Shoreline Management Plan Update 2018

Open House – Zurich

August 18, 2018

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Outline

01 Study Overview

02 Review of ABCA Recession Rate Analyses

03 Shoreline Management Plan Update

04 Next Steps

Study Overview

Project Background

SHORELINE MANAGEMENT PLAN

Considerations for Shore Protection Structures

1994

SHORELINE MANAGEMENT PLAN

Update to reflect the wording of the Provincial Policy Statement on Natural Hazards

2000

CONSULTANT'S RECOMMENDATION REPORT ON UPDATING SMP

- Public Consultation
- ABCA BOD resolution
- BOD continues to endorse the policies in the 2000 SMP and re-engage public

2016

2017 ABCA PUBLIC ENGAGEMENT PROCESS

- Update to 1994 Considerations for Shore Protection Structures
- Recommendations for ABCA permitting process for shore protection structures

2017

2018 ABCA PUBLIC ENGAGEMENT PROCESS

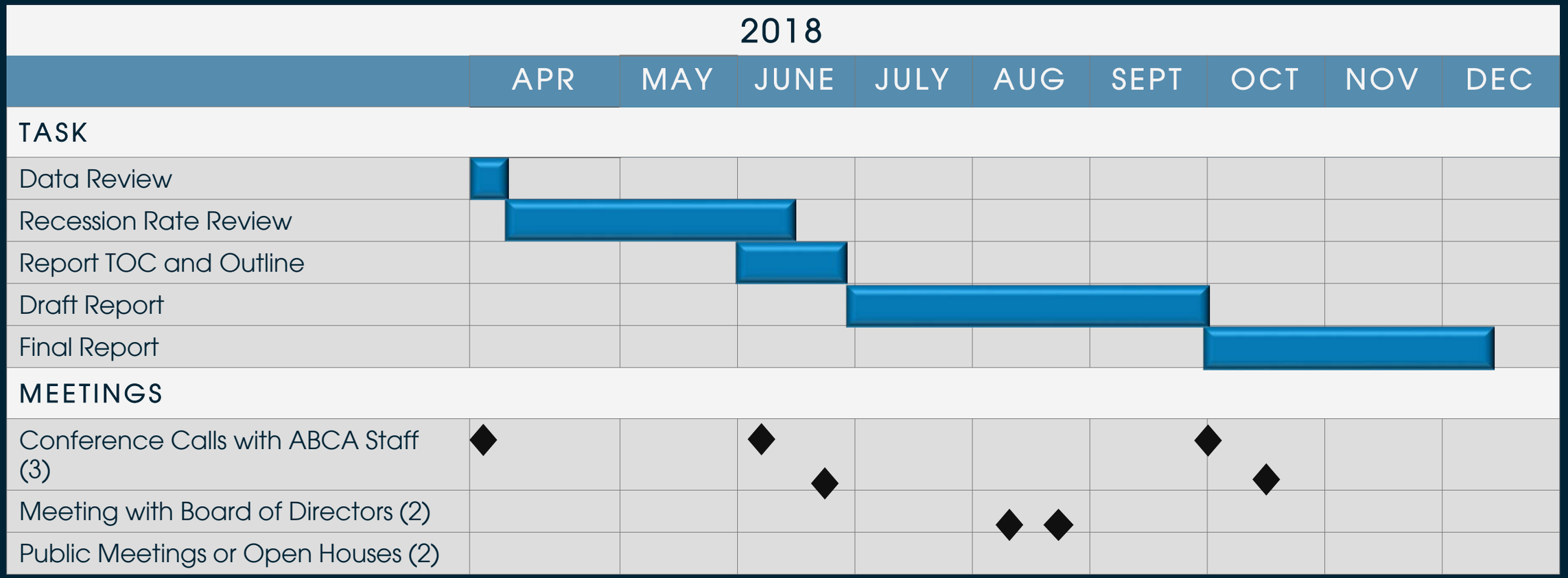
- Review of Recession Rate Analyses
- SMP Update 2018

2018

Project Objectives

- Develop updated ABCA Shoreline Management Plan 2018
- Review and provide recommendations for calculating AARR
- Update Development Guidelines (ABCA)
- Public Open Houses to receive feedback and input from the Public

