

Report to Council



Date: December 11, 2017
File: 0100-01
To: City Manager
From: Deputy City Manager
Subject: Value Planning Assignment – 2016-2030 Fire Department Strategic Plan

Recommendation:

That Council receives, for information, the report from the Deputy City Manager, dated December 11, 2017.

And That City Council at the 2018 Budget deliberations consider adding additional resources as per the Fire Chief's budget submissions.

And That the results of the Value Planning Assignment (Appendix 1) be forwarded to the Fire Chief for consideration in updating the Kelowna Fire Department Strategic Plan.

And That the Kelowna Fire Department with the assistance of various City Department's including the City's analytics team continue to monitor and investigate past call volumes, practices, proposed growth and determine what policies and actions be considered for implementation in 2018 and beyond.

Purpose:

To present the results of the Value Planning Assignment.

Background:

The Kelowna Fire Department provides an important service to the citizens of Kelowna and beyond. The Kelowna Fire Department's passion and commitment to serve our community is exemplary especially given the significant call volumes that continue to rise. The outstanding service is confirmed by the 2017 Citizens Survey which indicated that 95 % of citizens are extremely satisfied with the services offered making fire services the highest ranked City service.

In 2016 the City Manager directed the City's new data analytics team to work with the Fire Department to review the recommendations of the 2016 KFD Strategic Plan to determine if the proposed new Fire

Hall near John Hindle Drive and Glenmore Road was the best location for a new fire hall in Glenmore. The internal analytics team was not in place when the 2016-2030 Kelowna Fire Department Strategic Plan was created. The City's Information Services Department had just recently conducted a review of our snow clearing response during the past winter's major storm event which helped improve service. A preliminary analysis by our internal analytics team of the data provided by the Fire Department and their consultants concluded the addition of a truck and fire fighters at Station No. 1 Enterprise Hall would provide the biggest performance improvement in the short-term. Also the proposed location for the new fire hall at Glenmore Road and John Hindle Drive was not optimal given the majority of calls are along the Highway 97 corridor. Although there was general agreement that the methodology and analysis was sound there was not a consensus on a future course of action at that time.

The KFD Strategic Plan and corresponding 2017 Budget included a request to upgrade Paid On Call Fire Hall No. 8 at 550 Valley Road North in Glenmore to accommodate on a temporary basis a permanent full-time professional fire fighter hall until a new fire hall could be built near John Hindle Drive and Glenmore Road by 2020. The 2017 request also included 12 fire fighters, an Engine and an additional 8 fire fighters in 2019. The strategic plan proposed removing the existing rescue truck from Station No. 1 Enterprise until additional fire fighters were potentially added in 2019 and moving the 8 fire fighters to the Glenmore Fire Hall with the additional 12 new firefighters to complete the unit.

The analytics team found that the data indicated removing the rescue unit from Enterprise Fire Hall no.1 would significantly decrease overall performance in the short-term given the majority of calls are first medical response and located along the Highway 97 corridor. Placement of the rescue truck in Glenmore as per the Strategic Plan was due in part to managing overall fire risk associated with North Glenmore. It was determined that more work would have to be undertaken to try to resolve the matter and ensure the best overall decision is made. In the meantime, with John Hindle Drive not being complete, Council did not approve the 2017 budget requests.

In 2017 the City Manager directed the Deputy City Manager to conduct a value planning exercise with an independent third party with both analytics and emergency management experience, on the KFD Strategic Plan given the questions the internal data analysis raised and the importance of the decision. At that time our new Fire Chief had not been appointed however it was critical the work be carried out before the 2018 budget. Appendix 2 summarizes the intent of the value planning exercise. Specifically, the exercise was to determine if adding a Glenmore Fire Hall and 20 fire fighters immediately provided the best value to the City. The exercise was also to determine if the current locations of the existing fire halls and the proposed location near John Hindle Drive and Glenmore Road were in the optimal locations and what additional resources were required in 2018 and beyond.

In the summer of 2017 the City hired Darkhorse Analytics to review the Kelowna Fire Department's Strategic Plan. Darkhorse is an Edmonton based company that specializes in data analytics and has extensive experience working with emergency management services throughout North America. Darkhorse confirmed the City's analytics team initial findings. Darkhorse's information *partially aligns with KFD Strategic Plan* regarding need for additional resources and a fire hall is required sometime in the future but timing and location doesn't align with the plan.

