Analysis Update and Location Modelling

Report to Committee of the Whole

September 12, 2023

PLAN. PREPARE. PERFORM.

Agenda

- Introduction
- Analysis Highlights
- Modelling Future Scenarios
- Summary

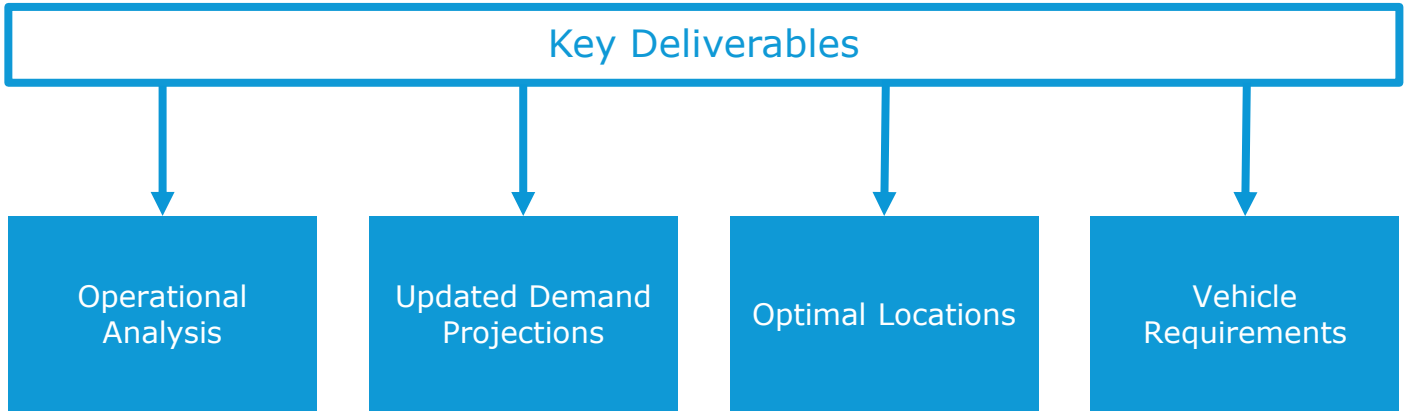
Introduction

Background

- 10-year Resources and Facilities **Master Plan for PCCP** completed by ORH in **2016**
- Steps made by PCCP to progress down the **recommended development path** (for example, opening Clonsilla and making resource enhancements to mitigate increasing demand)
- **Master Plan for KLPS** completed by Performance Concepts in **2021** – findings built into ORH's future modelling
- Opportunities for **shared deployment strategies** between PCCP and KLPS, particularly in Cavan-Monaghan where significant development anticipated

