embankment fill will depend on the slope geometry, foundation conditions and also to a large degree on the material used to construct the embankment. Foundation settlement due to elastic recompression and primary consolidation of the underlying firm to stiff silty clay will also be induced. Results of discussions with Delcan indicate that the use of lightweight fill such as EPS will be included in the preliminary design of the abutment backfill in order to minimize the risks of global slope instability and foundation settlements.

Preliminary global stability analyses results indicate that placement of up to 1 m of earth fill and 2 m of EPS will not alter the current conditions of the valley slopes at the abutment locations.

Preliminary settlement analysis results indicate that the 1 m of earth fill and 2 m of EPS would induce post construction settlement up to the order of 30 to 35 mm over 3 years. The magnitude of these settlements could be further reduced by refining the abutment fill configuration during detailed design. Such refinement may include partial sub-excavation of the surficial slope and replacing it with more EPS.

6. PROPOSED STRUCTURE

6.1 Span Arrangement and Length

The proposed crossing can be divided into three structures; a north-bound structure, a south-bound structure, and a rigid frame structure.

The north-bound structure consists of seven spans with a total length of 353.55 m. The south-bound structure consists of six spans with a total length of 310.45m. Due to the horizontal alignment of St. Joseph's Street, the south abutment will have a 27° skew angle. The rigid frame structure has a clear span of 6.7 metres along the centreline of the new structure.

The proposed span arrangement minimizes the impact on Highway 406, considers the effects of fill at the ends of the bridge, and maintains a high level profile for the roadway.

6.2 Deck Cross-Section

The structure cross-section is summarized as follows:

Barrier	500 mm
Sidewalk	2400 mm
Bicycle Lane	1500 mm
Traffic Lane	3500 mm
Shoulder	500 mm
Barrier	500 mm
Arch / Gap	5000 mm
Barrier	500 mm
Shoulder	500 mm
Traffic Lane	3500 mm
Bicycle Lane	1500 mm
Sidewalk	2400 mm
Barrier	500 mm
Total	**22800 mm**

6.3 Superstructure Type

In selecting a recommended bridge type, consideration was given to bridge engineering requirements, heritage, beauty, stakeholders' comments and public input, technical agency reviews, enhancing the environment, and overall costs. Subsequent to a comparative evaluation, and in accordance with significant public input, the recommended bridge type selected is a multispan steel box girder bridge with one span supported by a steel arch bridge.

The main span superstructure will consist of trapezoidal steel box girders, with a reinforced concrete deck, supported by a single tri-chord steel tied arch. The box girders will be connected via transverse box floor beams, which are connected to the arch by high strength steel cables. The arch tie will consist of high strength steel cables at the same level as the floor beams.

The side spans will be comprised of conventional reinforced concrete decks on trapezoidal steel box girders. A reinforced concrete rigid frame structure will be constructed at the south end of the bridge to provide access to St. Joseph Street.

6.4 Substructure Type

The north abutment will be a staggered abutment, to facilitate emergency access to Yates Street, while also minimizing fill requirements on the north-bound structure, given concerns regarding slope stability. A stepped, reinforced concrete retaining wall will run longitudinally between the two north abutments. The south abutment will be aligned on the south side of the rigid frame structure over St. Joseph's Street.

The piers will be comprised of reinforced concrete. The length of the piers will be dictated by the existing ground line.

The abutments, wingwalls, retaining wall, and piers will be founded on steel 'H' piles, end bearing on bedrock.

7. MISCELLANEOUS

7.1 Corrosion Protection

The new bridge will comply with the MTO Corrosion Protection Guidelines for Bridge components. A 3 coat system will be used in accordance with MTO guidelines. The system will consist of an epoxy zinc primer, an epoxy coat, and a polyurethane coat. For the deck top and other surfaces exposed to salt spray, galvanized reinforcement will be used. Consideration should be given to using stainless steel reinforcement in the traffic barriers and deck top.

7.2 Drainage

Deck drainage shall be in accordance with CHBDC and the MTO Drainage Manual. Deck drains will be provided and shall drain at the piers and abutments.

7.3 Approach Slab

Standard approach slab details, as per Structural Standard Drawing SS 116-1 will be provided.

7.4 Traffic Barriers

To accord with the CHBDC, Performance Level 2 (PL-2) barriers are required for the structure. The final selection of barriers will be made during the final design phase as these are the subject of both structural and architectural design. Open metal barriers are preferred. The barriers will be an integrated set dealing with the requirements for vehicular traffic loads on barriers on the roadways, for vehicular traffic loads and pedestrian traffic for barriers on the sidewalks, for high barriers to reduce the throwing of objects from the bridge, and for possible high barriers to reduce the possibly of falling from the bridge. Final decisions as to the barriers and crash protection requirements have not yet been made and hence a variety of barrier schemes appears in the renderings and drawings produced to date, some of which reflect architectural considerations and some of which reflect engineering considerations. An integrated suite will be developed during final design in accordance with criteria to be developed.

7.5 Guiderails at Barrier Wall Ends

Standard Steel Beam Guiderail and Channel Anchorage details shall be specified for each end of the parapet walls on the approaches.

7.6 Utilities

The project requires the relocation of a limited number of utilities and services. These are detailed in the Environmental Study Report. The project also requires the relocation of a significant Bell Canada facility which is currently carried on the existing bridge. This Bell Canada facility will be relocated away from the project on a separate alignment and buried in the valley crossing.

7.7 Illumination

The illumination of the main span will be provided by lighting attached to the central arch. Single mast lighting will be provided along the centreline of the structure for the remaining spans.

7.8 Expansion Joints and Bearings

The structure will be fitted with fixed bearings at the north pier of the arch span, and sliding bearings at all other piers and abutments. Seismic isolation bearings may be utilized to facilitate the distribution of the loads to the piers.

Expansion joints will be provided at both ends of the structure. Due to the length of the structure, a modular expansion joint will be provided at the south abutment.

7.9 Construction Limitations

The proposed structure grades may require embankment fill above the existing ground line. The increased embankment may induce consolidation settlement of the underlying clay soils. The use of lightweight fill, consisting of polystyrene blocks, within the embankments, is being considered to mitigate the anticipated settlement and slope stability issues.

7.10 Construction Staging and Traffic Detouring

The construction of the new bridge will strive to have minimum impact to traffic. In order to achieve this, the following stages can be utilized:

Stage 1: Removal of the east sidewalk from the existing bridge, while maintaining two lanes of traffic and one sidewalk on the existing bridge.

Stage 2: Construction of the north-bound structure, along with temporary support, while maintaining two lanes of traffic and one sidewalk on the existing bridge.

Stage 3: Demolition of the existing bridge, with two lanes of traffic and one sidewalk on the north-bound structure.

Stage 4: Construction of the south-bound structure, while maintaining two lanes of traffic and one sidewalk on the north-bound structure.

Stage 5: Construction of the tied arch, with one lane of traffic on each portion of the bridge and one sidewalk on the south-bound structure.

Stage 6: Construction of one sidewalk on the north-bound structure, with one lane of traffic on each portion of the bridge and one sidewalk on the south-bound structure.

Stage 7: Completion of the new bridge, with one lane of traffic and one sidewalk on each portion of the new bridge.

8. PRELIMINARY CONSTRUCTION COST ESTIMATE

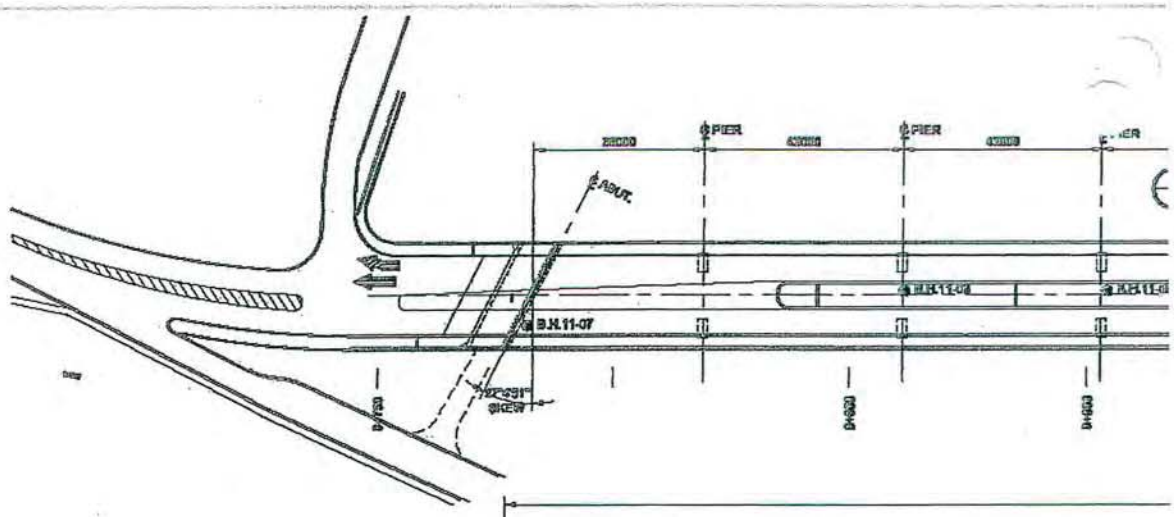
Item No.	Spec. No.	Item Description	Unit	Est. Qty.	Per unit cost	Total
Work Items:						
1		Mobilization, Access and Environmental Protection	LS	1	650,000	650,000
2		Demolition and Removal of Existing Structure	LS	1	2,000,000	2,000,000
3		Traffic	LS	1	70,000	70,000
4		Bridge - Substructure	LS	1	11,410,000	11,410,000
5		Bridge - Superstructure	LS	1	30,320,000	30,320,000
6		Electrical and Illumination Work	LS	1	400,000	400,000
7		Road Work and Slope Restoration	LS	1	630,000	630,000
8		Drainage and Utility Work	LS	1	150,000	150,000
9		Bell Canada	LS	1	500,000	500,000
10		Landscaping	LS	1	300,000	300,000
		TOTAL OF WORK ITEMS				**$46,430,000**
		CONTINGENCY (6%)				**$2,785,800**
		TOTAL INCLUDING CONTINGENCY				**$49,215,800**

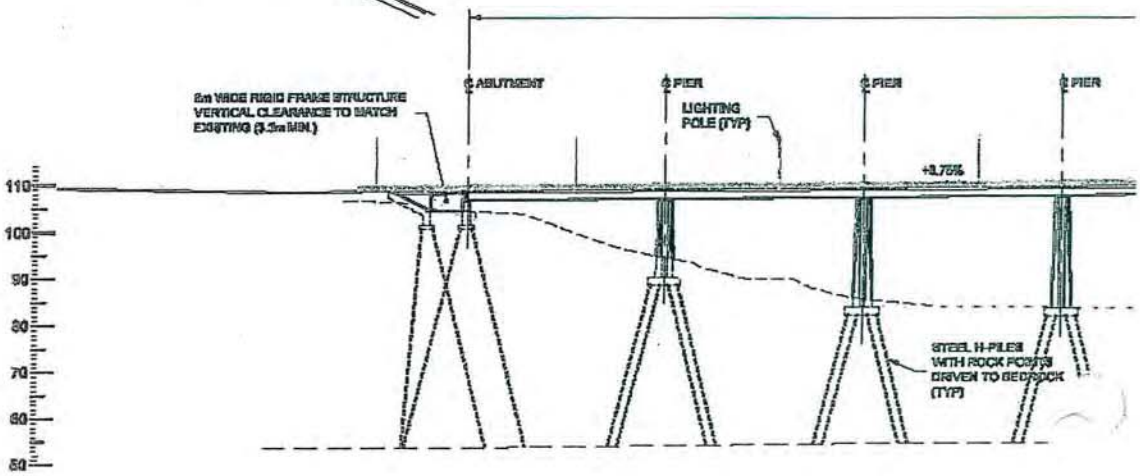
NOTES:

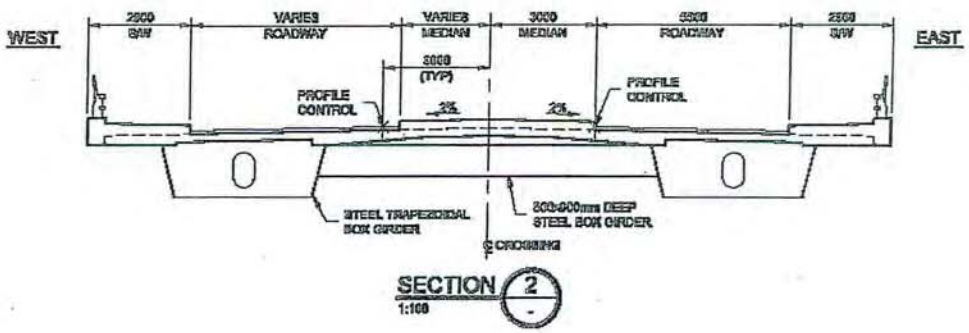
1. ***Costs are in December 2011 Canadian dollars***
2. ***Property Costs Not Included***
3. ***Professional Services Costs Not Included***
4. ***Cost estimate updated December 18 2011***
5. ***HST not included***

APPENDIX A FIGURES

LIST OF FIGURES







SECTION 2
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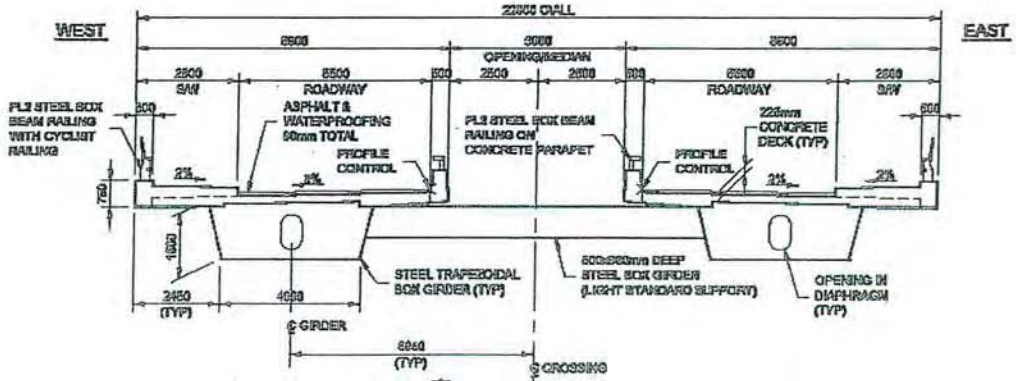