Darkhorse completed the value planning exercise and based on their analysis provided the following statements:

In the near term, the main concern is the high growth in call volumes. Calls have increased by 10% in each of the previous three years reaching just over 11,400 in 2016. Medical calls make up the bulk of responses (65%) and account for the majority of the growth. Breathing problems and chest pain are the two largest call categories with approximately two thousand calls per year between the two of them. Roughly half of the fire calls are minor fires and another 40% are responses to alarms.

The Fire Department uses two targets for response performance: First Due and Effective Response Force (ERF). First Due measures how quickly the department can respond with a single vehicle, and is primarily associated with medical calls. ERF is the time it takes to have sufficient personnel on-scene to begin suppression activities. KFD reaches 84% of medical calls (First Due) and 74% of its fire calls (ERF) in its target times. (First Due Performance is % of calls reached in 9:04 Urban Non-Medical, 9:00 Urban Medical, 13:04 Rural Non-Medical, 13:04 Rural Medical. ERF Performance is % of calls reached with three suppression vehicles within 12:00 Urban, 18:00 Rural for structure fire events. The goal for all time targets is 90%).

To understand what drives response performance in KFD, we studied the root causes of response issues and came to the following conclusion: the majority of improvement in ERF responses can be found in improving unit availability through adding resources. Right now, there is only a small portion of the City that can be reached in a reasonable time with an Effective Response Force and the service would be unable to respond to simultaneous fires effectively.

By adding a single unit to the best possible location (Enterprise station), fire response improves by over 13.5% to 86.7%. This also improves the flexibility and risk profile of the overall system and allows KFD to better reposition resources in response to anticipated demand.

The second major item we evaluated was the need for and timing of a station location in the Glenmore area. Adding a station to the Glenmore/Hindle area improves Medical First Response (MFR) by 1.0% and fire response by 1.8%.

The best possible location for a new station is actually further south in the Glenmore Watson area. If added there, the station would improve MFR by 1.8% and fire response by 6.0%.

The timing of the new station is more difficult to analyze and is more an issue of balancing budget requirements with risk. If added in 2018, the new station would have a similar call volume as the Mission station and would be as busy as average stations in comparable communities (Strathcona County, AB and Abbotsford, BC). Furthermore, call volumes in Glenmore are expected to grow more quickly than the City as a whole.

There are a few other considerations:

- *Kelowna has exceptionally high call volumes per population*
- *Most of the call volume in Glenmore is generated by two properties that may be*

able to reduce it

- *The Glenmore area (unlike the Mission area) has neighbouring stations that can provide some coverage of the community*

- *Flexing a vehicle into the Valley Road station at peak times would provide reasonable response performance into Glenmore*

These factors suggest that there is some flexibility in the timing of adding a new station to Glenmore.

To help understand the long term picture for the City of Kelowna, we worked with the City Planning group to generate a spatial call forecast through 2030. Over the past three years, Kelowna has averaged roughly ten thousand calls per year, but also a growth rate of about 10% per year. We expect call growth to match the rate of population growth (2.3%) in our forecast and to reach just over thirteen thousand calls in 2030. We expect most of the growth to be concentrated in the Downtown and Glenmore with some additional growth in the Upper Mission and Black Mountain areas.

We can use this forecast to evaluate current stations and to see how robust the locations are into the future. We found the following:

- *The downtown station would be better situated further inland near Harvey and Richter.*

- *A station in Glenmore/Watson is the best location for any new station both today and into the foreseeable future.*

- *The Mission station will eventually need to be split into two with one in Pandosy and a second in the Upper Mission.*

There is significant uncertainty around demand growth. Although over the long term, calls will grow at a rate commensurate with population, Kelowna has experienced three years of exceptionally high growth (~10%). Our evaluation of the data suggests that the call levels do not have a strong seasonality component and thus cannot be blamed entirely on summer tourists. Other communities have found benefit in taking active steps to prevent both medical and fire calls.

Strategies to understand and prevent calls may include:

- *Identifying call hotspots and frequent users and then developing outreach programs to minimize the need for services in vulnerable communities;*

- *Coordinating with the BC Ambulance Service to identify events where Fire Department responses are required and should be dispatched (i.e., when an ambulance can't arrive in a timely manner) and those where an ambulance will arrive in a timely manner; and,*

- *Developing a risk-based fire prediction model that would prioritize certain structures for inspection and intervention*

Finally, as part of the agreement, Darkhorse has provided the City a set of tools to use for ongoing monitoring, scenario analysis, and evaluation. With these tools, both the City administration and the Kelowna Fire Department will be better able to understand and respond to issues as they arise.

