

***Proposal for
Saskatchewan Crescent and 16th Street
Slope Remediation***

Meewasin Board of Directors

July 8, 2016

Presentation Outline

- Slope Stability Background
- Evaluation
- Recommended Solution
- Next Steps

Historic Slope Stability

1. McRaney Slide (1929)
2. 15th Street Slide (1950)
3. 15th Street Slide (1954)
4. 16th Street Slide (2014-2016)



16th Street Lower Slope



16th Street Lower Slope



16th Street Upper Slope



16th Street Upper Slope





May 13, 2016, Courtesy of Saskatoon Police Service



June 27, 2016

Golder Associates' Slope Analysis

- Comprehensive testing
 - Geometry (grade of slope)
 - Geology (soil composition, strength)
 - Groundwater
- Information used to model seven different remediation options

Evaluation Criteria

1. Factor of safety
 - Likelihood of future movement
2. Estimated cost
3. Estimated construction time
4. Other advantages and disadvantages
 - Environmental, aesthetics, impact to local residents, upper and lower trail impacts

Options Considered

1. Let nature take its course / Do nothing
2. Sub-drainage system to lower water table
3. Shear key/Toe berm
4. Stone columns
5. Lightweight fill (e.g. EPS geof foam at 17th)
6. Tie-back wall
7. Soldier (H) pile and lagging retaining wall

Recommended Solution

Soldier (H) Pile/Lagging Retaining Wall and Horizontal Drainage

- # of H-Piles: 36 spanning 70m
- Lagging Wall Length: 44m
- Max Wall Height: 3.2m

