

# Modelling police demand

Chief Constables' Council

July 2019



# Agenda

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1. Background to the work and partner forces
2. Demand on the police: what is the shape of demand now and how might it look over the next four years?
3. The methodology supporting the findings
4. The implications of our findings:
  - a. For the spending review
  - b. For workforce planning
  - c. For public perception/police legitimacy

## Background : Crest's work on police demand has been in development for over 2 years

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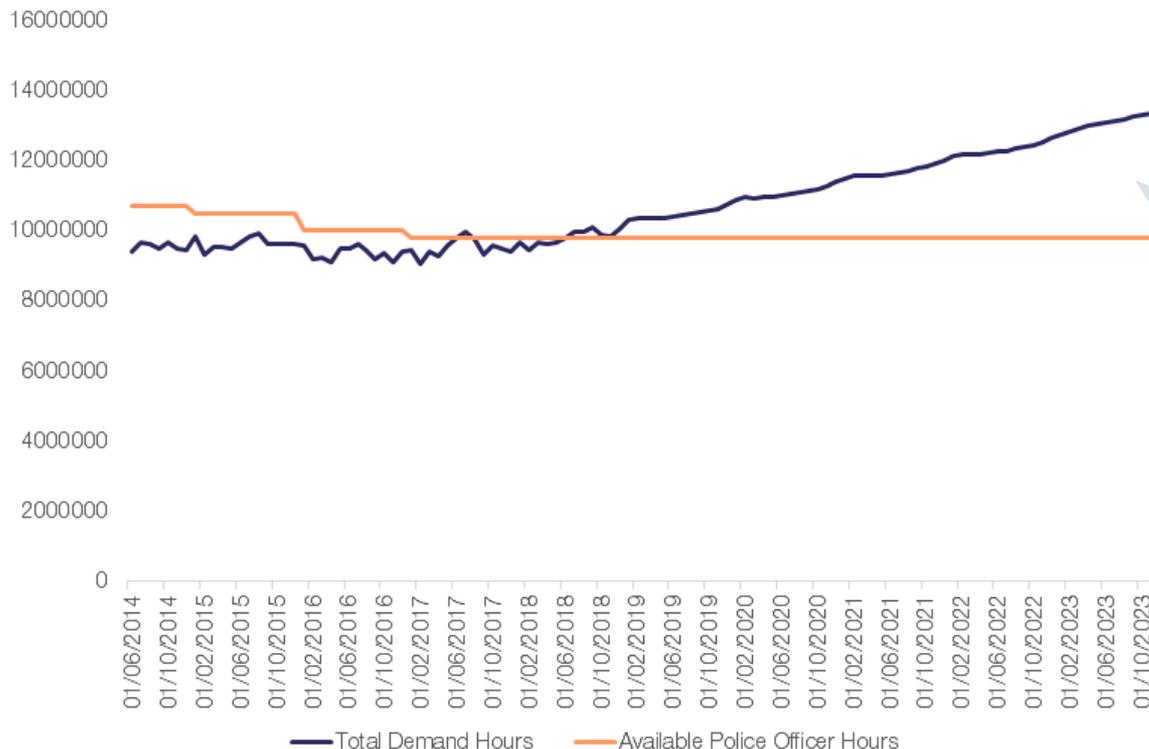


- Published a report on police demand based on analysis of control room data in Autumn 2018
- Worked with Bedfordshire and Nottinghamshire Police on independent demand modelling projects (Jan-May 2019)
- Presented methodology and findings to HMIC and Policing Minister, Nick Hurd (May 2019)



Findings in Bedfordshire and Nottinghamshire were broadly similar, allowing us to extrapolate some of the analysis, combined with published crime data, to create a national picture

# Big picture: Policing across England and Wales has been operating at or over capacity since 2017. We estimate that 32,000 additional officers are needed across England and Wales by 2023 at a cost of £2.3bn over 2 years\*



