

City of Kelowna Fire Department

# Presentation to Council



December 11, 2017

# Mandate – Value Planning Analysis

## Review the KFD 2016-30 Strategic Plan

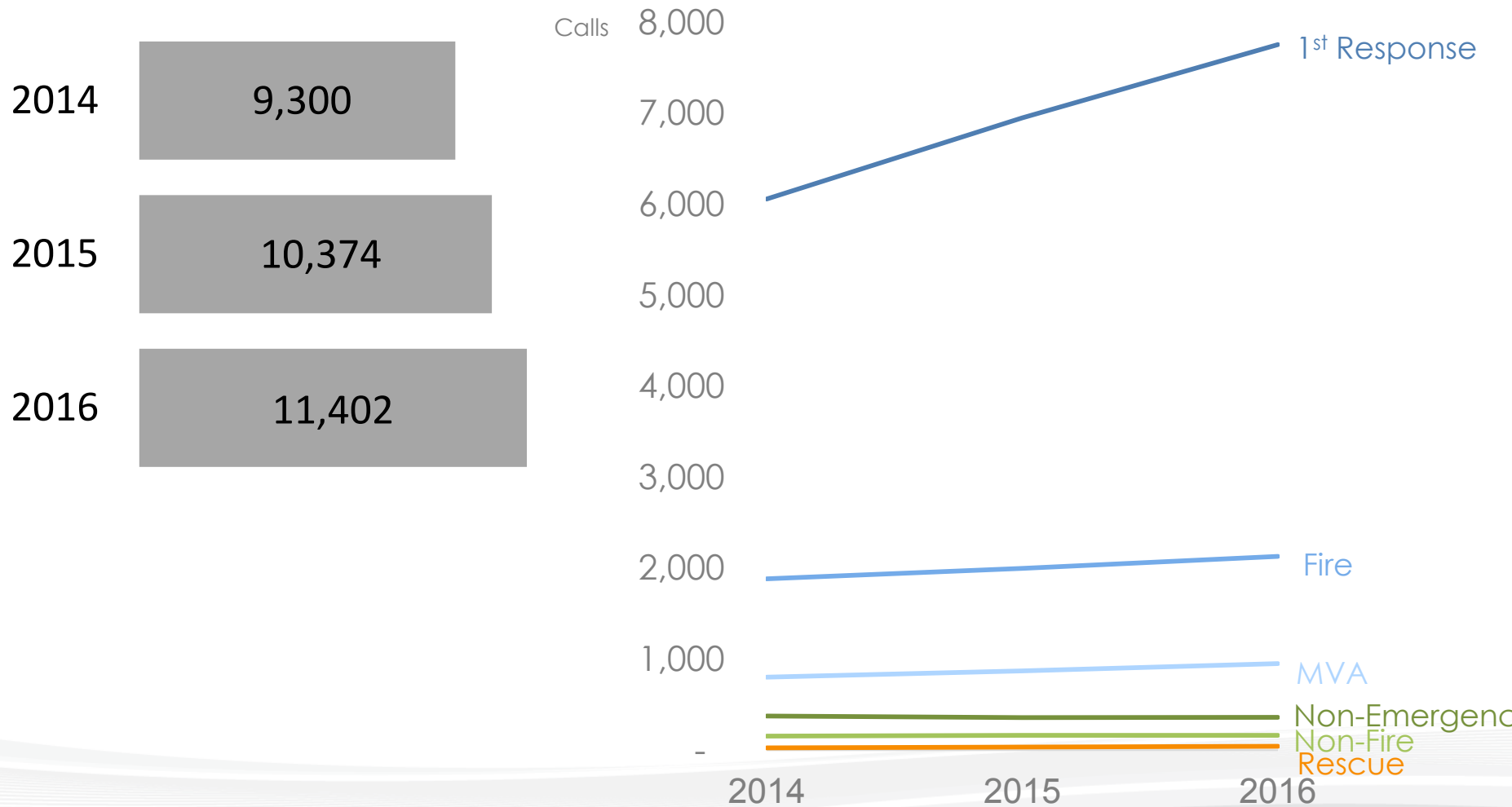
- Evaluate station needs
- Evaluate response vehicle needs
- Characterize and model demand growth
- Suggest strategies to respond to growth and manage risk

# Context

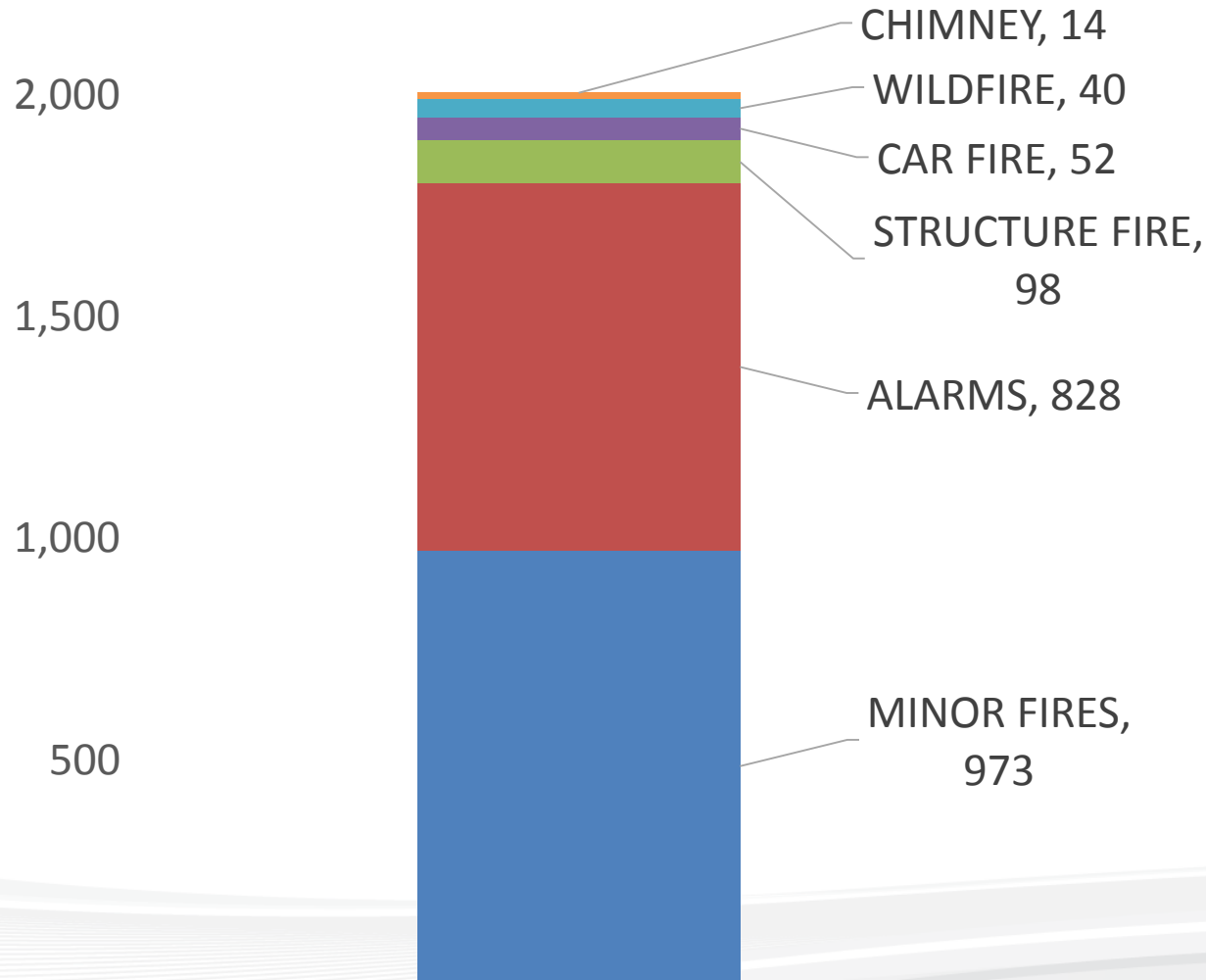
- Three years of detailed emergency response data
- City building plans out to 2030
- No explicit analysis of risk magnitude