Objective

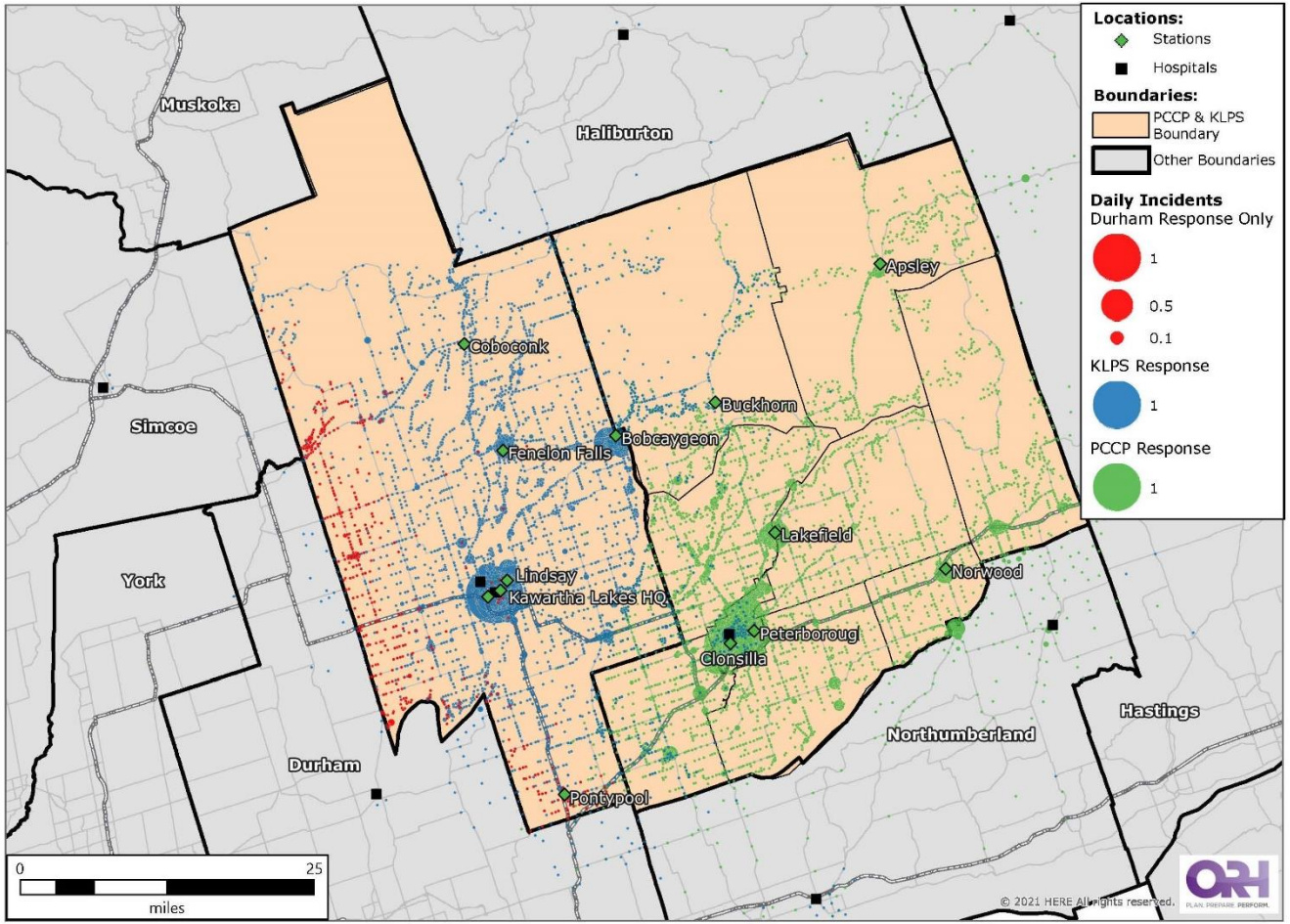
Analyze how Peterborough County/City Paramedics (PCCP) operations and drivers have changed since the previous review and **identify optimal locations** across both **PCCP** and Kawartha Lakes Paramedic Services (**KLPS**).



