TOWN OF CANMORE
AGENDA
Regular Meeting of Council
Council Chambers at the Civic Centre, 902 – 7 Avenue
Tuesday, September 6, 2022 at 9:00 a.m.

Times are estimates only.

PUBLIC QUESTION PERIOD – Before meeting is called to order

A. CALL TO ORDER AND APPROVAL OF AGENDA

9:00 – 9:05
1. **Land Acknowledgement**
2. **Agenda for the September 6, 2022 Regular Meeting of Council**

B. PUBLIC HEARINGS

9:05 – 9:15
1. **Clean Energy Improvement Tax Amending Bylaw 2022-21**
   (1) Introduction
   (2) Administrative Presentation
   (3) Public Verbal Submissions
   (4) Public Written Submissions
   (5) Council Question Period
   (6) Closure of Public Hearing

C. DELEGATIONS

9:15 – 9:35
1. **Homelessness Society of the Bow Valley**
   Request: That Council consider providing a municipal space to support shelter operations from December 1, 2022 to March 15, 2023 (from 8pm-8am daily).

D. APPROVAL OF MINUTES

9:35 – 9:40
1. **Minutes of the August 16, 2022 Regular Meeting of Council**

E. BUSINESS ARISING FROM THE MINUTES – None

F. UNFINISHED BUSINESS – None

G. BYLAW APPROVAL

9:40 – 9:45
1. **Clean Energy Improvement Tax Amending Bylaw 2022-21**
   Recommendations:
   1. That Council give second reading to Clean Energy Improvement Tax Amending Bylaw 2022-21.
   2. That Council give third reading to Clean Energy Improvement Tax Amending Bylaw 2022-21.

9:45 – 10:00 **2. Amendments to the Canmore Planning Commission**

Recommendations:

1. That Council give first reading to Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw Amendment 2022-22 – Membership and Eligibility.
2. That Council give second reading to Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw Amendment 2022-22 – Membership and Eligibility.
3. That Council give leave for third reading of Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw Amendment 2022-22 – Membership and Eligibility.
4. That Council give third reading to Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw Amendment 2022-22 – Membership and Eligibility.

H. NEW BUSINESS

10:00 – 10:30 **1. Council Advisory Committee Review**

Recommendations:

1. That Council give first reading to Environmental Advisory Review Committee Repeal Bylaw 2022-23.
2. That Council give second reading to Environmental Advisory Review Committee Repeal Bylaw 2022-23.
3. That Council give leave for third reading of Environmental Advisory Review Committee Repeal Bylaw 2022-23.
4. That Council give third reading to Environmental Advisory Review Committee Repeal Bylaw 2022-23.

Meeting Break 10:30 – 10:45

K. IN CAMERA

10:45 – 11:45 **1. Three Sisters Mountain Village Litigation Update**

Recommendation: That Council take the meeting in camera to prevent disclosure of solicitor-client privilege in accordance with s.27(1)(a) of the Freedom of Information and Protection of Privacy Act.

H. NEW BUSINESS continued

11:45 – 12:00 **2. Highway Mitigation Letter to Province**

Recommendation: That Council direct Mayor Krausert to write a letter to the Province requesting action be taken to reduce accidents involving wildlife on the TransCanada Highway between the Bow River Bridge and the East Park Gates.

Lunch Break 12:00 – 1:00

1:00 – 1:15 **3. Labour Market Recruitment and Retention Strategy**

Recommendations:

1. That Council approve a new 2022 capital project for Labour Market Recruitment and Retention Strategy in the amount of $100,000 funded from the Economic Development Reserve; and
2. That Council direct administration to apply for the Alberta Labour and Immigration Grant and if successful, apply the grant funding to the Labour Market Recruitment and Retention Strategy capital project.

1:15 – 1:20 **4. Rescheduling September 20, 2022 Committee of the Whole Meeting**

Recommendation: That Council reschedule the September 20, 2022 Committee of the Whole meeting to September 27, 2022.

1:20 – 1:30 **5. PL20210015 – The Gateway at Three Sisters Subdivision: Endorsement Extension**

Recommendation: That Council grant an extension for the endorsement of PL20210015 to November 1, 2024.

I. REPORTS FROM ADMINISTRATION

1:30 – 2:00 **1. Canmore Community Monitoring Program**

Purpose: To provide Council with an overview of the new web-based Canmore Community Monitoring Program.

2:00 – 2:15 **2. Changes to Victim Services (verbal)**

J. NOTICES OF MOTION – None

K. IN CAMERA – addressed earlier in the agenda

2:15 **L. ADJOURNMENT**

Agenda prepared by: Andrew Kelly, Assistant Municipal Clerk

Homelessness Society of the Bow Valley

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Delegation report to the Town of Canmore
September 6, 2022

Background
The Homelessness Society of the Bow Valley (HSBV) is a community-based organization with a mission to support and advocate for individuals who are without shelter in the Bow Valley by providing low barrier shelter and programs with the goal to build trust and facilitate individuals' access to the local system of care.

In February 2022, HSBV incorporated as a Society under the Government of Alberta Society's Act and elected a board of directors and committee members to operationalize the organization's vision and mission.

History & Context
The need for a cold weather shelter program was initially identified through the data collected in two separate Rural Housing and Service Needs Assessments. Based on these findings, the REST pilot program was launched on March 1, 2021 including an outreach and shelter program. These programs were designed to support individuals who experienced challenges and barriers when accessing existing services. The program ran for 42 nights and supported 10 unique individuals for a total of 16 bed nights.

HSBV launched a winter Outreach Program on December 6th 2021, and reopened the Emergency Shelter Program for a second season on February 7th 2022. The outreach program operated in concert with the shelter program and concluded operations on March 31st, 2022. During the 116 nights that the outreach and shelter programs operated, 28 unique individuals accessed a combined total of 366 bed nights.

Need for the Program
Data from the program review indicates a substantial increase in usage of the Outreach and Shelter programs in 2022. The Emergency Shelter Program was open for 11 nights longer in 2022 and saw an increase of 16 unique individuals over 2021 (a 160% increase).
The shelter provided 280 more bed nights and had an average of 5.6 guests per night, up from 0.4 guests per night in 2021. This translates to a 1,300% increase in the average number of guests served per night in shelter in 2022.

During the 53 nights of operation, the shelter was accessed by guests every night. The highest number of guests to access the programs in one night was 10. When the shelter reached capacity (7 beds), additional guests were redirected to the Outreach Program for a hostel or hotel bed.

Shelter guests shared that if they were not staying in the outreach or shelter programs, they would find accommodation by couch surfing, accessing businesses open 24 hours, sleeping in stairwells, garbage bins or camping outside.

Outreach and Shelter 2022/23

HSBV is planning to open the Outreach and Emergency Shelter Programs in the winter of 2022/23. In preparation for the coming season, HSBV has secured the following grants:

- Banff Canmore Community Foundation (organizational development)
- Rotary Club of Canmore (organizational development)
- Town of Canmore Community Grant (laundry services and hygiene products)

HSBV is currently pursuing operational funding from the Rural Development Network through the Federal Government Reaching Home program.

Community Partners

HSBV programs accept referrals from locations throughout the Bow Valley including: Municipal District of Bighorn (Dead Man's Flats, Lac Des Arcs, Exshaw, Harvie Heights), Canmore, Banff, Lake Louise Improvement District 9, Mini Thni (Morely) and Kananaskis.

In order to achieve the goals of the outreach and shelter programs, HSBV works closely with community partners such as Canmore and Banff Hospitals, RCMP, YWCA Banff, local businesses, and the Towns of Banff and Canmore (Municipal Enforcement, FCSS, and Administration).

Program Outcomes

HSBV programs meet an identified community need by providing a warm, safe space, basic needs and referrals for individuals without access to safe shelter in the coldest months of the year. Additionally, the programs provide a place where community partners such as hospitals, YWCA Banff, and RCMP can refer individuals without safe warm accommodation.

HSBV is committed to working with organizations, businesses, and funders to collectively develop a Bow Valley System of Care for individuals experiencing housing instability and homelessness.

<u>Request to the Town of Canmore Council:</u>

Shelter Space:

In 2021 and 2022, HSBV rented space, at a discounted rate, from St. Michael's Anglican Church. The program used the space from 8pm-8am every day in February and March. The space was a key component to the shelter program's success.

St. Michaels Anglican church is located in a housing complex. Shelter participants accessed the program by using a shared pathway that is connected to the complex; this caused some concern and late-night noise. In addition, the shelter space had religious symbols that some

participants found uncomfortable. St. Michaels has request that the shelter seek another location in 2022/2023.

HSBV is requesting that council consider providing a municipal space to support shelter operations from December 1, 2022 to March 15, 2023 (from 8pm-8am daily).

Homelessness Society of the Bow Valley

HSBV Program Review
June 2022

"Having a shelter makes homelessness more humane"
-Shelter Guest 2022

Acknowledgments

The Homelessness Society of the Bow Valley (HSBV) would like to acknowledge and appreciate that our lives, work and recreation take place on the traditional territories and home of the Stoney Nakoda Nations (Bearspaw, Wesley, Chiniki), the Blackfoot Confederacy (Siksika, Kainai, Pikani) the Tsuut'ina Nation and the Region 3 Metis Nation.

HSBV is committed to advancing Truth and Reconciliation and to working with Indigenous peoples to reflect their voices and imbed their experiences within HSBV's programs and supports. We recognize the impact that historical trauma, oppression, racism and discrimination has and continues to have on Indigenous peoples lives and we commit to honouring all life as we share this space and land with respect.

HSBV would also like to thank the shelter guests who took the time to share their experiences with us. It is through these conversations that we as an organization and as a community can continue to learn and grow.

HSBV would finally like to acknowledge the staff and community partners who supported the shelter program in 2022. Thank you for your patience, your passion and your support. We are stronger as a community.

HSBV Board of Directors

Chair	Sarah Lonz
Vice Chair	Elle West
Treasurer/ Fund Development Committee Chair	Lisa Brown
Secretary	Sachiho Miller
Public Engagement Committee Chair	Kayla Eykelboom
Human Resources	Lynda Damen

Prepared by:
Amber Forest, Shelter Director
Homelessness Society or the Bow Valley
Program data and editing provided by Neil Atkinson, Consultant
June, 2022

Funders

Rural Development Network (RDN)

Banff Canmore Community Foundation (BCCF)

Rotary Club of Canmore

Bow Valley Food Bank

Private Donors

Community Partners

Anglican Church Women's Group
Bow Valley Food Alliance
Canmore Hotel/Hostel
Crossway Community Thrift
Family Community Support Services Canmore
Mountain Fire Foods
Positive People's Placement
Royal Canadian Mounted Police (RCMP)
Spillet Security
Three Sister's Taxi
Trinity Bible College
Banff Mineral Springs Hospital
Canmore General Hospital
Canmore Public Library
Drycleaning by Dave
Food and Friends Community Dinners
Municipal Enforcement (Canmore)
Rocky Mountain Ski Lodge
Rusticana Grocery
St. Michael's Anglican Church
Town of Canmore
YWCA Banff

Special Thanks

HSBV would like to thank the following people for generously giving their time, talent and support to make HSBV programs possible:

- Shawn Franklin – Photographer
- Margo Petroff – Graphic Design & Illustration
- Georgi Silckerodt – Photographer
- Waill Tatari – Website Design
- Sean Krausert – Founding Member
- Michelle Rhode – Founding Member
- Teresa Snow – Indigenous Curriculum Developer and Knowledge Keeper

Table of Contents

Homelessness describes the situation of an individual, family or community without stable, safe, permanent, appropriate housing, or the immediate prospect, means and ability of acquiring it. It is the result of systemic or societal barriers, a lack of affordable and appropriate housing, the individual/household's financial, mental, cognitive, behavioural or physical challenges, and/or racism and discrimination. Most people do not choose to be homeless, and the experience is generally negative, unpleasant, unhealthy, unsafe, stressful and distressing.

-Canadian Observatory on Homelessness

Executive Summary

The HSBV Outreach and Emergency Shelter Programs are local, seasonal, highly collaborative projects originally developed in partnership with the Homeless to Housing Coalition (H2HC), St. Michael's Anglican Church, and the Town of Canmore.

The 2021/22 Outreach Program provided temporary hotel/hostel accommodation and basic supports until the Emergency Shelter Program opened for the season. The Emergency Shelter Program offered a low barrier, inclusive shelter space. Both programs provided a warm, safe place to sleep for any individuals in the Bow Valley who did not have access to alternate shelter during the coldest months of the year.

HSBV programs emphasise local solutions based on community partnerships and work closely with organizations such as Hospitals, RCMP, YWCA Banff and the Towns of Banff and Canmore (Municipal Enforcement, FCSS and Administration).

HSBV recognizes and emphasizes the need for an inclusive and diverse space. This includes working with an Indigenous Advisor to ensure the programs were trauma-informed, welcoming and incorporated traditionally guided practices. HSBV believes in harm reduction and meeting guests where they are at.

The HSBV Program Review is based on information collected through a guest feedback session, a staff evaluation and data collected throughout program operations. This Program Review addresses the Outreach Program from December 2021 to March 2022 and the Emergency Shelter Program from February to March 2022. The review aims to better understand community need, shelter need and usage in the Bow Valley.

Key Findings

Key findings of the program review indicate that through the use of existing resources and strong partnerships, the Homelessness Society of the Bow Valley successfully provided warm, safe shelter to individuals in need.

During the 116 nights that the outreach and shelter programs operated, 28 unique individuals accessed a combined total of 366 bed nights.

The programs focused on providing shelter and support to individuals experiencing challenges and multiple barriers to service.

HSBV's programs met a community need by providing a space where partnering community service organizations could refer individuals for shelter and support. 3 individuals were referred by partnering organizations to the Outreach Program and another 8 individuals were referred to the shelter program. Countless other individuals were self-referred or received referrals from community partners that were not captured in the data for 2021/22.

Need for the Program

There is a clear need for a local, collaborative, community-based solution to homelessness in the Bow Valley. Data from the program review indicates a substantial increase in usage of the Outreach and Shelter programs in 2022.

The Emergency Shelter Program was open for 11 nights longer in 2022 and saw an increase of 16 unique individuals over 2021 (a 160% increase). The shelter provided 280 more bed nights and had an average of 5.6 guests per night, up from 0.4 guests per night in 2021. This translates to a 1,300% increase in the average number of guests served per night in shelter in 2022.

During the 53 nights of operation, the shelter was accessed by guests every night. The highest number of guests to access the programs in one night was 10. When the shelter reached capacity (7 beds), additional guests were redirected to the Outreach Program for a hostel or hotel bed.

Shelter guests shared that if they were not staying in the outreach or shelter programs, they would find accommodation by couch surfing, accessing businesses open 24 hours, sleeping in stairwells, garbage bins or camping outside. All guests attending the feedback session rated the Emergency Shelter Program as 10 out of 10 for being helpful to them and expressed unanimous appreciation for the program in the form of "Thank you".

Summary of Recommendations

Recommendations identified through the program review include:

- Create more robust data collection methods based on program logic models.
- Increase staff during intake (check-in) and discharge (check-out) daily.
- Review and expand the existing policy manual including procedures, protocols, guidelines and staff training requirements.
- Locate a more appropriate shelter space.
- Continue to run the Outreach Program in concert with the Shelter Program to ensure a more robust support service.
- Due to interest in the program and guests reporting that they were sleeping outside both before and after the programs were operational, it is recommended that the Shelter and Outreach Programs operate year-round.

HSBV Program Review

Introduction

The Homelessness Society of the Bow Valley (HSBV) is a community-based organization with a mission to support and advocate for individuals who are without shelter in the Bow Valley by providing low barrier shelter and programs with the goal to build trust and facilitate individuals' access to the local system of care.

In February 2022, HSBV incorporated as a Society under the Government of Alberta Society's Act and elected a board of directors and committee members to operationalize the organization's vision and mission.

Background and Context

HSBV began a winter outreach program on December 6th 2021, and reopened the Emergency Shelter Program for a second season on February 7th 2022.

The need for a cold weather shelter program was initially identified based on data collected in two separate Rural Housing and Service Needs Assessments. Based on these findings, a community group launched the REST pilot program, which included both an outreach (launched in February 2021) and shelter program (launched in March 2021).

These programs were the first of their kind in the Bow Valley and were designed to support individuals who experienced challenges and barriers when accessing existing services. The findings of the 2021 pilot program demonstrated a clear need in the Bow Valley. In addition, the REST pilot evaluation helped inform other rural, provincial shelter programs and was referenced in the Rural Development Network "Step-by-Step Guide to Developing Temporary Emergency Mat Programs".

HSBV programs are important given the unique Bow Valley context. The inventory of affordable and appropriate housing in the Bow Valley is limited. In addition, Canmore has the highest living wage in the province of Alberta at $37.40 per hour (Canmore 2021 Living Wage report: Town of Canmore - Living Wage), and an average advertised job wage of $20.70 (The Job Resource Centre Bow Valley). There are also unique risks for individuals sleeping outside in the Bow Valley. Including an increased risk of human-wildlife encounters.

Program Overview

Outreach Program

From December 6th 2021 until February 6th 2022, HSBV operated an Outreach Program designed to provide basic shelter and support until the Emergency Shelter Program opened. Four community outreach workers provided daily coverage of a phone line, email and social media account (checked three times daily) and they responded to queries for individuals who were without shelter. Outreach workers provided basic supports which included cold weather planning, referrals to food and clothing, and access to temporary, short-term shelter through a local hotel and hostel. Outreach workers also referred individuals to other community supports such as Family Community Support Services (FCSS) and YWCA Banff.

Through the Outreach Program, individuals without access to warm safe shelter could access emergency accommodation when temperatures dropped below -20 with a wind chill. Outreach workers had discretion and would provide accommodation on a warmer night if individuals were referred to the program by a local service provider such as the hospitals or if the individual was struggling and could not manage sleeping outdoors. Emergency accommodation spaces through the Outreach Program were booked one day at a time. Regardless of temperature, outreach workers provided information on community resources, referrals and transportation.

From February 7th to March 31st 2022, the Outreach Program operated in concert with the Emergency Shelter Program. During this time, the Outreach Program was staffed by the Emergency Shelter Program staff and provided support for individuals when the shelter program had reached capacity.

Emergency Shelter Program

The Emergency Shelter Program opened its doors on February 7th, 2022 at St. Michael's Anglican Church. The program ran until March 31st, 2022 for a total of 53 nights. The program's design included 5 beds with an additional 2 overflow beds available as needed. The use of hotel and hostel beds (through the Outreach Program) continued throughout the shelter program. These additional beds were used to address overflow (if all 7 beds in the shelter were full); respite (if a guest did not feel safe in the shelter space) or for isolation (if a guest reported experiencing covid symptoms). The program was a diverse and welcoming space, open to all genders and backgrounds.

Intakes took place nightly between 8:30pm and 11:00pm with referrals from community partners (hospitals, RCMP) accepted until 1:00am. The shelter space closed each morning at 8:00am. Quiet time was in place from 11:00pm to 7:00am in accordance with the Good Neighbour Policy.

Upon check-in, guests were provided with their rights and responsibilities in the program and asked to self-screen for COVID-19 symptoms. Anyone exhibiting symptoms would be placed in a hotel in order to isolate. After intake, guests were offered food and basic hygiene products. As the program is considered low-barrier, guests were not asked for identification or proof of vaccination and there were no sobriety requirements. Respect for staff and fellow guests was required.

Each morning, guests were woken at 7:15am and provided with a gift card for coffee and/or a warm meal if the temperature outside fell below -10 degrees. If the temperature was mild, guests could access a gift card once per week. Before leaving the shelter, guests and staff would thoroughly clean and disinfect the shelter space.

Program Security

The Emergency Shelter Program contracted the services of a security company, which included 5 nightly check-ins. Check-ins were conducted in person. The security company could also be contacted in the event that an incident occurred in the shelter space during the night. There was always on-call support available to shelter staff including the Shelter Manager, Director or a member of the board.

HSBV connected regularly with local RCMP to ensure the program was a safe space and that guests could make a smooth transition into the program when referred by RCMP.

Staffing Model

The Emergency Shelter Program began operation in February 2022 with a single staffing model based on shelter usage data from the previous season. There was one Outreach Worker for each of the 3 shifts per night including intake from 8:00pm to 12:00am, awake overnight from 11:30pm to 7:30am and discharge from 7:00am to 9:00am with an additional one hour of community work during the day. An on-call position was available throughout the night to assist Outreach Workers as needed.

In March, 2022 the Emergency Shelter Program changed the staffing model to include double staffing for both intake and discharge. This change was based on an increase in shelter usage and the complexity of guests presenting in the program. Shifts included: two intake shifts from 8:00pm to 12:00am and 8:30pm to 1:00am, awake overnight from 12:00am to 8:00am and discharge from 6:00am to 9:00am.

A Shelter Manager provided support, feedback and training for Outreach Workers with support from the Shelter Director and the Board of Directors.

Referring Partners

The Emergency Shelter Program accepted referrals from agencies throughout the Bow Valley including Lake Louise, Banff, Canmore, Exshaw, Mini Thni and Kananaskis.

The majority of referrals to the Emergency Shelter Program came through FCSS, YWCA Banff, Canmore General Hospital and Banff Mineral Springs Hospital.

Results

The goal of the Outreach and Emergency Shelter Programs was to ensure that individuals in the Bow Valley experiencing challenges and multiple barriers to service were able to access safe, warm nights during the coldest months of the year. The Outreach Program operated from December 6th 2021 until March 31, 2022 for a total of 116 nights. The Outreach Program ran concurrently with the shelter program for 53 nights. The Emergency Shelter Program operated from February 7, 2022 to March 31, 2022 for a total of 53 nights. In all, emergency shelter from the cold was available to the Bow Valley community for 116 nights during the winter of 2021/22.

Program Data

Outreach Program

From December 6th, 2021 to February 6, 2022 (63 nights), 10 unique individuals accessed the Outreach Program and found safe accommodation in hotel or hostel for a total of 57 bed nights.

From February 7th to March 31, 2022 (53 nights), 6 unique individuals accessed the Outreach Program and found safe accommodation in hotel or hostel for a total of 13 bed nights. On separate occasions, 4 of these individuals also accessed accommodation through the Emergency Shelter Program.

It is important to note that individuals accessing the Outreach Program from February 7th to March 31st accessed the program by attending the Emergency Shelter facility and speaking with the Outreach Workers there. Staff time from the Shelter Program was used to run the Outreach Program. All 6 guests were unable to stay in the shelter program due to a limited number of beds. The Outreach Program ensured that despite limited capacity in the Shelter Program, guests still had a warm, safe place to sleep.

In total the Outreach Program from December 6th to March 31st (116 nights) served 16 unique individuals for a total of 70 bed nights. * It was not possible to compare the data from the 2021 outreach program as the 2021data was not collected using the same method.

Of the 16 unique individuals who accessed the Outreach Program, 3 individuals were referred to the program by a community partner (hospital, FCSS). In addition to emergency accommodation, the Outreach Program also provided 4 emergency taxi fares to individuals in need.

Emergency Shelter Program

From February 7th to March 31st, 2022 (53 nights) 26 unique individuals accessed the Emergency Shelter Program for a total of 296 bed nights. In 2021, from March 1 to April 11 (42 nights) 10 unique individuals accessed the Emergency Shelter Program for a total of 16 bed nights.

The Emergency Shelter Program was open for 11 nights longer in 2022 and saw an increase of 16 unique individuals over 2021 (a 160% increase). The shelter provided 280 more bed nights and had an average of 5.6 guests per night, up from 0.4 guests per night in 2021. This translates to a 1,300% increase in the average number of guests served per night in shelter in 2022.

The total number of stays (defined as one or more consecutive nights in shelter, accessed by the same guest) in the Emergency Shelter Program in 2022 was 76. The length of stay in the program ranged from 1 night to 36 nights. Open for only 53 nights, the Emergency Shelter Program did not impose a limit on stays.

During the 53 nights of operation, the shelter was accessed by guests every night. The highest number of guests to access the program in one night was 10. When the shelter reached capacity (7 beds), additional guests were redirected to the Outreach Program for a hostel or hotel bed. No individuals were turned away from the Outreach Program.

The reason for the increase in bed nights and unique shelter guests accessing the program in 2022 is likely multifaceted and has not been determined within the scope of this program review.

Of the 26 unique individuals who accessed the shelter program, partnering community service organizations referred 8 individuals to the program. In addition, the staff organized a total of 9 taxi rides to the shelter.

Guest Feedback

On March 28th, HSBV held a guest feedback session to learn more about guests' experiences in the program. Guests accessing the shelter between March 25th and March 28th were invited to participate. A small breakfast and coffee were provided.

6 out of 28 or 21% of unique individuals accessing the outreach or shelter programs from December 6 to March 25th participated in the feedback session. All 6 participants rated the shelter as 10 out of 10 for being helpful to them and expressed unanimous appreciation for the program in the form of "Thank you".

Guests shared that in addition to a warm bed, for the them the program successes included access to food, coffee and gift cards for groceries and coffee shops. Guests also appreciated having access to WIFI and reported building good relationships with staff.

The only program challenge guests shared was the need for more comfortable beds (the shelter program uses camp style cots).

Guests provided suggestions for the shelter program going forward including but not limited to:

- The addition of more beds
- Warm socks
- An option to launder clothing
- An area to relax, separate from the shared sleeping area
- Help with system navigation
- Support with housing location
- More flexible hours for the shelter
- Double staffing at all times

Guests reported that the most helpful supports they received, apart from a warm bed were referrals to FCSS, gift cards and referrals for a shower.

Guests shared that if they were not staying in the outreach or shelter programs, they would find accommodation by couch surfing, accessing businesses open 24 hours, sleeping in stairwells, garbage bins or camping outside. After the programs closed, participants in the feedback session said they would consider returning to Mini Thni, accessing staff accommodation or return to sleeping outside.

Recommendations

Following the findings of the program review, 9 recommendations have been identified:

- Create more robust data collection methods based on program logic models, including:
    - Program data
    - Guest demographics
    - Community partner referrals
- Increase staff during intake (check-in) and discharge (check-out) daily.
- Review and expand the existing policy manual including procedures, protocols, guidelines and staff training requirements.
- Continue to run the Outreach Program in concert with the Shelter Program to ensure a more robust support service.
- Continue to build relationships with various food providers and agencies in order to provide a wider variety of warm food options for guests.
- Consider the addition of support for guests with housing location and system navigation.

- Locate a more appropriate shelter space including:
    - Showers
    - Individual sleeping spaces
    - Beds for 7 or more guests
    - An area for guests to unwind that won't disturb guests who are sleeping.
    - Multiple bathrooms
    - Office space
    - A functional kitchen
    - Storage for equipment
- Provide group and individual supervision for staff to manage challenging experiences.
- Due to interest in the program and guests reporting that they were sleeping outside both before and after the programs were operational, it is recommended that the Shelter and Outreach Programs operate year-round.

Conclusion

This program review provides an overview of the HSBV Outreach and Emergency Shelter Programs in 2022, specifically the need for and usage of these programs.

The primary focus of the Outreach and Emergency Shelter Programs is to ensure that individuals in the Bow Valley experiencing challenges and multiple barriers to service are able to access safe, warm nights through a local, collaborative, low barrier shelter program. These programs also aim to meet a community need by providing a safe, warm space, where partnering and referring agencies can refer clients without alternate, safe accommodation.

The findings of the program review confirm that there is a real and ongoing need for emergency shelter and supports for homelessness in the Bow Valley and that the community would benefit from the programs being open year-round.

References

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The Job Resource Centre Bow Valley (2022) Labour Market Review Spring 2022. Retrieved from https://www.jobresourcecentre.com/

Town of Canmore; Living Wage Network; Puzzle Rock Coding (2021) Canmore's 2021 Living Wage Report. Retrieved from https://canmore.ca/residents/family-community-services/community-social-development/living-wage

List of Acronyms

HSBV: Homelessness Society of the Bow Valley
H2HC: Homelessness to Housing Coalition
RCMP: Royal Canadian Mounted Police
FCSS: Family and Community Support Services

Appendix A - Methodology

Methodology
For the 2022 program review, multiple methods were used to collect data on the programs.

Program Data was collected and reported on throughout the program including but not limited to: number of stays, number of nights, taxi rides and reportable incidents. Partnering community service agency referrals were also recorded.

A **Guest Feedback Session** was conducted on March 28, 2022, two days before the closure of the shelter program. Beginning on March 21st, guests attending the shelter were notified about and invited to the feedback session. The feedback session took place from 8:00am to 9:00am. Discharge was extended to 9:30 to allow space for existing shelter guests to depart after the information session. The feedback session took the form of a round table discussion with eight guiding questions. Breakfast sandwiches and coffee was provided for participants.

Guests attending the feedback session were not obligated to share information. No personal or identifying information was recorded. Responses were aggregate and non-identifiable to the extent that was possible with a small group.

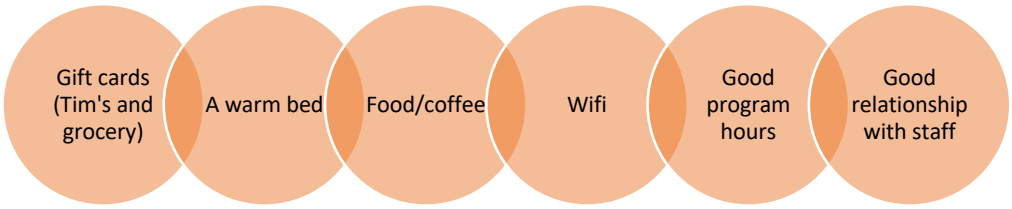
Staff Feedback Surveys were provided to shelter staff from March 25th to 31st to be completed during paid time. Surveys included 11 questions with multiple choice and written answers.

Data Analysis
Data was analyzed and synthesized by the Shelter Director and a consultant. When comparing data from winter 2021, the REST Evaluation 2021 document was used.

Limitations
The Emergency Shelter Program is low barrier program. As such, only basic data was collected. Demographic information was not collected from guests.

Appendix B – Guest Feedback

Guests identified program successes (what went well) as:

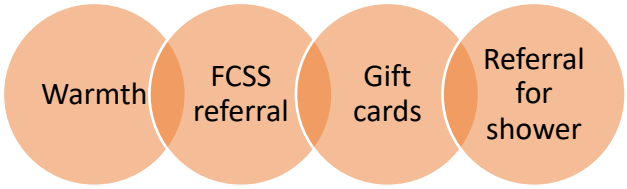


Guests identified program challenges (what did not go well) as:

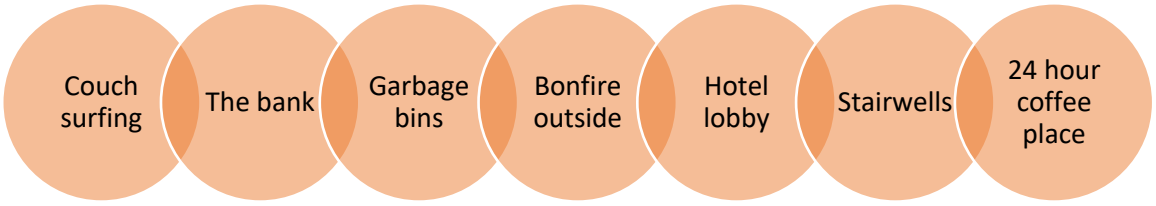
Guest suggestions for the shelter program next year included:

*Systems navigation: Help with acquiring identification and accessing local resources.

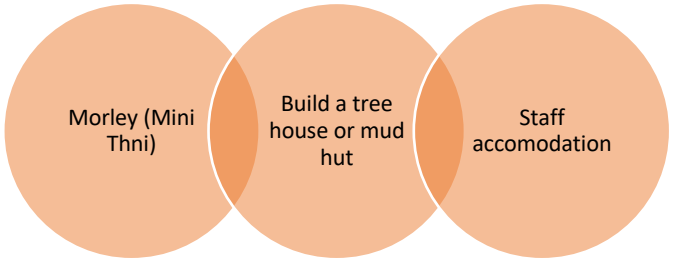
Besides a place to sleep, the most helpful supports guests shared that they received in the shelter program were:



If the shelter program wasn't operating, guests shared where they might stay instead:



Guests shared where they might stay after the shelter closure on March 31:



Participants demonstrated nearly unanimous expressions of gratitude for the shelter program in the form of "thank you" (5/6).

TOWN OF CANMORE
MINUTES
Regular Meeting of Council
Council Chambers at the Civic Centre, 902 – 7 Avenue
Tuesday, August 16, 2022 at 9:00 a.m.

COUNCIL MEMBERS PRESENT

Sean Krausert	Mayor
Wade Graham	Deputy Mayor (joined virtually)
Jeff Hilstad	Councillor
Jeff Mah	Councillor
Joanna McCallum	Councillor
Karen Marra	Councillor (joined virtually)
Tanya Foubert	Councillor

COUNCIL MEMBERS ABSENT
None

ADMINISTRATION PRESENT

Sally Caudill	Chief Administrative Officer
Therese Rogers	General Manager of Corporate Services
Lauren Miller	Acting GM of Municipal Infrastructure/Manager of Planning
Lisa Brown	Acting GM of Municipal Services/Manager of Community Social Development
Adam Driedzic	Town Solicitor
Robyn Dinnadge	Manager of Communications
Cheryl Hyde	Municipal Clerk
Andrew Kelly	Assistant Municipal Clerk (Recorder)
Nathan Grivell	Development Planner
Caitlin Miller	Manager of Protective Services
Amy Fournier	Climate Change Specialist
Andy Esarte	Manager of Engineering
Palki Biswas	Manager of Finance
Megan Dalrymple	Property Tax Coordinator
Eleanor Miclette	Manager of Economic Development

Mayor Krausert called the August 16, 2022 regular meeting to order at 9:00 a.m.

PUBLIC QUESTION PERIOD – Before meeting is called to order

A. CALL TO ORDER AND APPROVAL OF AGENDA
1. Land Acknowledgement

2. Agenda for the August 16, 2022 Regular Meeting of Council

176-2022 Moved by Mayor Krausert that Council approve the agenda for the August 16, 2022 regular meeting of Council as presented, with one addition:

- K2 – Three Sisters Mountain Village Litigation Matters

CARRIED UNANIMOUSLY

B. PUBLIC HEARINGS

1. Spring Creek Mountain Village Area Redevelopment Plan Amendments Bylaw 2021-22 and Land Use Bylaw Amendments Bylaw 2021-23

(1) Mayor Krausert opened the public hearing for Bylaws 2021-22 and 2021-23 at 9:03 a.m.

(2) Administration spoke to a verbal report on the matter under consideration to provide context. The applicant also provided a verbal overview and proposed an amendment to the area redevelopment plan for Council's consideration.

(3) Public Submissions

In Favour

Name	Verbal	Written
Brown, Debbie and Peter		X
Chalifoux, Gerry		X
Chrumka, Douglas		X
Fridhandler, Jonathan		X
Hancock, Hugh and Harrison, Terri		X
Higgins, Rene		X
Howe, Gayden and James		X
Ingle, Peter and Barb		X
Lambert, Liam and Mary		X
Murdoch, Robert and Beverly		X
Oosthuizen, Shaun and Sinclair, Donna	X	
Pare, William		X
Plummer, Annette		X
Seitz, Scott		X
Spence, Greg	X	
Steel, Stephen		X
Taylor, Sharon		X
Walthall, Richard and Bernice		X
Wetter, Graham		X
Zenert, Jack		X

Neutral or Unstated

None

Opposed

Name	Verbal	Written
Baker, Liz, Hoilett, Phil and Claire and Dupuis, Alex	X	X
Cooke, Catherine		X
Cooper, Sarah		X
Denton, Ian		X
Dyck, Bryan		X
Goodrow, Val and Don		X
Hall, Constance		X
Holdner, Brent and Terrie		X
Jarrah, Aranzazu and Juan		X
MacDonell, Michelle	X	
Mracek, John and Kathy		X
Parno, Patrick		X
Poland, Carol		X

(4) The applicant addressed questions of clarification from Council.

(5) The recording secretary read into the record the names of those who provided written submissions. These submissions are recorded in the list of public submissions above and are published in the record of public submissions for this meeting.

(6) Administration provided closing comments.

(7) Administration addressed questions of clarification from Council.

(8) Mayor Krausert closed the public hearing at 10:29 a.m.

Meeting Break 10:29 – 10:40

C. DELEGATIONS – None

D. APPROVAL OF MINUTES

1. Minutes of the July 5, 2022 Regular Meeting of Council

177-2022 Moved by Mayor Krausert that Council approve the minutes of the July 5, 2022 regular meeting of Council as presented.

CARRIED UNANIMOUSLY

Minutes approved by: _____ _____

E. BUSINESS ARISING FROM THE MINUTES

1. Resilient Canmore Society

Ruben Nelson, Chair of Resilient Canmore, provided additional written material that is included in the agenda package for this meeting. The updated request from Resilient Canmore is that Council pass the following motion: "While we are interested in what you are doing, we cannot make a commitment to it until you have delivered to us a clearer statement of what you will be doing and how the outcomes and outputs will benefit Canmore. We trust you will be in a position to inform us about these matters in the first quarter of 2023."

178-2022 Moved by Mayor Krausert that Council accept the request from the Resilient Canmore Society as information.

CARRIED UNANIMOUSLY

F. UNFINISHED BUSINESS – None

G. BYLAW APPROVAL

1. Spring Creek Mountain Village Area Redevelopment Plan Amendments Bylaw 2021-22 and Land Use Bylaw Amendments Bylaw 2021-23

179-2022 Moved by Mayor Krausert that Council give second reading to Spring Creek Mountain Village Area Redevelopment Plan Amendments Bylaw 2021-22.

179A-2022 Moved by Mayor Krausert that Council amend motion 179-2022 by adding the following amendment recommended by the applicant: add s. 10 as follows and renumber subsequent sections:

10 Section 4.7.4 is amended by adding "for all stages including Perpetually Affordable Housing (PAH) units and bonus units" after "residential units", striking out "be 1050 plus PAH and any related bonus units with an absolute total", striking out "to" before "exceed", and striking out "1200" and substituting "1000 units".

and that Council authorize similar changes throughout the document.

CARRIED UNANIMOUSLY

179B-2022 Moved by Mayor Krausert that Council amend motion 179-2022 by adding: any reference in the Area Redevelopment Plan Bylaw, not the Land Use Bylaw, to "top of bank" change to "legal bank."

CARRIED UNANIMOUSLY

179-2022 VOTE Moved by Mayor Krausert that Council give second reading to Spring Creek Mountain Village Area Redevelopment Plan Amendments Bylaw 2021-22, amended as follows:

- add s. 10 as follows and renumber subsequent sections:

  10 Section 4.7.4 is amended by adding "for all stages including Perpetually Affordable Housing (PAH) units and bonus units" after "residential units", striking out "be 1050 plus PAH and any related bonus units with an absolute total", striking out "to" before "exceed", and striking out "1200" and substituting "1000 units".

Minutes approved by: _____ _____

and that Council authorize similar changes throughout the document.

- any reference in the Area Redevelopment Plan Bylaw, not the Land Use Bylaw, to "top of bank" change to "legal bank."

CARRIED UNANIMOUSLY

Note to minutes: the "similar changes throughout the document referenced in motion 179-2022" are as follows:

Add s. 11 and 12 to Bylaw 2020-21 as follows and renumber subsequent sections:

11 Section 4.2.2 is amended by striking out "For each PAH unit provided and utilized as PAH, one additional market unit (a bonus unit) may be provided." after "various development stages and buildings"; striking out "and bonus units" after "PAH units", striking out "excluded from" and substituting "included in", striking out "1050" and substituting "1000", and striking out "The SCMV PAH/bonus unit policy will apply in SCMV irrespective of other Town bonus policies that may be adopted from time to time".

12 The Residential Units section of Table 4 is amended as follows:
a) under the column "Stage 1", replace "24", "207", "7" and "238" with "12", "222", "10" and "244", respectively,
b) under the column "Stage 2", replace "52", "302", and "354" with "37", "284" and "321", respectively,
c) under the column "Stage 3", replace "19", "202", and "221" with "27", "156", and "183", respectively,
d) under the column "Stage 4", replace "44", "200", and "244" with "100", "152" and "252", respectively, and
e) under the column "Total", replace "139", "911", "7", and "1,057" with "176", "814", "10", and "1000", respectively.

180-2022 Moved by Mayor Krausert that Council give third reading to Spring Creek Mountain Village Area Redevelopment Plan Bylaw 2021-22.

CARRIED UNANIMOUSLY

181-2022 Moved by Mayor Krausert that Council give second reading to Land Use Bylaw Amendments Bylaw 2021-23.

CARRIED UNANIMOUSLY

181A-2022 Moved by Mayor Krausert that Council amend motion 181-2022 by adding the following typographical corrections recommended by administration:

- Amend s. 14.19.2 by adding a closing bracket after 150m^2, and
- Amend s. 14.27.10.1 by striking out "Irrespective of section 14.27.10.11".

CARRIED UNANIMOUSLY

Minutes approved by: _____ _____

181-2022 VOTE — The vote followed on motion 181-2022 as amended: that Council give second reading to Land Use Bylaw Amendments Bylaw 2021-23 amended as follows:

- Amend s. 14.19.2 by adding a closing bracket after 150m^2, and
- Amend s. 14.27.10.1 by striking out "Irrespective of section 14.27.10.11".

CARRIED UNANIMOUSLY

182-2022 — Moved by Mayor Krausert that Council give third reading to Land Use Bylaw Amendments Bylaw 2021-23.

CARRIED UNANIMOUSLY

2. Community Standards Bylaw 2022-16

183-2022 — Moved by Mayor Krausert that Council give first reading to Community Standards Bylaw 2022-16.

183A-2022 — Moved by Mayor Krausert that Council amend motion 183-2022 by adding: add the following to the beginning of s. 55: "Except for Fruit-Bearing Vegetation located on any premises at the time of coming into effect of this bylaw,".

CARRIED UNANIMOUSLY

183B-2022 — Moved by Mayor Krausert that Council amend motion 183-2022 by adding: amend the heading "Appliances in Outdoor Locations" by striking out "Appliances" and substituting "Equipment" and by adding the following section after s. 49 and renumbering subsequent sections:

> 50 No Owner or Occupant of a Premises shall place, cause, or permit the placement of Power Tools or other potentially dangerous equipment in an outdoor location on the Premises except during active use for their intended purposes unless secured so as to not be potentially dangerous.

CARRIED UNANIMOUSLY

183C-2022 — Moved by Councillor Hilstad that Council amend motion 183-2022 by adding: amend s. 26(e) by striking out "Province" and substituting "Government".

CARRIED UNANIMOUSLY

183D-2022 — Moved by Councillor Hilstad that Council amend motion 183-2022 by adding: amend s. 52 by deleting (e) roofs and renumbering subsequent subsections.

CARRIED UNANIMOUSLY

183-2022 VOTE — Moved by Mayor Krausert that Council give first reading to Community Standards Bylaw 2022-16 as amended:

- add the following to the beginning of s.55: "Except for Fruit-Bearing Vegetation located on any premises at the time of coming into effect of this bylaw,".
- amend the heading "Appliances in Outdoor Locations" by striking out "Appliances" and substituting "Equipment" and by adding the following section after s. 49 and renumbering subsequent sections:

  > 50 No Owner or Occupant of a Premises shall place, cause, or permit the placement of Power Tools or other potentially dangerous equipment in an outdoor location on the Premises except during active use for their intended purposes unless secured so as to not be potentially dangerous.

- amend s. 26e by striking out "Province" and substituting "Government".

Minutes approved by: _____ _____

- amend s. 52 by deleting (e) roofs and renumbering subsequent subsections.