SECTION 1 TYPICAL DIMENSIONS
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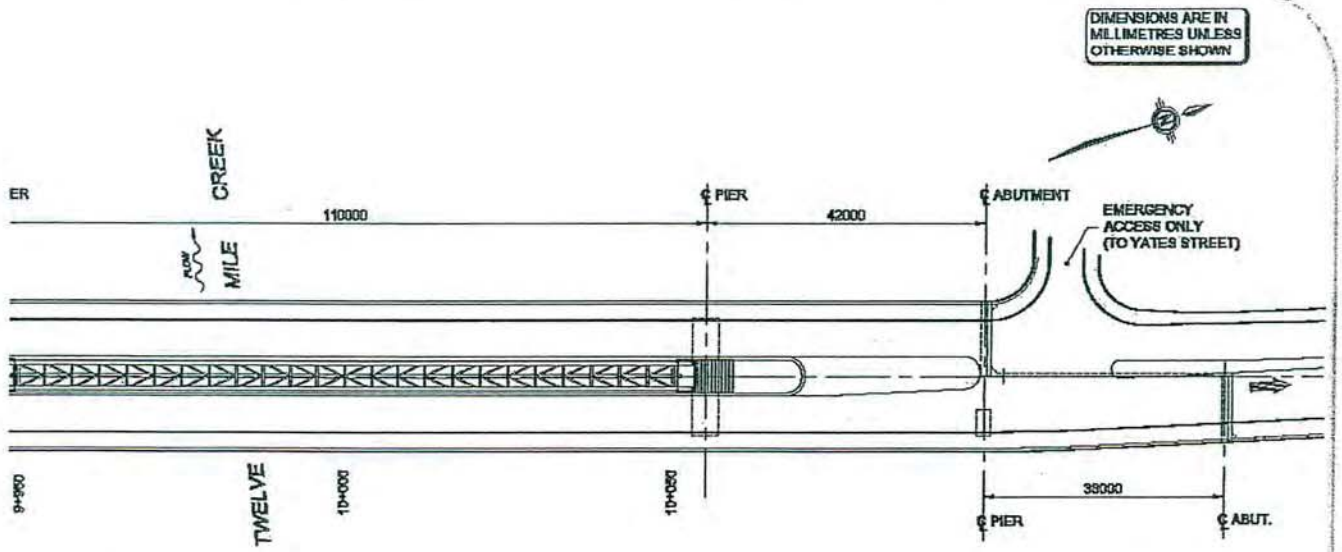
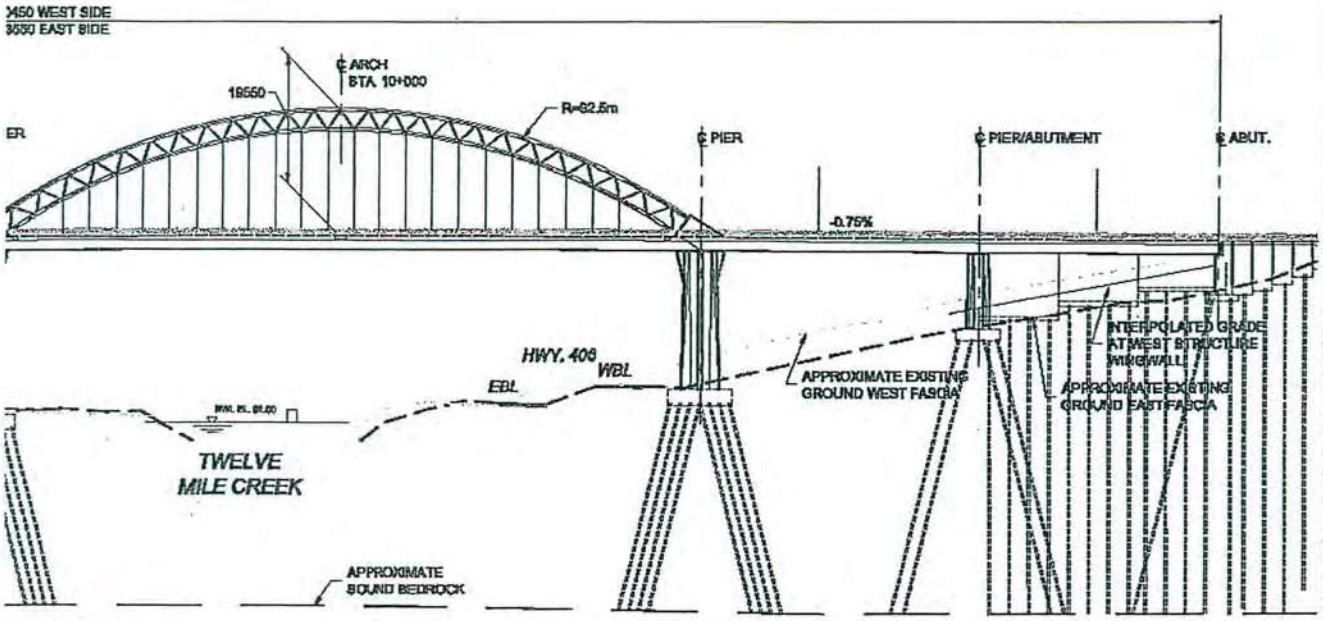


PLAN
1:500



ELEVATION
1:500

BURGOYNE BRIDGE

CLASS EA STUDY AND PRELIMINARY DESIGN

PRELIMINARY GENERAL ARRANGEMENT PLAN & ELEVATION

DECEMBER 2011 FIGURE NO. 2

Niagara Region Delcan

Document 15

Scott, Andrew

...:	DiPaola, Mike
...t:	Tuesday, December 13, 2011 2:52 PM
To:	'Vic Anderson'; Marr, Jason
Cc:	Manoj Dilwaria; Andrew McGregor
Subject:	RE: Burgoyne Agenda Attached

ok

Mike DiPaola, P.Eng
Associate Director Transportation Engineering
Public Works - Transportation Division
mike.dipaola@niagararegion.ca

Tel. 905-984-3644
Fax: 905-685-0013

From: Vic Anderson [mailto:v.anderson@delcan.com]
Sent: Tuesday, December 13, 2011 2:45 PM
To: Marr, Jason; DiPaola, Mike
Cc: Manoj Dilwaria; Andrew McGregor
Subject: Re: Burgoyne Agenda Attached

Ye ...hat is understood.

...e can go through it in detail then so that the Region has all the information required to move forward.

Depending on assumptions, the current total is close to the overall budget of $59 Million including property.

The concern of course is that these are estimates and not contractors' bids; hence there is always some uncertainty about them.

There is too the issue of eligible vs non-eligible costs.

We did manage to estimate the Rideau River Bridge project within $200k of the low bid of about $44 Million. But that was exceptional I think.

The deck area of the Rideau River Bridge is virtually the same as that of the Burgoyne Bridge.

The Rideau River bridge is more complex in that it includes three arches and the entire bridge is supported by arches. The Burgoyne Bridge has only one arch but the box girders supported by that arch are more substantial that the box girders supported at the Rideau River Bridge.

The foundations at the Rudeau River Bridge are large drilled-in caissons, whereas the foundations at the Burgoyne Bridge are simpler but deeper.

... balance one might expect somewhat similar costs for the two bridge projects. Ie about $44 Million

Our detail estimates show that the Burgoyne Bridge is somewhat more costly on a unit basis, which suggests that our current estimating may be a somewhat conservative.

We are quite close to the original total budget numbers, given a minimization of property costs, and depending on the contingency allowance adopted.

In any event, it will be good to go through the entire Burgoyne Bridge estimates with you and assess their meaning.

Perhaps we can have a preliminary review and work session with you on the estimating on Friday Dec 19, after the meeting with Bell Canada.

Regards

Vic

W.Vic Anderson, ing., P.Eng.
Executive Vice President
Delcan
1 416 666 7553
v.anderson@delcan.com
www.delcan.com

Sent from my iPhone

On 2011-12-13, at 1:43 PM, "Marr, Jason" <Jason.Marr@niagararegion.ca> wrote:

> Looks good Vic. The main purpose for the AM meeting with Ken and Joe will be to review the cost estimate.
>
> **From:** Vic Anderson [mailto:v.anderson@delcan.com]
> **Sent:** Tuesday, December 13, 2011 1:36 PM
> **To:** Marr, Jason; DiPaola, Mike; Manoj Dilwaria; Andrew McGregor
> **Subject:** Fwd: Burgoyne Agenda Attached
>
> An Agenda for consideration
>
> Regards
>
> Vic
>
> W.Vic Anderson, ing., P.Eng.
> Executive Vice President
> Delcan
> 1 416 666 7553
> v.anderson@delcan.com
> www.delcan.com
>
> Sent from my iPhone
>
> Begin forwarded message:
>
> > **From:** "Diane Kingston" <d.kingston@delcan.com>
> > **Date:** 13 December, 2011 10:30:47 AM EST
> > **To:** "'Vic Anderson'" <v.anderson@delcan.com>
> > **Subject: Burgoyne Agenda Attached**

Diane Kingston
Division Administrator
Bridges & Structures

Delcan
625 Cochrane Drive, Suite 500
Toronto (Markham) Ontario Canada
L3R 9R9

Phone 1 905 943 0514 Fax 1 905 943 0400
www.delcan.com

From: TSYcanonscanner@delcan.com [mailto:TSYcanonscanner@delcan.com]
Sent: Tuesday, December 13, 2011 10:27 AM
To: Diane Kingston
Subject: Attached Image

Document 16

Scott, Andrew

From: Sydney Pang <spang@thurber.ca>
Sent: Friday, December 23, 2011 2:38 PM
To: Vic Anderson
Cc: 'Manoj Dilwaria'; 'Andrew McGregor'; Marr, Jason; 'Paulo Branco'
Subject: Foundation Investigation and Design Report (DRAFT) Burgoyne Bridge dec 11
Attachments: 142222 Burgoyne Bridge EA FIDR DRAFT dec 11.pdf

Vic,

Please find attached a pdf version of the draft report.

Regards,

Sydney

Sydney Pang, Ph.D., P.Eng.
Associate / Senior Geotechnical Engineer

Thurber Engineering Ltd.
#103 - 2010 Winston Park Drive
Oakville, ON, Canada L6H 5R7
Tel: (905) 829-8666 ext. 229
F (905) 829-1166
w.thurber.ca

7 STRUCTURE FOUNDATIONS

In general, the stratigraphy encountered at the site consists of surficial fill overlying an extensive deposit of firm to stiff silty clay grading into a very stiff to hard silty clay till, with random interlayers of sands and silts. Within the floodplain, very loose to loose sand and gravel to silty sand, and soft silty clay, underlie the fill. The site is underlain by reddish brown shale bedrock of the Queenston Formation. Artesian groundwater conditions are present beneath the floodplain.

The elevations at which bedrock was encountered or inferred at the foundation elements are as follows:

Location	Borehole Number	Elevations (m)	
		Existing Ground Surface	Top of Bedrock Surface
North Abutment	11-01	98.2	59.0*
Pier/Abutment 1	11-01	98.2	59.0*
Pier 2	11-02	94.8	57.2
Temporary Foundation	11-03	85.1	56.2
Pier 3	11-04	85.5	57.3
Pier 4	11-05	84.2	56.6
Pier 5	11-06	85.6	56.9
Pier 6	11-06 / 11-07	85.6 / 103.0	56.9 / 57.3*
South Abutment	11-07	103.0	57.3*

* Proven by coring

During detailed design, additional boreholes will be required at all foundation elements to confirm the top of bedrock elevations.

8 FOUNDATION DESIGN

8.1 Foundation Alternatives

Consideration was given to alternate foundation systems, taking into account the site stratigraphy, existing bridge configurations and preliminary design information. The following lists the foundation types that were considered.

- Driven steel H-piles
- Driven steel pipe piles
- Augered caissons (drilled shafts)

Spread footings founded on the compressible silty clay are not feasible due to the anticipated large magnitude of post construction settlements.

Augered caissons, though technically feasible, are not considered to be a cost effective option at this site due to the presence of artesian conditions at Piers 3, 4 and 5, and the required depths of installation.

Driven steel pipe piles are also technically feasible but would likely encounter potential difficulties when driving through the very stiff to hard silty clay till to reach bedrock.

Due to the size and the type of the new bridge, an integral abutment design is not considered suitable and is not discussed further in this report.

Steel H-piles, driven to be seated within bedrock, are considered to be the most feasible foundation option at the abutments and the piers.

8.2 Driven H-Piles

Steel piles driven to be seated within bedrock may be considered for use to provide foundation support at the abutments, piers and the temporary foundation. For preliminary planning and design purposes, the following pile tip elevations are recommended.

Foundation Element	Reference Boreholes	Estimated Pile Tip Elevation (m)
North Abutment	11-01	58±
Pier/Abutment 1	11-01	58±
Pier 2	11-02	56±
Temporary Foundation	11-03	55±
Pier 3	11-04	56±
Pier 4	11-05	55.5±
Pier 5	11-06	56±
Pier 6	11-06 / 11-07	56±
South Abutment	11-07	56±

8.2.1 Axial Resistance

In addition to the typical HP 310 x 110 section, a heavier section such as the HP 360 x 132 may also be considered for use at this site.

For HP 310 x 110 steel H-piles driven to be seated on bedrock, a factored axial geotechnical resistance at ULS of 2,000 kN is recommended.

For HP 360 x 132 steel H-piles driven to be seated on bedrock, a factored axial geotechnical resistance at ULS of 2,400 kN is recommended.

The SLS condition will not govern design of piles founded in bedrock.

Document 17

Ministre des Transports,
de l'Infrastructure et des Collectivités
et ministre de l'Agence de développement
économique du Canada pour les régions du Québec

Minister of Transport,
Infrastructure and Communities
and Minister of the Economic Development Agency
of Canada for the Regions of Quebec

Ottawa, Canada K1A 0N5

MAR 1 6 2012

Mr. Gary Burroughs
Regional Chair
Niagara Region
2201 St. David's Road
P.O. Box 1042
Thorold, Ontario L2V 4T7

Dear Mr. Burroughs:

I am pleased to inform you of federal approval-in-principle of funding for the Burgoyne Bridge, Regional Road 81, Replacement Project. This approval is given following a successful review of your project under the terms and conditions of the Building Canada Fund.

