



KAMLOOPS AS HOST CITY

2017 Wildfires in British Columbia:
Response-Generated Demands in the City
of Kamloops

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From the Researchers



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We are pleased to present this report exploring the host city activities of the City of Kamloops during the 2017 wildfires in British Columbia. This report was made possible through a Quick Response Grant provided by the Institute for Catastrophic Loss Reduction in Toronto, Ontario. We are grateful to our funders for their continued support of social science research.

Inspired by the influx of roughly 11,000 persons into Kamloops after evacuating from their fire-stricken communities as a result of the 2017 wildfires in interior British Columbia, we set out to answer the following research question:

What are the response-generated challenges that Kamloops faces as a wildfire evacuation host city?

In an attempt to address this question, we entered the field from August 23 to August 27, 2017. At that time, the Elephant Hill Wildfire was ending and the Philpott Road Wildfire was flaming up. Time was spent within offices, operation centres, evacuation centres, fire centres and other local venues in Kamloops, in order to interview 17 persons who were stakeholders in the process of hosting wildfire evacuees. We are grateful to the members of provincial, regional district, and local governments, first nations representatives, non-governmental organizations and other community stakeholders in Kamloops who were very generous in providing us with both time for interviews and information on which this report is based.

We believe field-based disaster social science research can in small ways improve the plight of those persons coping with wildfire evacuations. As circumstances ranging from increased development in natural hazard risk areas to our changing climate result in increased wildfire exposure to cities throughout Canada, we hope that this work gets into the hands of practitioners so that both processes and procedures for cities which host wildfire evacuees can potentially improve.

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Background:

2017 Wildfires in British Columbia

During 2017, the province of British Columbia (BC) experienced wildfire disasters at an unprecedented level. Statistics collected by the British Columbia Wildfire Service have indicated that over 1.2 million hectares of land were burned, fire suppression costs were over \$568 million, and roughly 65,000 persons were evacuated (Province of British Columbia, 2018). Some of the factors that made the 2017 fire very devastating included record high temperatures in early July, and a lack of precipitation. A mild winter resulted in much of the province having little winter snow cover, resulting in low moisture levels during the summer. The parched landscapes combined with the summer atmospheric conditions of lightning strikes along with factors such as human-induced accidental fire starts lead to disastrous conditions across the province. It has been suggested that such summer conditions may represent the new norm for British Columbia. While scientists have been reluctant to link specific wildland fire occurrences to climate change, what happened in British Columbia in 2017 is consistent with the prediction of how increased wildfire risk can be associated with a warming planet (Donnelly, 2017). By mid-August 2017 it became official that the wildfire season become the worst on record in terms of hectares burned, surpassing the record set in 1958, when 855,000 hectares burned (Ghoussoub, 2017). In September 2017, Professors from the University of British Columbia issued a call to action letter regarding an urgent need to adapt and improve resilience to wildfire. The letter stated that the status quo approach of addressing BC's wildfire threat was inadequate; and resulted in costs exceeding \$200 million in emergency support services for evacuees. The case was made that, "A holistic, landscape view of this problem and transformative changes to wildfire and forest management are urgently needed to achieve forest and community resilience to contemporary and future wildfires" (Daniels *et al*, 2017).

The British Columbia Wildfire Service operates six regional fire centres (see Figure 1). Each regional fire centre is responsible for wildfire management within its boundaries. Located nearby the Kamloops airport, the Kamloops Fire Centre coordinates wildfire management across a wide area of south central British Columbia. The area covered by the Kamloops Fire Centre ranges from the Blue River in the North, to the United States Border in the South, to the Bridge River in the West, to the Monashee Mountains in the East (Province of British Columbia, n.d.).



Figure 1. Map depicting British Columbia Fire Service Fire Centre Boundaries.

Source: <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-response/fire-centres>

During the 2017 wildfire season, for the region encompassed by the Kamloops Fire Centre, there were seven wildfires of note recorded (Province of British Columbia, 2018). Those fires are listed below in chronological order:

1. The Fountain Valley Road burned 30 hectares in the Lillooet vicinity prompting evacuation orders and alerts. The fire was discovered on May 28.
2. The Elephant Hill fire burned 191,865 hectares, covering an extensive area spanning from near Ashcroft (south) to near BC Highway 24 (north) end. This fire prompted numerous evacuation orders and evacuation alerts. Areas impacted included the Ashcroft Indian Reserve, the Boston Flats mobile home park, and the entire village of Cache Creek was evacuated. The fire was discovered on July 6.
3. The Princeton fire burned 3,278 hectares in the Princeton vicinity prompting evacuation orders and alerts. The fire was discovered on July 7.

4. The Little Fort Complex (Thuya Lake) fires burned 3,607 hectares in the vicinity of Little Fort and Clearwater prompting evacuation orders and alerts. The fire was discovered on July 7.
5. The Diamond Creek Fire was part of a larger fire in the United States which crossed the international border burning 12,453 hectares on the Canadian side of the border in the Ashnola Valley vicinity having highly visible smoke impacts. The fire was discovered on July 23.
6. The Philpott Road Fire burned 465 hectares in the vicinity of Kelowna, near Joe Rich, prompting evacuation orders and evacuation alerts. The fire was discovered on August 24.
7. The Finlay Creek burned 2,224 hectares in the vicinity of Peachland, prompting evacuation orders and alerts. The fire was discovered on September 2.