CARRIED UNANIMOUSLY

184-2022 Moved by Mayor Krausert that Council give second reading to Community Standards Bylaw 2022-16.

CARRIED UNANIMOUSLY

185-2022 Moved by Mayor Krausert that Council give leave for third reading of Community Standards Bylaw 2022-16.

CARRIED UNANIMOUSLY

186-2022 Moved by Mayor Krausert that Council give third reading to Community Standards Bylaw 2022-16.

CARRIED UNANIMOUSLY

Lunch Break 12:37 – 1:43

3. Clean Energy Improvement Tax Amending Bylaw 2022-21

187-2022 Moved by Mayor Krausert that Council give first reading to Clean Energy Improvement Tax Bylaw 2022-21 and schedule a public hearing for September 6, 2022.

CARRIED UNANIMOUSLY

4. Borrowing Bylaw 2022-20 for Clean Energy Improvement Program

188-2022 Moved by Mayor Krausert that Council give first reading to Borrowing Bylaw 2022-20.

CARRIED UNANIMOUSLY

5. Increasing Membership of the Subdivision and Development Appeal Board

189-2022 Moved by Mayor Krausert that Council give first reading to Subdivision and Development Appeal Board Amending Bylaw 2022-19.

CARRIED UNANIMOUSLY

190-2022 Moved by Mayor Krausert that Council give second reading to Subdivision and Development Appeal Board Amending Bylaw 2022-19.

CARRIED UNANIMOUSLY

191-2022 Moved by Mayor Krausert that Council give leave for third reading of Subdivision and Development Appeal Board Amending Bylaw 2022-19.

CARRIED UNANIMOUSLY

192-2022 Moved by Mayor Krausert that Council give third reading to Subdivision and Development Appeal Board Amending Bylaw 2022-19.

CARRIED UNANIMOUSLY

Minutes approved by: _____ _____

H. NEW BUSINESS

1. Amendment to Assessment Appeal Fees: 91B Three Sisters Drive

193-2022 Moved by Mayor Krausert that Council uphold the 2022 complaint fees for the tax rolls at 91B Three Sisters Drive at $650 per tax roll for fourteen of the assessment complaints filed for a total of $9,100.

CARRIED UNANIMOUSLY

2. Major Event Grant Policy

194-2022 Moved by Mayor Krausert that Council approve the Major Event Grant Policy as presented.

CARRIED UNANIMOUSLY

195-2022 Moved by Mayor Krausert that Council allow retroactive applications for major events that have already taken place in 2022.

CARRIED UNANIMOUSLY

3. Family Connection Centre Position Reclassification

196-2022 Moved by Mayor Krausert that Council approve the reclassification of the Family Connection Centre positions (Hub Program Assistant to a Program Coordinator and the Caregiver Capacity Builder to a Family Support Worker).

CARRIED UNANIMOUSLY

4. Appropriateness of Indigenous Place Names

197-2022 Moved by Mayor Krausert that Council direct administration to send a letter to the Stoney Nakoda Nation requesting their input on renaming Indian Flats and TeePee Town.

CARRIED UNANIMOUSLY

Meeting Break 3:00 – 3:16 p.m.

5. Court of Queen's Bench of Alberta decision re. "Staircase Lands" (Three Sisters Mountain Village Properties Ltd. v. Canmore, 2022 ABQB 511)

198-2022 Moved by Mayor Krausert that Council take the meeting in camera to prevent disclosure of solicitor-client privilege in accordance with s. 27(1)(a) of the Freedom of Information and Protection of Privacy Act at 3:35 p.m.

Members of administration present at the closed session: Adam Driedzic, Cheryl Hyde, Sally Caudill, Therese Rogers, Robyn Dinnadge, Lauren Miller, and Andrew Kelly.

199-2022 Moved by Mayor Krausert that Council return to the public meeting at 4:44 p.m.

CARRIED UNANIMOUSLY

200-2022 Moved by Mayor Krausert that Council direct administration to:

- acquire the upper portion of the Staircase Lands to satisfy the decision of the Court of Queens Bench decision and
- report on detailed options for implementing this decision.

CARRIED UNANIMOUSLY

Minutes approved by: _____ _____

I. REPORTS FROM ADMINISTRATION – None

J. NOTICES OF MOTION – None

K. IN CAMERA

1. Court of Queen's Bench of Alberta decision re. "Staircase Lands" (Three Sisters Mountain Village Properties Ltd. v. Canmore, 2022 ABQB 511)

Addressed during item H-5.

2. Three Sisters Mountain Village Litigation Matters

201-2022 Moved by Mayor Krausert that Council postpone item K2 to the September 6, 2022 regular meeting of Council.

CARRIED UNANIMOUSLY

L. ADJOURNMENT

202-2022 Moved by Mayor Krausert that Council adjourn the August 16, 2022 regular meeting of Council at 4:46 p.m.

CARRIED UNANIMOUSLY

_____
Sean Krausert, Mayor

_____
Andrew Kelly, Assistant Municipal Clerk

Minutes approved by: _____ _____

Request for Decision

DATE OF MEETING:	**September 6, 2022**	**Agenda #:**	G-1
TO:	Council		
SUBJECT:	Clean Energy Improvement Tax Amending Bylaw 2022-21		
SUBMITTED BY:	Amy Fournier, Energy and Climate Action Coordinator		
RECOMMENDATION:	1. That Council give second reading to Clean Energy Improvement Tax Bylaw 2022-21. 2. That Council give third reading to Clean Energy Improvement Tax Bylaw 2022-21.		

EXECUTIVE SUMMARY

Administration's analysis and position on this matter was presented at first reading of this bylaw and remains unchanged. Please see Attachment 1 for the materials presented at first reading.

ATTACHMENTS

1) Request for Decision and associated attachments from the August 16, 2022 regular meeting
2) Bylaw 2022-21 as approved at first reading.

AUTHORIZATION

Submitted by: Amy Fournier
Energy and Climate Action Coordinator Date: August 25, 2022

Request for Decision

DATE OF MEETING:	**August 16, 2022**	**Agenda #:**	G-3
TO:	Council		
SUBJECT:	Clean Energy Improvement Tax Amending Bylaw 2022-21		
SUBMITTED BY:	Amy Fournier, Energy and Climate Action Coordinator		
RECOMMENDATION:	That Council give first reading to Clean Energy Improvement Tax Amending Bylaw 2022-21 and schedule a public hearing for September 6, 2022.		

EXECUTIVE SUMMARY

This amending bylaw is being brought forward for Council to approve minor administrative edits to the Clean Energy Improvement Tax Bylaw 2020-26.

RELEVANT COUNCIL DIRECTION, POLICY, OR BYLAWS

Bill 10, An Act to Enable Clean Energy Improvements, was introduced in the Alberta Legislature on April 12, 2018, to enable municipalities to establish a Clean Energy Improvement Program (CEIP). CEIP intends to make it more affordable for Albertans to upgrade their residential and commercial properties to improve energy efficiency or add renewable energy, through municipal financing paid back via property taxes. The provincial legislation requires that municipalities pass Clean Energy Improvement Tax Bylaws to deliver a local CEIP program.

Clean Energy Improvement Tax Bylaw 2020-26 was passed on December 1, 2020.

DISCUSSION

When Bylaw 2020-26 was passed, the Program Administrator of CEIP, as designated by the Minister of Environment and Parks, was the Municipal Climate Change Action Centre (MCCAC). This has since been changed to the Alberta Municipal Services Corporation (operating as Alberta Municipalities). As Administration is working though the detailed design and funding mechanisms of the local CEIP, in preparation for public launch in the coming months, the bylaw is now being updated to reflect that change. As detailed in the attached tracked changes version of Bylaw 2020-26, the following changes are also being made at this time, mainly to provide greater clarity, as well as consistency with provincial legislation.

- Updating language in the bylaw to align with Section 390.3 of the *Municipal Government Act* (Clean Energy Improvement Tax).
- Edits to provide clarity in the relationship between Alberta Municipalities and municipalities delivering CEIP.
- Addition of a Definitions and Interpretation section.
- Change in the maximum interest rate to match the accompanying CEIP Borrowing Bylaw (2022-20).

- Change in the program details to align with provincial regulation, specifically around the CEIP loan repayment being based on the estimated useful life of each of the improvements, as opposed to the weighted average.

The Clean Energy Improvement Tax Bylaw enables both a residential and commercial/non-residential CEIP. Administration is currently working towards launching the residential program in the coming months. A commercial/non-residential program will be developed at a future date.

ANALYSIS OF ALTERNATIVES

No alternatives have been considered.

FINANCIAL IMPACTS

Even though there are no direct financial impacts from the proposed Clean Energy Improvement Tax Bylaw Amending Bylaw, there are financial impacts to the residential Clean Energy Improvement Program as highlighted in the report that is seeking Council's approval for the borrowing bylaw for this program.

STAKEHOLDER ENGAGEMENT

The changes in the amending bylaw were made in consultation with Finance and Alberta Municipalities staff.

ATTACHMENTS

1) Clean Energy Improvement Tax Bylaw 2022-21
2) Clean Energy Improvement Tax 2020-26

AUTHORIZATION

Submitted by:	Amy Fournier Energy and Climate Action Coordinator	Date:	July 15, 2022
Approved by:	Palki Biswas Manager of Finance	Date:	July 26, 2022
Approved by:	Andreas Comeau Public Works Manager	Date	July 26, 2022
Approved by:	Whitney Smithers General Manager of Municipal Infrastructure	Date:	July 27, 2022
Approved by:	Sally Caudill Chief Administrative Officer	Date:	July 27, 2022

BYLAW 2022-21

A BYLAW OF THE TOWN OF CANMORE, IN THE PROVINCE OF ALBERTA, TO ESTABLISH A CLEAN ENERGY IMPROVEMENT PROGRAM

WHEREAS the purpose of a municipality is to foster the well-being of the environment and provide services, facilities or other things that, in the opinion of Council, are necessary or desirable for all or a part of the municipality;

WHEREAS the Clean Energy Improvement Program is a financing program in Alberta that uses municipal financing to enable the implementation of clean energy improvements to eligible residential, non-residential, and/or not designated industrial properties, through the use of a local taxation mechanism that provides security for repayment of the financing;

WHEREAS the Alberta Municipal Services Corporation (operating as Alberta Municipalities) has been designated by the Minister of Environment and Parks to be the Program Administrator for the Clean Energy Improvement Program and support municipalities in Alberta that finance clean energy improvements;

WHEREAS the Council of a municipality must pass a Clean Energy Improvement Tax Bylaw to establish a Clean Energy Improvement Program pursuant to Section 390.3 of the *Act*;

WHEREAS the Council of the Town of Canmore wishes to enable financing for clean energy improvements for eligible properties in their municipality;

NOW THEREFORE, the Council of the Town of Canmore, duly assembled, enacts as follows:

TITLE

1 This bylaw shall be known as the "Clean Energy Improvement Tax Bylaw."

DEFINITIONS AND INTERPRETATION

2 In this bylaw,

a) "*Act*" means the *Municipal Government Act*;

b) "Agreement" means a Clean Energy Improvement Agreement entered into between the municipality and an Owner whereby the Owner agrees to pay an amount required to cover the costs of financing each clean energy improvement approved by the Program Administrator, in accordance with Section 390.4 of the *Act*;

c) "Owner" means, collectively, the registered owners of property in the municipality;

d) "Program" means a Clean Energy Improvement Program as described in the *Act* and *Regulation*;

e) "Program Administrator" means the Alberta Municipal Services Corporation (operating as Alberta Municipalities), or provincially designated Program Administrator as defined in the *Regulation*;

f) "*Regulation*" means the *Clean Energy Improvements Regulation*.

PROVISIONS

3 An Owner of an eligible property within the municipality may apply to the Program Administrator to seek financing for clean energy improvements to their property.

4 Participation in the Program is limited to eligible properties, defined as a property located within the municipality that is designated as residential, non-residential, or not designated industrial property, but does not include designated industrial property or government owned properties.

5 The Owner of a tax-exempt property is responsible to pay all principal and interest of the Program costs in accordance with the Agreement.

6 The chief administrative officer is hereby authorized to impose a Clean Energy Improvement Tax, in respect of each clean energy improvement made to a property, where the municipality has entered into an Agreement with the Owner(s) of that property.

7 The Clean Energy Improvement Tax shall be voluntarily levied against a property subject to an Agreement to raise revenue to pay the amount required to recover the costs of those clean energy improvements, including principal and interest, to do so between the municipality and the Owner.

8 The Owner(s) must meet the criteria defined by the Program Administrator and municipality to be eligible to participate in the Clean Energy Improvement Program.

9 For a clean energy improvement to be eligible, it must be an installation that is permanently affixed to the eligible property which

a) will increase energy efficiency or the use of renewable energy on that property,

b) must be listed as an eligible upgrade on the Program Administrator's website, and be agreed to in writing by the municipality within the Agreement,

c) is not less than three thousand ($3000) dollars in project value, and

d) does not exceed $50,000 in project value for residential or $500,000 for non-residential or not designated industrial property.

10 The most recent amount of the annual tax authorized by a bylaw under Section 353 (property tax) of the *Act* and imposed on the property, must be greater than, or equal to, the total annual clean energy improvement tax payment(s).

11 The annual clean energy improvement tax payment is calculated in accordance with the formula

$$\frac{A + B + C}{D}$$

Where: A is the capital cost of undertaking the clean energy improvement,
B is the total cost of professional services needed for the clean energy improvement,
C is the total of all incidental costs, and
D is the lesser of the probable lifetime, calculated in years, of the improvement or the maximum financing term established by the municipality.

12 An Owner may submit one application per year.

13 An Owner may apply for the Program

a) by submitting an application to the Program Administrator , including any required supporting documentation, and by following all program requirements as outlined by the Program Administrator, and

b) by paying any required application fee.

14 For the purpose of the Program, the sum of project amounts, as they are approved, shall be borrowed by the municipality through a financial institution and/or other sources as set out in a borrowing bylaw.

15 The amount borrowed by the Owner shall have a maximum rate of interest of up to 7% to a maximum term of 25 years, with the repayment term based on the estimated useful life of the improvement(s).

16 The principal and interest owing under the borrowing by the municipality will be paid using the revenue from the annual Clean Energy Improvement Tax payments made by the approved project recipients through to the municipality.

17 The Clean Energy Improvement Tax will be imposed on the property that is subject to an Agreement, after the signing of the Agreement.

18 If an owner wishes to repay the Clean Energy Improvement Program financing early, the amount owing will be calculated at the time of the request, based on principal and interest remaining and the terms of the financing being used for the project(s).

19 Any project(s) approved under the Clean Energy Improvement Program must be completed within the time limit as set out under the Agreement.

ENACTMENT/TRANSITION

20 If any clause in this bylaw is found to be invalid, it shall be severed from the remainder of the bylaw and shall not invalidate the whole bylaw.

21 Clean Energy Improvement Tax Bylaw 2020-26 is repealed.

22 This bylaw comes into force on the date it is passed.

FIRST READING:

PUBLIC HEARING:

SECOND READING:

THIRD READING:

Approved on behalf of the Town of Canmore:

Sean Krausert Mayor	Date
Cheryl Hyde Municipal Clerk	Date

Town of CANMORE

BYLAW 2020-26

A BYLAW OF THE TOWN OF CANMORE, IN THE PROVINCE OF ALBERTA, TO ESTABLISH A CLEAN ENERGY IMPROVEMENT PROGRAM

WHEREAS the purpose of a municipality is to foster the well-being of the environment and provide services, facilities or other things that, in the opinion of Council, are necessary or desirable for all or a part of the municipality;

WHEREAS the Clean Energy Improvement Program is a financing program that uses municipal financing to facilitate the implementation of clean energy improvements to residential and/or commercial properties, through the use of a local taxation mechanism, to provide security for repayment of the financing;

WHEREAS the Municipal Climate Change Action Centre ("MCCAC") has developed a Clean Energy Improvement Program ("CEIP") to support municipalities in Alberta finance clean energy improvements;

WHEREAS MCCAC is the Program Administrator, designated by the Minister, for the Clean Energy Improvement Program;

WHEREAS the Council of a municipality must pass a Clean Energy Improvement Tax Bylaw to establish a Clean Energy Improvement Program pursuant to Section 390.3 of the *Municipal Government Act*, R.S.A. 2000, c. M-26 ("the Act");

WHEREAS the Council of the Town of Canmore wishes to enable financing for clean energy improvements for eligible properties in their municipality by using MCCAC's CEIP Program.

NOW THEREFORE, the Council of the Town of Canmore, duly assembled, enacts as follows:

TITLE

1. This Bylaw shall be known as the "Clean Energy Improvement Tax Bylaw", of the Town of Canmore.

PROVISIONS

2. A property owner of an eligible property within the Municipality can apply to the Program Administrator to seek financing for a clean energy improvement of their property.

3. Participation in the Program is limited to eligible properties, defined as a property located within the Municipality that is designated as residential, commercial, non-profit, or multi-unit residential (>5 units), but does not include designated industrial property or government owned properties.

4. An applicant of a non-profit property that is tax exempt would be responsible to pay any and all principal and interest of the Clean Energy Improvement Program costs, as per the Clean Energy Improvement Agreement.

Bylaw approved by: CT JB

5. The Chief Administrative Officer, or designate, of the Town of Canmore is hereby authorized to impose a Clean Energy Improvement Tax, in respect of each clean energy improvement made to a property, where the municipality has entered into a Clean Energy Improvement Agreement with the owner(s) of that property.

6. The Clean Energy Improvement Tax will be voluntarily levied against a property when there is a Clean Energy Improvement Agreement, to raise revenue to pay the amount required to recover the costs of those clean energy improvements, including principal and interest, to do so between the municipality and the property owner.

7. The Property owner(s) must meet the criteria defined by the Program Administrator and Municipality to be eligible to participate in the Clean Energy Improvement Program.

8. For a clean energy improvement to be eligible, it must be an installation that is affixed to the eligible property which:
   (a) will result in improved energy efficiency or the production of renewable energy;
   (b) must be listed as an eligible upgrade on the Program Administrator's website, and be agreed to in writing by the Municipality within the Agreement;
   (c) is not less than three thousand ($3000) dollars in project value;
   (d) does not exceed $50,000 for residential, $500,000 for commercial, $50,000 for non-profit, and $100,000 for multi-unit residential (>5 units), in project value.

9. The most recent amount of the tax authorized by a bylaw under Section 353 (property tax) of the *Municipal Government Act* and imposed on the property, must be greater than, or equal to, the annual Clean Energy Improvement plan annual payment, calculated in accordance with the following formula:

$$\frac{A + B + C}{D}$$

Where A is the capital cost of undertaking the clean energy improvement;
B is the total cost of professional services needed for the clean energy improvement;
C is the total of all incidental costs;
D is the probable lifetime, calculated in years, of the improvement.

10. The Clean Energy Improvement Agreement will be as set out as under Section 390.4 of the Municipal Government Act, and as amended.

11. The period over which the cost of each eligible clean energy improvement will be spread, to a maximum, over the probable lifetime of the improvement. The repayment amount will not exceed the taxation amount for the property in question. For multiple upgrades on one property, a weighted average of the probable lifetimes of each upgrade, will be utilized.

12. A property owner may submit one application per year.

13. The property owner(s) can apply for the program:

(a) By submitting an application to MCCAC for the Clean Energy Improvement Program, including any required supporting documentation, and following all program requirements as outlined by MCCAC;
(b) By paying any required application or administration fees.

14. That for the purpose of the Clean Energy Improvement Program, the sum of project amounts, as they are approved, will be borrowed through a financial institution or other sources to be set out in a borrowing bylaw.

15. The annual maximum amount to be allocated by the municipality towards the Clean Energy Improvement Program is $400,000 for residential and $1,000,000 for non residential.

16. The annual borrowed amount will have a maximum rate of interest of five percent (5%), a maximum term of twenty five (25) years, with the repayment term based on the weighted average of the lifespan of the improvement(s).

17. The principle and interest owing under the borrowing will be paid using the proceeds from the Clean Energy Improvement Tax and payment made by the approved project recipients through to the Municipality on the annual improvement levy.

18. A Clean Energy Improvement Tax will be imposed on the property that is subject to a Clean Energy Improvement Agreement, directly after the signing of the Clean Energy Improvement Agreement.

19. In the event that an owner wishes to repay the Clean Energy Improvement Program financing early, the amount owing will be calculated at the time of the request, based on principle and interest remaining and the terms of the financing being used for the project(s).

20. Any project(s) approved under the Clean Energy Improvement Program must be completed within the time limit as set out under the agreement.

ENACTMENT/TRANSITION

21. If any clause in this Bylaw is found to be invalid, it shall be severed from the remainder of the Bylaw and shall not invalidate the whole Bylaw.

22. This Bylaw comes into force on the date it is passed.

FIRST READING: November 3, 2020

PUBLIC HEARING: December 1, 2020

SECOND READING: December 1, 2020

THIRD READING: December 1, 2020

DATE IN FORCE: December 3, 2020

Bylaw approved by: CT JB

Approved on behalf of the Town of Canmore:

John Borrowman
Mayor

December 3, 2020
Date

Cheryl Hyde
Municipal Clerk

December 3, 2020
Date

Bylaw approved by: CH JB

Town of CANMORE

BYLAW 2022-21

A BYLAW OF THE TOWN OF CANMORE, IN THE PROVINCE OF ALBERTA, TO ESTABLISH A CLEAN ENERGY IMPROVEMENT PROGRAM

WHEREAS the purpose of a municipality is to foster the well-being of the environment and provide services, facilities or other things that, in the opinion of Council, are necessary or desirable for all or a part of the municipality;

WHEREAS the Clean Energy Improvement Program is a financing program in Alberta that uses municipal financing to enable the implementation of clean energy improvements to eligible residential, non-residential, and/or not designated industrial properties, through the use of a local taxation mechanism that provides security for repayment of the financing;

WHEREAS the Alberta Municipal Services Corporation (operating as Alberta Municipalities) has been designated by the Minister of Environment and Parks to be the Program Administrator for the Clean Energy Improvement Program and support municipalities in Alberta that finance clean energy improvements;

WHEREAS the Council of a municipality must pass a Clean Energy Improvement Tax Bylaw to establish a Clean Energy Improvement Program pursuant to Section 390.3 of the *Act*;

WHEREAS the Council of the Town of Canmore wishes to enable financing for clean energy improvements for eligible properties in their municipality;

NOW THEREFORE, the Council of the Town of Canmore, duly assembled, enacts as follows:

TITLE

1 This bylaw shall be known as the "Clean Energy Improvement Tax Bylaw."

DEFINITIONS AND INTERPRETATION

2 In this bylaw,

a) "*Act*" means the *Municipal Government Act*;

b) "Agreement" means a Clean Energy Improvement Agreement entered into between the municipality and an Owner whereby the Owner agrees to pay an amount required to cover the costs of financing each clean energy improvement approved by the Program Administrator, in accordance with Section 390.4 of the *Act*;

c) "Owner" means, collectively, the registered owners of property in the municipality;

d) "Program" means a Clean Energy Improvement Program as described in the *Act* and *Regulation*;

e) "Program Administrator" means the Alberta Municipal Services Corporation (operating as Alberta Municipalities), or provincially designated Program Administrator as defined in the *Regulation*;

f) "*Regulation*" means the *Clean Energy Improvements Regulation*.

PROVISIONS

3 An Owner of an eligible property within the municipality may apply to the Program Administrator to seek financing for clean energy improvements to their property.

4 Participation in the Program is limited to eligible properties, defined as a property located within the municipality that is designated as residential, non-residential, or not designated industrial property, but does not include designated industrial property or government owned properties.

5 The Owner of a tax-exempt property is responsible to pay all principal and interest of the Program costs in accordance with the Agreement.

6 The chief administrative officer is hereby authorized to impose a Clean Energy Improvement Tax, in respect of each clean energy improvement made to a property, where the municipality has entered into an Agreement with the Owner(s) of that property.

7 The Clean Energy Improvement Tax shall be voluntarily levied against a property subject to an Agreement to raise revenue to pay the amount required to recover the costs of those clean energy improvements, including principal and interest, to do so between the municipality and the Owner.

8 The Owner(s) must meet the criteria defined by the Program Administrator and municipality to be eligible to participate in the Clean Energy Improvement Program.

9 For a clean energy improvement to be eligible, it must be an installation that is permanently affixed to the eligible property which

a) will increase energy efficiency or the use of renewable energy on that property,

b) must be listed as an eligible upgrade on the Program Administrator's website, and be agreed to in writing by the municipality within the Agreement,

c) is not less than three thousand ($3000) dollars in project value, and

d) does not exceed $50,000 in project value for residential or $500,000 for non-residential or not designated industrial property.

10 The most recent amount of the annual tax authorized by a bylaw under Section 353 (property tax) of the *Act* and imposed on the property, must be greater than, or equal to, the total annual clean energy improvement tax payment(s).

11 The annual clean energy improvement tax payment is calculated in accordance with the formula

$$\frac{A + B + C}{D}$$

Where: A is the capital cost of undertaking the clean energy improvement,
B is the total cost of professional services needed for the clean energy improvement,
C is the total of all incidental costs, and
D is the lesser of the probable lifetime, calculated in years, of the improvement or the maximum financing term established by the municipality.

12 An Owner may submit one application per year.

13 An Owner may apply for the Program

a) by submitting an application to the Program Administrator , including any required supporting documentation, and by following all program requirements as outlined by the Program Administrator, and

b) by paying any required application fee.

14 For the purpose of the Program, the sum of project amounts, as they are approved, shall be borrowed by the municipality through a financial institution and/or other sources as set out in a borrowing bylaw.

15 The amount borrowed by the Owner shall have a maximum rate of interest of up to 7% to a maximum term of 25 years, with the repayment term based on the estimated useful life of the improvement(s).

16 The principal and interest owing under the borrowing by the municipality will be paid using the revenue from the annual Clean Energy Improvement Tax payments made by the approved project recipients through to the municipality.

17 The Clean Energy Improvement Tax will be imposed on the property that is subject to an Agreement, after the signing of the Agreement.

18 If an owner wishes to repay the Clean Energy Improvement Program financing early, the amount owing will be calculated at the time of the request, based on principal and interest remaining and the terms of the financing being used for the project(s).

19 Any project(s) approved under the Clean Energy Improvement Program must be completed within the time limit as set out under the Agreement.

ENACTMENT/TRANSITION

20 If any clause in this bylaw is found to be invalid, it shall be severed from the remainder of the bylaw and shall not invalidate the whole bylaw.

21 Clean Energy Improvement Tax Bylaw 2020-26 is repealed.

22 This bylaw comes into force on the date it is passed.

FIRST READING: August 16, 2022

PUBLIC HEARING:

SECOND READING:

THIRD READING:

Approved on behalf of the Town of Canmore:

Sean Krausert Mayor	Date
Cheryl Hyde Municipal Clerk	Date

Request for Decision

DATE OF MEETING: **September 6, 2022** **Agenda #:** G-2

TO: Council

SUBJECT: Amendments to the Canmore Planning Commission

SUBMITTED BY: Whitney Smithers, GM of Municipal Infrastructure

RECOMMENDATIONS:

1. That Council give first reading to Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw Amendment 2022-22 – Membership and Eligibility.
2. That Council give second reading to Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw Amendment 2022-22 – Membership and Eligibility.
3. That Council give leave for third reading of Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw Amendment 2022-22 – Membership and Eligibility.
4. That Council give third reading to Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw Amendment 2022-22 – Membership and Eligibility.

EXECUTIVE SUMMARY

Administration is recommending Council amend the Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw to change the composition of the Canmore Planning Commission's membership. This proposal is intended to ensure matters before the Commission benefit from a review of a broad cross-section of professional and community interest.

RELEVANT COUNCIL DIRECTION, POLICY, OR BYLAWS

Bylaw 2019-07 is the "Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw". The bylaw establishes a municipal planning commission, known as the Canmore Planning Commission (CPC). The bylaw further establishes Commission membership and term, eligibility for membership, appointment of chair and vice-chair, and meeting procedures.

DISCUSSION

Currently, the Canmore Planning Commission is comprised of a minimum of five and a maximum of seven voting members. One of these members is a member of Council (an alternate is also appointed), and the remainder are public members. Eligibility requirements are restricted to age, residence in Canmore, and term limits. The bylaw further states that members of administration and the Subdivision and Development Appeal Board are ineligible to be members.

Composition of CPC

The approach of not requiring subject matter expertise for any members of CPC is increasingly becoming a challenge. The CPC tends to handle some of the largest, most impactful applications in the community. They also consider applications where significant variances from rules of the Land Use Bylaw are being proposed, the consideration of which requires an understanding of the impacts of such variances in the context of the purpose or intent of the land use district. While there is value in bringing a broad community lens to decisions of this nature, there is also a need for technical knowledge and subject matter expertise to ensure decisions made by CPC are in alignment with Council approved policies and add value to the end project and the community.

In addition, the Bow Valley Developers Association (BOWDA) has regularly raised issues with the current composition of CPC as being problematic because of the lack of expertise as noted above.

Administration conducted an informal review of the composition of planning commissions in other similar sized municipalities across Alberta. 11 municipalities were reviewed, and of those, only four have planning commissions (Brooks, Cochrane, Okotoks, and Sylvan Lake). Each of them appoints between four and seven citizens at large. All four include at least two appointed members of Council.

Given the nature and complexity of land use decisions in Canmore, a small number of larger municipalities were also reviewed, as summarized below.

Airdrie	Two councillors; Seven citizens	Citizens are appointed at large.
Calgary	• Two administrative staff (planning and transportation); • Mayor; • Two councillors; and • Six citizens	Four of the six citizens may have expertise in planning and development related professions; non-binding nominations have typically been solicited from related professional and industry organizations.
Edmonton	Does not have a planning commission	
Red Deer	Mayor; Two councillors; and Four citizens	Citizens are appointed at large.

Based upon this review and feedback, administration recommends a change to the composition of CPC. It is suggested that CPC be comprised of:

- the general manager of municipal infrastructure (chair) who shall vote only in the case of a tie,
- two Council representatives,
- two community members with planning or development related credentials, and
- up to two community members at large.

A non-binding nomination from BOWDA would be solicited for one of the community member positions requiring planning or development related credentials.

This composition acknowledges the need for greater subject matter expertise and technical knowledge to be brought to larger applications, while still ensuring these applications can be considered through a broader community lens.

In terms of the potential impact on the current CPC, of the four public members currently appointed, only one has a term extending past October. If that member were intending to continue their term, they could continue on CPC as a community member at large. The Town would need to encourage community members with planning, architecture, or landscape architecture backgrounds to apply in the call for committee members that will go out in September.

ANALYSIS OF ALTERNATIVES

Council could retain CPC in its current form. This would not address the challenge of lack of subject matter expertise on the most significant development applications in the community.

Council could choose to abandon the need for a planning commission altogether. As noted in the report, the majority of communities reviewed do not have a planning commission and rely on the professional expertise of municipal staff as the development authority. While administration is prepared to have that conversation, there is still value to the "voice of the citizen" on some development applications. On the other hand, applications for appointment to CPC have declined over the past few years. If this trend continues, administration will likely revisit this position.

FINANCIAL IMPACTS

N/A

STAKEHOLDER ENGAGEMENT

BOWDA supports that the proposed changes to require more subject matter expertise on the commission would lead to improved consideration and vetting of applications.

ATTACHMENTS

1) Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw 2019-07 – tracked changes version
2) Amending Bylaw 2022-22

AUTHORIZATION

Submitted by:	Whitney Smithers General Manager Municipal Infrastructure	Date:	August 18, 2022
Approved by:	Sally Caudill Chief Administrative Officer	Date:	August 19, 2022

BYLAW 2019-07

Office Consolidation Current as of December 7, 2021

A BYLAW OF THE TOWN OF CANMORE, IN THE PROVINCE OF ALBERTA, FOR THE PURPOSE OF ESTABLISHING A SUBDIVISION AUTHORITY, A DEVELOPMENT AUTHORITY, AND A MUNICIPAL PLANNING COMMISSION

The Council of the Town of Canmore, in the Province of Alberta, duly assembled, enacts as follows:

TITLE

1 This bylaw shall be known as the "Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw."

2021-25

INTERPRETATION

2 In this bylaw:

a) "Act" means the Municipal Government Act, RSA 2000, Chapter M-26, as amended;

b) "Commission" means the Canmore Planning Commission of the Town as established by this bylaw (also referred to as a Municipal Planning Commission in the Act);

c) "Development Authority" means the Town of Canmore Development Authority as established by this bylaw, and includes the Chief Administrative Officer, the Canmore Planning Commission, and Council;

d) "Member" means a member of the Canmore Planning Commission appointed pursuant to this bylaw;

e) "Pecuniary Interest" means pecuniary interest as defined by section 170(1) of the Act;

f) "Secretary" means an employee of the Town assigned by the Manager of Planning and Development to act as the Commission Secretary;

g) "Town" means the Town of Canmore.

3 Where a bylaw references a Town staff position, department or Commission, the reference is deemed to be to the current name that the staff position, department or Commission is known by.

ESTABLISHMENT OF A SUBDIVISION AUTHORITY

3.1 A subdivision authority is hereby established to exercise subdivision power and duties on behalf of the Town.

2021-25

3.2 The subdivision authority is comprised of the chief administrative officer.

2021-25

3.3 The chief administrative officer shall, in writing, delegate the powers and duties of the subdivision authority to any employee or employees of the municipality considered qualified.

2021-25

ESTABLISHMENT OF A DEVELOPMENT AUTHORITY

4 A development authority is hereby established to exercise development powers and perform duties on behalf of the Town, subject to section 641 of the Act.

2021-25

4.1 Pursuant to this bylaw, the powers and duties of the development authority may be carried out by:

a) the chief administrative officer,

b) the Canmore Planning Commission, or

c) Council.

2021-25

5 The chief administrative officer shall, in writing, delegate the powers and duties of the development authority to any employee or employees of the municipality considered qualified, with those employee(s) to be known as the development officers.

2021-25

6 Repealed 2021-25.

7 Repealed 2021-25.

8 The Development Officer may refer any development permit application to the Canmore Planning Commission for consideration and decision.

2021-25

ESTABLISHMENT OF A MUNICIPAL PLANNING COMMISSION

8.1 A municipal planning commission known as the Canmore Planning Commission is hereby established.

2021-25

8.2 In addition to the powers and duties authorized by this bylaw, the Commission may provide advice to Council on any planning matter.

2021-25

COMMISSION MEMBERSHIP AND TERM

9 The Commission shall be comprised of a minimum of five and a maximum of seven voting Members,

a) a minimum of ~~four~~ two and a maximum of ~~six~~ four Members shall be public members appointed to the Commission by resolution of Council, ~~and~~

b) ~~only one Member shall be a member of Council~~ two members of Council shall be appointed by resolution of Council. and.

c) the general manager of municipal infrastructure, or their designate, who shall vote only in the event of a tie.

10 Council shall appoint Members at Council's annual organizational meeting.

11 Members shall be appointed for either

a) one-year terms that commence on January 1 and end on December 31, or

b) two-year terms that commence on January 1 and end on December 31 of the following year.

12 The number of consecutive years served by a public Member shall not exceed six.

13 Despite section 12, if a public member reaches the maximum number of years of service, they may conclude the current term for which they have been appointed.

COMMISSION ELIGIBILITY

14 To be eligible for public membership on the Commission, a person must

a) Repealed 2021-19

b) be a resident of Canmore, and

c) be at least eighteen years of age.

14.1 At least two public Members must

a) demonstrate a strong working knowledge of Alberta planning legislation, or

b) have experience in one or more of the following: planning, planning law, engineering, construction, architecture, landscape architecture or urban design.

15 A public Member is not eligible for continuing a term on the Commission and/or for reapplying for the next subsequent term on that Commission if the public Member

a) fails to attend three consecutive meetings of the Commission, unless that absence is caused by illness or is authorized in advance by the chair with notice of and reasons for the member's absence (the sufficiency of such reasons to be determined by the Chair in their sole discretion), or

2021-25

a) ceases to meet the eligibility requirements set out in this bylaw.

16 ~~Town employees and m~~Members of the Subdivision and Development Appeal Board are ineligible to be public Members.

COMMISSION REMUNERATION

17 Public Members are eligible to claim per diems for attending meetings of the Commission.

18 Public Members shall be compensated per diem rates at the rate set out for councillors in the Council Remuneration Policy adopted by resolution of Council.

COMMISSION RESIGNATIONS AND REMOVALS

19 Any public Member may resign from the Commission at any time by sending written notice to the Secretary who shall inform Council and the Commission chair.

20 If a vacancy occurs before Council's annual organizational meeting, Council may appoint a replacement for the remainder of the term.

21 Council may remove a Member at any time.

COMMISSION QUORUM AND APPOINTMENT OF CHAIR AND VICE-CHAIR

22 Three voting Members shall constitute a quorum.

22.1 The chair of the Commission shall be the general manager of municipal infrastructure or their designate.

23 A ~~chair and~~ vice-chair shall be selected each calendar year by a majority vote of Members at the first meeting in the new year.

24 In the event of absence or inability of the chair to preside at a meeting, the vice-chair shall preside.

25 In the event of absence or inability of both the chair and vice-chair to preside at a meeting, the Members present shall elect one of its Members to preside as chair for that meeting.

COMMISSION MEETING PROCEDURES

26 Public notice of a meeting will be provided on the Town's website at least 24 hours prior to the meeting.

27 Repealed 2021-25.

28 The chair shall:

a) maintain order and decorum and may, if necessary call a member to order,

b) determine who has a right to speak,

c) ensure all members who wish to speak to a motion have spoken, ensure that the members are ready to vote, and subsequently call the vote,

d) rule when a motion is out of order, and

e) ensure persons in the gallery maintain quiet and order and may, if necessary, provide for the removal of those who do not comply.

29 Members shall not communicate individually on matters relating to an application before the Commission with any persons prior to the meeting.

30 The Commission, at its sole discretion, is not required to hear any representations from the public with respect to any matter over which it makes a decision or recommendation.

31 Where the Commission or the manager of planning and development deems it desirable, they may request any person or persons to attend meetings in an advisory capacity.

32 When a Member has a Pecuniary Interest with respect to an application under consideration, the Member must disclose the nature of the Pecuniary Interest prior to any discussion on the matter, abstain from voting on the matter, and leave the room in which the meeting is being held until discussion and voting on the matter are concluded.

33 A Member who, for any reason, is unable to attend the whole of the meeting or meetings where an application is being considered, shall not participate in the Commission's deliberations or decision on that application.

34 When a Member does not vote on a matter pursuant to section 32 and 33, the abstention and reasons therefore shall be recorded in the minutes.

35 After hearing all submissions, the Commission may deliberate and reach its decisions in a meeting closed to the public.

36 Where the Commission closes all or part of a meeting to the public, the Commission may allow one or more other persons to attend, as it considers appropriate, and the minutes of the meeting shall record the names of those persons and the reasons for allowing them to attend.

37 A decision of the majority vote of Members present shall be deemed to be a decision of the whole Commission.

38 ~~A tied vote is defeated.~~ Repealed

39 A member shall not make any public statements (including verbally, in writing or via electronic media), on matters relating to an application before the Commission, either before or after a meeting, except those statements authorized by the Commission through the chair.

40 The manager of planning and development shall act as the liaison to the Commission, and Town staff will provide technical advice to the Commission.

41 The Secretary shall

a) notify all Members of meeting arrangements,

b) carry out the administrative duties of preparing agendas, notifications, record retention and other duties assigned as required, and

c) prepare and maintain a file of written minutes of the business transacted at all meetings of the Commission.

COMMISSION MOTIONS

41.1 All members speaking to a motion must comply with meeting procedures as stated in this bylaw.
2021-25

41.2 A motion may be withdrawn by the Member that made the motion any time before voting occurs, subject to no objection from any Member present. Motions withdrawn in this manner shall not be recorded in the minutes.
2021-25

41.3 A friendly amendment, defined as a proposed change in wording that enhances and strengthens the original motion, may be proposed adopted if the mover of the motion approves. Only the motion as amended by the friendly amendment shall appear in the minutes.
2021-25

41.4 After a motion has been made, no other motion may be made except for

a) a motion to table the motion until a time later in the meeting, or

b) a motion to postpone the main motion to a definite time at a future meeting.
2021-25

41.5 A motion to table must include the reason and time within the current meeting to which the matter is to be tabled. A motion to table is not debatable.
2021-25

41.6 A motion to postpone must include the reason for postponement and a specific time when the matter shall be considered. A motion to postpone is debatable and is decided by a majority vote of the Commission.
2021-25

41.7 A motion to reconsider a motion that has already been voted on

a) is not debatable, and

b) cannot be reconsidered.
2021-25

41.8 A motion to adjourn

a) is not debatable, and

b) cannot be reconsidered.

2021-25

41.9 Any Member may request the motion under consideration to be read at any time, but not so as to interrupt a Member who is speaking.

2021-25

41.10 Once the chair has called the vote on a motion on the floor, no Member may speak to the motion until after the result of the vote has been declared.

2021-25

41.11 Unless otherwise provided for in this bylaw, motions will be decided by majority vote of the Commission.

2021-25

41.12 Motions receiving a unanimous vote shall be recorded in the minutes as "carried unanimously" or "defeated unanimously" and, in the case of a split vote, as "carried" or "defeated," and the names of those who voted for and against the motion shall be recorded.

2021-25

COMMISSION MEETING RECORDS

42 Agendas shall be made available to Members at least three days prior to a meeting and made available to the public at least one day prior to a meeting.

43 Minutes shall be prepared for every meeting and contain the following:

a) the date, time and location of the meeting,

b) the names of all Members present,

c) the name of anyone other than a Member who participated in the meeting,

d) a summary of the evidence presented at the meeting, and

e) any motions made at the meeting, along with the results of the vote on the motion.

43.1 Questions and debate shall not be recorded in the minutes.

2021-25

43.2 Minutes of the meeting shall be adopted by motion at the next meeting convened.

2021-25

44 Any Member may request a correction to the minutes before they are adopted; corrections are deemed adopted when the motion to adopt the minutes has carried.

45 Approved minutes shall be signed by the chair and the Secretary who were present at the meeting where the minutes were taken, wherever possible. Where not possible, the minutes shall be signed by the current chair and Secretary.

46 The chief administrative officer is authorized to provide for streaming video and video recording of any meeting.

47 The video recording provided by the chief administrative officer may be used to determine the accuracy of a portion of the minutes.

ENACTMENT/TRANSITION

48 If any clause in this bylaw is found to be invalid, it shall be severed from the remainder of the bylaw and shall not invalidate the whole bylaw.

49 Bylaws 17-2011 and 2017-32 are repealed.

50 This bylaw comes into force on the date it is passed.

FIRST READING: January 8, 2019

SECOND READING: January 8, 2019

THIRD READING: January 8, 2019

OFFICE CONSOLIDATION

This document is a consolidation of a bylaw with one or more amending bylaws. Anyone making use of this consolidation is reminded that it has no legislative sanction. Amendments have been included for convenience of reference only. The approved bylaws should be consulted for all purposes of interpreting and applying the law.

Bylaws included in this consolidation:

2019-07 Development Authority
2021-19 Committee Omnibus Amendment 2021-19 Citizenship Requirement
2021-25 Amendment – Meeting Procedures and Inclusion of Subdivision Authority

BYLAW 2022-22

A BYLAW OF THE TOWN OF CANMORE, IN THE PROVINCE OF ALBERTA, TO AMEND SUBDIVISION AUTHORITY, DEVELOPMENT AUTHORITY, AND MUNICIPAL PLANNING COMMISSION ESTABLISHMENT BYLAW 2019-07

The Council of the Town of Canmore, in the Province of Alberta, duly assembled, enacts as follows:

TITLE

1 This bylaw shall be known as the "Subdivision Authority, Development Authority, and Municipal Planning Commission Establishment Bylaw Amendment – Membership and Eligibility."