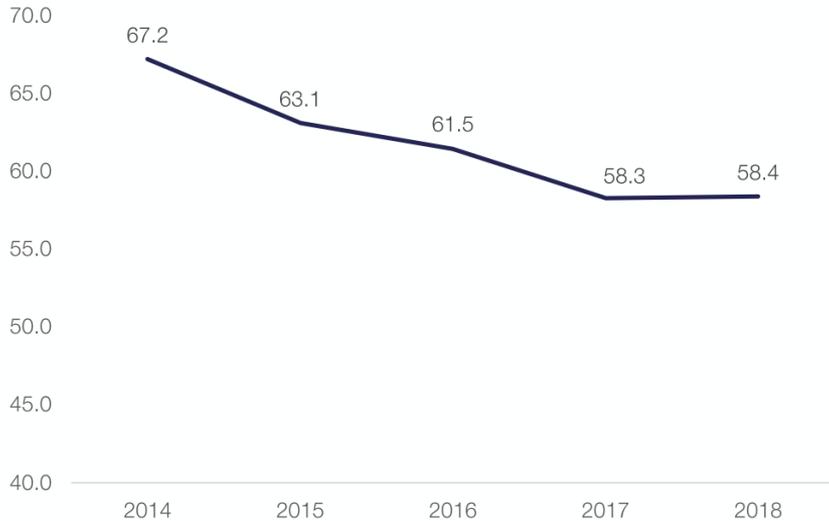
There is likely be a deficit of **3.5 million police hours** per month by 2023

\*Assuming the cost of recruitment and training is £12,900 per officer and annual payroll costs are £30,520 per officer, and officers are productive for 70% of their contracted hours

# Hard choices: It appears that forces have already adjusted their operating models to reflect demand pressures

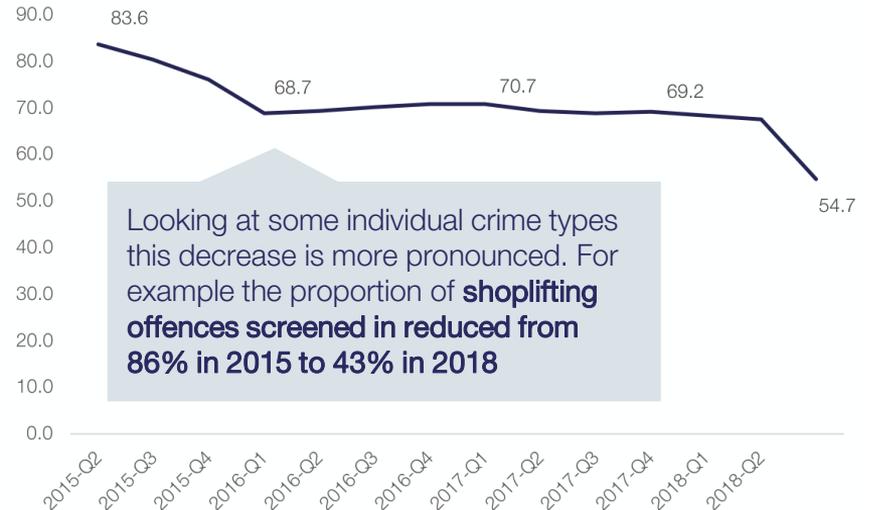
Average rates of deployment have decreased since 2014

Average proportion (%) of incidents deployed to, 2014-2018



The proportion of crime screened in for further investigation has also decreased

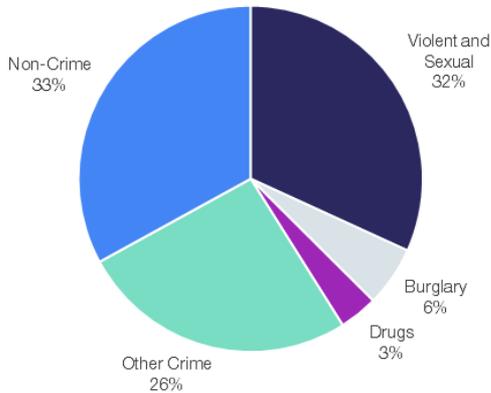
Proportion (%) of reported crimes screened in for further investigation, 2015-2018