As a result of this review, federal funding of the project from the Building Canada Fund will be up to one-third (33.33%) of the total eligible project costs, to a maximum federal contribution of $ 18,167,000. Federal funding from all sources (including funding from the Building Canada Fund and any other federal program such as the Gas Tax Fund) cannot exceed 50 percent of the project's total eligible costs.

With this approval-in-principle, eligible costs as determined under the terms and conditions of the Building Canada Fund, and incurred as of the date of this letter, will be eligible for federal reimbursement, subject to the timely execution of a contribution agreement. If a contribution agreement is not signed, the Government of Canada will not reimburse any costs incurred. Once signed, the contribution agreement represents the final federal approval of the project.

Please note that the Government of Canada cannot contribute more than 15 percent of its funding towards non-capital or "soft costs." These costs include planning and assessment costs specified in the contribution agreement, for example, those related to environmental planning, surveying, engineering, architectural supervision, testing and management consulting services. More specifically, the Government of Canada will not contribute more than $ 2,725,050 to these costs.

...2

Canada

As we move to the contribution agreement stage, the following conditions will also apply:

- The Regional Municipality of Niagara will demonstrate that it has secured the funds necessary to complete the project;

- Regardless of the outcome of any of the project tendering processes, all ineligible costs, cost overruns, and any costs related to the ongoing operation and maintenance of the project, will be the responsibility of the Regional Municipality of Niagara;

- Any costs incurred prior to the date of this letter are ineligible for reimbursement;

- The Regional Municipality of Niagara will satisfy the Government of Canada with respect to the competitive and transparent tendering process to be established;

- The Regional Municipality of Niagara and the Government of Canada will work to complete the negotiation of a contribution agreement in a timely manner and to this end the Regional Municipality of Niagara will provide detailed and final design information, and verified cost estimates and cash flows broken down by fiscal year for all project components;

- Within 15 days of the date of this letter, the Regional Municipality of Niagara agrees to produce and erect temporary signage at each of the project sites acknowledging the federal government's contribution to the project, the costs of which will be an eligible cost under the contribution agreement. The signage will be produced in accordance with the design requirements to be provided by the Government of Canada, and will be at least equivalent in size and prominence to other partners' project signage and remain in place until 90 days after construction is completed;

- Federal funding towards this project is conditional on the demonstration that the project will adhere to all applicable federal legislations and obtain all necessary federal permits and authorizations required for the project;

- The Regional Municipality of Niagara will fulfill, where applicable, the requirements of the *Canadian Environmental Assessment Act* and the requirements for Aboriginal consultations under section 35 of the *Constitution Act, 1982.*

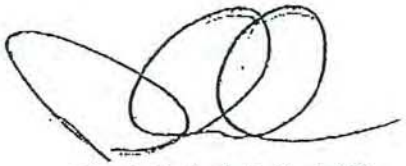
I note that the project business case you have submitted specifies that project construction is planned to get underway in October 2013 and be completed in June 2016. As your project is being approved in principle on the basis of this information, please notify me, in writing, should you expect delays of more than three months in either the start or completion date.

...3

An Agreement Management Committee will be established within 60 days of the signing of the contribution agreement to oversee the agreement. Once the Committee is established, the Government of Canada will confirm its requirements and expectations for monitoring and reporting on progress.

Thank you for your collaboration to date and I look forward to continuing to work together to conclude a contribution agreement for this project in a timely fashion.

Yours sincerely,



Denis Lebel, P.C., M.P.

Document 18

Niagara Region
CORPORATE SERVICES

THE REGIONAL MUNICIPALITY OF NIAGARA

REQUEST FOR PROPOSAL

GEOTECHNICAL INVESTIGATION
AND
PAVEMENT DESIGN
FOR THE REPLACEMENT OF
BURGOYNE BRIDGE (STRUCTURE NO. 081220) WHICH CARRIES
REGIONAL ROAD 81 (ST. PAUL STREET WEST)
OVER
12 MILE CREEK AND HIGHWAY 406 IN THE CITY OF ST. CATHARINES

PROPOSAL NUMBER 2012-RFP-31

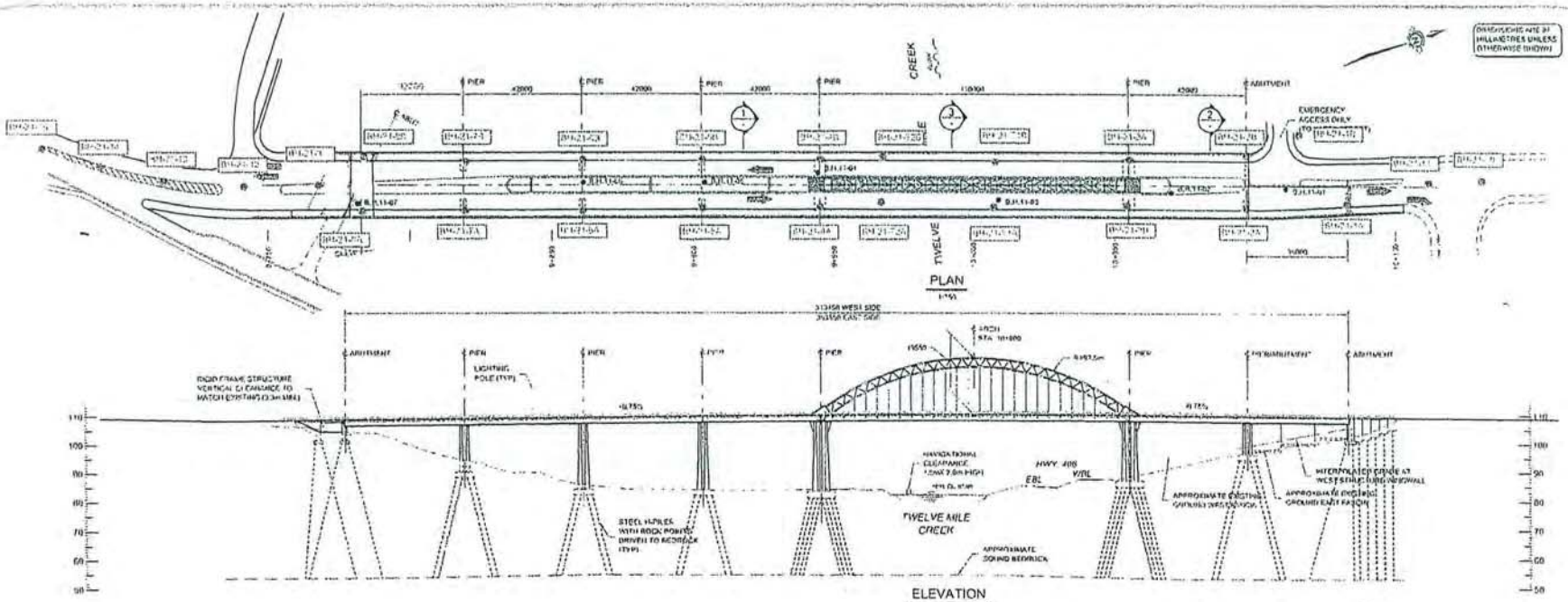
ISSUE DATE: THURSDAY, JUNE 07, 2012

CLOSING LOCATION:

THE PURCHASING OFFICE
THE REGIONAL MUNICIPALITY OF NIAGARA
CAMPBELL WEST BUILDING
2201 ST. DAVID'S ROAD
THOROLD, ONTARIO, L2V 4T7

CLOSING DATE AND TIME:

JUNE 21, 2012
2:00 P.M. LOCAL TIME



BURGOYNE BRIDGE

CLASS EA STUDY AND PRELIMINARY DESIGN
PRELIMINARY GENERAL ARRANGEMENT

DECEMBER 2011 FIGURE NO. 1

Niagara Region

ENGINEERING AGREEMENT

THIS AGREEMENT MADE THIS 24 day of July, 2012,

BETWEEN:

THE REGIONAL MUNICIPALITY OF NIAGARA
2201 St. David's Road, P.O. Box 1042
Thorold, ON L2V 4T7

OF THE FIRST PART

(hereinafter called the "Owner")

- AND -

GOLDER ASSOCIATES LTD.
110 Hannover Drive, Building A, Suite 203
St. Catharines, ON L2W 1A4

OF THE SECOND PART

(hereinafter called the "Consultant")

WHEREAS the Owner intends to undertake the Geotechnical Investigation and Pavement Design for the Replacement of Burgoyne Bridge (Structure No.081220) which carries Regional Road 81 (St. Paul Street West) over 12 Mile Creek and Highway 406, in the City of St. Catharines (2012-RFP-31) (hereinafter called the "Project");

AND WHEREAS the Consultant has submitted a proposal dated June 26, 2012 to furnish professional services in connection with the Project;

AND WHEREAS the Owner has requested the Consultant perform the services more particularly described in the Consultant's proposal dated June 26, 2012 set out in Schedule "B" in accordance with the terms and conditions set forth in this Agreement;

NOW THEREFORE this Agreement witnesses that for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and the mutual promises herein, the parties agree as follows:

ARTICLE 1 – INTERPRETATION

1.1 Definitions

In this Agreement and in the recitals and schedules hereto, the following words, terms and expressions shall have the following meanings:

(a) "Applicable Law" means all applicable federal, provincial, municipal and other laws, statutes, regulations, by-laws and codes, now or hereafter in existence, having the force of law;

(b) "As-built drawing" means documentation prepared by the Consultant and created by or based solely on information provided by a third party that reflects the installed, constructed or commissioned conditions of the Project. The information has not been verified to be complete or accurate by an engineer;

Document 19

Scott, Andrew

From: Vic Anderson <v.anderson@delcan.com>
Sent: Monday, June 18, 2012 8:39 AM
To: Marr, Jason; DiPaola, Mike
Cc: Nick Palomba; Brent Archibald
Subject: Burgoyne Bridge Grotechnical

We are moving along here but the geotechnical issues on this project are difficult.

What I would like to do is consult with Thurber as a continuation of their previous assignment rather than await the arrival of a new consultant.

We have the budget available in that previous phase of the work ie the preliminary engineering.

Would this be ok?

Regards

Vic

W.Vic Anderson, ing., P.Eng.
Executive Vice President
'can
/16 666 7553
v.anderson@delcan.com
www.delcan.com

Please consider the environment before printing this email.

Document 20

Scott, Andrew

From: Vic Anderson <v.anderson@delcan.com>
Sent: Monday, June 25, 2012 8:12 AM
To: Marr, Jason; DiPaola, Mike
Cc: Brent Archibald; Jack Ajrab; Hugh
Subject: Burgoyne Bridge update

The MTO requirement for additional widening allowance including HOV lanes on Highway 406, conflicts with the bridge as currently laid out.

As well, and more importantly, our discussion with Thurbers on Friday suggests that although the new bridge foundations are constructible as is, the piers should be further away from the existing bridge foundations if we wish to reduce risks to virtually zero.

So, that was news. It relates to the vibration of equipment, even auguring equipment, possibly causing some settlements. Hence even very quiet construction methods may not be risk-free.

So, we are seeing what that means in terms of the bridge layout. We clearly want the risks here to be virtually zero.

Thurbers had recommended driven piles but that is obviously no good here at many locations; we envisage caissons at the critical locations, as they are much quieter to construct.

can review the findings tomorrow after the Bell meeting.

Regards,

Vic

W.Vic Anderson, ing., P.Eng.
Executive Vice President
Delcan
1 416 666 7553
v.anderson@delcan.com
www.delcan.com

Document 21

Niagara Region

REPORT TO: **Public Works Committee**

SUBJECT: **Status Update on the Burgoyne Bridge Project In the City of St. Catharines**

RECOMMENDATION

That this report BE RECEIVED for information.

PURPOSE

The purpose of this report is to provide an update on the status of the Burgoyne Bridge (Structure No. 081220) which carries Regional Road 81 (St. Paul St. West) over the Twelve Mile Creek and Highway 406, in the City of St. Catharines.

BUSINESS IMPLICATIONS

At this time, there are no business implications associated with this report since it is an update on the status of the detailed design engineering assignment for the Burgoyne Bridge replacement project. Once the detailed design and associated cost estimates are complete, we will be able to provide further information regarding the overall budget for the project.

REPORT

Special efforts have been made in the functional design of the bridge to create an architecturally-designed structure, which will have a net positive effect on the 12 Mile Creek Valley, and for St. Catharines and the Niagara Region. This has been achieved by creating an aesthetically pleasing arch bridge that provides both form and function in its execution.

It was a requirement of the Class EA and a desire from the citizens and business community that traffic be maintained on the crossing throughout construction. As a result traffic must be maintained on the existing 97 year old structure until such time that the new structure can be, in whole or in part, available for service.

The detailed design has carried forward assuming that the project will be staged to allow traffic to remain on the existing bridge while the east half of the proposed bridge is

constructed immediately adjacent to the existing bridge. Once this is complete the existing structure will be removed and the second half of the proposed bridge can be constructed with traffic using the newly constructed east bridge.

Since the girders carrying the bridge over the main span (over the 12 Mile Creek and Hwy 406) are not able to support the construction and traffic loadings over that length of span temporary piers are required until the final placement of the tied structural arch (the last phase of the project).

The following is an update of the various issues surrounding the Burgoyne Bridge Replacement Project:

Detailed Design and Geotechnical Considerations

- The detailed design is at approximately 50 percent. (See Appendix A – General Arrangement Drawing).

- Geotechnical investigations have determined that there are safety concerns and risk associated with installing deep foundations adjacent to the existing bridge foundations. The consultant's recommendation is that any type of deep foundation, including "quiet methods" such as drilling caisson foundations within 10 m of existing foundations, may result in settlement of the existing bridge and cause safety concerns for the public using the existing structure. As a result, the design includes permanent foundations strategically placed to meet this objective.

  A consequence of this design parameter is that the arch is now 125 m compared to the 110 m arch proposed in the EA. This also satisfies the MTO concerns to maintain a ROW which would support a third lane of traffic in the SB and NB directions of Hwy 406 and would also give them the flexibility to install HOV lanes, if warranted.

  However, a consequence is that now because of the increased span length, there will be a requirement for two temporary towers to support the new east and west bridge until the arch can be placed in the final phase of the project. The temporary piers are being proposed to be placed in the median shoulder of the SB lanes of Hwy 406 and in the centre of the 12 Mile Creek. This is a significant design change impacting this project since it now involves obtaining permits and approvals from the MTO and MNR. These permits may take time to obtain.