In summary, we recommend the following:

- 1. A new response unit should be added to the system, preferably at Enterprise Station.*
- 2. The City should monitor call volumes - particularly in the Glenmore area - and take active steps to prevent calls citywide*
- 3. The City should begin exploring options for a Glenmore station in the Glenmore/Watson area*

A few additional findings:

- 1) Demand growth is primarily attributed to growth in medical first response incidents, while fire calls are growing at a rate comparable to population growth.*
- 2) Kelowna's call demand per career station is nearly double that of comparable Canadian cities, but tends to be highly concentrated in the downtown core.*
- 3) Even with the addition of a new station, Kelowna would still have a higher call volume per station than most jurisdictions (~1900 Incidents/FT Station /Year compared to ~1300 Incidents/FT Station/Year)*
- 4) The current locations of the existing career stations are near optimal when it comes to First Due responses.*
- 5) First Due response performance to the Glenmore area is poor, but call volumes there are low.*
- 6) There are several levers available to the City to improve fire service delivery to its residents. A multi-faceted approach that aims to target service demand and supply of resources should be encouraged. Strategies may include:*
 - a) Identifying call hotspots and developing outreach programs to minimize the need for services in vulnerable communities;*
 - b) Coordinating with the BC Ambulance Service to identify events where Fire Department responses are required and should be dispatched (i.e., when an ambulance can't arrive in a timely manner);*
 - c) Adding smaller units to address the growth in medical first responses; and*
 - d) Adding additional units/resources so that KFD's workload is more in line with other Fire Departments across the country.*

Based on the information from both Darkhorse and our internal analytics team the following is also provided for Council as information.

As confirmed by Darkhorse, sixty-five percent of call volume is related to first medical response. Although Darkhorse believes call volume will level off, if it doesn't, call volume could double in seven years if the current trend continues. This may drive the need for significant additional resources in the future. While every community is unique there are several examples of how fire departments have effectively reduced the number of calls. Call volumes in Kelowna are almost double to comparable cities. Chief Whiting is investigating what is driving this abnormal call volume and developing strategies, policies and programs to mitigate. Currently, KFD is meeting regularly with BCAS to look at increased communication and clarity on how to maximize support to the community, while managing call volumes and reducing unnecessary calls. In addition, KFD is working through the Fire Chiefs Association of BC (FCABC) to look provincially on how to manage the increase demands of the FMR program. This includes consideration of cost coverage and balancing the Province's role with the ability of local departments to support their communities. BC Ambulance response targets are responding within 9 minutes 75% of the time in urban areas. KFD's targets is 7 minutes and 40 seconds 90% of the time in urban areas. We

understand in the province the BC Ambulance target is only met approximately 51% of the time. Improvement in this area is critical given current trends and projections. The City needs to understand the true cost of providing first medical response given the significant number of first medical response calls and how BC Ambulance performance impacts. As noted above, KFD has ongoing discussions with BCAS and the RCMP to reduce redundancy. BCAS adding resources to improve performance will also be pursued.

It's also important the City work with BC Ambulance and other jurisdictions to determine the cost of delivery, service level agreements and potentially cost recovery given the increasing demands on municipal fire departments. Work also needs to be done to understand BC Ambulance's standards and ability to provide first medical response to the community without requiring local governments to add additional resources and impact its ability to fight fires.

The Fire Prevention division of KFD actively pursues managing call volume. Through timely inspections to reduce risk and their public education initiatives, the Prevention Branch works proactively to reduce fire risk. The team works closely with Building Inspection and Planning on new developments with the goal of finding ways to support the construction activity in a way that meets public safety needs. They also work with Bylaw on identifying challenging properties, especially those with multiple false alarm complaints, to reduce false alarms and if needed, to fine non-compliant property owners. Higher fines should be considered for properties that have frequent fire alarms to encourage them to reduce the number of false alarms.

