# Our Demand Forecast

Forecasting is a technique that uses historical data as inputs to make informed estimates that are predictive in determining the direction of future trends. This methodology has been applied to the following activities to predict the level of demand we may face over the life time of this plan. This can also assist us to formulate our 10-year capital investment and 3-year revenue plans.

Current Average Annual Operational Demand *Based on data from 2019-20 to 2022-23	Category	Predicted Average Annual Operational Demand 2024-25 to 2028-29
5,161	Incidents Attended	5,702
1,806	Fires	1,299
349	Accidental Dwelling Fires	247
200	Non-domestic Property Fires	156
498	Deliberate Fires	412
2,441	False Alarms	2,678
2,399	False Alarms by Apparatus	2,642
727	Other Emergency Incidents	1,593
188	Road Traffic Collisions	356
521	Vehicle Fires	667
87	Flooding	Unable to predict
24	Wild Fires	22
15,537	Safe and Well Checks Completed	16,081

Our Demand Profile
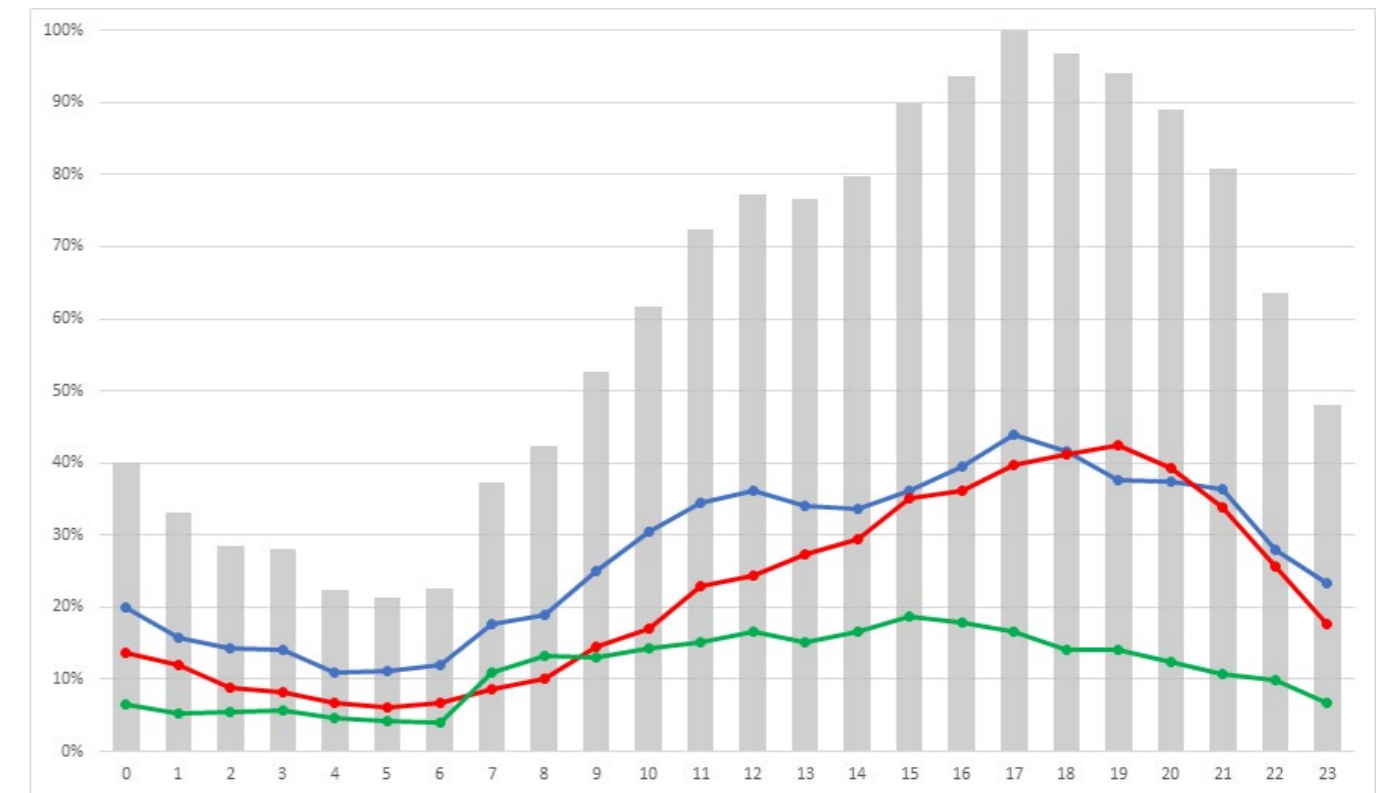
Average hourly incidents

Incident Category - Blue: False Alarm, Red: Fire, Green: Special Service

Our Performance Indicators

The Local Government (Wales) Measure 2009 outlines the duty of Fire and Rescue Authorities to collect information relating to performance and to use that information to compare their performance in previous years and with similar organisations.