# Near Term Analysis

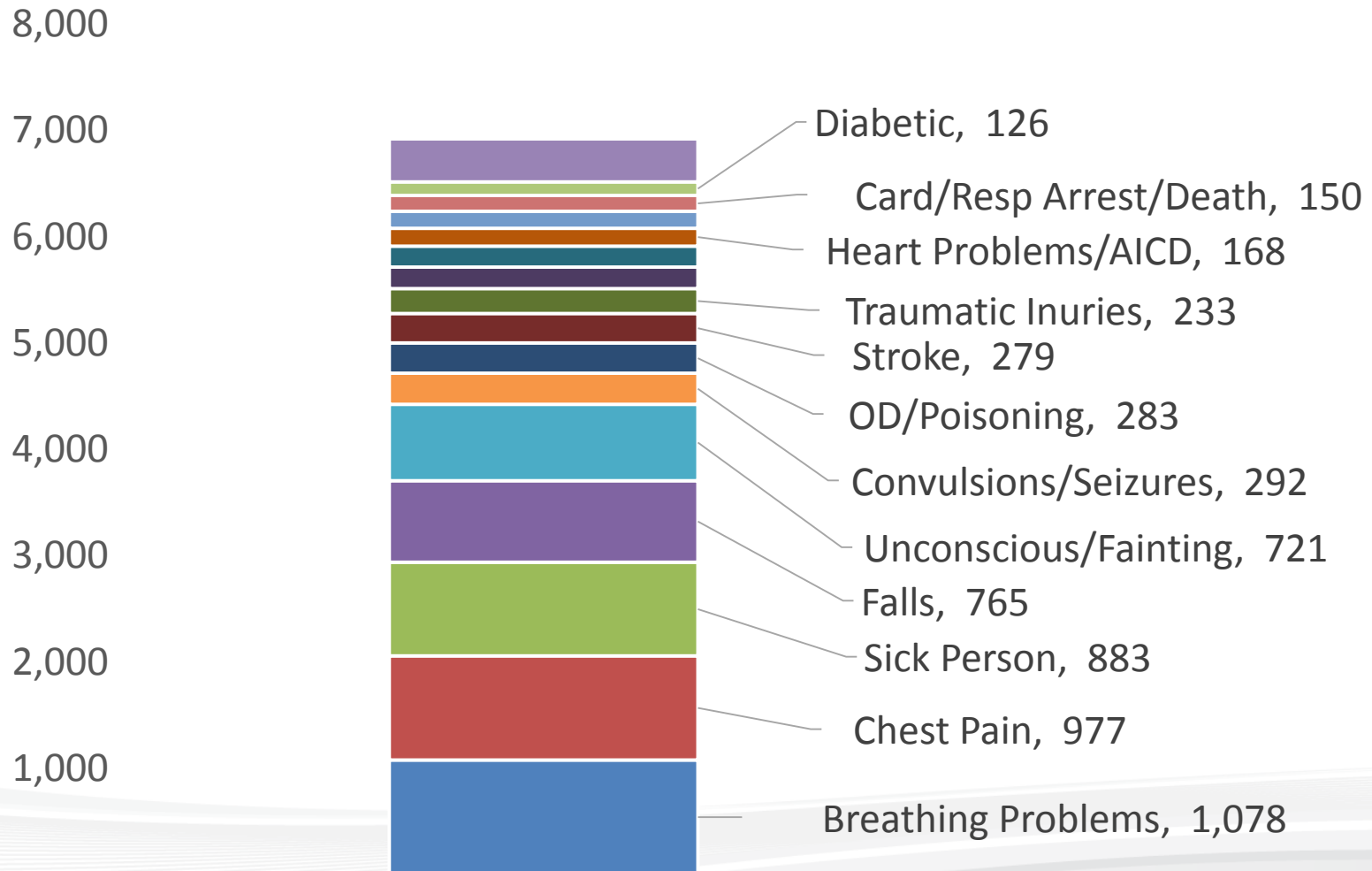
# Demand has increased >10%/year and is driven by medical calls



# Average number of fire calls per year



# Average number of medical calls per year



# KFD Response Performance

First Due Performance  
(Medical First Response)

84 %

ERF Performance  
(Fire Response)

74 %



# Medical first response

- KFD often arrives first to medical calls
- Performance based on a global 9-minute target:

BC Ambulance<sup>1</sup>

51 %

Kelowna Fire

87 %

<sup>1</sup> BCAS ambulance provincial response time performance extracted from [BCEHS Demand Analysis of Metro Ambulance Service Delivery Report](#)

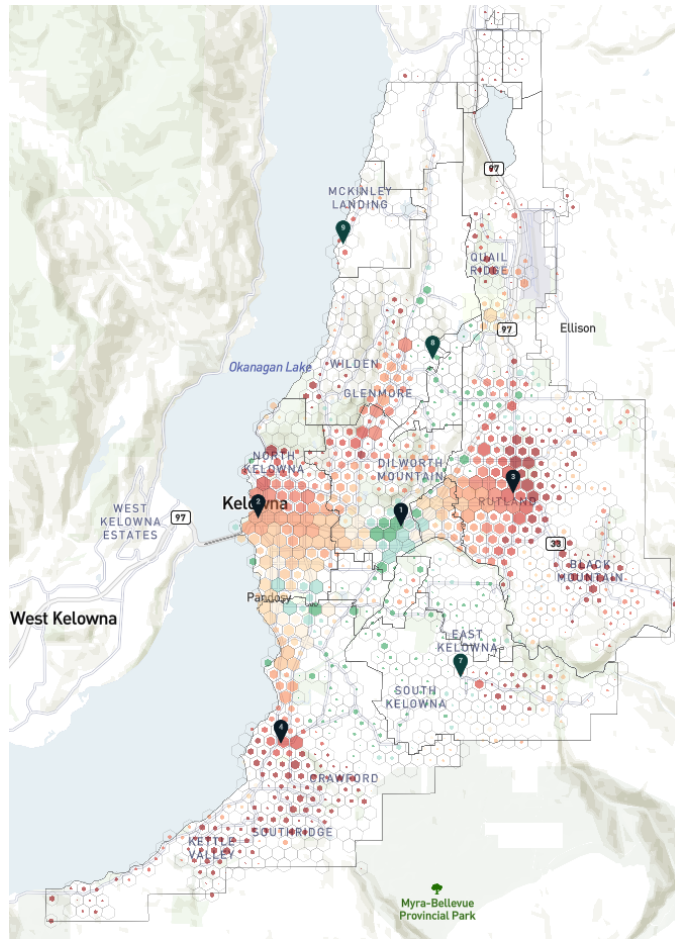
Formal BCAS ambulance target is 9 minutes 90% of the time. A shadow target of 9 minutes 75% of the time was proposed. <sup>1</sup>

**Does Kelowna  
need an  
additional  
staffed vehicle?**

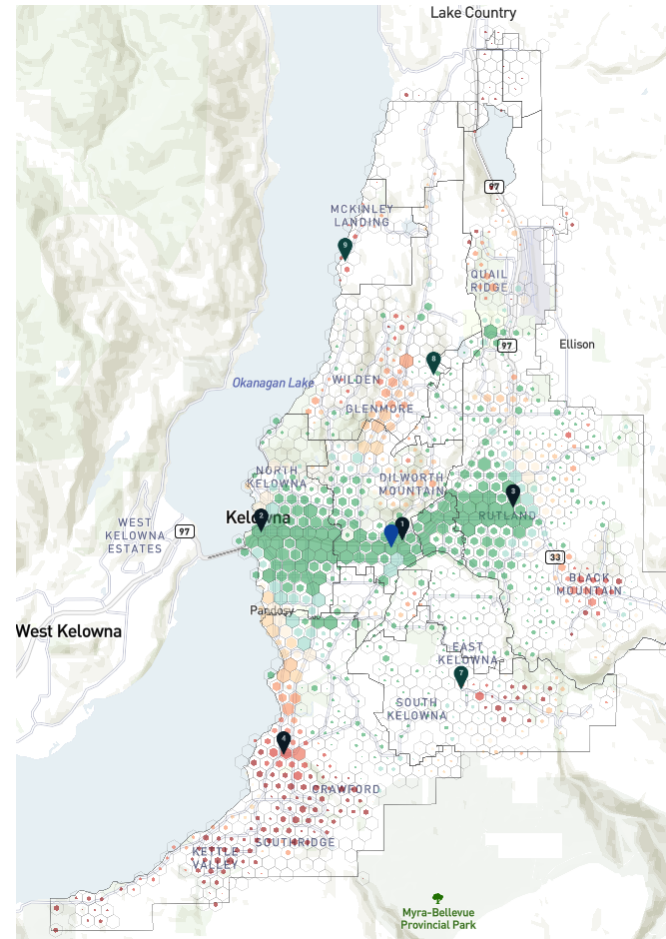
# KFD is already making use of resources

- Repositioning vehicles to maintain coverage
- Paid on call staff activated during fire calls
- Progressive suppression even before full contingent arrives