  There will be additional costs added to the project to complete the temporary works. We are also examining the design of temporary towers in other locations to ensure that the contractor has the maximum of possible options available and the costs are minimized.

- The proposed cross section of the new bridge consists of a 3.75 m travelled lane, a 1.5 m dedicated bicycle lane and a 2.4 m wide sidewalk in each direction. (See Appendix B for a schematic of the proposed cross section for the Burgoyne Bridge).
- Heritage features and landscaping features are continuing to be developed as the detailed design moves forward.

Utility Relocations (Bell)

The main utility on the Burgoyne Bridge is a Bell Fibre Optic and Copper cable. Because of the staging of this project this relocation remains a critical task. As a result, Delcan and staff have been working closely with Bell to ensure that this portion of the work does not impact the overall construction schedule. Bell is scheduled to begin advanced civil works this fall to prepare for the final relocation works during the bridge construction project.

Property Acquisitions

The Region currently has the necessary property to complete the project. In addition, Regional property staff is working closely with the City of St. Catharines, NPCA, MTO, and OPG to receive the necessary encroachment permits and easements required to complete the project. It is expected that all property acquisitions, permits, and easements will be in place prior to construction.

In addition, staff has initiated a policy regarding the 8 townhouses and one single dwelling on the west side of Hainer Street, which is located directly adjacent to the proposed Burgoyne Bridge. Staff is currently negotiating with these property owners in accordance with this policy.

Cost Sharing Negotiations (City of St. Catharines)

- Staff has commenced negotiations with the City of St. Catharines on cost sharing items for the Burgoyne Bridge Replacement project. Specifically, the Region has identified the following list of items to be cost shared with the City:

    - 2.4 m wide sidewalks;
    - Landscaping on the crests of the valley and at the bridge approaches or medians;
    - The implementation of architectural lighting and the use of decorative poles and fixtures;
    - The implementation of Lookouts, Plazas, and Heritage / Story telling features; and
    - Improvements to St. Josephs Street.

Many of the above items identified for cost sharing are above and beyond the scope of the initial project that was used to determine the overall project budget. It

was this budget that was used to determine funding requirements from the Federal and Provincial governments, where the Region is receiving 2/3 funding (1/3 Federal and 1/3 Provincial).

As a result, some of the above cost sharing items may be eligible for Federal and Provincial funding depending on the prices that are received at the time of tendering and the actual cost of the project with respect to the original budget. Therefore, the City of St. Catharines has been presented with a range of cost between $1,818,750 and $5,478,000.

It should also be qualified that the estimated cost for these items are preliminary estimates only and will be revised once more detailed cost estimated and tendered values become available. Staff has forwarded a letter to the City of St. Catharines for the purpose of obtaining acceptance in principle from the City of St. Catharines Council to proceed with the detailed design of the cost sharing items.

Funding Agreement

Approval in principle has been received from the Federal and Provincial governments and staff is continuing to work with our Federal and Provincial funding partners to finalize the agreements. It is expected that the Federal and Provincial funding agreements are currently being reviewed and will be presented to the Public Works Committee and Regional Council for execution in Q4 2012 Council before construction commences.

Construction Cost Estimate and Schedule

- The original cost estimate for the Burgoyne Bridge Replacement was based on the information provided in the Evaluation, Inspection, and Rehabilitation / Replacement analysis performed by Hatch Mott MacDonald in 2009 / 2010. The original project budget was determined on the basis that the existing bridge would be replaced with a concrete segmental bridge on a new alignment to the east of the existing alignment. A total of $6.85 million has previously been approved for the Burgoyne Bridge which, when combined with the $59.0 million being proposed in the 2013 budget, results in a total budget of $67.85 million for this project (including property, engineering studies, inspections and emergency repair work). The eligible share of these costs for the Federal/Provincial funding partnership is $54.5 million.

  During the EA study the preferred alternative for the bridge replacement was determined to be a Steel Tied Arch allowing the bridge to span Hwy 406 and the 12 Mile Creek without the need for an intermediate pier between the creek and the highway. Our consultant, Delcan, has completed the EA study and preliminary

design for the new bridge keeping the original project budget in mind. Nevertheless, several of the design challenges stated above have and will place considerable strain on the project budget.

The project remains on schedule to have a completed detailed design of the Burgoyne Bridge project by January of 2013. Following completion of the detailed design staff will prepare the tender documents and tender the project in the spring of 2013 to allow for mobilization and the start of construction in the summer / fall of 2013. It is estimated that the duration of the project will be 2 – 2.5 years.

Staff will be reporting back to PWC and Regional Council with a revised project estimate and schedule as the detailed design assignment nears completion. It is also the intention of staff to hold a public meeting to inform the public of the details surrounding the bridge replacement prior to tendering the project.

REPORTS PERTINENT TO THIS MATTER

PWA 07-2012	Completion of the Class Environmental Assessment (EA) Study for Burgoyne Bridge (Structure No. 081220), in the City of St. Catharines
CSD 177-2011	Proposed Improvements to Bidding Process Methodology
Report 1-2011	to Public Works Bidding Evaluation Process Review Committee
CSD 39 – 2012	Corporate Services Committee February 22, 2012
CSD 40 – 2012	Corporate Services Committee February 22, 2012
CSD 54 – 2012	Corporate Services Committee April 4, 2012

Submitted by:

Kenneth J. Brothers, P. Eng. FIWA
Commissioner of Public Works

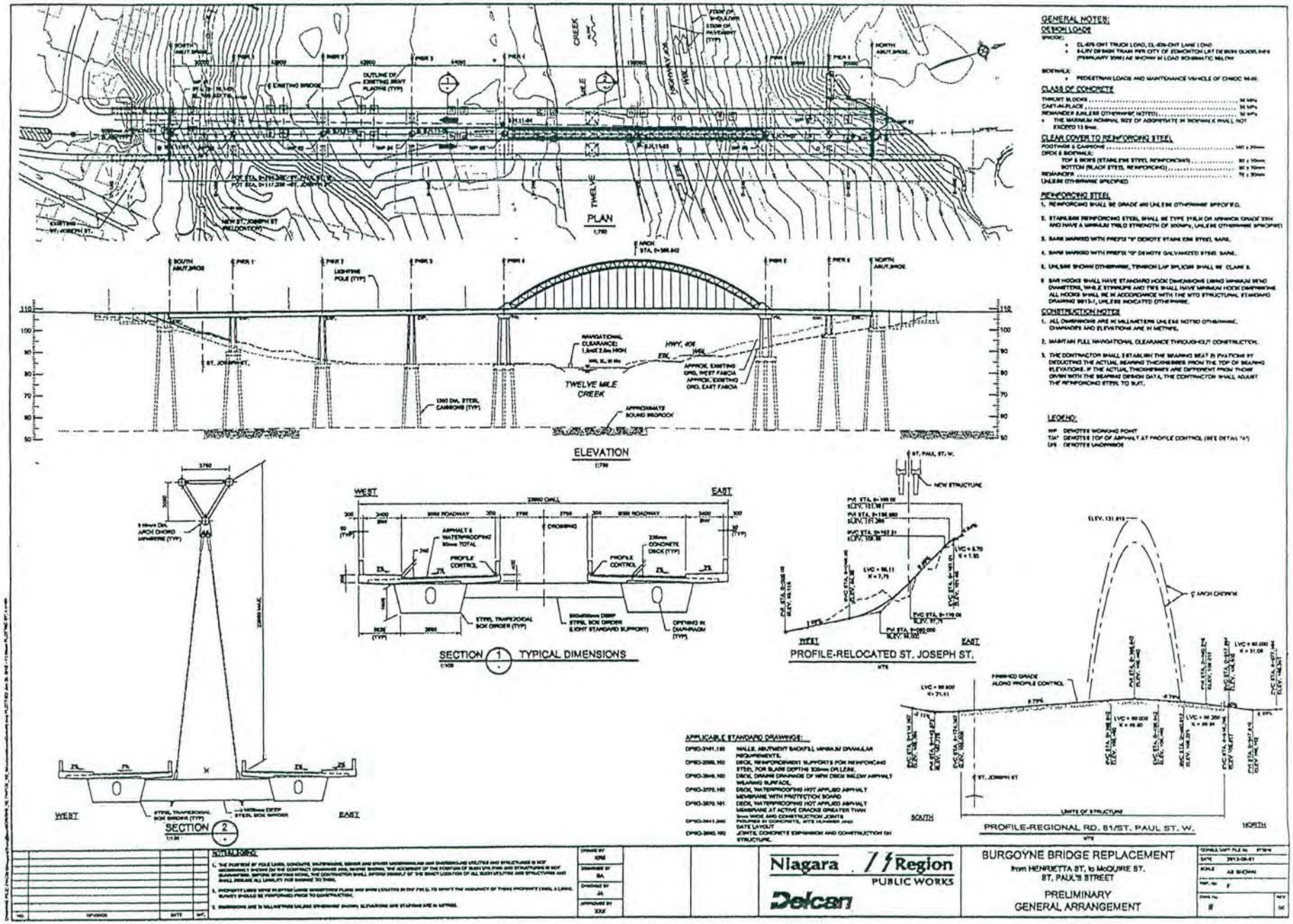
Approved by:

Mike Trojan
Chief Administrative Officer

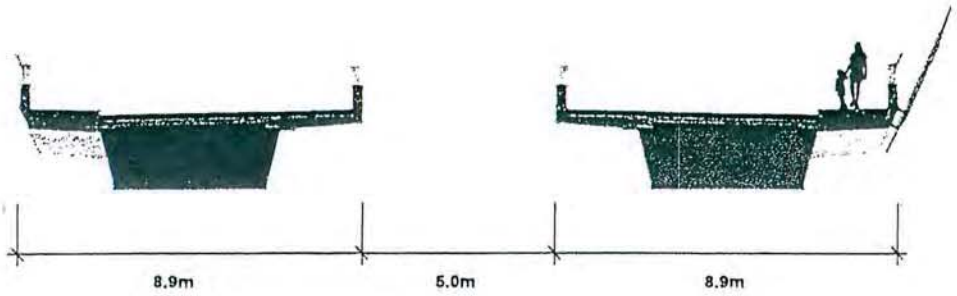
Appendix A - General Arrangement Drawing
Appendix B - Proposed Burgoyne Bridge Cross Section

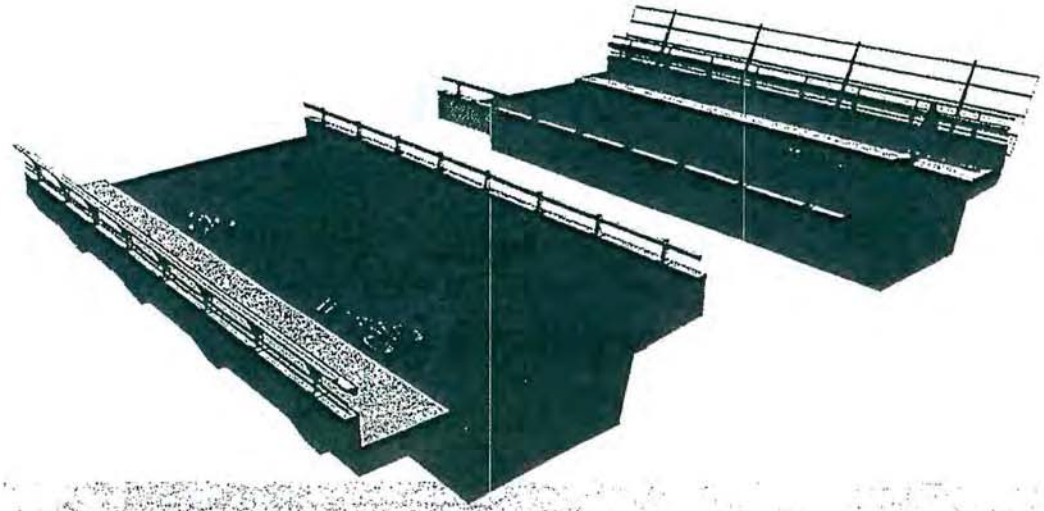
This report was prepared by Jason Marr, P. Eng., Senior Transportation Project Engineer, and reviewed by Glen Cowan, Associate Director, Public Works Finance, and Joe Cousins, Director Transportation Services.

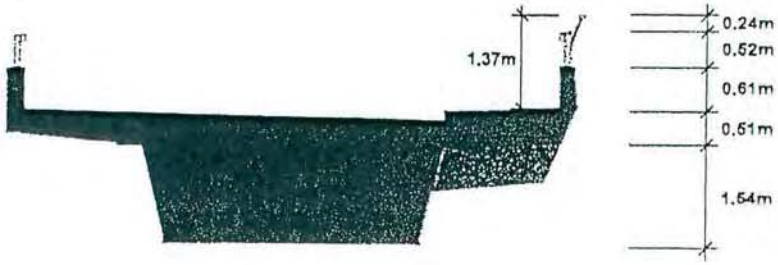
APPENDIX A – General Arrangement Drawing



APPENDIX B – Proposed Cross-Sections







dtah

BARRIERS / RAILINGS NTS

Document 22

Scott, Andrew

From:	DiPaola, Mike
Sent:	Friday, October 19, 2012 9:30 AM
To:	Brothers, Ken
Cc:	Cousins, Joe; Marr, Jason; DiPaola, Mike
Subject:	RE: Bridge Budget? Reply

Hi Ken

The following is a summary / breakdown of the current Burgoyne Bridge Replacement Budget.

At the time of the BCF application, The Region's budget/funding submission was for a total of $60,000,000, which included $54,500,000 of eligible cost (items 1 to 3 below) and $5,500,000 of in-eligible cost (item 4 below):

1) NEW BRIDGE - $49,000,000
2) DEMO OF EXISTING BRIDGE - $1,500,000
3) ENGINEERING & APPROVALS - $4,000,000
4) EA STUDY & PROPERTY - $5,500,000

The Region is currently showing a total budget of $65,850,000 (Gross) in our Capital Budget Forecast, which includes $6,850,000 of prior approved funding plus a $59,000,000 allocation in the 2013 Capital Budget. The $59,000,000 shown in the 2013 Capital Budget includes $2,500,000 (Estimated) of external funding to cover the City of St. Catharines work. T' fore we are showing a total budget amount (minus the City's share) of $63,350,000. We are still awaiting irmation from the City of St. Catharines regarding the scope of their work and cost sharing amount.