Such information indicates that persons evacuating from wildfires were moving actively moving around south central British Columbia from May to September. Given the large number of fires occurring simultaneously in south central British Columbia, thousands of persons were on the move throughout the entire region. While some persons were under direct evacuation order and forced to temporarily relocate, others had evacuated on a voluntary basis to flee deteriorating conditions such as air quality problems due to smoke.

The City of Kamloops as an Evacuation Host City

Kamloops is a city with a population of 90,280 persons, making it the regional centre of activity for south-central British Columbia. Located 310 kilometers northeast of Vancouver, the city is at the approximate geographic centre of the province. The city functions as a regional hub for government administrative functions, business activities, and the provisions of human and social services (City of Kamloops, 2017). In addition, the Thompson-Nicola Regional District is headquartered out of Kamloops. The city acts as a host centre for tournaments, cultural events related to sports, high performance training camps, and national and international competitions, giving it the reputation of being Canada's Tournament City, with a focus on sport tourism as an economic generator for the city (City of Kamloops, 2018).

Given the city's size, roles in the administrative and economic functioning of south-central British Columbia, as well as the connectivity of three major provincial highways passing through the city, Kamloops is well positioned to be a host city for wildfire evacuees (see Figure 2). In fact, Kamloops city is well practiced in dealing with natural disasters. In August 2003, the McLure fire burned in the proximity of Kamloops. The fire burned out of control and forced the evacuation of 3,000 residents of the Lower North Thompson Valley,

devastating the town of Barriere (Kulig *et al.*, 2010). This large fire took place in an area 81 kilometres north of Kamloops, therefore many persons evacuating this blaze fled to Kamloops. More recently in May and June 2017, flooding along the North Thompson River and the Thompson River impacted Kamloops (Bassett, 2017). Floodwaters crept into the Cherry Creek area and various other portions of the municipality, prompting evacuations (Kamloops This Week Staff, 2017).

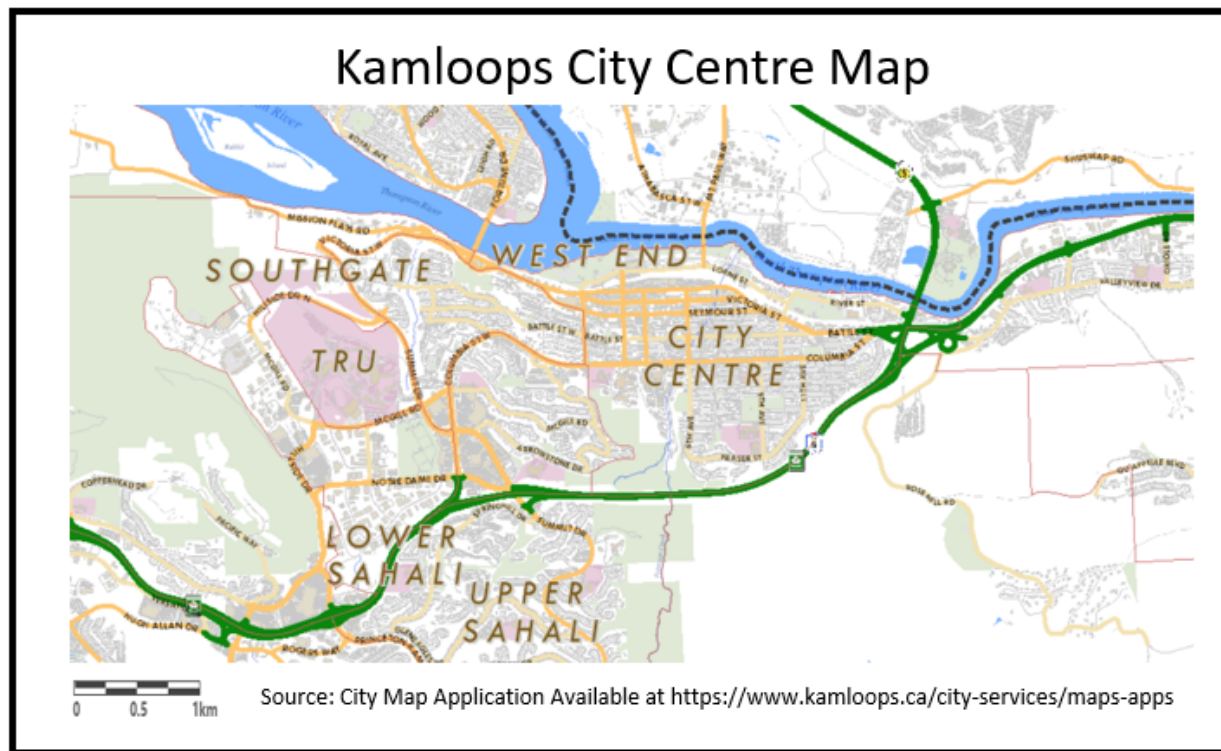


Figure 2. Map depicting Kamloops City Center and the Trans-Canada Highway. *The Sandman Centre is located in the City Centre District.*

During the 2017 wildfire season, although wildland-urban interfaces were closely monitored, the dynamic fire circumstances around British Columbia did not substantially encroach on the City of Kamloops boundaries. This made Kamloops a safe haven from active fire, resulting in many thousands of persons eventually passing through Kamloops seeking temporary accommodations. When Kamloops was organizing to act as a host city for the 2017 wildfire evacuees, the city was just coming off of coping with the flood events a few months earlier.