Fire and Rescue Authorities are under a legal duty to collect and report data for the statutory indicators set out below.

		2022-23		2023-24	
		Total	Per 10,000	Total	Per 10,000
1	The total number of fires attended per 10,000 population.	2,011	29.27		
	The total number of false alarms attended per 10,000 population.	2,674	38.92		
	The total number of road traffic collisions attended per 10,000 population.	234	3.41		
	The total number of other incidents attended per 10,000 population.	977	14.22		
		Total	Per 100,000	Total	Per 100,000
2	The total number of deaths and injuries from all fires per 100,000 population.	40	5.82		
	The total number of deaths and injuries from accidental fires per 100,000 population.	35	5.09		
3	The percentage of dwelling fires which were contained in the room in which they originated.	86.84%			

How We Assess Risk and Demand

In preparing our Community Risk Management Plan we reviewed a wide range of Wales and United Kingdom level information sources, such as the UK National Risk Register, the Future Trends Report Wales and the North Wales Community Risk Register.

We have reviewed our own and partnership data relating to historical reported incidents, to identify the hazards likely to have an impact upon the future delivery of Fire and Rescue services in North Wales.

This takes into account when and where incidents occur, the socio-demographic profile of people affected as well as, the nature of the buildings, vehicles or environments involved. Emerging threats, such as technology, and the evolving challenges of climate change were also considered.

We have consulted with our staff, staff representative bodies and key partners, as well as a review of our strategic risk register to determine the most significant risks in the preparation of this consultation document.

We then analysed all of this information and applied professional judgement to identify the greatest risks to our communities, staff and places. Having identified the risks, we then reviewed our existing strategies to consider how effectively they mitigated against those risks. Where there are gaps we are developing specific approaches to further mitigate those risks. This approach, closely follows the National Fire Chiefs Council Strategic Framework for Community Risk Management Planning.

Effective response to some of the risks means working in partnership with other emergency services, local authorities, health providers and partner agencies. These partners are brought together through the North Wales Local Resilience Forum to prepare and respond to a range of emergencies. We regularly test these plans in joint training exercises.

Local Resilience Forums produce a Community Risk Register (CRR), which highlights potential risks facing the area. The risks outlined in this draft plan include some of those identified in the CRR and the government's updated National Risk Register, as well as some more specific fire and rescue risks.

Defining Scope
Understanding what the CRMP process needs to achieve.

Hazard Identification
Describe community hazards and who is at risk.

Risk Analysis
Assess the likelihood and consequence of a risk occuring.

Decision-Making
Decide on steps to take to reduce the risk

Evaluation
Check to see if the CRMP is working as planned

In addition to the statutory requirement for reporting of performance indicators to Welsh Government, a suite of measures has been developed to monitor the effectiveness of our tactics against those risks and these are regularly reviewed by the Service Leadership Team and the Fire and Rescue Authority.

Sustainable reduction in risk related incidents can only successfully be achieved by working in partnership with our communities, local businesses and other public service partners. We are members of the Local Resilience Forum, Partnership Service Boards and the Strategic Partnership Casualty Reduction Group.

Our Risks

Tourism

The tourism and hospitality sector is a key part of the economic infrastructure of North Wales. With visitors from the rest of the UK and abroad the overall population, and therefore the risk of fires, road traffic collisions and other emergencies significantly increases during the tourist season.

Accidental Dwelling Fires

Analysis of our incident data consistently concludes that the older you get the more likely you are to suffer a serious injury or die if you have a fire in your home. Over 40% of all fires in the home start in the kitchen and being distracted is the biggest human factor responsible, resulting in a smoke logged kitchen, damaged equipment or in the worst cases, serious injury or death.

This risk increases over the age of 65 and increases further if the occupant lives alone.

Other contributory factors which exponentially increase the risk of fire or accidents amongst this cohort are health conditions, such as dementia and poor mobility.

According to census data North Wales has an ageing population. The proportion of households made up of only pensioners (people aged 66 years and over) increased to 27%, which is high compared to the all Wales figure of 24.8% in 2021.

47,676 or 15.8% of all households were pensioners living alone. This has increased from 43,932 in 2011, even though the pension age was lower in 2011.

