

# Strategic and Operational Resource Planning (SORP) Guide

**Revised July 2011**

# FOREWORD

The financial demands and challenges facing public services, in particular following the Comprehensive Spending Review published in October 2010, will require a push towards exploring and planning for innovative and transformative ways of working.

Improving the ability of the police service to deploy its workforce more effectively in meeting demand will be vital as forces move towards a workforce that maximises potential efficiency benefits and resilience and deployment flexibility for the service. Strategic and Operational Resource Planning is therefore a key strand within this.

The following Strategic and Operational Resource Planning (SORP) guide was originally developed with support from Deloitte as part of the Workforce Modernisation Programme. It offers forces a phased approach to developing longer term workforce plans. The guide takes forces through a structured process of analysing current and predicted future demand as well as current and future projected supply. Once this analysis has been carried out with existing and future gaps identified it enables the user to develop a workforce plan based upon the findings.

The first stage lays the foundations for all your Strategic and Operational Resource Planning by helping you to agree the roles and responsibilities of those who will manage the process; to decide on your operational priorities; and to help ensure you have the skills tools and data you need.

Phase two takes you through a detailed analysis of your current demand for the function you have chosen to analyse (Force/BCU/Team) as well as projecting how those demands may change over the next 2 – 5 years.

The third phase looks at your supply i.e. the size, shape and diversity of your workforce. As with demand this also has two steps, firstly looking at existing supply and secondly projecting what your supply may look like in the future.

Once the Demand and supply phases have been completed the fourth phase enables you to make comparisons and determine the size and make up of any gaps. Analysis of these gaps will determine if any action is required to address them.

The final phase brings together the lessons, data, information and analysis from the previous phases to assess your final recommendations and develop the actual workforce plan.

A number of tools are available to assist in this process to achieve a robust workforce plan based upon sound evidence and analysis and these are referred to in more detail later in this document.

It should be emphasised that Strategic and Operational Resource Planning is the responsibility of Chief Officers as it requires expert operational input to generate meaningful plans. It is an iterative process, and is just one input into your operational decision-making – the plans should be a support to, not substitute for, professional judgement.

The benefits of getting Strategic and Operational Resource Planning right are significant and growing. Committing effort and resource to this process can help your force to address key operational resourcing challenges, both in the short and long term, and can greatly enhance the likelihood of you achieving your strategic objectives through all your policing capabilities.

**Further support is available from the NPIA Cost Effectiveness Unit [cost.effectiveness@npia.pnn.police.uk](mailto:cost.effectiveness@npia.pnn.police.uk)**

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# Introduction

The police service has in the past not had an understanding of its demand, and its ability to tailor responses to that demand. In an environment of increasing resources, and with a predominance of omni-competent police officers in the workforce, this was not an issue for forces. Yet with funding significantly reduced and workforces modernising, as well as reductions in policing numbers, efficient and effective resourcing decisions become critical at strategic, operational and tactical levels.

For forces to undertake Strategic and Operational Resource Planning (SORP) effectively, they need three key things:

1. A detailed understanding of both current and likely future demand – not just in terms of its profile over time, but the volume of workload it generates, and the skills and powers it requires from different policing capabilities.
2. A detailed picture of the current 'supply' of officers and staff, how they are distributed across policing capabilities (investigation, response etc.), their powers and skills, and when and where they are deployed.
3. The ability to analyse the relationship between demand and supply, and to take informed decisions about how to address any mismatches.

This guide is designed to help you achieve this, and in a structured manner. It can be used at force, BCU or directorate level. It draws on good practice from leading private sector companies, as well as other public sector organisations, and builds on some existing strengths in the police service around operational demand and resource management. It takes you systematically through the key steps you need to take, from setting up your organisation to delivering your first operational workforce plan, while acknowledging that these steps are highly iterative.

The benefits of getting Strategic and Operational Resource Planning right – and the costs of getting it wrong – are significant and growing. Committing effort and resource to this process can help your force to address key operational resourcing challenges, both in the short and long term, and can greatly enhance the likelihood of you achieving your strategic objectives through all your policing capabilities.