The largest fire that was in the vicinity of the city was the Elephant Hill Fire. In that fire incident, when the village of Cache Creek was evacuated, many evacuees fled to Kamloops, which is located approximately 85 kilometres to the east of that fire-stricken area. However, air quality did become a concern as smoke and haze from the numerous wildfires blanketed the interior of British Columbia. For a brief period of time on August 3, 2017, air quality

reached dangerous levels, as measured on a scale that normally goes from zero (good) to 10 (bad), Kamloops registered reading at 49 - dangerous off-the-charts levels (Sperling, 2017). That circumstance did pass and proved itself to be more of a minor irritation, rather than a major disruption to the functioning of the city.

It was difficult to obtain exact numbers of how many evacuees spent time in Kamloops during the 2017 fire season, but sources and data obtained suggest that over 11,000 persons were hosted by Kamloops due to the fires (InfoTel News - Kamloops, 2017). To put that number in context, the city hosted an additional 12% of its base population.

Response-Generated Demands in Disaster Literature

One theoretical framework which is useful in grounding this work in the domain of disaster response is the concept of response-generated demands. Disaster researcher Enrico Quarantelli (1996) has stated that, “Good disaster managing must recognize correctly the difference between agent and response generated needs and demands” (p. 5). Based on the work of Quarantelli and others, McEntire has suggested definitions for agent and response generated demands in the context of disaster management (McEntire, 2007). Agent-generated demands are defined as the needs made evident by the hazard itself. Response-generated demands are defined as needs that are made evident as individuals, organizations, and communities attempt to meet agent-generated needs. For this quick response study, the fire impacts that prompted large group centralized evacuation of villages and communities as a whole, as well as individual decentralized evacuation of widely dispersed individual properties, would be an agent-generated demand. That is a movement to safer surroundings, prompted by the fire’s threats (the agent). When fire evacuees eventually stop in a place like Kamloops, many entities in the city engage in various actions to meet the needs of the evacuees. These response actions will generate their own sets of demands that need to be met in order to sustain the emergency operations needed for evacuation hosting. Therefore, this study can be placed in the domain of exploring response-generated demands that are specific to cities hosting wildfire evacuees.

Response-Generated Demands:

Response-generated demands experienced by Kamloops in its capacity as a host city can be understood from physical, economic and social perspectives. The following sections detail observations and impacts in each of these three categories.

Physical Findings

Kamloops was able to absorb the temporary population influx of fire evacuees without major long-lasting physical impacts. Local transportation and parking facilities handled the influx of persons; private sector accommodations were made available; public mass sheltering was established at existing facilities; and the local Indian Band provided services to evacuees based on the unique characteristics of their Pow Wow grounds.

- ✓ **Local transportation and parking infrastructure handled peak demand of evacuees without major problems.**

In terms of transportation demands, interviews with public officials indicated that there were times when 'peak loads' of evacuees would arrive all at once, causing some traffic congestion. However, the local transit networks functioned adequately under the stresses, and first responders were able to handle the additional service calls due to the temporary increases in traffic volumes. Additional traffic control and parking management measures were put in place around facilities where evacuees were received and hosted. Evacuees were able to use local city buses for free if they officially registered with the evacuation centres and had their registration papers/bracelets with them.

- ✓ **Existing hotel accommodations absorbed demands for evacuee housing, and overflow was handled by establishing mass evacuation centres in public facilities.**

Demands for temporary living quarters for the population influx were met by a variety of means. By virtue of being Canada's Tournament Capital - where over one million people are reported to frequent the city annually for sporting related events, Kamloops has ample spaces for temporary accommodation, including motels, hotels, university residences, parks and arenas. One issue was the timing of when the evacuees arrived. In some instances, space was already booked for existing events. The timing issue worked out after the 'bump' of absorption of addition persons into the system. As events and tourism plans changed due to the fires, space opened for evacuee housing. Private sector employees were able to facilitate hosting evacuees as a part of their existing job duties in the hospitality sector. For housing capacity beyond what the hospitality industry could provide, and for those who were unable to locate or afford private accommodation, three successive mass evacuation sites were established - McArthur Island, Thomson Rivers University and the Sandman Centre.

Kamloops Bylaws also relaxed restrictions, enabling evacuees with recreational vehicles (RVs) to set up in parks.

The longest standing evacuation centre was in the Sandman Centre - home to the Kamloops Blazers ice hockey team (see Figure 3). The Blazers were required to conduct their practices off-site in order to allow for the placement of hundreds of cots in the main floor of the ice hockey arena. The facility was set-up with 504 cots, and different sections of the arena were used to support evacuee needs, including for registration, document processing, data storage, logistics and primary care. The Sandman Centre was an ideal location because it was privately owned, giving Emergency Social Services (ESS) staff flexibility and control over the operation, and facilitated strict control over who entered and left the facility. For those evacuees that had small pets, an animal shelter was set up on the Sandman Centre grounds. A pre-existing shelter in Kamloops also received pets, and a volunteer organization coordinated billeting across the city.