# Adding a fire unit to Enterprise Station improves fire response the most (by 13.5%)

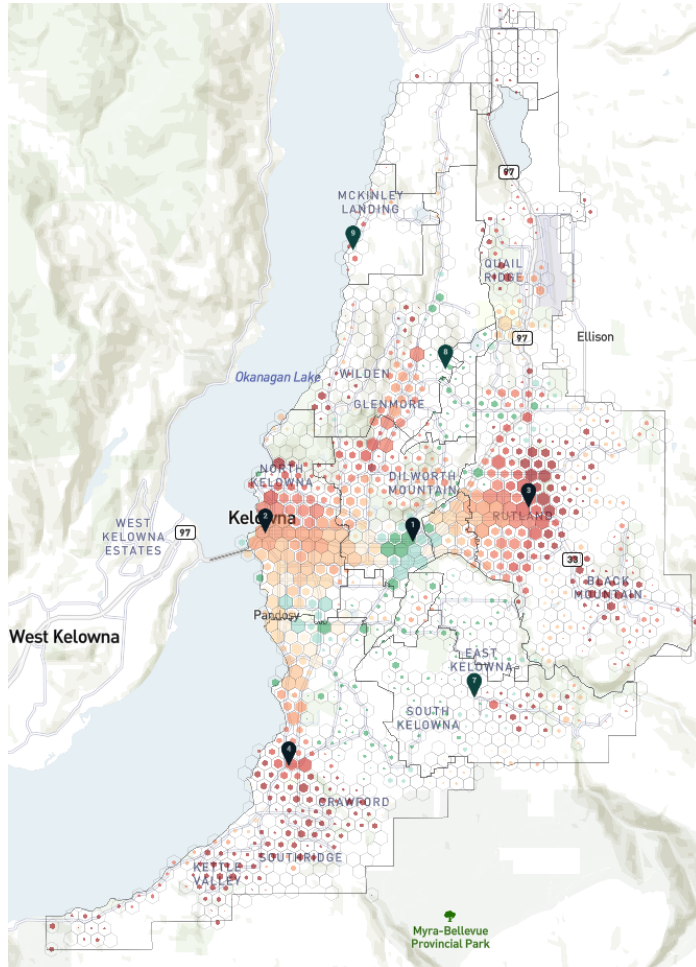


Baseline fire performance of  
**73.2%**

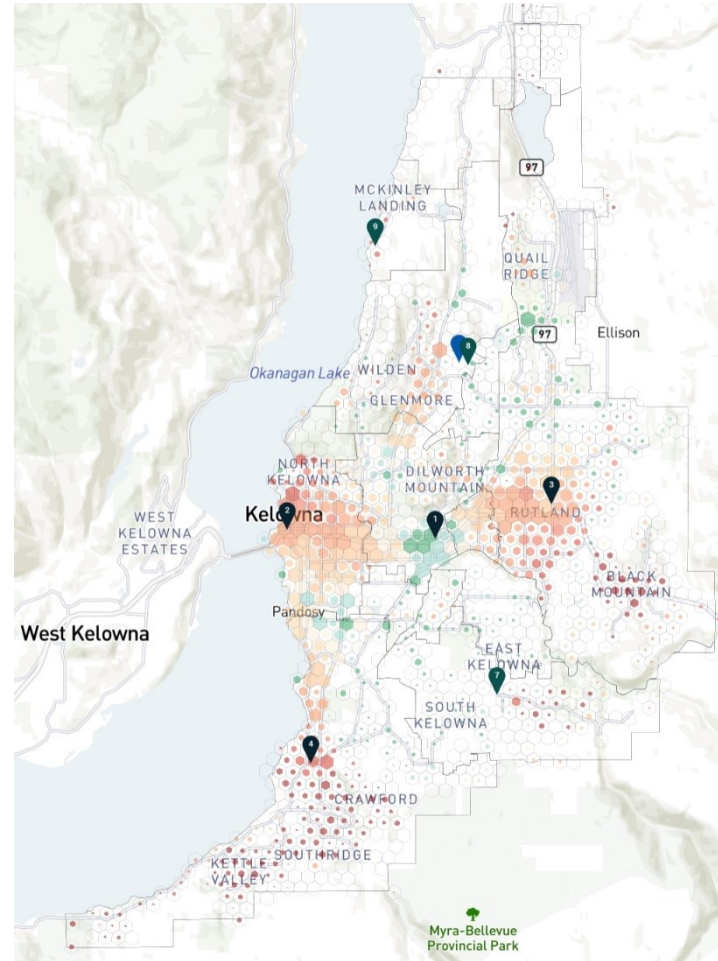


Fire performance **86.7%**

# Adding a fire unit to Valley Road improves fire response by only 2.9% (and MFR by 1%)



Baseline fire performance of  
73.2%



ERF performance 76.1%

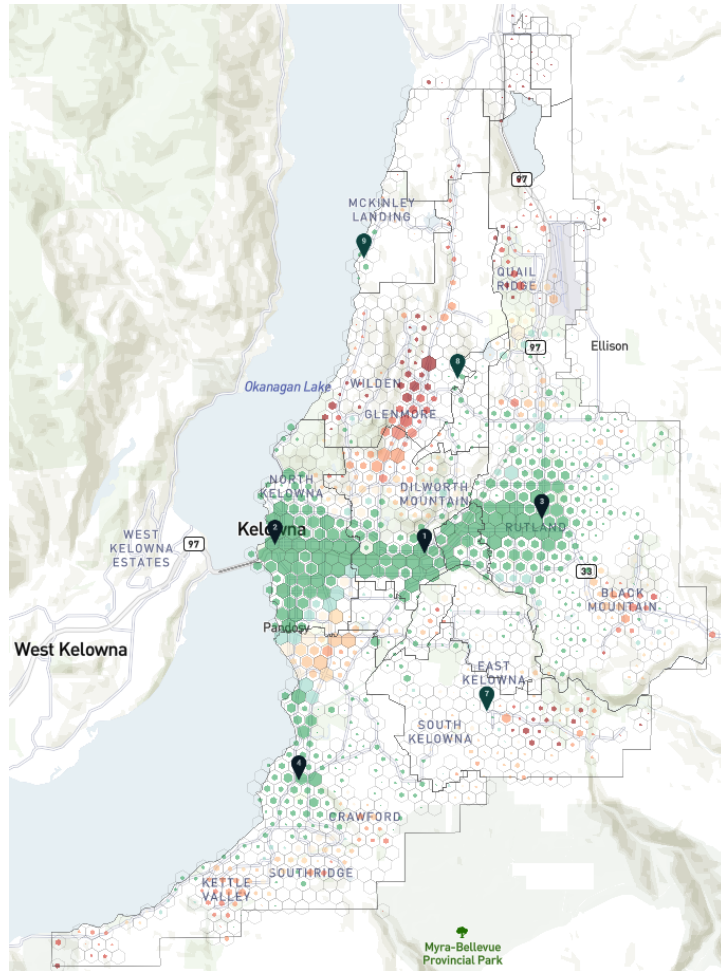
# Units Summary

Scenario	Fire Performance	
<b>Existing</b>	<b>73.2%</b>	
Add 2 units to Station 1 & 2	87.8%	+14.6%
Add 1 unit to Station 1	86.6%	+13.4%
Add 1 unit to Station 2	81.6%	+8.4%
Add 1 unit to Station 3	80.4%	+7.2%
Add 1 unit to Station 8	76.1%	+2.9%
Add 1 unit to Station 4	74.0%	+0.8%

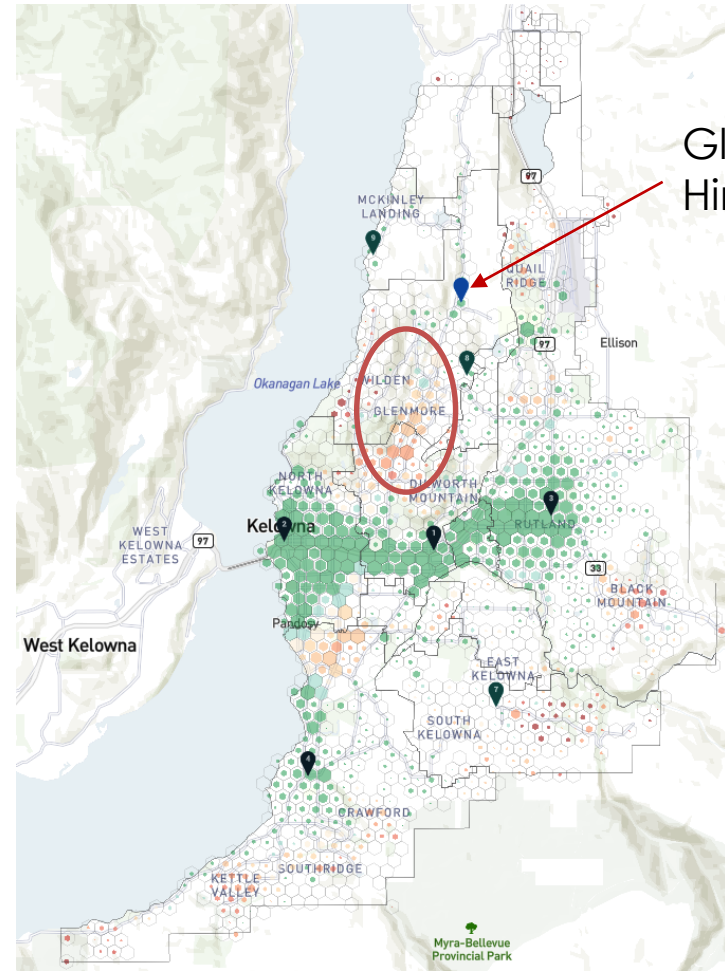
**What is the impact  
of a new station in  
Glenmore/Hindle?**