Analysis Highlights

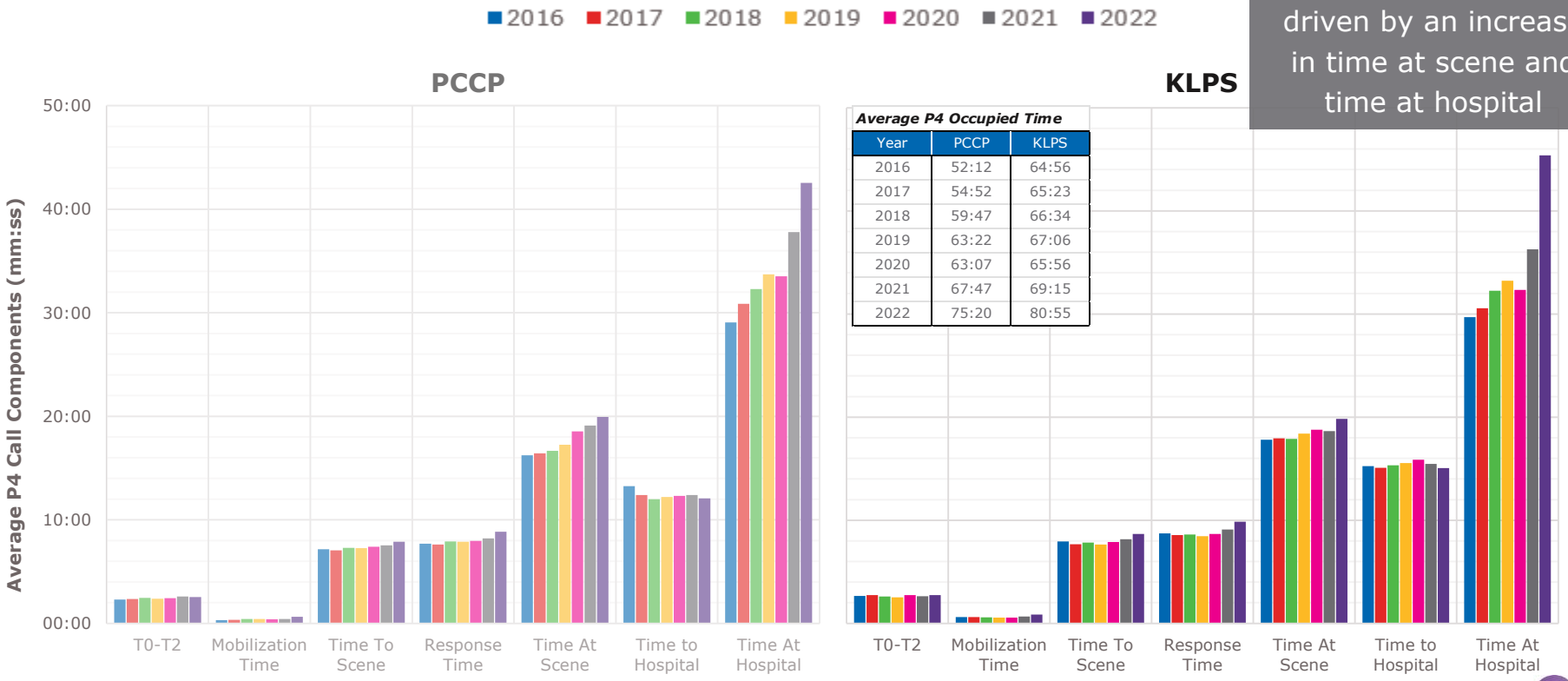
Responded Incidents Map

Overlap in PCCP and KLPS responses in south Kawartha Lakes, Durham supporting response in west Kawartha Lakes



Call Components

Average occupied time increased between 2016 and 2022, largely driven by an increase in time at scene and time at hospital