# The Principles of Strategic and Operational Resource Planning (SORP)

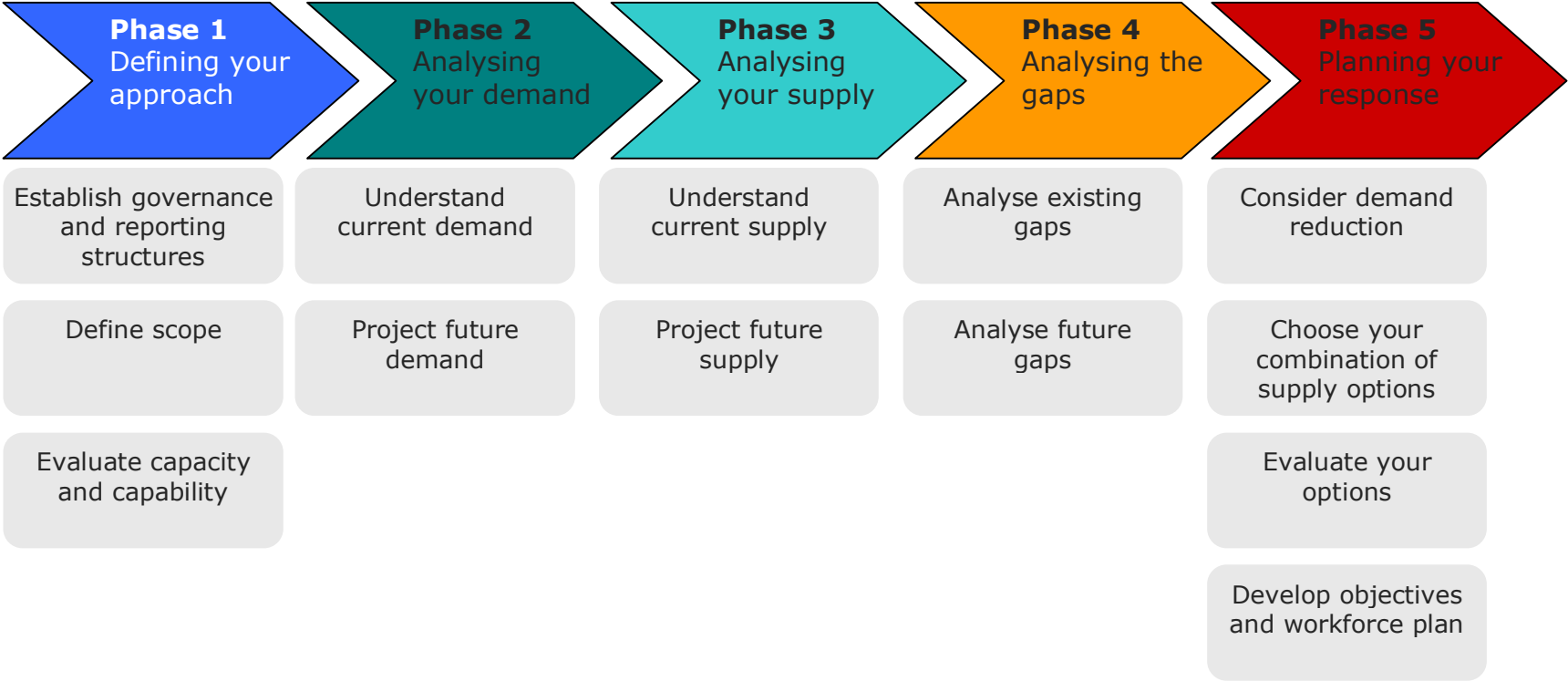
This guide takes you through the key steps of analysing your demand and supply and addressing any mismatches between the two. Underlying the whole approach are five key principles that should be adhered to throughout to maximise the effectiveness of the process:

- **Integration** – the companies that do this best do not split responsibilities for demand-side and supply-side analysis and decision making; instead, they integrate demand and supply planning and execution activities under a single leadership and governance structure. Police forces should consider doing the same.
- **Operational leadership** – within this structure, operational officers need to take the lead. While expertise from across the organisation will be needed, operational leaders must own both the assessments of current and forecasted demand, and the resourcing decisions that are taken to address it.
- **Dynamism** – not only are policing demands dynamic, but so are workforces (even in policing). There are some key milestones in the process, but SORP is not a one-off activity. It is something that needs to be conducted on a continual basis, and is highly iterative – assessments and decisions about demand and supply will continually feed back into one another.
- **Support from the top** – organisations that excel in strategic and operational resource planning invariably drive it from the top. For you, this means ensuring that the SORP process is owned at Chief Officer level.
- **Embedded but not lost** - this guide highlights where SORP activities can be embedded into existing arrangements. However, no existing processes in policing are fit-for-purpose in this regard – not even, we would argue, the NIM process as currently undertaken. Consequently, SORP processes should continue to be prioritised and given sufficient profile to make them effective and prevent them from getting lost within existing processes.

