ROCKY VIEW COUNTY

CAPITAL PROJECT MANAGEMENT

TO:	Council		
DATE:	October 6, 2020	**DIVISION:**	8
FILE:	5000-100	**APPLICATION:**	N/A
SUBJECT:	Bearspaw Stormwater Management		

EXECUTIVE SUMMARY:

Administration wishes to provide Council with background information on stormwater management within the community of Bearspaw. This includes general discussion on the challenges faced by both the County and residents, the methods used to respond to stormwater issues and flooding, as well as the work undertaken to address long-term stormwater management within the community.

ADMINISTRATION RECOMMENDATION:

Administration recommends approval in accordance with Option #1.

BACKGROUND:

The community of Bearspaw routinely experiences flooding due to meltwater and/or significant seasonal rains. Although there are areas that are more prone to flooding, most of the community has faced some form of stormwater management problems in recent history (ie. +/-10 Years).

These challenges vary significantly in scale, ranging from minor encroachment of stormwater onto private property to major flooding that threatens homes and County infrastructure.

The primary challenge for the community is a lack of outlets to convey stormwater out of the area and into natural drainage courses such a Nose Creek. This challenge is further compounded by the unique topography of the area, annual fluctuations in the local water table, and the timing, frequency, and duration of events.

With limited access to outlet(s), both the County and the community is largely dependent upon interim/emergency pumping to protect infrastructure and property. While this strategy has proven to be generally effective, it suffers from three considerable constraints:

1. Identifying a receiving waterbody is difficult, particularly during periods in which high water levels are occurring throughout the community.

   This situation typically occurs when the local water table is elevated and/or water from a previous event has yet to dissipate.

2. The availability of labour and equipment limits the ability to respond in a timely fashion.

   The County has a limited stockpile of pumps/hoses and often relies on private contractors during periods of peak demand. These private resources also become scarce quickly, limiting the options available to the County and private landowners alike.

3. The costs associated with moving water is expensive.

   The volume of water to be moved and the distance with which it needs to be conveyed are the primary cost-drivers. Moving comparatively small volumes of water to a nearby receiving body

Administration Resources
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can commonly range between $5,000 to $10,000 per occurrence, with significant events costing $100,000 or more.

For context, the County's annual budget for emergency pumping (County wide) is $180,000, while the 2017 emergency pumping at Meadow Drive was $150,000.

In response to the challenge, the County has completed a variety of engineering works (ex. site assessments, design work) to identify opportunities for relief. The Bearspaw Drainage Assessment (MPE 2009) is arguably the most comprehensive and widely referenced document, although site-specific studies and design concepts have been produced for locations throughout the community.

The County has also undertaken construction initiatives to help provide both interim and long-term relief. The most significant scope of work is the Woodlands Catchment 'B' project (2017-2019), although all County-led projects in the area (ex. Roadworks) attempt to a stormwater management component.

Although targeted constructed works and ancillary works on non-drainage projects have had a positive impact, they cannot fully address the fundamental need to gain access stormwater outlets. The identification and design of outlets has been Administration's (primary) focus for the past several years with the two most promising options being:

1. A gravity fed outlet at (near) Meadow Drive and Rocky Ridge Road.

   Although intended to provide direct relief to residents along Meadow Drive itself, establishing this outlet also provides a mix of gravity and mechanical options to upstream landowners in areas such as Aspen Drive and Bearspaw View.

   This option has been fully designed (to 90%) and has an estimated cost of $3.6 Million, excluding land costs. The project is on the County's 5-Year Capital Plan for 2022.

2. A mechanical/gravity outlet at Burma Road and Range Road 25.

   Supported by a small seasonal pump-station, the outlet will provide direct relief to residents along Timber Ridge Way, Silverwoods Drive, and Alexa Close.

   Preliminary design is complete (to 30%) and has an estimated cost of $900,000, excluding land costs.

Further, Administration has been working with the Church Ranches Homeowners Association (CRHOA) to identify opportunities for mutual benefit. During preliminary discussion, the CRHOA expressed an interest in partnering with the County to fund the operation of the community's private lake system. Gaining access to the CRHOA system may benefit the County by providing access to an existing conveyance network and interim storage capacity.

BUDGET IMPLICATIONS:

As this report is offered for information only, there are no budget implications.

COMMUNICATIONS PLAN:

N/A

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OPTIONS:

Option #1: THAT the Bearspaw Stormwater Management report be accepted for information.

Option #2: THAT alternative direction be provided.

Respectfully submitted,

"Byron Riemann"

Executive Director

Concurrence,

"Al Hoggan"

Chief Administrative Officer

DH/bg