DATE:	May 17, 2024
TO:	MAYOR AND COUNCIL
NAME AND TITLE:	Eric Depenau, Acting Director of Administrative Services
SUBJECT:	Simon Fraser University – Wildfire Study
ATTACHMENT(S):	Draft Support Letter - Environment and Infrastructure Wildfire Risk Assessment (EIWA) project.

RECOMMENDATION(S):

THAT Council AGREE to be a community partner to the SFU Environment and Infrastructure Wildfire Risk Assessment (EIWA) project as outlined in the report dated May 17, 2024, titled "Simon Fraser University – Wildfire Study", and that Council supply a support letter to this effect substantially in the form of the draft letter attached to the report.

PURPOSE:

The following report is provided to share an opportunity to partner with Simon Fraser University on a wildfire study known as the Environment and Infrastructure Wildfire Risk Assessment (EIWA) project.

BACKGROUND:

Simon Fraser University (SFU) is seeking a community partner to co-create a comprehensive wildfire assessment tool. Staff have had contact with members of the SFU School of Resource and Environmental Management around this opportunity, and the following text outlines the project in more detail. It is important to note that this project is in the initial phases and may not progress, separate from any decision of Council.

From the SFU School of Resource and Environmental Management:

The "Environment and Infrastructure Wildfire Risk Assessment (EIWA)" project seeks to learn from community experiences to mitigate wildfire threats to human health and infrastructure. Our team will develop an innovative open-source Physics-Informed Neural Network (PINN) modeling tool to conduct a holistic wildfire risk assessment, generate mitigation solutions, and identify resources for wildfire resilience.

Wildfires introduce heat and fire-related chemicals, which alter local meteorology, impact air quality, and put grid resiliency at risk, to the significant detriment of public health and safety. A comprehensive approach to fire modeling that accounts for these changes enables indoor and outdoor air quality shifts and grid resilience to be predicted and addressed in the context of broader,

wildfire-induced climatic alterations. This integrated approach is critical for safeguarding lives and the environment.

Current wildfire modeling tools face limitations in their design that prevent a holistic approach to predictive assessment, mitigation, and resource distribution. Fire behavior and smoke modeling, and integrated models in next-generation smoke research and forecasting systems will improve evacuation strategies and health advisories, and contribute to more robust power grid management in anticipation of fire-induced disruptions. PINN addresses these multifaceted challenges through an integrated modeling approach that captures the full scope of wildfire impacts.
As an integrated tool, PINN will provide essential data for policymakers and planners, which will enable the development of more effective land use policies, building codes, and emergency preparedness plans. Public health will be able to provide more timely advisories and actions to protect against poor air quality and other health risks. Strategic infrastructure protection will become more feasible, with targeted measures to safeguard essential services and minimize disruptions.

Staff believe supporting academia in projects such as this is generally a low barrier and cost-effective option to develop new understanding and explore issues pertinent to the City. Specific support proposed to be offered to this project is:

> 1. Provision of Data: Provide available data, as appropriate, regarding the City's residential and industrial infrastructure, which will support assessment of vulnerabilities and planning mitigation strategies.
>
> 2. Community Engagement: Utilizing the City's established networks to help facilitate connections with communities that may have a higher risk, which will support ensuring that those communities are heard and have their experiences included in the wildfire risk assessment process.
>
> 3. Co-Creation Workshop Hosting: The City, pending availability, will help to host and support co-creation workshops that will engage stakeholders from various sectors, fostering a collaborative environment for innovation and shared learning.
>
> 4. Expertise and Local Input: Local experts, ranging from urban planners to emergency services personnel, will be made available to provide insights and specialized knowledge that will enrich the project's understanding of local conditions and needs.

STRATEGIC PRIORITIES:
Seeking opportunities to better understand wildfire risk and take steps to prepare against those factors can be viewed in relation to the strategic pillar of Social, Health and Wellbeing.

FINANCIAL CONSIDERATIONS:
No known financial considerations arising from the recommendation of this report at this time. Staff time and venue space would be utilized to advance this project if supported by Council and assuming the project receives funding to advance.

SUMMARY AND CONCLUSION:
In conclusion, this report shares information on an opportunity to partner with SFU on a study to better understand local wildfire risks and impacts. This project is in its initial phase. If Council supports partnering at this juncture more information will be returned as appropriate.

RESPECTFULLY SUBMITTED:
Eric Depenau, Acting Director Administrative Services

Prepared by:

Tanya Spooner, Manager, Emergency Programs

APPROVED:

Walter Babicz, City Manager

Meeting Date: 27 May 2024