With these principles in mind, the guide now describes the overall Strategic and Operational Resource Planning approach.

# The Strategic and Operational Resource Planning Framework

The approach, which consists of five distinct phases, has been designed to give you practical guidance through the end-to-end cycle of Strategic and Operational Resource Planning. Each phase is supported by a number of steps and activities that help you to work through the detail.



- The initial phase 'Defining Your Approach' allows you to adapt this framework to your individual needs and establish the infrastructure critical to developing, and then delivering against, the workforce plan.
- Phases 2, 3 and 4 outline the steps you will need to take to pull together all the necessary information required to make informed workforce recommendations.

- The final phase 'Planning Your Response' guides you through the process of assessing your options and committing to specific objectives and actions in your workforce plan.
- The goal of the approach is to have the right people with the right knowledge, skills and competencies deployed appropriately throughout your force.

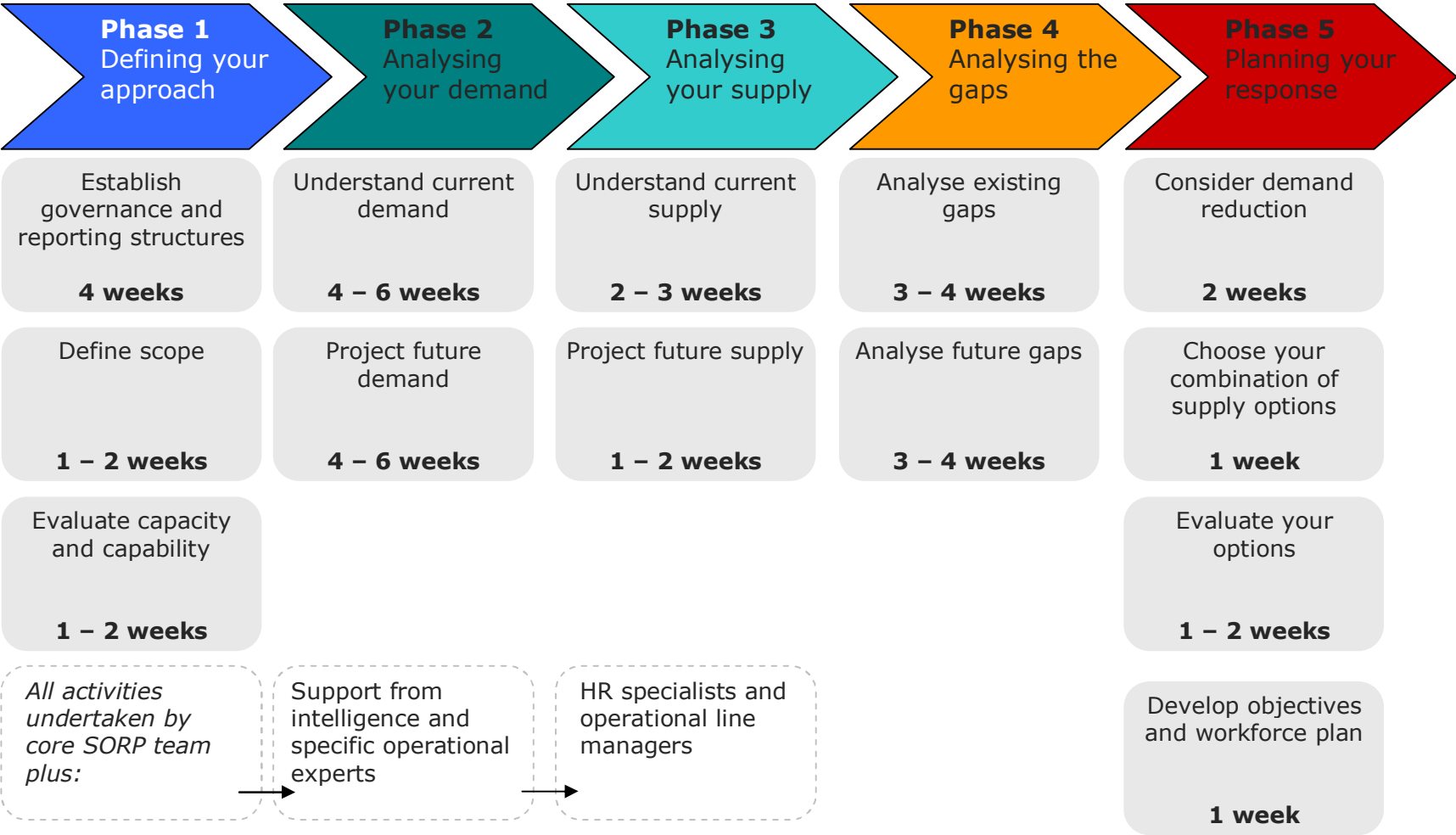
The recommended process is flexible and iterative. Some of the phases, steps and activities can be done in parallel and you will find that you often need to revisit a previous phase or step to reassess your findings as new information comes to light. Similarly you may find that you are able to execute some activities in more detail than others depending on the information, skills and tools you have access to, but you should always be looking for ways to improve the process.