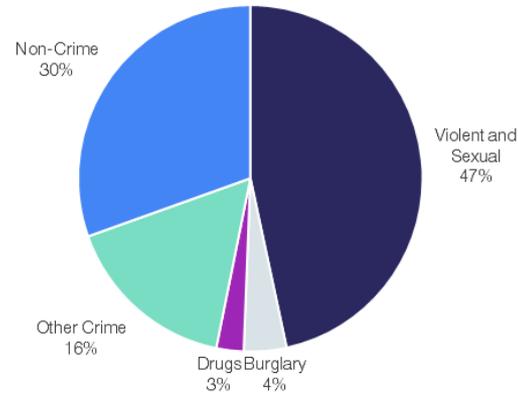
# Shifting landscape: Recorded crime is rising, but the profile of offending is also changing and becoming increasingly complex

According to our national model (extrapolated from our work with individual forces) violent and sexual offences will make an increasing contribution to total demand/workload, whilst non-crime demand will decrease (though not in terms of absolute volume).

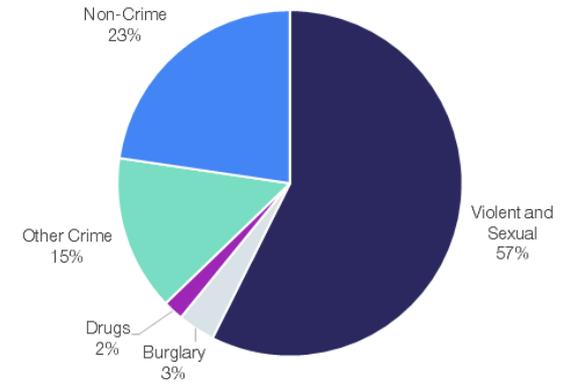
2014



2018



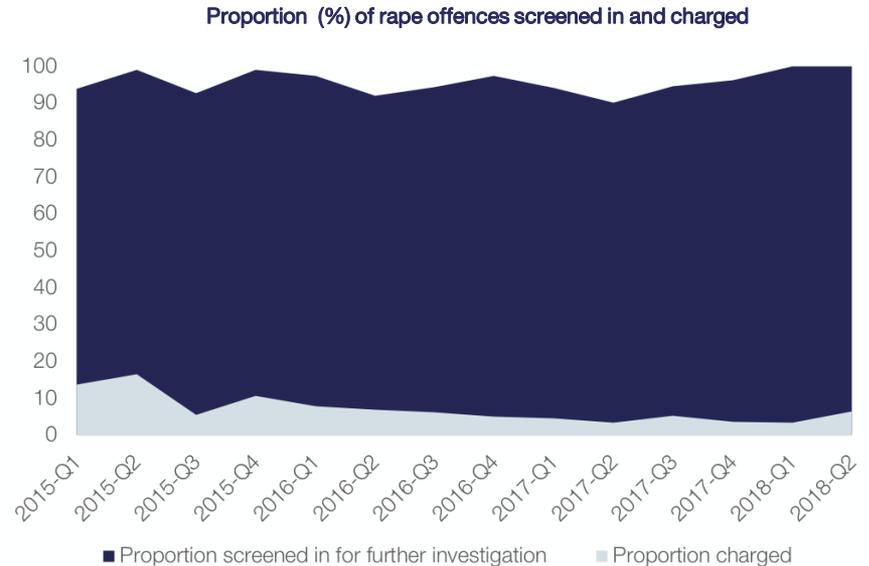
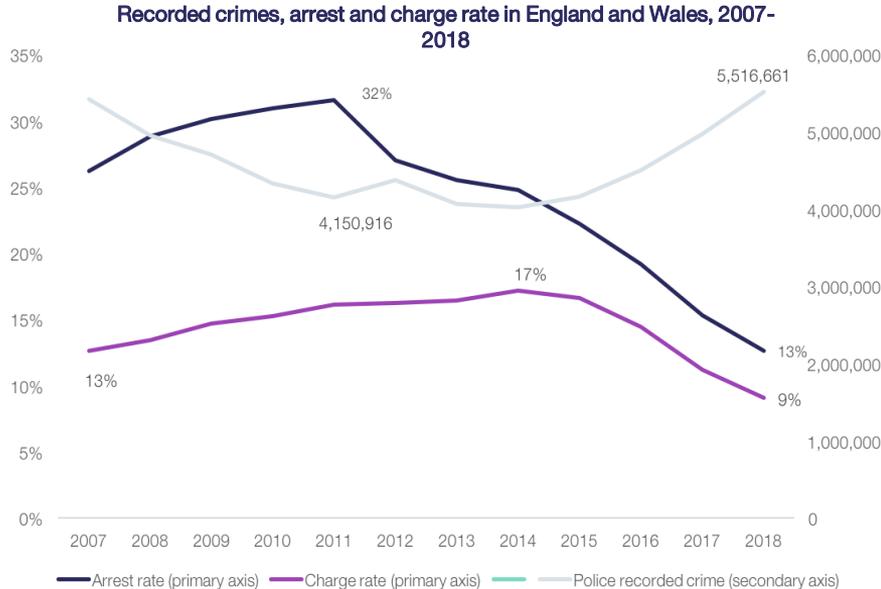
2023