INTERPRETATION

2 Words defined in Bylaw 2019-07 shall have the same meaning when used in this bylaw.

PROVISIONS

3 Bylaw 2019-07 is amended by this bylaw.

4 Section 9 is amended

a) in subsection a) by striking out "four" and substituting "two", by striking out "six" and substituting "four", and by striking out "and";

b) in subsection b) by striking out "only one Member shall be a member of Council", substituting "two members of Council shall be", and adding "and" at the end of the subsection, and

c) by adding the following after subsection b):

c) the general manager of municipal services, or their designate, who only shall vote only in the event of a tie.

5 The following is added after section 14:

14.1 At least two public Members must

a) demonstrate a strong working knowledge of Alberta planning legislation, or

b) have experience in one or more of the following: planning, planning law, engineering, construction, architecture, landscape architecture or urban design.

6 Section 16 is amended by striking out "Town employees and" and adding "public" before "Members."

7 Section 17 is amended by adding "Public" before "Members".

8 The following is added after section 22:

22.1 The chair of the Commission shall be the general manager of municipal infrastructure or their designate.

9 Section 23 is amended by striking out "chair and".

10 Section 38 is repealed.

ENACTMENT/TRANSITION

11 If any clause in this bylaw is found to be invalid, it shall be severed from the remainder of the bylaw and shall not invalidate the whole bylaw.

12 This bylaw comes into force on the date it is passed.

FIRST READING:

SECOND READING:

THIRD READING:

Approved on behalf of the Town of Canmore:

Sean Krausert Mayor	Date
Cheryl Hyde Municipal Clerk	Date

Request for Decision

DATE OF MEETING:	**September 6, 2022**	**Agenda #:** H-1
TO:	Council	
SUBJECT:	Council Advisory Committee Review	
SUBMITTED BY:	Whitney Smithers, General Manager, Municipal Infrastructure and Sally Caudill, Chief Administrative Officer	
RECOMMENDATION:	1. That Council give first reading to Environmental Advisory Review Committee Repeal Bylaw 2022-23. 2. That Council give second reading to Environmental Advisory Review Committee Repeal Bylaw 2022-23. 3. That Council give leave for third reading of Environmental Advisory Review Committee Repeal Bylaw 2022-23. 4. That Council give third reading to Environmental Advisory Review Committee Repeal Bylaw 2022-23.	

EXECUTIVE SUMMARY

The Town has three committees with mandates to advise Council on various matters of municipal interest. A review of the effectiveness of those committees in achieving their mandates was conducted, so that Council has the opportunity to consider any potential changes to those committees prior to appointing members at October's organizational review meeting.

RELEVANT COUNCIL DIRECTION, POLICY, OR BYLAWS

In 1998, Council approved Bylaw 40-98, the Environmental Advisory Review Committee Bylaw, which established the committee.

In 2017, Council approved Bylaw 2017-33, the Community Events Committee Bylaw, which established a Community Events Committee. In 2018, Council approved the Community Event Policy AE-002, which generally reiterates the committee responsibilities as stated in the Bylaw.

In 2021, Council approved Bylaw 2021-17, the Cultural Advisory Committee Establishment Bylaw.

DISCUSSION

Council has created boards and committees to assist with various functions of municipal governance. These committees are typically comprised of public citizens and Council appointees and supported by administration. As Council prepares for its annual organizational meeting in October, there was interest in specifically reviewing its advisory committees and their stated purposes. This is both to ensure the committees are providing helpful advice and input to Council; and that the time and efforts required of citizens recruited to these committees has a meaningful, tangible impact in the community.

The three committees that have a stated purpose to advise Council on matters are:

Community Events Committee	The committee is authorized to: a) Review, evaluate, and approve or deny community event applications. b) Provide input on policies, procedures, and practices that govern community events and event producers. c) Establish working committees as required to implement committee initiatives.
Cultural Advisory Committee	The purpose of the committee is to: (a) provide advice and recommendations to help Council implement the Canmore Cultural Master Plan based on approved budgets; (b) foster partnerships, innovation, and commitment for developing a creative economy, creative places, creative people, and creative identity; and (c) provide advice and recommendations to help administration acquire and manage the public art collection.
Environmental Advisory Review Committee	The Environmental Advisory Review Committee (the committee) will provide advice and assistance to council concerning the application of the environmental provisions of policies contained within the Canmore Municipal Development Plan. The committee will advise and assist council with the compilation of information to further public awareness and understanding of particular environmental issues that may arise.

Council members, and the administrative support people for the committees, were surveyed and asked the following questions:

1. Is the committee achieving its goal/objectives, articulated through the associated bylaw?
2. Do you see the committee as still being relevant?
3. Could the committee do more/have a different scope?

A summary of responses to each question, by committee, is provided below.

Community Events Committee

Is the committee achieving its goal/objectives, articulated through the associated bylaw?
The survey demonstrated that the committee is meeting its intended purpose, though some education on the role of the committee would be beneficial. Currently the committee reviews event applications and decides if they are to be approved or declined. The committee reviews event evaluation criteria regularly to ensure continued relevance and alignment with the Community Event Policy.

Do you see the committee as still being relevant?
Yes. The committee has supported the recent updates to our policies and provide residents and businesses with an ability to be at the table when event decisions are made. The current mix of community members, Downtown Business Improvement Area, event producers, and town staff work together to ensure that well-balanced and well-informed decisions are made.

Could the committee do more/have a different scope?
While there were suggestions for both increased and decreased scope for this committee, overall, the survey indicated agreement that the scope is appropriate for the committee at this time.

Cultural Advisory Committee

Is the committee achieving its goal/objectives, articulated through the associated bylaw?
The Cultural Advisory Committee was formed in October 2021 to replace the Canmore Public Art Committee and in alignment with the Cultural Master Plan. The committee is just finding its legs. The committee has reviewed the Cultural Master Plan and the Cultural Advisory Committee bylaw to better understand the future focus.

Do you see the committee as still being relevant?
The survey indicated that it is too early to determine.

Could the committee do more/have a different scope?
The survey indicated that it is too early to determine.

Environmental Advisory Review Committee (EARC)

Is the committee achieving its goal/objectives, articulated through the associated bylaw?
The survey demonstrated that generally, Council members feel the committee is achieving its stated mandate in alignment with its terms of reference. Some concern was voiced that when there is little EIS review work, EARC members want to contribute and make a positive impact. This good intention can create situations where the committee operates outside of their stated objectives, rather than acting as an advisor to the Town in accordance with the approved terms of reference.

Do you see the committee as still being relevant?
Most respondents indicated some concern that some of the functions of EARC, as stated in the terms of reference, are no longer necessary and create a duplication of efforts given existing Town practice. Specifically, this related to the standard of EARC reviewing Environmental Impact Statements (EIS) required by the Town. Respondents questioned the value-add of an EARC review, when expert third-party reviews are now required by the Town.

When the EARC bylaw was first adopted, the Town did not have in-house or contracted resource to turn to for specialized advice related to environmental matters. Given the long-standing importance of environmental matters to the community, EARC served to fill a subject matter gap at the Town. Since that time, the Town has created positions specializing in climate change and the environment. Additionally, the Town has a standard operating practice of hiring third-party consultants with the required expertise to inform the development of terms of reference for EIS's, and to review the draft EIS's required through the Town's

planning and development processes. These two changes – brought into place after EARC was established – appear to drive the general view that EARC's involvement in the development process is no longer required.

Some appreciation was expressed for the additional viewpoints that EARC can bring forward as a voice of the public. It was also noted that the comments provided by the committee can often repeat what has already been stated in the third-party reports. Further, formal opportunities for the public to provide input currently exist in planning and development processes, including public hearings of Council.

Could the committee do more/have a different scope?
Many respondents noted the lack of clarity and direction provided to EARC is potentially problematic. Council members noted that there could be an opportunity to refresh the mandate of EARC, and that as a committee of Council, that mandate must come from the Town. It was suggested the mandate could include a shift to a focus on climate action, where the committee could foster partnerships, innovation and commitment in the broader community, similar to the mandate of the Cultural Advisory Committee. Removing the emphasis on planning and development, particularly the current functions related to Environmental Impact Statements, was supported by all but one of the respondents.

It was recognized that having citizens willing to share their specialized knowledge and make a meaningful contribution to the community is highly valued; at the same time, it was acknowledged that the input of EARC does not necessarily reflect the diversity of the community.

Conclusions

Based on the above, Administration is proposing the following:

1. Community Events Committee – no change at this time.

2. Cultural Advisory Committee – no change at this time.

3. Environmental Advisory Review Committee (EARC) - It is evident, based on feedback from Council members, that there is no longer a requirement for EARC to play a role in the review of environmental impact statements and assessments. This is supported by feedback from administration. The mandate of the committee may be better focused as an advisory board or taskforce for specific projects as they arise. Accordingly, administration is recommending that Council dissolve the committee by repealing the bylaw. Administration will look for ways to include diverse stakeholder groups (including subject matter experts) in future environmental and sustainability initiatives.

   It must be noted that there are a number of existing entities in the community focused on environment, sustainability and climate change, one of which (Biosphere Institute of the Bow Valley) receives Town funding to assist in implementing Town priorities. Other not-for-profits in this space include the Bow Valley Clean Air Society, Bow Valley Climate Action, Bow Valley Green Energy, Bow Valley Naturalists, and Yellowstone to Yukon. From the perspective of administration, Town resource may be more effectively used in leveraging the knowledge and expertise of these specialized entities.

ANALYSIS OF ALTERNATIVES

N/A

FINANCIAL IMPACTS

N/A

STAKEHOLDER ENGAGEMENT

Members of Council, as the primary stakeholder for a Council advisory committee, were surveyed for their views. The administrative resource person for each committee also provided input. Current EARC members have been advised of this report and will be notified of Council's decision. While advertising for boards and committees has already begun, our website and future ads will be updated accordingly.

ATTACHMENTS

1) Bylaw 2022-23 Environmental Advisory Review Committee Repeal
2) Bylaw 40-98 Environmental Advisory Review Committee (Consolidated)

AUTHORIZATION

Submitted by:	Whitney Smithers General Manager Municipal Infrastructure	Date:	August 15, 2022
Approved by:	Sally Caudill Chief Administrative Officer	Date:	August 19, 2022

BYLAW 2022-23

A BYLAW OF THE TOWN OF CANMORE, IN THE PROVINCE OF ALBERTA, TO REPEAL ENVIRONMENTAL ADVISORY REVIEW COMMITTEE BYLAW 40-98

The Council of the Town of Canmore, in the Province of Alberta, duly assembled, enacts as follows:

TITLE

1 This bylaw shall be known as the Environmental Advisory Review Committee Repeal Bylaw.

REPEAL

2 The following bylaws are repealed by this bylaw:

a) Environmental Advisory Review Committee Bylaw 40-98,

b) Amending Bylaw 2015-22 Environmental Advisory Review Committee Terms of Reference, and

c) Amending Bylaw 2017-32 Environmental Advisory Review Committee Term Length and Composition.

ENACTMENT/TRANSITION

3 If any clause in this bylaw is found to be invalid, it shall be severed from the remainder of the bylaw and shall not invalidate the whole bylaw.

4 This bylaw comes into force on the date it is passed.

FIRST READING:

SECOND READING:

THIRD READING:

Approved on behalf of the Town of Canmore:

Sean Krausert
Mayor

Date

Cheryl Hyde
Municipal Clerk

Date

BYLAW 40-98

Office Consolidation Current as of September 27, 2017

BEING A BY-LAW OF THE TOWN OF CANMORE IN THE PROVINCE OF ALBERTA, TO ESTABLISH AN ENVIRONMENTAL ADVISORY REVIEW COMMITTEE.

WHEREAS Pursuant to the Municipal Government Act, being Chapter M-26.1 of the Revised Statues of Alberta, 1980 as amended, a Council may pass by-laws to establish council committee and their functions;

WHEREAS Council for the Town of Canmore wishes to establish an Environmental Advisory Review Committee, for the purpose of providing advice and assistance to Council concerning the application of environmental provisions of policies and other functions;

NOW THEREFORE the Municipal Council for the Town of Canmore in the Province of Alberta, duly assembled, hereby enacts as follows:

1. TITLE

(a) This By-Law shall be known as the Environmental Advisory Review Committee By-Law.

2. ESTABLISHMENT

(a) The Environmental Advisory Review Committee is hereby established to perform those duties and functions as outlined in the Term of Reference (attached to the By-Law as Schedule “A”) and as modified by Council from time to time.

3. DATE OF COMMENCEMENT

(a) This By-Law shall come into force and take effect upon the date of final reading thereof.

4. REPEAL

(b) By-Law 4-95 and all amendments thereto are repealed.

FIRST READING: October 6, 1998

SECOND READING: October 6, 1998

THIRD READING: October 6, 1998

DATE IN FORCE: October 6, 1998

OFFICE CONSOLIDATION

This document is a consolidation of a bylaw with one or more amending bylaws. Anyone making use of this consolidation is reminded that it has no legislative sanction. Amendments have been included for convenience of reference only. The approved bylaws should be consulted for all purposes of interpreting and applying the law.

Bylaws included in this consolidation:

40-98	Environmental Advisory Review Committee Establishment
2015-22	Amending Bylaw Terms of Reference
2017-32	Amending Bylaw Term Length and Composition

Schedule A – Environmental Advisory Review Committee Terms of Reference

Amended 2015.11.22 Bylaw 2015-22

Mandate

The Environmental Advisory Review Committee (the committee) will provide advice and assistance to council concerning the application of the environmental provisions of policies contained within the Canmore Municipal Development Plan.

The committee will advise and assist council with the compilation of information to further public awareness and understanding of particular environmental issues that may arise.

Reporting to council, the membership of this committee will be as follows:

a) A minimum of five and a maximum of seven members from the community and appointed by council to terms not to exceed two years; *Amended 2017-09-27 Bylaw 2017-32*

b) One member of council;

c) One member from Town administration.

Core Functions

In order to assist council, the committee shall:

i. Review and advise on the completeness/adherence to the terms of reference of the environmental impact statements conducted;

ii. Review and advise on the draft terms of reference for an environmental impact statement;

iii. Advise on protective management measures or mitigative measures that may be needed for specific environmental policy areas;

iv. Review and advise on environmental impact assessment reports;

v. Provide advice on the Town's Environmental Sustainability Action Plan (ESAP) and any updated or related plans; and support the execution of initiatives related to ESAP.

vi. Upon request of the development authority, advise the development authority on environmental impact statement or environmental impact assessments statements as required by the Canmore Municipal Development Plan; and

vii. perform duties as directed by council from time to time.

Accountability

The Environmental Advisory Review Committee shall be accountable to council on the environmental impacts of development. All environmental impact statements and environmental impact assessments shall be reported to council.

Request for Decision

DATE OF MEETING:	**September 6, 2022**	**Agenda #:** H-2
TO:	Council	
SUBJECT:	Highway Mitigation Letter to Province	
SUBMITTED BY:	Councillor Graham	
RECOMMENDATION:	That Council direct Mayor Krausert to write a letter to the Province requesting action be taken to reduce accidents involving wildlife on the TransCanada Highway between the Bow River Bridge and the East Park Gates.	

EXECUTIVE SUMMARY

The stretch of highway between the Bow River Bridge and the East Park Gates is one of the major sources of Vehicle Wildlife altercations. Research by Yellowstone to Yukon, various insurance companies and the Alberta Government has shown that there are many actions that could be taken to help significantly reduce the number of collisions that happen regularly.

It can also be noted that a significant number of pedestrians also regularly cross this section of highway and while no one has been killed or injured yet one could expect that it is only a matter of time until such a tragedy did occur.

RELEVANT COUNCIL DIRECTION, POLICY, OR BYLAWS

Council supports many actions that support the co-existence of humans and wildlife in the Bow Valley including the recently approved Community Standards Bylaw which restricts fruit trees and bird feeders, financial support of WildSmart, and participating in the Roundtable on Human Wildlife Coexistence.

DISCUSSION

Over the years hundreds of animals have been wounded or killed on the Trans Canada Highway (TCH). Unfortunately, this has resulted in millions of dollars in damages and the loss of wildlife (See attachments 1 and 2). While many stretches of the TCH are fenced, there are still some important locations that are not. This includes the stretch from the Bow River Bridge to the East Park gate. Almost all of Banff National Park is fenced to the West of Canmore and to the East past Dead Man's Flats. The province is currently fencing the Kananaskis Wildlife Corridor on the TCH between Lac Des Arc and the Stoney Nation,

A study by the province concluded that the section of highway through Canmore was the second highest priority for the province (See attachment 3).

Canmore Town Council is requesting that the mayor send a letter to the Premier, Official Opposition and relevant Provincial Ministers and Departments requesting that mitigation efforts be applied to this section of highway such as but not limited to highway speed reduction, fencing, wildlife and human over passes and/or the removal of wildlife attractants.

ANALYSIS OF ALTERNATIVES
N/A

FINANCIAL IMPACTS
N/A

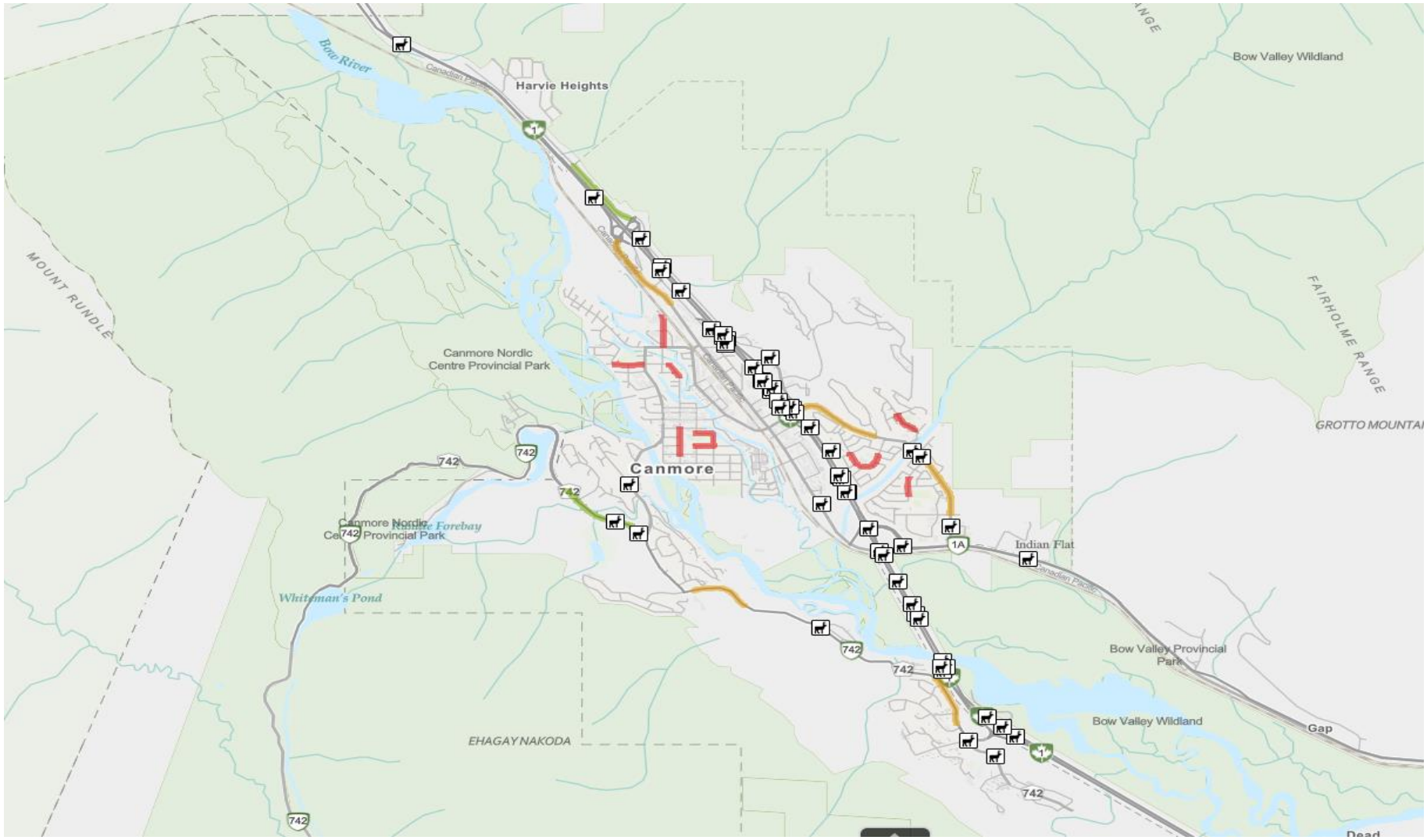
STAKEHOLDER ENGAGEMENT
Before preparing this report, consultation occurred with Y2Y, then Minister of Transportation Rajan Sawhney, MLA Rosin, MD Reeve Rosvold, and the Town's Engineering Department. The item was also discussed during a CAO-Council meeting with a report on a Council agenda agreed to as a next step.

ATTACHMENTS
1. Highway 1opportunities - Bow Valley, Alberta - Google My Maps
2. Collisions Involving Wildlife – Jan 2019 to July 2022
3. Alberta Watch Wildlife Program Plan

AUTHORIZATION

Submitted by: Wade Graham
Councillor

Date: August 15, 2022



Traffic Collision Data Mapping Application – Town of Canmore

Collisions Involving Wildlife – January 2019 to July 2022 - Total: 39 on Trans Canada Highway

Alberta

ALBERTA WILDLIFE WATCH PROGRAM

AUGUST 2017

D Williamson

2017.8.31

Approved by:
Des Williamson, M.Sc., P.Eng.
Executive Director
Technical Services Branch
Alberta Transportation
Government of Alberta

Date

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
AEP	Alberta Environment and Parks
AVC	Animal-Vehicle Collision
AVCPL	Animal-Vehicle Collision Prone Location
AWW	Alberta Wildlife Watch
ERTA	Environmental Regulatory Tracking Application
GOA	Government of Alberta
GPS	Global Positioning System
HMC	Highway Maintenance Contractor
km	Kilometre
Org. ID	Organization ID
TDRA	TIMS Data Repository Application
TIMS	Transportation Information Management System
%	Percent
±	Plus or minus

DEFINITIONS

Term	Definition
Animal Carcass Data	Animal carcass data collected using the AWW application. An animal carcass report is assumed to represent an animal-vehicle collision.
AWW Application	Smartphone application supported in iOS, Android, and BlackBerry devices.
AWW Mitigation Toolbox	Alberta Transportation's guidebook of AVC mitigation technologies and structures.
AWW Program	The Program developed to identify and prioritize animal-vehicle collision prone locations, identify cost-effective mitigation, and to evaluate mitigation performance. The Program includes four components: 1) the AWW System, 2) Alberta Transportation's Mitigation Planning and Design Standards, 3) User Engagement Plan, and 4) Annual Review.
AWW System	Collects, manages, analyzes, and reports AWW data, identifies and prioritizes AVC mitigation locations, and evaluates mitigation performance.
AWW Viewer	Alberta Transportation's stakeholders and partners with view only access to the AWW website tool.

Term	Definition
Mitigation Data Repository	Map and document storage of AVC mitigations across the provincial highway network.
Organization ID	A unique code given to each company and or organization registered as a Principal Contributor to use the AWW application. The code is provided by Alberta Transportation's Operations Manager (for HMCs) or Alberta Transportation's System Administrators within the Environmental Services Section.
Principal Contributor	An AWW application user that has been identified as critical for the acquisition of animal carcass and live sighting data. Principal Contributors are Highway Maintenance Contractors and Government of Alberta staff.
Project User	Alberta Transportation's project-specific consultants with primarily view-only (restricted editor access) to the AWW website tool.
Regional Administrator	An AWW website tool manager for designated Region(s). Example Regional Administrators are those with an Alberta Transportation regional consulting assignment.
System Administrator	A supervisor for the AWW application and website tools. Limited to Alberta Transportation staff.

1.0 INTRODUCTION

The Alberta Wildlife Watch (AWW) Program's primary goals are to reduce animal-vehicle collisions (AVCs) on provincial highways, improve driver safety, and minimize the impacts of highways on wildlife populations. The AWW Program allows Alberta Transportation to cost-effectively collect and analyze high-quality data for effective decision making across the provincial highway network.

The AWW Program is a joint project between the Transportation Services Division and Delivery Services staff and was developed with input from Alberta Environment and Parks (AEP) and Red Deer College. The development of the AWW Program is consistent with Alberta Transportation's mandate for managing transportation safety and is a solution to help manage AVCs across Alberta.

AWW Program is designed to:

1. Identify AVC-prone locations (AVCPLs);
2. Provide high-quality data for effective decision making;
3. Develop departmental policy & standards; and
4. Allow for innovation and evaluate long term mitigation effectiveness.

The Program goals and its key components are highlighted in a video available at https://youtu.be/zBknpdganB8.

The AWW Program was developed using lessons gathered from a 2008 provincial workshop and was initiated to meet regulatory commitments for twinning Highway 63. In 2008, Alberta Transportation hosted a "Strategies Workshop on the Reduction of Animal-Vehicle Collisions on Alberta's Roadways" (Clevenger et al. 2008). The workshop brought together local and international transportation and wildlife professionals to highlight the current problem with AVCs in Alberta, suggest ways to improve data collection, and discuss considerations for AVC reduction planning and mitigation technologies.

Using lessons gathered from this workshop, the AWW Program was initially developed to satisfy Alberta Transportation's regulatory obligations for twinning Highway 63 and commitments were made to both federal and provincial regulators to monitor and mitigate AVCs. To meet these commitments, Alberta Transportation required a solution to collect accurate AVC data across a large study area, determine where AVC mitigation is required, and evaluate the effectiveness of mitigation applied. The AWW Program considered the various issues with the AVC portfolio in Alberta and built-in solutions to support the Program's core pillars.

The AWW Program was considered a success within the Highway 63 trial area. Consequently, the AWW Program evolved for provincial deployment, and began its provincial launch in 2016. During the next phase Alberta Transportation will continue to develop and enhance the program with a focus on standards development.

2.0 THE PROBLEM: ANIMAL-VEHICLE COLLISIONS IN ALBERTA

Animal-vehicle collisions are a significant problem in Alberta affecting motorist safety and wildlife populations. AVCs represent approximately 50 percent (%) of all reported vehicle accidents on provincial rural highways and result in an average of five human fatalities each year. In 2015, Alberta Transportation estimated that the annual cost of AVCs across the province may have surpassed $280 million per year.

Prior to the development of the AWW Program, Alberta Transportation did not have the ability to accurately track AVCs due to the traditional manual data collection system in place. This hindered Alberta Transportation's ability to determine the true magnitude of the issue, accurately locate Animal Vehicle Collision Prone Locations (AVCPLs), and effectively mitigate site-specific AVC concerns. The traditional approach to collecting AVC data presented challenges of:

1. Under reporting of AVCs: Police reports were the only source of AVC data. Collisions resulting in a human fatality, personal injury, or total property damage of $2,000 or more must be reported to the police in the jurisdiction where the collision occurred. Prior to 2011, the property damage threshold was $1,000 or more. Due to this threshold, it is estimated that over 50% of AVCs were unreported. AVCPL identification is less reliable as a result of under reporting.

2. Spatial inaccuracy in AVC reports: Police accident reports were filed using a paper process with limited ability to accurately record the location of the incident. This resulted in substantial inaccuracies in the accident location. It is estimated that the AVC location data was inaccurate by as much as a few kilometres.

3. Limited species identification: The police accident report lacked consistent species-specific information. Each species interacts with highways and responds to mitigation differently. Therefore, it is important to consider the life history traits of the predominant species involved. Furthermore, AVCs may influence survival and recovery of Species at Risk populations, and the current data inaccuracies inhibited conservation efforts.

4. Manual data entry delays: Traditional AVC data had to be manually entered, which required time and resources, increased the risk of data entry errors, and delayed data availability. It typically required two years after an AVC had occurred for the data to be available.

5. Lack of contextual information: Additional information that would be useful for mitigation design, including live animal sightings, had traditionally not been collected.

In turn, challenges with the traditional AVC data collection methods also affect Alberta Transportation's ability to design and evaluate the effectiveness of mitigation applied. In 2005, Alberta Transportation undertook a study to evaluate the effectiveness of AVC mitigations (EBA 2005). Results from this study were inconclusive due to the quantity and quality of data. Three main challenges limited Alberta Transportation's ability to manage AVCs:

1. AVC reduction considerations were not effectively integrated into Alberta Transportation's project delivery process. Wildlife and wildlife mitigation were considered in the Environmental Evaluation for a given project; however, due to lack of reliable data, mitigation was often difficult to plan.

2. Several mitigation strategies implemented across Alberta have traditionally been ineffective (or the data were inconclusive) at reducing AVCs and improving motorist safety. This was the consensus of local and international transportation and wildlife professionals at the 2008 workshop.

3. Low public awareness of AVCs. Further consideration of additional AVC-related educational programs may be needed.

3.0 THE SOLUTION: ALBERTA WILDLIFE WATCH PROGRAM

3.1 Description

The AWW Program provides a simple and cost-effective solution to resolve the traditional challenges, meet regulatory commitments, and support Alberta Transportation's provincial traffic safety mandate.

The AWW System includes an application and website tool that collects and analyzes AVC-related data in a standardized approach to identify AVCPLs. The AWW Program then provides an automated process to prioritize statistically significant AVCPLs and assess individual AVCPL sites for mitigation feasibility and cost-effectiveness. If mitigation at individual AVCPLs is determined to be feasible the project can proceed to mitigation planning and design. The AWW Program provides a defensible approach for the implementation of mitigation, monitoring, reporting, and information sharing to increase transparency, innovation, and stakeholder engagement. The AWW Program approach also provides a framework to support the development of, and continual improvement to, AVC mitigation policy and standards.

Key features of the AWW Program include (Figure 1):

1. Data Collection (Appendix A): The AWW smartphone application improves the quality of data being collected across the province.

2. Data & User Management and Analyses (Appendix B): The AWW website tool provides a platform to efficiently manage and analyze the AWW data (including the identification of AVCPLs) and manage users.

3. Mitigation Data Repository (Appendix C): Provides an organized and secure site to store, update, and manage AVC-specific mitigations for the province.

4. Mitigation Monitoring and Evaluation (Appendix D): Monitors, evaluates, and reports mitigation performance to determine the effectiveness of mitigation projects and learn from previous experience.

5. Annual Regional and Provincial Reporting (Appendix E): Automatically generates key report details and provides standard templates to facilitate reporting at regional and provincial scales and facilitates mitigation decision making.

6. Stakeholder & Principal Contributor Engagement Plan (Appendix F): Supports the development of and regular engagement with Alberta Transportation's stakeholders and Principal Contributors to enhance the AWW Program and the collection of high quality data.

7. Mitigation Planning and Design (Appendix G): Facilitates the development of and provides mitigation standards and design considerations to support mitigation project planning and design.

8. AWW Program Evaluation (Appendix H): Reviews the AWW Program across the province to ensure progress is being made towards the Programs goals. This review process also supports adaptive management and modernization of the AWW Program, when required.

The AWW Program is a milestone for Alberta Transportation. Not only is it the first operational application to collect high-quality animal carcass and live sightings data throughout the province, it is Alberta Transportation's first comprehensive AVC management program. Details of the AWW Program services and how they meet Alberta Transportation's core pillars are provided in stand-alone Appendices A to H.

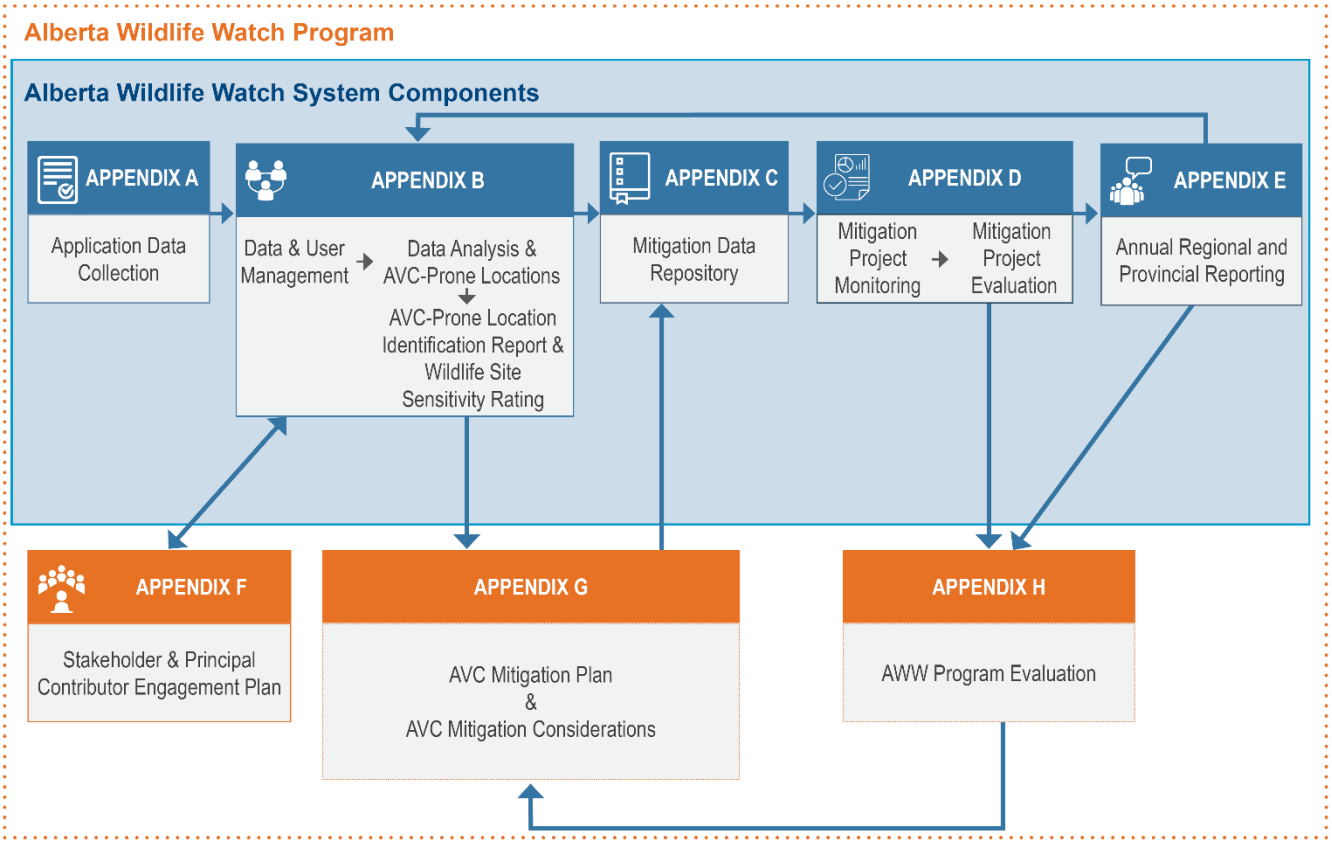

Figure 1: Alberta Wildlife Watch Program Schematic

3.1.1 Summary of AWW Program Services

Alberta Transportation incorporated the 2008 workshop improvement ideas to develop this comprehensive AWW Program that is applicable for the province. Tables 1 and 2 briefly identify how the AWW Program services solve the traditional AVC challenges and meet recommendations from the 2008 workshop, respectively. Further details are provided in Appendices A to H.

Table 1: AWW Program Services

Challenges with Traditional Approach	AWW Program Services
Identifies AVC-prone locations and provides high-quality data for effective decision making: The AWW Program addresses the challenges with the traditional data collection method, and greatly improves the quality and quantity of data collected across the province, at low overall cost.	
▪ Under reporting	▪ Reports both animal carcasses and live animal sightings. Carcasses are representative of an AVC incident and include AVCs that may not have resulted in reportable property damage. Live animal sightings may indicate areas of wildlife movement, where animals are currently able to cross the highway successfully; and ▪ Continues to report animal carcasses and live animal sightings after AVC mitigation applied (i.e., mitigation monitoring).
▪ Spatial inaccuracies	▪ Collects fine-scale location data using the smartphone's onboard Global Positioning System (GPS) (accuracy within ± 10 meters).
▪ Limited species identification	▪ The species identification field is mandatory for report submission; ▪ Includes a species identification guide and range maps built into the application to improve positive identification of the animal; and ▪ Allows photo submission of the animal for data Quality Control, including verification of the species identification.
▪ Manual data entry	▪ Electronically submits the animal carcass and live sighting record automatically into a secured database, which eliminates all manual data entry requirements and reduces common data entry errors.
▪ Data access delay	▪ Available to the AWW Program administrators in near real-time, which significantly reduces the data access delay from two years to mere minutes.
▪ A lack of contextual information	▪ Collects live animal sightings, animal gender, and specific notes and collision details; ▪ Additional contextual information provided within the AWW website tool's interactive map, including (but not limited to) terrain, known wildlife linkage zones, Species at Risk records, and mitigations installed; ▪ Maps and describes mitigations implemented provincially in context to AVCPLs (i.e., Mitigation Data Repository); and ▪ Transitions into Alberta Transportation's Information Management System (TIMS) and Environmental Regulatory Tracking Application (ERTA).
▪ AVC data analyses	▪ Automatically identifies and prioritizes statistically significant AVCPL clusters and high AVC density segments across provincial roads; ▪ Accepts updates to parks and protected areas, important wildlife linkage zones, and other applicable mapping provided by AEP; ▪ Identifies AVCPLs involving large-bodied animals and Species at Risk; ▪ Identifies AVCPLs inside known wildlife linkage areas (i.e., AEP's Key Wildlife and Biodiversity Zones); and ▪ Provides the AWW administrator access to AWW data, maps, and analyses automatically generated by the System.
▪ Low public awareness of the of AVCs	▪ Reports AWW animal carcass statistics as a means of sharing information with relevant stakeholders; ▪ Supports the development of a Stakeholder and Principal Contributor Engagement Plan and automatically generates an annual poster specific to each Contract Maintenance Area displaying the AWW data collected; and ▪ Displays AWW data summaries and maps for public viewing.

Table 1: AWW Program Services

Challenges with Traditional Approach	AWW Program Services
Incorporates departmental AVC mitigation considerations, and supports the decision-making process for capital planning and design: The AWW Program provides a standard AVC mitigation approach across the province and supports the selection of effective mitigation based on mitigation effectiveness monitoring from Alberta. This allows the department to address AVCs across the province in a systematic, cost-effective, and defensible manner.	
▪ AVC mitigation considerations	▪ Includes a standard two-step process to plan and design a mitigation project; ▪ Incorporates departmental design standards and considerations to facilitate mitigation planning and design; ▪ Provides a guidebook of AVC mitigation technologies and structures to consider in Alberta (i.e., AWW Mitigation Toolbox); and ▪ Supports mitigation trials for new applicable research and or innovative solutions.
▪ AVC mitigation monitoring and evaluation	▪ Supports cost-effective monitoring of animal carcass data collected before and after mitigation to evaluate mitigation performance; ▪ Aids in evaluating mitigation performance by mapping and reporting details of AVC mitigations installed in the provincial Mitigation Data Repository; and ▪ Supports the evaluation of mitigations based on standard performance criteria defined by the department.
▪ Long-term Review	▪ Regular review of the overall AWW Program and provincial mitigation performance; ▪ Continues to re-evaluate mitigation performance criteria over time, including recommendations from key stakeholders; and ▪ Influences the department's AWW Program policy and standards, and mitigation design considerations.

Table 2: Checklist of AVC Reduction Strategies Recommended at the 2008 Workshop

AWW Program Addresses	AVC Reduction Strategy Recommendations, 2008 Workshop
I. The Problem with AVCs	
Fully	Inform the public to increase awareness, improve driver safety, and garner funding support for AVC mitigation.
II. Policy and Planning	
Fully	Create a department and inter-department policy addressing AVCs during capital planning.
Partially	Identify a liaison within AEP to assist with policy development to maintain and enhance wildlife habitats during highway planning, construction, and maintenance.
Fully	Look for opportunities within the Government of Alberta (GOA) for inter-jurisdictional bodies that could adopt an AVC reduction mandate, such as the Office of Traffic Safety or the Land-use Framework.
Undeveloped	If a suitable inter-agency committee cannot be found, create an Alberta Linkages Working Group with wildlife, research, insurance, and transportation experts to communicate and provide ongoing guidance to future initiatives.
Fully	Identify collaborative research centers to perform and coordinate research with GOA priorities (e.g., universities, Red Deer College, Western Transportation Institute).
Fully	Focus efforts on two groups of species: 1) those that are a motorist safety concern; and 2) those that are a concern to wildlife management and conservation.
Fully	Conduct a "transportation risk assessment for wildlife" to identify AVC conflict areas and key wildlife

Table 2: Checklist of AVC Reduction Strategies Recommended at the 2008 Workshop

AWW Program Addresses	AVC Reduction Strategy Recommendations, 2008 Workshop
	corridors across the provincial network. This can be developed on a regional basis (i.e., integrated with Land-use Frameworks and associated initiatives).
Fully	At a provincial-scale, prioritize highways (or sections thereof) for mitigation deployment and testing.
Fully	Develop a made-in-Alberta "mitigation toolbox" of proven or emerging technologies for deployment and or testing.
Fully	Identify existing (i.e., scheduled for replacement) or planned bridge files that could serve as wildlife crossing structures.
Fully	Implement AVC mitigation and conduct monitoring to evaluate performance and inform future decision making.
III. Ways to Improve Data Collection	
Fully	Develop and implement standards and policies to collect, report, and manage AVC data.
Fully	Create a wildlife species field guide to assist highway maintenance staff and RCMP with species identification.
Fully	Identify a prototype system (e.g., handheld personal data assistant PDA with GPS capabilities) to collect accurate AVC data. The prototype system should be piloted in test districts/regions.
Fully	Once the piloted prototype (e.g., PDA-GPS) complete and deployed across a greater region, consider: ▪ Procedure(s) to identify errors, retrieve missing data, and verify any unusual data (Huijser et al. 2007). ▪ Spatial accuracy of AVC locations reported. Entering spatial data may lead to the belief that the data are more precise than they actually are, which can have serious consequences when implementing mitigation (Huijser et al. 2007). ▪ Training courses for Alberta Transportation and AEP personnel. ▪ Highway maintenance contracts to hold staff accountable for collecting AVC data.
IV. AVC Reduction	
Fully	Re-examine the effectiveness of existing and planned AVC mitigation.
Fully	Implement only proven AVC mitigation.
Partially	Conduct research on AVC mitigation that is promising but requires further investigation.
Partially	Inform and educate transportation practitioners about AVC mitigations, their performance and guidelines for proper implementation. Provide a training course on effective or promising mitigation to Alberta Transportation Planning and Operations personnel.
Partially	▪ Create a public AVC awareness and reduction education/outreach strategy. Education programs like "Don't Veer for Deer" signs or public service announcements may help raise awareness and educate drivers how to respond in collision situations. ▪ Improve reporting of AVC collision statistics (e.g. annual Collisions Statistics report).

3.1.2 AVC Mitigation Project Analysis

Initiating and planning a mitigation project follows a simplified decision-making process that is critical to the development of cost-effective AVC mitigation projects. To meet this objective, Environmental Services Section has developed a two part process:

1. AVCPL Identification Report
2. AVC Mitigation Plan

Part A: AVCPL Identification Report focuses on specific location(s) of interest and statistically significant AVCPLs. The Wildlife Site Sensitivity Rating (WSSR) governs the process to assess AVCPLs to ensure a mitigation project is feasible. Once the project is determined to be feasible, a mitigation recommendation and cost estimate is provided.