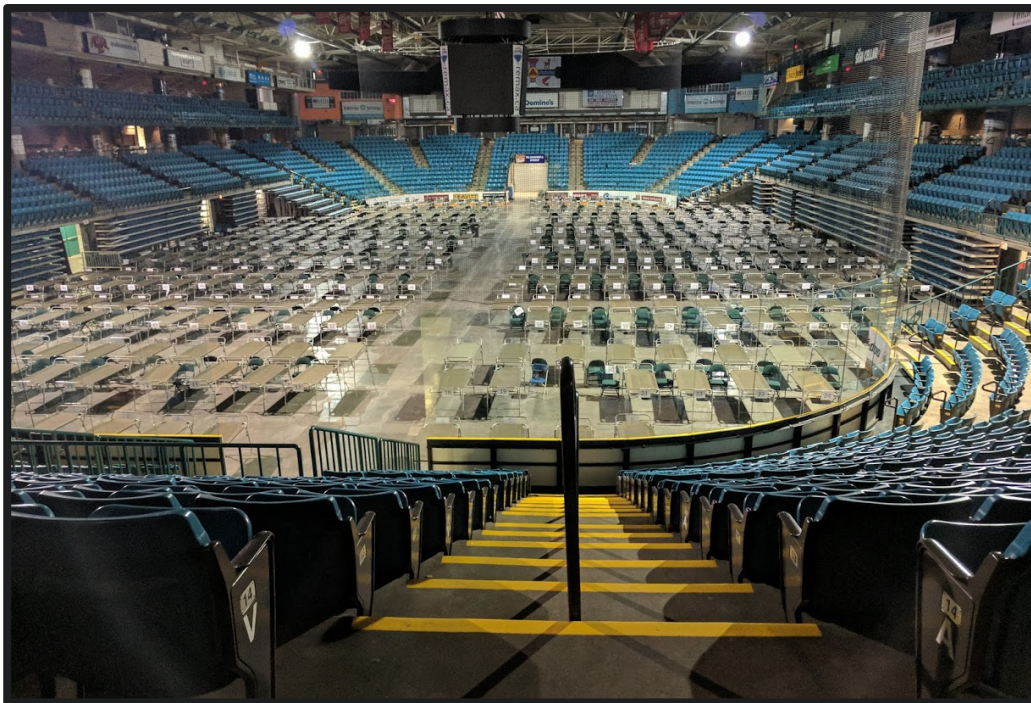


Figure 3. The Sandman Centre, Interior.

Note cots on floor of stadium for evacuee temporary sheltering (Kamloops, British Columbia, August 25 2017). Close-up of cots depicted on front cover of this report.

Numerous members of the public and business owners arrived at evacuation centres with goods to be donated. This situation resulted in major logistical complications for Emergency Social Services staff, as there was both a lack of storage space and utility for many of the donated items. To mitigate this, it is important to publically announce how members of the public can effectively contribute. Gift cards from large retail establishments and gas companies were particularly useful.

- ✓ **A local Indian Band opened their Pow Wow grounds for evacuees, providing a greater level of flexibility for evacuees than other housing alternatives available.**

The Tk'emlúps Indian Band opened their Pow Wow grounds and received an estimated 1,000 evacuees. The Pow Wow grounds had outdoor lodging areas for staying in tents and parking recreational vehicles, indoor washroom facilities, ample parking, food service areas, and recreation space. Given that a number of ranch communities were affected by the wildfires, Tk'emlúps also opened their grounds to receive livestock and pets.

It should be noted that the Pow Wow grounds allowed for flexibility not available at the other sites due to logistical and policy restrictions, and enabled the accommodation of specialized needs and cultural practices. For example, extended families were allowed to stay together at one site, pets were allowed to remain with families, and some persons preferred the less restricted environment of sleeping in tents at the Pow Wow grounds (Tk'emlúps te Secwépemc, 2017). It was found that the Tk'emlúps Indian Band provided unique services to the evacuees that went beyond the scope of what other social service providers were able to deliver.

Social Findings

While social impacts were wide ranging, the evacuee hosting activities in Kamloops constituted a whole of community effort - the largest in its recent history. Highlights of social-related findings include the importance of a reliable emergency social services staff, the importance of local volunteers solving local problems, and the roll-out of a three-tiered assistance centre system. While nearly all persons interviewed agreed that the pro-social benefits of hosting evacuees outweigh any anti-social costs, there are some potential social downsides to be recognized.