\*Further breakdown: Violence with Injury (13%), Rape and Sexual Offences (12%), Violence without Injury (8%), Public Order (6%), Harassment (5%), Robbery and Domestic Abuse Crime, Possession of Weapons (5%)

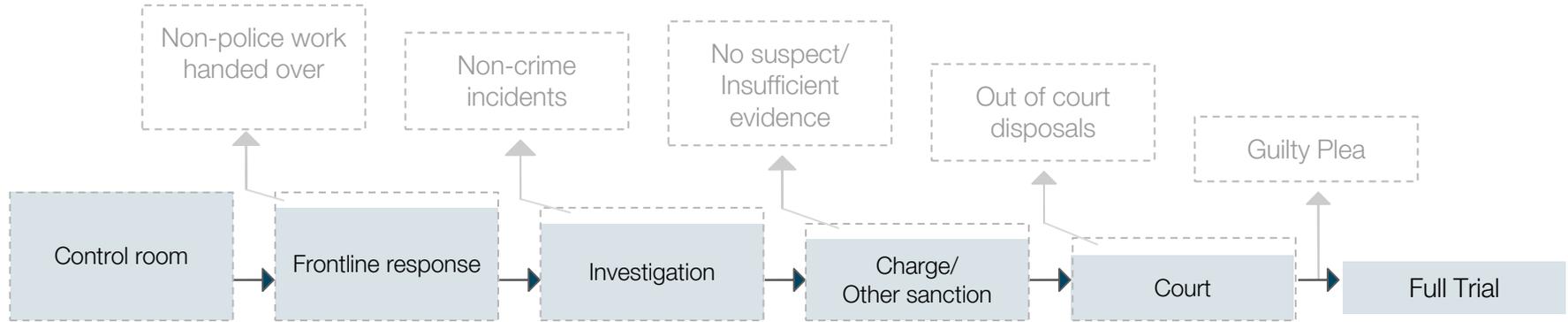
# Outcomes: Charge rates are being impacted by demand pressures

Nationally, charge rates have fallen, driven by a combination of demand pressures. Partly this may reflect a more challenging crime mix though closer analysis of the data suggests this cannot be the whole story, since charge rates are falling across all offence types.



# Methodology

**The model works by combining a number of statistical forecasting methods to analyse historical data and forecast 'reactive' demand over the next four years. It accounts for demand throughout police involvement in each incident/offence type**



We used control room data to establish the average time taken to resolve incidents on scene

In the absence of activity-based timings data, we conducted focus groups across the command structure to establish how the length of investigation changes by offence type, and tested these with a survey of officers

# The model can be used to investigate the impact of different operational choices on managing demand



Proportion of police officer time available for frontline activity



Proportion of incidents attended (aggregate or by offence type)



Average time spent on enquiries (aggregate or by offence type)



Average time to resolve incidents on scene (aggregate or by offence type)



Proportion of offences screened in for further investigation (aggregate or by offence type)

