

## CREATIVE SENTENCING FINAL TERM REPORT

Submitted by: Nose Creek Watershed Partnership

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### PROJECT TITLE

Nose Creek Wetland Inventory and Valuation Project

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### WORK TERM PROJECT DESCRIPTION

**Time Period:** February 2020 – March 31, 2021

## INTRODUCTION

The NCWP worked to develop a wetland inventory with Dr. Creed, leveraging the work she and her research team had already completed into a product that would be useful to supporting decision-makers in the Nose Creek watershed. The following objectives were identified in collaboration with Dr. Creed:

- a) Provide a firm baseline inventory and prioritization of high valued wetlands for future retention and restoration
- b) Support municipalities in their current review of development plans
- c) Inform future wetland integration discussions with respect to stormwater management
- d) Align with a current model project by providing more detailed wetland information to consider in the future evaluation of development scenarios

The Nose Creek Wetland Inventory Project was completed in March 2021. The following provides a summary of the key project outcomes, and a summary of next steps. Details of project are provided in the attached Nose Creek Wetland Inventory Project Final Report (Creed 2021).

## PROJECT HIGHLIGHTS

- Existing and drained wetland inventories for the Nose Creek watershed were developed and are available for review and discussion
- Wetland function and value scoring parameters were developed based on GOA wetland policy, and on NCWP priorities. A preliminary wetland valuation was completed.
- Draft wetland priorities for retention and restoration are available for further discussion
- A preliminary digital map indicating wetland values is available in .pdf and .shp file format for use by the NCWP to support a decision-making tool
- A plan is being drafted by NCWP to guide validation of the wetland inventory, and to support discussions regarding wetland priorities (wetland retention, integration and restoration)

## WETLAND PRIORITIES DRAFT APPROACH

Due to timing of final product delivery, the NCWP did not have the desired amount of time to work with the preliminary wetland inventory and valuation to explore management strategies. However, using the wetland inventory and valuation, the NCWP developed an initial approach to identify wetlands for retention, integration and restoration. In its current form, this inventory and valuation will provide a valuable tool for landuse planners within the watershed.

Hydrologic and water quality functions are inherent to all wetlands, and thus many wetlands rate highly in the Nose Creek watershed when these indicators are used to value wetlands. The NCWP discussed the most defining value weighting scores that would help distinguish priority wetlands. The ecological health indicator was acknowledged as a defining feature for wetlands, beyond the inherent hydrologic and water quality functions. Thus, wetlands that rated high (a or b) in ecological health were given priority in a cursory review. It was noted that the value ranking for ecological health should not be reviewed independent of other important features or local objectives. These local objectives are currently being explored. An summary of the management scenarios being explored using the wetland inventory and valuation is provided below in terms of wetland retention, integration and restoration.

### RETENTION

**Priority 1. Intermunicipal wetands of highest value (a and b) are priorities for retention in their natural state.**

- Wetland retention across intermunicipal boundaries will mitigate flood concerns from future development; these wetands are critical natural infrastructure that will help to achieve runoff volume targets established in the Nose Creek Plan (2018)

**Table 1.** Number wetlands that cross intermunicipal boundary with values rated as a, b, c or d.

Intermunicipal Wetlands	# of Wetlands	Cat Ecological Health Priority			
		a	b	c	d
Crossfield/Rocky View County	11	5	0	1	5
Airdrie/RVC	26	2	2	9	13
Calgary/RVC	18	7	3	6	2
<b>Total</b>	<b>55</b>	<b>14</b>	<b>5</b>	<b>16</b>	<b>20</b>

**Priority 2. Wetlands of highest value (a and b) are priorities for retention in their natural state within each jurisdiction.**

- Wetland retention in a natural state in urban areas (within parks systems) and rural areas as part of compensation (?) mechanisms

**Table 2. Number of wetlands within each jurisdiction with values rated as a, b, c or d using the ecological health priority.**

Wetlands by Jurisdiction	Cat Ecological Health Priority			
	a	b	c	d
Crossfield	5	2	6	51
Airdrie	7	11	57	201
Rocky View County	602	1219	1761	1943
Calgary	40	55	114	375
<b>Total</b>	<b>654</b>	<b>1287</b>	<b>1938</b>	<b>2570</b>

## INTEGRATION

**Priority 3. Wetlands in urbanizing areas are at risk of hydrologic isolation. Wetlands within municipal boundaries are priorities for integration (provided that water quality concerns can be addressed).**

- Integration in urbanizing areas as part of stormwater drainage system (provided water quality requirements are met)

See Table 2. Number of wetlands within each jurisdiction with values rated as a, b, c or d.

## RESTORATION

**Priority 4. Intermunicipal ditch-drained wetlands of highest value (a and b) are priorities for restoration.**

- Restoration may be achieved by re-connecting historic hydrological pathways

The number of wetlands in this category will be determined (note that the ditch-drained wetlands is based on the 2015 inventory that does not include inter-municipal boundary file).