# Adding a station in Glenmore/Hindle improves Medical First Response performance by 1%...



MFR Baseline Performance of  
**90.1%**

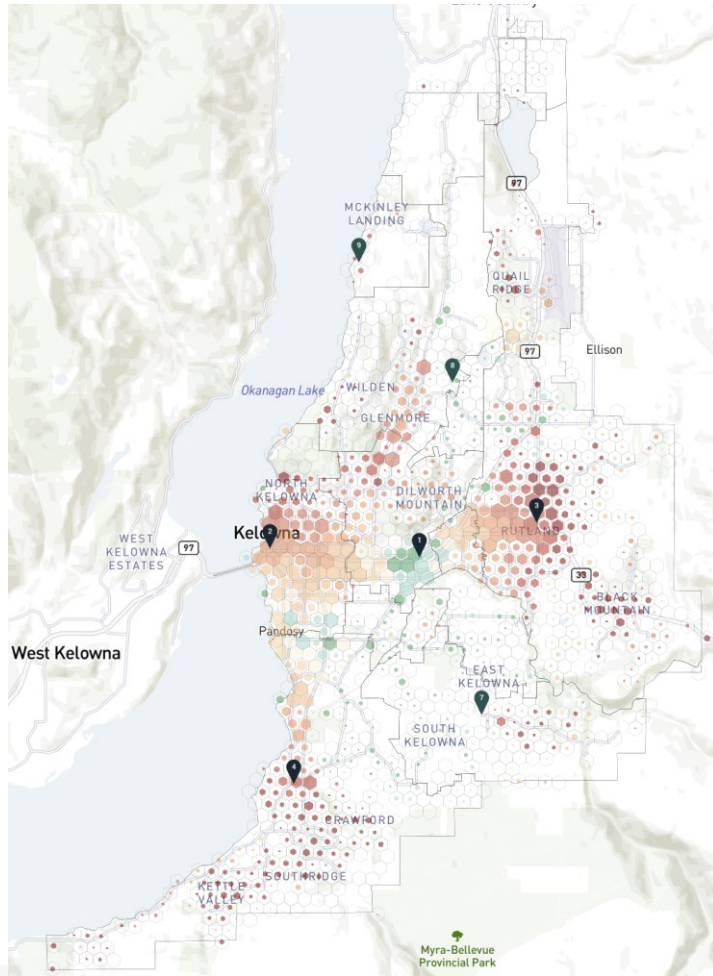


Glenmore/  
Hindle

MFR Performance of **91.1%**

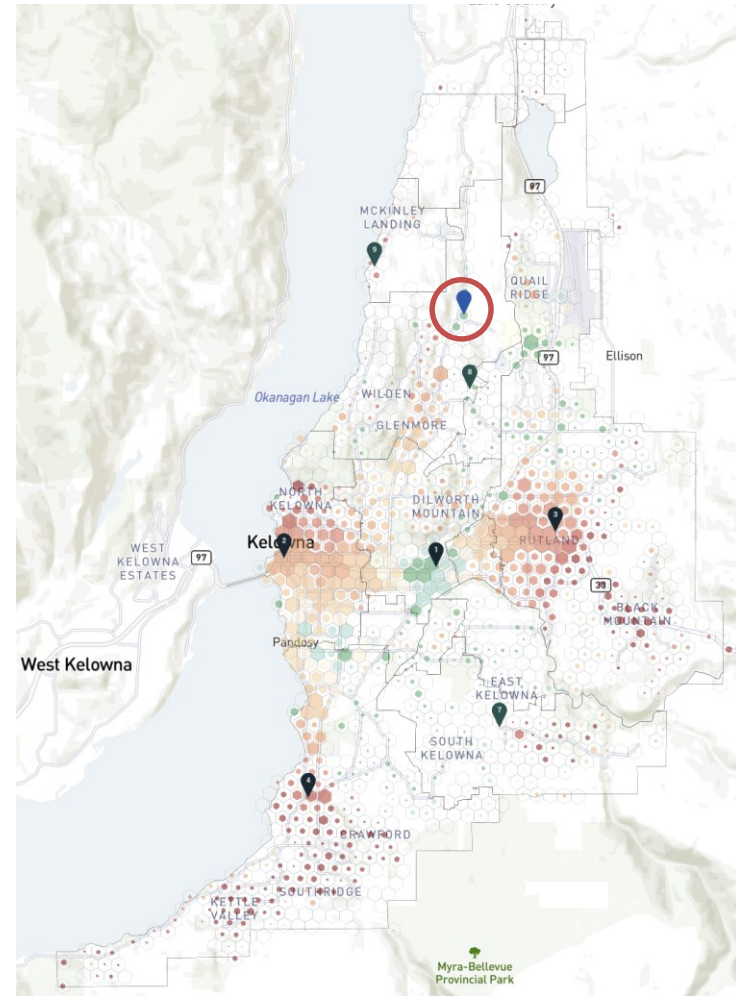


# ...and Fire Performance by 1.8%



Baseline Fire Performance of  
**73.2%**

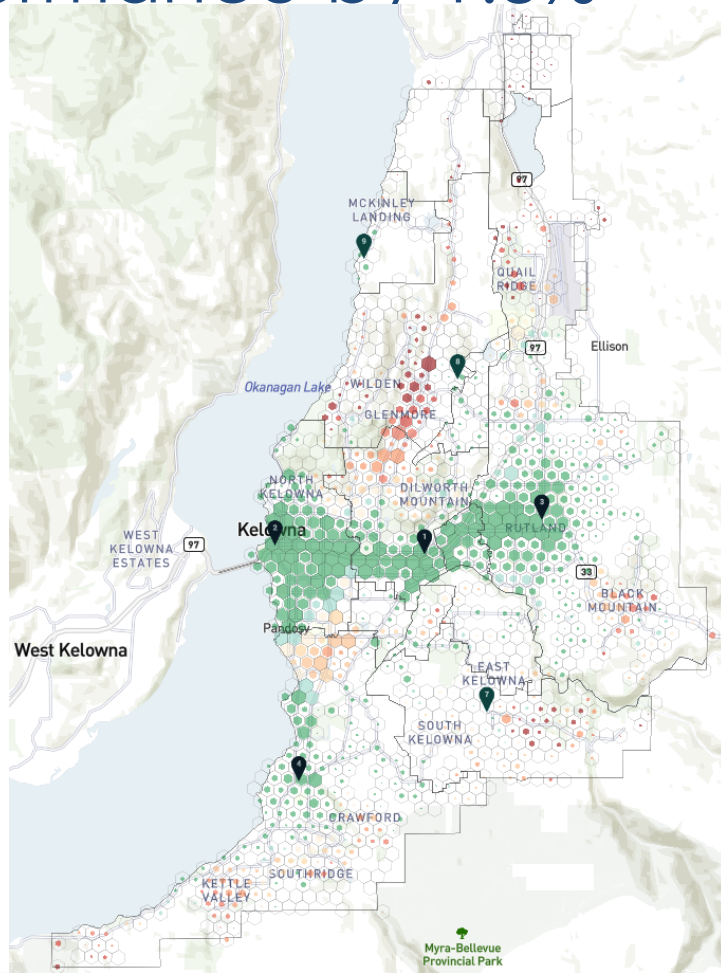
Performance based on average historical demand.