Part B: The AVC Mitigation Plan only proceeds if the AVCPL Identification Report makes the recommendation to proceed and is approved by Alberta Transportation. The AVC Mitigation Plan is developed using site and species specific design considerations, cost effectiveness assessment, and detailed engineering design. This plan forms the framework allowing a tender package to be developed and ultimately the project to be constructed.

3.1.3 Annual Provincial Mitigation Priorities

Priority AVCPLs may be considered for mitigation at three government levels:

1. Project Level Priorities
2. Ministry Level Priorities
3. GoA Level Priorities

Project Level Priorities are AVCPLs that reside within the boundaries of the highway project limits. The project consultant completes the AVCPL Identification Report (Section 1.1.3) to identify feasible mitigation(s) early on in highway project planning. The Region then assesses if the mitigation can be funded. If funds are not available, the proposed mitigation project(s) is submitted for funding consideration at a Ministry Level Priority.

Ministry Level Priorities are set by Environmental Services, Technical Services Branch, based on the annual AWW Regional Reports and are presented as a component within the annual AWW Provincial Report. Ministry Level Priorities identify the mitigation projects of highest importance to Alberta Transportation.

GoA Level Priorities recognize that other GoA ministries have mandates that include the protection of wildlife and habitat connectivity. The AWW program's approach not only addresses Alberta Transportation's mandate but that of other Government of Alberta ministries. Alberta Transportation will consider requests from other ministries to evaluate priorities for potential mitigation.

Once Ministry and GoA Level Priorities are identified the AWW Provincial Annual Report is submitted to the Executive Director of Technical Services Branch for later submission to the Executive Team for consideration.

3.2 AWW Program Development Schedule

The AWW Program started with a trial launch along Highway 63 and 881 to meet federal and provincial regulatory commitments and has since launched provincially. Figure 2 outlines the AWW Program development schedule.

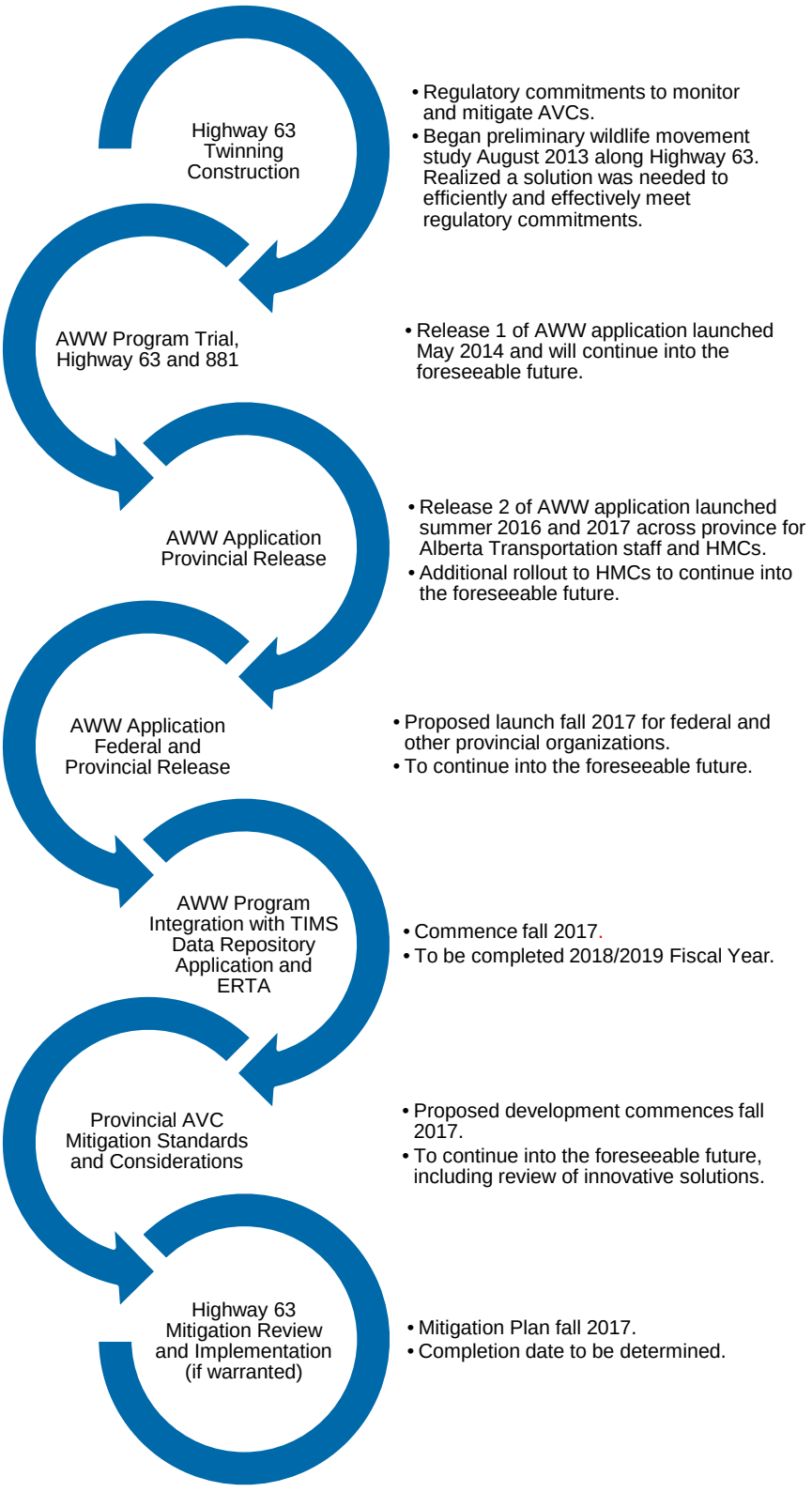

Figure 2: Alberta Wildlife Watch Program Development Schedule

3.3 Alberta Transportation Integration and Management

The AWW website tool is designed to easily integrate into Alberta Transportation's existing systems. Integration will involve moving the existing AWW data into the TIMS Data Repository Application (TDRA) in the 2018/2019 fiscal year (Figure 3). The TDRA is a centralized database of TIMS data, which receives information from multiple applications responsible for performing various operational duties. Once integrated, AWW will become one of many other TIMS applications managed by the Information Management Branch (IMB).

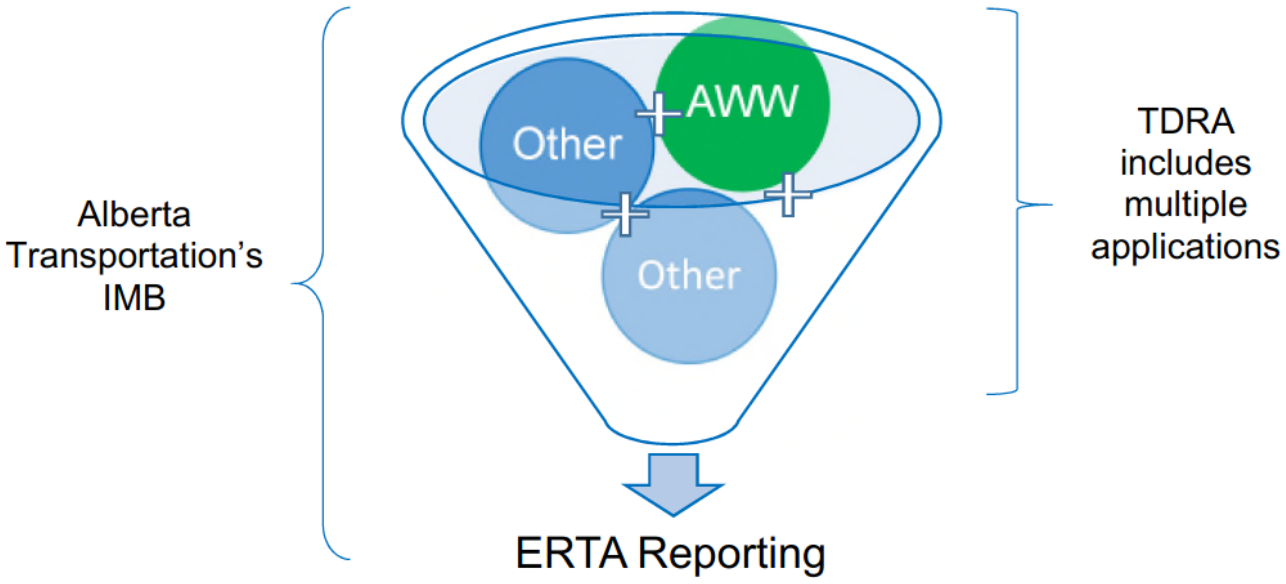

Figure 3: Alberta Wildlife Watch within TIMS and ERTA

Together with the AWW data, the TDRA will house information to better understand factors leading to AVCs, including AVCPLs, traffic volumes, guard rails, culvert structures, watercourses, and additional collision information reported through the Office of Traffic Safety.

The map-based reporting of the AWW application data will be through ERTA. ERTA is an operational application (launched in November 2016; currently in Release 2 development stage) and is part of the enterprise suite of applications.

3.4 AWW Users

Five different users: 1) Principal Contributors, 2) AWW Viewers, 3) Project Users, 4) Regional Administrators, and 5) System Administrators (Figure 4) contribute to, access, and or manage the AWW Program. User access is dependent upon their program authority and their responsibilities within the AWW Program. Each user and their responsibilities are detailed in Appendices A to H.

The AWW application is currently in operation, largely with the participation of the HMCs who are responsible for collecting animal carcass data along provincial highways. The AWW Program is managed by the Environmental Services Section.

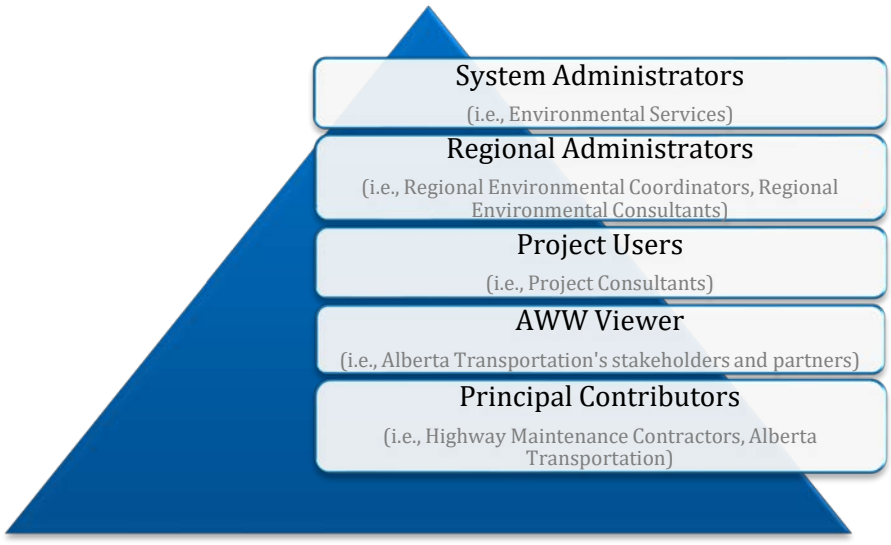

Figure 4: Alberta Wildlife Watch User Structure

The **Environmental Specialist, Technical Services Branch** is the System Administrator and is the primary information contact**.**

3.5 Help Desk

The GOA service desk is the initial point of contact for the AWW application and website tools technical help inquiries. Help desk contact details are below:

Telephone: 1-888-427-1GOA (1462)

Email: goa.servicedesk@gov.ab.ca

4.0 REFERENCES

Clevenger, A.P., A. Ford, S. MacDougall. 2008. Strategies Workshop on the Reduction of Animal-Vehicle Collisions on Alberta's Roadways: Synthesis and Recommendations. Submitted to Alberta Transportation. 41 pp.

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Alberta

ALBERTA WILDLIFE WATCH PROGRAM

APPENDIX A

AWW APPLICATION DATA COLLECTION

AUGUST 2017

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
AWW	Alberta Wildlife Watch
AVC	Animal-Vehicle Collision
AVCPL	Animal-Vehicle Collision Prone Location
GPS	Geographic Positioning System
HMC	Highway Maintenance Contractor
Org. ID	Organization ID
TDRA	TIMS Data Repository Application
TIMS	Transportation Information Management System

DEFINITIONS

Term	Definition
Animal Carcass Data	Animal carcass data collected using the AWW application. An animal carcass report is assumed to represent an animal-vehicle collision.
Traditional Animal-Vehicle Collision Data	This is the traditional police reported data of known animal-vehicle collision incidents.
AWW Application	Smartphone application supported in iOS, Android, and BlackBerry devices.
AWW Program	The Program developed to identify and prioritize animal-vehicle collision prone locations, identify cost-effective mitigation, and to evaluate mitigation performance. The Program includes four components: 1) the AWW System, 2) Alberta Transportation's Mitigation Planning and Design Standards, 3) User Engagement Plan, and 4) Annual Review.
AWW System	Collects, manages, analyzes, and reports AWW data, identifies and prioritizes AVC mitigation locations, and monitors evaluates mitigation performance.
AWW Viewer	Alberta Transportation's stakeholders and partners with view only access to the AWW website tool.
Organization ID	A unique code given to each company and or organization registered as a Principal Contributor to use the AWW application. The code is provided by Alberta Transportation's Operations Manager (for HMCs) or Alberta Transportation's System Administrators within Environmental Management Services.
Principal Contributor	An AWW application user that has been identified as critical for the acquisition of animal carcass and live sighting data. Principal Contributors are Highway Maintenance Contractors and Government of Alberta staff.
Project User	Alberta Transportation's project-specific consultants with primarily view-only (restricted editor) access to the AWW website tool.
Regional Administrator	An AWW website tool manager for designated Region(s). Example Regional Administrators are those with an Alberta Transportation regional consulting assignment.
System Administrator	A supervisor for the AWW application and website tools. Limited to Alberta Transportation staff.

Alberta Wildlife Watch Program Overview

Animal-vehicle collisions (AVCs) are a significant problem in Alberta affecting motorist safety and wildlife populations. Alberta Transportation designed the Alberta Wildlife Watch (AWW) Program as a solution to reduce AVCs on provincial highways improve driver safety and minimize the impacts of highways on wildlife populations. The AWW Program and its goals are highlighted in a video available at https://youtu.be/zBknpdganB8.
AWW Program is designed to:

1. Identify AVC-prone locations (AVCPLs);
2. Provide high-quality data for effective decision making;
3. Develop departmental policy & standards; and
4. Allow for innovation and evaluate long term mitigation effectiveness.

High-quality data is collected using the AWW application[1]. Data analyses to identify and prioritize statistically significant AVCPLs are automatically performed on the AWW website tool[2]. Together, the AWW application and website tools support the decision-making process for AVC mitigation.

AVCPLs identified are prioritized for mitigation and evaluated for feasibility. Once approved for mitigation, Alberta Transportation's Terms of Reference for AVC mitigation projects outline the design and tender process including the development of an AVC Mitigation Plan. Alberta Transportation's mitigation standards and considerations are incorporated into planning and design to ensure each mitigation project contributes to the Program goals. Once a mitigation project is complete, the applicable mitigation construction reports and AVCPL records are stored and mapped in the Mitigation Data Repository. This builds an AVC mitigation inventory that is linked to the AWW data and AVCPL analyses (animal carcass data collected before and after the mitigation project) to facilitate mitigation performance monitoring. Its effectiveness at reducing AVCs is evaluated using standardized performance criteria.

Over time, standard performance of the overall AWW Program and provincial mitigations are evaluated to ensure continued alignment with the AWW Program's goals. Lessons learned from this long-term review influences Alberta Transportation's mitigation standards, construction and innovation, evaluation criteria, and all System components.

Figure 1 displays the AWW Program structure.

1 Smartphone application for iOS, Android, and BlackBerry devices.
[2] A modern browser, such as Chrome, is required for the website (Internet Explorer is not recommended).

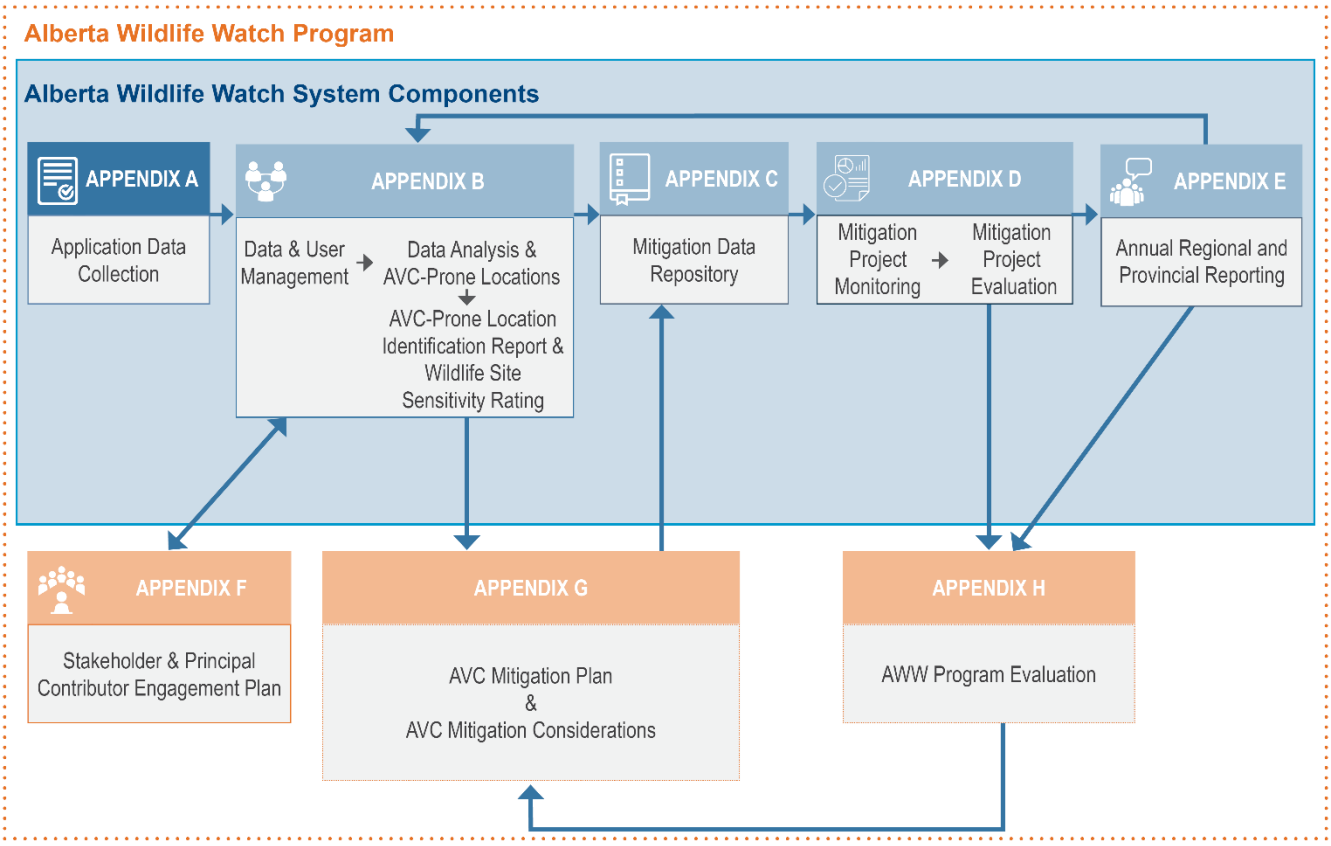


Figure 1: Alberta Wildlife Watch Program Structure

Appendix A: Data Collection

1.0 INTRODUCTION

Collecting high-quality data is a core pillar of the Alberta Wildlife Watch (AWW) Program, as it is the basis for effective provincial animal-vehicle collision (AVC) mitigation decision making and monitoring. The development of the AWW smartphone application is Alberta Transportation's solution to substantially improve the quality of data being collected across the province.

Traditionally, the AVC data collection methods limited the quality and quantity of the data being collected. This restricted its use as a decision-making tool. The traditional AVC data poorly represents the actual number of AVCs occurring across the province, is spatially inaccurate, frequently lacks species documentation, and is unreliable for species identification. Alberta Transportation were thus unable to: 1) quickly access the data for analysis, 2) suitably locate and prioritize provincial animal-vehicle collision prone locations (AVCPLs), 3) confidently choose and justify the most appropriate species-specific mitigation for a given site, and 4) accurately monitor provincial AVC trends and AVC mitigation performance.

The AWW application addresses the shortfalls of the traditional data collection method, and greatly improves the quality and quantity of data collected, at low overall project cost. The AWW application is user-friendly to efficiently and accurately collect animal carcass and live sightings data. The AWW application is currently in operation, largely with the participation of Highway Maintenance Contractors (HMCs) and other Principal Contributors.

2.0 USER ROLES AND RESPONSIBILITIES

The AWW data collection solution is provided through the AWW application; under the responsibility of designated smartphone users (i.e., Principal Contributors). Principal Contributors have the primary responsibility of collecting animal carcass and live animal sightings data and are supported by Regional and System Administrators (Table 1). User access is dependent upon their program authority and their unique identification codes that are determined by a System Administrator.

Table 1: User Responsibilities for Data Collection

User	Access Permission(s)	Data Collection Responsibilities	
		Expand Participation	Collect Data
1. Principal Contributors	Application Tool		✓
2. Regional Administrators	Application & Website Tools		✓
3. System Administrators	Application & Website Tools	✓	✓

Other AWW Program users with no responsibilities for data collection, such as **Project Users and AWW Viewers**, are described in additional appendices, including Appendices B and C.

2.1 Principal Contributors

Principal Contributors currently include HMCs and relevant Government of Alberta staff. Under the AWW Program, their primary responsibility is to collect accurate and consistent animal carcass and live sighting data using the AWW application.

The System Administrator adds new Principal Contributors into the AWW website and provides the Principal Contributors with their unique Organization Identification (Org. ID) code. An Org. ID is usable for all Principal Contributors within that organization (i.e., Alberta Transportation), and is associated with and credits each wildlife record in the database.

2.2 Regional Administrators

Regional Administrators are selected by Alberta Transportation for regional consulting assignments. Individual Regional Administrators gain access to the AWW application using an Org. ID code and the website using an assigned username and password system. Both the Org. ID code and the user name and password are assigned by the System Administrator. Alternatively, the Org. ID may be requested from Alberta Transportation's Environmental Services, Technical Services Branch.

They have the ability to collect live sighting and carcass data using the AWW application; however, Regional Administrators' primary responsibilities include the analyses, management, and reporting of the AWW data described in Appendices B to E.

2.3 System Administrators

System Administrators are responsible for the overall management of the AWW Program and its users, including the AWW application. This role includes access to the entire AWW System and is restricted to Alberta Transportation staff. A primary responsibility is assigning and managing AWW application and website user access for data collection purposes, and expanding participation using the AWW application (i.e., Government of Alberta staff).

3.0 COLLECTING DATA USING THE AWW APPLICATION

AWW is a milestone for Alberta Transportation as it is the first operational application to collect high-quality animal carcass and live sighting data throughout the province. As part of its user-friendly design the AWW application is available in three different platforms: iPhone (iOS 4.0 and later), Android (Android 3.0 and later), and BlackBerry (BlackBerry 10 and later). Access to the application is via the Apple App Store, Google Play Store, and BlackBerry World.

The AWW application provides a standard method to collect data across the province. Its well-thought out design collects the data that will help meet the AWW Program goals. Importantly, it is designed with the needs of Principal Contributors in mind (i.e., easy and safe reporting along highways), and resolves the traditional data collection challenges by:

- Growing the amount of data collected;
- Increasing spatial accuracy;
- Improving species reporting; and
- Storing data in real-time.

3.1 Growing the Amount of Data Collected

Alberta Transportation chose Principal Contributors (e.g., HMCs) to collect animal carcass and live sighting data with the AWW application while carrying out their routine duties. Principal Contributors provide a relatively equal representation of AWW data and data collection effort across the province. Additional Principal Contributors may be approached if it is determined that additional coverage is required to ensure the highest quality data collection.

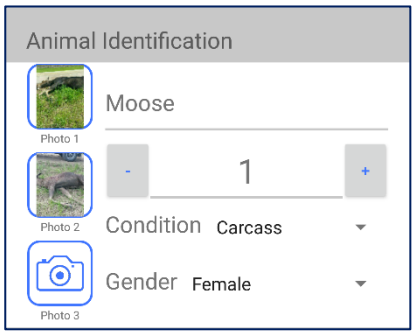
This system of data collection inherently increases the amount of data collected on a regular basis, in the most cost-effective way. By comparison, the traditional data collection approach relied on police reports of AVCs causing $2,000 or more in property damages. Prior to 2011, the reporting limit was $1,000. Due to the monetary reporting threshold, it is estimated that over 50 percent of AVCs went unreported. As a consequence, the true magnitude of AVCs across the province was poorly understood.

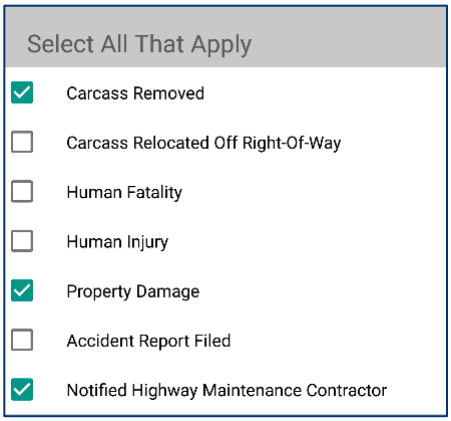
Reporting both animal carcasses and live sightings increases the usefulness of the AWW data. An animal carcass report represents an AVC incident, irrespective of property damages exceeding $2,000. Live animal reports indicate areas of movement, and possibly where animals are currently able to cross the highway successfully.

Additional contextual information about the animal carcass and live sighting is also collected with the AWW application. This provides a finer level of detail appropriate for planning effective AVC mitigation. Additional contextual information includes:

Incident Date and Time: The current date is automatically recorded but may be manually updated by the Principal Contributor. The AWW application also collects the time (i.e., Dawn, Day, Dusk, Dark, Unknown) the animal was hit by a vehicle (if known by the Principal Contributor) or the live animal was seen.

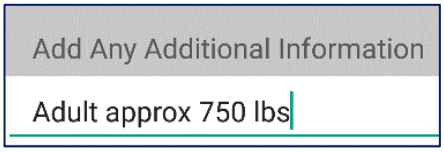
Animal Description and Photo: Additional information about each animal carcass/live sighting is also recorded, including: the number observed, gender (if known), and whether or not the observation was a live animal or an animal carcass. The application also allows Principal Contributors to provide up to three photos of the animal carcass/live animal. The Global Positioning System (GPS) location of each photo is also geotagged to help improve reporting accuracy.





Incident Report: A checklist allows quick identification of information specific to the incident. This includes whether or not the carcass was removed or relocated off the highway right-of-way; if there was a human fatality, human injury, or property damage suspected; if an accident report was filed; and if a HMC was notified to pick up the carcass.

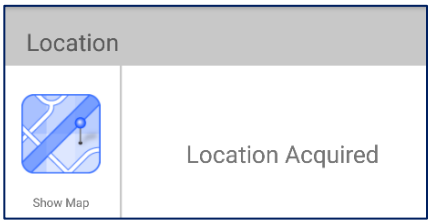
Additional Information: Principal Contributors can manually enter additional information applicable to the report. This may include the species of bird observed (e.g., Great Horned Owl) or the age of the animal (e.g., calf). To date, some Principal Contributors have also recorded the approximate weight of animal carcasses removed from the highway right-of-way.



3.2 Increasing Spatial Accuracy

Increasing the spatial accuracy allows Alberta Transportation to complete fine-scale analyses of where animal-vehicle collisions are occurring. The AWW application provides spatial accuracy within ± 10 metres by using the smartphone's built in GPS. It is designed to automatically record the GPS location and Road Name (if known) at the users' position when submitting the report. Similarly, the AWW application geo-references the location of each photo submitted with the record.

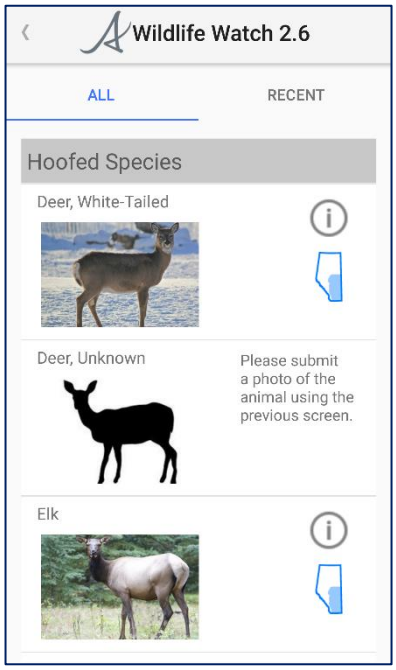
In the traditional reporting system, the location of the AVC was reported as the nearest highway kilometre marker, if known. Improved spatial accuracy allows Alberta Transportation to identify AVCPLs with higher accuracy, and subsequently target mitigation efforts appropriately.



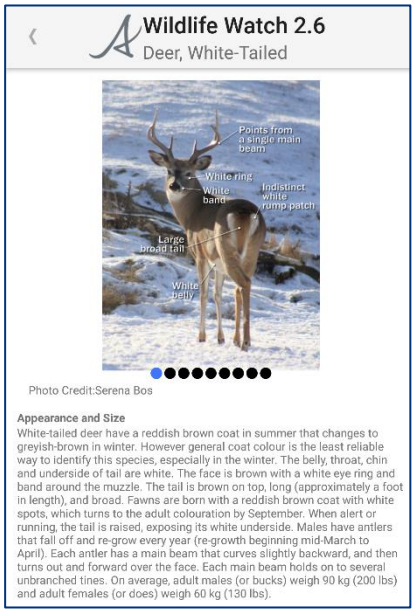
The GPS location continues to update automatically until the report is submitted. Users can also open a map to manually select the location of the observation. Satellite, standard, terrain, or hybrid map options are available to help the user locate local landmarks on the map and increase spatial accuracy of the observation record.

Locational services work in the event that there is no cell signal, or the device has no cell plan. The GPS will acquire the location; however, the manual map entry function will not work without cell signal.

3.3 Improving Species Reporting



Species reporting helps Alberta Transportation understand seasonal and spatial patterns and the species most involved in animal-vehicle collisions. This supports the development of species-specific mitigations. The AWW application improves species reporting and identification. Traditionally, the identification of species was not included in the standard accident report form. Consequently, AVCs were recorded in the TDRA as an "animal strike" with the species infrequently recorded in the comment field.



The AWW application simplifies the recording of provincial animal species. The AWW application provides a well-organized list of main species likely to be observed and recorded by Principal Contributors. Principal Contributors can select provincial species/species groups from a list of all options or, most efficiently, from a shorter list of the ten most recently observed species. The application's quick select button to automatically enter the species name also eliminates spelling errors later in the database. If the species is not on the list, or grouped together, users can manually type in the specific species name in the Additional Information field of the AWW application.

Similarly, the AWW application groups together species that are less likely to be reported/seen (i.e., waterfowl) and those difficult to identify at the species level (i.e., weasel family) by Principal Contributors. This minimizes the number of provincial species/species groups available for Principal Contributors to choose from and facilitates quick selection without being overwhelming to the user.

In addition, the AWW application assists in species identification. It has an embedded electronic species identification guide specific to Alberta. This includes multiple photos that highlight the physical characteristics (i.e., coat colour and pattern) of each species for quick identification. Species range maps are also included as an identification aid.

3.4 Storing Data in Real-time

AWW application records are stored within the smartphone until a network connection is available. Once available, the application record(s) are automatically transferred to a secure database, thereby eliminating the need for manual data entry, and avoiding common data entry and lag-time problems.

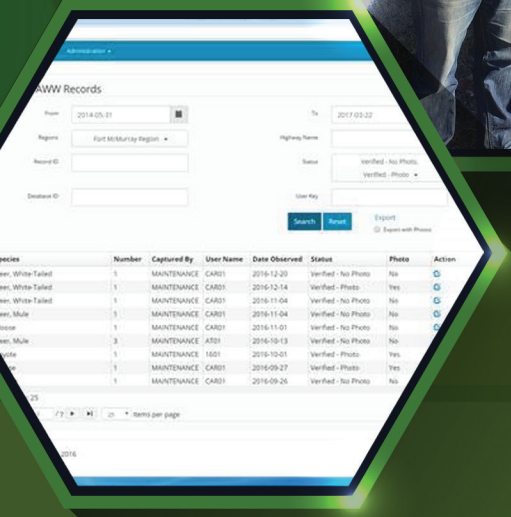
Data from the AWW application is uploaded to the AWW website near live-time. This allows animal carcass and live sighting data to be analyzed in a timely manner. The traditional AVC data can take up to two years for the paper forms for each AVC (with damage ≥ $2,000) to be manually entered into the TIMS Data Repository Application (TDRA).

Quick access to the data allows for more appropriate analysis and timely AVCPL mitigation decision making.

4.0 PREVIEW: DATA & USER MANAGEMENT AND ANALYSIS

Collecting and storing high-quality data is one goal of the AWW Program to help reduce AVCs on provincial highways, improve driver safety, and reduce the impacts of highways on wildlife populations. Subsequent steps to reach all the Program goals are outlined in the following Appendices' documents (Appendices B-H).

Once stored on the AWW website, animal carcass and live sighting data is accessible to Alberta Transportation and other select users. This provides the ability to quality control the data, complete data analyses in a timely manner, and suitably locate and prioritize provincial AVCPLs for mitigation design and tender. These next steps are outlined in Appendix B (*Data & User Management and Analysis*).



Alberta

ALBERTA WILDLIFE WATCH PROGRAM

APPENDIX B

DATA & USER MANAGEMENT AND ANALYSIS

AUGUST 2017

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
AEP	Alberta Environment and Parks
AWW	Alberta Wildlife Watch
AVC	Animal-Vehicle Collision
AVCPL	Animal-Vehicle Collision Prone Location
CMA	Contract Maintenance Area
GPS	Global Positioning System
GoA	Government of Alberta
HMC	Highway Maintenance Contractor
KDE+	Kernel Density Estimate+
Org. ID	Organization ID
TDRA	TIMS Data Repository Application
TIMS	Transportation Information Management System
WSSR	Wildlife Site Sensitivity Rating

DEFINITIONS

Term	Definition
Animal Carcass Data	Animal carcass data collected using the AWW application. An animal carcass report is assumed to represent an animal-vehicle collision.
AWW Application	Smartphone application supported in iOS, Android, and BlackBerry devices.
AWW Dashboard	AWW Program tool to monitor and report AWW data as a snapshot in time. The AWW Dashboard includes clear and concise graphics at the provincial and regional scales to provide an efficient Program checkup.
AWW Mitigation Toolbox	Alberta Transportation's guidebook of AVC mitigation technologies and structures.
AWW Program	The Program developed to identify and prioritize animal-vehicle collision prone locations, identify cost-effective mitigation, and to evaluate mitigation performance. The Program includes four components: 1) the AWW System, 2) Alberta Transportation's Mitigation Planning and Design Standards, 3) User Engagement Plan, and 4) Annual Review.
AWW System	Collects, manages, analyzes, and reports AWW data, identifies and prioritizes AVC mitigation locations, and evaluates mitigation performance.
AWW Viewer	Alberta Transportation's stakeholders and partners with view only access to the AWW website tool.

Term	Definition
Mitigation Data Repository	Map and document storage of AVC mitigations across the provincial highway network.
Organization ID	A unique code given to each company and or organization registered as a Principal Contributor to use the AWW application. The code is provided by Alberta Transportation's Operations Manager (for HMCs) or Alberta Transportation's System Administrators within Environmental Management Services.
Principal Contributor	An AWW application user that has been identified as critical for the acquisition of animal carcass and live sighting data. Principal Contributors are Highway Maintenance Contractors and Government of Alberta staff.
Project User	Alberta Transportation's project-specific consultants with primarily view-only (restricted editor) access to the AWW website tool.
Regional Administrator	An AWW website manager for designated Region(s). Example Regional Administrators are those with an Alberta Transportation regional consulting assignment.
System Administrator	A supervisor for the AWW application and website. Limited to Alberta Transportation staff.
User Key	A unique identifier for individual smartphones that is generated by the AWW System.

Alberta Wildlife Watch Program Overview

Animal-vehicle collisions (AVCs) are a significant problem in Alberta affecting motorist safety and wildlife populations. Alberta Transportation designed the Alberta Wildlife Watch (AWW) Program as a solution to reduce AVCs on provincial highways improve driver safety and minimize the impacts of highways on wildlife populations. The AWW Program and its goals are highlighted in a video available at https://youtu.be/zBknpdganB8.

AWW Program is designed to:

1. Identify AVC-prone locations (AVCPLs);
2. Provide high-quality data for effective decision making;
3. Develop departmental policy & standards; and
4. Allow for innovation and evaluate long term mitigation effectiveness.

High-quality data is collected using the AWW application[1]. Data analyses to identify and prioritize statistically significant AVCPLs are automatically performed on the AWW website tool[2]. Together, the AWW application and website tools support the decision making process for AVC mitigation.

AVCPLs identified are prioritized for mitigation and evaluated for feasibility. Once approved for mitigation, Alberta Transportation's Terms of Reference for AVC mitigation projects outline the design and tender process including the development of an AVC Mitigation Plan. Alberta Transportation's mitigation standards and considerations are incorporated into planning and design to ensure each mitigation project contributes to the Program goals. Once a mitigation project is complete, the applicable mitigation construction reports and AVCPL records are stored and mapped in the Mitigation Data Repository. This builds an AVC mitigation inventory that is linked to the AWW data and AVCPL analyses (animal carcass data collected before and after the mitigation project) to facilitate mitigation performance monitoring. Its effectiveness at reducing AVCs is evaluated using standardized performance criteria.

Over time, standard performance of the overall AWW Program and provincial mitigations are evaluated to ensure continued alignment with the AWW Program's goals. Lessons learned from this long-term review influences Alberta Transportation's mitigation standards, construction and innovation, evaluation criteria, and all System components.

Figure 1 displays the AWW Program structure.

1 Smartphone application for iOS, Android, and BlackBerry devices.
2 A modern browser, such as Chrome, is required for the website tool (Internet Explorer is not recommended).

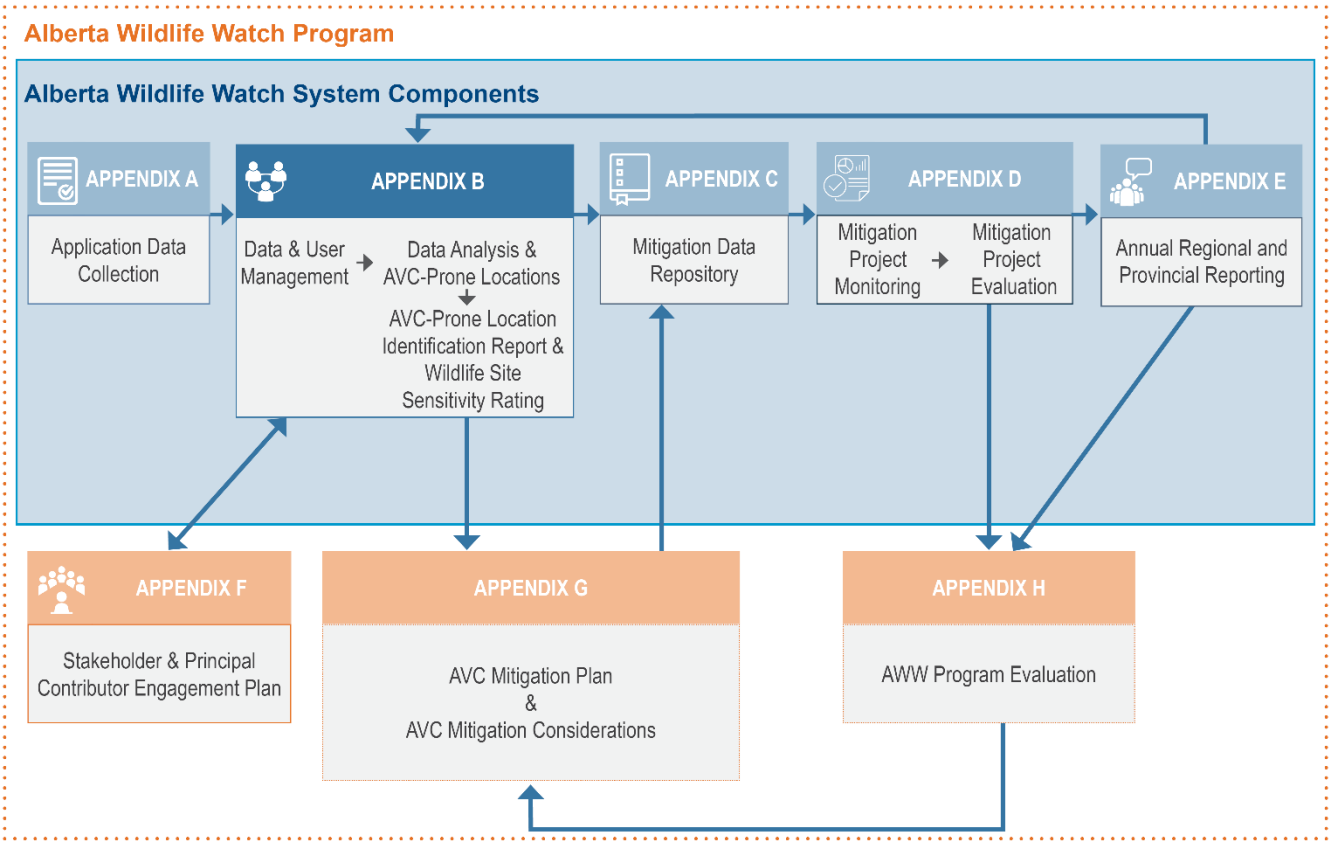


Figure 1: Alberta Wildlife Watch Program Structure

Appendix B: Data & User Management and Analyses

1.0 INTRODUCTION

The development of the Alberta Wildlife Watch (AWW) smartphone application is Alberta Transportation's solution to substantially improve the quality of data being collected across the province (refer to Appendix A). This allows for the data to be quality controlled and analyzed in a timely manner. This is an effective solution to the traditional animal-vehicle collision (AVC) data collection approach.

AVC data is traditionally collected from police reports. Incidents that result in property damage $2,000 or more (prior to 2011 the damage threshold was $1,000), a human fatality, and or human injury are filed using a paper process. This traditional method involves considerable data entry and results in data entry errors and data access delays. Currently, the delay to access the traditional AVC data is two years after an AVC has occurred.

As a result of the delay, AVC reduction considerations are not effectively integrated into Alberta Transportation's project delivery process. Wildlife and wildlife mitigation are considered in the Environmental Evaluation for a given project; however, due to lack of reliable and current data, mitigation is often difficult to plan.

The AWW System solves these challenges by 1) automating the animal carcass and live sighting data entry (as outlined in Appendix A), and 2) providing a platform to efficiently manage and analyze the data (described here in Appendix B). Timely access to the data is improved and the risk of data errors is reduced by the automation and efficient design of the AWW application (i.e., drop down selections). Data collected using the AWW application is automatically submitted to the AWW website once a network connection is available. This allows for near real-time access to the data. Once collected in the field and stored on the AWW System's website, animal carcass and live sighting data is accessible to Alberta Transportation and other selected users. This provides a platform to quality control the data, register and manage select users (i.e., data contributors), and analyze the data. This ensures the highest-quality data, and simple effective analyses.