Project Scope and Schedule



Review of ABCA Recession Rate Analyses

Review of ABCA Recession Rate Analyses

- Technical review of datasets and methodologies used to determine shoreline recession rates
  - Recession rates are used to calculate the Average Annual Recession Rate (AARR), which in turn is used to map the hazard limits
- Provide recommendations on data sets and methodologies to be used
- Make recommendations for a defensible methodology that can be used by property owners who wish to undertake a site-specific assessment

Review of ABCA Recession Rate Analyses

- Methodology used to estimate recession rates at ABCA has evolved over time:
  - Shoreline Management Plan 2000
    - comparison of 1935 survey to 1988 mapping
  - 2016 Consultant Recommendation Report
    - update based on comparison of 1973 Shoreline Atlas to 2007 Imagery
  - 2016 ABCA Updates
    - comparison 1973 Imagery to 2007 Imagery

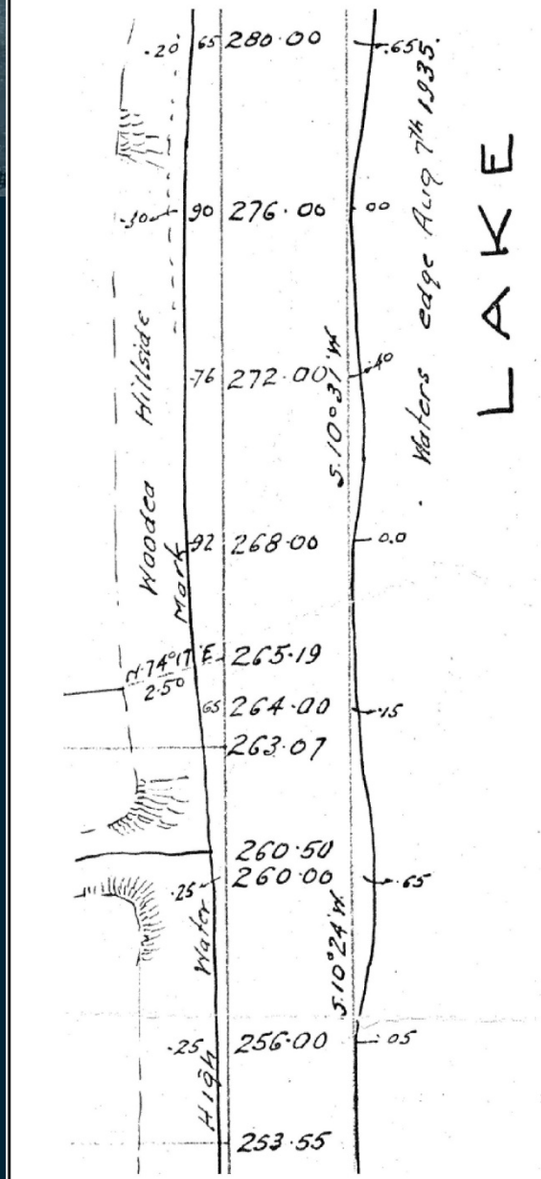
SMP 2000

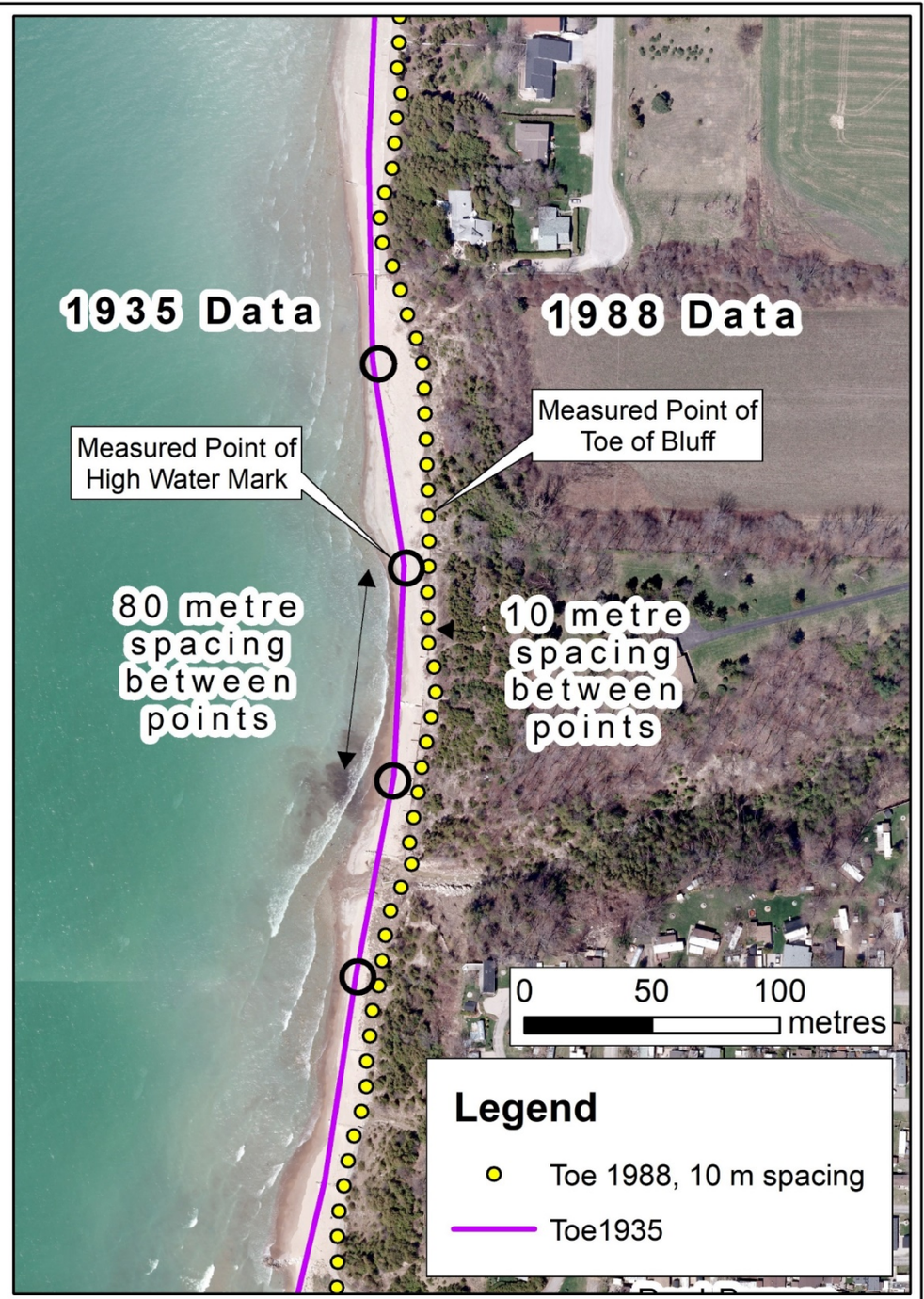
- 1935-1988 (55 years)
- Comparison of toe of bluff; top of bluff introduces less errors
- High Water Mark used to delineate toe; HWM is not always consistent with toe
- Survey used 80 m transect spacing; this is coarser than spacing typically used today