Non-Domestic Premises Fires

North Wales is home to a diverse array of industry, business and service providers. From our universities in Bangor and Wrexham, hospitals, hotels and heritage sites, to COMAH (Control of Major Accident Hazards Regulations 2015) regulated industry and the UK's largest hydroelectric facility, in Dinorwig Power Station.

Fire in any type of business premises can have a devastating impact on lives and livelihoods. We undertake a risk-based inspection programme to ensure businesses are complying with fire safety legislation and to help them become more fire resilient, prioritising those buildings with a history of fire incidents or known fire safety concerns,

or those escalated to us by partner agencies or the community. We encourage and assist businesses to comply with fire safety laws or face potential enforcement action.

Many of these premises have automatic fire alarms (AFA) as mitigation measures. The growth of AFAs and the frequency of false alarms, has placed increasing resource demands on the Fire and Rescue Service, which can compromise its ability to respond to other emergencies.

Wildfires

Home to Wales' largest National park, Eryri, thousands of acres of moorland and three of the five Welsh Areas of Outstanding Natural Beauty, North Wales' landscape is steeped with culture, history and heritage.

Climate change is here and threatening our landscape. There has been a marked increase in severe weather events and an increase in the demand to respond to wildfires across our region.

The impact of wildfires can be devastating. Every year in Wales, fire is responsible for damaging thousands of hectares of countryside, damaging land and property, harming our wildlife and our environment, releasing carbon dioxide and pollutants into the atmosphere and water courses, affecting local communities and businesses.

Extinguishing a wildfire is very difficult and costly, requiring specialist equipment as our firefighters often face working in dangerous and difficult conditions.

The costs following a wildfire including restoration, land lost to farmers and businesses and disruption to communities is immense.

Wildfires tie up our resources which could be needed at another emergency – and due to the rural and rural-urban interface environments in which they tend to occur we've seen how wildfires put lives at risk, the lives of our communities as well as those of our firefighters.

The summer of 2022 saw record-breaking high temperatures, and a dramatic increase in the number and severity of wildfires attended in North Wales, rising from four in March and April 2021 to 20 in March and April 2022. The picture was similar across the whole of Wales.

Drowning

With a three-year average of 11 drowning deaths per annum across North Wales there is a duty on fire and rescue services in Wales to respond to flooding and inland water emergencies.

The locations of drowning incidents are diverse – from entering the sea, rivers, streams, ports and harbours to baths and hot tubs. Whilst most people enter water intentionally, up to 40% do not. Of those intending to enter it may be for recreation, commercial or everyday reasons.

Some people may be under the influence of drugs and/or alcohol, which can seriously impede a person's ability to survive in water.

There is a significant gender split in relation to victims, with 88% being male.

Road Traffic Collisions

From our major trunk roads, vital to the economy, to the winding minor roads connecting communities and traversing our varied landscapes, North Wales' roads carry cars, HGV's, alternative fuelled vehicles, agricultural and recreational vehicles and more, each with its own unique risk.

North Wales Fire and Rescue Service works in partnership with other organisations to promote road safety and raise awareness of the main causes of fatal road traffic collisions. The 'Fatal Five' message focuses on 'Don't drink and drive, Kill your speed, Don't get careless, Belt up, and Switch off your mobile phone'.

We attend serious road traffic collisions to assist other emergency services and work tirelessly with partner agencies to help educate drivers about the potentially fatal consequences of speeding or not paying attention while driving.