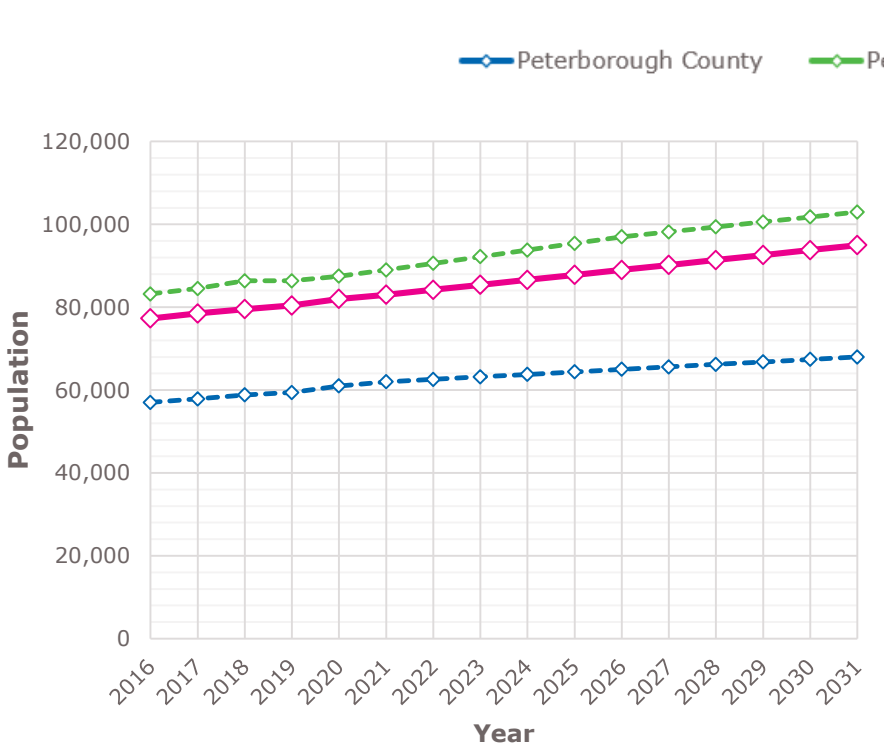


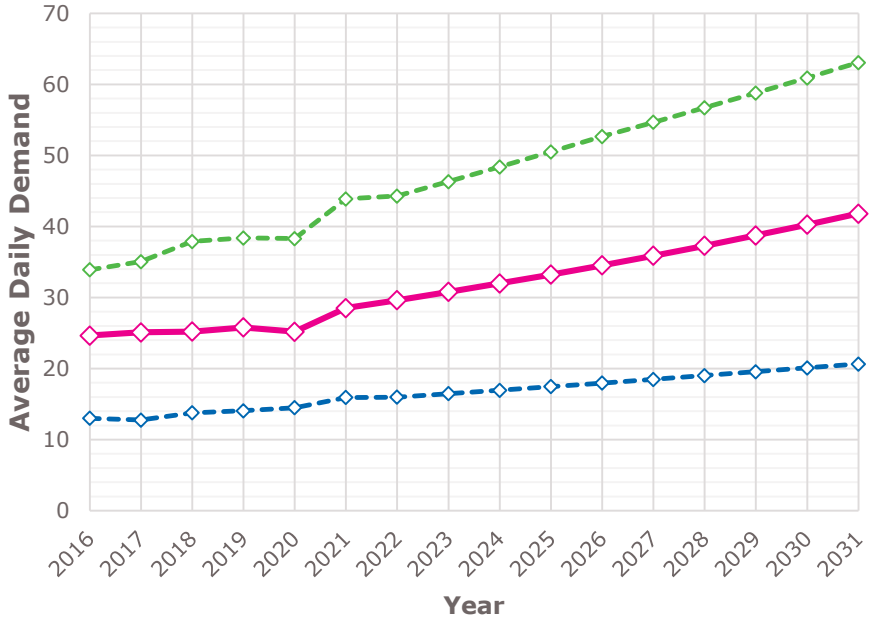
Average P4 Occupied Time

Year	PCCP	KLPS
2016	52:12	64:56
2017	54:52	65:23
2018	59:47	66:34
2019	63:22	67:06
2020	63:07	65:56
2021	67:47	69:15
2022	75:20	80:55

Population and Demand Projections

Area	2021 vs 2031	
	Demand	Population
Kawartha Lakes	**47%**	**14%**
Peterborough	40%	13%