- ✓ **The importance of reliable emergency social services staff in Kamloops.**

Kamloops had approximately 30 local Emergency Social Services (ESS) core volunteers that were able to meet the multiple needs of running the evacuation centres. These personnel were able to coordinate and train hundreds of spontaneous volunteers who were involved in facilitating the efforts of evacuee hosting at venues like the Sandman Centre. These included citizens with specialized skill-sets, such as schoolteachers, nurses, veterinarians and IT workers, and community organizations such as faith-based groups. The ESS Coordinator also participated in Emergency Operations Centre (EOC) and taskforce meetings from the start of the official hosting operation, thereby cultivating a trust-based relationship between the City of Kamloops and the Thompson Nicola Regional District. This trust resulted in a smooth working relationship between on-the-ground service providers and

the entities that ultimately provide both material and financial support to sustain the evacuee hosting operations.

✓ **The importance of local volunteers solving local problems.**

Individuals staffing local emergency social service functions were primarily drawn from Kamloops and other nearby locales. As opposed to emergency workers who are imported to help communities during times of crisis, these local workers were able to better sympathize with the plight of evacuees, and also provide for value added services that only persons embedded in the community would be aware of. For example, due to the wide extent of the fires in south central interior British Columbia, both persons evacuating from small cities and persons from rural settings arrived in Kamloops seeking solutions to problems. The basic approaches to problems and personalities of urban dwellers versus rural dwelling presented challenges as there were rarely one-size fits all solutions for the variety of needs brought by evacuees. It was found that local volunteers were able to adapt, improvise, and garner resources to improve the quality of life for evacuees, no matter what type of setting they were evacuating from.

✓ **A scope of social services provided through a three-tiered network of assistance centres.**

It can be confusing when evacuees arrive in a host city where a variety of services are available, but a clear starting point may not be readily apparent for receiving services. In Kamloops, Emergency Social Services operated under a tiered system, with three units that served different temporary needs of evacuees:

Reception Centres

First upon arrival, an evacuee would be guided to a reception centre. The reception centre's purpose would be receiving the evacuee and addressing immediate needs, registering the evacuee into the existing systems for individual grant and aid programs, and conducting a needs assessment. The goal would be to transition the person from crisis mode to some form of stability. It is attempted to get disaster victims 'back on their own feet' within three days. The reception centre provides all of the logistics to make that initial transition from chaos to order.

Resilience Centres

Second, evacuees are encouraged to interact with resilience centres. Resilience centres are designed to act as a 'one-stop' shop for all of the social services that are needed in the intermediate term as one begins to consider when and how they can repatriate to the area they are evacuated from. In this stage, individual choices need to be made based on what is known about the damage to the area from where they have evacuated. These choices can range from returning, waiting a few days to return

to business as usual, to returning to a new normal in the case where communities that persons have evacuated from are severely scarred by the wildfires. Representatives from a variety of federal, provincial, region municipal, and local agencies, as well of the non-for profit and social entrepreneurial sector, are on hand to provide guidance.

Recovery Centres

The third stage of assistance centres is the recovery centre. The recovery centre is meant to provide assistance to jump-start the brick and mortar aspects of the recovery process that evacuees will be returning to. At this stage longer term caseworkers are made available, and psychosocial assistance are rendered in order to help disaster victims through the long and arduous recovery process.

It was found that providing such a full spectrum of services is an important function of a host city, as such cities receive a variety of evacuees requiring a whole range of services - from only direct material and sheltering assistance for a few days, to a relationship with social service and aid providers that lasts during many years of recovery. In order to ensure that social services to residents of Kamloops were not disrupted, the Red Cross solicited surge capacity from Ontario in order to assist with evacuee hosting efforts, and managed services for evacuees at a separate location from the main Kamloops Red Cross office.

✓ **Pro-social benefits from acting as a host city.**

A consistent theme across interviews in all sectors was the intangible personal gains experienced by those persons who went above and beyond their normal duties to render aid to fellow Canadians in their time of need. The results engaging in pro-social actions clearly had touched all who had participated in some aspect of hosting evacuees. In terms of community building and increasing social capital, an overall feeling observed was that any pain caused in hosting wildfire evacuees would be replaced by gains made in the community as a result of coming together to help others.

✓ **Anti-Social costs from acting as a host city.**

While the overall themes discerned indicated more pro-social than anti-social aspects of the acting as a host community, some interviews highlighted community problems. For example, at the height of the evacuation, there were reports of increasing nuisance-type criminality in the city such as substance abuse and crime, and a surge in panhandling. The reduced number of RCMP officials in the city (as many were manning roadblocks), only exacerbated this situation. Also, as community facilities were converted to hosting evacuees, many local events had to be cancelled or altered. While no research participant suggested that having a stadium available for a local hockey team is more important than using that stadium for hosting evacuees, one must acknowledge the additional costs incurred and

inconveniences experienced with the rapid changes of uses for the majority of community facilities, all at the same time.

One must also recognize the potential for future increases in social services loads, especially if there are no mechanisms in place to support such increased loads. Kamloops put its 'best foot forward' in hosting evacuees, resulting in goodwill between the host and guests alike. While it is not a problem if some evacuees decide to stay in Kamloops, it does represent a challenge if the population of those persons who stay require a multitude of social services to be added on top of the required social services of the existing population. During times of crisis, numerous funding streams are available to support additional social services for disaster victims. If victims stay and the disaster funding goes away, a gap emerges in support for these persons. It will require that social services providers increase revenues (perhaps through philanthropy) to support both the existing and new social service loads simultaneously. This circumstance can represent a difficult challenge if persons who would give charitably have already overextended themselves due to increased giving during the recent fires.