Addressing the supply side is also necessary. For example, ten properties in the downtown zone make up approximately 23 % of false alarms and two properties in Glenmore make up approximately 30 per cent of calls in that area. Local governments can also review guidelines regarding the future location of high use services to ensure the City's ability to service within current and future emergency services. Once again Chief Whiting is investigating and developing strategies, policies and programs to mitigate.

The City also has the opportunity to strike a cross-departmental team to look at the ideal location of all fire stations taking into consideration the remaining life-span of all existing fire stations and other civic needs. Locating a fire hall within a multi-use site should also be examined. This was beyond the scope of the Value Planning Assignment. Given the long-term nature of these capital investments it would be prudent to take the time to review how best to move forward considering all the factors.

Finally, KFD is proactively working closely with Human Resources and the City's analytics team to understand opportunities to better understand resource management and overtime controls. In working with the Divisional Director of Human Resources, KFD is looking at the long term needs of the department and how better long term work force management processes may assist going forward. The internal analytics team is mapping past overtime costs to determine patterns and drivers which may allow us to proactively manage overtime costs better going forward. KFD is working with a number of City departments to understand City growth and to develop a long term station location plan that recognizes not just the current need, but where the need will be over the next 20 – 40 years, to ensure any new construction meets the future needs of the community.

Internal Circulation:

Divisional Director Corporate Strategic Services
Divisional Director Corporate and Protective Services
Fire Chief
Divisional Director, Human Resources

Financial/Budgetary Considerations: The 2018 Budget proposes to add resources subject to City Council approval. Resources include a Fire Engine, 12 fire fighters and renovations to Station 8 in Glenmore to accommodate these permanent fire fighters on a temporary basis. From that location, the unit will be able to deploy dynamically to assist with call volumes during the day especially as it relates to Station No.1 Enterprise and Station No. 2 Water, but will be located in the growing north end of the City at night to manage fire risk.

Considerations not applicable to this report:

Personnel Implications:

Legal/Statutory Authority:

Legal/Statutory Procedural Requirements:

Existing Policy:

External Agency/Public Comments:

Communications Comments:

Alternate Recommendation:

Submitted by:

A handwritten signature in purple ink, appearing to read "Joe Creron".

Joe Creron, Deputy City Manager

Approved for inclusion:



Ron Mattiussi, City Manager

APPENDIX 2

"Value Planning Assignment

In 2016 the Kelowna Fire Department (KFD) completed its 2016-2030 Strategic Plan and it was approved by City Council. The plan states it is built on risk analysis, the use of predictive modelling including historical data analysis, industry practices, community comparatives and subject matter expert input. In summary the strategic plan proposes the following:

- Build a new fire station and training centre in Glenmore by 2020. Capital costs of a new station including land, building and outfitting would be over \$7 million. In the meantime, in 2017 Station 8 in Glenmore which exists today as a Paid on Call (POC) station would be outfitted with dorms among other things and a total of 20 fire fighters would be hired over the next 2 years (12 in 2017 and 8 in 2019) working out of Station 8. The costs associated with incremental staffing options would range from \$3.48 million to \$ 3.09 million per year.*
- KFD will set a performance target to achieve an average turnout time of 1:40 minutes for fire response and 1:20 minutes for medical responses.*
- KFD will base the preferred PM/DDS analysis on geographic coverage along with incident volume (risk based response).*
- KFD will establish performance targets for response times within the permanent growth boundary (PGB) to have the first fire truck arriving (dispatch to on the scene) within 7:40 minutes 90% of the time of being dispatched for all emergency types. For areas outside the PGB, the deployment is the same with the first truck arriving 11:40 minutes 90% of the time of being dispatched to arriving on scene.*
- That KFD and the City conduct a complete review and audit of the contracted area fire suppression service to establish performance measures or alternatively determine if KFD can provide an equivalent level of service.*
- KFD will monitor the need for 1 additional Fire Inspector focussed on public education and pre fire planning functions.*
- That KFD continue to further market dispatch services to both traditional and non traditional clients, with a focus on managing current costs to the City, while maintaining or enhancing critical service levels.*
- There is a service gap in the KLO/Gordon/Pandosy area and it will be served by dynamic deployment and risk based responses until a sixth station is required sometime after 2025. The 6th station is currently considered in the 2030 Capital Infrastructure Plan.*

Provision of fire services today are discretionary as there is no legislation mandating the levels or type of fire services that any municipalities provide. Services provided today include fire operations (suppression and first medical response), fire prevention (inspections, investigations, public education, juvenile firesetters program, development/construction review), fire training, regional fire dispatch, regional emergency management, regional rescue services (hazmat), road rescue, technical rescues such as ice and low embankment rescues, technical high angle rope/swift water and confined space plus marine rescues.

