

Astotin Creek Basin Study Project Plan

Project Scope:

In 2018, most major creek systems in northern Strathcona County saw water rise to extreme levels, putting the area at risk of imminent flooding. The Astotin Creek basin was the primary focus as it was where majority of the creek and tributaries spilled over its banks. This resulted in farmland flooding and threatened private residences in three key locations. The County responded to protect residents' homes, closed many roads, monitored and pumped at bridge structures. This flooding was comparable to floods in 2011.

In Spring 2020, we saw the same issues arise and the spring melt had very similar characteristics to the 2018 floods. Furthermore, since the spring melt completed the above average rainfall has had many areas sustain a large amount of land flooded and many roads closed for months.

Upon review of the flooding that occurred, it was clear that a detailed study would be required to understand what has changed and what is now taking place in the basin.

The study will include the following key items:

- Review of background data, including information on historic and existing drainage projects in the basin.
- A physical inventory of watershed features, flooding and erosion conditions, and natural areas and wetland resources.
- Hydrologic and hydraulic modelling to define the creek flow and future action plan options.
- Erosion and flooding assessment to define impacts of changed watershed and inform implementation action plan.
- Agriculture impacts review to be included in study to look at action plan options.
- Identify drainage constraints and opportunities and alternatives for stormwater and an overall concept plan for the basin.
- Stakeholder consultation and decision-making workshops
- Develop an action plan for a phased implementation of improvements.

The main concern will be the changes in water flow that continue to be different from the historical flow rates and water volumes in some portions of the basin continuing to impact both public and private infrastructure.

We have seen a significant impact on the basin from changes and channelization that has occurred through the drier years through private property and land improvements.

Objectives:

The key objectives for this project area:

- Develop clear understanding the historical drainage patterns
- Develop a detailed understanding of the changes and constraints to the basin drainage courses
- Develop an action plan for a phased implementation of improvements
- Develop a clear understanding of stakeholder perspectives on the drainage basin issues and concerns
- Protect the flooding lands for future generations
- Minimize impacts from the creek and tributaries on adjacent lands
- Adapt existing areas to the change in drainage patterns with minimal property impacts
- Preserve and look to improve existing drainage courses

Partners/Stakeholders:

The Astotin Creek Basin Study success will be impacted by our partners listed below. Key steps in creating a comprehensive report with an action plan that can be implemented and supported will be open dialogue and engagement with

- Elk Island National Park
- Lamont County
- Alberta Agriculture
- Alberta Environment and Parks
- Strathcona County residents
- Industrial partners

Proposed Budget:

Proposed 2021 budget of \$650,000

High-level Project Schedule:

December 2020	Budget approval
Q1 2021	RFP/consultant selection
Q1-Q2 2021	Project detailed plan reviewed and information gathering
Q2-Q3 2021	Resident and stakeholder engagement #1
Q3-Q4 2021	Historical review and high-level basin survey
Q1 2022	Draft assessment review
Q1 2022	Resident and stakeholder engagement #2
Q2 2022	Detailed study and action plan finalized