Reliable and timely access to the data provides Alberta Transportation the ability to locate and prioritize provincial animal-vehicle collision prone locations (AVCPLs). This aids the decision-making process and provides solid justification for mitigating AVCs. Appendix B outlines how the website maintains the integrity and accuracy of the data to ensure high-quality data and effective analyses of AVCPLs by:

1. Managing Data:
    a. Data quality control;
    b. Coach Principal Contributors; and
    c. Integration of other Alberta Transportation information.
2. Managing Users:
    a. Administer user roles and responsibilities; and
    b. Data change history.
3. Analyzing Data using a Provincial Approach (Including the Identification of AVCPLs).

Near real-time access for data analyses provides Alberta Transportation the ability to identify and respond to AVCPLs in a timely manner, synchronize AVC reporting with the annual provincial collision statistics, and effectively engage with stakeholders and the public.

High-quality data is managed and analyzed within the AWW website tool by identified key users. It is their responsibility to ensure quality data is 1) attained/maintained, 2) analyzed, and 3) advanced through the AWW Program.

2.0 USER ROLES AND RESPONSIBILITIES

The AWW website tool efficiently manages multiple users. Three different users 1) **Project Users**, 2) **Regional Administrators**, and 3) **System Administrators** access, manage, and analyze the AWW data (Table1). Each have distinct responsibilities under the data and user management and analyses component (Table 1). For users to view, manipulate, or export certain parts of the AWW website they must have the proper credentials (i.e., username) that are determined by the System Administrator.

Table 1: User Responsibilities for Data/User Management and Analysis

User	Access Permission(s)	Management and Analysis Responsibilities			
		User Management	Data Management	Data Analyses	Public Engagement/ Awareness
1. Project Users	Website Tool			✓ (assigned project(s))	
2. Regional Administrators	Smartphone & Website Tools		✓ (assigned Region(s))	✓	
3. System Administrators	Smartphone & Website Tools	✓	✓	✓	✓

Principal Contributors and **AWW Viewers** are Highway Maintenance Contractors and Alberta Transportation stakeholders and partners. Both users have no responsibilities for AWW data and user management and analyses. Principal Contributors responsibility are outlined in Appendices A and D.

AWW Viewers have no designated responsibilities under the AWW Program; however, have view-only access to the AWW website tool. Once registered by the System Administrator, AWW Viewers are emailed a username and password automatically from the AWW website (email will be sent from info@albertawildlifewatch.ca). AWW Viewer accounts are deactivated by System Administrators upon an agreed upon completion date.

2.1 Project Users

Project Users are Alberta Transportation's project-specific consultants. With view-only access to the AWW data, this user is able to incorporate AWW's data and analyses (including identifying and priority ranking AVCPLs) into their project work. To facilitate project-specific work, Project Users are able to download the AWW database and analyses for all traffic control segments that fall within their project limits. They may then incorporate any required AVC mitigation within, or adjacent to their project. Additional analyses of data may be required outside the AWW website tool.

Once registered by the System Administrator, Project Users are emailed a username and password automatically from the AWW website (email will be sent from info@albertawildlifewatch.ca). Project User accounts are deactivated by Regional Administrators upon project completion.

2.2 Regional Administrators

Regional Administrators are selected by Alberta Transportation for regional consulting assignments. Individual Regional Administrators gain access to the AWW application using an Organization ID (Org. ID) code and the website tool using an assigned username and password system. Both the Org. ID code and the user name and password are assigned by the System Administrator. Alternatively, the Org. ID may be requested from Alberta Transportation's Environmental Services Section, Technical Standards Branch.

Regional Administrators play a primary role within the AWW System. Under the data and user management and analyses component, Regional Administrators' primary responsibilities include 1) data management (i.e., quality control), and 2) data analyses (including identifying and priority ranking AVCPLs). Regional Administrators are also responsible for deactivating Project User accounts when their projects are complete.

2.3 System Administrators

System Administrators are responsible for the overall management of the AWW Program and its users, including the AWW website tool. This role includes access to all AWW data and management systems and is restricted to Alberta Transportation staff. Responsibilities include assigning and managing all other users, registering usernames and passwords for Project Users and Regional Administrators, overseeing data quality control, managing information available from other Alberta Transportation applications, and integrating/sharing data analyses results. Registration of all AWW Program users is completed through the AWW website's *Administration* tab.

3.0 MANAGING DATA

Animal carcass and live sighting data collected using the AWW application are managed within the AWW website tool. Once in the website, the data are reviewed and, where warranted, data quality is further improved. This ensures that data is the highest quality and as reliable as possible when locating and prioritizing provincial AVCPLs. This is achieved by:

- Quality controlling the data;
- Coaching Principal Contributors; and
- Integrating with other Alberta Transportation applications.

Once in the website, data is further protected from loss. Data is backed up on a nightly basis using the Acronis software program.

3.1 Data Quality Control

Animal carcass and live sighting records are automatically uploaded from the AWW application to the website tool. Once in the website, records are initially marked as Pending and are available to Regional Administrators for quality control purposes. This quality control process increases the reliability of the data.

Quality control is completed on the AWW website's *Record Management* tab. Regional Administrators have the ability to view the record, its location, and photo(s) submitted from the AWW application. Updates to the animal species, gender, and condition (animal carcass or live sighting) are permitted during the quality control process. Quality control benefits most when using photo(s) submitted with the record.

Animal carcass and live sighting records and or individual photos may be archived if deemed to be invalid during quality control. Archived items are removed from the database and map layers; however, are retrievable for export and may be restored by a Regional or System Administrator.

To help with the quality control process, an easy drop-down list of pre-identified quality control remarks are provided. This includes the most common errors encountered during the quality control process. An example quality control remark is: *species corrected*. All quality control remarks are automatically included in the AWW database. It is in the database where the true benefit of these pre-identified quality control remarks is most evident. It allows the entire provincial database to be sorted based on a specific data error (i.e., *species corrected*). This simple and effective manipulation to the database allows Regional Administrators to easily identify, manage, and report primary data errors and error rates, and target additional coaching of Principal Contributors.

Uncommon errors, not available in the quality control drop-down list, may be manually entered by the Regional Administrator in the notes section. This manual notes section allows the Regional Administrator to report a cautionary notice. This may be warranted when a species is recorded well outside its known provincial range and a photo was not submitted to verify the observation. These quality control notes are also included in the provincial export database. However, Regional Administrators are responsible for notifying Alberta Transportation of suggested AWW System improvements (i.e., application coaching and or engagement needs).

Once the record is quality checked, the Regional Administrator changes the record status from Pending to Verified- Photo (i.e., verified using a photo record) or Verified-No Photo (i.e., verified without a photo record available). All data, including Pending records, data corrections, and quality control remarks/notes are available for analyses.

The quality control process maximizes data processing efficiency. This includes a streamlined quality control page that 1) displays the applicable record information needed to quickly determine data quality, 2) warns of possible errors, and 3) easily progresses to the next Pending record.

The quality control page is designed specifically to limit three potential data errors:

1. Species identification;
2. Location; and
3. Duplicate records.

The management of these three errors is important to improve data reliability.

3.1.1 Species Identification

Correct species data provides a better understanding of species involved in AVCs, animal movements, and seasonal AVC rates. This allows Alberta Transportation to target mitigation specific to species involved in collisions and manage species at risk. Ultimately, species identification errors in the database have the potential to influence a mitigations effectiveness to reduce AVCs.

The AWW application limits species identification errors by including a species identification guide. Alberta Transportation has also delivered hard copies of the species identification guide as part of the Principal Contributors Engagement Plan (Appendix F). This attempts to reduce the number of species identification errors entering into the database.

Once in the website, species identification is quality checked using the record's photo(s) submitted. Records with on-site photo(s) and correctly identified species are re-classified from Pending to Verified-Photo. Photos showing clear evidence of incorrect species are corrected by the Regional Administrator in the quality control process. Records submitted without photos are re-classified from Pending to Verified-No Photo by the Regional Administrator.

Animal carcasses in particular may be difficult to identify. To aid in species identification, Regional Administrators are able to zoom into the photo. If needed, Regional Administrators are also able to email the photo to a provincial expert for species confirmation (e.g., AEP biologists, Royal Alberta Museum curators).

During the species quality control process using animal photos, Regional Administrators are also able to manually adjust the records' animal gender and age classification. This process also allows records of broad species groupings (e.g., duck species) available on the application to be manually changed to a finer species classification (e.g., Mallard).

3.1.2 Location

Location data directly influences the identification and magnitude of AVCPLs. Accurate location data allows Alberta Transportation to identify mitigation needs, design mitigation appropriate for the entire AVCPL, and effectively monitor mitigation performance.

The AWW application provides spatial accuracy within ± 10 metres by using the smartphone's built in Global Positioning System (GPS). It is designed to automatically record the GPS location at the users' position when submitting the report. Similarly, the AWW application geo-references the location of each photo submitted with the record. This maximizes the location accuracy of the data.

Once in the AWW website, the records and photo location data are available for quality control. The quality control page simplifies the location check by mapping both the record and photo locations together. This allows the Regional Administrator to quickly verify any discrepancies. In addition, a notification alerts the Regional Administrator if the record and photo locations differ by more than 100 metres.

Manual adjustment to the records' location is not permitted. However, a location error notification is saved to the record and entered into the database. This is accomplished during the quality control process and involves selecting a pre-identified quality control remark: *record location ≥100 m from photo location*. Both the record and photo(s) GPS locations are provided in the database for export and further analyses if needed.

3.1.3 Duplicate Record

Duplicate records are defined as multiple AWW application records of the same animal carcass. Large numbers of duplicate carcass records may introduce bias into the AWW database, resulting in an overestimate of the magnitude of AVCs at a particular location. Duplicate live sighting records are considered inherent to the natural movement of wildlife. Multiple live sighting records are not regarded as duplicates within the AWW website tool.

The AWW website tool minimizes the risk of duplicate carcass records by restricting AWW application users to Principal Contributors that are primarily highway maintenance contractors and Government of Alberta staff. Any duplicate records submitted are later managed in the AWW website tool as part of the quality control process.

The quality control process includes an automatic approach to help identify potential duplicate carcass records. During the quality control, a notification alerts the Regional Administrator of all AWW records reported within a 500 m radius and within 1 week of each other (i.e., 14 day span; e.g., a record submitted January 15 is matched to observations from January 8 to January 22). These records are considered possible duplicates, irrespective of the animal species and submitting organization, until further evaluated by the Regional Administrator.

To efficiently evaluate possible duplicates, the species, observation date, record identification number, and submitting Organization ID are listed and mapped for each. Any record determined to be a duplicate by the Regional Administrator is archived and removed from the database.

3.2 Coach Principal Contributors

Data quality is also contingent upon the practices of Principal Contributors (i.e., the highway maintenance contractors). The AWW application is designed to be user-friendly; requiring little time to learn and use on a daily basis.

Similarly, a package of various AWW application training materials are provided to Principal Contributors at deployment (refer to Appendix F). These include an introduction video to the AWW Program (available at https://youtu.be/zBknpdganB8), a detailed AWW application user manual, species identification guide, a simple user guide poster, and travel-sized application guide cards. These are found on Alberta Transportation's website under the *Technical Resources* tab http://www.transportation.alberta.ca/6003.htm
Coaching occurs after deployment of the AWW application, on an as-needed basis. It involves directed instruction specific to the Principal Contributor's needs. Regional Administrators are responsible for monitoring and coaching the Principal Contributors, as needed. Principal Contributors are monitored within the AWW website tool using their unique Org. ID's associated with each AWW record. The AWW website tool includes a dashboard summary of Principal Contributor records and error rates. This provides a high-level overview of the system operations and alerts administrators of potential areas of concern. The AWW Dashboard specifically monitors the primary data errors, Principal Contributor submission rates, and application versions in use. This allows Regional Administrators to easily and effectively monitor coaching needs and initiate an applicable coaching approach. The AWW Dashboard is described further in Section 5.4.

The coaching approach (e.g., phone call, letter, in-person training) is determined by the System Administrator and the Principal Contributor Engagement Plan (Appendix F). Factors that determine the coaching approach and schedule, include but not limited to, the severity of the concern and the ease with which coaching is best communicated.

Coaching is a simple, yet effective method to increase data quality.

3.3 Incorporate Other Alberta Transportation Information

The AWW website tool must also remain current by incorporating other available Alberta Transportation information and mapping. This helps maintain data quality throughout operations, and a seamless transition of data/information sharing among Alberta Transportations applications. This is particularly important at the data analyses and project planning stages.

Alberta Transportation's TIMS Data Repository Application (TDRA) is a centralized database which receives provincial highway information from multiple applications. AWW is one of several applications within the TDRA. Integration of the AWW System with the TDRA ensures data reliability and maintains data consistency across Alberta Transportation's applications.

Alberta Transportation's Informatics and Modelling team maintains custodianship of the highway data used by AWW. They update the highway data annually to include highway upgrades, re-alignments, and new road projects. Similarly, traffic control sections are defined and managed by Alberta Transportation's Modelling and Analysis team using Highway segments with uniform traffic volumes. This is completed by taking the current highway control sections and dividing them, if needed, into "Traffic Control Sections". The AWW System uses the highway and traffic control section information and shapefiles as base maps for data analyses. In particular, the AWW website sources snapshot highway, control section, traffic control section, and kilometre point information from the TDRA.

AWW is designed to incorporate the most contemporary information and mapping from the TDRA. Integration of this information is currently completed manually once annually; however, automation is ultimately preferred as it reduces the potential for human error. This ensures data quality is maintained and provides confidence in the AWW data analyses through time.

4.0 MANAGING USERS

The AWW System's data management approach helps improve and maintain high data quality standards. By comparison, the AWW user management approach helps protect the integrity of the AWW data. Protecting the integrity of the data includes processes to reduce the risk of data corruption and data bias and increase the overall reliability of the data. This supports a higher-level of confidence in the data to aid AVCPL mitigation decision-making.

The AWW System's user management approach helps protect the integrity of the data by:

- Limiting user access; and
- Recording data changes in a change history log.

4.1 Limiting User Access

Alberta Transportation protects the integrity of the data by limiting access to the AWW application's Principal Contributors and website tool to designated AWW Viewers, Project Users, and Administrators with the proper credentials. This includes access to both the AWW application and the website tool based on the user's responsibilities. For instance, Principal Contributors must receive an Organization Identification code to open the AWW application. Proper credentials to access the AWW application and website tools are distributed by the System Administrator.

Access to the AWW application is limited to select Principal Contributors to minimize risk of duplicate carcass records[3]. Each Principal Contributors' phone is given a unique User Key identifier when first submits an AWW application record. This User Key identifies an individual smartphone, without identifying the individual person. In exceptional cases, this allows the data collected by an individual Principal Contributor of known concern to be manually archived and removed from the database. This protects the database from bias and increases the overall reliability of the data.

[3] Access to the AWW application is also limited to Principal Contributors with safety plans addressing the safe use of smartphones.

Similarly, each Regional Administrator has a unique username and password to quality control records collected within their Region(s). They have view-only access to records collected elsewhere to protect data integrity. This protects the integrity of the data by reducing the risk of data corruption.

4.2 Data-Change History

A data-change history strengthens the reliability of the data and reduces the risk of the data being subverted. A change history provides a chronological record of individual AWW record updates. The date and time of a change, and the user name of the Administrator are recorded. In addition, the previous and new attribute value for all changed attributes are also recorded. For example, records changed from “Pending” to “Verified-No Photo” are included in the change history.

5.0 ANALYZING DATA

The AWW website tool utilizes several analytical approaches to yield the most accurate and practical solutions for Alberta Transportation. Data analysis within the AWW website is automated, to the extent possible, and relevant to Alberta Transportation’s traffic safety mandate. This includes analyses that can be used to locate and prioritize AVCPLs and determine effective mitigation to improve highway safety.

Wild large-bodied species are the primary target in the AWW analyses, which reflect Alberta Transportation’s highway safety mandate. These targets species (Table 2) pose the highest risk of property damage and human fatalities/injuries when struck. Large-bodied species are selected based on their physical size and weight; and generally, represent species the size of wolves and larger.

Table 2: Alberta Wildlife Watch Large-Bodied Animals

North American Bison	Moose	Unknown Deer Species	Wolf
Mountain Goat	Elk	Woodland Caribou	Grizzly and Black Bear
Bighorn Sheep	Mule and White-Tailed Deer	Pronghorn	Cougar

However, Alberta Transportation recognizes Alberta Environment and Parks (AEPs) mandate to conserve wildlife including species at risk across the province. Traffic and provincial highways can adversely affect wildlife and species at risk populations. Thus, it is important for capital planning and species conservation to consider highway-related and AVCs mitigations for all wildlife. As a result, the AWW website also includes analysis tools to better identify and understand adverse effects highways may have on other wildlife.

All species, including species at risk, are included in the analyses. The AWW application and website tools collect and analyze data primarily on medium and large-bodied species including those listed as Endangered, Threatened, and Special Concern under the federal *Species at Risk Act* (Schedule 1), Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Alberta *Wildlife Act* (Table 3). Smaller-bodied species at risk are inconspicuous, and thus inconsistently reported by Principal Contributors. As a result, smaller-bodied species at risk data is unreliable; however, still forms part of the AWW analyses if it is included in the AWW database (i.e., reported by Principal Contributors).

Table 3: Species at Risk Targeted in Alberta Wildlife Watch*

North American Bison	Grizzly Bear	Swift Fox	Prairie Rattlesnake
Woodland Caribou	Wolverine	American Badger	

* Manual updates to the list of species at risk is required annually to incorporate any newly listed species.

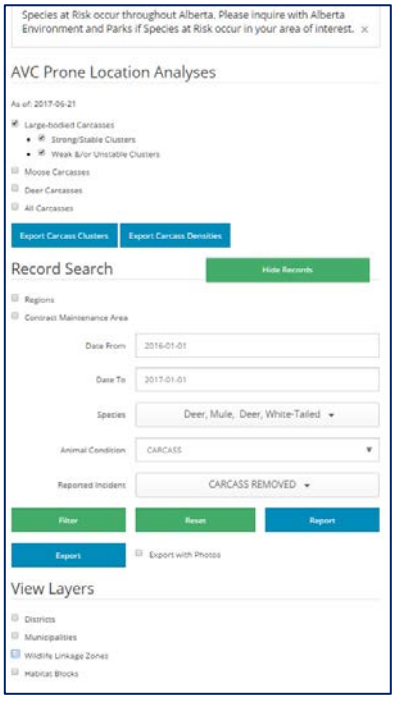
To support Alberta Transportation's traffic safety mandate and species conservation, the AWW website tool analyzes animal carcass and live sighting data using:

1. Interactive mapping;
2. Animal carcass and live sighting data summaries;
3. Animal-vehicle collision prone location analyses;
4. AWW Dashboard; and an
5. Exportable database.

All active AWW data records, including those pending quality control, are included in the data analyses (archived records excluded).

5.1 Interactive Mapping

The AWW website tools interactive map provides visual context and clarification to the data, and cursory analyses of when and where AVCs occur. Maps are an essential component of the AWW website tool. The AWW interactive map provides an effective representation of animal carcass patterns, juxtaposed to surrounding landscape/terrain features and management regions (e.g., Contract Maintenance Areas). This functional map is most beneficial when prioritizing, planning, and mitigating AVCPLs.



Several key features of the AWW interactive map includes data search functions, display of the raw animal carcass and live sighting data, and descriptive and analytical results including the AVCPL analysis. The AWW interactive map allows the user to select a number of data filters to generate and display analyses, including:

- AVCPLs for select species/species groups;
- spatial boundaries (e.g., Region, Contract Maintenance Area, and a user-drawn polygon);
- dates (e.g., start and end dates for data search);
- species (i.e., multi-species selection);
- animal condition (e.g., animal carcass or live sighting); and
- incident details (e.g., carcass removed, human fatality, injury, property damage).

Mapped data is displayed as clusters of raw data, individual record locations, and AVCPL algorithm tools (refer to Sections 5.2 and 5.3). As users zoom into the map, the data clusters recalculate based on the users preferred scale. Hyperlinks from the map connect to record details, analyses, and the database export.

The AWW interactive map also provides additional visual context to the surrounding landscape/terrain features to further support understanding of the data analyses. Surrounding landscape and terrain features often influence animal abundance and where AVCs occur. Open Street Map satellite and terrain visual modes, protected habitat blocks, and wildlife movement linkage zones represent existing landscape/terrain features in AWW. Protected habitat blocks include areas with minimal land development and relatively continuous wildlife habitat. This map layer includes: Provincial Parks and Protected Areas, National Parks, Provincial Wildlife Sanctuaries, and Provincial Special Access Zones. Protected habitat blocks represent natural landscapes that persist through time.

AWW maps wildlife movement linkage zones; identified by Alberta Environmental and Parks (AEP) as Key Wildlife and Biodiversity Zones. These include areas important for overwintering ungulates, principally occurring along major river valleys, and which are intended to represent important local and regional wildlife movement corridors. In addition to public safety concerns around AVCs, Alberta Transportation recognizes AEPs concerns about the landscape level ecological impacts of roads and traffic. Wildlife connectivity is an important part of AEP's mandate to manage the wildlife in the province. Thus, it is important for capital planning and species conservation to consider how wildlife movement corridors or linkage zones intersect with provincial highways. The sharing of data will further support the collaboration between these departments regarding their concerns related to wildlife connectivity at specific highways allowing both ministries to meet their mandates and potentially that of our federal counterparts within Alberta. Known linkage zones are included as a map layer in AWW and the program is soft coded to allow anticipated updates and new mapping, as it becomes available from AEP.

The AWW interactive map of animal carcass and live sighting data is hyperlinked to additional detailed analyses (Sections 5.2 and 5.3). This provides a seamless connection from the mapping component to detailed record analyses.

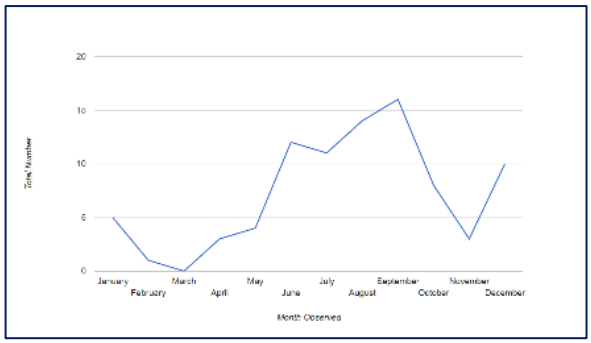
5.2 Animal Carcass and Live Sighting Raw Data Summaries

The raw animal carcass and live sighting data are automatically summarized within the AWW website tool using tables and graphs. These summaries provide simple analyses of the raw data, including the number of records submitted and animal carcasses and live animals.

The raw animal carcass and live sighting data summaries provide an initial understanding of the species most recorded, seasonal and annual trends, and the magnitude and locations of AVC and wildlife movements. Data analyses may be tailored to specific parameters of interest, for instance a species at risk, specific location across the province, date range, or incident report (i.e., suspected property damage). Hyperlinks directly from the interactive map supports these analyses. Summary tables and graphs include:

1. Total number of records submitted;
2. Total number of animal carcasses and/or live sightings;
3. Total of each species and percent representation in the dataset;
4. Total number of records each month; and
5. Total number of records each year.

Raw data summaries are fundamental to the overall understanding of animal carcass and live sightings at various temporal and spatial scales. The AWW website tool then completes further data analyses to locate and prioritize areas needing mitigation to improve highway safety.



5.3 Animal-Vehicle Collision Prone Locations

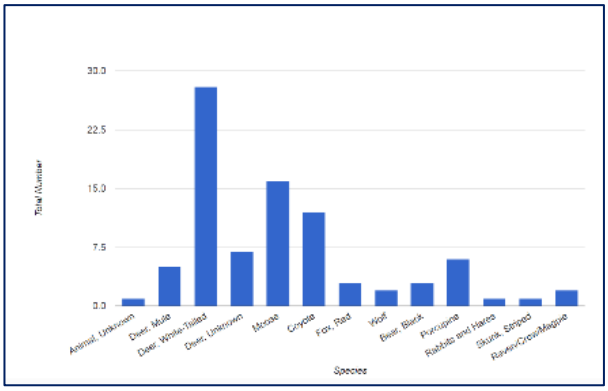
Alberta Transportation's ability to quickly access, analyze, and compare animal carcass data, at a provincial scale, is a critical component of AWW. The AWW animal carcass data, generated from the AWW application, is provided at a sufficient level of detail to identify and prioritize AVCPLs, and determine the magnitude of the issue across Alberta. The AWW website tool automatically performs the cluster and density analyses and maps the results in a simple and informative manner.

Before the analyses begins, the animal carcass data is assigned to a corresponding highway traffic control section. To do so, animal carcasses located (i.e., x,y coordinates) within 75 metres of the highway are forced into the corresponding road traffic control section using a "snap to line" tool. Traffic control sections represent areas along the highway with similar traffic volumes. It is important to have driving conditions (e.g. traffic volume) for each traffic control section as consistent as possible as driver speed and traffic volume all impact the frequency and severity of an AVC.

Once animal carcass data is assigned a traffic control section the AVCPL analysis is initiated. Two animal carcass analyses tools identify and prioritize AVCPLs: 1) animal carcass clusters (Section 5.3.1); and 2) animal carcass density (i.e., animal carcasses/kilometre/year; Section 5.3.2). Statistically significant animal carcass clusters and or highway zones with high animal carcass densities are identified as an AVCPL. This provides Alberta Transportation with a list of AVCPL that may warrant mitigation. This list is then ranked based on strength and stability (the number of animals included in the AVCPL) of each AVCPL, which allows AVC reduction considerations to be effectively integrated into Alberta Transportation's project delivery process.

Analyses may be completed based on four chosen user selected species/species groups. Species/species groupings available for selection are:

1. Moose carcasses;
2. Deer carcasses;
3. Large-bodied animal carcasses; and
4. All reported species carcasses.



These species/species groupings are most applicable to the overall provincial road network. Moose and deer are most commonly reported in AVCs in Alberta. This allows Alberta Transportation to identify species-specific AVCLPs. Similarly, the large-bodied animal carcass filter identifies AVCLPs of highest risk to the travelling public. AVCPLs with all reported species carcasses represent areas that pose the greatest risk to driver safety and species conservation.

Alberta Transportation considered developing a species analysis filter specific to species at risk carcasses within the AWW System. However, at this time, an insufficient number of species at risk carcasses are reported (due to their low populations). As a result, cluster analysis is not the appropriate statistical tool for monitoring species at risk. The locations of all species at risk carcasses are important, and the AWW website tool addresses these by 1) including species at risk carcasses in the "all reported species" analyses, and 2) automatically identifying mapped clusters (regardless of statistical strength) that include a species at risk.

In addition to species/species groupings, a minimum of five years of data is typically required by Alberta Transportation before data analyses is completed. This specified time period will be re-evaluated using the AWW data and AVCPL analyses. For now, a minimum of one year of data along an individual highway is acceptable as a temporary option to begin investigating AVCPLs.

Batch Processing

The AWW website tool automates the analyses, to the extent possible. AVCPL analyses is completed each night as a batch process. Thus saving analyses computation time and providing AVCPL results on an as-needed basis. These standard methods to identify and prioritize AVCPLs is a key component of the AWW System. They provide an easy and reliable method across the province and allows comparisons among years (e.g., mitigation performance monitoring) and similar highways.

5.3.1 Animal Carcass Clusters

Kernel Density Estimate+ (KDE+) software[4] (Bíl et al. 2013[5], 2016[6]) was selected to determine non-random clusters of animal carcass reports or AVCLPs across the province. It enables Alberta Transportation to easily and defensibly 1) identify and 2) prioritize statistically significant animal carcass clusters. KDE+ looks for significant clusters of animal carcasses *within* each traffic control section. Using a Monte Carlo method of repeated random simulations, KDE+ defines clusters above the 95 percentile level within each traffic control section as significant.

KDE+ takes into account a number of factors during the statistical analyses and prioritizing of AVCPLs. Significant clusters are ranked according to a cluster strength (which takes into account factors like the number of carcasses and length of the AVCPL cluster) to help prioritize areas for mitigation. The strongest and most stable clusters are those with a KDE+ strength ≥0.6 and ≥ 5 carcasses/cluster. These are clusters that are consistently observed over time and won't change in their strength if one or two animals are added or have gone unreported. Weaker and or unstable clusters are those with a KDE+ strength <0.6 and ≤ 4 carcasses/cluster. Each of the strong and weak/unstable clusters are mapped along respective highway sections. These criteria for strong versus weak clusters will be re-examined and updated after the AWW Program has been running province wide for at least three years.

KDE+ requires two sets of points (i.e., animal carcass data) and line shapefiles (i.e. traffic control sections). Alberta Transportation uses traffic control sections as the line shapefiles because traffic volumes are assumed to be consistent within each section, and they are used for other traffic safety analyses in Alberta. The AWW website tool incorporates existing TDRA traffic control section information and shapefiles (refer to Section 3.3) each year. The traffic control sections are integrated into the AWW System manually, on a yearly basis, to ensure the analysis is being completed using the current network information.

[4] KDE+ software is freely available for download at http://kdeplus.cz/en/download.

[5] Bíl, M., R. Andrášik, and Z. Janoška. 2013. Identification of Hazardous Road Locations of Traffic Accidents by means of Kernel Density Estimation and Cluster Significance Evaluation. Accident Analysis.

[6] Bíl, M., R. Andrášik, T. Svoboda, and J. Sedoník. 2016. The KDE+ software: a tool for effective identification and ranking of animal-vehicle collision hotspots along networks. *Landscape Ecology* 31, 231–237.

On a daily basis, the KDE+ analysis is applied to the entire provincial road network, analyzing only those sections in which new records have been submitted each day. The AWW website tool acts as a current day calculator and calculates the significant collision-prone locations using the current highway length and reported carcasses (i.e., carcasses within 75 metres of the highway are forced to a traffic control section using a “snap to line” tool; carcasses beyond 75 metres from the highway are excluded from the KDE+ analysis). No consideration of historical highway alignment changes are included.

Results from the AVCPL analyses are displayed as map layers on the AWW interactive map based on the filter chosen by the user (e.g., large-bodied animals). Users can manually select a cluster on the map to access the associated summary data and download the cluster shapefiles. Detailed results tables are also provided for review. These tables provide the highway and control section, KDE+ section number, cluster begin and end locations, number of animal carcasses in the cluster, number of species at risk carcasses in cluster, cluster strength, years of data, and if the cluster is located inside a wildlife linkage zone. This KDE+ report table is available in an excel comma separated format, and is customizable by the geo-boundary (i.e., Highway 63).

One strength of the KDE+ method is that it is accessible in GIS. As a result, the data is also available as a shapefile. Additional strengths of the KDE+ clustering method are:

1. Provides reliable cluster identification even when animal carcasses are under-reported (i.e., reporting rates may vary across the province depending on different levels of Principal Contributor effort);

2. Prioritizes cluster areas (e.g., highlights significant clusters, and ranks clusters according to their statistical strength);

3. Provides information about the number of carcasses/cluster and cluster length along the road;

4. Clusters are independent of scale, such that the location and length of clusters do not change (e.g., if the user is viewing a single highway or looking at the entire provincial highway network); and

5. Does not require equal section lengths (as other aggregating methods do; e.g. 100 metre segments) and, therefore is more stable when highway realignments occur.

Despite the many strengths of using the KDE+ methodology, three shortcomings of KDE+ have been identified:

1. KDE+ does not identify areas with a high number of carcass records that are distributed across a larger road zone (non-clustered). As a solution, the AWW System also calculates the animal carcass density (refer to Section 5.3.2).

2. KDE+ cannot be used on Traffic Control Sections that are less than 200 metres in length. As a temporary solution Regional Administrators manually inspect animal carcass records along these sections on an annual basis. AWW maps each of these short sections to ease manual inspections.

3. KDE+ does not recognize animal carcass clusters that may extend over the end of one traffic control section and the beginning of the adjacent section. AWW solves this by: highlighting clusters which occur within 75 metres of the end of a section for further inspection to ensure that an animal carcass cluster which overlaps the end of one traffic control section and the beginning of the adjacent section will not be overlooked. Regional Administrators are required to examine any highlighted clusters within 75 metres of the end of a road segment and report any cluster which may have been missed in the KDE+ analysis.

5.3.2 Animal Carcass Density

Animal carcass densities are a supporting tool for KDE+ analyses to allow comparisons with existing published AVC and AVC mitigation cost-benefit analyses. Many AVCPLs are spatially clustered but not all. Animal carcasses may be observed in a random pattern in homogenous landscapes with similar habitat types and terrain. These homogenous landscapes may not have clearly defined wildlife movement corridors and highway crossing locations. As a result, AVCPLs may extend across a larger road zone representing landscape features.

Animal carcass densities are calculated for highway control sections that are divided into 1 km segments and include the most recent five years of data. Prior to five years of data, the AWW website tool calculates a density with no minimum period of time to allow prompt analyses. Density represents the number of animal carcasses per traffic control section length per year (animal carcass/km/year).

The AWW website tool automatically calculates and reports animal carcass densities across the province. Reports are provided in a succinct table that prioritizes highway control sections. Reports detail the corresponding highway control section, section length, number of animal carcasses, density result, years of data, if species at risk were involved, and if a wildlife linkage zone is present.

The AWW interactive map displays highway control section densities across the province. With the addition of more provincial data, a provincial threshold will be evaluated, and will support comparisons with published AVC mitigation cost-benefit analyses. In the interim, Alberta Transportation considers highway sections with animal carcass densities ≥ 3 carcasses/km/yr. as an AVCPL.

The interactive map is hyperlinked to allow access to summary data specific for each high animal carcass density zone mapped.

Animal carcass density and KDE+ analyses are a complementary solution to identify and prioritize AVCPLs across the province. The AWW website tools data analyses approach meets Alberta Transportations traffic safety mandate and provides an effective solution to prioritize capital planning and justify spending.

5.3.3 AVCPL Location Identification Report

Once AVCPLs are identified using the animal carcass cluster and density analyses, the results are detailed in an AVCPL Identification Report. Each AVCPL is given a priority rank based on the animal carcass cluster/density strength and evaluated for its technical and financial feasibility (refer to Section 5.3.3.1). Recommended mitigation type(s) for all AVCPL mitigation projects determined to be feasible are provided, along with a high-level cost estimate.

5.3.3.1 Wildlife Site Sensitivity Rating

The primary function of a Wildlife Site Sensitivity Rating (WSSR) is to determine if a mitigation project is feasible. The WSSR includes field verification by a Professional Biologist that identifies key site-specific considerations that may affect AVC mitigation options. Examples of site specific considerations include existing highway access, land use changes, adjacent land ownership, topography, water table levels, soil/geotechnical conditions, highway design, and existing highway infrastructure (i.e., bridge structures) that could serve to facilitate and or hinder mitigation. For consistency, the WSSR is prepared utilizing a standardized template for each AVCPL.

The WSSR will be completed for all priority AVCPLs and submitted with the AVCPL Identification Report (Section 5.3.3.) identifying Project Level Priorities[7] and or Annual Regional Report for Ministry and GoA Level Priorities; (Appendix E) to Environmental Services. All AVCPLs where mitigation is determined to be feasible are identified in the Annual Provincial Report (Appendix E) and may advance to mitigation planning and design. AVCPLs where mitigation is determined not to be feasible are recorded in the Mitigation Data Repository (Appendix C).

Project Level Priorities will be required to complete the WSSR for any AVCPL within or adjacent to the project limits. This assessment is independent of the provincial priority. The reports generated by this work will form an appendix to the projects' Environmental Evaluation.

5.4 AWW Dashboard

The AWW Dashboard is an administrative tool that displays the AWW System's key performance indicators at a glance. Data and user management indicators of the AWW Program are provided in clear and concise graphics at the provincial and regional scales to provide an efficient Program checkup.

Regional Administrators are responsible for monitoring the AWW Dashboard regularly for system functionality and Principal Contributor performance.

The AWW Dashboard will provide summary information in four key areas:

1. Provincial Statistics Summary;

2. Regional Statistics Summary;

3. Engagement Monitoring; and

4. Mitigation Summary.

By its nature, the Dashboard is a view-only reporting tool; all information displayed is calculated automatically by the AWW website. All AWW Program users may view but not edit or remove data from the dashboard.

5.5 Export Database

Further data analyses may be completed outside the AWW website by exporting the AWW database. All animal carcass and live sighting records are accessible for export to registered users (i.e., System and Regional administrators, and Project Users), including photos if submitted. The database includes all record details collected using the AWW application, as well as quality control remarks and notes, and the GPS locations of the record and photos.

To support further analysis of the data, the AWW website tool auto-fills several additional database parameters based on the record location. This includes the highway name (if known), control section, Region, District, Municipality, Contract Maintenance Area, and if located inside a known wildlife linkage zone. Similarly, the database auto-fills columns for large-bodied animal and species at risk based on species recorded in Tables 2 and 3.

[7] The Region assesses if Project Level mitigation priorities can be funded. If funds are not available, the proposed mitigation project(s) is submitted for funding consideration at a Ministry Level through the Annual Regional Report.

The database may be exported with or without the photos. Similarly, portions of the database may be exported based on pre-selected parameters (e.g., woodland caribou). The database is provided in an excel comma separated format for easy manipulation and analysis. This allows Alberta Transportation to easily share data with stakeholders.

6.0 PREVIEW: MITIGATION DATA REPOSITORY

Collecting, storing, managing, and analyzing high-quality data are the preliminary steps (Appendices A and B) to reduce AVCs on provincial highways, improve driver safety, and reduce the impacts of highways on wildlife populations. Subsequent steps are outlined in the following Appendices documents (Appendices C-F).

Once stored on the AWW website, animal carcass and live sighting data is accessible to Alberta Transportation and other select users. With this near real-time availability to the data, the AWW website tool supports the ability to quality control the data, register and manage users (i.e., Principal Contributors), and complete data analysis in a timely manner to suitably locate and prioritize provincial AVCPLs for mitigation.

With this knowledge, Alberta Transportation is able to confidently choose the best mitigation for each site and review the relative performance of existing AVC mitigations. The AWW Mitigation Data Repository provides an organized and secure system to store, update, and analyze AVC-specific mitigations across the province. This is outlined in Appendix C (*Mitigation Data Repository*).

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APPENDIX C
MITIGATION DATA REPOSITORY

AUGUST 2017

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
AWW	Alberta Wildlife Watch
AVC	Animal-Vehicle Collision
AVCPL	Animal-Vehicle Collision Prone Location
ERTA	Environmental Regulatory Tracking Application
TDRA	TIMS Data Repository Application
TIMS	Transportation Information Management System

DEFINITIONS

Term	Definition
AWW Mitigation Toolbox	Alberta Transportation's guidebook of AVC mitigation technologies and structures.
AWW Program	The Program developed to identify and prioritize animal-vehicle collision prone locations, identify cost-effective mitigation, and to evaluate mitigation performance. The Program includes four components: 1) the AWW System, 2) Alberta Transportation's Mitigation Planning and Design Standards, 3) User Engagement Plan, and 4) Annual Review.
AWW System	Collects, manages, analyzes, and reports AWW data, identifies and prioritizes AVC mitigation locations, and evaluates mitigation performance.
AWW Viewer	Alberta Transportation's stakeholders and partners with view only access to the AWW website tool.
Mitigation Data Repository	Map and document storage of AVC mitigations across the provincial highway network.
Principal Contributor	An AWW application user that has been identified as critical for the acquisition of animal carcass and live sighting data. Principal Contributors are Highway Maintenance Contractors and Government of Alberta staff.
Project User	Alberta Transportation's project-specific consultants with primarily view-only (restricted editor) access to the AWW website tool.
Regional Administrator	An AWW website tool manager for designated Region(s). Example Regional Administrators are those with an Alberta Transportation regional consulting assignment.
System Administrator	A supervisor for the AWW application and website tools. Limited to Alberta Transportation staff.

Alberta Wildlife Watch Program Overview

Animal-vehicle collisions (AVCs) are a significant problem in Alberta affecting motorist safety and wildlife populations. Alberta Transportation designed the Alberta Wildlife Watch (AWW) Program as a solution to reduce AVCs on provincial highways improve driver safety and minimize the impacts of highways on wildlife populations. The AWW Program and its goals are highlighted in a video available at https://youtu.be/zBknpdganB8.
AWW Program is designed to:

1. Provide high-quality data for effective decision making;
2. Identify AVC-prone locations (AVCPLs);
3. Develop departmental policy & standards; and
4. Allow for innovation and evaluate long term mitigation effectiveness.

High-quality data is collected using the AWW application[1]. Data analyses to identify and prioritize statistically significant AVCPLs are automatically performed on the AWW website tool[2]. Together, the AWW application and website tools support the decision-making process for AVC mitigation.

AVCPLs identified are prioritized for mitigation and evaluated for feasibility. Once approved for mitigation, Alberta Transportation's Terms of Reference for AVC mitigation projects outline the design and tender process including the development of an AVC Mitigation Plan. Alberta Transportation's mitigation standards and considerations are incorporated into planning and design to ensure each mitigation project contributes to the Program goals. Once a mitigation project is complete, the applicable mitigation construction reports and AVCPL records are stored and mapped in the Mitigation Data Repository. This builds an AVC mitigation inventory that is linked to the AWW data and AVCPL analyses (animal carcass data collected before and after the mitigation project) to facilitate mitigation performance monitoring. Its effectiveness at reducing AVCs is evaluated using standardized performance criteria.

Over time, standard performance of the overall AWW Program and provincial mitigations are evaluated to ensure continued alignment with the AWW Program's goals. Lessons learned from this long-term review influences Alberta Transportation's mitigation standards, construction and innovation, evaluation criteria, and all System components.

Figure 1 displays the AWW Program structure.

1 Smartphone application for iOS, Android, and BlackBerry devices.
[2] A modern browser, such as Chrome, is required for the website tool (Internet Explorer is not recommended).