B. — 19 81

Excerpt from 1935 Survey

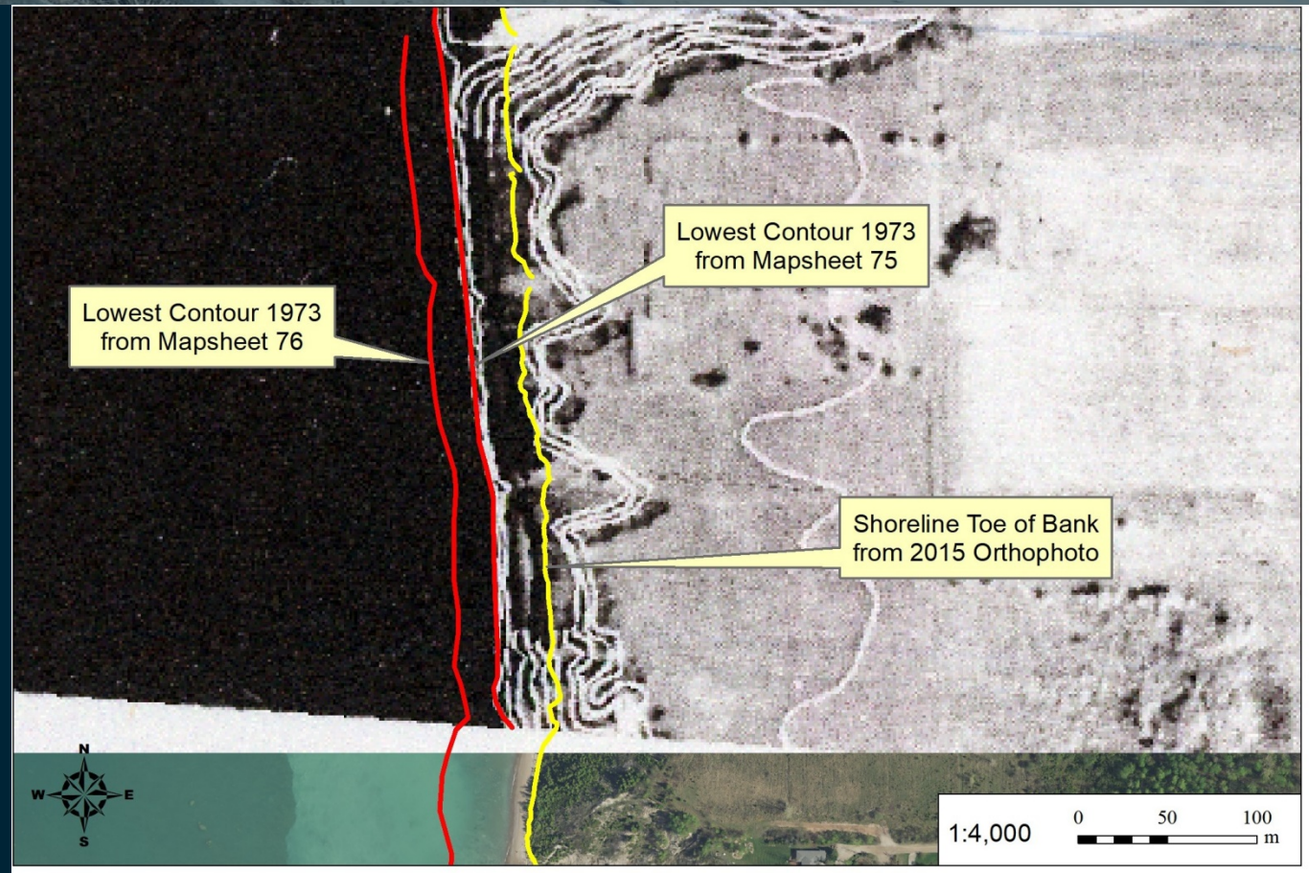
All dimensions are in Chains.
1 Chain = 20.1168 metres
(Frame is rotated North down for readability.)





2016 Consultants Report Update

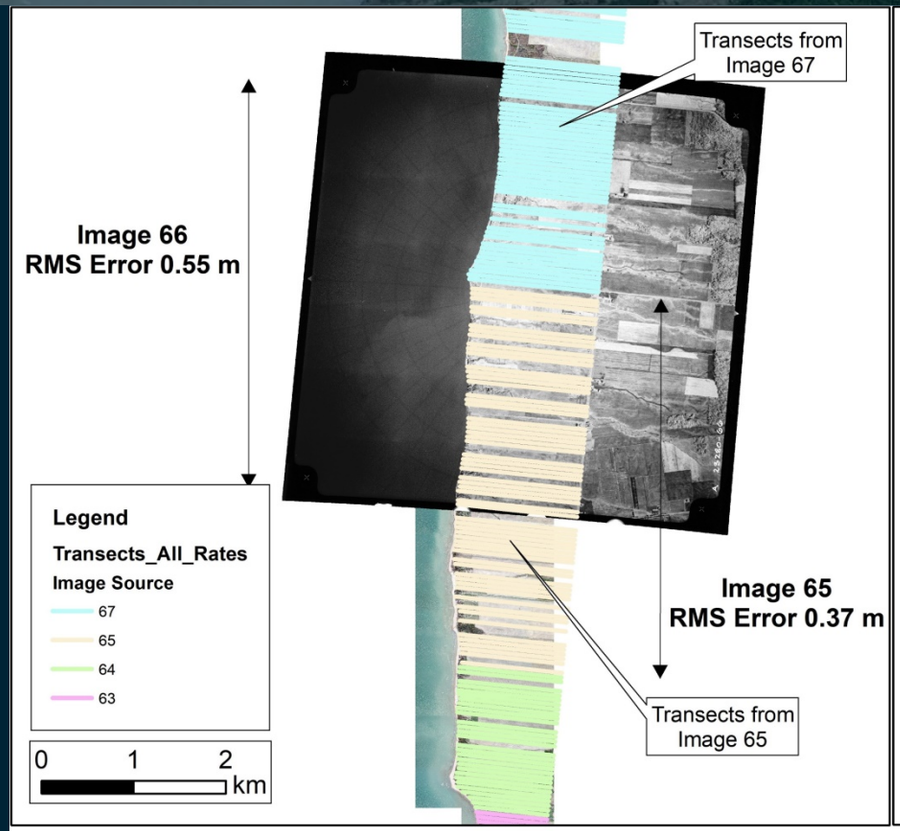
- 1973-2007 (34 year comparison)
- Comparison of toe of bluff; top of bluff introduces less errors
- Geo-registration resulted in misalignment of features; 1973 Atlas not suitable
- Image quality made it difficult to extract features; Use of original 1973 imagery would provide better results