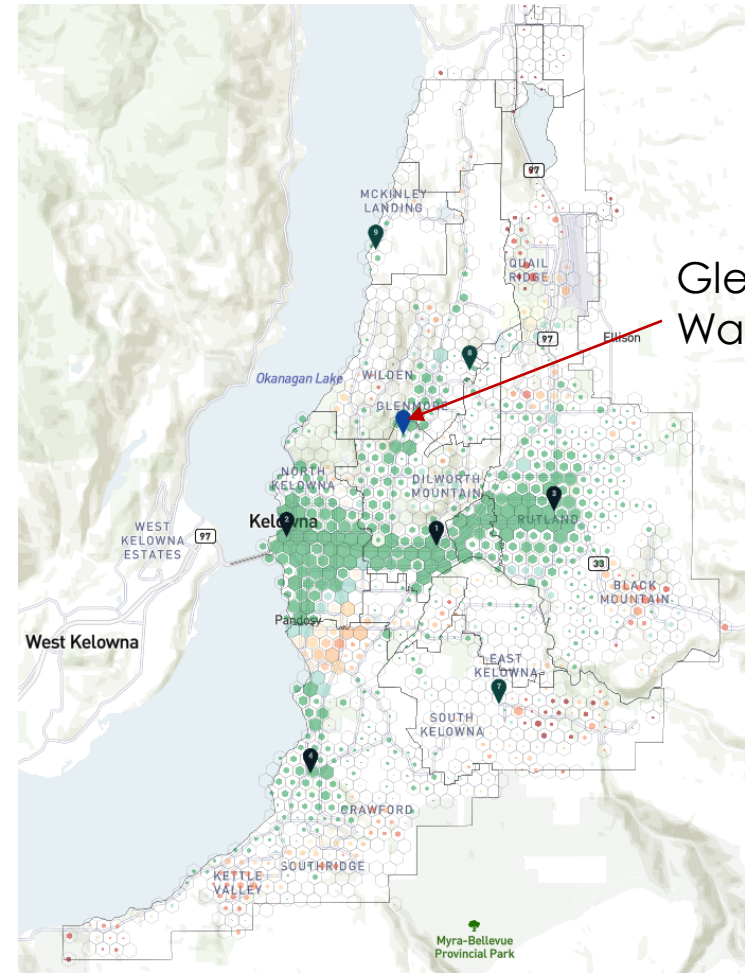
Fire Performance of **75.0%**

**What is the best  
place to add a  
new station?**

# Adding a station in optimal location (Glenmore/Watson) improves medical first response performance by 1.8%



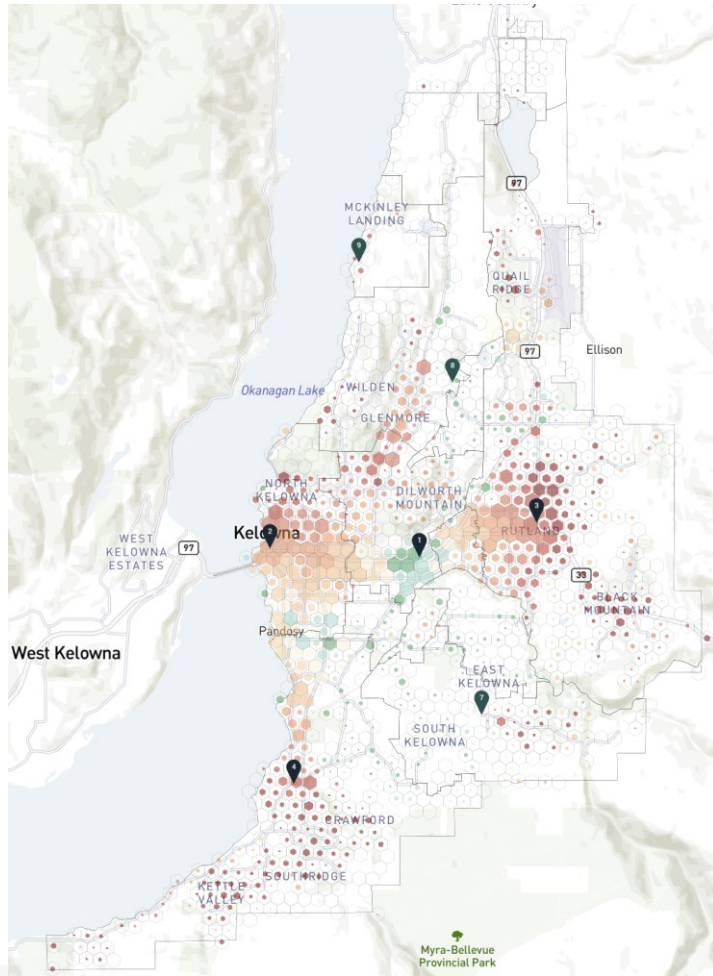
Baseline MFR Performance of  
**90.1%**



MFR Performance of **91.9%**

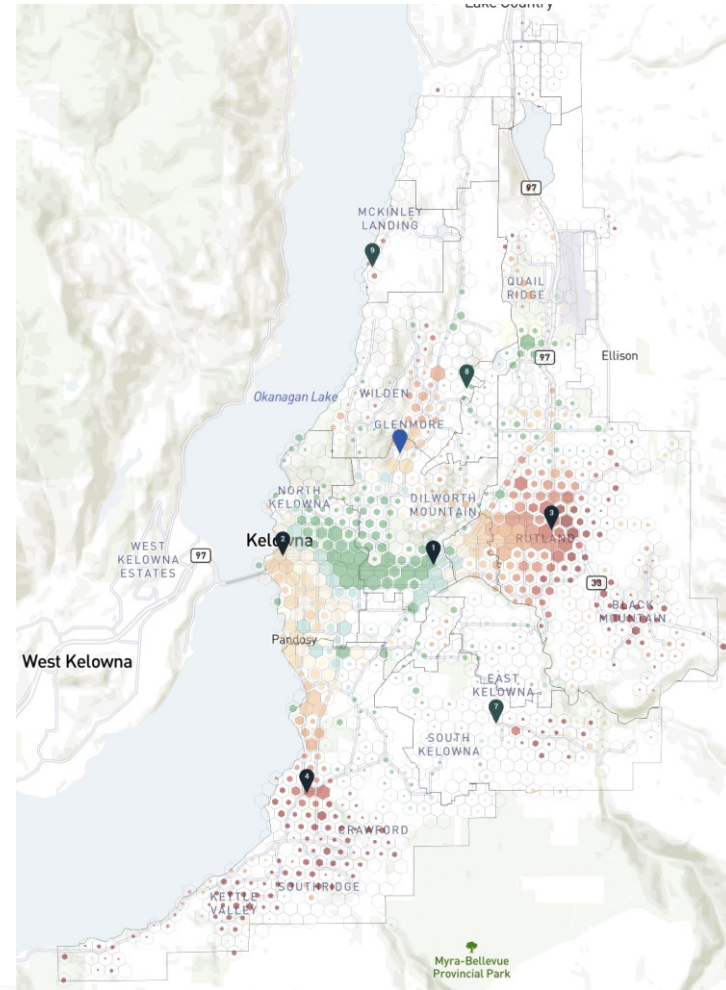


# ...and Fire Performance by 6.0%



Baseline Fire Performance of  
**73.2%**

Performance based on average historical demand.



