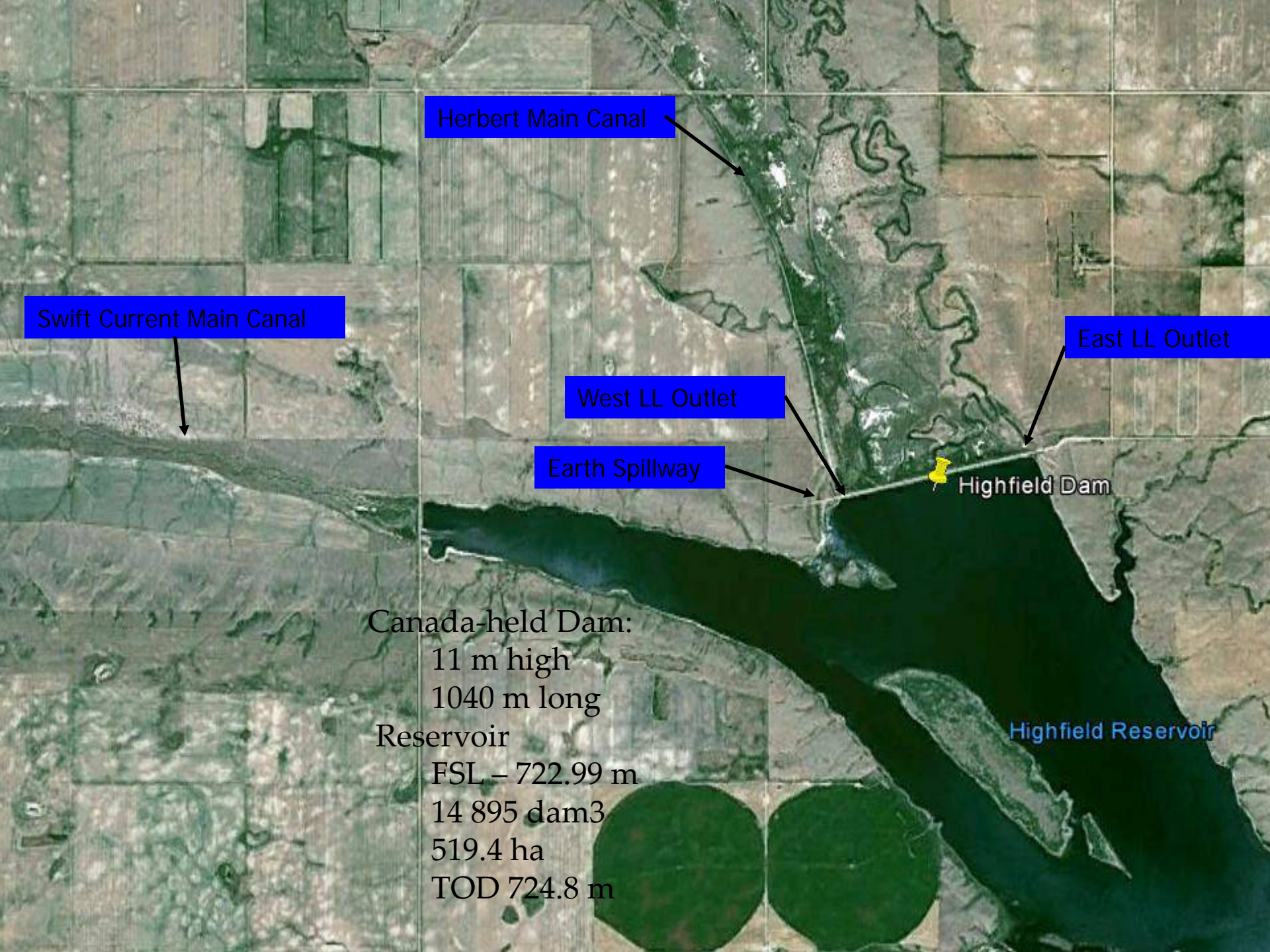


Highfield Dam

Engineering Services for Final Design and
Construction Management

Tender Period Meeting presentation

February 10, 2015



Herbert Main Canal

Swift Current Main Canal

West LL Outlet

Earth Spillway

East LL Outlet

Highfield Dam

Canada-held Dam:

11 m high

1040 m long

Reservoir

FSL - 722.99 m

14 895 dam3

519.4 ha

TOD 724.8 m

Highfield Reservoir

Highfield Dam

Background Information

- Originally constructed in 1941/42
 - Sequence of embankment raises until 1950
 - Low-level outlet works refurbished in the early 1990s
- Classified as “Significant”
- Recent DSRs indicated:
 - Insufficient freeboard
 - Inadequate capacity to convey the IDF
 - Questionable structural integrity of the LLOs
 - Unacceptable factors of safety against embankment failure

Embankment



Looking East



Looking West

East Low Level Outlet



Rehabilitation Activities

- Raise the embankment by 0.9 m
- Build a granular blanket drain at the downstream toe
- Slip-line the West Low Level Outlet
- Decommission the existing East Low Level Outlet
- Build new East Low Level Outlet and Spillway
- Upgrade existing West Spillway
- Raise a 0.6 km section of RM road

Current ToR

Required Services

- To provide the final engineering designs for a completely rehabilitated Highfield Dam (excluding the West LLO)
 - Toe berm and embankment
 - West Spillway
 - East Spillway/LLO
 - RM road raise
- To undertake a geotechnical investigation
 - To identify and confirm appropriate borrow and waste areas
- To assist with Environmental and Regulatory approvals
- To provide engineering support during construction of the **Toe berm** and the **West Spillway**
 - Includes Tender Services, Resident/Non-resident engineering and Environmental Monitoring
- Until March 31, 2016

Current Schedule

Task	Deliverable deadline
Kick off meeting	Within 2 weeks of contract award
Updated work plan	Within 2 weeks of kickoff meeting
Design and Tender Pkg: Toe Berm	April 30
Design and Tender Pkg: West Spillway	May 31
Geotechnical Investigation	July 15
Design and Tender Pkg: Embankment	Sept 30
Design and Tender Pkg: East LLO/Spillway RM Road raise	March 31, 2016
Construction Support for: Toe Berm West Spillway	March 31, 2016

Current ToR

Option to Extend

- To provide the same construction support as described under “required services” during the construction of:
 - Embankment raise
 - East Spillway and LLO
 - RM road raise
- AAFC will enact this Option prior to March 31, 2016 which would then extend the contract until March 31, **2017**
- Dependent on internal approvals and budgets

Project Constraints

- Water Management
 - Spring Flood passage (complete)
 - Minimize reservoir draw down
 - Lowering the reservoir in excess of the “normal” irrigations causes major downstream flooding of Reed Lake
- Environment
 - Migratory bird nesting – set back distances and/or timelines may apply
 - Permit requirements
 - Aquatic habitat protection permit
 - DFO
- GoC procurement takes time
 - PWGSC will be involved with this process
 - Required construction advertisement period
- Toe Berm materials
 - AAFC intends to procure granular materials in advance, these materials will be used in construction.
- Rip rap
 - We have some rip rap available – but not enough for the entire project, will still need to procure

For information only: West Low Level Outlet

- Was tendered for construction in 2014, but will be completed by July 2015
- Construction work will rehabilitate:
 - Upstream Section:
 - Line the existing concrete conduit with HDPE
 - Gatewell
 - Replace the gate and rebuild the gatewell platform (complete with safety fencing)
 - Downstream Section
 - Line the existing conduit with HDPE
 - Reinforce the canal with riprap

West LLO



Project Management details

- Serena Ward will be the AAFC PM, with support from Glenn McLaughlin
- Hank Bartkiewicz will be the contracting officer for PWGSC
 - Officially all questions during Tender period must go through Hank Bartkiewicz Hank.Bartkiewicz@pwgsc-tpsgc.gc.ca

Questions/Discussion

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