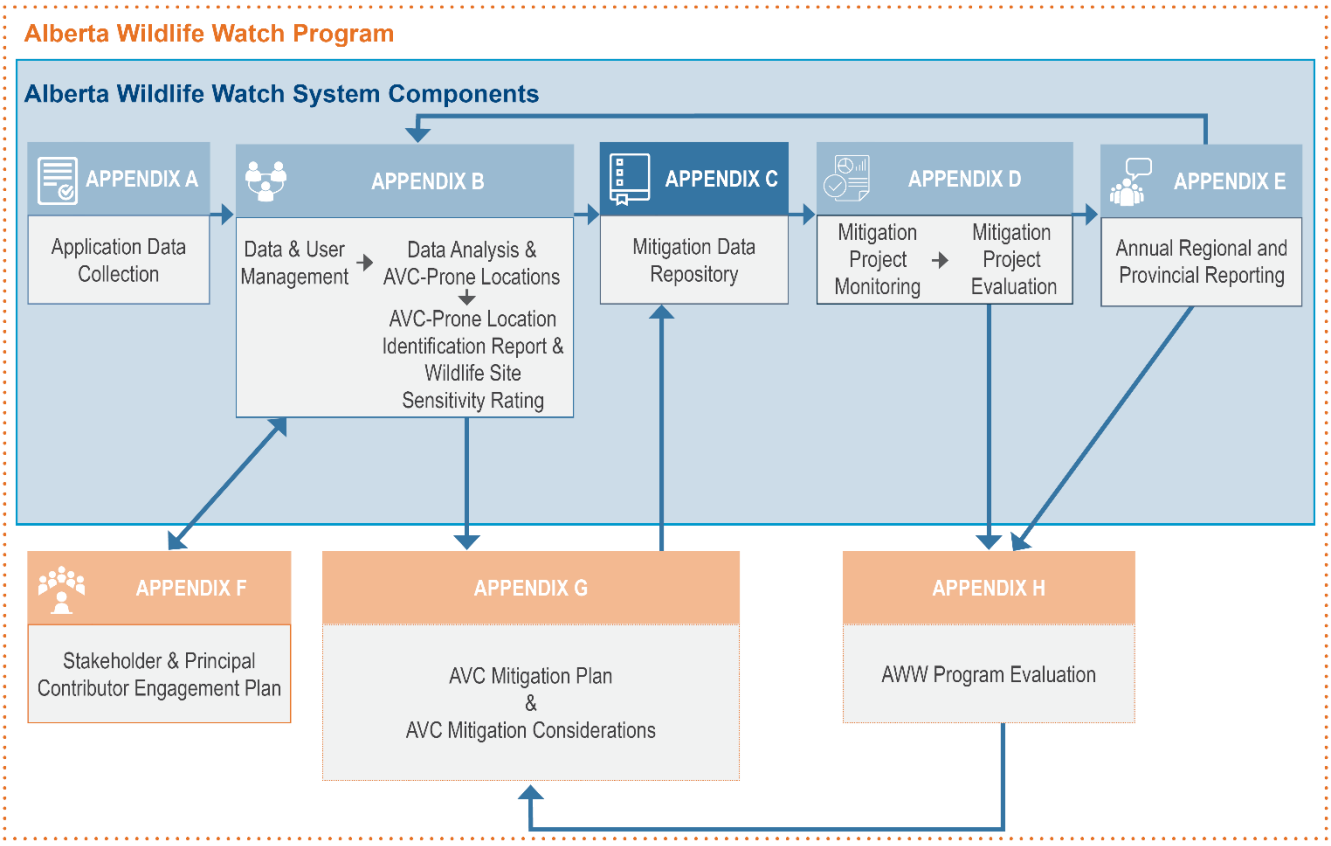

Figure 1: Alberta Wildlife Watch Program Structure

Appendix C: Mitigation Data Repository

1.0 INTRODUCTION

Alberta Transportation has used a number of mitigation techniques to reduce animal-vehicle collisions (AVCs) across Alberta. Prior to 2017, mitigations were implemented entirely at a project-level with limited post-construction monitoring. As a result, mitigation performance was not consistently measured and performance results not readily accessible to support future projects. The lack of a province-wide AVC Mitigation Data Repository resulted in Alberta Transportation not being able to effectively improve its understanding of AVC reduction strategies and further integrate them into project delivery.

Mitigation performance is difficult to monitor and evaluate without reliable data and an appropriate study design prior to mitigation. In 2005, Alberta Transportation attempted to evaluate their provincial AVC mitigations installed. However, the report concluded the effectiveness of Alberta's mitigations were unclear due to data quality issues.

The Alberta Wildlife Watch (AWW) System solves these issues by 1) collecting accurate data (as outlined in Appendix A), 2) supporting a secure platform to quality control and analyze the data to identify and prioritize statistically significant animal-vehicle collision prone locations (AVCPLs; as outlined in Appendix B), and 3) providing an organized and secure Mitigation Data Repository to store, update, and manage AVC-specific mitigations across the province (outlined here in Appendix C).

Appendix C outlines how this centralized data repository offers a support tool to simplify mitigation monitoring and evaluations using a:

1. Provincial AVC mitigation inventory; and
2. Supporting document bank.

Together these two components expedite mitigation monitoring and provide a reference library of AVC mitigations across the province.

All mitigation records from past and future projects will be entered into the AWW Mitigation Data Repository. The streamlined design of the mitigation repository allow users to enter the project specific data with ease, taking advantage of data that is already available within Alberta Transportation's Transportation Information Management System (TIMS) Data Repository Application (TDRA). The AWW website tool is integrated with TDRA, which stores information concerning existing highway structures, including AVC mitigations. This existing information is integrated into the AWW Mitigation Data Repository and updated as mitigation projects occur.

Once initial data entry is complete, records need to be maintained through the course of the mitigation project. Keeping the records up to date is not expected to require significant amounts of time as the AWW System has been designed with the user in mind. Ongoing maintenance of the AWW Mitigation Data Repository will allow for effective mitigation monitoring and evaluation, as outlined in Appendix D. The data also supports ongoing development and analysis of provincial AVC mitigation standards that will further Alberta Transportations understanding and evaluation of mitigation strategies.

2.0 USER ROLES AND RESPONSIBILITIES

Regional Administrators are responsible for monitoring the use of the AWW Mitigation Data Repository, and with **Project Users**, also uploading, updating, and managing the mitigation data and records (Table 1). **System Administrators** provide oversight on user access and all aspects of the AWW Program, including the Mitigation Data Repository.

Table 1: User Responsibilities for Mitigation Data Repository

User	Access Permission(s)	Mitigation Data Repository Responsibilities		
		Enter Existing Mitigations into Inventory	Monitor and Maintain Mitigation Inventory	Store and Manage Mitigation Data Repository
1. Project Users	Website Tool	✓	✓	✓
2. Regional Administrators	Application & Website Tools	✓	✓	✓
3. System Administrators	Application & Website Tools			✓

Principal Contributors and **AWW Viewers** have no responsibilities under the Mitigation Data Repository. These users have limited access to the AWW website tool and include Highway Maintenance Contractors and specific Alberta Transportation stakeholders and partners.

2.1.1 Project Users

Project Users are Alberta Transportation's project-specific consultants. During the completion of the project specific Environmental Evaluation, Project Users will be required to access the AWW System to evaluate projects impacts on wildlife. This evaluation requires the consultant to consider AVC mitigation where appropriate. If mitigation is constructed, Project Users are required to input and maintain AVC mitigation records for their projects in the AWW Mitigation Data Repository.

2.1.2 Regional Administrators

Regional Administrators are selected by Alberta Transportation for regional consulting assignments. Individual Regional Administrators are granted full access to the Mitigation Data Repository, within their contract Region, by the System Administrator. Regional Administrators have view-only access to Regions outside their designated responsibility.

Regional Administrators' play a primary role within the AWW System. Regional Administrators' primary responsibilities for the Mitigation Data Repository include 1) monitoring the input of mitigation records, 2) inputting existing mitigation data and mapping into the inventory, 3) maintaining the mitigation inventory, and 4) maintaining the mitigation record database.

2.1.3 System Administrators

System Administrators are responsible for the overall management of the AWW Program and its users, including the AWW website tool. This role includes access to the entire AWW Mitigation Data Repository and is restricted to Alberta Transportation staff. Access and modifications to the Mitigation Data Repository are allowed. This facilitates the overseeing of users and the overall provincial AVC mitigations.

3.0 PROVINCIAL MITIGATION INVENTORY

The provincial AVC mitigation inventory is a simple map display of polygon and point features, representing the locations where mitigations are installed (e.g., active signs, underpasses, exclusion fencing). Mitigation locations are identified using a map symbol with hyperlinks to site-specific mitigation details (Section 4.0). This provides a seamless connection from the interactive map to the detailed records.

The AVC mitigation inventory is displayed within AWW's interactive map juxtaposed with statistically significant AVCPLs, landscape features/terrain, protected habitat blocks, and known wildlife movement linkage zones (outlined in Appendix B). Displaying mitigation locations with AVCPLs and habitat factors provides visual context and cursory evaluation of site-specific mitigation and mitigation performance.

Project Users and Regional Administrators enter the locations of AVC mitigations into the repository by uploading a shapefile or by hand drawing the location on the AWW interactive map. Shapefiles loaded into the repository are mapped automatically. Based on the location provided, the AWW website tool automatically identifies the nearest community and applicable Contract Maintenance Area, Region, and District. These location attributes are searchable within the supporting document bank (Section 4.0).

4.0 SUPPORTING DOCUMENT BANK

Central repositories, such as the AWW mitigation document bank, provide important document management services for the province. This searchable document bank stores existing and new AVC-specific mitigation records for easy access and evaluation and is hyperlinked from each mitigation identified in the provincial inventory.

The supporting document bank stores AVC mitigation records applicable for mitigation monitoring and performance evaluation. Records include the mitigation structure type and its unique identification number, date installed, surrounding lands, site photos, associated reports (i.e., AVC Mitigation Plan, Wildlife Site Sensitivity Rating), and its shared identification number with Alberta Transportation's Environmental Regulatory Tracking Application (ERTA) Environmental Project. ERTA is an application that feeds back into the TDRA, and acts as a repository of provincial construction projects, regulatory compliance, and environmental document management.

The AWW Mitigation Data Repository simplifies access to records and provides a well-organized foundation that supports mitigation monitoring and mitigation performance evaluations. It is designed to allow Project Users and Regional Administrators to easily and efficiently upload applicable records to the mitigation repository as part of their assignments.

5.0 PREVIEW: MITIGATION MONITORING AND EVALUATION

Collecting, storing, managing, and analyzing high-quality animal carcass and mitigation data are critical steps to reduce AVCs on provincial highways, improve driver safety, and reduce the impacts of highways on wildlife populations. The AWW Mitigation Data Repository is a key storage and organization system for provincial mitigation projects. The records support and expedite mitigation monitoring and performance evaluations, which will be addressed in Appendix D.

The ability to monitor and evaluate mitigation effectiveness is a strength of the AWW System as it allows Alberta Transportation to learn from past projects and inform mitigation practices into the future. This ultimately helps Alberta Transportation make well-informed, cost-effective AVC mitigation decisions across the province.

Alberta

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APPENDIX D

MITIGATION MONITORING AND EVALUATION

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Org. ID	Organization Identification Code

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AVCPLs identified are prioritized for mitigation and evaluated for feasibility. Once approved for mitigation, Alberta Transportation's Terms of Reference for AVC mitigation projects outline the design and tender process including the development of an AVC Mitigation Plan. Alberta Transportation's mitigation standards and considerations are incorporated into planning and design to ensure each mitigation project contributes to the Program goals. Once a mitigation project is complete, the applicable mitigation construction reports and AVCPL records are stored and mapped in the Mitigation Data Repository. This builds an AVC mitigation inventory that is linked to the AWW data and AVCPL analyses (animal carcass data collected before and after the mitigation project) to facilitate mitigation performance monitoring. Its effectiveness at reducing AVCs is evaluated using standardized performance criteria.

Over time, standard performance of the overall AWW Program and provincial mitigations are evaluated to ensure continued alignment with the AWW Program's goals. Lessons learned from this long-term review influences Alberta Transportation's mitigation standards, construction and innovation, evaluation criteria, and all System components.

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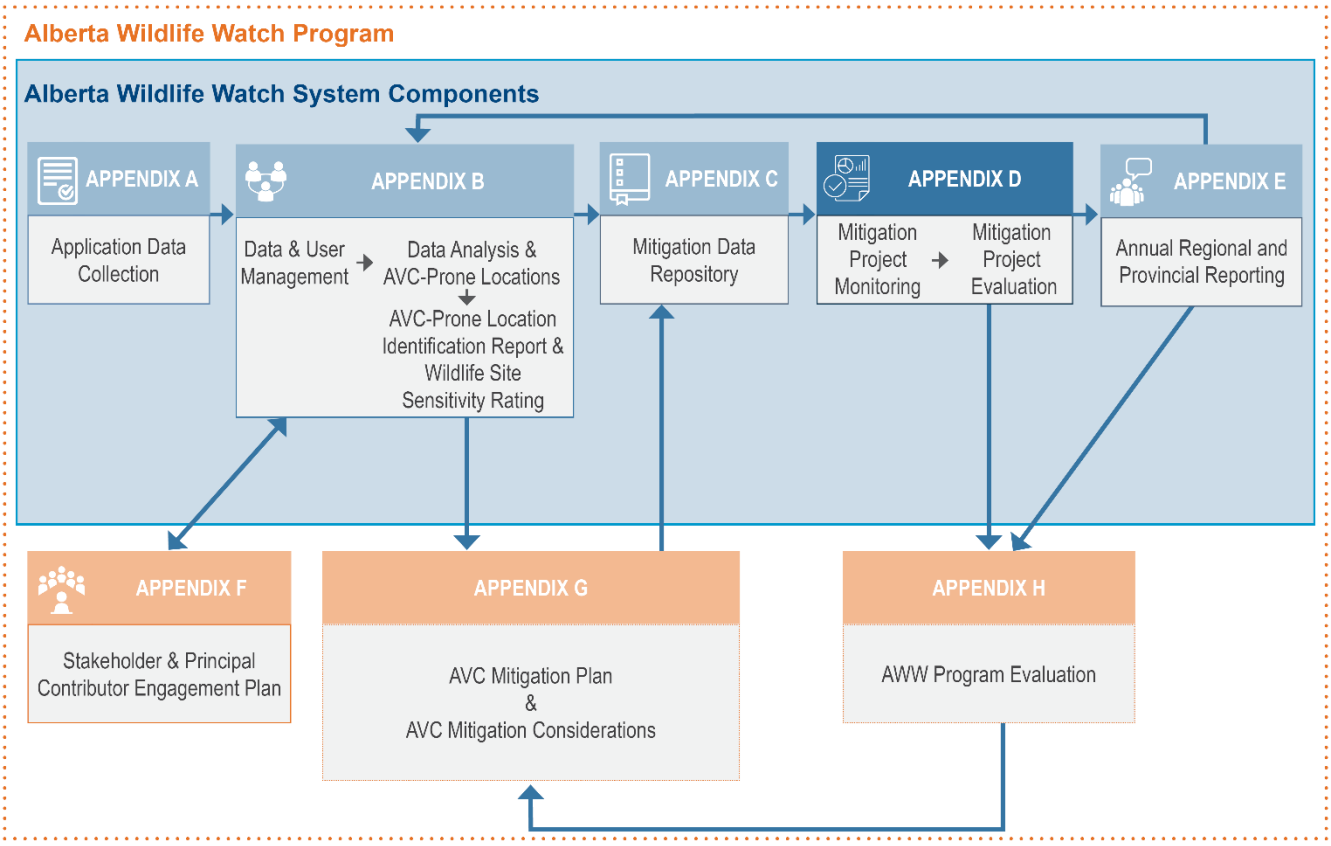


Figure 1: Alberta Wildlife Watch Program Structure

Appendix D: Mitigation Monitoring and Evaluation

1.0 INTRODUCTION

Alberta Transportation is committed to improving driver safety on provincial highways. Mitigating animal-vehicle collisions (AVCs) is critical for ongoing safety improvements. Due to the historic data quality issues, outlined in Appendix A, previous AVC mitigation has been implemented without fully understanding their effectiveness. The historic challenges were identified in 2005 during Alberta Transportation's evaluation of the provincial AVC mitigation projects. The report concluded the effectiveness of Alberta's mitigations were unclear due to data-related issues.

Poor AVC data impedes the scientific evaluation of mitigation effectiveness. The Alberta Wildlife Watch (AWW) System helps solves these issues by 1) collecting accurate data (as outlined in Appendix A), 2) identifying and prioritizing areas requiring mitigation (as outlined in Appendix B), 3) storing and managing mitigation data in the repository (outlined in Appendix C), and 4) monitoring and evaluating mitigation performance which will be addressed in this appendix.

Appendix D outlines how the monitoring and evaluation approach is simplified by:

- Collecting high-quality pre- and post-mitigation animal carcass data (i.e., monitoring); and
- Evaluating and reporting mitigation performance using provincial criteria.

A key strength of the AWW System is it allows Alberta Transportation to continue to learn from past projects and inform mitigation practices into the future. Lessons learned from the mitigation performance evaluations directly influence modifications, if required, to the AWW Mitigation Toolbox. The AWW Mitigation Toolbox is a guidebook of AVC mitigations used to plan and design projects in Alberta (Appendix G).

The AWW program helps Alberta Transportation make well-informed, cost-effective, AVC mitigation decisions into the future.

2.0 USER ROLES AND RESPONSIBILITIES

The AWW System is an efficient program utilized and managed by multiple users. **Principal Contributors** have the primary responsibility to collecting monitoring data. **Project Users** and **Regional and System Administrators** are primarily responsible for evaluating and reporting mitigation performance (Table 1).

Table 1: User Responsibilities for Mitigation Monitoring and Evaluation

User	Access Permission(s)	Mitigation Monitoring and Evaluation Responsibilities	
		Data Collection	Evaluating and Reporting Mitigation Performance
1. Principal Contributors	Application Tool	✓	
2. Project Users	Website Tool		✓
3. Regional Administrators	Application & Website Tools	✓	✓
4. System Administrators	Application & Website Tools		✓

AWW Viewers, specific Alberta Transportation stakeholders and partners, have no responsibilities under the AWW Program including the mitigation monitoring and evaluation component. Once registered by the System Administrator, AWW Viewers are emailed a username and password automatically from the AWW website (email will be sent from info@albertawildlifewatch.ca). This allows AWW Viewers to have view-only access of the Alberta Wildlife Watch website tool. AWW Viewer accounts are deactivated by Regional Administrators upon an agreed upon completion date.

2.1 Principal Contributors

Principal Contributors currently include Highway Maintenance Contractors and relevant Government of Alberta staff, and have work place safety plans addressing the safe use of smartphones. Their primary responsibility is to collect accurate and consistent animal carcass and live sighting data using the AWW application, both before and after mitigation.

2.2 Project Users

Project Users are Alberta Transportation's project-specific consultants. Project Users have primarily view-only access to the AWW website tool to analyze mitigation monitoring and evaluations and incorporate into their project work reports. To facilitate project-specific work, Project Users are able to download the AWW database and mitigation monitoring data for all traffic control segments that fall within their project limits. They may then evaluate mitigation performance within, or adjacent to their project, and upload associated documents to the AWW Mitigation Data Repository (Appendix C).

Once registered by the System Administrator, Project Users are emailed a username and password automatically from the AWW website (email will be sent from info@albertawildlifewatch.ca). Project User accounts are deactivated by Regional Administrators upon project completion.

2.3 Regional Administrators

Regional Administrators' play a primary role within the AWW System. They have the ability to collect live sighting and carcass data using the AWW application; however, Regional Administrators' primary responsibility, as it relates to Appendix D, is to evaluate the performance of mitigations within their contracted Region(s), report mitigation evaluations, and upload associated documents to the Mitigation Data Repository (Appendix C). The Regional Administrators take the summary of this work and include it in the Annual Regional Report.

2.4 System Administrators

System Administrators are responsible for the overall management of the AWW Program and its users, including the AWW website tool. This role includes access to all AWW mitigation monitoring data, evaluations, and associated reports and is restricted to Alberta Transportation staff. Responsibilities include assigning and managing AWW System users and overseeing the overall mitigation monitoring and performance evaluations. Registration of all AWW System users are completed through the AWW website *Administration* tab.

3.0 COLLECTING DATA (MONITORING)

Principal Contributors are responsible for collecting accurate and reliable animal carcass data across the provincial highway network using the AWW application, as outlined in Appendix A. Data collection by Principal Contributors will continue into the future, with no anticipated end date. As a result, animal carcass data will be collected before (i.e., pre-) and after (i.e., post-) mitigation. The AWW System takes advantage of the pre- and post-mitigation data to monitor the effectiveness of AVC mitigation projects. This approach resolves historical concerns with Alberta's pre-mitigation data quality and quantity (Appendix A).

A minimum of three years of pre- and post-mitigation data is required under the AWW Program. AVC's can vary naturally in time and space as animal populations and distributions, traffic volumes, and the surrounding landscapes change. The minimum data requirements collect a baseline of these natural fluctuations.

The AWW application collects both pre- and post- mitigation animal carcass records. Once AVC mitigation is applied, post-mitigation animal carcass data is collected by simply continuing to use the AWW application. Post-mitigation data is then evaluated on a project specific basis (i.e., projects in the AWW Mitigation Data Repository; refer to Appendix C). This uncomplicated, cost-effective monitoring approach is fundamental to understanding if AVCs reductions were realized by the mitigation applied. It allows direct comparisons between the pre- and post- mitigation data, and therefore, provides a robust design to effectively evaluate mitigation performance.

4.0 EVALUATING AND REPORTING MITIGATION PERFORMANCE

With the improved data available through the Alberta Wildlife Watch application it is worthwhile for Alberta Transportation to evaluate and report if mitigation projects are performing effectively and reducing AVCs. Evaluating and reporting mitigation performance allows Alberta Transportation to develop suitable and cost-effective mitigations that are known to reduce AVCs. Therefore, aiding Alberta Transportation's decision-making process and improving driver safety.

The AWW System's evaluation process includes a set of evaluation criteria with which to measure performance. This evaluation criteria provides a consistent approach to evaluate a mitigation project. Evaluating and reporting consistently over time, it also supports a relative comparison between mitigation projects and methods across Alberta. The mitigation methods being proposed are clear, automated to the extent possible, and measurable within a specified period of time.

Evaluation criteria will be reviewed and finalized once provincial AVC mitigation considerations are developed (Appendix G) and a minimum of three years of AWW data is collected across the province. This includes mitigation performance requirements to support both traffic safety and wildlife conservation mitigation performance criteria have been developed and will be continently assessed for suitability.

The mitigation performance criteria compare pre- and post-mitigation results, to a reference (i.e., province or an unmitigated section of the same highway). Both methods follow the principals of a robust Before-After-Control-Impact analysis (BACI)[3]. Using the BACI principals, Alberta Transportation will consider mitigation effective if one of the following is met:

1. The animal carcass cluster strength[4] at a mitigation structure is reduced from pre-mitigation levels for an equivalent period of time (i.e., three years pre- and post-mitigation data, each).

2. The animal carcasses density[4] reported in mitigated zone (e.g., 1 km) is reduced, maintained, or grows at a slower rate than the provincial average.

3. The animal carcasses density reported in a mitigated zone (e.g., 1 km) is reduced, maintained, or grew at a slower rate than a comparable un-mitigated zone along the same highway.

The AWW mitigation performance criteria provide a consistent level of expectations for all AVC mitigations across the province. A minimum of three years of pre- and post-mitigation data is suggested to begin evaluating a mitigation's performance. However, further consideration for when post-mitigation data begins to be evaluated is required. For instance, animals may require additional time post-mitigation to become accustomed to the mitigation. In this case, a mitigation may be erroneously evaluated as unsuccessful if evaluation begins before animals are accustomed to the mitigation. These will be considered for the final performance criteria.

Results from the mitigation performance evaluations are reported annually in AVC Mitigation Project Evaluation Reports.

4.1 AVC Mitigation Project Evaluation Report

A key strength of the AWW System is it allows Alberta Transportation to continue to learn from past projects and inform mitigation practices into the future. Lessons learned from the Mitigation Project Evaluation Reports are identified in the annual Regional and Provincial Reports (Appendix E), and directly influence modifications, if required, to the AWW Mitigation Toolbox.

An AVC Mitigation Project Evaluation Report will be prepared upon completion of each mitigation project (i.e., once post-mitigation data collection is complete). Using the AWW performance criteria outlined herein, this report provides evidence if a mitigation project is performing effectively.

The report is restricted to two pages length to provide a concise document that emphasizes mitigation performance. The report is supported by summary graphs, tables, and figures as appropriate.

Components of the standard template will include, but not limited to:

1. Mitigation project summary (i.e., mitigation project identification number, mitigation type(s), construction start and end dates, location, and target species including Species at Risk);

2. Pre- and post-mitigation animal carcass and AVCPL data;

3. Performance criteria applied;

[3] Roedenbeck, I.A., L. Fahrig, C.S. Findlay, J.E. Houlahan, J.A.G. Jaeger, N. Klar, S. Kramer-Schadt, and E.A. Van der Grift. 2007. The Rauischholzhausen agenda for road ecology. Ecology and Society, 12(1):11. [online] URL: http://www.ecologyandsociety.org/vol12/iss1/art11/

[4] Descriptions of animal carcass cluster analysis strength and animal carcass densities are provided in Appendix B *Data & User Management and Analysis*.

4. Performance evaluation results; and

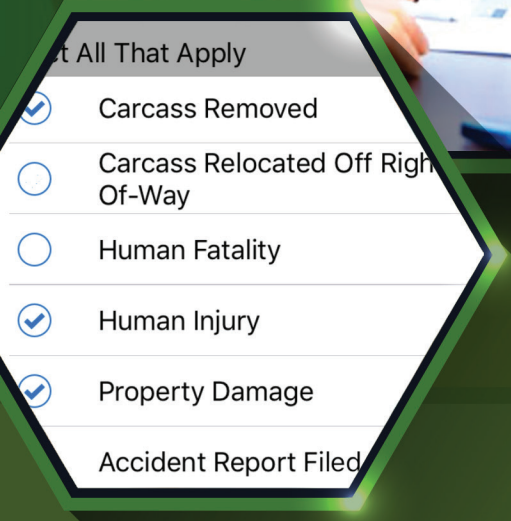
5. Determination of Effectiveness.

Upon completion, the AVC Mitigation Project Evaluation Report is entered into the AWW Mitigation Data Repository. This report is also later summarized as part of the annual Regional and Provincial Reports (Appendix E).

5.0 PREVIEW: ANNUAL REGIONAL AND PROVINCIAL REPORTING

AVCs are reduced and driver safety improved by designing mitigations that perform well across Alberta. The ability to monitor and evaluate Alberta Transportation's mitigation performance is a strength of the AWW System. This helps Alberta Transportation make well-informed, cost-effective, AVC mitigation decisions.

AWW Program reporting, including mitigation monitoring and evaluation results is the most effective method to disseminate information within Alberta Transportation, stakeholders, and project/regional consultants. In addition, reporting of the AWW animal carcass and mitigation performance results demonstrates to stakeholders the actions taken to improve highway safety. This also enhances public education and awareness of AVC's across the province. The AWW Program's annual Regional and Provincial reporting requirements are outlined in Appendix E.



Alberta

ALBERTA WILDLIFE WATCH PROGRAM

APPENDIX E

ANNUAL REGIONAL AND PROVINCIAL REPORTING

AUGUST 2017

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
AWW	Alberta Wildlife Watch
AVC	Animal-Vehicle Collision
AVCPL	Animal-Vehicle Collision Prone Location
OTS	Office of Traffic Safety
WSSR	Wildlife Site Sensitivity Rating

DEFINITIONS

Term	Definition
AWW Dashboard	AWW Program tool to monitor and report AWW data as a snapshot in time. The AWW Dashboard includes clear and concise graphics at the provincial and regional scales to provide an efficient Program checkup.
AWW Program	The Program developed to identify and prioritize animal-vehicle collision prone locations, identify cost-effective mitigation, and to evaluate mitigation performance. The Program includes four components: 1) the AWW System, 2) Alberta Transportation's Mitigation Planning and Design Standards, 3) User Engagement Plan, and 4) Annual Review.
AWW System	Collects, manages, analyzes, and reports AWW data, identifies and prioritizes AVC mitigation locations, and evaluates mitigation performance.
AWW Viewer	Alberta Transportation's stakeholders and partners with view only access to the AWW website tool.
Mitigation Data Repository	Map and document storage of AVC mitigations across the provincial highway network.
Principal Contributor	An AWW application user that has been identified as critical for the acquisition of animal carcass and live sighting data. Principal Contributors are Highway Maintenance Contractors and Government of Alberta staff.
Project User	Alberta Transportation's project-specific consultants with primarily view-only (restricted editor) access to the AWW website tool.
Regional Administrator	An AWW website tool manager for designated Region(s). Example Regional Administrators are those with an Alberta Transportation regional consulting assignment.
System Administrator	A supervisor for the AWW application and website tools. Limited to Alberta Transportation staff.

Alberta Wildlife Watch Overview

Animal-vehicle collisions (AVCs) are a significant problem in Alberta affecting motorist safety and wildlife populations. Alberta Transportation designed the Alberta Wildlife Watch (AWW) Program as a solution to reduce AVCs on provincial highways improve driver safety and minimize the impacts of highways on wildlife populations. The AWW Program and its goals are highlighted in a video available at https://youtu.be/zBknpdganB8.

AWW Program is designed to:

1. Identify AVC-prone locations (AVCPLs);

2. Provide high-quality data for effective decision making;

3. Develop departmental policy & standards; and

4. Allow for innovation and evaluate long term mitigation effectiveness.

High-quality data is collected using the AWW application[1]. Data analyses to identify and prioritize statistically significant AVCPLs are automatically performed on the AWW website tool[2]. Together, the AWW application and website tools support the decision-making process for AVC mitigation.

AVCPLs identified are prioritized for mitigation and evaluated for feasibility. Once approved for mitigation, Alberta Transportation's Terms of Reference for AVC mitigation projects outline the design and tender process including the development of an AVC Mitigation Plan. Alberta Transportation's mitigation standards and considerations are incorporated into planning and design to ensure each mitigation project contributes to the Program goals. Once a mitigation project is complete, the applicable mitigation construction reports and AVCPL records are stored and mapped in the Mitigation Data Repository. This builds an AVC mitigation inventory that is linked to the AWW data and AVCPL analyses (animal carcass data collected before and after the mitigation project) to facilitate mitigation performance monitoring. Its effectiveness at reducing AVCs is evaluated using standardized performance criteria.

Over time, standard performance of the overall AWW Program and provincial mitigations are evaluated to ensure continued alignment with the AWW Program's goals. Lessons learned from this long-term review influences Alberta Transportation's mitigation standards, construction and innovation, evaluation criteria, and all System components.

Figure 1 displays the AWW Program structure.

1 Smartphone application for iOS, Android, and BlackBerry devices.
[2] A modern browser, such as Chrome, is required for the website tool (Internet Explorer is not recommended).

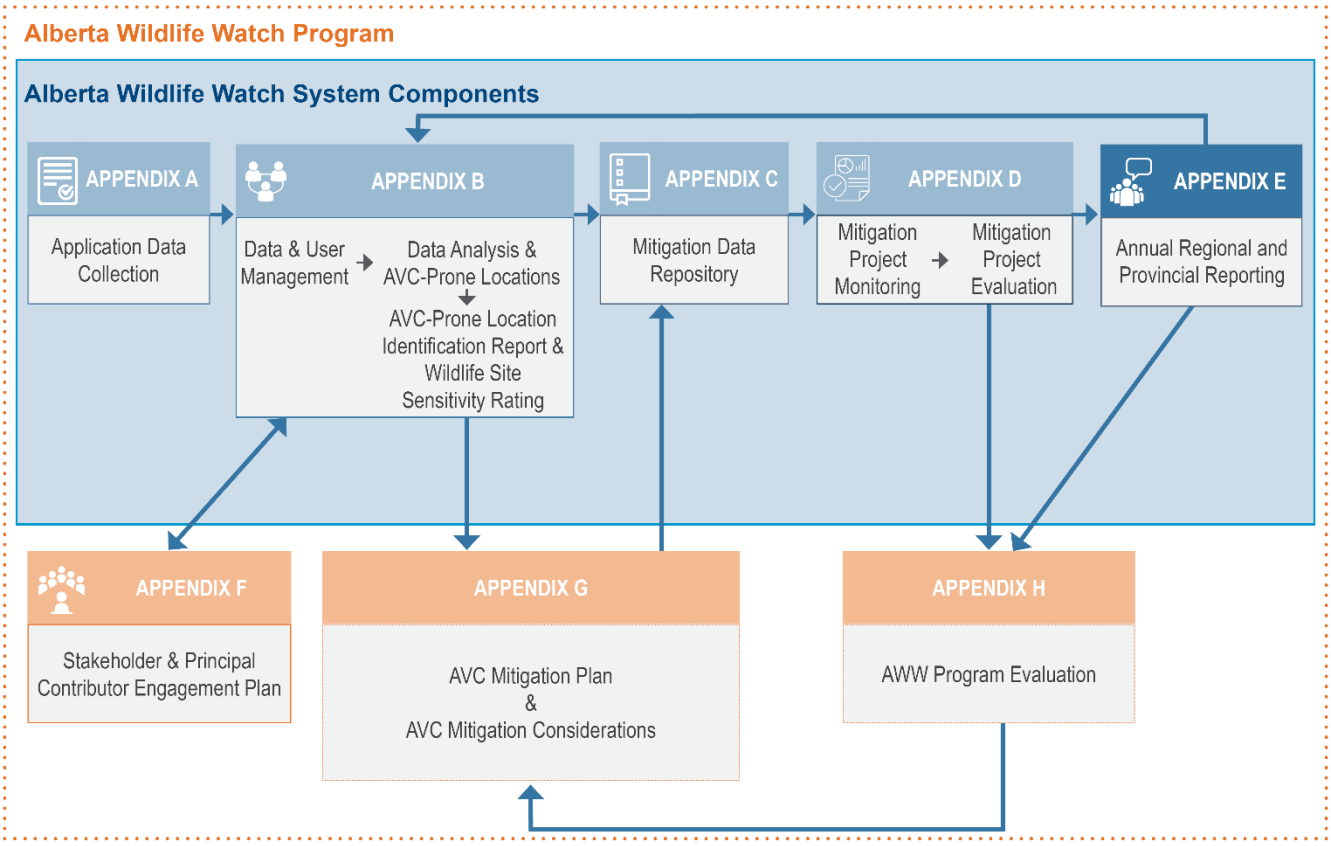

Figure 1: Alberta Wildlife Watch Program Structure

Appendix E: Annual Regional and Provincial Reporting

1.0 INTRODUCTION

The Alberta Wildlife Watch (AWW) Program collects a large amount of animal carcass data, analyzes and evaluates animal-vehicle collision prone locations (AVCPLs), and monitors mitigation performance. Reporting is the most effective method to disseminate important information to advance decision making, share information, and further action.

The AWW System expedites reporting and information sharing by automatically generating key reports using standardized templates. These reports build off the AWW Dashboard (refer to Appendix B) that automatically generates clear and concise Program reporting. The AWW standard report templates and information guidelines maintains readability and clearly conveys regional and provincial information important for decision making. This allows the AWW Program to provide consistency and transparency of the decision-making process, and allows comparison between years, AVCPLs, and mitigation projects.

Annual reports are prepared at both the regional and provincial levels by Alberta Transportation.

2.0 USER ROLES AND RESPONSIBILITIES

The AWW Program collects and disseminates AVCPL information to prioritize, justify, plan, and evaluate mitigation across the province. AWW reports are prepared and utilized by key users, depending on their program authority and responsibilities. **System Administrators**, Alberta Transportation's Regions and Environmental Services Section, will work together to generate annual Regional and Provincial reporting and to disseminate these reports for approval.

Table 1: User Responsibilities for Regional and Provincial Reporting

User	Access Permission(s)	Regional and Provincial Reporting Responsibilities	
		Prepare Regional Reports	Prepare Provincial Reports and Disseminate Information
1. Project User	Website Tool	✓ (specified component(s))	
2. Regional Administrator	Application & Website Tools	✓ (specified component(s))	
3. System Administrators	Application & Website Tools	✓ (interim)	✓

2.1 Principal Contributors and AWW Viewers

Principal Contributors are AWW application users, primarily including Highway Maintenance Contractors. Their primary responsibility is to collect accurate and consistent animal carcass and live sighting data using the AWW application, both before and after mitigation (refer to Appendices A and D). They, along with **AWW Viewers,** have no designated report preparation responsibilities.

2.2 Regional Administrators and Project Users

Regional Administrators and **Project Users** may be responsible for contributing to the Annual Regional Reports. Regional Administrators and Project Users are selected by Alberta Transportation for regional and project-specific consulting assignments, respectively. They may have the responsibility to identify and complete the Wildlife Site Sensitivity Rating (WSSR) as part of their assignments (refer to Appendix G). When complete, these users submit the WSSRs through the AWW website. These reports are then available for the development of the Annual Regional Reports.

2.3 System Administrators

The **System Administrator** from Alberta Transportation's Environmental Services Section is responsible for working with the Regions to prepare and circulate annual Regional and Provincial Reports. Once complete, the annual Provincial Report will be submitted to the Executive Director, Technical Services Branch, for consideration and presentation to the Executive Team.

3.0 AWW ANNUAL REPORTS

AWW annual reports provide an overview of the AWW Program, as well as identify and prioritize AVCPLs for mitigation. These AWW annual reports are the foundation for action. Two separate report types are prepared annually:

1. Regional Reports; and
2. Provincial Report.

These reports provide regional and provincial snapshots of the AWW Program outputs and identifies priority locations for mitigation. Regional Reports present information specific to each Region, whereas, the Provincial Report also offers options and recommendations to support corporate- level decision making.

The content of these annual AWW reports will be standardized to the extent possible. This provides a clear and consistent message and allows for a standardized decision-making framework. This provides Alberta Transportation the ability to track Program progress into the future.

3.1 Annual Regional Report

A Regional Report is prepared for each of the five Regions annually and presented to Alberta Transportation's Regional Directors. This report provides a snapshot of the current state of AVCs within each Region and identifies priority AVCPLs where mitigation may be required. Content is compiled from the AWW System's website tool (particularly the AWW Dashboard and AVCPL analyses; refer to Appendix B) and Alberta Transportation's Office of Traffic Safety (OTS).

The report is restricted to four pages length to provide a concise document that showcases the most critical information. The report is supported by summary graphs, tables, and figures as appropriate. All statistically significant AVCPLs identified within the Region along with any individual Wildlife Site Sensitivity Ratings (Appendix B) will be provided as an appendix to this report. A final prioritized list of all AVCPLs within the Region that have passed the WSSR will be provided.

Components of the standard template will include:

1. Purpose: this is the opening statement that presents the purpose of the Regional Report to focus the reader's expectations.

2. Background: this section provides an overview of the road conditions. Background key information details include:

    a. Provincial animal carcass rate and density for 2 lane low traffic volume, 2 lane high traffic volume, and 4 lane divided roads; and

    b. The Regions total vehicle kilometers travelled.

3. Current Condition: this section specifies the AWW System's AVC and AVCPL data analyses, at a regional scale, to frame mitigation decision making. Key information details include:

    a. Total number of animal carcass records in the Region including Species at Risk and large-bodied animals (i.e., trends (up or down over a five year period));

    b. Total number and kilometres of AVCPL clusters in the Region (i.e., trends over a five year period);

    c. Total number of 1 km highway segments with the highest animal carcass densities (≥5 animal carcasses/km/year; refer to Appendix B for details);

    d. Highways with the highest number of large-bodied and Species at Risk AVCPLs; and

    e. Number of and total kilometres of AVCPL clusters and high density segments that are inside designated wildlife linkage zones in the Region.

4. Principal Contributor Engagement: Principle Contributor key error rates (refer to Appendix B), engagement and training completed (e.g., poster submissions to Principal Contributors, discussion log for troubleshooting), and opportunities for possible improvement.

5. Key Considerations: this section provides a summary of key considerations for mitigation development, and specifically outlines:

    a. Final prioritized list of all large-bodied and Species at Risk AVCPLs (e.g., strongest and most stable statistically significant animal carcass clusters that have passed the WSSR; refer to Appendix B) for mitigation within the Region. Statistically significant clusters and associated WSSRs are provided as an appendix;

    b. Target species for mitigation (based on large-bodied and terrestrial Species at Risk sufficiently reported in the animal carcass cluster and or high density segment); and

    c. Any known factors affecting AVCs in the region.

6. Mitigation Monitoring: this section summarizes the number of AVC mitigations developed in the last five years, performance of mitigation projects in the Region (i.e., AVC Mitigation Project Evaluation Reports (Appendix D)), and recommends mitigation improvements, if warranted.

3.2 Annual Provincial Report

The Provincial AWW AVC Report is a broad summary appropriate for the Minister, Deputy Minister, and Assistant Deputy Minister level review. This report provides a snapshot of the current state of AVC and AVCPLs across the province and includes a prioritized list of AVCPLs that are candidates for mitigation projects. Content is compiled from the Regional Reports (refer to Section 3.1), associated WSSRs (refer to Appendix B), and from AWW Program users. In addition, this report also summarizes the priority projects presented by Alberta Environment and Parks.

The report is restricted to four pages length to provide a concise document that showcases the most critical information. Components of the standard template will include:

1. Purpose: this is the opening statement that presents the purpose of the Provincial Overview to focus the Minister, Deputy Minister, and Assistant Deputy Minister's expectations.

2. Background: this section provides a summary from each of the five Regional Reports. Key information includes each Region's priority AVCPLs where mitigation is considered feasible.

3. Current Condition: this section specifies the AWW System's and AVC and AVCPL data analyses, at a provincial scale, to frame mitigation decision making. Key information details include:

    a. Total number of AVC-related human injuries and fatalities (information provided from the OTS);

    b. AVC estimated annual cost to society (i.e., trends (up or down) over a five year period);

    c. Total number of animal carcasses records in the province (i.e., trends over a five year period);

    d. Total number of Species at Risk animal carcass records in the province (i.e., trends over a five year period);

    e. Provincially prioritized list of AVCPLs that have passed the WSSR, including total number and kilometers of priority AVCPL clusters in the province (i.e., trends over a five year period), and highways with the highest number of priority AVCPLs;

    f. Total number of 1 km highway segments with the highest animal carcass densities (>5 animal carcasses/km/year) in the province;

    g. Number of and total kilometres of priority AVCPL clusters and high density segments that are inside designated wildlife linkage zones in the province; and

    h. Provincially prioritized list of projects from AEP that have passed the WSSR.

4. AVC Mitigation and Evaluations: summary of AVC mitigations in operation and construction, mitigation performance results from individual mitigation projects (i.e., complied from AVC Mitigation Project Evaluation Report(s); Appendix D), and the provincial mitigation review (i.e., compiled from the Provincial Mitigation Review Report; Appendix H).

5. Key Consideration: this section outlines any opportunities to increase efficiencies with well-coordinated mitigation projects (i.e., plan two nearby mitigation projects simultaneously) and or mitigation at a specific AVCPL that would yield highest return (e.g., an AVCPL that is easily mitigated).

6. Stakeholder and Principal Contributor Engagement: summary of engagement records and opportunities for possible AWW Program improvement.

7. AWW Program Evaluation and Updates: a summary of the annual AWW Program Review (refer to Appendix H) to highlight long term performance of the AWW Program at a provincial scale and recommendations to date.

8. Next Steps: this section provides recommendations for feasible AVCPL mitigation projects to advance into the planning and design stage (Appendix G), as well as approvals for AWW Program improvements.

4.0 PREVIEW: STAKEHOLDER AND PRINCIPAL CONTRIBUTOR ENGAGEMENT PLAN

The AWW Program collects high-quality data and identifies AVCPLs for mitigation consideration. Reporting is the most effective method to disseminate the information, including priority AVCPLs that may require mitigation consideration. Reporting advances mitigation decision making, as well as a method to share information with and document recommendations from Alberta Transportation's stakeholders and Principal Contributors.

Reporting supports stakeholder and Principal Contributor engagement and maintains a transparent decision-making process, which are addressed in Appendix F.

ALBERTA WILDLIFE WATCH PROGRAM

APPENDIX F
STAKEHOLDER & PRINCIPAL CONTRIBUTOR ENGAGEMENT PLAN

AUGUST 2017

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Acronyms/Abbreviations	Definition
AWW	Alberta Wildlife Watch
AVC	Animal-Vehicle Collision
AVCPL	Animal-Vehicle Collision Prone Location
HMC	Highway Maintenance Contractor
Org. ID	Organization Identification Code
TSD	Transportation Services Division

DEFINITIONS

Term	Definition
AWW Program	The Program developed to identify and prioritize animal-vehicle collision prone locations, identify cost-effective mitigation, and to evaluate mitigation performance. The Program includes four components: 1) the AWW System, 2) Alberta Transportation's Mitigation Planning and Design Standards, 3) User Engagement Plan, and 4) Annual Review.
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AWW Program is designed to:

1. Identify AVC-prone locations (AVCPLs);

2. Provide high-quality data for effective decision making;

3. Develop departmental policy & standards; and

4. Allow for innovation and evaluate long term mitigation effectiveness.

High-quality data is collected using the AWW application[1]. Data analyses to identify and prioritize statistically significant AVCPLs are automatically performed on the AWW website tool[2]. Together, the AWW application and website tools support the decision-making process for AVC mitigation.