Fire Performance of **79.2%**

# Station Summary

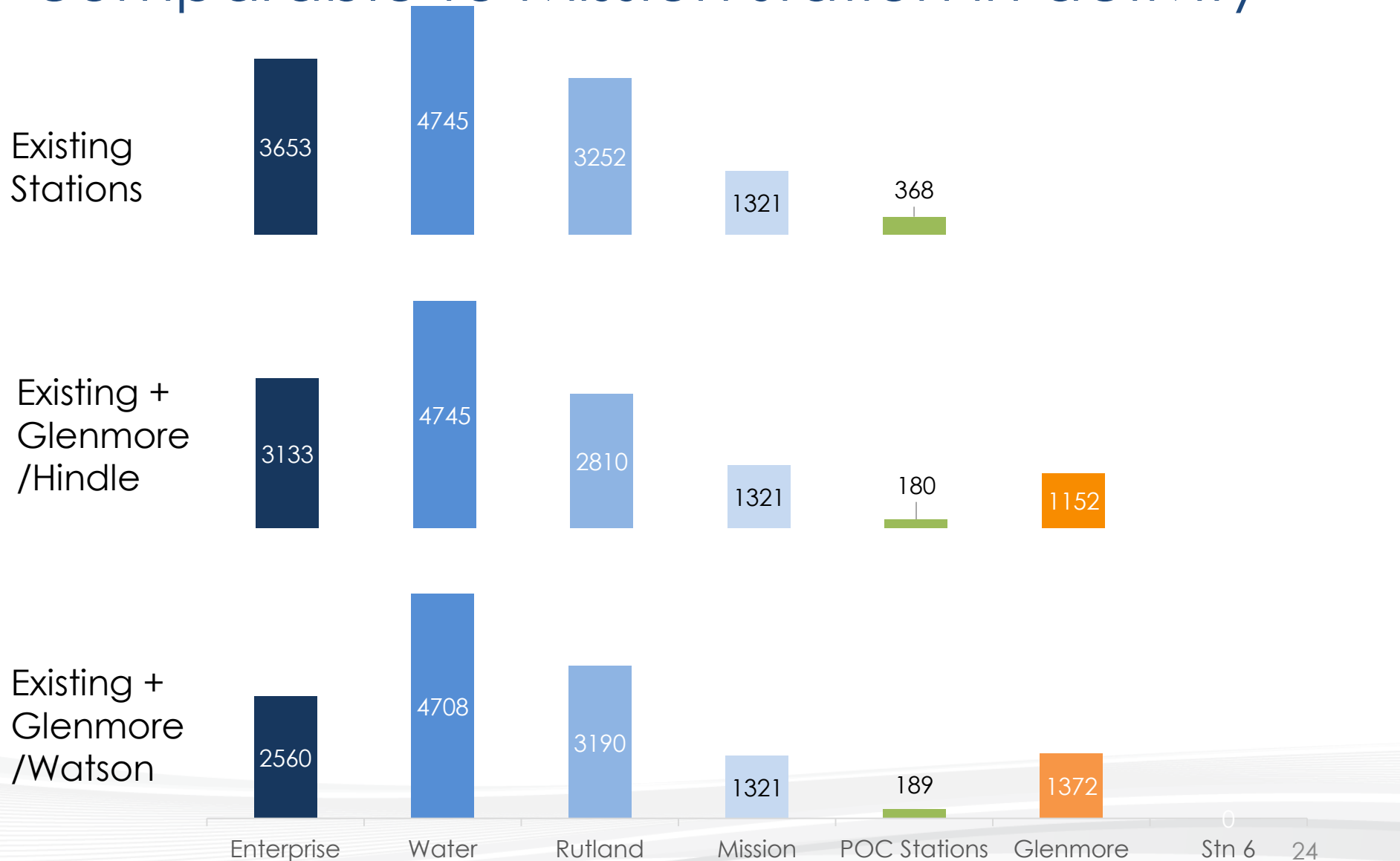
Scenario	Fire Performance		MFR Performance	
Existing	73.2%		90.1%	
Add a full-time station at Glenmore/Watson	79.2%	+6.0%	91.9%	+1.8%
Convert Station 8 to full time	76.1%	+2.9%	91.2%	+1.1%
Add a full-time station at Glenmore/Hindle	75.0%	+1.8%	91.1%	+1.0%

**Does Kelowna  
need a  
Glenmore  
station in the  
near term?**

Kelowna has a heavier workload per career station than comparable cities

<b>Municipality</b>	<b>Avg Incidents/FT Station/Year</b>
<b>Kelowna</b>	<b>2,460</b>
Abbotsford	1,640
Strathcona County	1,189
Toronto	1,307

# A new Glenmore station would be comparable to Mission station in activity



Annual call volume per station based on drive time analysis.



# Other considerations

- Call growth in Glenmore will be higher than average (~50% through 2030)
- Two large properties drive call volumes in Glenmore
- Call growth may be higher in the near term
- Flexing a vehicle to station 8 can alleviate medical response issues in Glenmore

# Near Term Summary

- A new unit in the Enterprise station has a significant impact on fire performance
- The current stations are reasonably well-located for current calls
- A new station would be best situated in Glenmore/Watson based on call frequency