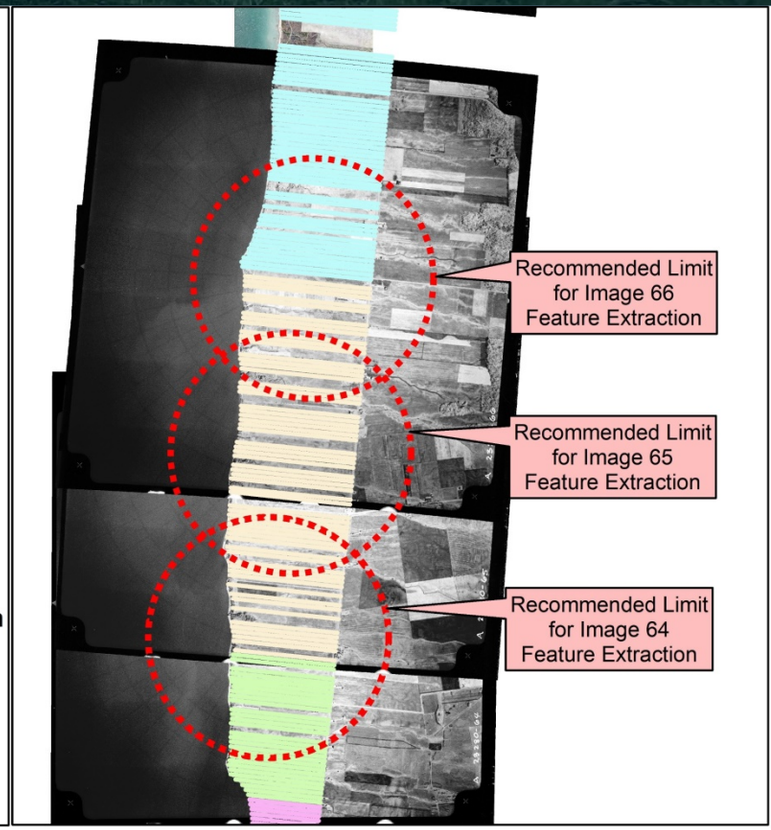
B. — 19 81

2016 ABCA Updates

- 1973-2007 (34 years)
- Georegistering original 1973 imagery gives improved results
- Use of top of bluff feature provides improved results
- Selection of photos for comparison



The transects were chosen from the source airphoto images with the lowest RMS Error.



The centre of each photo image can be used because the RMS Error values are all sufficiently low.

Recommendations for ABCA Approach to Estimating AARR

01 In general, for Best Practice use earliest available historic photos considering scale and quality.

02 Use top of bank comparison of 1973 and 2007 imagery to estimate AARR.

03 These new rates supersede the previous rates from the 1935 to 1988 comparisons.

04 The LHSEM ground surveys can be used for validation.

Recommendations for ABCA Approach to Estimating AARR

05 Reduce image distortion in the 1973 imagery by cropping photos to utilize the central, less distorted section of each image.