AVCPLs identified are prioritized for mitigation and evaluated for feasibility. Once approved for mitigation, Alberta Transportation's Terms of Reference for AVC mitigation projects outline the design and tender process including the development of an AVC Mitigation Plan. Alberta Transportation's mitigation standards and considerations are incorporated into planning and design to ensure each mitigation project contributes to the Program goals. Once a mitigation project is complete, the applicable mitigation construction reports and AVCPL records are stored and mapped in the Mitigation Data Repository. This builds an AVC mitigation inventory that is linked to the AWW data and AVCPL analyses (animal carcass data collected before and after the mitigation project) to facilitate mitigation performance monitoring. Its effectiveness at reducing AVCs is evaluated using standardized performance criteria.

Over time, standard performance of the overall AWW Program and provincial mitigations are evaluated to ensure continued alignment with the AWW Program's goals. Lessons learned from this long-term review influences Alberta Transportation's mitigation standards, construction and innovation, evaluation criteria, and all System components.

Figure 1 displays the AWW Program structure.

1 Smartphone application for iOS, Android, and BlackBerry devices.
[2] A modern browser, such as Chrome, is required for the website tool (Internet Explorer is not recommended).

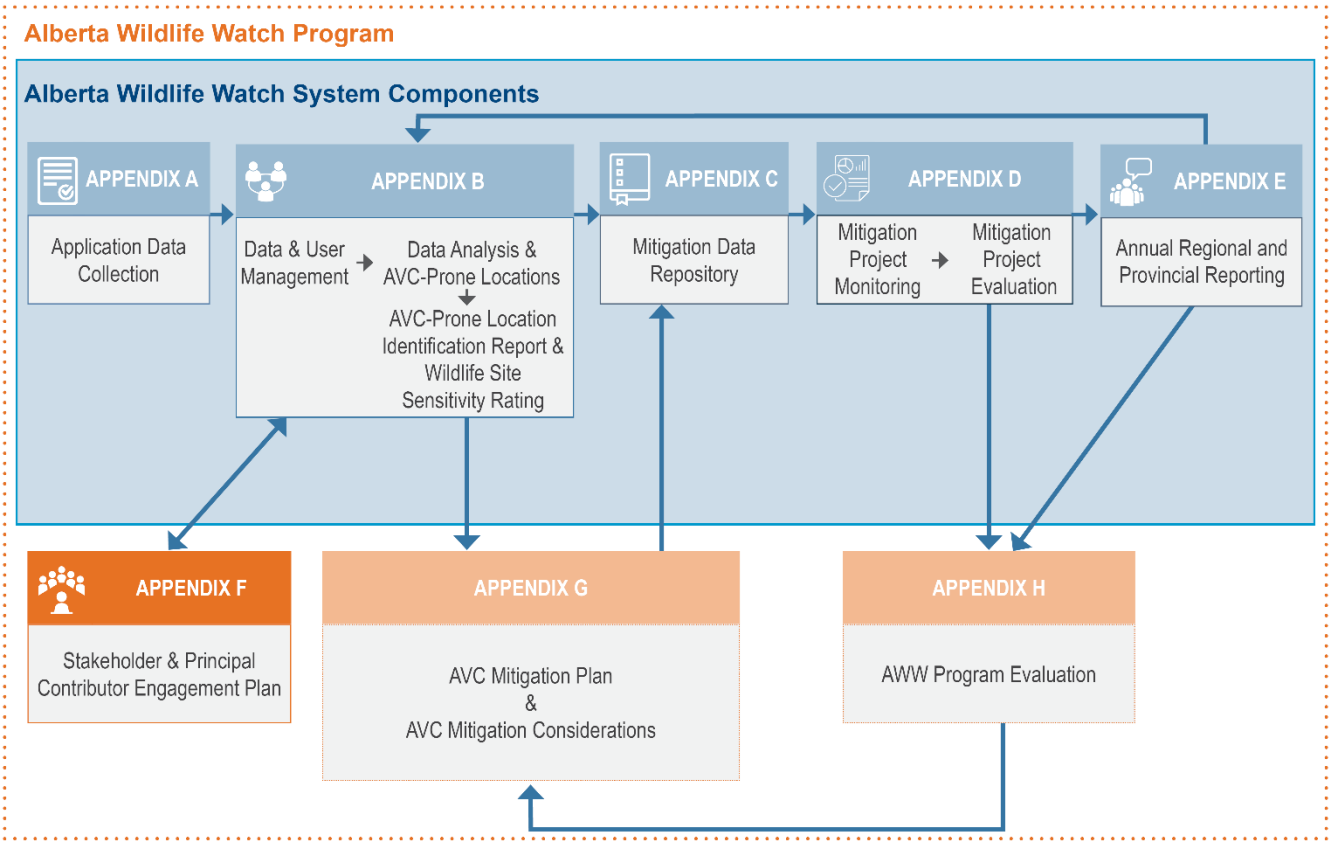

Figure 1: Alberta Wildlife Watch Program Structure

Appendix F: Stakeholder & Principal Contributor Engagement Plan

1.0 INTRODUCTION

Success of the Alberta Wildlife Watch (AWW) Program is dependent upon the consideration of stakeholder insights and the collection of high quality animal carcass and live sighting data collected by Principal Contributors. These support on-going improvements to the AWW Program and maintain high quality standards.

The AWW Stakeholder and Principal Contributor Engagement Plan outlines the process to engage with and maintain stakeholder and Principal Contributor engagement. Alberta Transportation values five basic concepts to engage with stakeholders and Principal Contributors: 1) regular communication, 2) clear roles and responsibilities, 3) open dialogue with parties, 4) reliable sharing of data applicable to their area of interest, and 5) update engagement/training materials as needed. These basic concepts are integrated into Alberta Transportation's Stakeholder and Principal Contributor Engagement Plan (Engagement Plan) and associated Principal Contributor training materials.

2.0 USER ROLES AND RESPONSIBILITIES

Of the various AWW System users, **System Administrators** have the primary responsibility under the Stakeholder and Principal Contributor Engagement Plan (Table 1). **Regional Administrators** play a fundamental role engaging and training Principal Contributors. **Principal Contributors** have a responsibility to participate in and understand the training materials and operate the AWW application safely.

Table 1: User Responsibilities for the Stakeholder & Principal Contributor Engagement Plan

User	Access Permission(s)	Stakeholder & Principal Contributor Engagement Plan Responsibilities		
		Communicate Regularly	Provide/Participate in Engagement	Share Data/Update Plan
1. Principal Contributors	Website Tool	✓	✓	
2. Regional Administrators	Application & Website Tools	✓	✓	✓
3. System Administrators	Website Tool	✓	✓	✓

AWW Viewers and Project Users have no designated responsibilities under the Engagement Plan. These are AWW website tool users with primarily view-only access. These include specific Alberta Transportation stakeholders, partners, and project-specific consultants. AWW Viewers have no responsibilities under the whole AWW Program; however, Project Users incorporate AWW data into their project-specific work (refer to Appendices B, D, and E).

2.1 Principal Contributors

Principal Contributors currently include HMCs and relevant Government of Alberta staff. Under the AWW Program, their primary responsibility is to collect accurate and consistent animal carcass and live sighting data using the AWW application, to participate in engagement and training, and operate the AWW application safely.

The System Administrator adds new Principal Contributors into the AWW website and provides the Principal Contributors with their unique Organization Identification (Org. ID) code. An Org. ID is usable for all Principal Contributors within that organization (i.e., Alberta Transportation), and is associated with and credits each wildlife record in the database.

2.2 Regional Administrators

Regional Administrators are selected by Alberta Transportation for regional consulting assignments. Individual Regional Administrators gain access to the AWW application using an Org. ID code and the website using an assigned username and password system. Both the Org. ID code and the user name and password are assigned by the System Administrator.

Regional Administrators' have the ability to collect live sighting and carcass data using the AWW application. However, Regional Administrators will regularly communicate with Principal Contributors within their contract Region and execute the training and engagement plan using the materials developed by the System Administrator. Their focus is to summarize and share AWW data collected within their Regions to the Principal Contributors and suggest opportunities to update the Engagement Plan to the System Administrator.

2.3 System Administrators

System Administrators are responsible for the overall management of the AWW Program and its users, including the AWW Stakeholder and Principal Contributor Engagement Plan. This role includes access to all AWW data and user management systems and is restricted to Alberta Transportation staff. As it relates to the Engagement Plan the System Administrator is responsible for the development of the plan including any required engagement tools (i.e. AWW engagement video), engagement with stakeholders, maintenance of the stakeholder engagement record, and updates/maintenance to the Engagement Plan and or AWW Program.

Additional responsibilities include assigning and managing AWW System users, and registration of all AWW System users through the AWW website *Administration* tab.

3.0 PRINCIPAL CONTRIBUTOR ENGAGEMENT AND TRAINING MATERIALS

Data quality is contingent upon the cooperation from Principal Contributors using the AWW application across the province. Data quality is supported by engaging with and providing multiple training options and tools to the Principal Contributors.

3.1 Communication

The deployment of the AWW application is launched to Principal Contributors by the System Administrator. This initial launch includes an introduction to the AWW application, its goals, and user responsibilities. Regular follow-up telephone calls and in-person informal meetings occur, at a minimum, annually to discuss application use, suggested upgrades, and respond to any questions relating to the application and or the AWW Program.

Additional informal meetings (in-person and or telephone) may evolve into bi-annual engagement sessions to maintain the working relationship and encourage consistent data collection.

3.2 Data Sharing

To encourage Principal Contributors continued cooperation and reinforce the benefit of data collection, the AWW website tool automatically customizes a poster for each Contract Maintenance Area (CMA) (total of 32 unique posters available by January 1 each year). Customized posters are scheduled for delivery once the minimum number of years of data have been collected (i.e., three years, expected in 2020).

This engagement poster provides a summary of the last three years of AWW data collected within each area, and includes 1) a map, 2) photos, and 3) summary graphs and tables. The posters are in a professional design template and are print quality appropriate for wall mounting.

Program support will come from both Environmental Services Section and the Regional Environmental Coordinators. Each Regional Administrator is responsible for printing and distributing the poster for their contract area annually. Previous years posters are archived within the AWW website and available to the public for download.

3.3 Engagement Materials

Engagement material is developed to provide explicit rationale and benefits to both parties. The AWW Program's engagement material provides clear instructions, rationale for the AWW Program, and the AWW Program's benefits to various parties.

Alberta Transportation developed a short (five minute) video as the primary engagement approach. This video was developed to introduce AWW to Principal Contributors, including the:

- primary goals of the AWW Program;
- benefits to both society and Principal Contributors; and
- how Alberta Transportation uses the data collected by Principal Contributors to reduce AVCs and improve motorists' safety.

Alberta Transportation's engagement video is available at: https://youtu.be/zBknpdganB8.

3.4 Training Materials

To further support and provide training to Principal Contributors, Alberta Transportation has developed additional tools. Training materials range from detailed user manuals to simple highlights of key operating practices. These straightforward materials are provided with screenshots of the application to visually display content and instructions.

Training materials include:

1. Detailed AWW Smartphone Application User Guide: this guide details the AWW application setup, operation, and troubleshooting. It is provided to Principal Contributors in hard copy, is available online (http://www.transportation.alberta.ca/6020.htm), and on the AWW application (Wi-Fi connection required). The online guide is provided to Principal Contributors at launch, and the hard copy is later mailed as follow-up engagement.

2. Wall poster: the wall poster provides quick tips to operate the AWW application including their unique Organization Identification code. This quick-tips, poster, guide is provided in hard copy after launch as follow-up engagement. It is also available online at http://www.transportation.alberta.ca/Content/docType29/Production/AWW_App_Guide_Poster.pdf.

3. AWW Wildlife Identification Guide: clearly describes and highlights key wildlife species identification attributes for easy field verification. Species range maps are also provided to improve positive identification of the animal. The AWW Wildlife Identification Guide is available in hard copy, online (http://www.transportation.alberta.ca/Content/docType253/Production/AWWWildlifeGuide.pdf), and on the application. The hard copy guide is mailed to Principal Contributors after launch as follow-up engagement.

4. Engagement Cards: engagement cards are quick AWW application operating tips available on a keychain, appropriate to put in each vehicle. These are provided after launch as part of ongoing engagement and training.

5. Government of Alberta HelpDesk Contact: the HelpDesk contact is provided at launch of the AWW application. The HelpDesk contact is also provided in the detailed User Guide, wall poster, and engagement cards.

4.0 STAKEHOLDER ENGAGEMENT

Alberta Transportation realizes the importance of stakeholder collaboration to ensure that the AWW Program considers all aspects of animal-vehicle collisions. Input gathered from these discussions is used as the basis of continual improvement to the AWW Program. Stakeholders include federal and provincial ministries, as well as non-governmental organizations that have a direct interest in protecting wildlife from vehicle collisions.

Engaging stakeholders in dialogue will allow Alberta Transportation to understand the issues that matter most to them and to consider these during decision making. These discussions will be focused to the AWW Program and any concerns raised with respect to site-specific AVCPLs will be directed to the relevant Region with Alberta Transportation for attention. The System Administrator will maintain an annual list of stakeholder engagements as well as any improvements to the AWW Program resulting from these discussions.

5.0 PREVIEW: MITIGATION PLANNING AND DESIGN

Well informed mitigation decisions arise from accurate data and analysis, and structured planning and design. The AWW Program includes a formalized AVC mitigation planning and design approach to simplify decision making and to ensure mitigation projects are cost effective and reduce AVCs.

The AWW Program acts as a clearing-house of standard AVC mitigation considerations, as they are developed, to facilitate mitigation planning and design. The AWW Program's clearing-house will be a living resource with standards being added and updated, as prepared, and innovations advance. The AWW Program's AVC mitigation planning and design components are outlined in Appendix G.

Alberta

ALBERTA WILDLIFE WATCH PROGRAM

APPENDIX G

MITIGATION PLANNING AND DESIGN

AUGUST 2017

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
AWW	Alberta Wildlife Watch
AVC	Animal-vehicle Collision
AVCPL	Animal-vehicle Collision Prone Location
GoA	Government of Alberta
Org. ID	Organization Identification
TOR	Terms of Reference
WSSR	Wildlife Site Sensitivity Rating

DEFINITIONS

Term	Definition
AWW Mitigation Toolbox	Alberta Transportation's guidebook of AVC mitigation technologies and structures.
AWW Program	The Program developed to identify and prioritize animal-vehicle collision prone locations, identify cost-effective mitigation, and to evaluate mitigation performance. The Program includes four components: 1) the AWW System, 2) Alberta Transportation's Mitigation Planning and Design Standards3) User Engagement Plan, and 4) Annual Review.
AWW System	Collects, manages, analyzes, and reports AWW data, identifies and prioritizes AVC mitigation locations, and evaluates mitigation performance.
AWW Viewer	Alberta Transportation's stakeholders and partners with view only access to the AWW website tool.
Principal Contributor	An AWW application user that has been identified as critical for the acquisition of animal carcass and live sighting data. Principal Contributors are Highway Maintenance Contractors and Government of Alberta staff.
Project User	Alberta Transportation's project-specific consultants with primarily view-only (restricted editor) access to the AWW website tool.
Regional Administrator	An AWW website tool manager for designated Region(s). Example Regional Administrators are those with an Alberta Transportation regional consulting assignment.
System Administrator	A supervisor for the AWW application and website tools. Limited to Alberta Transportation staff.

Alberta Wildlife Watch Program Overview

Animal-vehicle collisions (AVCs) are a significant problem in Alberta affecting motorist safety and wildlife populations. Alberta Transportation designed the Alberta Wildlife Watch (AWW) Program as a solution to reduce AVCs on provincial highways improve driver safety and minimize the impacts of highways on wildlife populations. The AWW Program and its goals are highlighted in a video available at https://youtu.be/zBknpdganB8.

AWW Program is designed to:

1. Identify AVC-prone locations (AVCPLs);

2. Provide high-quality data for effective decision making;

3. Develop departmental policy & standards; and

4. Allow for innovation and evaluate long term mitigation effectiveness.

High-quality data is collected using the AWW application[1]. Data analyses to identify and prioritize statistically significant AVCPLs are automatically performed on the AWW website tool[2]. Together, the AWW application and website tools support the decision-making process for AVC mitigation.

AVCPLs identified are prioritized for mitigation and evaluated for feasibility. Once approved for mitigation, Alberta Transportation's Terms of Reference for AVC mitigation projects outline the design and tender process including the development of an AVC Mitigation Plan. Alberta Transportation's mitigation standards and considerations are incorporated into planning and design to ensure each mitigation project contributes to the Program goals. Once a mitigation project is complete, the applicable mitigation construction reports and AVCPL records are stored and mapped in the Mitigation Data Repository. This builds an AVC mitigation inventory that is linked to the AWW data and AVCPL analyses (animal carcass data collected before and after the mitigation project) to facilitate mitigation performance monitoring. Its effectiveness at reducing AVCs is evaluated using standardized performance criteria.

Over time, standard performance of the overall AWW Program and provincial mitigations are evaluated to ensure continued alignment with the AWW Program's goals. Lessons learned from this long-term review influences Alberta Transportation's mitigation standards, construction and innovation, evaluation criteria, and all System components.

Figure 1 displays the AWW Program structure.

1 Smartphone application for iOS, Android, and BlackBerry devices.

[2] A modern browser, such as Chrome, is required for the website tool (Internet Explorer is not recommended).

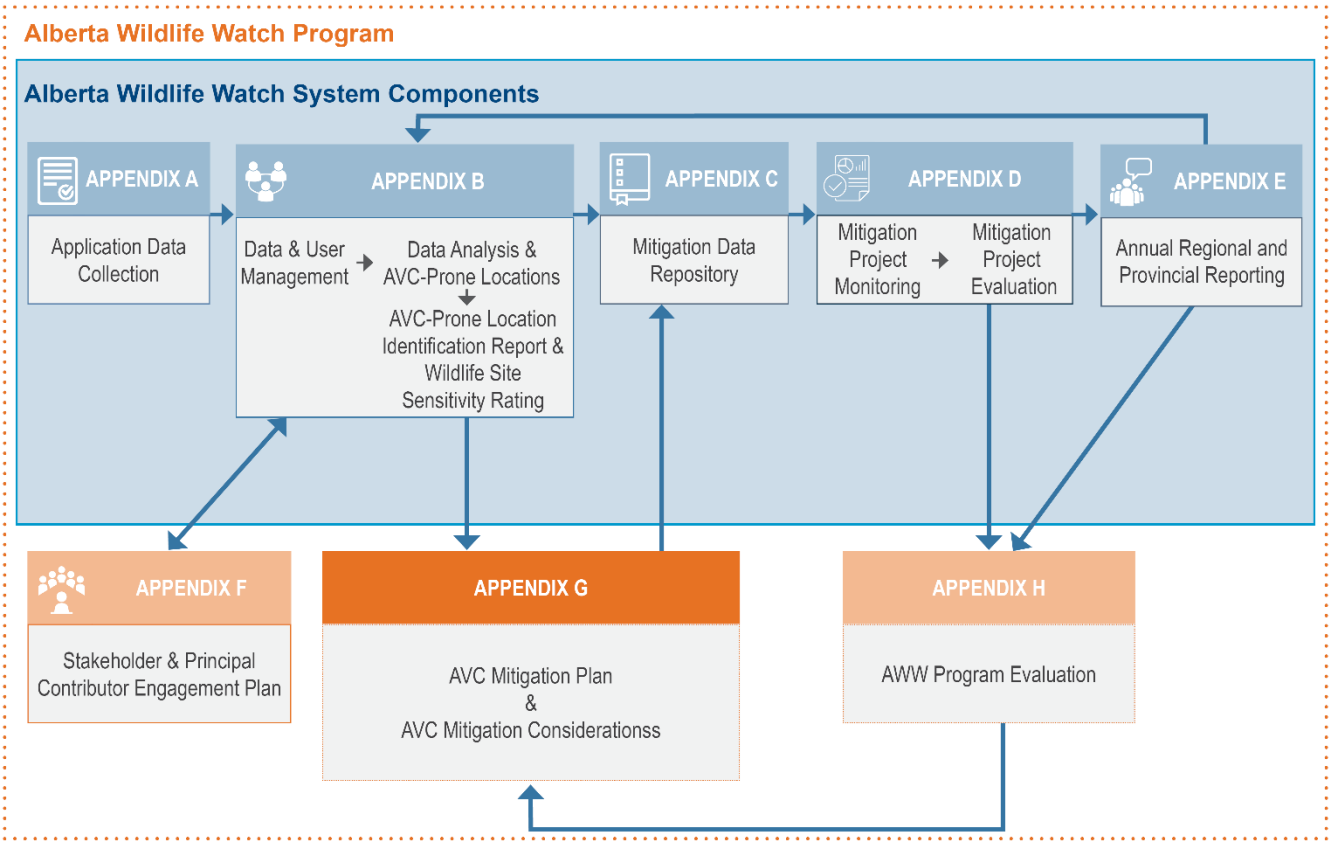

Figure 1: Alberta Wildlife Watch Program Structure

Appendix G: Mitigation Planning and Design

1.0 INTRODUCTION

Alberta Transportation works to ensure that the transportation system enables Alberta's economic, social, and environmental vitality. The Alberta Wildlife Watch (AWW) Program is one of Alberta Transportation's many approaches to meet their mandate.

AWW improves motorists' safety on provincial highways by identifying animal-vehicle collision (AVC)-prone locations (AVCPLs) and supporting mitigation using best and innovative technologies. Mitigation is planned and designed using an AVC Mitigation Plan and following standard mitigation design considerations. These provide a reliable and cost-effective approach for the province to support decision making.

AVC mitigation planning is initiated once a priority AVCPL is identified and determined to be feasible (i.e., technically and financially; Appendix B). AVCPLs that are considered technically and financially feasible in the Wildlife Site Sensitivity Rating (WSSR; Appendix B) are presented in a prioritized list, and once approved by Alberta Transportation's Executive Team, progress to a mitigation project design and tender stage in conformance to a Terms of Reference (TOR). In the TOR's detailed planning and design stage mitigation options are identified, evaluated, and designed. Standardized mitigation designs, provided by Alberta Transportation, ensures Alberta Transportation's mitigation design considerations are incorporated in the planning and design process.

This formalized approach provides consistency with each AVC mitigation project to ensure cost-effective mitigations are developed that result in AVCs reductions.

2.0 USER ROLES AND RESPONSIBILITIES

System Administrators have primary responsibility to develop the AWW planning and design standard documents (Table 1). Once developed, **Regional Administrators** and **Project Users** have the responsibility to incorporate into their project work (Table 1).

Table 1: User Responsibilities for Mitigation Planning and Design

User	Access Permission(s)	Mitigation Planning and Design Responsibilities		
		Develop/Update Mitigation Documents	Provide Access to Mitigation Documents	Incorporate into Project Work
1. Project User	Website Tool			✓
2. Regional Administrators	Application & Website Tools			✓
3. System Administrators	Website Tool	✓	✓	✓

Two additional AWW System users, **AWW Viewers and Principal Contributors**, have no designated responsibilities under mitigation planning and design. These users include specific Alberta Transportation stakeholders, partners, and Highway Maintenance Contractors (HMCs) with no to limited access to the AWW website tool.

2.1 Project User

Project Users are Alberta Transportation's project-specific consultants. With primarily view-only access to the AWW website tool, this user is able to view annual reports, access the raw database, and carry out additional analyses to incorporate into their own project reporting (i.e., Environmental Evaluations and AVCPL Identification Report). Using the mitigation planning and design tools, they may then incorporate appropriate AVC mitigation within, or adjacent to their project. Project Users are responsible for the preparation of select mitigation planning and design reports (i.e., Wildlife Site Sensitivity Rating Report, AVC Mitigation Plan) appropriate within or adjacent to their project. They are also able to upload their own mitigation project reports into the AWW website tool.

Once registered by the System Administrator, Project Users are emailed a username and password automatically from the AWW website (email will be sent from info@albertawildlifewatch.ca). Project User accounts can be deactivated by Regional Administrators.

2.2 Regional Administrators

Regional Administrators are selected by Alberta Transportation for regional consulting assignments. Individual Regional Administrators gain access to the AWW application using an Organization Identification (Org. ID) code and the website tool using an assigned username and password system. Both the Org. ID code and the user name and password are assigned by the System Administrator.

Like Project Users, Regional Administrators' have a primary responsibility to use the AWW Program's mitigation planning and design tools, and have access to the AWW reports, raw database, and ability to carry out additional analyses to incorporate into their own project reporting.

Once registered by the System Administrator, Regional Administrators are emailed a username and password automatically from the AWW website (email sent from info@albertawildlifewatch.ca).

2.3 System Administrators

System Administrators are responsible for the overall management and development of the AWW Program and its users, including mitigation planning and design components. Registration of all AWW System users are completed through the AWW website *Administration* tab. This role includes full access to all AWW Program components, including the AWW website tool, and is restricted to Alberta Transportation staff. Responsibilities include assigning and managing AWW System users, and developing, storing, and updating the AVC mitigation planning and design components.

3.0 DESIGN AND TENDER MITIGATION PROJECTS

Alberta Transportation's approach to planning and designing AVC mitigation projects is straightforward and transparent. Alberta Transportation has developed The Environmental Evaluation TOR which also addresses AVC mitigation projects. This TOR provides a standard to plan, evaluate, design, build, and monitor a feasible mitigation project at a priority AVCPL.

The TOR is available on the Environmental Services at the following link:

http://www.transportation.alberta.ca/6003.htm

The AWW Program's AVC Mitigation Design and Tender approach includes an AVC Mitigation Plan and associated AWW Mitigation Toolbox. Together these assists in the development of mitigation project planning and design, and directly influence the types of AVC mitigations developed across the province. In return, the performance of mitigation projects (refer to Appendix D) inform mitigation consideration updates. This feedback loop allows best-performing AVC mitigations to be developed across the province and supports a process to maintain current standards and specifications.

An example mitigation project process, including AWW Program's step-wise approach to planning and design and AWW user roles and responsibilities, is provided in Figure 2. Each step in this process is required to plan and design a mitigation project that is cost-effective and reduces AVCs in Alberta.

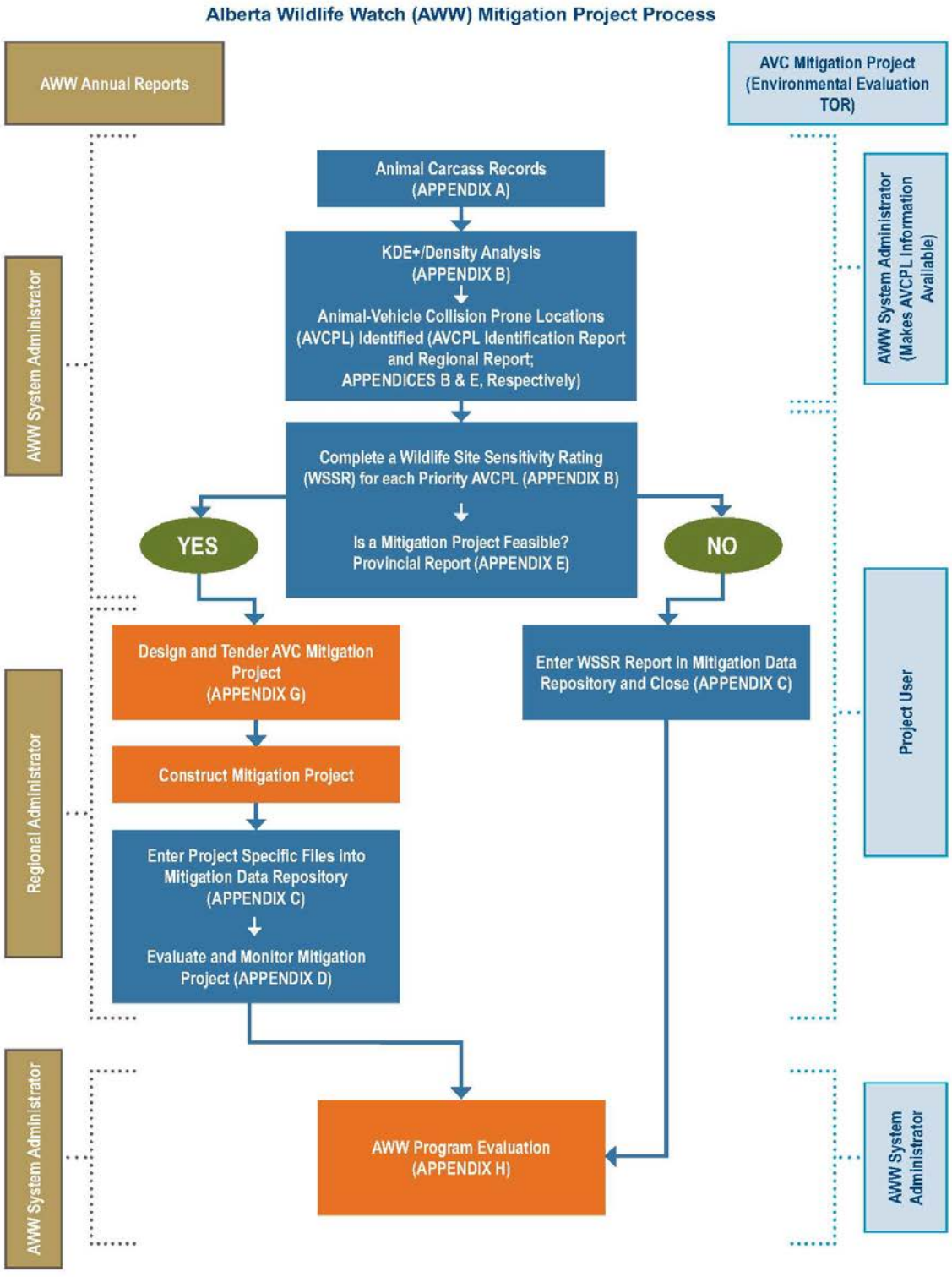

Figure 2: Example AVC Mitigation Project Process

3.1 AVC Mitigation Plan

Upon Alberta Transportation's approval of a mitigation project, the AVC Mitigation Plan is completed during the mitigation planning and design stage. This plan outlines available mitigation options and innovations with substantial likelihood of success at site-specific AVCPLs.

Each mitigation option considers the target species, seasonality of the collisions, cost-benefit, expected mitigation service life, and estimate of construction, maintenance, and replacement costs. Mitigation(s) presented in the AVC Mitigation Plan are selected from the AWW Mitigation Toolbox (Section 3.2) and follow Alberta Transportation's design standards. This allows Alberta Transportation to effectively select the most appropriate mitigation to best meet their traffic safety mandate.

The AVC Mitigation Plan also provides a summary of site-specific conditions using the AWW System data, existing reports (e.g., Wildlife Site Sensitivity Rating report), and the surrounding landscape (e.g., Key Wildlife and Biodiversity Zones (refer to Appendix B), Regional Land Use Plans) to provide best mitigation options.

3.2 AVC Mitigation Toolbox

A strength of the AWW Program is its ability to store provincial AVC mitigation planning and design considerations within the same system that collects, analyzes, prioritizes, inventories, evaluates, monitors, and reports AVC's across the province (Appendices A to F). Housing these documents within the AWW System ensures consultants have ready access to the most up-to-date information to support AVC mitigation project design goals. This also allows Alberta Transportation to learn from the mitigation performance evaluations and make ongoing improvements to mitigation designs.

The AWW Program provides AVC mitigation options to support the selection of effective mitigation. This expedites project planning and design and allows Alberta Transportation to cost-effectively plan and design mitigation known to perform well in the province therefore, aiding Alberta Transportation's decision-making process. These AVC mitigation options help to deliver Alberta Transportation's traffic safety goals while providing reasonable expectations for mitigation performance across Alberta.

An AVC Mitigation Toolbox, specific for Alberta, is incorporated as part of the AWW Program. This toolbox includes proven and AVC mitigation standards and is straightforward in design. It is a support tool and technical reference to help Alberta Transportation plan and design appropriate mitigation. It also provides pros and cons of each mitigation option, known performance efficiencies, and example cost-benefit thresholds appropriate for Alberta. The Mitigation Toolbox is a living resource and will be updated as mitigations are proven effective (or ineffective; refer to Appendix D) in Alberta. This allows Alberta Transportation to advance the provincial state of knowledge using contemporary AVC research.

The AVC Mitigation Toolbox avoids future work redundancies and helps detect mitigation information or knowledge gaps. AVC mitigations provided will be applicable to meet Alberta Transportation's mandate and categorized into the following:

1. Those that attempt to influence driver behaviour; and
2. Those that attempt to influence animal behaviour.

Table 2 provides some example AVC mitigations to be considered for the province. Table 2 is not a comprehensive list of all optional AVC mitigations applicable for the AWW Mitigation Toolbox nor a recommendation of use.

Associated mitigation design standards to be developed may include:

- Animal Detection System design considerations and best management practices;
- Brushing and mowing guidelines to reduce AVCs, road salt alternative guidelines;
- AVC speed zone reduction guidelines;
- Road salt alternatives guidelines;
- Wildlife exclusion design considerations; and
- Wildlife crossing structure design including overpasses, underpasses, and at-grade crossings.

Table 2: Example Animal-Vehicle Collision Mitigations

Existing Mitigation	Optional Mitigation Available
Mitigations that Influence Driver Behaviour	
Driver behaviour is influenced passively using education initiatives, signage, and warning systems.	
▪ Wildlife Vehicle Collision Awareness Week. Led by Alberta Environment and Parks; and ▪ Over-sized signage at AVCPLs.	▪ Driver safety programs (e.g., Wildlife Hazard Warning System, a warning sign coding system based on hazard level by Dr. Leonard Sielecki); ▪ Animal detection systems; and ▪ Speed reduction considerations.
Mitigations that Influence Animal Behaviour	
These mitigations influence wildlife movement and behaviour. They deter wildlife from approaching and/or crossing the highway (e.g., exclusion fencing) or directing wildlife to a safer location to cross (e.g., overpass).	
▪ Bridge design to accommodate wildlife underpass; and ▪ Wildlife exclusion fencing.	▪ Vegetation clearing and mowing at AVCPLs; ▪ Wildlife overpass/underpass; and ▪ Boulder aprons (e.g., rip-rap outside of clear zone to reduce risk to motorists).

4.0 PREVIEW: AWW PROGRAM EVALUATION

Collecting, storing, managing, and analyzing high-quality animal carcass and mitigation data are critical steps to reduce AVCs on provincial highways, improve driver safety, and reduce the impacts of highways on wildlife populations. AVCs are reduced and driver safety improved by designing mitigations that perform well across Alberta.

The ability to evaluate the long-term performance of the AWW Program at a provincial scale is a key strength. This helps Alberta Transportation ensure the mitigation projects developed help support the overall provincial objectives and goals and demonstrates to the public actions taken to improve provincial highway safety. The AWW Program's provincial evaluation approach is outlined in Appendix H.

Alberta

ALBERTA WILDLIFE WATCH PROGRAM

APPENDIX H

AWW PROGRAM EVALUATION

AUGUST 2017

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AWW Program is designed to:

1. Identify AVC-prone locations (AVCPLs);

2. Provide high-quality data for effective decision making;

3. Develop departmental policy & standards; and

4. Allow for innovation and evaluate long term mitigation effectiveness.

High-quality data is collected using the AWW application[1]. Data analyses to identify and prioritize statistically significant AVCPLs are automatically performed on the AWW website tool[2]. Together, the AWW application and website tools support the decision-making process for AVC mitigation.

AVCPLs identified are prioritized for mitigation and evaluated for feasibility. Once approved for mitigation, Alberta Transportation's Terms of Reference for AVC mitigation projects outline the design and tender process including the development of an AVC Mitigation Plan. Alberta Transportation's mitigation standards and considerations are incorporated into planning and design to ensure each mitigation project contributes to the Program goals. Once a mitigation project is complete, the applicable mitigation construction reports and AVCPL records are stored and mapped in the Mitigation Data Repository. This builds an AVC mitigation inventory that is linked to the AWW data and AVCPL analyses (animal carcass data collected before and after the mitigation project) to facilitate mitigation performance monitoring. Its effectiveness at reducing AVCs is evaluated using standardized performance criteria.

Over time, standard performance of the overall AWW Program and provincial mitigations are evaluated to ensure continued alignment with the AWW Program's goals. Lessons learned from this long-term review influences Alberta Transportation's mitigation standards, construction and innovation, evaluation criteria, and all System components.

Figure 1 displays the AWW Program structure.

1 Smartphone application for iOS, Android, and BlackBerry devices.
[2] A modern browser, such as Chrome, is required for the website tool (Internet Explorer is not recommended).

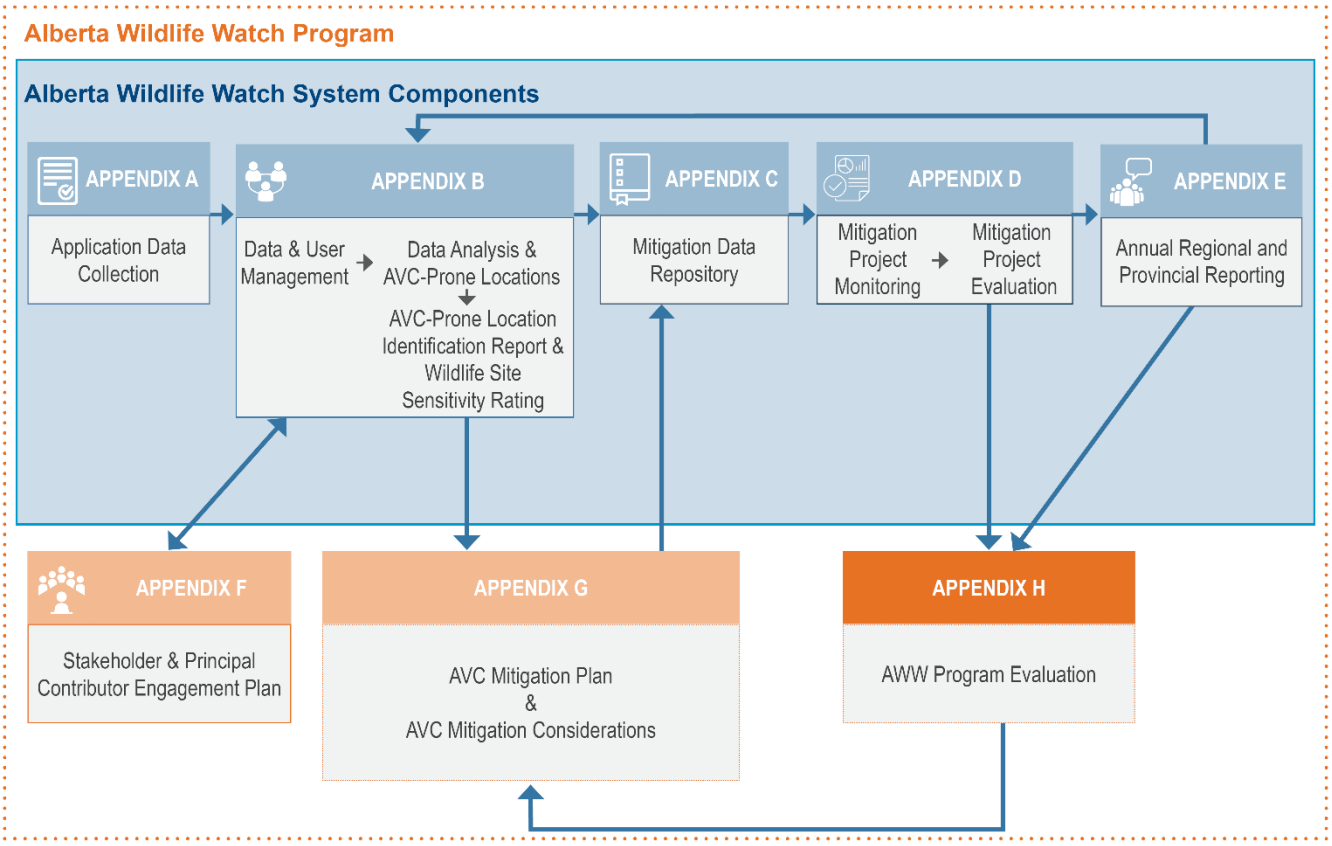


Figure 1: Alberta Wildlife Watch Program Structure

Appendix H: AWW Program Evaluation

1.0 INTRODUCTION

Alberta Wildlife Watch (AWW) Program is a comprehensive decision support tool to promote motorist safety and wildlife conservation across Alberta. It allows Alberta Transportation to collect, analyze, mitigate, and monitor animal-vehicle collisions (AVCs) and AVC mitigation efficiently and effectively over time (refer to Appendices A to G). It also includes a process for the long-term review of AVC mitigation at the provincial scale, as well as regular evaluation of the AWW Program itself as outlined in this Appendix.

The AWW Program evaluation is a high-level assessment of the AWW Program, and its AVC mitigation, to ensure progress is being made towards the Programs goals. This annual process supports adaptive management and modernization, when required, to the AWW Program. This includes making updates to AVC mitigation design considerations based on lessons learnt within Alberta and future innovations.

Results from the AWW Program evaluation are summarized in the annual AWW Provincial Report (refer to Appendix E).

2.0 USER ROLES AND RESPONSIBILITIES

System Administrators have the responsibility to complete the annual evaluation (Table 1). Feedback from the four additional AWW System users, **AWW Viewers, Principal Contributors, Project Users**, and **Regional Administrators** will be used to support and generate the ongoing improvements to the AWW Program.

Table 1: User Responsibilities for Provincial Review

User	Access Permission(s)	Provincial Review Responsibilities		
		Provide Feedback/Support	AWW Program Review	Provincial Mitigation Review
1. AWW Viewers	Website Tool	✓		
2. Principal Contributors	Application Tool	✓		
3. Project Users	Website Tool	✓		
4. Regional Administrators	Application & Website Tools	✓		
5. System Administrators	Website Tool	✓	✓	✓

2.1 System Administrators

System Administrators are responsible for the overall management and development of the AWW Program and its users, including the annual AWW Program evaluation. This role includes overall responsibility to modify and or replace existing AWW Program components and is restricted to Alberta Transportation staff. Responsibilities include assigning and managing AWW System users, consulting with stakeholders all AWW users for feedback, conducting the AWW Program and provincial mitigation reviews, and modernizing/updating the AWW Program components as required.

Additional System Administrator responsibilities for the AWW Program are outlined in Appendices A-G.

2.2 All Other AWW Users

All other AWW users, including **AWW Viewers, Principal Contributors, Project Users**, and **Regional Administrators** are responsible for consulting with the System Administrator annually during the annual evaluations and providing applicable feedback for improvements and or modernization. Feedback requests will be submitted to email addresses of the AWW Program registered users.

3.0 ANNUAL EVALUATION

Regular and consistent evaluation of the AWW Program ensures that it functions most efficiently and as intended. This also facilitates the development and or adaptive management of the AWW mitigation considerations to ensure it remains current with new technologies and policy updates.

Alberta Transportation implements a step-wise process for straightforward annual Program evaluations. This includes a high-level check on the main AWW Program components, consultation with stakeholders and Principal Contributors, Project Users, and Regional Administrators for opportunities to modernize/improve, and a process to modify existing components.

3.1 Alberta Wildlife Watch Program Evaluation

The AWW Program is a living resource. With regular evaluation, the AWW Program can most effectively meet the overall Programs goals.

The AWW Program evaluation is simple check-list of the main AWW Program components for review and discussion with the AWW users and Alberta Transportation stakeholders. Opportunities to improve key components of the AWW Program are highlighted. The AWW Program evaluation is provided as an attachment to the annual AWW Provincial report for Alberta Transportation's Executive Team's review and consideration (refer to Appendix E).