Economic Findings

Emergency Management British Columbia (EMBC) covered direct costs incurred by the City of Kamloops for evacuee hosting, upon request from the Thompson-Nicola Regional District. And, a number of private businesses in Kamloops provided free or discounted goods and services to assist evacuees. The full extent of economic impact on Kamloops for its hosting activities cannot be adequately determined at this time however, as there are both short and long-term impacts that need to be considered. While some sectors of the economy lost, others gained.

- ✓ **A variety of costs are covered by external sources during evacuation hosting, but locals need to account for the additional accounting burdens.**

While the City of Kamloops was initially responsible for covering some costs for the multitude of activities related to evacuation hosting, other governmental entities in British Columbia quickly provided financial resources. As of August 31 2017, the estimated cost of the Emergency Social Services and other wildfire-related activities in Kamloops provided by the Thompson Nicola Regional District amounted to roughly \$4,380,000. Costs below \$100,000 were quickly and easily approved at the Provincial Regional Coordination Level (PREOC), and those higher were handled at the Provincial Central Coordination Level (PECC). Non-governmental agencies also absorbed the financial burdens of hosting evacuees. For example, the Canadian Red Cross facilitated distribution of funds pledged by the Public Safety Minister, including \$600 for affected households and \$300 for their eventual return. Two major banks set up mobile units at the Sandman Centre to enable registered

evacuees to easily access their funds. The Red Cross also provided funding for community groups and organizations that were engaged in activities in response to the wildfires, including Samaritan's Purse and United Way.

Despite the availability of external assistance, host cities should realize that additional human and material resources will need to be directed to accounting and budgeting departments in order to deal with the burden of increased workloads. Also, pre-existing city budget cycles and incumbent tasks associated with those governmental functions continue, whether a city is engaged in disaster response related financial matters or not.

- ✓ **A local private sector champion can be of great assistance in organizing relief from the private sector.**

During times of disaster, the private sector is often ready, willing, and able to step forward and provide assistance to persons in need. In Kamloops, businesses (ranging from small local firms to large national chain stores) offered hundreds of dollars worth of products and services to fire evacuees for free - no questions asked. While many used social media to share information of their offers, it quickly became difficult to both confirm and keep track of this information. The local Chamber of Commerce was the private sector champion in Kamloops in organizing relief from the private sector.

The Kamloops Chamber of Commerce coordinated the delivery of goods and services from its member businesses to fire victims temporarily residing in Kamloops. Databases and the internet were used as the mechanism for interactive listings, and matching goods and services available to persons and entities in need. A verified list was made accessible online, and was continually updated. The link to this website was shared with ESS staff, and was provided to registered evacuees - this proved to be a valuable resource. As the Chamber of Commerce is an organization that concerns itself with connecting businesses of all sizes, fostering peer-to-peer private sector relationships, and bolstering the local economy through business advocacy, its member businesses can multiply their collective power in assisting the community during its time of need through the organization.

- ✓ **Positive or negative economic impacts from evacuation hosting, a mixed conclusion.**

During the research interviews, questions were posed to various stakeholders in an attempt to determine if hosting evacuees was an economic windfall or an economic drain to the city. Anecdotes were relayed indicating both situations. For example, as the wildfire disaster in British Columbia made national headlines in all corners of Canada, and images of reporters filing their stories from a smoke-filled Kamloops appeared, the cancellation of tournaments and interruptions to the summer tourism season followed. However, when the hotel, restaurants, and gas stations emptied of tournament seekers and nature tourists, they

all rapidly refilled with persons evacuating from the fires. Kamloops tourism may remain negatively effected as evacuated communities take time to recover. Furthermore, evacuees that associate their time in Kamloops with negative memories may also become less interested in returning to Kamloops. On the contrary, the demand to replace appliances and supplies lost by individuals affected by the wildfires may positively affect some Kamloops businesses.

Long-term economic impact analysis is recommended. At the time of this research project, it was clear that the economy was being impacted, but whether a net-positive or net-negative financial balance would emerge is beyond the scope of this work. What can be concluded is that hosting evacuees does impact the local economy, there are shifts and realignments in spending patterns, but hosting evacuees does not cease the economic function of the community.

Learning from the Kamloops Experience:

One of the explicit purposes of this research is to draw lessons learned from investigating the nature of the response-generated demands of an evacuation host city and how they were met in Kamloops. Unfortunately, in coming years it is likely that large uncontrolled wildfires will again strike locations in Western Canadian provinces. Both residents of sparsely populated locales, as well as people in some small villages and medium sized cities, will be forced to evacuate. Recent 2016 experiences of fire evacuation in Fort McMurray, Alberta, have indicated to us that even relatively larger cities can be forced into a sudden-onset evacuation. In that case, on May 3 and 4, 2016, it was estimated that 88,000 persons evacuated Fort McMurray. However, it is more likely that larger cities nearby fires will become host cities for evacuees, rather than having to evacuate themselves. While it is hoped that these evacuations are planned and orderly, they may also be more sudden-onset and chaotic. In any event, it would behoove Western Canadian cities to consider how they would be able to plan to absorb a temporary population influx of fire evacuees.