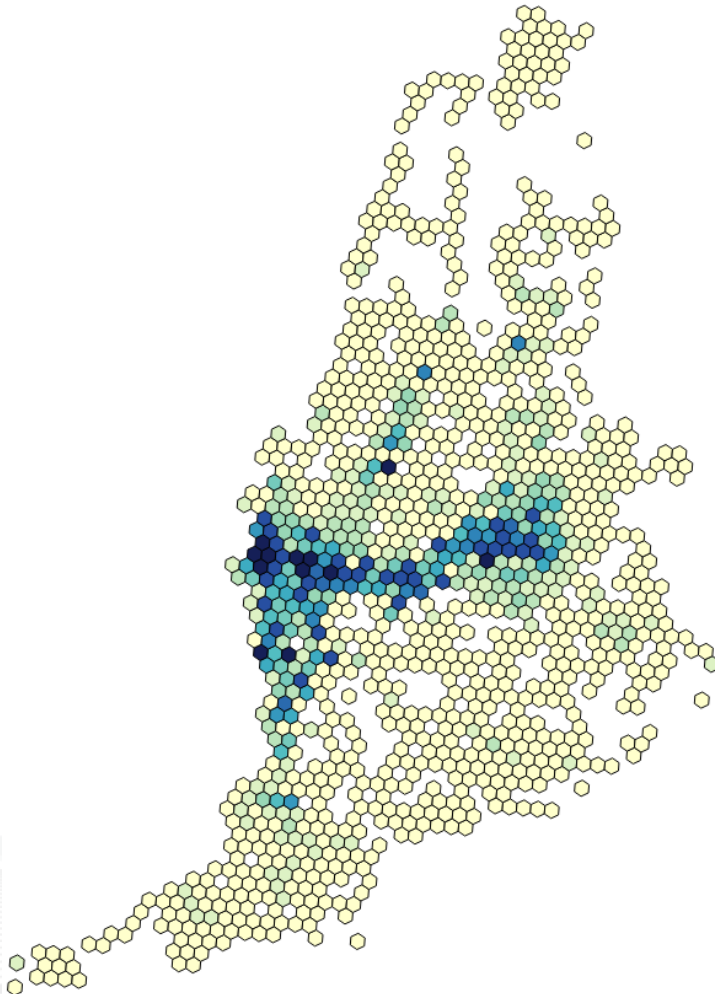
# Longer Term Analysis

**How will  
demand growth  
impact the  
City?**

# Call demand is expected to increase by 32%

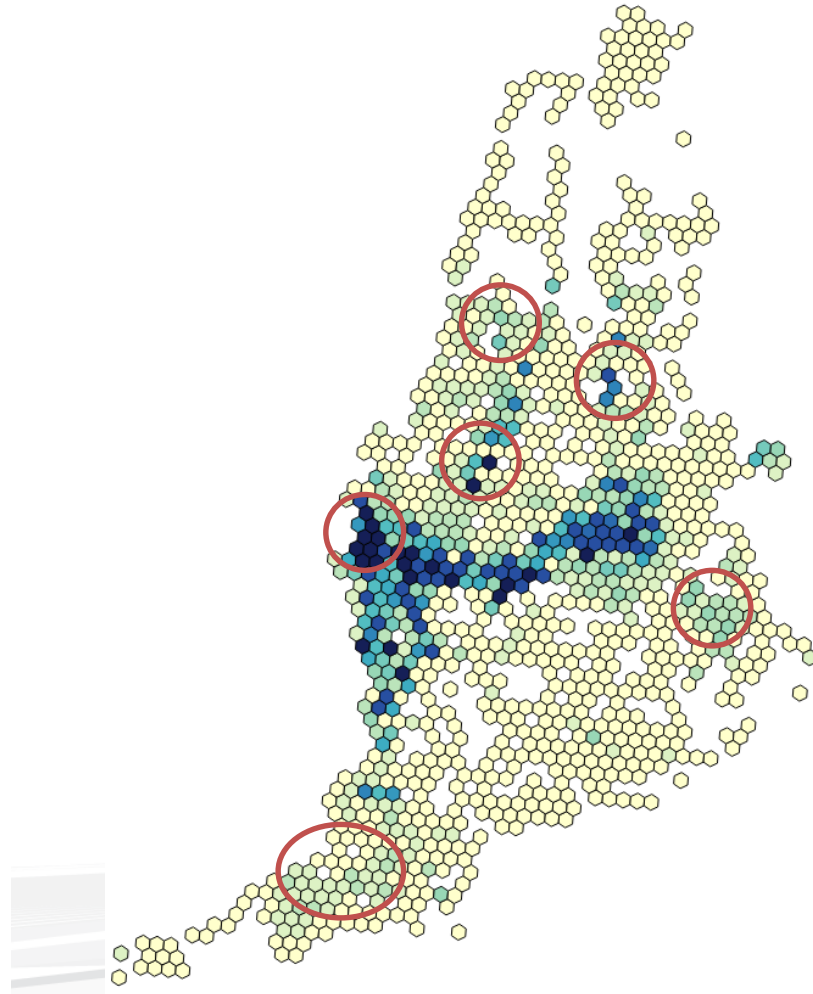
## Current Demand

Avg. 10,125 calls/year

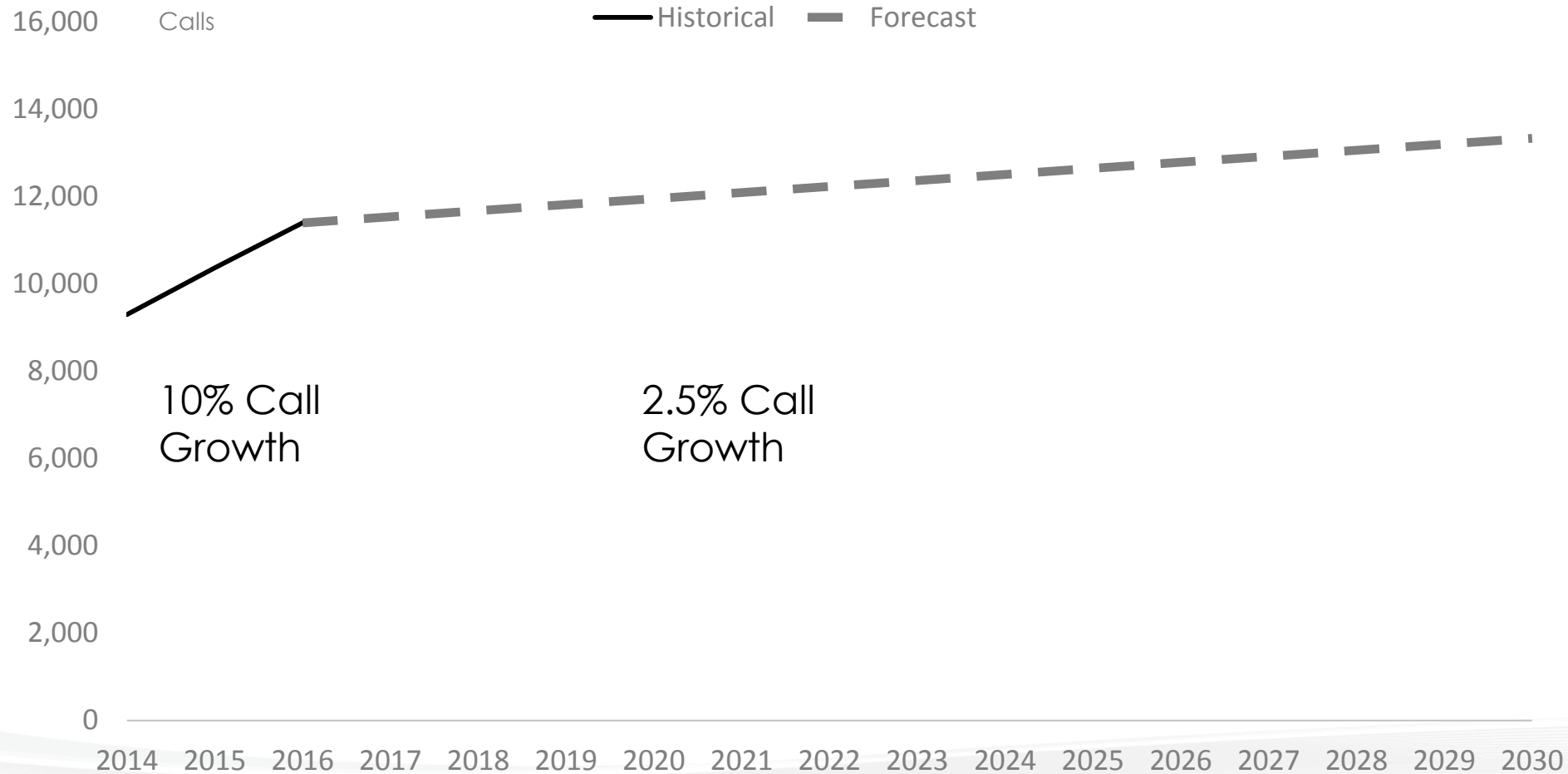


## 2030 Forecasted Demand

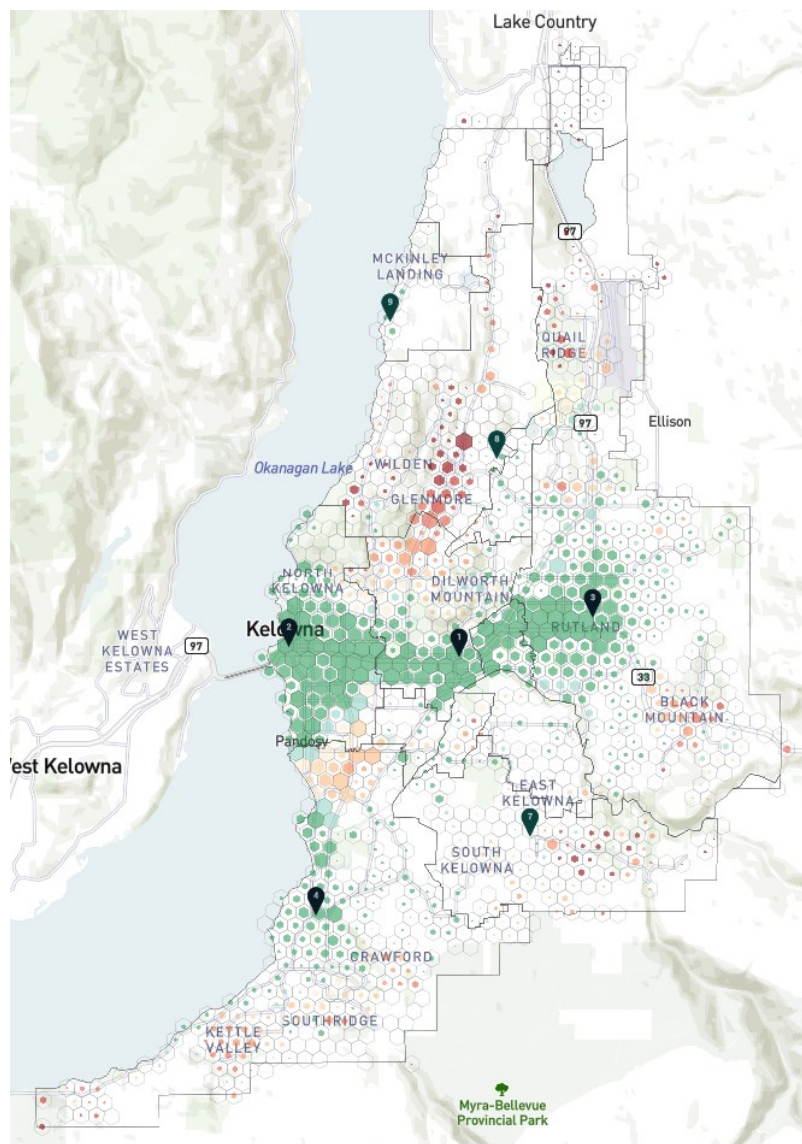
Avg. 13,340 calls/year



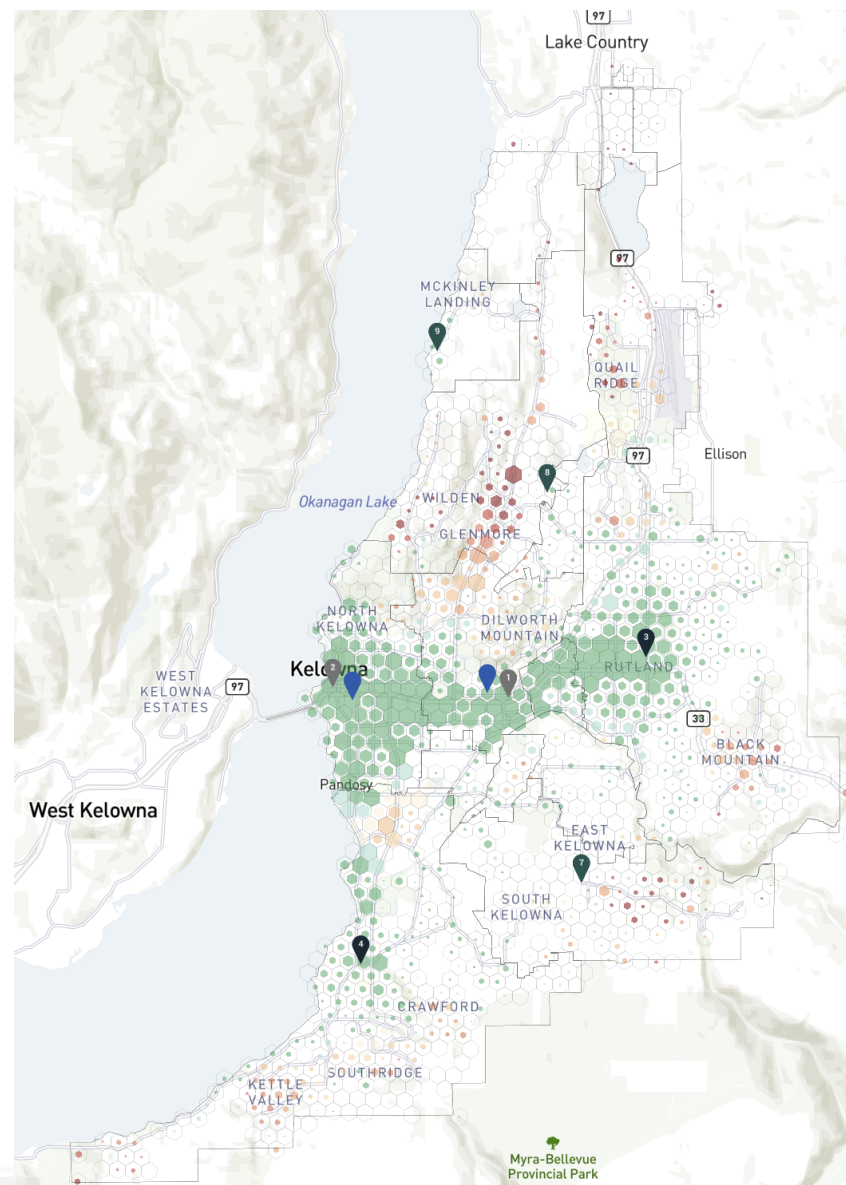
# Call Demand will tend toward the population growth rate