### **Guidance on timescales**

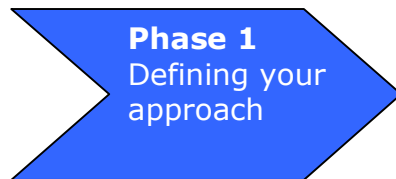
To help you plan your approach to developing your SORP process, the diagram below introduces guidance with regards to timescales for each step introduced on the previous page. These timescales will be largely determined by the 'Approach' and 'Scope' you choose within Phase 1; however they provide an indication of the intended balance in focus. It is also worth noting that timescales will change as the process matures, for example, the first iteration will take longer to complete than the second iteration as you will be setting things up. Furthermore, these activities do not have to be completed sequentially, for example work on the supply side can be undertaken alongside demand analysis.

By reading this guide and identifying the activities that are relevant to your situation you should be able to develop timescales that are appropriate to your specific circumstance.

Guidance on timescales



## Phase 1: Defining your approach



Establish governance and reporting structures

Define scope

Evaluate capacity and capability

### Summary

Phase 1 lays the foundations for all your Strategic and Operational Resource Planning (SORP) work, by helping you to agree the roles and responsibilities of those who will manage the process; to decide on your operational priorities; and to help ensure you have the skills, tools and data you need.

### Key objectives

- Establish the governance arrangements to manage the SORP process.
- Agree the respective responsibilities and accountabilities for all operational demand, supply and SORP activities.
- Define the priority policing capabilities and geographies that you will tackle first.
- Assess the current level of maturity in your SORP processes.

### Steps

- 1. Establishing governance and reporting structures:** Your very first step is to establish the organisational arrangements to support the process. Integration is the key here – demand and supply activities must not happen in isolation from one another, but should be conducted under a unified leadership and governance structure, with clear roles and responsibilities, and shared ownership of both analytical products and resourcing decisions.
- 2. Define scope:** You face some clear choices about how and where to start your SORP. Which workforces should you focus on, and in which policing capabilities? Should you focus at the force or local level first? The guide introduces the notion of a 'critical workforce segment', helping you to prioritise your actions based on where the impact will be most significant.
- 3. Evaluate SORP capacity and capability:** When defining your approach you need to also consider the tools and resources you have at your disposal as this will ultimately determine the level of detail and sophistication you will be able to support.

### Key outputs

- An established SORP capability/function with agreed roles and responsibilities.
- A customised SORP approach based on strategic goals, a defined scope, your ability to execute the process.

## Phase 1

### Step 1: Establish governance and reporting

#### Why is it important?

Strategic and Operational Resource Planning is unlikely to be owned by a single team or department. Instead, it will need commitment and skills from across the organisation, with extensive input from operational units, plus experts from HR, Corporate Planning and Finance. Such collaborative arrangements demand robust governance structures that make it very clear who needs to do what, when, and to what end, and with a meeting and reporting structure that supports this.

The companies that do this best closely integrate demand and supply activities under a single leadership structure, with close reporting links to the top team. In such a people-based business as policing, it is almost inconceivable that strategic and operational resource planning activities should report anywhere other than to a Chief Officer – a force-level responsibility.