How can we consider this situation in terms of British Columbia's urban geography? The greater Vancouver area in the southwest corner of the province dominates the urban geography of British Columbia with its population of 2.4 million. Victoria, Kelowna, and Abbotsford follow in population size. After Abbotsford, there are four cities with populations in the range of 70,000 to 90,000: Kamloops, Nanaimo, Prince George, and Chilliwack (Bone, 2008). These recommendations and lessons learned make sense in the context of cities of 70,000 to 90,000 persons as they will have the infrastructure and appurtenances to effectively become host cities for up to 10,000 additional persons without becoming overwhelmed. This study concludes with the following four important lessons that can be learned from the experiences of the City of Kamloops during its 2017 wildfire hosting activities:

1. Communication and coordination are key

Recommendation: Include regular times for information sharing as a part of the operational pace.

The old maxim of effective communications and coordination as being integral to disaster management activities holds true in this case. During evacuation hosting activities in Kamloops, regularly scheduled taskforce teleconferences were employed in order to provide all the players in the event the same information, at the same time. This information sharing led to increased situational awareness, which in turn led to problems being solved before they materialized. In the case of Kamloops acting as an evacuation host city, players on these teleconferences included representatives from Emergency Management British Columbia, Tk'emlúps Indian Band, the Thompson Nicola Regional District, various branches of Kamloops city government, Kamloops Emergency Social Services Unit, Interior Health, Fire Centres and selected non-governmental agencies. Including specific times of information sharing as part of the operational pace should not be neglected.

2. No hard stop dates for services provided by Emergency Social Services units

Recommendation: Despite the pressures to return to normalcy as soon as possible, demobilize services for evacuees slowly.

In the case of Kamloops acting as a host city for evacuees from a variety of fires across interior south central British Columbia, there were definitely ebbs and flows of populations in shelters and users of emergency social services. However, one characteristic that the 2017 British Columbia fire season has shown is how fast changing and dynamic the situation can be. Once evacuees from one jurisdiction are cleared to return and repatriate to the areas they evacuated from, although the population of the emergency shelter may decrease dramatically, and the pace of Emergency Social Service work slows down, it may need to ramp-up again very quickly as evacuees from elsewhere en-route to the host city arrive. In addition, as every case of an individual or family evacuating is unique, it was observed that while there may be a peak of when services are needed, for a variety of reasons, other persons in need of services might materialize days or weeks later in host cities. If services have been suspended entirely, certain evacuees may be left without needed aid services. At the Sandman Centre in Kamloops, the situation was handled by reducing the hours of emergency social service provision gradually over weeks, rather than declaring a hard stop when the caseloads appeared to slow down.

3. Evacuees do not respect governmental boundaries

Recommendation: Establish intergovernmental cooperation prior to the disaster.

In the vast expanses of interior British Columbia, it can sometimes be difficult to establish intergovernmental cooperation between neighboring jurisdictions. Factors ranging from local cultural peculiarities, urban-rural divides, and even sporting rivalries, can lead to situations where it is not easy to reach out to other regions in order to address multi-jurisdictional issues of common interest. As mentioned in the background to this study, wildfires encompassed a large portion of British Columbia during summer 2017. As British Columbia is partitioned into 29 regional districts, the fire evacuees were often crossing regional district borders. For example in evacuation and resiliency centres in Kamloops, residents from the neighboring Squamish-Lillooet Regional District or the Cariboo Regional District would drive hundreds of kilometres and arrive at centres in the Thompson-Nicola Regional District requesting aid and services. This circumstance can be problematic from a finance and administrative viewpoint as services are planning to be administered on a jurisdictional basis for residents of the jurisdiction. While no one was turned away due to asking for aid outside of their jurisdiction, the situation was nonetheless problematic from an administrative viewpoint. It is clear that in times of crisis, evacuees do not respect government boundaries. Any intergovernmental cooperation that can be anticipated and procedurally worked-out prior to potential evacuee movement would reduce the administrative hurdles in managing affairs incumbent with an evacuation host city. Think of expanding the scope of problem solving beyond administrative boundaries and establishing relationships before they are needed during the time of a disaster.

4. “One cannot think well, love well, sleep well, if one has not dined well”

- Quotation from English novelist and essayist Virginia Woolf

Recommendation: Do not overlook simple support needs for disaster relief workers, such as privately catered lunches and dinners.

Staff and volunteers in all response entities involved, including the emergency management authorities at the provincial, regional and municipal levels, evacuation centres, and at Fire Centres, were required to work long hours, day after day - a situation that was conducive to burnout. One point of appreciation that was repeatedly highlighted by persons who have had direct roles in the hosting of evacuees in Kamloops was the provision of lunches and dinners. While in the grand scheme of things such accommodations may not seem large, they are overly important.

