ROLLING WITH THE RIVER: THE INTERSECTION OF SOCIAL VULNERABILITY AND FLOOD MITIGATION PLANNING IN PORT ALBERNI, BRITISH COLUMBIA

Executive Summary

Floods are among the most expensive natural disasters in Canada. In 2021, natural disasters resulted in over $2 billion in damages to insured property in Canada. Furthermore, these impacts are expected to intensify with climate change. Severe weather events and flooding intensified by climate change will put pressure on local governments and decision-makers to mitigate risks and address shortcomings in local capacity to cope with impacts. As such, it is becoming increasingly vital to investigate the challenges and opportunities that exist for coastal municipalities to plan for and cope with intensifying natural disasters like floods.

In planning for flood risk mitigation and other natural disaster risks, it is important to consider that physical assets are not the only component of a community that are at risk of impacts from flooding and other natural and man-made hazards. Social vulnerability, described by FEMA as a "consequence enhancing risk component," can be high when certain members of the community are especially sensitive the impacts of natural disasters compared to the rest of the local population. This may be due to factors such as income, housing, education, age, and/or race, and combinations of these and other factors.

This study investigates the effects of social vulnerability and economic disparity on planning for flood risk mitigation at the local and regional levels. To accomplish this, the key research question is explored: How does flood risk planning interact with social vulnerability in a coastal municipality experiencing economic challenges? This research contributes to a better overall understanding of how planning decisions related to disaster risk reduction may affect the most vulnerable members of a community. More specifically, examining how Port Alberni grapples with flood hazards that are intensifying due to climate change may contribute insight to the scholarship by illuminating challenges and opportunities for building social resilience in fiscally constrained communities with high levels of environmental and social vulnerability.

A mixed methods approach was applied to the case study location of Port Alberni, British Columbia. Qualitative strategic planning document review and a self-directed internal narrative photo diary with associated location mapping were used to obtain contextually relevant information related to flood mitigation planning and social vulnerability. Quantitative analysis was used in the form of using open-source GIS data to compare the Canadian Index of Multiple Deprivation ratings of flood-prone locations in Port Alberni to the overall rating of the entire city and region respectively.

It was apparent that fiscal restrictions created path dependencies leading to unideal decision-making regarding flood prone areas and that social vulnerability was not well integrated into the planning process in the case study location. The key findings from this research demonstrated that coastal municipalities in British Columbia require greater leadership from senior levels of government to content with intensifying flood risk resulting from climate change and persistent social vulnerability due to weak economic conditions.