#### Key activities

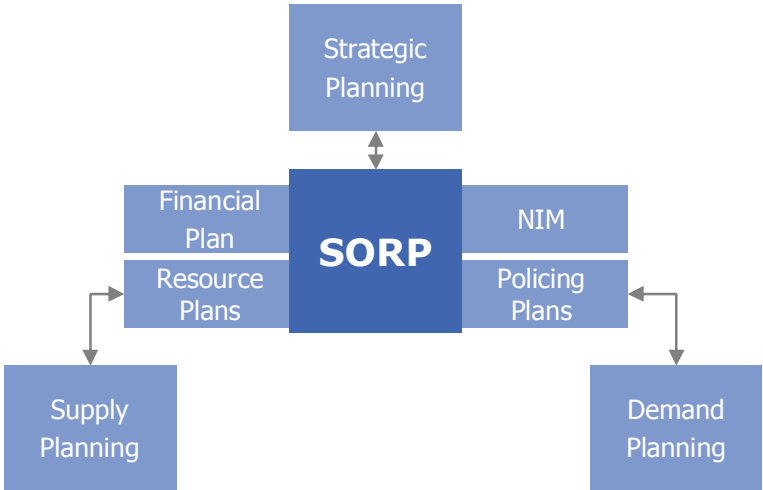
1. Appoint an overall SORP leader, with ultimate responsibility for signing off current and forecasted demand analyses, and developing and implementing the workforce plan to meet this demand. He/she are most likely to have a strong operational background. Depending on your local requirements, their function could be resourced by a dedicated full-time team or be more 'virtual', comprising of individuals for which SORP is just one of their responsibilities, albeit a critical one. Either way, the core team will need to call on additional support at certain stages within the process when specialist input is required (e.g. performance management).
2. Identify the skills you require in the wider team – be sure to include strong HR, strategic planning and analytical skills.
3. Use the framework and guidance here to define your own end-to-end SORP process, comprising all roles and responsibilities; meeting structures, attendees, and inputs/outputs; data and analysis requirements; and, agree the products at each stage. Remember, your overall objective is to produce a detailed, evidence-based and continually updated operational workforce plan.
4. Implement appropriate meeting forums and reporting mechanisms to support the SORP objectives.

#### Key inputs

- Top-level sponsorship.
- Commitments from key operational and support functions and individuals.
- Existing SORP processes, roles and responsibilities (if appropriate).

**Sample governance structure**

Derived from a model used in a major global consumer business, the diagram illustrates potential components of a monthly/weekly Strategic and Operational Resource Planning meeting.



**Outputs**

- One consensus SORP plan.
- Agreed demand and supply strategies aligned with service, financial, and resourcing plans.
- Consistent processes and alignment across the force.
- Collaboration/teamwork across functions.
- Measurement of performance against defined SORP KPIs.

**Key responsibilities of a SORP function**

- ✓ Develop and implement the SORP approach, ensuring it is aligned with and meets the force objectives.
- ✓ Drive the governance processes, and use it to educate the force in the importance of SORP
- ✓ Commission and own all demand and supply analyses, ensuring that consensus exists around both demand and supply projections.
- ✓ Develop and own the overall workforce plan and actions required to deliver it; use it to educate the force.

**What data/tools do we need?**

- ✓ There are a number of national sources of data, and you may need to generate new data (e.g. through process mapping). Existing local sources of data to draw on include: calls for service; crime reports; HR data on staff numbers and capability; shift patterns; activity analysis; local socio-economic, demographic data and policy information.
- ✓ Some forces are using locally-developed applications in Excel, or process analysis tools within the NSPIS suite. (NPIA fund the licence for Ximes software for shift pattern design which is available to all Home Office forces).

## Phase 1

### Step 2: Define scope

#### Why is it important?

Leading organisations extend SORP processes right across their businesses and, ultimately, your vision should be to have a sophisticated understanding of your demand and workforce across all policing functions – indeed, the service should also look to achieve this nationally.

You need to start somewhere, though, and it is important for your SORP team not to be daunted by the process, while also being realistic about what can be achieved initially. Key questions you should ask yourselves include:

- Should we start at force, BCU or sub-BCU level?
- Which policing capabilities should we focus on first?
- Do we start with Level 1 or Level 2 functions?

Your answers to these questions will be driven by a range of strategic and local factors, perhaps relating to both force and national policing priorities, and tied to particular local demand or workforce issues (see 'Tips and traps').

#### Key activities

1. Within the SORP team, define which areas/capabilities of your police force you will focus on first.
2. Identify which operational stakeholders need to be involved as a result.
3. Develop an analysis plan, based on the framework outlined in this guide.
4. Define headline data requirements and initiate data collection.
5. Obtain sign-off for plan from SORP leadership.

#### Key inputs

- National/local policing strategies.
- Employment frameworks and career pathways.
- Existing NIM priorities in the force.