Representatives from the Thompson-Nicola Regional District made certain that catered lunches and dinners were provided to staff and volunteers at evacuation centres. This catered food was provided from the finer local dining establishments in a setting separated from the actions of evacuation hosting duties. If that was not done, it is likely that it would have been very easy for workers to grab and eat on-the-go with one hand, while continuing work with the other. In order to partake in the meals, however, a 'forced' time out allowed for workers to not only replenish, but to separate and debrief from the psychologically taxing work they were engaged in. Given the long hours and intense nature of the work involved in hosting fire evacuees, any (even small) courtesies provided to front line aid workers can serve a variety of purposes, from generating feelings of appreciation, to reducing burnout, to making what can be at times taxing and traumatic work a little more pleasant. While this recommendation may seem more like an application of common sense than a well thought out operational recommendation, the fact that this small act of providing food came up so many times during interviews, indicated to the researchers its importance.

Works Cited

- Bassett, J. (2017, June 6). Flood risk downgraded on some B.C. rivers, but Kelowna residents still watchful. *The Globe and Mail*. Retrieved from <https://www.theglobeandmail.com/news/british-columbia/flood-risk-downgraded-on-some-bc-rivers-but-kelowna-residents-still-watchful/article35221036/>
- Bone, R.M. (2008). *The regional geography of Canada*. Don Mills, ON: Oxford University Press.
- City of Kamloops. (2017). *Annual report 2016*. Retrieved from <http://www.city.kamloops.bc.ca/publications/pdfs/AnnualReports/16-AnnualReport-V2-Web.pdf>
- City of Kamloops. (2018). *Choose Kamloops - sports and facilities*. Retrieved from http://www.tournamentcapital.com/sport_and_facilities.htm
- Daniels, L.D., Grat, R.W., Burton, P. J. (2017, September 26). *Communication to Honourable John Horgan, The Premier of British Columbia: "RE: 2017 Megafires in BC - Urgent Need to Adapt and Improve Resilience to Wildfire."* Retrieved from <http://treering.sites.olt.ubc.ca/files/2013/02/2017-Wildfires-and-Resilience.pdf>
- Donnelly, A. (2017, November 7). Wildfire 2017: A look back at the worst fire season in BC's history. *CFJC Today*. Retrieved from <http://cfjctoday.com/article/596264/wildfire-2017-look-back-worst-fire-season-bcs-history>
- Ghoussoub, M. (2017, August 16). B.C. surpasses worst wildfire season on record. *CBC News - British Columbia*. Retrieved from <http://www.cbc.ca/news/canada/british-columbia/b-c-surpasses-worst-wildfire-season-on-record-1.4249435>
- InfoTel News - Kamloops, Staff. (2017, November 17). City of Kamloops and Thompson-Nicola Regional District express gratitude for wildfire support, News Briefing Submitted by the City of Kamloops. *InfoTel News - Kamloops*. Retrieved from <https://infotel.ca/newsitem/city-of-kamloops-and-thompson-nicola-regional-district-express-gratitude-for-wildfire-support/it47823>

- Kamloops This Week, Staff. (2017, May 6). Water creeping into Kamloops at various locations. *Kamloops This Week*. Retrieved from <https://www.kamloopsthisweek.com/water-creeping-kamloops-various-locations/>
- Kulig, J.C., et. al. (2010). *McLure fire: Lessons learned*. A Report from the Faculty of Health Sciences, The University of Lethbridge. Retrieved from: <http://barriere.ca/files/%7B0702F1AF-A15B-4935-8200-08F45F7CF7CD%7DMcLure%20Lessons%20Learned.pdf> www.ruralwildfire.com.
- McEntire, D.A. (2007). *Disaster response and recovery: Strategies and tactics for resilience*. Hoboken, NJ: John Wiley and Sons.
- Province of British Columbia - B.C. Wildfire Service. (2018). *Wildfire Season Summary*. Retrieved from <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-history/wildfire-season-summary?keyword=2017&keyword=fire&keyword=season&keyword=history>
- Province of British Columbia - B.C. Wildfire Service. (2018). *Wildfire Season Summary*. Retrieved from <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-history/wildfire-season-summary?keyword=2017&keyword=fire&keyword=season&keyword=history>
- Province of British Columbia - B.C. Wildfire Service. (n.d.). *Fire centres*. Retrieved from <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-response/fire-centres>
- Quarantelli, E.L. (1996). Ten criteria for evaluating the management of community disasters. *Disaster Research Center (University of Delaware) Preliminary Paper #241*. Retrieved from <http://putnam.lib.udel.edu:8080/dspace/bitstream/handle/19716/649/PP241.pdf?sequence=1>
- Sperling, J. (2017, August 3). Kamloops' air quality reaches dangerous new level. *CFJC Today*. Retrieved from <http://cfjctoday.com/article/582158/kamloops-air-quality-reaches-dangerous-new-level>

Tk'emlúps te Secwèpemc. (2017, August 15). *Emergency operations report - 2017 wildfires, A report presented to the Chief and Council*. Kamloops, British Columbia: Tk'emlúps te Secwèpemc Indian Band.

Yin, R.K. (2013). *Case study research: Designs and methods*. Fifth Edition. Thousand Oaks, CA: Sage Publications.



Figure 4. Principal Investigators Dr. Aida Mamuji and Dr. Jack Rozdilsky outside of zone with an active evacuation order in place.

(Unincorporated Area, Thomas Nicola Regional District, British Columbia, August 26 2017)