**How optimal  
are existing  
stations?**



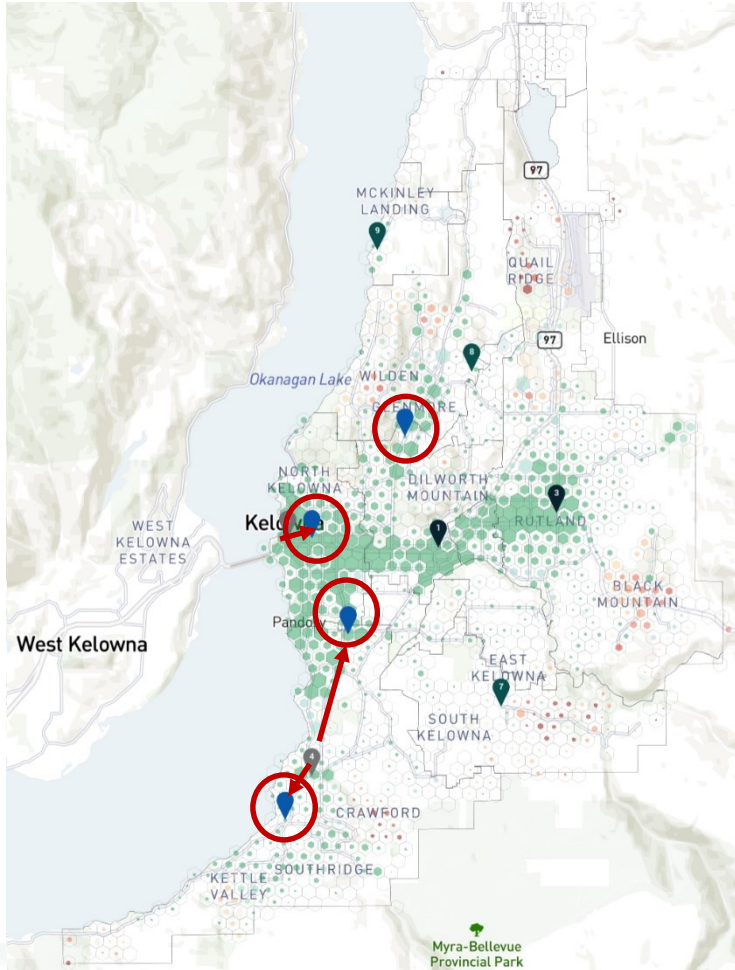
MFR Baseline Performance of  
**90.1%**



Medical Response Performance  
of **90.8%**



# If the city grows as planned, a denser station plan will be needed



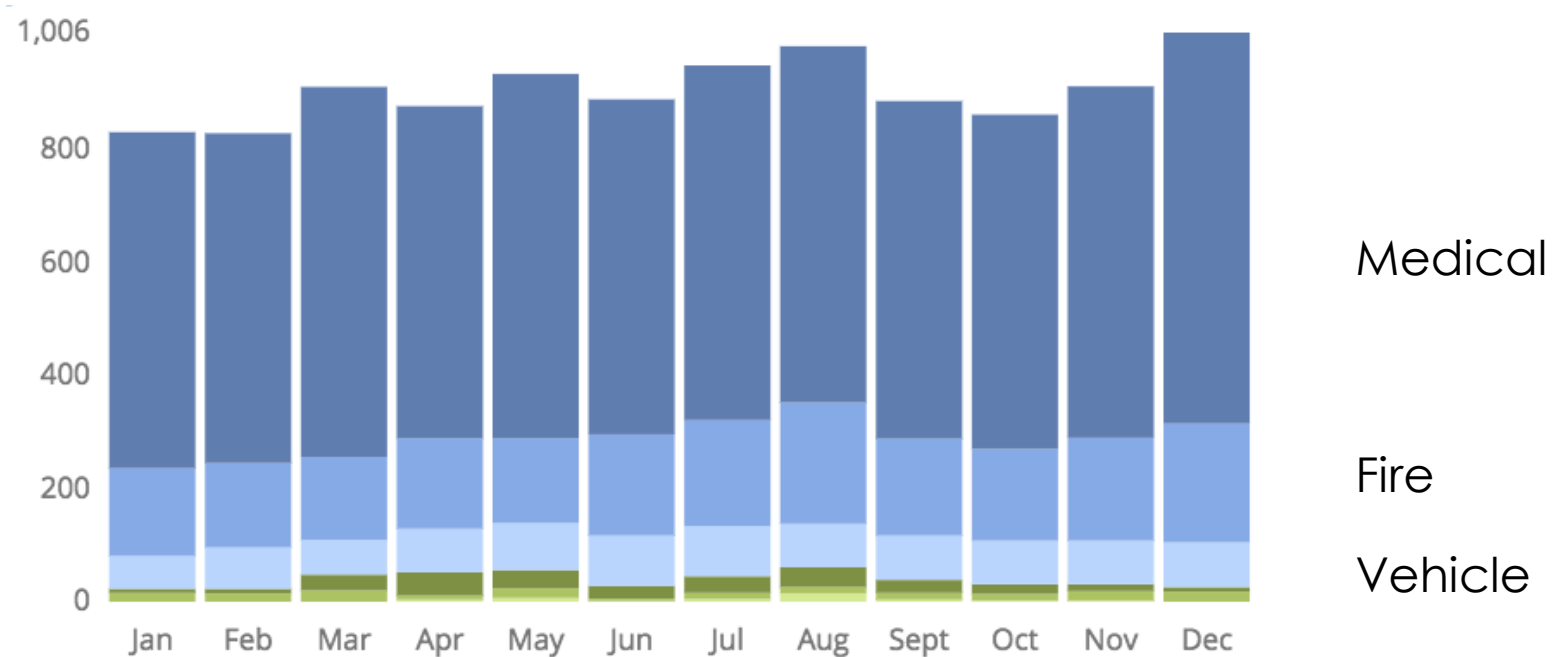
- New station at Glenmore
- Mission splits in two (Pandosy and Upper Mission)
- Downtown could move inland

# How can demand be managed?

# Kelowna has more incidents per person than comparable cities

<b>Municipality</b>	<b>Incidents/ Person</b>	<b>Medical Calls/Person</b>	<b>Fire Calls/Person</b>
<b>Kelowna</b>	<b>0.08</b>	<b>0.05</b>	<b>0.03</b>
Abbotsford	0.05	0.03	0.02
Strathcona County	0.04	0.03	0.01
Toronto	0.04	0.02	0.02

...but the calls don't have a strong seasonality



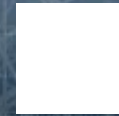
# A deeper look will likely reveal opportunities:

- Frequent flyers
- Redundant response
- High-risk populations
- High-risk structures

# Recommendations

- Add a unit to the Enterprise station
- Monitor call volumes in Glenmore
- Pursue call prevention activities
- Plan for a station in Glenmore/Watson area when risk and call activity warrant
- Consider mixed- or multi-use facilities for stations

# Questions



**DARKHORSE**  
ANALYTICS

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