The $6,850,000 of prior approved funding including approximately $850,000 of preliminary engineering (detailed inspection / rehabilitation & replacement analysis) that was completed by Hatch Mott MacDonald, Regional staff time, minor repairs and ongoing maintenance, and annual inspections. Therefore the $850,000 is not part of the Burgoyne Bridge Replacement Project as outlined in the BCF Application.

Therefore, we are showing $6,000,000 (prior approved) plus $56,500,000 (excluding City's Share) in the 2013 Budget, for a total budget of **62,500,000** for the Burgoyne Bridge Replacement Project. Based on our current estimate (50 % design stage, as of October 2012) our latest project estimate is now:

1) NEW BRIDGE - $ 49,640,000
2) DEMO OF EXISTING BRIDGE - $1,900,000
3) ENGINEERNIG & APPROVALS - $5,500,000
4) CONTINGENCY - $3,560,000
5) LESS CITY WORK – ($2,500,000)

TOTAL ELIGIBLE COST ESTIMATE - **$58,100,000**

6) EA STUDY - $600,000
7) PROPERTY / COMMITTED TO DATE - $1,800,000
8) POSSIBLE FUTURE PROPERTY (TOWNHOUSES) – $2,000,000

TC L IN-ELIGIBLE COST ESTIMATE - **$4,400,000**

ust the above is satisfactory at this time. If you have any questions please feel free to contact myself or Jason Marr.

Regards,

Mike DiPaola, P.Eng
Associate Director Transportation Engineering
Public Works - Transportation Division
mike.dipaola@niagararegion.ca

Tel. 905-984-3644
Fax: 905-685-0013

From: Brothers, Ken
Sent: Thursday, October 18, 2012 11:20 AM
To: Petrowski, Andrew
Cc: DiPaola, Mike; Cousins, Joe
Subject: Re: Bridge Budget? Reply

Andy:

We will put together an outline of the project costs for you. Give me a day or so on this.

Thx., Ken
Message sent via BlackBerry

Kenneth J. Brothers, P. Eng.
Commissioner of Public Works
Region of Niagara, ON

From: ANDY PETROWSKI [mailto:apetrowski@bell.net]
Sent: Thursday, October 18, 2012 07:55 AM
To: Brothers, Ken
Subject: Bridge Budget?
Hi Ken, Not including the "St. Catharines" contribution, what is the new total budget amount for Burgoyne Bridge, please? I understood from this week's report that it is over $60 million now, up from the original $54 million? Thank you in advance, Andy

Document 23

Niagara Region
CORPORATE SERVICES

THE REGIONAL MUNICIPALITY OF NIAGARA

REQUEST FOR PRE-QUALIFICATION (RFPQ) FOR

GENERAL CONTRACTING SERVICES FOR THE REPLACEMENT OF BURGOYNE BRIDGE (STRUCTURE No. 081220) WHICH CARRIES REGIONAL ROAD 81 (ST. PAUL ST. WEST) OVER THE 12 MILE CREEK AND HWY 406

IN THE CITY OF ST. CATHARINES

DOCUMENT NUMBER 2012-RFPQ-10

ISSUE DATE: DECEMBER 20, 2012

CLOSING LOCATION:

PURCHASING SERVICES

THE REGIONAL MUNICIPALITY OF NIAGARA

CAMPBELL WEST BUILDING

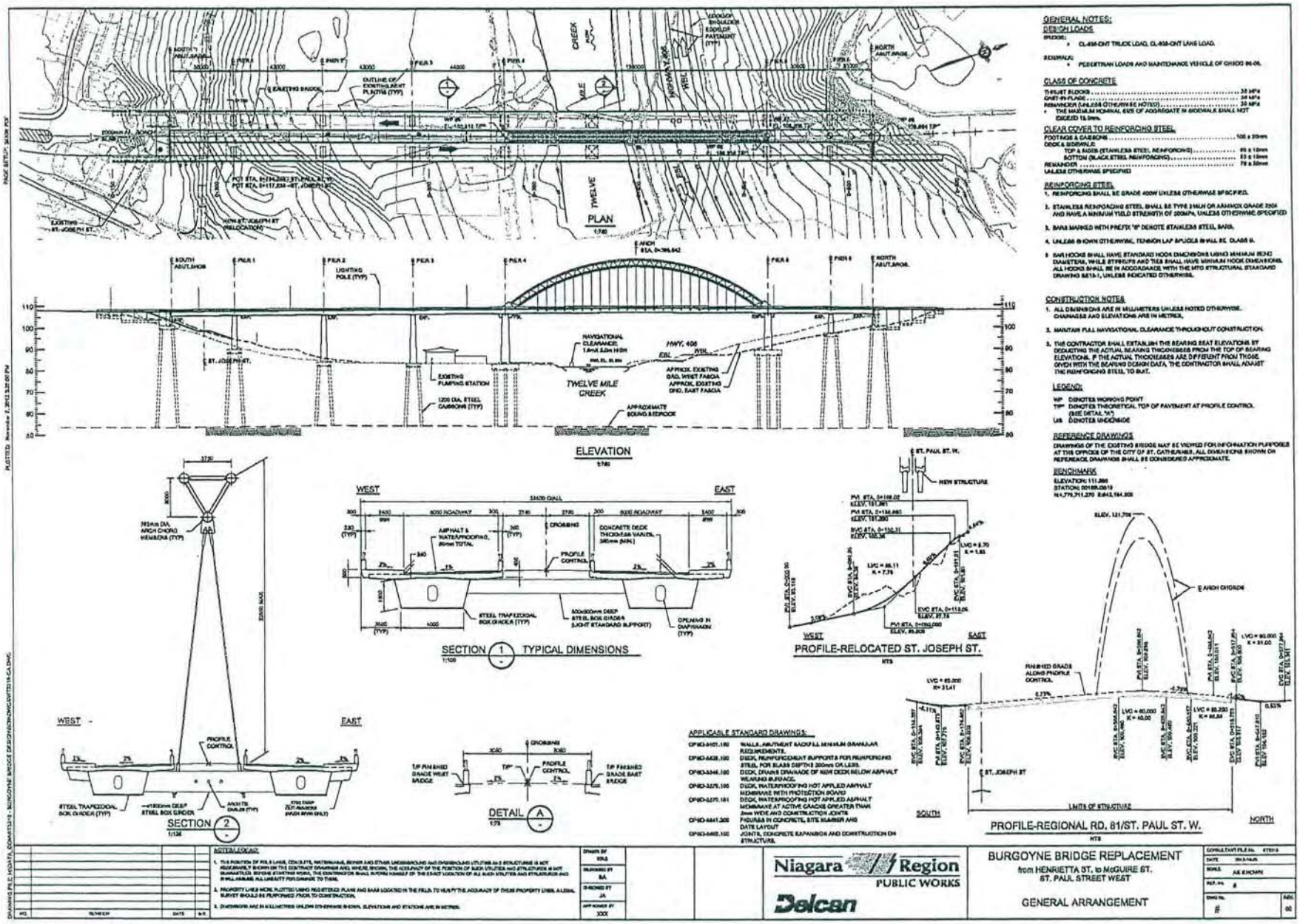
2201 ST. DAVID'S ROAD, THOROLD, ONTARIO, L2V 4T7

ATTENTION; ANDREA MALESZYK, PURCHASING MANAGER

CLOSING DATE AND TIME:

THURSDAY, JANUARY 31, 2013

2:00 P.M. LOCAL TIME


PLAN
ELEVATION
SECTION 1 TYPICAL DIMENSIONS
SECTION 2
DETAIL A
PROFILE-RELOCATED ST. JOSEPH ST.
PROFILE-REGIONAL RD. 81/ST. PAUL ST. W.
GENERAL NOTES:
CONSTRUCTION NOTES
REFERENCE DRAWINGS
BENCHMARK
APPLICABLE STANDARD DRAWINGS:
BURGOYNE BRIDGE REPLACEMENT
from HENRIETTA ST. to McGUIRE ST.
ST. PAUL STREET WEST
GENERAL ARRANGEMENT
Niagara Region
PUBLIC WORKS
Delcan

Document 24

Niagara Region

REPORT TO: **Public Works Committee**

SUBJECT: **Status Update on the Burgoyne Bridge Project In the City of St. Catharines**

RECOMMENDATION

That this report **BE RECEIVED** for information.

PURPOSE

The purpose of this report is to provide an update on the status of the Burgoyne Bridge replacement project.

BUSINESS IMPLICATIONS

There are no business implications associated with this report since it is a project status update. Prior to the project being tendered and/or once the tendered bids are received, we will be able to provide further information regarding the overall budget for this project.

REPORT

The following is a brief update of the various key components surrounding the Burgoyne Bridge replacement project:

Detailed Design and Geotechnical Investigation

The detailed design is approximately 80% complete.

The field work for the geotechnical investigation will be completed in the month of February followed by the final Geotechnical Investigation Report in the month of March.

In order to expedite the foundation design for the new Burgoyne ridge structure, ongoing discussions and technical memorandums regarding the subsurface geotechnical

conditions have been taking place between the project team and the consultant undertaking the geotechnical investigation.

As outlined in Report PW 99-2012 (October 16, 2012), the geotechnical investigations have revealed safety concerns and risk associated with installing deep foundations adjacent to the existing bridge. These conditions, coupled with the requirement to maintain traffic during construction, have proven to make this site and bridge replacement project very challenging and complex.

The October 16, 2012 status update discussed the need to increase the main span length to 125 metres and mentioned the requirements for temporary towers to support the new east and west bridge until the structural steel arch can be erected and installed in the final phase of the project.

Over the last few months, Niagara Region engineering staff have examined a number of different options for the design and location of the temporary towers/supports and have recently devised a plan that is expected to mitigate constructability issues, safety concerns, and risk.

The design consultant is currently evaluating the feasibility of this option and will proceed with final design details once the assessment is complete. The General Arrangement Drawing and proposed plan for the temporary supports are shown as Appendix 1.

Provisions/language will also be provided in the contract document so that contractors have the ability to propose an alternative method to temporarily support the main span, subject to review and approval from the engineering consultant. This will ensure that all the possible options are explored.

Heritage and landscaping features are being finalized after developing plans with the Burgoyne Bridge Heritage Committee and the City of St. Catharines.

Wind Tunnel Testing

The analytical work and the actual wind tunnel model building and wind tunnel testing itself have been completed by RWDI, sub-consultants working for Delcan. This work has been successful in ensuring that the bridge will not suffer any ill effects from wind, and has provided confirmation from this perspective that the design produced by Delcan is appropriate.

Utility Relocations

A great deal of work has been done on utility relocations. Final elements of this work are being completed at this time. Work has already commenced on site by Bell Canada in order to advance their relocation works ahead of the main construction of the bridge as soon as possible. Similar works are being undertaken with regard to the electrical utilities

by Horizon. Some utility relocations, such as underground municipal services, will be carried out as a part of the main contract. These works are being defined with the various responsible agencies and companies and incorporated in the contract documents by Delcan.

Property Acquisitions

The Region currently has the necessary property to complete the project. In addition, Regional Facilities property staff is working closely with the City of St. Catharines, NPCA, MTO, and OPG to secure the necessary encroachment permits and easements required to complete the project. It is expected that all property acquisitions, permits, and easements will be in place prior to construction.

In addition, staff has initiated an acquisition strategy regarding the eight townhouses and one single family dwelling located on the west side of Hainer Street, which is located directly adjacent to the proposed Burgoyne Bridge. Staff is currently negotiating with these property owners in accordance with this strategy. To date, the Region has acquired one of the townhouse units and entered into an Agreement to acquire the single family dwelling, scheduled to be completed in late February.

The Region previously acquired single family residences, 4 Henrietta Street and 20 Hainer Street and a multi-family residence at 25 St. Paul Street West for construction purposes. Four Henrietta Street is scheduled to be demolished in early February and 20 Hainer Street and 25 St. Paul West are scheduled for demolition in the spring.

Agency Approvals

Ongoing meetings and work with the approval agencies are proceeding with the original contacts during the preliminary engineering and environmental assessment stage. Contact is being maintained with all of the agencies involved in the project including, in particular, the Ministry of Transportation of Ontario, the Ministry of Natural Resources, Transport Canada, and others. We are not anticipating any difficulties with agency approvals based on this communications program and comments received from the agencies to date.

Cost Sharing Negotiations (City of St. Catharines)

A preliminary estimate/range of cost between $1.8 and $5.5 million has been presented to the City of St. Catharines for improvements that fall under their jurisdiction. These include sidewalks on the bridge, landscaping on the crests of the valley and bridge approaches, lookout/plaza areas, heritage story telling features, and roadway/underground infrastructure improvements on St. Joseph Street. These estimated costs are preliminary at this stage and will be revisited with City staff once detailed design is complete and tendered prices are confirmed.

On December 10, 2012, City of St. Catharines Council approved the cost sharing arrangement which will establish the framework for negotiations with the City and the Region once actual pricing is received.

Funding Agreements

Through report PW 118-2012, dated November 27, 2012 approval was received for the Regional Clerk and Regional Chair to execute the federal and provincial funding agreements. Both funding agreements have been finalized and they are currently being executed by all parties.

Tender Schedule and Anticipated Construction Schedule

The RFPQ (Request for Pre-Qualifications) to pre-qualify general contractors for this bridge replacement project closes on February 14, 2013. Submissions will be reviewed during the months of February and March. The project is expected to be tendered in April/May with tender award and construction to start in the summer of 2013. The construction duration for this size of project is anticipated to last 2.5 years.

Contract Administration and Inspection Services

Discussions between Niagara Region staff and Delcan are being held to ensure that the scope and approach accurately and appropriately meet our requirements for engineering services during the construction phase of this project. These services will include:

- Contract Administration
- Inspection Services
- Quality Assurance Testing
- Foundation/Geotechnical Services

Based on the bridge's unique design, challenges with the valley site, scope and complexity of this project, staff feel it will be in the Region's best interest to negotiate the above services with Delcan. This will ensure continuity and efficiency gained by following through on the construction implementation services by the same team that designed and certified this project. Other key benefits that staff believes will accrue to Niagara Region are listed in Appendix 2.

These negotiations will continue over the next few months and staff will ensure that the firm's unit rates received during the Detailed Design RFP process remains consistent and competitive. The estimated engineering fees are in the order of approximately $3 M. This range is consistent with the Building Canada Fund application submission.

