



Reach 11 – Flood Mitigation

Presented by:
Paul Maciejowski, CET, Stantec Consulting Inc.
Kevin Zeggil, Pidherney's Inc.



Reach 11 - Introductions

Owner: Regional Municipality of Wood Buffalo

Engineer: Stantec Consulting Inc. / Thurber Engineering Ltd.

Contractor: Pidherney's Inc.

Presenters:

Paul Maciejowski, CET, Senior Project Manager, Stantec Consulting Inc.

Kevin Zeggil, Estimator, Project Manager, Pidherney's Inc.



Reach 11 - Agenda:

1. Project Background
2. Project Design
3. Construction
4. Completion
5. Questions



Reach 11 – Background

- The Regional Municipality of Wood Buffalo (RMWB) has a long history of overland flooding, with 17 notable floods since 1835, of which 16 have been ice jam flood events.
- Reach 11 is one of 13 flood management projects undertaken by the RMWB.
- Reach 11 began as the secondary egress road to facilitate an alternate route out of the lower Fort McMurray downtown to Highway 69.
- Egress road design was started in 2017.
- The first phase was identified to protect Waterways from flooding in the Clearwater River.
- The project was tendered summer of 2021 with construction commencing in fall and completed in fall of 2023.



Reach 11 – Project Design

Design consisted of:

- 21 Hectares Clearing
- 630,000 m³ Borrow Loaded to Trucks
- 150,000 m³ Common Excavation
- 423 m of various Diameter Reinforced Concrete Pipe
- 2 Clearwater River Outfalls
- 28,000 t of Asphalt Concrete Pavement
- Stormwater Piping and Control Structures
- 2,200 m of Electrical Conduit
- Project Cost: \$26 Million



Reach 11 Construction

Construction started in fall of 2021. Several environmental items had to be addressed from the start.

- The project was changed from a road construction project to a berm/levee. This changed the environmental permitting requirements.
- Clearing started in October and was completed December 22, 2021.
- Outfalls were installed in November / December during low water in the Clearwater River.
- Alberta Environment (AE) visited the site twice during the fall 2021 due to public requests.



July 2022





September 2022



October 2022

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Reach 11 Construction 2022

- The Borrow Pit required constant monitoring by Thurber and Pidhenrey's due to escarpment movement.
- Geotechnical requirements dictated that borrow excavation had to start from the top (outside) of the excavation down.
- Topsoil stockpiles around edge of borrow could be no higher than 1.5m.
- Eco-Plan and best management practices were used to maintain erosion control on the steep and moving slopes of the plateau.
- New road alignment was through old industrial area. Debris had to be disposed.



Reach 11 Construction 2022

- The project experienced heavy rains with frost still in the ground. Project did not have defined drainage patterns, so Pidherney's moved quickly to slow and capture water.
- No issues we observed when the site was visited by the RMWB environmental staff or AE.





Reach 11 Construction 2023

- Thurber installed new slope monitoring wells along Saline Plateau bank.
- Added additional rip rapping off Saline Creek Parkway.
- Paving was completed by September 2023.
- Landscaping: 88 trees planted along trail system and boulders placed along parking and access roads.
- Final Erosion Control and Rip Rap.



Reach 11 Construction

- Client, Consultant, Contractor coordination was managed through bi-weekly meetings.
- Full-time onsite inspection by Stantec and Thurber with materials testing being carried out by Pidherney's full time engineering firm Parkland GEO Ltd.
- All parties worked as a team to address issues as they arose.



June 2023



July 2023



August 2023





Questions?