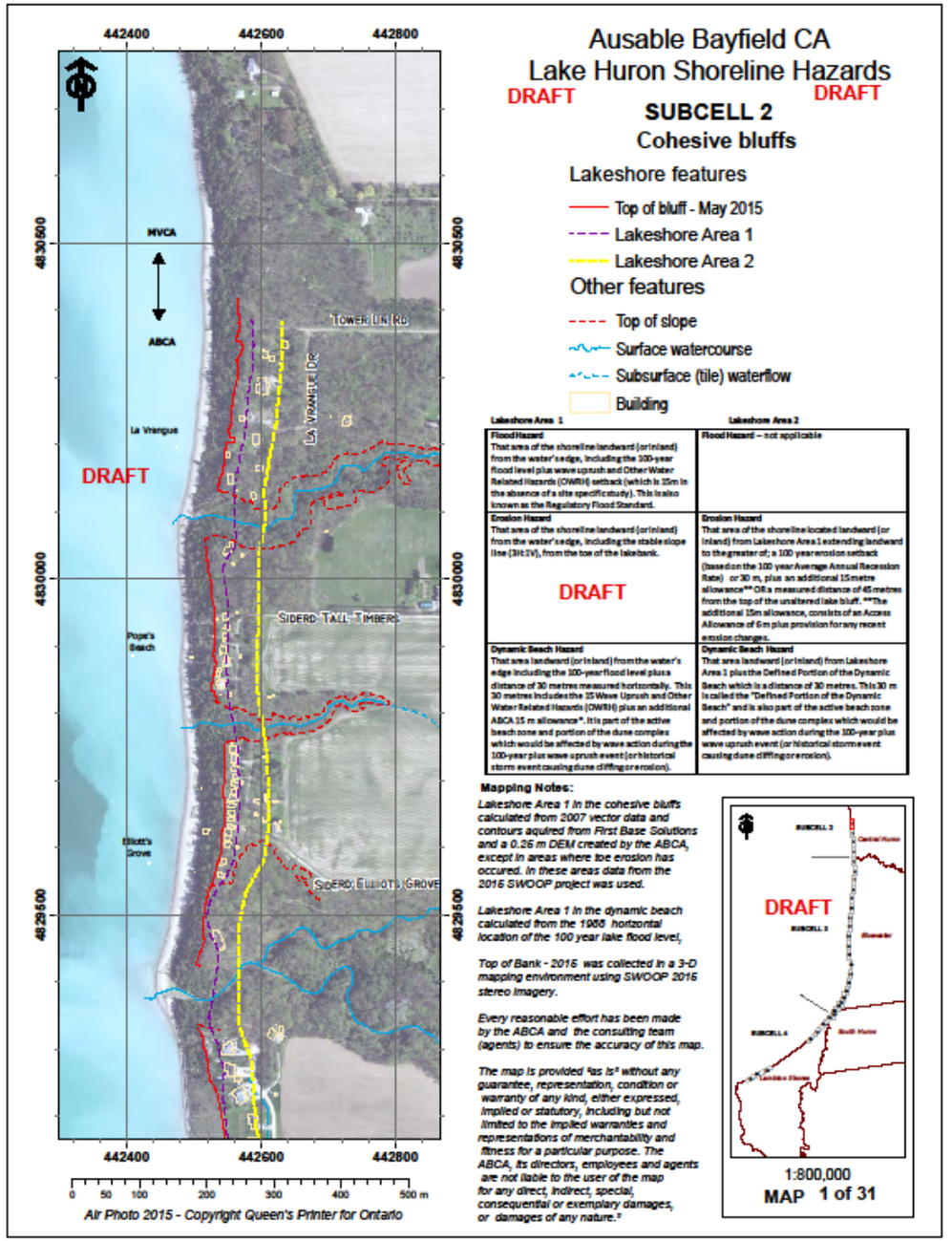
06 When budget permits, extend the period of comparison by utilizing the 1955 imagery.

07 When new imagery becomes available, review the quality to determine if it would be worthwhile to extend the period of comparison.

08 Undertake a comparison of the smoothing function used in calculating the AARR, with results for other approaches such as S.D.

Recommendations for Site Specific Assessment of AARR by Property Owner

- Analysis must provide additional data that improves the temporal range of the analysis.
- Analysis must maintain or exceed the level of accuracy of the ABCA analysis.