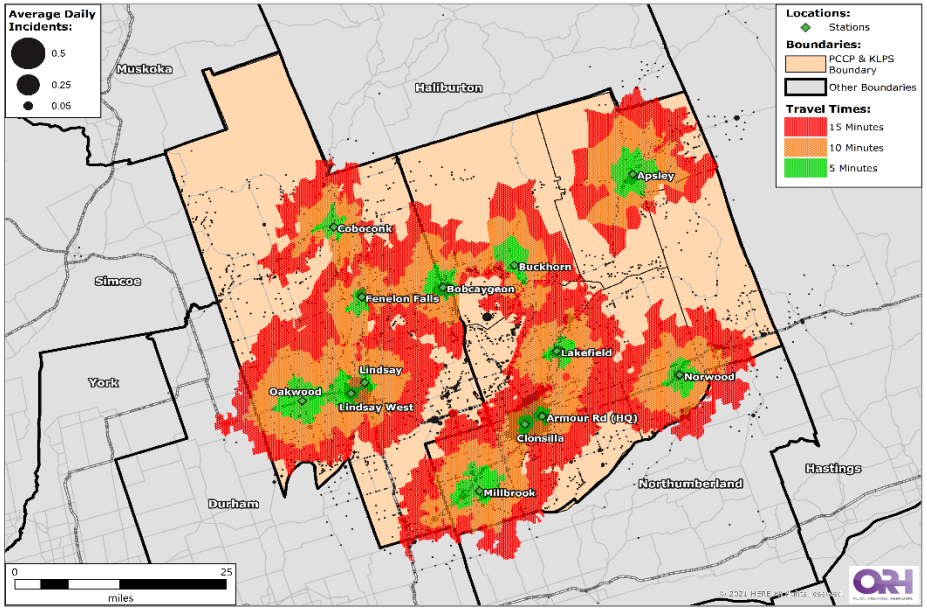
Modelling Future Scenarios

Location Optimization Results

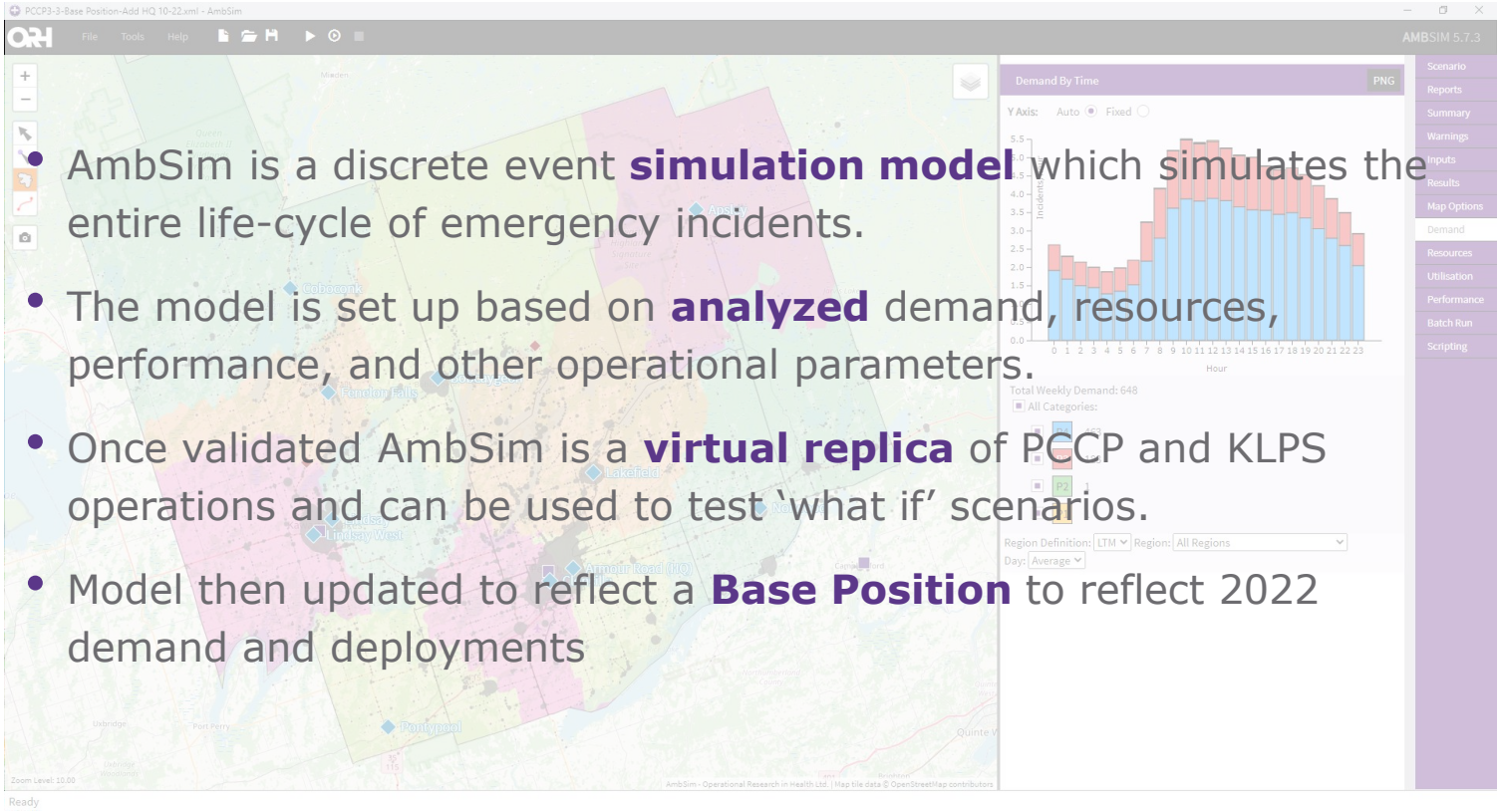
Current Response Locations

- The optimal site for Cavan-Monaghan and south Kawartha Lakes was found in **Millbrook**, close to the planned Millbrook location
- With a site in Millbrook, the next optimal site for Kawartha Lakes was found in **Oakwood**
- The optimal sites for Fenelon Falls and North Kawartha were **near to the existing stations**

Recommended Response Locations



AmbSim: The Model Base Position



- AmbSim is a discrete event **simulation model** which simulates the entire life-cycle of emergency incidents.
- The model is set up based on **analyzed** demand, resources, performance, and other operational parameters.
- Once validated AmbSim is a **virtual replica** of PCCP and KLPS operations and can be used to test 'what if' scenarios.
- Model then updated to reflect a **Base Position** to reflect 2022 demand and deployments

‘Do Nothing’ Scenario (2031)

- Demand projections modelled with **no other operational changes**
- P4 8-minute performance **degrades by 7.7%** compared to Base Position
- Base Position resources/locations **insufficient to offset demand increases**

Base Position

Model Outputs

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	**52.6%**	**61.4%**	**90.4%**	**10:02**
Peterborough	68.1%	76.9%	94.6%	07:59

‘Do Nothing' Scenario (2031)

Model Outputs

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	**44.9%**	**53.4%**	**84.7%**	**11:45**
Peterborough	61.9%	71.1%	91.1%	09:17

Difference to 2022 Base Position

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	**-7.7%**	**-8.0%**	**-5.8%**	**01:43**