Communication with Stakeholders and Public

As with all of our capital works projects, Regional staff and the engineering consultant are continually communicating key developments to affected stakeholders through meetings, media releases, and newspaper advertisements. In addition, staff will hold a Public Information Centre prior to the start of construction so that all stakeholders, area residents, and businesses are aware of the project construction schedule and its impact. Staff will also be implementing a communication strategy through the entire construction duration.

REPORTS PERTINENT TO THIS MATTER

PW 118-2012	Provincial & Federal Funding Agreements Replacement of Burgoyne Bridge November 27, 2012
PW 99-2012	Status Update on the Burgoyne Bridge Project October 16, 2012
PW 48-2012	Award of the Detailed Design Assignment for the Burgoyne Bridge April 24, 2012
PWA 07-2012	Completion of the Class EA Study for Burgoyne Bridge January 10, 2012

Submitted by:

Kenneth J. Brothers, P. Eng. FIWA
Commissioner of Public Works

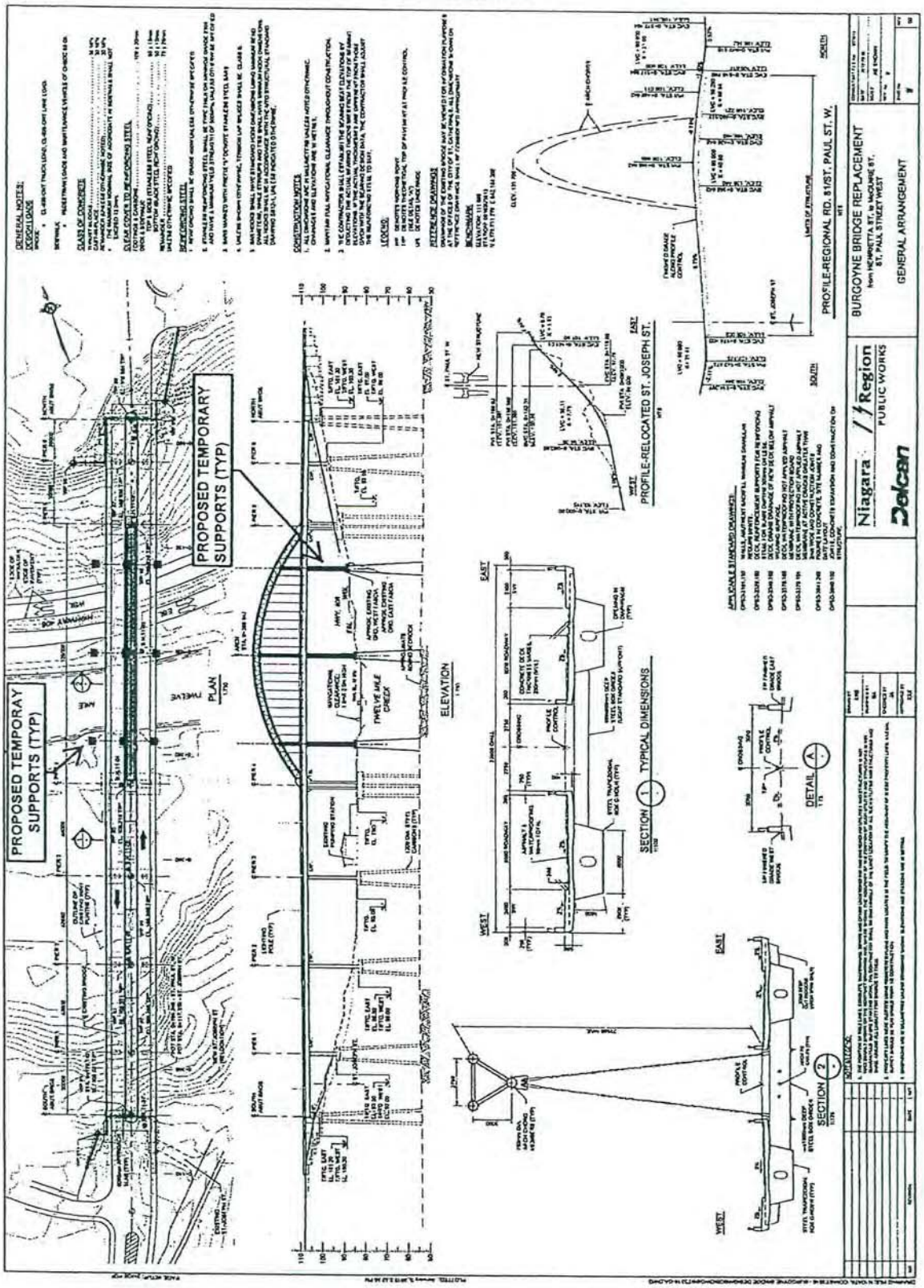
Approved by:

Mike Trojan
Chief Administrative Officer

APPENDIX 1 **General Arrangement Drawing**
APPENDIX 2 **Key Benefits For Retaining Delcan to Provide Contract Administration & Inspection Services**

This report was prepared by Mike DiPaola, P.Eng., Associate Director Transportation Engineering, and reviewed by Glen Cowan, Associate Director, Public Works Finance and Joe Cousins, Director Transportation Services.

APPENDIX 1


PROPOSED TEMPORARY SUPPORTS (TYP)
PROPOSED TEMPORARY SUPPORTS (TYP)
PLAN
ELEVATION
SECTION 1 TYPICAL DIMENSIONS
DETAIL A
SECTION 2
PROFILE-RELOCATED ST. JOSEPH ST.
PROFILE-REGIONAL RD. 81/ST. PAUL ST. W.
BURGOYNE BRIDGE REPLACEMENT
GENERAL ARRANGEMENT
Niagara
Region
PUBLIC WORKS
Dalcan

APPENDIX 2

Key Benefits for Retaining Delcan to Provide Contract Administration & Inspection Services

- Continuity and efficiency gained by following through on the construction implementation services by the same team which designed and certified this project.

- Technical continuity with regard to geotechnical subsurface investigations, the difficult underground conditions found at this site with regard to piling and the sensitive issues associated with slope stability in the valley, can be maintained by continuing with Golder Associates, the geotechnical engineers on the project. Golder Associates will be part of Delcan's team during the construction phase.

- The team also includes the architects who are responsible for the architecture of the project and who have been contributors to this unique bridge design.

- The archaeological consultants on the team can provide efficient additional services during construction if required, depending upon what is revealed during the actual excavation works and construction works carried out by the contractor.

- Delcan's bridge engineering office in Markham will provide specialist bridge engineering services and overall project management services during construction, continuing on with the work that they have provided during the environmental assessment, preliminary engineering and final design works.

- Delcan's Niagara Falls office is fairly near the site and their staff will be involved in all of the services during construction associated with roads, traffic, utilities, electrical works, and related tasks.

- Ellis Engineering of St. Catharines is a part of the team. Ellis Engineering is very experienced in providing contract administration, resident services and engineering services during construction to Niagara Region and they are involved with Delcan in the design of the project.

- The staff of Delcan and their key sub-consultants have made a commitment to Niagara Region to follow through from inception of construction to completion with the provision of these services and the continuation of the specific services of the key senior staff associated with the project

- The experience which Delcan has gained during the construction of the Strandherd-Armstrong Bridge over the Rideau River in the City of Ottawa, (which has a similar arch design as Burgoyne Bridge) will be invaluable in enabling the Delcan team to anticipate, deal with and resolve issues that may arise during the construction of the Burgoyne Bridge.

Document 25

Scott, Andrew

From: Vic Anderson <v.anderson@delcan.com>
Sent: Friday, June 28, 2013 8:59 AM
To: Marr, Jason
Cc: Brent Archibald
Subject: FW: Estimate for 2013 / 2014
Attachments: BT3316 - Burgoyne Bridge Detailed Design Cost Estimate - To end of March 2014.pdf

Hello Jason

We attach an estimate as requested to end of March 2014.

The estimate at $5.4 seems to be reasonable based on a percentage of time as well (which would be about $58.9 Million times 3 months divided by 30 months equals $5.9 Million)

Adding the 5 % basic contingency would increase these numbers.

A very organized contractor could exceed these numbers somewhat we think.

Regards

Vic

From: Brent Archibald [mailto:b.archibald@delcan.com]
Sent: Thursday, June 27, 2013 7:01 PM
To: Vic Anderson
Subject: RE: Estimate for 2013 / 2014

From: Marr, Jason [mailto:Jason.Marr@niagararegion.ca]
Sent: Thursday, June 27, 2013 2:39 PM
To: Brent Archibald (b.archibald@delcan.com); Vic Anderson
Subject: Estimate for 2013 / 2014

What do you estimate the value of work will be on the project (by the Contractor) by the end of March 2014? Estimate only

Jason Marr, P. Eng.
Senior Transportation Project Engineer
Niagara Region
2201 St. Davids Road,
P.O. Box 1042
Thorold, ON
L2V 4T7
T. (905) 685-4225 x 3552
F. (905) 685-0013
Niagara Region

Detailed Design Construction Cost Estimate

DRAFT

Item No.	Item Code	Item Description	Unit	Quantity	Unit Price	Total Cost	To end of March 2014 % Complete	To end of March 2014 Total Cost
Work Items								
1		Mobilization, Access and Envornmental Protection	LS	1	$ 905,700	$ 905,700	85	$ 769,845
2		Demolition and Removal of Existing Structure	LS	1	$ 1,900,000	$ 1,900,000	0	$ -
3		Traffic	LS	1	$ 50,000	$ 50,000	20	$ 10,000
4		Bridge	LS	1	$ 53,880,000	$ 53,880,000	Varies	$ 4,437,194
5		Electrical and Illumination Work	LS	1	$ 405,000	$ 405,000	10	$ 40,500
6		Road Work and Slope Restoration	LS	1	$ 478,550	$ 478,550	10	$ 47,855
7		Drainage and Utility Work	LS	1	$ 181,520	$ 181,520	25	$ 45,380
8		Bell Canada, Horizon, Enbridge	LS	1	$ 225,000	$ 225,000	30	$ 67,500
9		Landscaping	LS	1	$ 875,000	$ 875,000	0	$ -
		Total of Work Items				**$ 58,900,770**		**$ 5,418,274**
		Contingency (5%)				**$ 2,945,039**		
		Total Including Contingency				**$ 61,845,809**		

Notes:

1. Costs are in February 2013 Canadian dollars
2. Property Costs Not Included
3. Professional Services Costs Not Included
4. Cost Estimate Updated June 6, 2013
5. HST Not Included

Detailed Design Construction Cost Estimate

DRAFT

Item No.	Item Code	Item Description	Quantity	Unit Price	Total Cost	To end of March 2014 % Complete	To end of March 2014 Total Cost
B 001	0510-9010	Removal of Bridge Structure	1	$ 1,800,000	$ 1,800,000	0	$ -
B 002	0510-9015	Removal of Bridge Footings	500	$ 200	$ 100,000	0	$ -
Subtotal	Part B - Bridge Removal			Total Cost =	$ 1,900,000		$ -

Item No.	Item Code	Item Description	Quantity	Unit Price	Total Cost	% Complete	Total Cost
D 001	0511-0020	Rock Protection	190	$ 65	$ 12,350	0	$ -
D 002	0539-0040	Protection Systems	2,200	$ 500	$ 1,100,000	10	$ 110,000
D 003	0902-0020	Earth Excavation for Structure	8,991	$ 22	$ 197,797	20	$ 39,559
D 004	0902-0030	Unwatering Structure Excavations	1	$ 75,000	$ 75,000	20	$ 15,000
D 005	0314-0190	Granular B Type II Backfill to Structure	8,500	$ 13	$ 110,500	10	$ 11,050
D 006		Lightweight Backfill to Structure (EPS)	10,308	$ 175	$ 1,803,900	10	$ 180,390
D 007		Lightweight Backfill to Structure (Cematrix)	3,721	$ 150	$ 558,150	10	$ 55,815
D 007	0903-0012	Supply Equipment for Installing Caisson Piles	1	$ 400,000	$ 400,000	100	$ 400,000
D 008	0903-	Supply and Install Permanent Steel Liners (1200 diameter)	4,024	$ 1,600	$ 6,438,400	20	$ 1,287,680
	0903-	Supply and Install Permanent Steel Liners (600 diameter)	2,268	$ 650	$ 1,474,200	30	$ 442,260
D 009	0903-	Excavate Rock Sockets (1200 diameter)	602	$ 2,200	$ 1,324,400	15	$ 198,660
D 010	0904-	Concrete in Caissons	5,699	$ 350	$ 1,994,650	10	$ 199,465
		Mass Concrete (for EPS topping)	465	$ 300	$ 139,500	0	$ -
D 011	0904-0035	Mass Concrete (for working slabs)	110	$ 400	$ 44,000	15	$ 6,600
D 012	0904-0055	Concrete in Footings	2,334	$ 700	$ 1,633,800	20	$ 326,760
D 013	0904-0095	Concrete in Retaining Walls	412	$ 1,200	$ 494,400	10	$ 49,440
D 014	0904-0085	Concrete in Substructure	2,323	$ 1,100	$ 2,555,300	0	$ -
D 015	0904-	Concrete in Arch Anchor Blocks	459	$ 1,400	$ 642,600	0	$ -
D 016	0904-0105	Concrete in Deck	2,444	$ 1,400	$ 3,421,600	0	$ -
D 017	0904-0125	Concrete in Parapet Walls	238	$ 1,750	$ 416,500	0	$ -
D 018	0904-0135	Concrete in Approach Slabs	50	$ 950	$ 47,500	0	$ -
D 019	0904-0165	Dowels into Concrete	1,190	$ 30	$ 35,700	0	$ -
D 020	0905-0010	Reinforcing Steel Bar	1,282	$ 2,000	$ 2,564,000	5	$ 128,200
D 021	0905-0025	Stainless Steel Reinforcing Bar	243	$ 7,000	$ 1,701,000	5	$ 85,050
D 022	0905-0030	Mechanical Connectors	500	$ 50	$ 25,200	0	$ -
D 023	0905-0040	Stainless Steel Mechanical Connectors	1,310	$ 150	$ 196,500	0	$ -
D 024	0906-0011	Fabrication of Structural Steel	2,000	$ 3,860	$ 7,720,000	5	$ 386,000
D 025	0906-0020	Delivery of Structural Steel	2,000	$ 220	$ 440,000	0	$ -
D 026	0906-0030	Erection of Structural Steel	2,000	$ 1,585	$ 3,169,400	0	$ -
D 027	0906-	Fabrication of Structural Steel Arch	401	$ 8,492	$ 3,405,292	5	$ 170,265
D 028	0906-	Delivery of Structural Steel Arch	401	$ 484	$ 194,084	0	$ -
D 029	0906-	Erection of Structural Steel Arch	401	$ 3,486	$ 1,398,022	0	$ -
D 030	0906-	Arch Anchorages	1	$ 28,000	$ 28,000	0	$ -
D 031		Tie Anchorages	1	$ 25,000	$ 25,000	0	$ -
D 032		Multi Cable Strand Hangers	1	$ 930,000	$ 930,000	0	$ -
D 033		Multi Cable Strand Ties	1	$ 500,000	$ 500,000	0	$ -
		Multi Cable Strand Floorbeam Ties	1	$ 200,000	$ 200,000	0	$ -
D 034	0908-0010	Mesh Barrier	100	$ 1,000	$ 100,000	0	$ -
D 035	0908-0030	Parapet Wall Railing-Vehicle	676	$ 250	$ 169,000	0	$ -
D 036		Parapet Wall Railing-Vehicle and Cyclist	690	$ 300	$ 207,000	0	$ -
D 037	0911-0012	Coating of New Structural Steel	6,110	$ 100	$ 611,000	0	$ -
D 038	0911-	Coating of New Structural Steel Arch	2,033	$ 275	$ 559,075	0	$ -
D 039	0911-0020	Enviromental Protection During Coating of Structural Steel	173	$ 200	$ 34,600	0	$ -
D 040	0914-0011	Bridge Deck Waterproofing	4,157	$ 75	$ 311,775	0	$ -
D 041	0920-0010	Deck Joint Assemblies, Installation	36	$ 2,667	$ 96,012	0	$ -
D 042	0922-0010	Bearings	32	$ 7,000	$ 224,000	0	$ -
D 043		Temporary Piers	1	$ 1,700,000	$ 1,700,000	0	$ -
D 044		Foundations for Temporary Piers	1	$ 2,250,000	$ 2,250,000	10	$ 225,000
D 045		Access to Temporary Piers	1	$ 200,000	$ 200,000	60	$ 120,000
Subtotal	Part D - Bridge Structure			Total Cost =	$ 53,879,208		$ 4,437,194