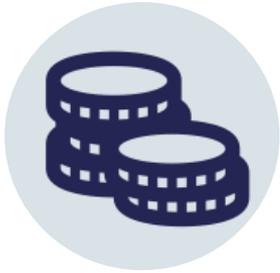
For example we examined the impact on demand if Bedfordshire attended only priority incidents



# Implications

# Our findings raise questions for the future of operational and strategic planning for police forces

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Approach to the spending review



Workforce planning



Legitimacy/Public perception



# Spending review: The model makes a compelling case for additional resource (at least 32,000 additional officers by 2023) nationally and the need for a longer term forward plan

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- Understanding (and quantifying) the shape of future demand will be a key component of a long-term plan for policing (as was the case for the NHS five year plan)
- Policing policy has historically been behind the curve when forecasting demand e.g. ahead of the last Spending Review, officials predicted violence would decline
- The current 2025 vision is too vague about future choices and ducks the major trade-offs required
- We have provided an analytical basis for determining both the level of spending required and future workforce/ capability requirements

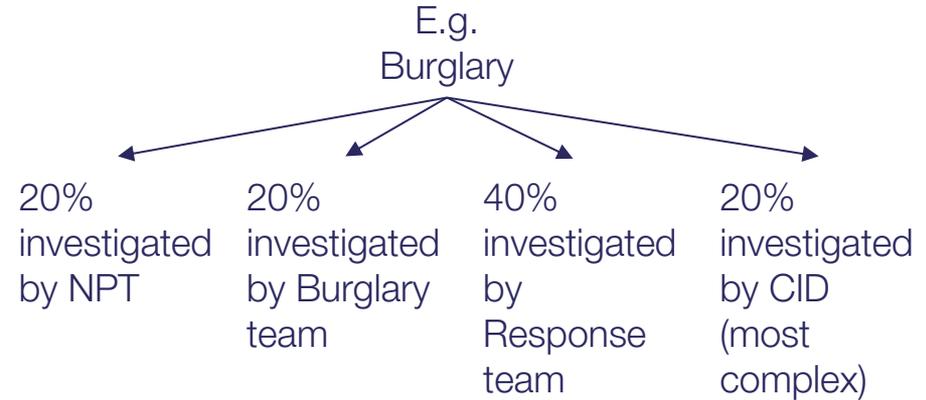
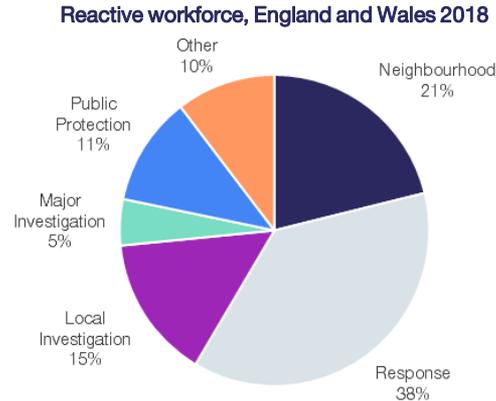




# Workforce planning: There is already a shortfall of 5,000 detectives nationwide. Our findings suggest there will be further pressure on investigative functions, but phase two of our work will make this clearer

The model allows us to ask questions about whether the current workforce is configured to meet future pressures (e.g. detectives/investigative resource)

We expect the next version of the model to set out exactly where in the command structure the additional resource will be needed.



An increase in the proportionate workload stemming from secondary investigation is likely to result in pressure on investigative functions

Once we understand the allocation of work we will be able to draw conclusions about how additional resource can best be allocated



# Legitimacy: Forces are already making difficult trade-offs in the context of limited resources. The model could be used to communicate rationale behind decisions and build public consent

Public priorities for the police don't always match the profile of demand. Setting out the trade-offs more clearly will help forces manage expectations and involve the public in decision-making