This is particularly important for younger drivers - it is well documented that drivers aged 16-24 are disproportionately likely to be casualties in road traffic collisions. In Wales, this age group makes up 11% of the population but 22% of all casualties.
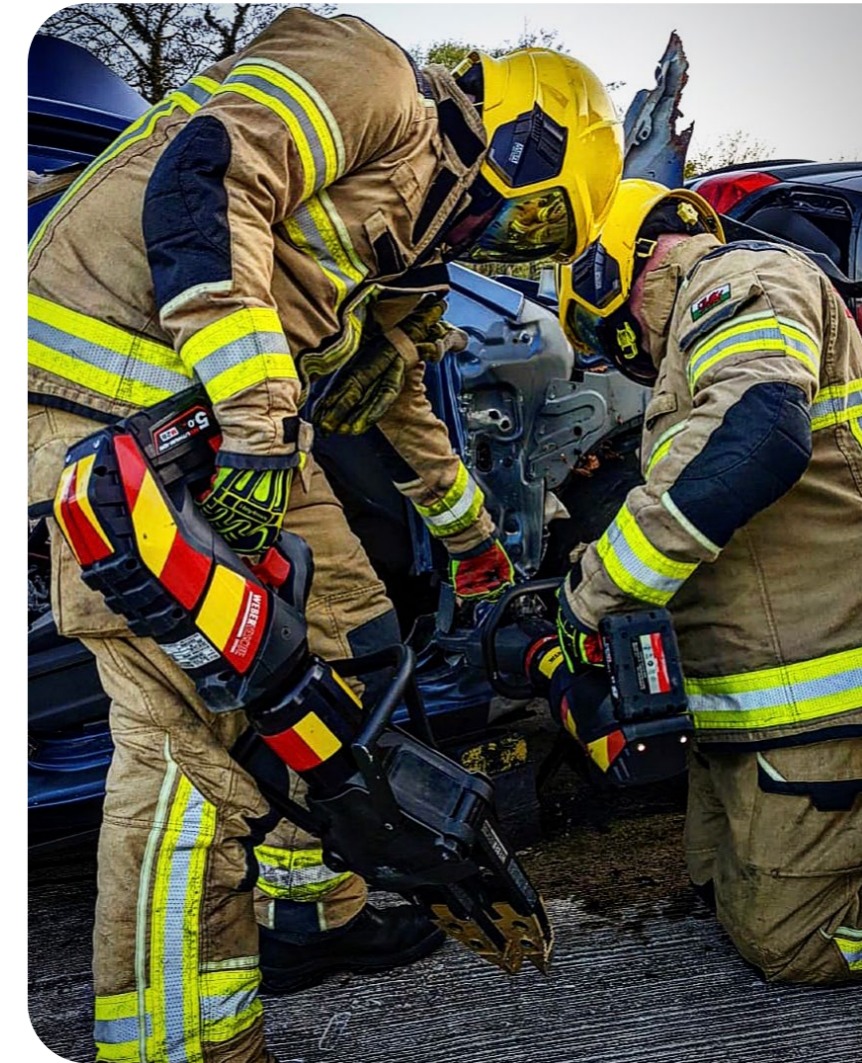
Flooding

Climate change has also seen an increase in demand to respond to flooding incidents in North Wales. Severe weather events are becoming more frequent across the UK, and with hundreds of miles of North Wales coastline and over 400 miles of rivers in Eryri alone, the threat posed by coastal, surface and waterway flooding, is very real and increasing.

By 2120 there are predicted to be over 38,000 properties at risk of flooding from the sea, up from 29,000 in 2020, and over 22,500 properties at risk of flooding from rivers, up from 18,000 in 2020.

Storm surges which raise high tide levels can affect many coastal communities and lead to overtopping of existing sea defences. This results in the flooding of residential and commercial properties. There is also a risk of river flooding caused by excess rainfall.

This has led to an increase in the demand to respond to flooding incidents in North Wales. Significant storms are becoming more frequent across Wales, requiring a multi-agency emergency response.

Floods can devastate entire communities and the effects are felt long after the water has subsided. During such incidents firefighters work around the clock saving lives, helping communities and providing humanitarian support.

As the planet continues to warm the frequency and magnitude of flooding events is projected to increase. The number of people in the UK significantly at risk of flooding is projected to increase 61% by 2050, under a modest warming scenario (2ºC).

[Flood Risk Management Plan for North West Wales](#)

[Flood Risk Management Plan for North East Wales](#)

Emerging Technologies

The North Wales Energy Strategy sees an ambitious and significant shift towards newer, more sustainable energy solutions. Increased reliance on photovoltaic energy production, both at a domestic and commercial level, and the associated energy storage systems, pose new risks and challenges for fire and rescue services.

Alternative fuelled vehicles, such as electric cars, gas and hybrid HGVs, driverless or autonomous vehicles, Artificial Intelligence (AI) systems, and modern methods of construction, all present emergent, and as yet undefined risks, which will need us to adapt our response.

The proliferation of lithium-ion batteries in electric vehicles, including e-bikes and e-scooter batteries, has led to a number of serious fires. Data obtained by the insurer Zurich revealed that such fires surged 149% across the UK between 2020 and 2021. These types of fires are increasing, they are difficult to extinguish and when they do occur, they escalate quickly, generate intense heat and produce harmful smoke and vapours.

Modern methods of construction

The construction of properties using timber frames rather than brick, block and steel is increasingly being seen as a preferred method by developers due to the potential savings in time, materials and labour. It is also regarded as a more sustainable method of construction.

However, if built outside recognised standards, or subsequently modified after construction, timber framed buildings can suffer rapid and major failings of their protection measures in the event of a fire. This can present significant risk to occupants of the building as well as to firefighters.