Document 26

Scott, Andrew

om: Matthews-Malone, Betty
nt: Tuesday, November 26, 2013 5:27 PM
To: Group-Councillors
Cc: Cousins, Joe; DiPaola, Mike
Subject: Burgoyne Bridge Update

The construction tenders for Niagara Region's Burgoyne Bridge project have come in. The tenders are still unofficial, but have initially come in higher than projected. The lowest tender has come in at $69.9 million.

The tenders must now be thoroughly reviewed to analyze all the details contained within the bids. This is a standard practice. This review will include recommendations related to cost sharing and elements that were provisional and can be removed if necessary.

At this time, the Region believes the higher costs are primarily due to recent geotechnical findings and required design updates.

An update on the review of the tenders will be provided to Public Works Committee next week. The project award is anticipated early in the new year.

F.Y.I. and update.

tty Matthews-Malone, P. Eng.
Acting Commissioner of Public Works
Niagara Region
2201 St. David's Road
Thorold, Ont. L2V 4T7
905-685-4225, ext. 3335
betty.matthews-malone@niagararegion.ca

Document 27

June 10, 2013

Summary of Burgoyne Bridge Budget

Item Description	Approved Budget	Funding Application	Expenditures (To Date)	Current Estimate	Projected Cost at Completion
Pre-Application Work					
Detailed Structural Analysis			$567,370		$600,000
ELIGIBLE COST					
New Bridge		$49,000,000		$57,600,000	$57,600,000
Demo of Existing Bridge		$1,500,000		$1,900,000	$1,900,000
Engineernig & Approvals		$4,000,000			
a) Geotechnical			$694,424		$1,000,000
b) Detail Design			$1,077,645		$1,400,000
c) CA & Inspection				$3,349,532	$3,349,532
d) Other				$720,000	$720,000
Contingency				$3,000,000	$5,000,000
IN-ELIGIBLE COST					
EA Study		$1,000,000	$719,759		$719,759
Property		$4,500,000	$2,124,872		$2,624,872
Staff Time & Internal			$132,416		$300,000
TOTALS:					
Gross Amount:	$65,850,000	$60,000,000	$5,316,487		$75,214,163
Funding Partners:	$36,334,000	$36,334,000			$36,334,000
City Share:	$2,500,000				$2,500,000
Net Region:	$27,016,000		$5,316,487		$36,380,163
				DIFFERENCE:	**$9,364,163**

Document 28

Scott, Andrew

From: Marr, Jason
Sent: Thursday, November 28, 2013 10:49 AM
To: DiPaola, Mike
Subject: RE: Heads Up on Something for Tonight

Delcan, will speak to the fact that the engineers estimate prior to tendering was $62M not $60M any concerns?

From: DiPaola, Mike
Sent: Thursday, November 28, 2013 10:40 AM
To: Marr, Jason; 'v.anderson@delcan.com' (v.anderson@delcan.com)
Subject: FW: Heads Up on Something for Tonight

Heads Up....

From: Matthews-Malone, Betty
Sent: Thursday, November 28, 2013 10:39 AM
To: Bentley, Bob; Hodgson, Bill; Hodgson, Bill; Zimmerman, Debbie; Zimmerman, Debbie
Cc: DiPaola, Mike
Subject: RE: Heads Up on Something for Tonight

Somewhat of a convoluted history but will do my best to summarize;

- Original construction budget approx. $50M
- Concerns flagged re geotechnical problems
- Pre-tender estimate $60M but budget not adjusted – recommended to wait for tender results
- Low bid - $69.9M so delta of $20M.
- Concern that contingency too low based on bids
- We have worked with Corporate Services to come up with financing plan for a $25.5M delta that would allow overall capital budget strategy to move
- Still reviewing bids (unofficial at this time), need to confirm funding from partners (St. Catharine's, Utilities) and need to vet provisional items in bids (not substantial in $'s)
- Targeting January award which will include answers to above, i.e. actual delta

We have discussed options relative to redesign/retender but a couple of fears – 1st concern is around timing of Building Canada funding and 2nd - we cannot guarantee the prices will be lower even with an attempt for a less expensive structure.

Design team will be at meeting tonight to answer any technical questions. I'll forward your questions this morning and they may be able to get something back to you before the meeting. Thanks.

Betty Matthews-Malone, P. Eng.
Acting Commissioner of Public Works
Niagara Region
2201 St. David's Road
T[illegible]ld, Ont. L2V 4T7
[illegible]-685-4225, ext. 3335
betty.matthews-malone@niagararegion.ca

From: Bentley, Bob
Sent: Thursday, November 28, 2013 9:57 AM
To: Matthews-Malone, Betty; Hodgson, Bill; Hodgson, Bill; Zimmerman, Debbie; Zimmerman, Debbie
Cc: McQueen, Chris; Murphy, Margaret
Subject: Re: Heads Up on Something for Tonight

How much higher is the tender amount than budget? I recall there were options for consideration in design and some were nice to have not must have. What modifications to planned design works are being considered to bring the Burgoyne Bridge back into budget?

Bob Bentley
Mayor
Town of Grimsby
"The Gateway to Niagara" &
"Friendly By Nature"
O-905-309-2001, H-905-945-2710
BB- 905-531-3501

From: Matthews-Malone, Betty
Sent: Thursday, November 28, 2013 09:01 AM Eastern Standard Time
To: Hodgson, Bill; Hodgson, Bill; Bentley, Bob; Zimmerman, Debbie; Zimmerman, Debbie
Cc: McQueen, Chris; Murphy, Margaret
Subject: Heads Up on Something for Tonight

As you may be aware, the Burgoyne Bridge tender closed this week and costs are higher than anticipated. This situation had been flagged in previous reports and memos to Council but as we now have the pricing, we have formulated a financing strategy. If the capital budget (which includes the financing strategy) is approved during tonight's budget discussion, it will allow award of the contract early next year. Timely award of contract allows us to continue to take advantage of the $36M contributions from the Federal and Provincial partners as there is a deadline to the funding (2017).

As part of the financing strategy we are recommending deferral of the Greenlane Roundabout. We have had a recent turn of events on this project that puts it at risk for implementation next year. We had been negotiating with a property owner for a required piece of property. Approximately 3 weeks ago they indicated that they had been advised by their solicitor that they could receive more compensation than originally discussed. The original offer was based on fair market value plus an allowance. The new ask is substantially above that amount. While we hope that this issue can be resolved next year, the outcome of those negotiations may alter the approach to the works, i.e. resurfacing versus roundabout. Our hope is that we can get the project back on line for 2015 implementation.

I wanted to give you a heads up on this. If you have any question before this evening I can be reached by cell at 905-401-6179.

Betty Matthews-Malone, P. Eng.
Acting Commissioner of Public Works
Niagara Region
2201 St. David's Road
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betty.matthews-malone@niagararegion.ca

Shortfall	25.500	
BB Additional funding options	**25.500**	
2013/2014 Cap budget		
Addition DC revenue	1.500	additional rev
Round about Grimsby	2.200	deferral - offset with 406 reduction
CNR	9.000	deferral - offset with 406 reduction
Rds Rehab	1.000	reduction to 2014 budget
406 interchange	3.000	reduction in exisitng budget
	16.700	
2013/ 2014 Op budget		
Bike lanes/SS	0.500	Transfer to CL in 2013 - no draws in 2013 (need to understand impact on YE fore
Debt place holder	4.500	Transfer to CL - debt deferral see debt tab
	5.000	
Other options		
PW review of projects	1.10	(3.1 M identified less 2 M CVR commitment)
St. Cath Cost share incr	1.00	(Mike L to confirm amount)
	2.10	
Balance O/S	**1.70**	(additional close out required)

Document 29

Niagara Region

REPORT TO: **Public Works Committee**

SUBJECT: **Status on the Replacement of the Burgoyne Bridge (Structure No. 081220) which carries Regional Road 81 (St. Paul Street West) over the 12 Mile Creek, in the City of St. Catharines**

RECOMMENDATION

That this report **BE RECEIVED** for information on the status of the Burgoyne Bridge Replacement project.

PURPOSE

The purpose of this report is to provide an update on the status of the replacement of Burgoyne Bridge (Structure No. 081220) which carries Regional Road 81 (St. Paul St. West) over the Twelve Mile Creek and Highway 406, in the City of St. Catharines.

BUSINESS IMPLICATIONS

~~There isn't any business implications associated with this report since it is strictly an update on the status of the detailed design engineering assignment for the Burgoyne Bridge replacement project.~~As outlined in further detail below, recent geotechnical findings indicate a potential cost pressure of up to $7 million due to concerns with the stability of slopes on which the abutments and approaches to the bridge rest.

No adjustment to project budget for the Burgoyne Bridge project is being proposed at this time. Instead it is recommended that the results of the competitive tender process be obtained first in order to provide a more accurate measure of what the total funding needs will be, and ensure the lowest potential prices are received.

The project schedule currently anticipates a tender in late August/early September, with a report to Council to award in November 2013. Since the proposed 2014 Capital Budget will be prepared for Council in advance of the tender closing date, additional funding for this Burgoyne Bridge will be excluded from the budget package provided to Council. A provision will be made, however, in the financing plan that supports the 2014 Capital Budget and 10-year plan in order to revise funding for the Burgoyne Bridge ~~to be added to~~for the year 2014 if required. ~~The additional~~A revised funding request, if needed, would be brought to Council for approval in November at the time of tender award and before finalization of the 2014 Budget.

REPORT

~~The detailed design assignment for the replacement of the Burgoyne Bridge is nearing completion and is approximately 95 percent complete. In the last update (PW 16-2013), we reported that the design team was facing challenges due to the poor soil conditions throughout the project site. We have now received some recent recommendations and findings from our geotechnical consultant that show there are concerns over the stability of the existing slopes on which the abutments and approaches to the bridge rest. These recent findings are in addition to the poor soil conditions in the valley that have been previously communicated and reported on. As a result, this has provided several challenges to the design team, mainly being able to safely load the slopes particularly at the approaches and abutment supports for the new bridge.~~

~~In light of this new information, the design team has had to re-design the abutment supports and the approaches to the new bridge in order to meet current engineering standards and to meet acceptable factor of safety levels. This has resulted in a delay to the tendering phase for this project.~~

~~In addition, since our last update, Region staff has successfully pre-qualified nine (9) contractors to participate in the formal tendering process for this project. The nine contractors satisfying the requirements of the Request for Pre-Qualification (RFPQ) issued by the Region's purchasing department are included in Appendix A.~~

~~Further to the last update provided through PW 16-2013, Finally, there has been a new development with respect to maintaining access to St. Joseph Street (See Appendix B for site map). Currently, there are three (3) residential properties that exist on St. Joseph Street running east-west under the Burgoyne Bridge on the south slope. The Region is currently working with the City to purchase these homes which would eliminate the requirement to keep St. Joseph Street open. The Region's role in this process would be to enter into a cost sharing agreement with the City in which the City would be the purchaser of the properties.~~

~~T~~The following is an update ~~of the various issues surrounding~~on the Burgoyne Bridge Replacement Project:

Detailed Design and Geotechnical Considerations

The detailed design is ~~at~~ approximately 95 percent complete. Recent geotechnical investigations have revealed that the challenges faced with the poor soils throughout the valley are also impacting the stability of the existing slopes on the north and south approaches to the bridge. At a meeting with ~~our~~ the geotechnical sub-consultant on April 23, 2013, Golder Associates reported on their latest work on the valley side slopes including static and seismic considerations and calculations. They confirmed that:

- The side slopes do not in their current natural condition have an appropriate static factor of safety.
- The side slopes do not in their current natural condition have an appropriate seismic factor of safety, and
- The roads at these approach areas will settle under the anticipated loads.

Commented [MC1]: Explain in plain language what static factor is (or remove the technical explanation and simply state engineering concerns with the strength banks supporting the bridge)

In order to address these concerns, Delcan has been working with Golder from the outset to use Expanded Polystyrene Foam (EPS) and sub excavation at the crests of the slopes. Designs have proceeded using this methodology, subject to confirmation from Golder that the extent of such works is appropriate, and that settlements would be in an acceptable range.

However, as described by Golder on April 23, the extent of such works at the crests of the valley slopes, as necessary to resolve the above-noted issues, is more substantial than was anticipated to date and will add additional costs to the estimated budget for the project.