In anticipation of the 2017 budget and the impact on taxpayers of building a new fire hall and staffing five years earlier than originally planned, the Information Services Department (ISD) of the Corporate and Strategic Service Division was tasked with working with a team including the Fire Department to analyze data and determine if building a new station in Glenmore and adding 20 staff was the best option today. Phase 1 was a drive time analysis model to review various options and scenarios. John Hindle Drive was assumed to connect Highway 97 and Glenmore Drive. Some of the findings of our Information Services analytics team are as follows:

- 1. 6-minute driving time from all the current full time stations covers most of the urban area.*
- 2. Water Street Full time station significantly overlaps with other stations. Enterprise Fire Station overlaps with the majority of the Water Street station zone coverage.*
- 3. The bulk of the incidents are in the downtown core, along highway 97 with another less significant hub in Rutland. Traffic Corridors are where most of the incidents occur.*
- 4. The Deccan Model illustrates that when John Hindle Drive is completed, areas that were not within preferred travel times will then fall within preferred times.*
- 5. Building a new Fire Station in Glenmore would provide targeted drive time to an additional 8% of the structures in the City.*
- 6. Between 2012 and 2016, on average, fire halls are available at least 90% of the time per day.*
- 7. First Medical Responses account for the majority of incidents and reflect a significant portion of the predicted and actual incident growth. First medical response accounts for 66% of the total response call volume. Although firehalls are available most of the time as noted by point 6 above, when they are not available it is in large part due to a large volume of first medical response.*
- 8. In 2016, Glenmore would have only average 3.3 calls per day if an engine company had been deployed in that area*
- 9. The Fire Department Strategic Plan proposes starting with 12 fire fighters as an interim measure at the current Glenmore station, moving the rescue truck staffing to Glenmore (2 members) to staff an engine. The addition of the final 8 new would allow the rescue truck to be staffed back at Station 1 Enterprise. Moving the rescue truck from Enterprise to Glenmore drops availability across city and significantly in the Enterprise response zone.*
- 10. Proposed Glenmore Station is at the edge of the population boundary therefore will spend most of its time outside of its boundary.*

The Assignment

Conduct a value planning exercise on the Fire Department's Strategic Plan and determine if adding 20 fire fighters over the next 2 or 3 years as proposed by the Fire Department's Strategic Plan and building a new fire station in Glenmore is the best course of action in the short term or is there a better alternative or alternatives. As part of the exercise determine based on current services provided an appropriate minimum resource level (including staffing) of suppression fire fighters on shift, recognizing that there is a difference in service level expectations between areas within and outside of the permanent growth boundary. The current minimum resourcing level is 19 which includes 4 engine companies (4 person each), 1 rescue squad (2 person) and a Platoon Captain. We would expect as part of this exercise station optimal station locations. A recommendation by the

consultant regarding adding additional resources for 2018 and beyond will be needed by September 30th, 2017 and will include a presentation to City staff and likely include at least one presentation to City Council. The completion of the value planning exercise and final report November 1st, 2017, including recommendation on building a new fire hall would be preferred.

Background materials for review include:

- 1. 2016-2030 Fire Department Strategic Plan*
- 2. Information Services Fire Department Analytics Presentation (2 hours)*
- 3. Call data*
- 4. Additional information that we determine is important*

As part of this assignment you may engage the following as individuals or teams as necessary:

City Manager

Deputy City Manager

Divisional Director Corporate and Protective Services

Fire Chief (subject area expert)

Deputy Fire Chief Operations

Deputy Fire Chief Emergency Management

Information Systems Manager

Divisional Director Financial Services

Human Resources Divisional Director

Other staff as required

The Deputy City Manager (DCM) will be the current lead on this project. Your firm must maintain complete confidentiality during this assignment and only discuss this project with the individuals noted above, unless authorized by the Deputy City Manager.

Please provide your proposal to the DCM by August 11, 2017. Your proposal should address the deadlines noted above, methodology and process to complete this assignment including timelines and cost. This assignment will not include any public input. If you require any clarification a phone call will be arranged prior to August 3rd.