Peterborough	-6.2%	-5.8%	-3.5%	01:18

Impact of New Locations and Resources (2031)

- Optimal KLPS **sites introduced**: Pontypool to Oakwood, Lindsay consolidated to single location, Coboconk upgraded to base, Fenelon Falls moved to 13 John St
- PCCP location and resource changes also made (including 24/7 at Millbrook)
- P4 8-minute performance **improves significantly when compared to the 'Do Nothing'** scenario

Base Position

Model Outputs

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average
Kawartha Lakes	52.6%	61.4%	90.4%	10:02
Peterborough	68.1%	76.9%	94.6%	07:59

Impact of New Locations and Resources (2031)

Model Outputs

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	**51.8%**	**58.9%**	**88.5%**	**10:17**
Peterborough	70.5%	78.6%	94.8%	07:40

Difference to 2022 Base Position

Area	P4 Performance From Time Notified			
	8-Minute	10-Minute	20-Minute	Average (mm:ss)
Kawartha Lakes	**-0.8%**	**-2.6%**	**-1.9%**	**00:15**
Peterborough	1.7%	0.6%	-0.4%	-00:12

Summary

Summary

- Base Position (current) resources and locations are insufficient to offset demand
- Location optimization identified optimal site at Millbrook, close to planned location, and confirmed original Performance Concepts recommendations (for example, Pontypool moved to Oakwood)
- If KLPS implement the Performance Concepts location recommendations, along with the PCCP location and resource additions, this will allow the majority of the demand increases to be offset

Questions?

Find Out More

- You can find out more about our range of services at:

  www.orhltd.com

- If you would like to talk to one of our consultants please call:

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