Estimated Cost with Drainage ~\$2.0M

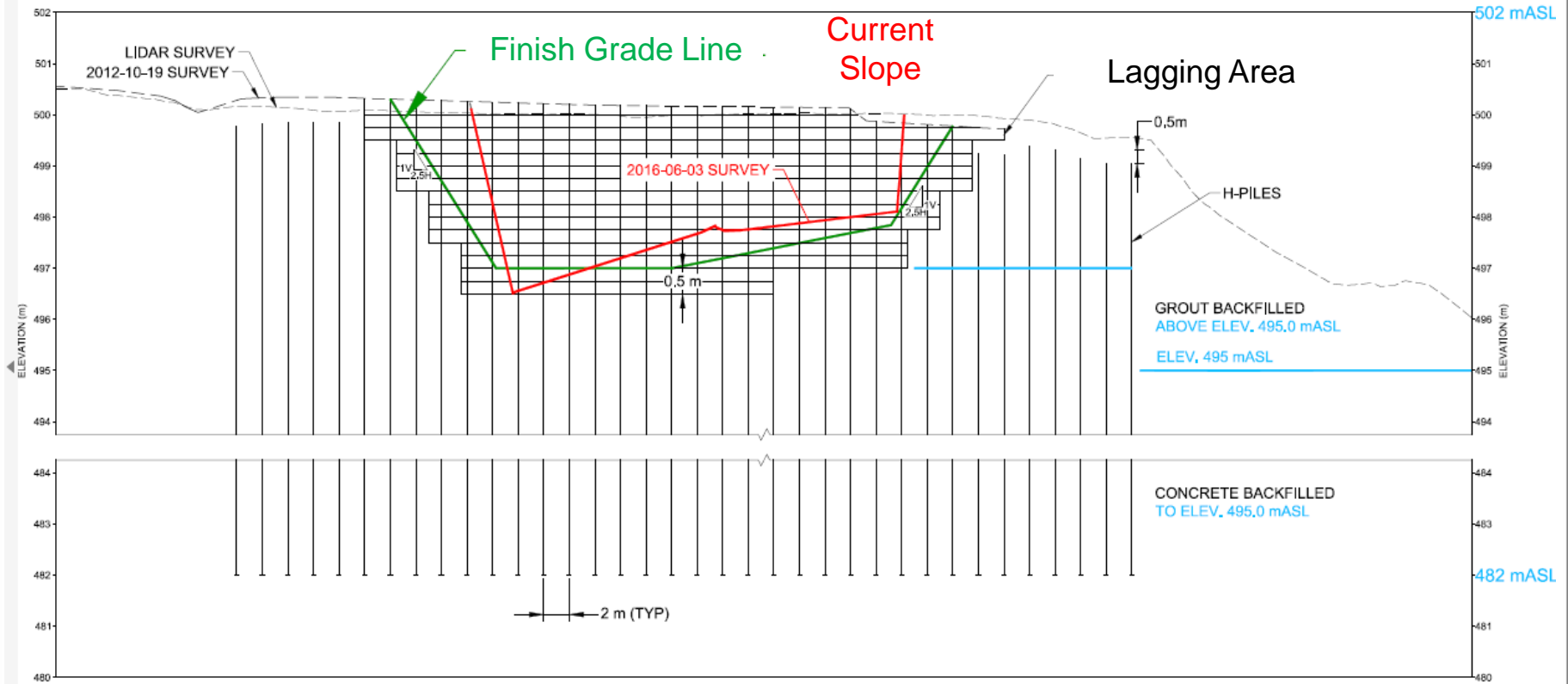
- Plus design, management, revegetation

Estimated Construction Time: 5 to 7 weeks

Small Construction Footprint



Looking from River towards Saskatchewan Crescent



SCALE 1:400
 VERT. SCALE 1:100

1
3

CROSS SECTION 1

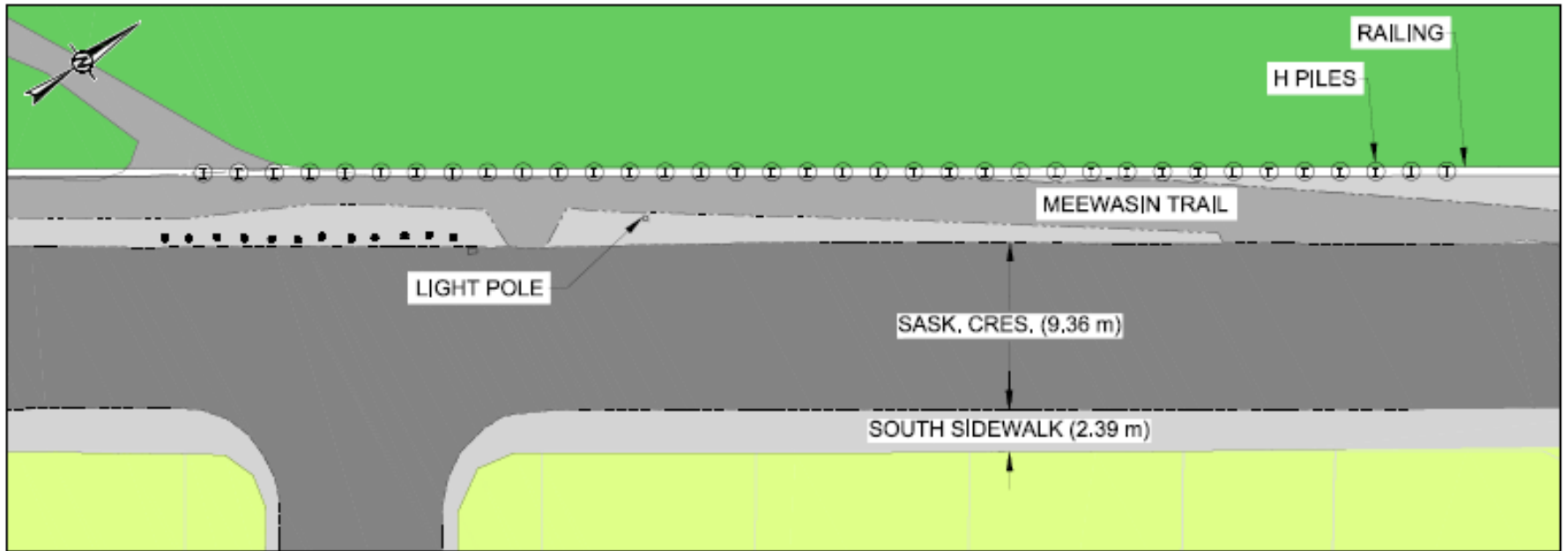
DRAFT

Landscaping

- Upper Meewasin Trail upgrade to ~ 4m
- Guard Rail
- Lower Meewasin Trail re-grading and re-vegetating
 - Meewasin to plant 2,000 native trees & shrubs
 - 2,000 m² lower trail and 350 m² below wall

