

Appendix D. River Hydraulics Report



northwest hydraulic consultants

memorandum

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To: Nadia Contant, Project Biologist
Spencer Environmental Management Services

From: Eugene Yaremko (NHC)

CC:

Re: **LRT Cloverdale Bridge Project**
North Saskatchewan River Survey

Date: 21-12-2010

No. Pages: 2 + Figures

Project No.: 17575

Ref. No.:

Because morphological information was quite limited for the North Saskatchewan River in the reach encompassing the proposed LRT Cloverdale bridge, the city of Edmonton retained NHC to undertake a comprehensive river survey. A single river cross section was available in the vicinity of the pedestrian bridge that was obtained as part of the provincial river floodplain study. As well, there were a few uncontrolled cross sections that were apparently collected as part of an aquatic study. Ultimately, much better morphological information will be required for EA assessments and engineering design work during upcoming phases of this project.

With the approval of the City, NHC undertook a river survey of the North Saskatchewan River November 15, 2010. River bottom and bank data were collected at sufficient density to enable generation of a 0.25 m contour interval plan that would be utilized for hydraulic modelling. The survey consisted of utilizing a boat-mounted continuous river bottom echo sounder, together with satellite-based horizontal positioning equipment that provided precise accuracy with regard to locations of x,y,z coordinates. Characterization information of the river bed and bank material was also collected.

Figure 1 provides the 0.5 m contour plan generated from the survey. The length of surveyed river extended approximately 1.1 km downstream and 1.0 km upstream of the pedestrian bridge crossing near the easterly boundary of Louise Mc Kinney Park.

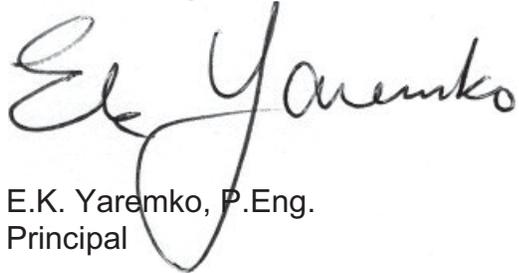
Figure 2 provides a 0.25 m contour interval plan centered on the proposed bridge site.

The survey data and drawings are available in digital form to members of the bridge EA and design team.

If you have any questions, please give me a call in our Edmonton office at (780) 436-5868.

Sincerely,

northwest hydraulic consultants

A handwritten signature in black ink that reads "E.K. Yaremko". The signature is written in a cursive style with a large, looping flourish at the end of the name.

E.K. Yaremko, P.Eng.
Principal



RIVERDALE

LOUISE
McKINNEY
PARK

GREYSON HILL

SURVEYED WL
NOV 15, 2010

100 0 100 m
SCALE 1:5,000

NORTH SASKATCHEWAN RIVER

SURVEYED WL
NOV 15, 2010

CLOVERDALE
PEDESTRIAN
BRIDGE

CLOVERDALE

LOW LEVEL BRIDGE

DESIGN NOTES

1. ALL DIMENSION IN METERS UNLESS OTHERWISE INDICATED
2. GRID DATUM: UTM ZONE 12, NAD 83
3. SURVEY CONDUCTED BY NHC NOVEMBER 15, 2010
4. CONTOUR INTERVAL 0.5 m



SPENCER ENVIRONMENTAL MANAGEMENT	
LRT BRIDGE DESIGN NORTH SASKATCHEWAN RIVER	
RIVER BATHYMETRY	
Dwg. 7575-002	20 DEC 2010 Figure 1
northwest hydraulic consultants ltd.	



SURVEYED WL
NOV 15, 2010

SURVEYED WL
NOV 15, 2010

NORTH SASKATCHEWAN RIVER →

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SPENCER ENVIRONMENTAL MANAGEMENT	
LRT BRIDGE DESIGN NORTH SASKATCHEWAN RIVER	
CONTOUR PLAN	
Dwg. 7575-001	20 DEC 2010 Figure 2
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