



STAFF REPORT

Title: Wildfire Exposure Assessment

Meeting Date: November 19, 2024

Executive Summary:

The City of Cold Lake received a Wildfire Exposure Assessment, commissioned for the City via Cold Lake Fire-Rescue Fire Chief Jeff Fallow and Deputy Fire Chief Hugh McKay. The assessment was submitted to the City in May of 2024, and presented to the Emergency Management Agency meeting held on October 30, 2024.

The overall exposure to wildfires in the community is generally low with the greatest exposures generally found to be in the southwest areas of the City of Cold Lake. The report notes that vegetation management is the primary means of mitigation available to communities seeking to lower the risk of wildfires.

The report used satellite imagery from September 2023 to assess the exposure of over 14,300 commercial and residential structures to hazards associated with wildfires, as well as classifying the areas in and around the city as high, moderate, low or no risk for wildfire behaviour, or the potential for a wildfire in the area to take hold and grow.

Structures are assessed for wildfire exposure across three (3) main categories:

- 1) Exposure due to radiant heat. Radiant heat can damage or ignite structures without direct flame contact and is determined with fuel sources from 0 to 30 metres from a structure. (86.7% of structures in Cold Lake considered to be low exposure)
- 2) Exposure due to short-range spotting. This occurs when embers are carried by the fire or wind to areas close to the fire's perimeter. This is assessed at a range of 0 – 100 meters from each structure. (65.3% of structures in Cold Lake considered to be low exposure)
- 3) Exposure due to long-range spotting. This occurs when embers are carried a significant distance by the wind, and is assessed at a range of 100 to 500 metres. (22.6% of structures in Cold Lake considered to be low exposure)

The report is attached for the Committee's reference.

Background:



The Wildfire Exposure Report considered over 14,300 residential and commercial structures within the City and assessed their risk of exposure to wildfires within the City and the surrounding area, using satellite imagery captured at a resolution of 0.3m in September 2023.

The report analyzed Alberta Wildfire data to determine that 136 wildfires have been documented within 10 kilometres of the City of Cold Lake from 1961 to 2023. The vast majority of these – 95.5%, or 130 instances – have been due to human activity either in industry or outdoor recreation and leisure, with the remaining 4.5% or 6 instances of wildfire ignitions due to lightning strikes.

There are an average of 2 to 3 wildfire ignitions in this area each year.

Generally speaking, the areas of greatest concerns for high-risk fire behaviour are coniferous forests, followed by unmanaged grasslands and then deciduous forests with a significant amount of underbrush (p. 10).

Alternatives:

- This report is presented for the Committee's information and discussion.

Recommended Action:

That the Committee of Council accept the 2024 Wildfire Exposure Report as information.

Budget Implications (Yes or No):

No.

Submitted by:

Kevin Nagoya, Chief Administrative Officer