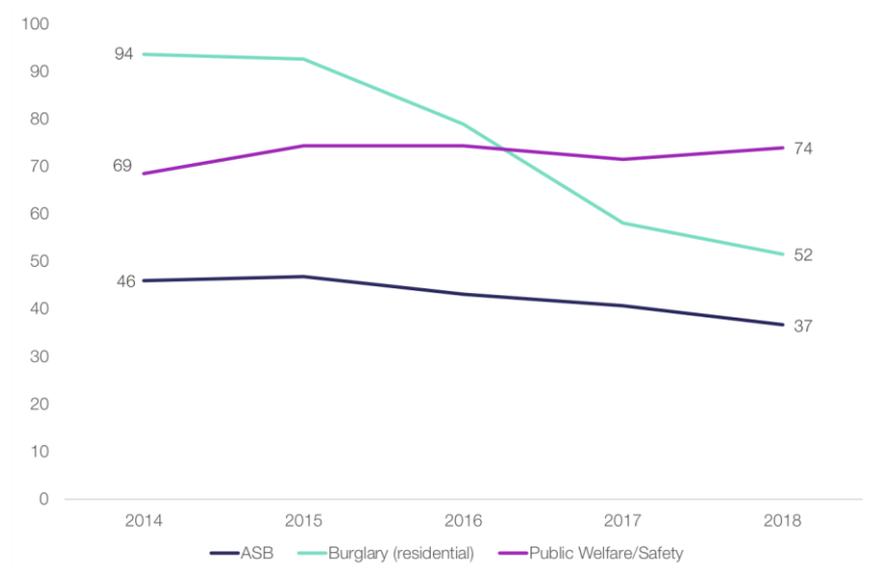
Top 3 local policing priorities for the area of Bedfordshire, 2018/2019

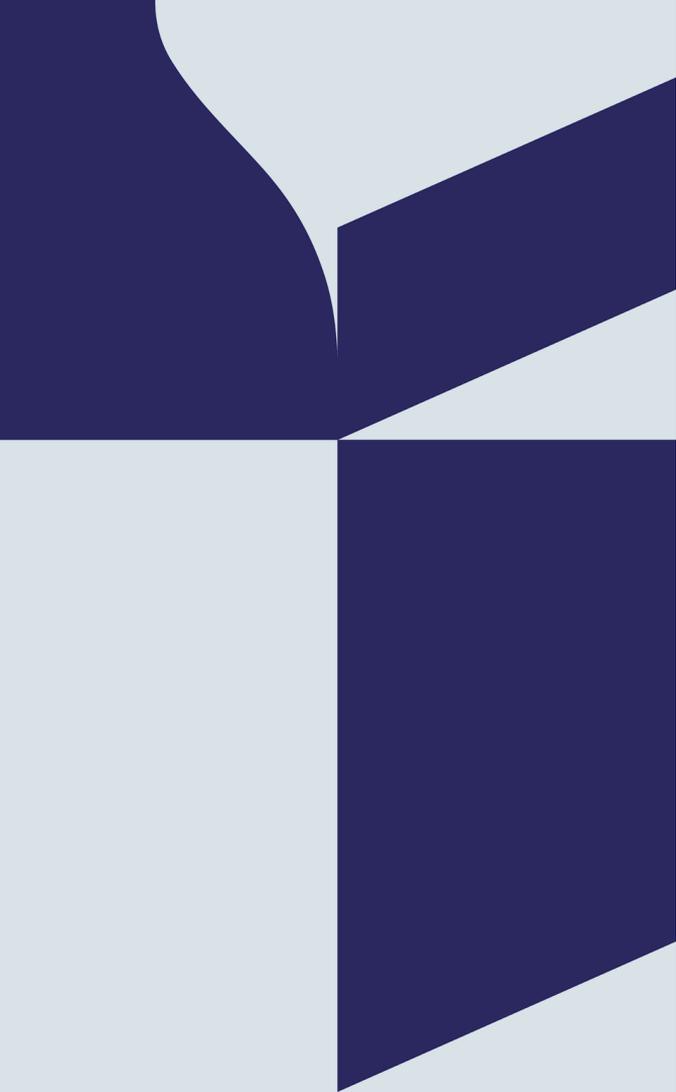
### Local priorities for this neighbourhood

Consultation with the community has identified the following priorities in this neighbourhood.