Contractor Prequalification

Regional staff has successfully pre-qualified nine (9) contractors to participate in the formal tendering process for this project. The nine contractors satisfying the requirements of the Request for Pre-Qualification (RFPQ) issued by the Region's purchasing department are included in Appendix A.

Cost Sharing Negotiations (City of St. Catharines) & St. Joseph Street Update

The City of St. Catharines has been presented with a range of cost between $1,818,750 and $5,478,000 depending on the availability of funding from the federal and provincial government. It should also be qualified that the estimated cost for these items are preliminary estimates only and will be revised once more detailed cost estimates ~~ed~~ and tendered values become available. Since ~~our~~ the last update, Region staff has received an agreement in principle on the items to be cost shared by the City of St. Catharines.

In addition, the Region has agreed to cost share on the City's purchase of the three residential properties on St. Joseph Street (See Appendix B for site map). On June 10th, City of St. Catharines Council approved the purchase of the three properties in order to permanently close St. Joseph Street.

The detailed design for the bridge project was completed to allow St. Joseph Street to remain open; however, in light of the developments with the recent geotechnical work and the discovery of the slope instability issues, it was determined that the costs of reconstructing and maintaining St. Joseph Street outweighed the costs to acquire the properties. The benefits to the Region during the Burgoyne Bridge replacement include:

- A mitigation of the Region's risk and exposure in dealing with the residents
- An elimination of any unforeseen site conditions associated with this work
- An easier approach to the construction staging, and
- A simplification of the overall construction operations

As a result, Region staff has agreed to enter into a cost sharing agreement for the purchase of the properties. Niagara Region's financial contribution on this matter will be $500,000.

Construction Cost Estimate

Since the beginning of the Environmental Assessment phase and as the detailed design has progressed, there have been several updates and changes to the estimated cost of

the project and the overall budget. This is not uncommon for a project of this size and complexity. Due to the recent challenges being faced regarding the poor soils and slope instability issues, the ~~estimated~~ potential increase in cost from ~~our~~ the original estimates is in the order of $7 ~~Million~~million. It should be noted that the estimated cost of the structure itself has not changed since the initial estimates were developed in the preliminary design stage~~; however, the poor soils and slope instability issues discovered during the geotechnical investigation has caused an upward pressure on the estimated cost to construct the foundations and the approaches to the bridge~~.

~~Also, t~~The ~~anticipated~~ potential cost increase~~s~~s presented in this report are only estimates, ~~and~~ and will be further assessed ~~whenuntil such time that the~~ the project is tendered and competitive pricing is received~~ the project team will not know the true cost of the project~~. Further review of tenders in other municipalities that has indicated that favourable pricing relative to the currently budgeted amount has been received on some similar projects. Should such pricing be achieved through the tender process for the Burgoyne Bridge, mitigation of the soil condition and slope stability cost pressures may be realized.

Schedule

To date, ~~we~~staff have only received a portion of the geotechnical report. It is expected that this information will be made available to the design team by the end of July. If this information is received in a timely manner, the project team is anticipating that the detailed design can be completed by August. As a result, the tender of the Burgoyne Bridge Replacement project will be delayed until late August or early September.

It is expected that the tender phase will take between 4-6 weeks to complete. In addition, following the tender period, Regional staff will need to complete a detailed tender review and finalize the cost sharing agreement with the City of St. Catharines. Based on this schedule, staff anticipates bringing a report to PWC recommending a tender award in November 2013. ~~We~~ It is anticipated that the contractor will be able to mobilize and start construction by the end of the calendar year. ~~It is~~The estimated ~~that the~~ duration of the project ~~will~~is ~~be~~ 2 to 2.5 years.

REPORTS PERTINENT TO THIS MATTER

PW 16-2013	Status Update on the Burgoyne Bridge Project, in the City of St. Catharines February 19, 2013
PW 118-2012	Provincial & Federal Funding Agreements Replacement of Burgoyne Bridge November 27, 2012
PW 99-2012	Status Update on the Burgoyne Bridge Project, in the City of St. Catharines October 16, 2012
PW 48-2012	Award of the Detailed Design Assignment for the Burgoyne Bridge April 24, 2012
PWA 07-2012	2012 Completion of the Class Environmental Assessment (EA) Study for Burgoyne Bridge (Structure No. 081220), in the City of St. Catharines January 10, 2012

~~PWA 07-2012 Completion of the Class Environmental Assessment (EA) Study for Burgoyne Bridge (Structure No. 081220), in the City of St. Catharines~~
~~CSD 177-2011 Proposed Improvements to Bidding Process Methodology~~
~~Report 1-2011 to Public Works Bidding Evaluation Process Review Committee~~
~~CSD 39 – 2012 Corporate Services Committee February 22, 2012~~
~~CSD 40 – 2012 Corporate Services Committee February 22, 2012~~
~~CSD 54 – 2012 Corporate Services Committee April 4, 2012~~

~~PW 99-2012 – Status Update on the Burgoyne Bridge Project, in the City of St. Catharines~~

Submitted by:

Kenneth J. Brothers, P. Eng.
Commissioner of Public Works

Approved by:

Patrick Robson
Acting Chief Administrative Officer

This report was prepared by Jason Marr, Senior Transportation Project Engineer and reviewed by Mike DiPaola, Associate Director Transportation and Engineering, Glen Cowan, Associate Director Public Works Finance in collaboration with Corporate Services, ~~and~~ Joe Cousins, Director Transportation Services and Corporate Services- Finance staff.

APPENDICES

Appendix A - List of Prequalified Contractors

Appendix B - Site Location Map

Document 30

	BCF Application	Hatch Report	Delcan - Prelim Design	Oct 2012 Budget Update	June 2013 Budget Summary	Delcan Design Construction estimate - June 27, 2013
EA, studies and approvals	$1,500,000.00			$600,000.00	$719,759.00	
Property Acquisition	$5,000,000.00	$10,000,000.00		$3,800,000.00	$2,624,872.00	
Utility Relocation	$1,500,000.00	$1,000,000.00	$650,000.00			$225,000.00
New Bridge Structure	$34,000,000.00	$31,680,000.00	$41,730,000.00	$49,640,000.00	$57,600,000.00	$53,880,000.00
Construction of new roadway approaches	$3,000,000.00	$200,000.00	$630,000.00	$1,500,000.00		$478,550.00
Temporary works to maintain access and construction stating	$3,000,000.00	$600,000.00				
Slope stabalization	$2,000,000.00	$300,000.00				
Demolition & removal of existing structure	$1,000,000.00	$2,000,000.00	$2,000,000.00	$1,900,000.00	$1,900,000.00	$1,900,000.00
Engineering	$3,500,000.00	$5,367,000.00		$5,500,000.00	$6,469,532.00	
Contingency	$4,500,000.00	$5,367,000.00	$2,785,800.00	$3,560,000.00	$5,000,000.00	$2,945,039.00
Other		$2,790,840.00		$850,000.00	$900,000.00	$2,417,220.00
pre-HST total	**$59,000,000.00**	**$59,304,840.00**	**$47,795,800.00**	**$67,350,000.00**	**$75,214,163.00**	**$61,845,809.00**
HST (If applicable)			$5,735,496.00			$7,421,497.08
Total	**$59,000,000.00**	**$59,304,840.00**	**$54,009,254.00**	**$67,350,000.00**	**$75,214,163.00**	**$69,885,764.17**

Niagara Region

Public Works
1815 Sir Isaac Brock Way, Thorold, ON L2V 4T7
905-980-6000 Toll-free: 1-800-263-7215

MEMORANDUM

PWC-C 13-2017

Subject: Response to Councillor Request – Burgoyne Bridge, Scrap Steel

Date: March 21, 2017

To: Public Works Committee

From: Ron Tripp, P.Eng., Commissioner of Public Works

This memo is provided in response to a request made by Councillor Petrowski at the Public Works Committee of January 31, 2017, for an update respecting steel being taken from the Burgoyne Bridge construction site. A response has been prepared by the Contract Administrator and reads as follows:

> *This will confirm that, as part of our engineering services during construction assignment, while serving as Contract Administrator for the Region, Parsons together with our sub-consultants, has provided and continues to provide as part of our scope of services, quality assurance inspections for the Burgoyne Bridge Replacement Contract.*
>
> *Review of shop drawings, periodic shop and ongoing resident field quality and quantity assurance inspections of permanent works (including structural steel and reinforcing steel for concrete) are within Parsons' scope of services. In the context of these services, validation of the quantity of work performed is undertaken in order that, as Contract Administrator for the Region, Parsons is in a position to on a monthly basis recommend progress payments to the Contractor by the Region. That said, the inspections are intended to provide the Region with the expected level of assurance, from both a qualitative and quantitative perspective, that all materials recommended for payment by the Region under the construction Contract have in fact, been incorporated as intended into the permanent works. This means that whether it is lump sum or unit price items being measured for payment under the Contract, the quantity recommended for payment accurately reflects the quantity of material incorporated into the completed permanent work. The presence of a full -time Contract Administration and inspection team has allowed the above approach to be taken by Parsons on behalf of the Region.*
>
> *In the case of the demolition of existing structures, such as structural steel from the existing bridge, the construction Contract assigns the disposal of all the scrap material to the Contractor, who upon its demolition, takes possession of all the scrap material. As Contract Administrator, our assessment for payment of the demolition items under the Contract (whether the demolition be of the old existing bridge or demolition of the temporary structures used in new construction) only*

requires an assessment of the degree of completion of the demolition item including the removal from the site of any resulting scrap and debris. Under the Contract, as is typically the case, there is no requirement for an accounting of the ultimate disposal of the scrap materials which become the property of the Contractor. In the particular case of the Burgoyne Bridge, for example, it is possible that the significant quantity of temporary works (including structural steel works) used in the erection of the steel bridge superstructure, resulted upon their removal in a relatively large quantity of apparent "scrap" steel being disposed of, once the temporary works the scrap material comprised was no longer required on site.

We trust that this clarification is of use to the Region.

Bill

William M. Moore, P.Eng.
Principal Engineer, Bridge Structures

It is the responsibility of the Contract Administrator to certify that all permanent structural steel specified, supplied and installed under this contract has been in accordance with the sealed design and contract documents. The presence and adequacy of the structural steel is generally obvious and visually verifiable in the final form of the structure. Similarly, it is the responsibility of the contract administrator to certify that all permanent reinforcing steel (cast into concrete) is supplied and installed in accordance with the sealed design and contract documents. The Contract Administrator has provided confirmation of this through full-time resident inspection services and evidenced through site inspection records and photographs (see attached). These records form the basis of payment to the contractor for completed works. In summary, all required reinforcing steel has been incorporated into the permanent structure and no additional payments have been made for steel not incorporated into the structure.

Photographs of scrap steel and shipping tickets were provided by the Councillor that an anonymous complainant alleges represent scrap and/or extra steel that was stolen from the site. The following comments are offered relative to the information provided:

- The information provided reflects what staff considers to be typical images of a construction site of this nature. There is an indication of minimal surplus reinforcing steel. It is normal for a contractor to order a percentage of additional steel for schedule and placement contingency. This steel is not paid for under the contract.
- There are photographs of structural steel elements, fasteners and connectors that appear to be residual from temporary works and/or false work. This is

normal for a project of this type. These materials, required to facilitate the construction of certain structure elements, are the property of the contractor, are not intended to be retained by the owner, and are not paid for directly.

- There are also photographs of steel from the original Burgoyne structure. The contract bid clearly indicated that, with the exception of designated structural elements to be retained for historical reference, the removal and disposal of the original Burgoyne structure was the responsibility of the contractor and their pricing for demolition reflects this requirement.
- Finally, for context, staff has attached photographs of the significant temporary structures that were required in order to construct the two spans and structural arch over Twelve Mile Creek and Highway 406. The three structural steel bents (green and rusty) were purposely built for this project, represent a considerable cost, and remain the responsibility of the contractor. It can be reasonably assumed that portions of these structures will be re-purposed for future works and portions of these structures will be sold as scrap metal. The Region has no role in determining the final disposition of these structures. The cost of supplying, installing, removing and disposing of these structures has been accounted for in the contractors' price to construct the permanent Burgoyne Bridge structure. This was always anticipated and is typical for a construction project of this nature.

In closing, based on the response provided by the Contract Administrator, the alleged evidence provided through the Councillor, and the preceding comments, Staff has no concerns with respect to what has been paid through the contract or with the quantity / integrity of steel that has been cast into concrete for the Burgoyne Bridge project. No further action is recommended at this time.

Should the Councillor or the complainant wish to pursue the matter further and/or acquire further evidence, it is respectfully suggested that he do so through the appropriate law enforcement authorities.

Respectfully submitted and signed by

_____
Ron Tripp, P.Eng.
Commissioner of Public Works

Appendix 1 – Photos: Burgoyne Bridge Replacement – Rebar Installation
Appendix 2 – Photos: Burgoyne Bridge Replacement – Temporary Towers

Burgoyne Bridge Replacement Project - Rebar Installation

Burgoyne Bridge Replacement Project – Temporary Towers

Man arrested for theft of aluminum beams from Burgoyne Bridge site

Stolen beams worth more than $20,000

News Oct 12, 2016 Niagara This Week - St. Catharines

Sometime between 5 p.m. Oct. 5 and 6 a.m. Oct 6, suspects stolen 40 14-foot beams from the Burgoyne Bridge construction site. The beams are worth $20,000 in all and can be identified by the blue and white stickers in this photo. - For Metroland

ST. CATHARINES – Niagara Regional Police have arrested a 63-year-old St. Catharines man in relation to the theft of 40 aluminum beams from the Burgoyne Bridge construction site last week.

On Friday, Oct. 7, police were called to the site for the theft complaint. They learned that sometime between 5 p.m. on Wednesday, Oct. 5 and 6 a.m. the next day, unknown suspects entered the gated and locked compound where they spent considerable time dismantling four large metal prep platforms. In all, 40 aluminum beams, each measuring 14 feet, 5 inches in length and 3 inches wide, were stolen from the site. Each beam weighs about 50 pounds and is identified with blue and white stickers bearing the name 'Pro Forme' and 'Hi-Life'. The stolen beams are worth about $20,000.

Late Tuesday night, police said they have arrested and charged a suspect.

Dan Rizzardo has been charged with theft over $5,000, driving while suspended, and fail to comply with his probation order.

Tags: **News (/niagara-news/) - Crime (/niagara-news/crime/), News (/niagara-news/)**