**Priority 4. High-valued ditch-drained wetlands in urban areas are a priority for restoration if it can contribute to the local drainage network (provided that water quality concerns can be addressed). High-valued ditch-drained wetlands in rural areas are a priority for restoration if the wetland has high ecological significance, and can contribute to future goals of integration.**

**Table 3. Number of ditch-drained wetlands within each municipality with values rated as a, b, c or d using the ecological health priority.**

Ditch-Drained Wetlands by Jurisdiction	Cat Ecological Health Priority			
	a	b	c	d
Crossfield	0	1	2	6
Airdrie	0	16	11	28
Rocky View County	75	129	176	225
Calgary	8	17	57	69
<b>Total</b>	<b>83</b>	<b>163</b>	<b>246</b>	<b>328</b>

## NEXT STEPS

- Due to budget constraints, high-valued and priority wetlands were not field-truthed to confirm presence, character and function. Future opportunities for field-validation are currently being explored.
- The NCWP is taking steps to assess the data results and refine wetland retention, integration and restoration priorities
- Phase II of the Nose Creek Hydrologic/Hydraulic and Water Quality Model Tool is recently underway (March 2021). The 2020 wetland inventory and valuation will be used within this important phase of the model project.

## COST SUMMARY

### A. Labour Costs

#### Human Resources: Wages and salaries

Position	Total hours on project	Rate/Hour	Total project amount
Project Consultant + Project Management			\$21,000.00
		<b>SUBTOTAL LABOUR COSTS =</b>	<b>\$21,000.00</b>

### B. Material Project Costs

Type	Description	Total cost
Capital Expenditures/Equipment Purchases		
Site Supplies and Materials		
Rentals (equipment, vehicle, helicopter)		
Work and Safety Supplies		
	<b>SUBTOTAL MATERIAL COSTS =</b>	

### C. Overhead/Administration Cost

Category	Description	Total project costs
Office space, utilities, etc.		
Office supplies		
Printing/photocopying		
Administration fee	Brownlee LPP, Legal Fee	\$4,151.23
	BRBC Grant Administration	\$1,250.00
	<b>SUBTOTAL OVERHEAD Cost =</b>	<b>\$5,401.23</b>

### D. Project Expenditure Summary

	Total Project Amount
Labour Costs	\$21,000.00
Material Costs	
Overhead Costs	\$5,401.23
<b>Total Spent</b>	<b>\$26,401.23*</b>
Original Amount diverted to project	\$25,000.00
Interest earned on account	
<b>Amount Remaining</b>	<b>\$0.00</b>

\*See NCWP project budget table.

Creative Sentencing Final Term Report

**NCWP Wetland Inventory and Valuation Project Budget**

**Updated:** April 7\_2020

Date	Description	Description	Revenue	Expenditure	Balance
18-Mar-19	AEP - Creative Sentencing Grant; Kuefler Stevenson Bennett LLP	Wetland Evaluation	\$25,000.00		\$25,000.00
18-Mar-19	BRBC	Admin and Finance cost		\$1,250.00	\$23,750.00
06-Aug-19	City of Airdrie	Brownlee LLP Legal review		\$4,151.23	\$19,598.77
16-Mar-20	Fiera Biological Consulting Ltd. (Inv. 1637)	Consulting fees		\$5,040.00	\$14,558.77
30-Jun-20	Fiera Biological Consulting Ltd. (Inv. 1653)	Consulting fees		\$5,040.00	\$9,518.77
15-Sep-20	Fiera Biological Consulting Ltd. (Inv. 1678)	Consulting fees		\$5,040.00	\$4,478.77
15-Dec-20	NCWP Cash Operating	Cash-Operating Funds	\$1,401.23		\$5,880.00
15-Dec-20	Fiera Biological Consulting Ltd. (Inv 1704)	Consulting fees		\$5,040.00	\$840.00
26-Feb-21	Fiera Biological Consulting Ltd. (Inv 1724)			\$840.00	\$0.00
		<b>Total</b>	<b>\$26,401.23</b>	<b>\$26,401.23</b>	<b>\$0.00</b>

InKind Contributions	Hours	Contribution
Dr. Irena Creed, University of Saskatchewan	240 hrs	\$12,000.00
Inkind NCWP Board (5 meetings/3 people/4 hrs each *80/hr)	60 hrs	\$4,800.00
NCWP Partner GIS Staff (4 x 2 hrs each *80/hr)	8 hrs	\$640.00
NCWP Project Management (1 *105/hr)	64 hrs	\$6,720.00
	<b>Total</b>	<b>\$24,160.00</b>

<b>Total Project Cost</b>	<b>\$50,561.23</b>
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### Additional Comments on Project Costs

*Explain any significant variances or differences from the approved project proposal (e.g., unspent funds, approved budget changes). Please provide a brief description of expected expenses in coming term.*

On July 12, 2019, J. Sleeman advised H. Brooymans that the NCWP received an invoice for the legal review and edits for the Recipient Agreement for the Creative Sentencing Project. A request was made to include this cost as an administrative project fee. On July 16, 2019, H. Brooymans indicated that this was considered a valid use of funds and could be included as a project expense. The NCWP recognizes that this was a one-time exception, and that the Creative Sentencing will not accept invoices for legal fees in the future.

In January 2020, the proposal was revised and contract formed between Fiera Biological Consulting (Irena Creed) and the Bow River Basin Council/Nose Creek Watershed Partnership. The budget was updated from the last interim report submission, but the overall cost estimate remained the same.

### Expected Expenses in the Coming Term

Item	Labour	Cost Estimate
Task 1. Update and refine the wetland inventory for the Nose Creek watershed	90 Hours (2 people \$50/hr)	9,000
Task 2. Identify key wetlands and prioritize them for future retention, restoration and/or integration	90 Hours (2 people \$50/hr)	9,000
Task 3. Create a map tool that can be used by all stakeholders to support wetland management in the watershed	10 Hours (1 person \$50/yr)	1,000
Overhead (10%)		2,000
	<b>TOTAL COST ESTIMATE</b>	<b>21,000</b>