- Anti-social behaviour
- Drugs
- Robbery and burglary

Average deployment rates to ASB, Burglary and Public Safety incidents, 2014-2018





# Thank you

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# Annex

# The current model (and findings discussed so far) focuses on 'reactive demand'. We are developing it to incorporate 'proactive' demand

Existing

Available police hours from:

- Response
- Neighbourhoods
- CID
- Specialist investigations



Demand from:

- Control room
- Reported crimes
- Neighbourhoods



Difference between *reactive* capacity and *reactive* demand

In development

Available police *and* staff hours from:

- SOC
- IOM
- Fraud
- Intelligence
- Forensics/support



Demand from:

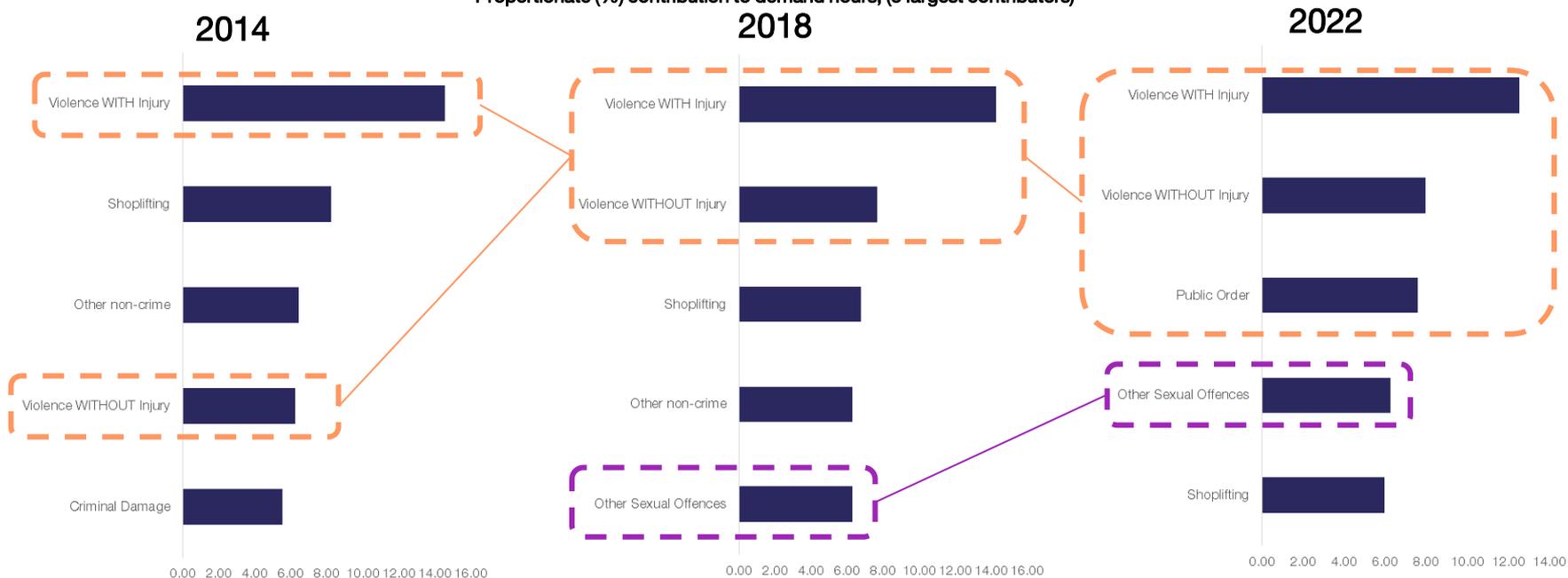
- Intelligence reports
- Pre-planned events
- Safeguarding
- Regional demand



Difference between *proactive* capacity and *proactive* demand

# Shifting landscape: Looking at more granular components of demand in Nottinghamshire, we can see the increasing contribution of violence without injury and sexual offences to total demand

Proportionate (%) contribution to demand hours, (5 largest contributors)



“Other non-crime” is an aggregation of a number of smaller components of demand hence why it takes up a large proportion of the total demand (in 2014 and 2018). The category includes: Abandoned/lost vehicles, animals/wildlife, suspicious circumstances, alarms, incidents passed to other agencies, police/court order/bail.