Site Specific Assessment Draft Checklist

- [x] Duration of comparison extends the temporal range of comparison
- [x] AARR represents unprotected shoreline
- [x] Imagery or data must be georegistered; a geomatics or surveying professional must be retained to complete the analysis and provide a report outlining QA/QC procedures
- [x] Scale of aerial photography used should 1:20,000 or better; scale of survey should be 1:1,000 or better
- [x] Regional erosion rates are considered. It is not acceptable to measure the rate at an individual property in isolation. The bluff retreats at a consistent rate, though failures may occur at different times.


50 m

SMP 2018 Update

SMP 2018 Update

- 2000 Shoreline Management Plan
- 2016 Consultant's Recommendations Report
- 2017 Considerations for Shoreline Protection Structures
- Updated Development Guidelines

Consistent with Provincial Policy (2014) and Technical Guide (2001)

2018 Shoreline Management Plan

SMP 2018 Update
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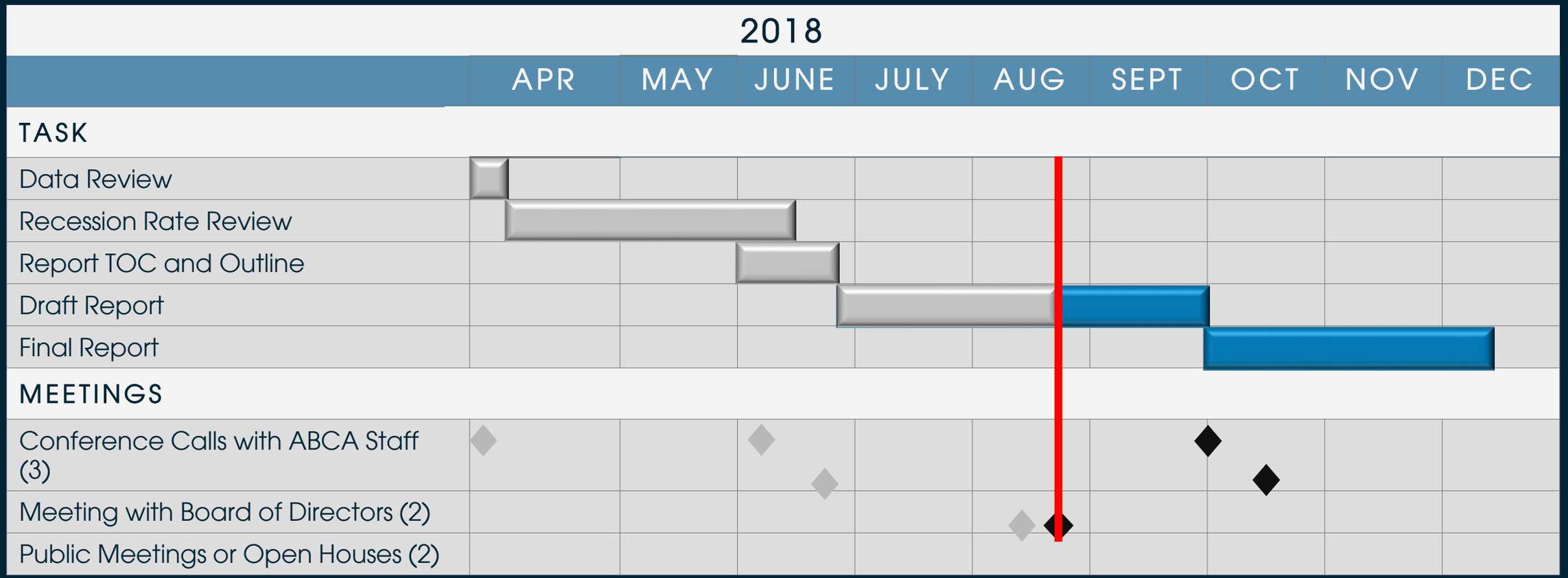
Next Steps

Next Steps


2018
APR
MAY
JUNE
JULY
AUG
SEPT
OCT
NOV
DEC
TASK
Data Review
Recession Rate Review
Report TOC and Outline
Draft Report
Final Report
MEETINGS
Conference Calls with ABCA Staff (3)
Meeting with Board of Directors (2)
Public Meetings or Open Houses (2)

Thank you

Questions?

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