All major AWW Program components will be assessed, including:

1. AWW data collection (Appendix A);
2. Data & User Management (Appendix B);
3. Mitigation Data Repository (Appendix C);
4. Mitigation Project Monitoring and Evaluation (Appendix D);

5. AWW Annual Regional and Provincial Reporting (Appendix E);
6. Stakeholder and Principal Contributor Engagement Plan (Appendix F);
7. AVC Mitigation Planning and Design (Appendix G); and
8. The overall AWW Program Evaluation (this appendix).

3.2 Provincial Mitigation Review

The AWW Program supports mitigation and mitigation evaluation projects by 1) collecting accurate data (as outlined in Appendix A), 2) identifying and prioritizing areas requiring mitigation (Appendix B), 3) storing and managing mitigation data in the repository (Appendix C), and 4) monitoring and evaluating mitigation project performance (Appendix D). AVC Mitigation Project Evaluations, as outlined in Appendix D, are completed at the project scale (i.e., small spatial and short temporal scales).

In contrast, the Provincial Mitigation Review is a long-term performance evaluation of AVC mitigations at a provincial scale. For simplicity, it remains as a high-level check to be conducted once annually to evaluate if overall AVC mitigations are improving motorist safety across the province. The Provincial Mitigation Review is provided as an attachment to the annual AWW Provincial Report (refer to Appendix E).

Alberta Transportation is developing provincial performance measures to simplify this mitigation review. This includes an AWW Dashboard (refer to Appendix B) that provides a simple snapshot of these performance measures for easy provincial evaluation. Performance measures will include, but not limited to:

- a return on investment (e.g., percent reduction of AVC-related direct and indirect costs);
- provincial AVC-related human fatality and injury trends; and
- total number of provincial AVCs over time.

Alberta

Request for Decision

DATE OF MEETING: **September 6, 2022** **Agenda #:** H-3

TO: Council

SUBJECT: Labour Market Recruitment and Retention Strategy

SUBMITTED BY: Eleanor Miclette, Manager of Economic Development

RECOMMENDATION:

1. That Council approve a new 2022 capital project for Labour Market Recruitment and Retention Strategy in the amount of $100,000 funded from the Economic Development Reserve; and
2. That Council direct administration to apply for the Alberta Labour and Immigration Grant and if successful, apply the grant funding to the Labour Market Recruitment and Retention Strategy capital project.

EXECUTIVE SUMMARY

A Labour Market Recruitment and Retention Strategy was recommended as part of the Business Recovery Taskforce Report to Council which was approved for planning purposes. With rising challenges experienced by businesses in recruitment and retention mainly due to the global labour shortage, Administration is recommending that the Town prioritize this project. Grant funding is available through Alberta Labour and Immigration and can be applied towards this project upon successful application. This new capital project is coming to Council outside of the normal budgeting process to leverage the current possibility and availability of grant funding.

RELEVANT COUNCIL DIRECTION, POLICY, OR BYLAWS

257-2021 Moved by Mayor Krausert that Council accept the Business Recovery Taskforce Report for planning purposes.

DISCUSSION

As part of the Covid Response Plan for Economic Development in 2020, Council approved the creation of a temporary advisory group named the Business Recovery Taskforce to bring forward recommendations that would support the return to work, and businesses in their operations and recovery efforts. The recommendations also looked at future growth opportunities and ways to propel the community beyond recovery. On December 7, 2021, Council accepted the Business Recovery Taskforce for planning purposes.

As part of the recommendations made related to labour, the taskforce identified the need for the creation of a Labour Market Recruitment and Retention Strategy in anticipation of labour pressures. Since that time, Canmore has seen growing challenges related to labour within the business community that supersede the pre-pandemic labour pressures of 2019. Although labour challenges are not unique to Canmore, there are compounding challenges that impact the ability to attract employees and a new workforce that are unrelated

to the type of jobs offered within the community. The compounding challenges include elements such as housing, affordability, seasonality of work, and temporary foreign labour force.

As the competition for labour is increasing, having a solid understanding of Canmore's current labour market, and looking at best practices and strategies is growing in its importance.

Grant funding is available through Alberta Labour and Immigration. Administration has been encouraged to submit a grant application as soon as possible, rather than in 2023 as was originally planned. A Council motion in support of this project is required to submit a grant proposal.

A Labour Market Recruitment and Retention Strategy will provide accurate local data sets on current labour market including:

- job types per industry
- current labour composition including skills and training
- temporary foreign workers
- residency of the labour force (e.g., where are they travelling from)
- unemployment rate
- vacancy by type and industry
- areas of labour crunch vs labour surplus by NOCS codes
- how and where recruitment currently happens
- impact(s) of labour shortages on businesses (e.g., number of operational hours reduced due to lack of labour)
- anticipated areas of skill gaps
- income levels based on NOCS codes
- housing needs based on income level
- overview of available employee housing

Using the collected data, a strategy will be developed to look at elements such as:

- labour market recruitment and retention, including
    - hiring best practices
    - wage review in comparison to like communities
    - retention strategy
    - immigration and temporary foreign worker strategy
    - housing needs of the current and future labour force based on income levels
    - training and education needs

The Labour Market Recruitment and Retention Strategy will focus on a long-term strategic approach to labour market needs, growth, and sustainability, and it aligns with Council's strategic planning objectives related to livability and relationships.

Should Council wish to see examples of similar work from other communities, there are links in the attachments section of this report for the BC Tourism Labour Market Strategy, the Tri-Municipal Regional Labour Market Strategy and Action Plan, and the Fort McMurray Wood Buffalo Labour Study[1].

Analysis of Alternatives
N/A

Financial Impacts
The new 2022 capital project for Labour Market Recruitment and Retention Strategy is being requested for approval in the amount of $100,000 with funding coming from Economic Development Reserve. If successful, any grant funding received will be applied to the project and the amount contributed from the Reserve will be reduced. Should Administration be unsuccessful in obtaining grant funding, it is recommended that staff proceed with this capital project with funds from the Reserve. The projected balance in Economic Development Reserve as of December 31, 2022, will be approximately $703,000 excluding this project.

Stakeholder Engagement
External Stakeholders engaged and in support of this project moving forward are the Bow Valley Chamber of Commerce, Downtown Canmore BIA, BOWDA, Tourism Canmore Kananaskis, Bow Valley Immigration Partnership, Job Resource Centre, and Canmore Community Housing.

Internal Stakeholders identified: Community Social Development, Human Resources, and Planning.

Attachments

1. BC Tourism Labour Market Study
2. Tri Municipal Labour Market Strategy and Action Plan
3. Fort McMurray Wood Buffalo Labour Study

AUTHORIZATION

Submitted by:	Eleanor Miclette Manager of Economic Development	Date:	August 12, 2022
Approved by:	Palki Biswas Manager of Finance	Date:	August 17, 2022
Approved by:	Lisa Brown Acting General Manager Municipal Services	Date:	August 15, 2022
Approved by:	Sally Caudill Chief Administrative Officer	Date:	August 19, 2022

Request for Decision

DATE OF MEETING:	**September 6, 2022**	**Agenda #:**	H-4
TO:	Council		
SUBJECT:	Rescheduling September Committee of the Whole Meeting		
SUBMITTED BY:	Andrew Kelly, Assistant Municipal Clerk		
RECOMMENDATION:	That Council reschedule the September 20, 2022 Committee of the Whole meeting to September 27, 2022.		

EXECUTIVE SUMMARY

Administration recommends that Council approve a motion to reschedule the September 20, 2022 Committee of the Whole meeting to September 27, 2022 due to scheduling conflicts.

RELEVANT COUNCIL DIRECTION, POLICY, OR BYLAWS

At the Town's Annual Organizational Meeting on October 26, 2021, Council approved motion 234-2021 to schedule Committee of the Whole meetings for 2022. Rescheduling a Committee of the Whole meeting requires Council's approval.

DISCUSSION

On September 20, 2022, members of Council and administration are attending a funding announcement in Calgary and the Mid-Sized Cities Caucus of Alberta Municipalities in Cochrane, creating a scheduling conflict.

ANALYSIS OF ALTERNATIVES

N/A

FINANCIAL IMPACTS

N/A

STAKEHOLDER ENGAGEMENT

Following approval of the motion, the meeting invitation to administration and Council will be updated. Administration will update the Town's advertising and website to reflect this change.

ATTACHMENTS

N/A

AUTHORIZATION

Submitted by:	Andrew Kelly Assistant Municipal Clerk	Date:	August 19, 2022
Approved by:	Sally Caudill Chief Administrative Officer	Date:	August 19, 2022

Request for Decision

DATE OF MEETING:	**September 6, 2022**	**Agenda #:** H-5
TO:	Council	
SUBJECT:	PL20210015 - The Gateway at Three Sisters Subdivision: Endorsement Extension	
SUBMITTED BY:	Riley Welden, Development Planner	
RECOMMENDATION:	That Council grant an extension for the endorsement of PL20210015 to November 1, 2024.	

EXECUTIVE SUMMARY

The Town's primary Subdivision Approval Authority approved PL20210015 (known as The Gateway at Three Sisters Subdivision) on October 5, 2021 for the creation of 18 commercial lots and the necessary road access . The Municipal Government Act (MGA) requires endorsement of the subdivision within one-year of the approval unless an extension is granted by Council. The applicant is requesting an extension for the plan of subdivision to be endorsed to November 1, 2024.

RELEVANT COUNCIL DIRECTION, POLICY, OR BYLAWS

Section 657(1) of the MGA requires a plan of subdivision be endorsed within one year of the approval. Section 657(6) allows a Council to grant an extension to the one-year period.

DISCUSSION

The Subdivision Authority approved PL20210015 for the subdivision of Lots 3, 4, 5, Block 18, Plan 0812528 and Lot 1, Block 19, Plan 1510968 (Attachment 1 – Approved Tentative Plan of Subdivision). The subdivision will create 1 multi-unit residential lot, 10 lots for commercial development, municipal and environmental reserve lots, public utility lots, and a new public road to provide access to the lots. The conditions of approval are provided in Attachment 2 – Unratified Extract. The approval was granted on October 5, 2021.

The applicant and their consultants have been preparing detailed engineering drawings for Town approval prior to commencing construction of municipal infrastructure (i.e. utilities and roads). These drawings are progressing and should be ready for approval shortly. Following the approval of detailed engineering drawings, the developer and the Town will enter into a Development Agreement, pursuant to Section 655(1) of the Act, which will allow the developer to commence construction.

In accordance with approved conditions of subdivision, the developer is required to substantially complete construction of the 'turbo' roundabout, principal commercial street and secondary access road, and water and sanitary services prior to endorsement of the subdivision. Substantial construction of the required municipal improvements is estimated to take two construction seasons and therefore cannot be completed prior to the one-year deadline for endorsement. This will require an extension to the one-year endorsement period. Administration supports Council granting the extension.

ANALYSIS OF ALTERNATIVES

Council could defeat the extension request. Administration does not recommend this because under section 657(5) of the MGA, the subdivision approval of the plan would be void and the applicant would not be able to register the subdivision at Land Titles past October 13, 2021.

Council could make a motion to delegate its authority to grant subdivision extensions to Administration. Doing so would remove these minor administrative matters from Council agendas, expedite these requests for applicants and allow Administration to seamlessly continue subsequent subdivision processes. Administration would be in support, if this was a direction Council wanted to pursue. The motion for this would be:

> That Council approve that the authority to grant extensions to the periods of time referred to in Section 657(1) and 657(5) of the Municipal Government Act of as provided by Section 657(6) of the Act is hereby delegated to the subdivision authority established under this Bylaw.

FINANCIAL IMPACTS

None.

STAKEHOLDER ENGAGEMENT

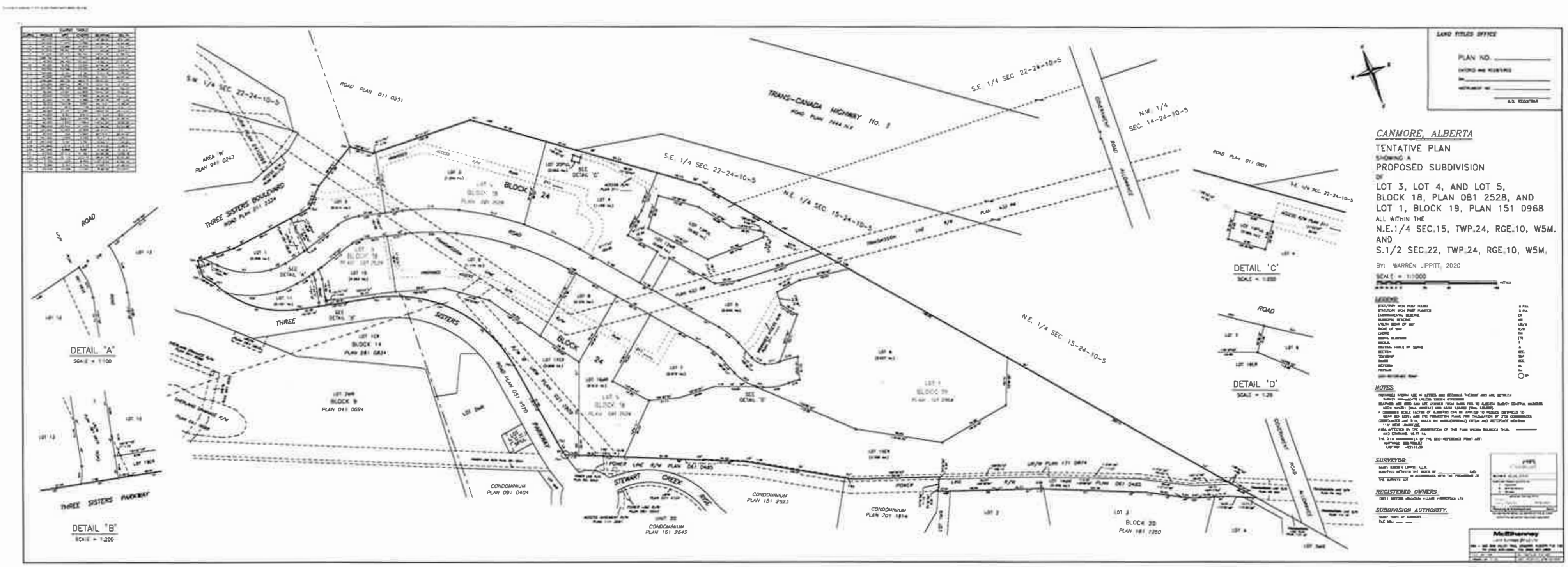
None. The subdivision application was circulated on April 1, 2021 in accordance with Section 653(3) of the Act.

ATTACHMENTS

1. Approved Tentative Plan of Subdivision
2. PL20210015 - Unratified Extract

AUTHORIZATION

Submitted by:	Riley Welden, RPP, MCIP Development Planner	Date:	August 15, 2022
Approved by:	Lauren Miller A/General Manager of Municipal Infrastructure	Date	August 19, 2022
Approved by:	Sally Caudill Chief Administrative Officer	Date:	August 20, 2022


LAND TITLES OFFICE
PLAN NO.
CANMORE, ALBERTA
TENTATIVE PLAN
SHOWING A
PROPOSED SUBDIVISION
OF
LOT 3, LOT 4, AND LOT 5,
BLOCK 18, PLAN 081 2528, AND
LOT 1, BLOCK 19, PLAN 151 0968
ALL WITHIN THE
N.E.1/4 SEC.15, TWP.24, RGE.10, W5M.
AND
S.1/2 SEC.22, TWP.24, RGE.10, W5M.
BY: WARREN LIPPITT, 2020
LEGEND:
NOTES:
SURVEYOR:
REGISTERED OWNERS
SUBDIVISION AUTHORITY
TRANS-CANADA HIGHWAY No. 1
S.E. 1/4 SEC. 22-24-10-5
S.W. 1/4 SEC. 22-24-10-5
N.E. 1/4 SEC. 15-24-10-5
N.W. 1/4 SEC. 14-24-10-5
THREE SISTERS BOULEVARD
THREE SISTERS PARKWAY
BLOCK 24
DETAIL 'A'
DETAIL 'B'
DETAIL 'C'
DETAIL 'D'
CONDOMINIUM PLAN 091 0404
CONDOMINIUM PLAN 151 2623
CONDOMINIUM PLAN 701 1814
CONDOMINIUM PLAN 151 2543
BLOCK 20 PLAN 161 1350
STEWART CREEK
BLOCK 9 PLAN 041 0024
BLOCK 14 PLAN 081 0824

Unratified Extract of the Subdivision Authority Decision of October 5, 2021, Sent Out October 7, 2021.

Gateway at Three Sisters Mountain Village Subdivision of Lots 3, 4, 5, Block 18, Plan 0812528 and Lot 1, Block 19, Plan 1510968 into 1 multi-family residential lot, 10 commercial lots, municipal and environmental reserve lots, public utility lots and roads 1.– PL20210015

The Subdivision Approving Authority has approved application **PL20210015** subject to the conditions in Schedule A:

Schedule A: Conditions of Approval

1. All conditions of this Subdivision Approval are to be carried out by the developer to the sole satisfaction and in the sole and absolute discretion of the Town of Canmore unless otherwise indicated in these conditions of approval.
2. The Subdivision shall be effected by registered Plan of Survey. The final Plan of Survey submitted for endorsement shall identify all Environmental Reserves (ER), Municipal Reserves (MR), Public Utility Lots (PUL) and the locations of all rights-of-way required to be registered on title under these conditions of subdivision approval.
3. Prior to construction of municipal services and infrastructure, the Developer shall enter into a Subdivision Servicing Agreement pursuant to Section 655 of the Municipal Government Act (the "Agreement") to contain among other things:
    a. The construction, at the Developer's sole cost, of all roads, water, sanitary, storm systems, pathways, and landscaping as needed to service the subdivision, including the construction of off-site turbo roundabout to provide access to the subdivision; and
    b. The provision of securities for the performance of the Developer's obligations under the Agreement in a form and amount acceptable to the Town to be paid at execution of the Agreement.
4. Prior to submitting detailed design the developer shall prepare and have approved a Transportation Impact Assessment prepared by a qualified professional for the subject site that reflects currently approved land uses and densities (i.e. DC1-98 & Resort Centre ASP). The 2020 Global Transportation Impact Assessment can be used as a reference if the unit counts and trip generations can be demonstrated to be approximately equivalent to currently approved land uses and densities.
5. Prior to construction of municipal services and infrastructure, the developer shall submit and have approved detailed engineering drawings prepared by a qualified professional in accordance with the Integrated Transportation Plan, Open Space and Trails Plan and Engineering Design and Construction Guidelines, including roads, water, sanitary, storm water, solid waste, transit facilities, pathways, signage and pavement markings, lighting and shallow utilities. The detailed engineering drawings shall include an Erosion and Sediment Control Plan prepared by a qualified professional in accordance with City of Calgary standards. The design and construction methods must be in accordance with the recommendations of the McIntosh Lalani Ltd. geotechnical report or their recommendations during construction.
6. The developer shall:

a. prepare and have approved by the Town of Canmore detailed engineering drawings for the off-site turbo roundabout;

b. prepare a VISSIM simulation with the detailed engineering design; and

c. submit a roadside development permit to Alberta Transportation for approval of the roundabout on behalf of the Town of Canmore

7. The developer shall provide detailed engineering drawings for all off-site pedestrian crosswalks and pathways around the entire turbo roundabout to the satisfaction of the Town of Canmore prior to submission to Alberta Transportation. The developer shall construct all improvements as identified in the engineering drawings approved by Alberta Transportation.

8. The detailed engineering drawings referenced in #5 shall include a Development Grading Plan prepared by a qualified professional. The grading plan shall be based on ground surveys of the existing site conditions and contain:

    a. original grades and design grades;

    b. building grade information for proposed lots;

    c. all cut and/or fill areas exceeding 1.0 metre will be identified using a colored or shaded gradation by depth;

    d. surface drainage patterns within and adjacent to the subdivision;

    e. driveway locations for each lot;

    f. and all underground utility service stubs to be shown.

    Where overland flow is required to be directed over and across adjacent parcels, easements are required to be prepared and registered concurrent with plan of subdivision.

9. The developer shall submit a Steep Creek Hazard study prepared by a qualified professional. The developer shall demonstrate that the recommendations of the study are incorporated in the detailed design.

10. The developer shall submit detailed engineering drawings of the principal commercial street prepared by a qualified professional as conceptually shown in the application submission. The design shall meet the following criteria at a minimum:

    a. In the locations where the Transportation Impact Assessment prepared by WSP recommends all-way stops, the bend-out pathway configuration shall be removed; Snow storage must be accommodated in the road ROW at intersections and driveways to a similar extent to comparable facilities in the EDGC The design of pathway crossings at intersections and driveways should meet the Town Engineering Design and Construction Guidelines, acknowledging that the EDCG may not have detailed specifications on this subdivision road cross sections or design. Placement of streetlights, planting and furnishings between bike path and sidewalk must facilitate the storage of snow from the vehicular travel lanes and bike path by being placed closer to the sidewalk.

    b. The number of driveways onto the principal commercial street must be minimized to reduce conflict points with pedestrian and cyclists.

    c. Proposed access must be shown for 'Lot 11' (as identified in the submitted Tentative Plan of Subdivision).

    d. A swept path analysis shall be provided (WB-20) for each of the intersections and commercial access point within the subdivision area.

e. The roadway alignment and/or location of commercial accesses along the principal commercial street shall be adjusted where a bypass for the through lane has been added to accommodate left turns, to the satisfaction of the Town.

f. Pathway crossing locations to account for desire lines and connections to external pathways and transit stops.

g. Raised crossing design must be updated to include adequate width and pavement markings for shared-use by pedestrians and cyclists.

h. Regular level landing areas shall be provided in the space between sidewalk and bike path for sections of roadway that have a longitudinal grade of 5% of higher.

i. Pedestrian-level lighting shall be provided within the cross-section.

11. The developer shall submit detailed engineering drawings of the secondary access road prepared by a qualified professional. The design shall meet the following criteria at a minimum:

    a. The intersection with the principal commercial street to meet at a 90-degree angle.

    b. A collector road right-of-way must be dedicated to provide walking, cycling and transit connectivity.

    c. Street lighting must be provided in accordance with the Engineering Design and Construction Guidelines.

    d. The right -of-way width referenced in (b) above must be level. No retaining walls will be permitted within the road right-of-way.

12. Transit facilities (including shelter, bike racks, waste and recycling receptacles and pedestrian-level lighting) and transit lay-by area shall be included in the detailed design drawings.

13. Private utilities shall be designed to not be located within Town utility rights-of-way for water, sanitary or storm mains.

14. The developer shall design the sanitary system with all new public sanitary mains to be located on public lands, such as road or PUL. Specifically, the section near the sanitary gravity and force mains from the lift station to the road shall be addressed.

15. The developer shall submit detailed engineering drawings of the sanitary lift station that adhere to the specifications of the Engineering Design and Construction Guidelines, the City of Calgary "Wastewater Lift Station Design Guidelines' and the EPCOR specifications provided to the applicant on March 3 2020.

16. The developer shall design the water system with all new public water mains to be located on public lands, such as road or PUL. Specifically, the loop through 'Lots 3 and 4' (as identified in the Tentative Plan of Subdivision) must be removed and the design changed to private service line stubs.

17. The developer shall demonstrate that the water distribution system design is adequately looped for redundancy. The watermain connection to Stewart Creek Phase 3 should be designed to follow the pathway alignment to minimize disturbance, where practical and feasible.

18. The developer shall design the stormwater system to direct any stormwater collected on individual titled lots to the public stormwater mains in the principal commercial street with suitable water quality pre-treatment prior to discharge to the public mains. Private storm water pipes shall not traverse through adjacent lots.

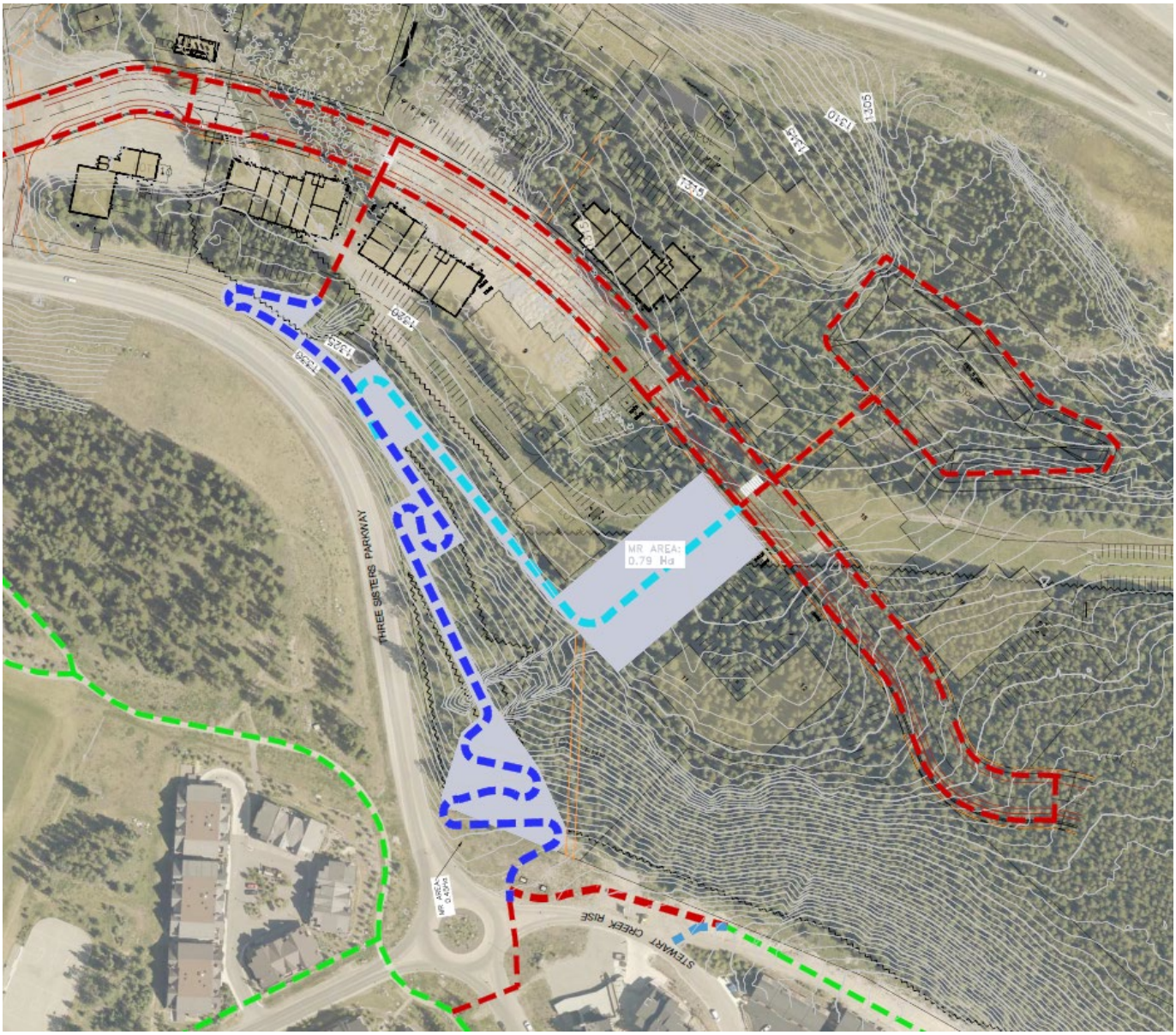
19. As part of the detailed engineering design drawings, the developer shall submit an updated Technical Memorandum addressing the storm pond design required to reduce ponding depth or to manage any

consequences of ponding at a depth exceeding 1.5m and shall incorporate any recommendations from the Technical memorandum into the detailed engineering design drawings. Concurrent with the detailed engineering design submission, the developer shall submit an analysis of the frequency of ponding exceeding 100mm in the storm pond, along with an assessment of potential impacts to downstream water quality should the pond be proposed for use as a dog park.

20. The developer shall submit detailed engineering drawings of the emergency access prepared by a qualified professional in accordance with the Engineering Design and Construction Guidelines. The emergency access shall be designed for all-seasons access by emergency vehicles. The developer must prepare an access right-of-way and maintenance agreement for the emergency access to the satisfaction of the Town of Canmore, which shall be registered concurrent with the plan of subdivision.
21. The developer shall liaise with the shallow utility providers to determine their requirements for maintenance and expansion of the shallow utilities and to incorporate these requirements into the detailed engineering design.
22. The developer shall design and construct, as conceptually shown in Figure 1:
    a. a 3.5 m asphalt pathway connecting from the existing pathways at the Stewart Creek roundabout along the general alignment of existing URW Plan 021 2809, to the principal commercial street.
    b. a 3.5 m asphalt pathway connecting to the pathway in (a) above to a location further southeast along the principal commercial street, connecting to the stormwater pond trail.
    c. A gravel trail around the stormwater pond.

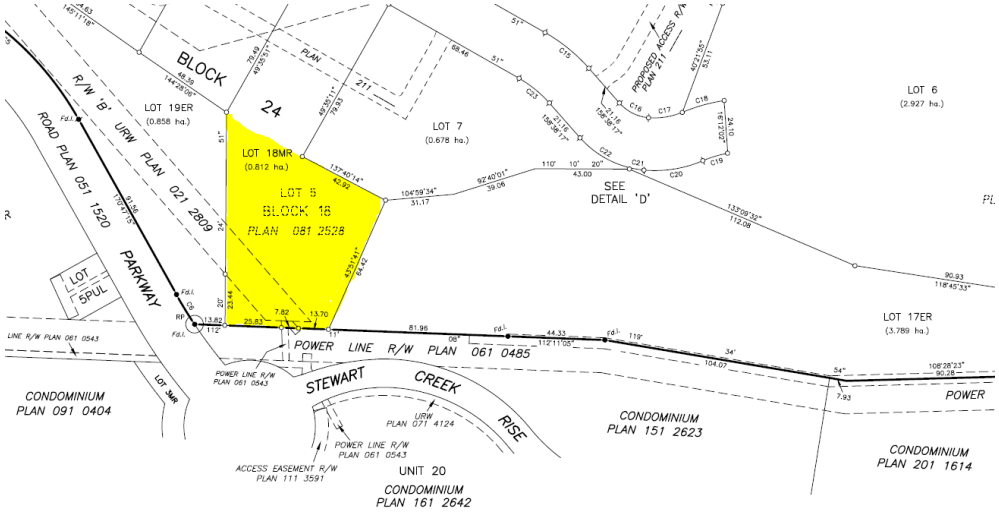
If during the detailed design process the developer proposes an alternative alignment for the pathways in (a) and (b) which satisfies the Town's EDCG and the design criteria in condition #23, it may be considered for acceptance by the Town of Canmore.

Figure 1.



23. The design of pathways in Condition #22 shall meet the following criteria:
    a. accommodate maintenance by snow-clearing equipment;
    b. avoid being aligned in such proximity to Three Sisters Parkway that roadway snow clearing equipment will throw snow onto people using the trail system below;
    c. include regular level landing areas adjacent to the pathways where longitudinal grade exceeds 5%; and
    d. include pedestrian level lighting.
24. A Landscaping Plan shall be prepared by a qualified professional in accordance with the Engineering Design and Construction Guidelines. The Landscaping Plan shall show all proposed Municipal Reserve, public utility lots, utility rights-of-way, boulevards, medians, pathways and trails.
25. Prior to construction of municipal services and infrastructure, a Construction Management Plan, prepared by a qualified professional shall be submitted to the satisfaction of the Town of Canmore.
26. The detailed engineering drawings shall identify the location and details of the street lighting to be provided by the developer. The developer shall construct the street lighting at its own expense.
27. Prior to endorsement of the Plan of Survey, the developer shall have accepted CCC for the water and sanitary systems, the principal commercial street and secondary access road needed to service the subdivision in accordance with the approved detailed engineering drawings.
28. The developer shall grade the subdivision area and construct all stormwater conveyance systems in accordance with the approved detailed engineering drawings and Stormwater Management plan to ensure proper stormwater management. At or before the FAC stage, the developer shall provide the Town with any plans or maintenance documentation of the stormwater management facilities not already in the possession of the Town of Canmore, where required by the Town of Canmore at the CCC stage.
29. Any slopes resulting from grading of this subdivision that exceed 1:3 shall require slope stability confirmation from a qualified engineer. Any retaining walls resulting from grading of this subdivision that exceed 1m shall be designed and certified by a qualified engineer.
30. The developer shall install all transit facilities, traffic and road signs in accordance with the approved detailed engineering drawings.
31. The developer shall prepare the necessary plans and documentation to grant new or amend existing easements in favour of shallow utility service providers, including but not limited to telephone, cable, electricity and natural gas, as approved on the detailed engineering drawings. All required easements shall be registered concurrent with the plan of subdivision.
32. The boundary of Lot 16MR as shown on the submitted Tentative Plan of Subdivision shall be adjusted to adequately consider steep and unstable slope conditions. The approximate 0.5 hectare area of steep and unstable land as shown in Figure 2 shall be designated Environmental Reserve (ER).

Figure 2



33. Prior to endorsement, the developer shall have prepared by a qualified professional a geotechnical investigation of the slopes within and adjacent to Lot 14MR. The report should address slope stability and methods for slope stabilization where required. The Town may require the boundary of the proposed Lot 14MR and Lot 15ER to be adjusted to accommodate for identified unstable slopes. The developer shall construct any recommended mitigations to stabilize the slopes and trail.
34. The developer shall provide 10% of the calculated developable area of lands as Municipal Reserve to the satisfaction of the Town. The approximate area of Municipal Reserve lands shall be equal to approximately 1.3 hectares. The Municipal Reserve dedication must include:
    a. 0.2 hectare deferred reserve caveat to be registered on title of Lot 6, Block 24.
    b. 0.196 hectares of a portion of Lot 12MR, Block 24, and up to 0.32 hectares if the developer proposes to use the storm pond for a dog park and can provide engineering evidence of the storm facility being acceptable for a dog park use. Only those lands less than 5:1 slope will be accepted as MR within the lot identified as Lot 12, Block 24.
    c. 0.203 hectares for portions of Lot 14MR, Block 24 which are less than 5:1 slope and are not deemed unstable lands in the geotechnical report required pursuant to #32.
    d. 0.32 hectares for areas within Lot 16MR that do not qualify as Environmental Reserve, for passive park or pathway connections.
    e. 0.4 hectares minimum for an off-leash dog park, in a location deemed suitable at the discretion of the Town, if (b) above cannot be met.
    f. Other outstanding MR requirements must be used for pathway connections and local passive parks.
35. Prior to endorsement of the Plan of Survey, Substantial Performance or equivalent for the turbo roundabout shall have been issued by Alberta Transportation.
36. Prior to endorsement, the developer shall prepare a Restrictive Covenant for applicable development setbacks to steep slopes in accordance with the McIntosh Lalani Engineering Ltd. geotechnical investigation, or for any lots noted in a subsequent investigation undertaken as a condition of this

approval at detailed design. The Town of Canmore must be a party to the Restrictive Covenant indicating it cannot be discharged without the Town's consent and the covenant shall be registered concurrent with the plan of subdivision.

37. Prior to endorsement, payment of all third-party costs incurred by the Town in reviewing all engineering, environmental, legal, planning documents and information submitted by the applicant.
38. Prior to endorsement, all outstanding taxes to be paid to the Town pursuant to Section 654 of the Municipal Government Act.
39. Prior to endorsement, the developer shall prepare an easement or other such agreement for the proposed snow storage area on Lot 7 for use by Lots 1 through 11, Block 24 as identified on the drawings submitted in the application. The easement must be registered concurrent with the plan of subdivision.
40. Prior to endorsement, the developer shall prepare any access rights-of-way or easements, or utility rights-of-ways where deemed necessary by the Town for public infrastructure or public access for registration concurrent with the plan of subdivision.
41. Prior to endorsement, the developer shall prepare shared driveway access easements, where required. The easements must be registered concurrent with the plan of subdivision.
42. The developer shall provide for community mailboxes in accordance with the specifications provided by Canada Post in a location determined in consultation with Canada Post.

Advisory Comments

The developer is encouraged to consider engaging with the Stoney Nakoda Nation to establish Indigenous Street names.

Reasons for Decision:

1. The proposed subdivision is in general conformance with the Stewart Creek Area Structure Plan.
2. The proposed use of the subject lands is compatible with adjacent uses.
3. Access to the proposed lots will be adequate and from public roads.
4. The proposed parcels will be served by municipal services.
5. The topography and soil characteristics are appropriate for development.
6. Impacts of flooding, subsidence, or erosion of land can be adequately mitigated.
7. Stormwater collection and disposal is adequate.
8. The subject land is suitable for the purposes for which the subdivision is intended.
9. Adequate municipal reserve is provided by way of dedication and deferred reserve caveat as required in the conditions of subdivision.

Briefing

DATE OF MEETING:	**September 6, 2022**	**Agenda #:** I-1
TO:	Council	
SUBJECT:	Canmore Community Monitoring Program	
SUBMITTED BY:	Lisa Brown, Manager of Community Social Development (CSD)	
PURPOSE:	To provide Council with an overview of the new web-based Canmore Community Monitoring Program.	

EXECUTIVE SUMMARY

Administration engaged the services of WCS engagement + planning (WCS) to review Canmore's Community Monitoring Report and provide recommendations on the report layout and format. In June 2021, Council approved the Community Monitoring Review and Recommendation Report for planning purposes and requested that Administration report to Council with options for a web-based monitoring report. As part of the 2022 operating budget, Council approved the creation of an Arc-GIS web-based monitoring report. Administration has worked with the WCS to create two web-based monitoring websites. One website that depicts progress towards Council's 2018-2022 Strategic Business Plan, and one that depicts data that profiles the Town of Canmore.

For Council's review and consideration, Community Social Development (CSD) will include expenses in the 2023 and 2024 budget to align the Community Monitoring program with the 2023-2026 Council Strategic Plan and to incorporate department-level indicators, Key Performance Indicators (KPI), and benchmarking data into the program.

RELEVANT COUNCIL DIRECTION, POLICY, OR BYLAWS

April 7, 2020: 87-2020 - That Council accept the Biosphere Institute's proposal to reallocate funding for the Canmore Community Monitoring Report (CCMR) in 2020 towards conducting a comprehensive review and recommendation for the future direction of the report by the end of the calendar year.

November 17, 2020 - Administration updated Council that the Biosphere Institute no longer has the capacity to complete the CCMR review, and that a new consultant would be selected following the Town's procurement process.

February 23, 2021 - WCS engagement + planning, the selected consultant, led a Council workshop to guide the direction of the CCMR review.

June 1, 2021 - Dan Wilson, Community Planning and Monitoring Specialist, WCS engagement + planning, provided Council with a synopsis of the review process of the Canmore Community Monitoring Report. Council approved these recommendations after his review:

> 146-2021 Moved by Mayor Borrowman that Council accepts the Canmore Community Monitoring Review and Recommendation Report for planning purposes.

147-2021 Moved by Mayor Borrowman that Council direct Administration to report back with options for a web-based monitoring program as outlined in the Canmore Community Monitoring Review and Recommendation Report.

November 16, 2021 - Administration updated Council on an outline for a web-based community monitoring report to be included in the 2022 operating budget for Council's review and approval.

BACKGROUND/HISTORY

The Town of Canmore's Community Monitoring program began in 1995 based on recommendations from the Growth Management Strategy. As the monitoring program evolved to meet community need, the resulting report grew from a 32-page threshold and monitoring report to a 288-page compendium of data, which included detailed department, organization, and community-level information.

The Town then engaged WCS to review the monitoring program and provide recommendations for a new report that is concise, informative, and easy to navigate. In June 2021, Administration presented WCS's Review and Recommendation Report to Council. This report recommended a collection of community-level indicators related to Council's 2018 Strategic Business plan, as well as potential structural and characteristic changes. Based on the recommendation report, Council directed Administration to explore a web-based community monitoring program.

WCS has created a monitoring program, and with the support of Peak Geo-Spatial, two Arc-GIS web-based reports:

1). Progress report, that highlights community-level indicators related to Council's 2018 Strategic Business Plan (See Attachment 1)

2) Profile report, that highlights community-level indicators to provide context and background information (See Attachment 2)

The Arc-GIS platform was selected because the Town currently has a license for this platform, and there is no additional cost for hosting the Community Monitoring program. In addition, a data collection methodology document was included in the WCS contract deliverables so that the Town has the option to bring data collection and website updating in-house.

DISCUSSION

A comprehensive community monitoring report that links municipal actions to longer-term strategic goals helps the "*community understand the value of a strong public service*" (2023-2026 Council Strategic Plan). The Canmore Community Monitoring websites are easy to navigate web-based platforms with the potential to links department/organization outputs to Council's business goals, and to help tell the story of how municipal action supports a longer-term community vision.

Presently, each department independently collects information to support and inform their projects and workplans. There is currently no mechanism to strategically link key department outputs or indicators to a community-level strategy. In addition, the Town currently has no way to assess if the municipal actions that are taken are moving towards the community-level strategic goals. There is potential for the Community Monitoring program to evolve to be part of a system of corporate/organizational monitoring where department plans are developed based on community-level indicators, and community-level strategic results are measured or evaluated based on department-level indicators.

As part of Community Social Development's 2023 and 2024 operating budget, there is potential to adapt and expand the Community Monitoring program to meet two key objectives over the two years as shown below: 1) To create a municipal web-based monitoring system; and 2) To highlight emerging community trends.

Proposed 2023 Operating Plan:

1) Reorganize monitoring webpages to align with 2023-2026 Council Strategic Plan
2) Collect 2023 data and update methodology data collection guide
3) Select department-level indicators and support department leads with selecting Key Performance Indicators (KPIs)
4) Expand Community Profile website to include additional benchmarking information on selected 'Profile Indicators'

Proposed 2024 Operating Plan:

1) Determine 'Progress Indicator' targets and incorporate targets into the website
2) Evaluate monitoring program
3) Move data collection and website updating in-house

FINANCIAL IMPACTS

Historically, approximately $20,000 per year in funding was allocated to the Canmore Community Monitoring Report program, and a report was released every two years.

In 2021, $20,000 was used to evaluate the monitoring program and a Review and Recommendation Report was created. In 2022, a total of $32,000 is budgeted for the creation of a web-based monitoring program, as outlined in the council-approved Review and Recommendation Report.

The 2023 and 2024 workplan is outlined in the Council-approved Review and Recommendation Report. The budget is based on quote from WCS. A total of approximately $70,000, over the two years which includes: $55,000 for 2023, and $15,000 for 2024 will be included in the proposed budget. This budget does not include funding for in-house staffing related to collecting indicator data and updating the Profile and Progress websites, starting in 2024. CSD department will also request a Community Evaluator position (1.0 full-time equivalent) whose portfolio will incorporate data collection and website updating as part of the 2023-2024 budget process.

STAKEHOLDER ENGAGEMENT

All Managers along with key the Town's internal stakeholders who either use or contribute to the Community Monitoring Program were consulted. WCS also connected with external stakeholders including Biosphere Institute, Green Analytics, Banff Canmore Community Foundation, Bow Valley Immigration Partnership, and the Rocky Mountain Outlook.

Administration consulted with the Planning, Engineering and Communication Departments on potential future next steps.

ATTACHMENTS

1. Canmore CCMR (arcgis.com)
2. Canmore Community Profile (arcgis.com)

AUTHORIZATION

Submitted by:	Lisa Brown Manager of CSD	Date:	August 14, 202
Approved by:	Palki Biswas Manager of Finance	Date:	August 18, 2022
Approved by:	Sally Caudill Chief Administrative Officer	Date:	August 19, 2022