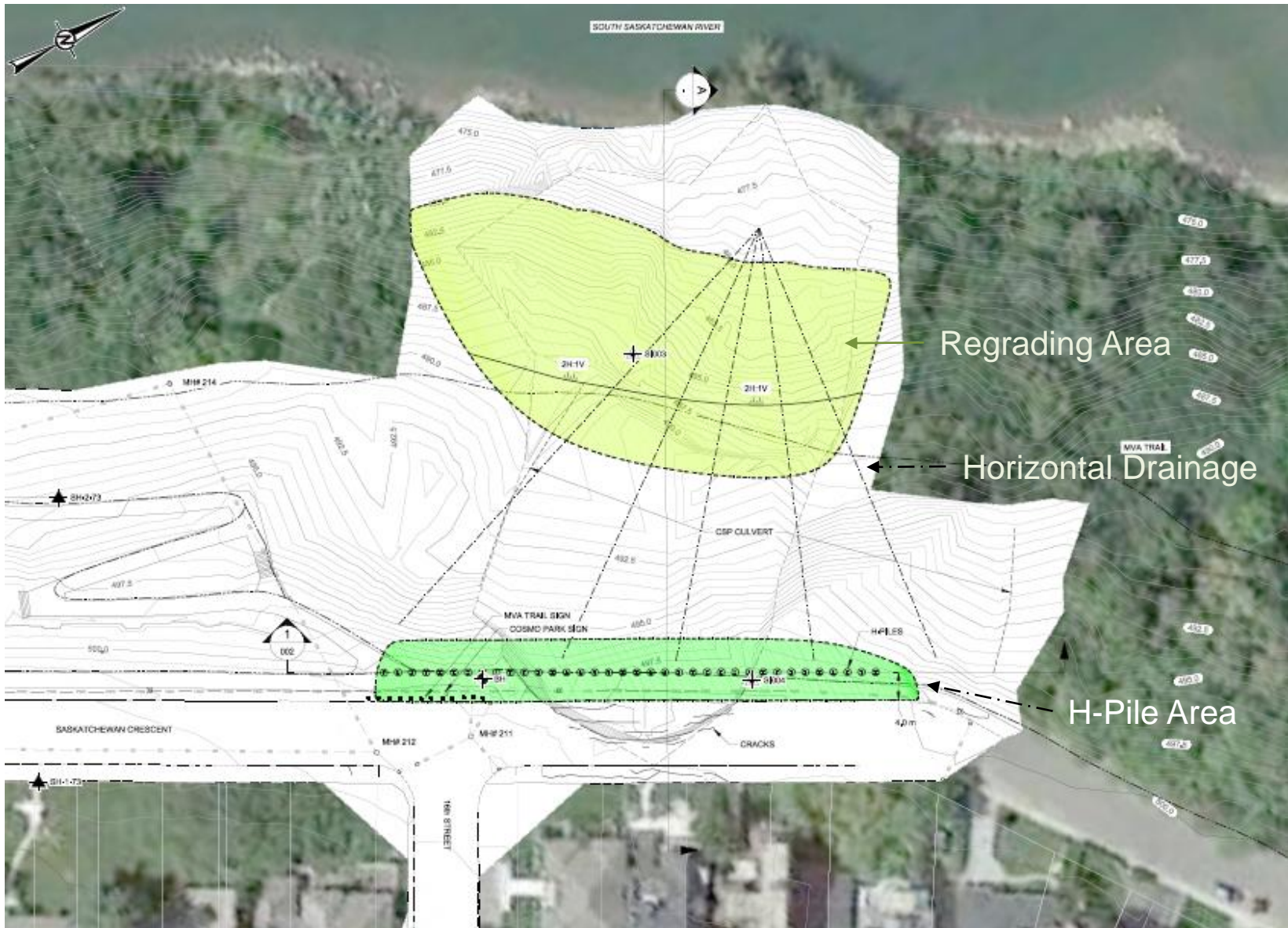


Upper Meewasin Trail



DRAFT

Meewasin Trail upgrade from ~ 2.5 metres to just under 4 metres after curbing, guardrail.



DRAFT

Next Steps

- Tender & Construction Process
 - Request for Qualifications closed June 30
 - Issue Construction Tender: Mid-July
 - Start Construction: Mid-August
 - Finish Repaving and Re-vegetating: 2017