### Tips and traps

- If your force is new to this process, start with a single policing capability initially (e.g. investigation, response, etc).
- It may be easier to focus on a BCU/sub-BCU level before refining your approach – you should make this decision in the context of data accuracy and availability.
- Reactive demand is often easier to model, which can point to response or investigation functions initially – but benefits exist across all policing capabilities.
- Do you have policing capabilities where workforce mix offers particular challenges?
- Are there bits of your business you know to have significant demand pressures? You may wish to start with these.

## Defining 'critical workforce segments' in policing

In defining the scope of your initial SORP work it might help if you focus your thinking on what resource planners term 'critical workforce segments' (CWS). A CWS may have the following characteristics:

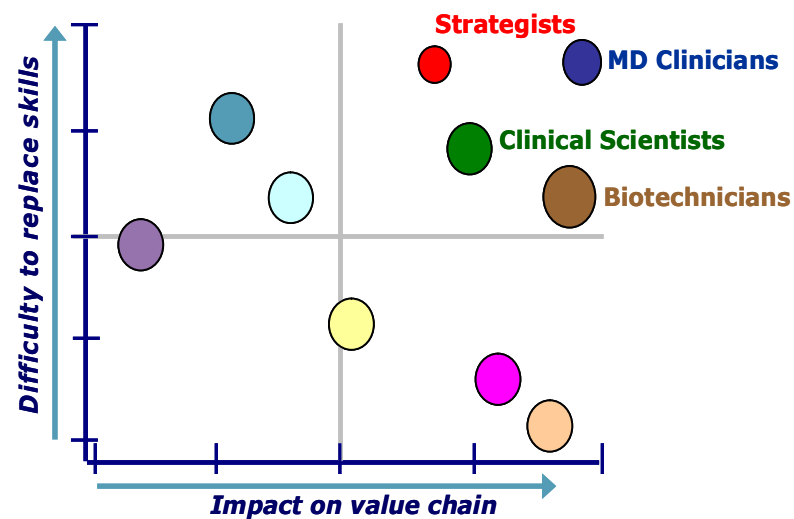
- Has a disproportionately large impact on **policing outcomes**.
- Possesses highly developed skills or **specialist knowledge** that are hard to replace internally or in the wider labour market.
- Are known to be **at risk from competitor organisations**.
- May be important to your force in meeting strategic or **diversity objectives**.

The diagram here represents some mapping work undertaken by a leading pharmaceutical company during its own SORP process. As the result of a merger, the company was facing significant workforce 'supply' issues and its portfolio of business was at risk. They decided therefore to identify which segments of their workforce were generating the most value to the portfolio, and those that were hardest to replace.

The company launched a number of initiatives targeted at these particular capabilities. The outcome was an increase in retention from 30 per cent to 65 per cent and a transition of all portfolio projects without missing any critical milestones. In summary, the use of the critical workforce segments concept had helped to prioritise who and what was done to effectively deliver the organisation's objectives.

Within your force, you may not need formal analysis to identify your critical workforce segments – the organisation may already know that, for example, **senior investigating officers** are stretched and in short supply, or that **specialist forensic or crime scene staff** are at risk of moving to other organisations, etc. You should use these insights when scoping your SORP priorities.

You should also re-visit these workforce segments/capabilities on an ongoing basis, since much of the analytical work in future phases – e.g. mapping your key policing processes – could identify new 'critical' areas that need your attention.



## Phase 1

### Step 3: Evaluate SORP capacity and capability

#### Why is it important?

All forces will have a different starting point for SORP and the level at which you can engage in it relies upon the current and future capacity and capability:

- **Capacity** - availability of sufficient technology and infrastructure to support the effort.
- **Capability** - alignment of the appropriate skill-sets and processes to manage the effort.

The current availability of data, the ability to collect and report on data and the technology approach will be especially important to determining the level of detail you can support in SORP and the sophistication of your solutions.

Greater levels of planning sophistication increases strategic alignment of your people strategies and therefore it is important to always have the next level of maturity in sight.

#### Key activities

1. Understand what data the force/BCU is currently collecting; conduct a data inventory to assess the current availability of data - this will determine the level of detail the organisation can support in SORP.
2. Assess your ability to collect and report on data; the systems and tools in place may enable the collection of additional data useful for SORP purposes e.g. time/activity analysis.
3. Define the technology approach for SORP; a more sophisticated technology will enable a more tailored and detailed SORP solution.
4. Determine future capacity and capability needs to move to the next level of planning sophistication.

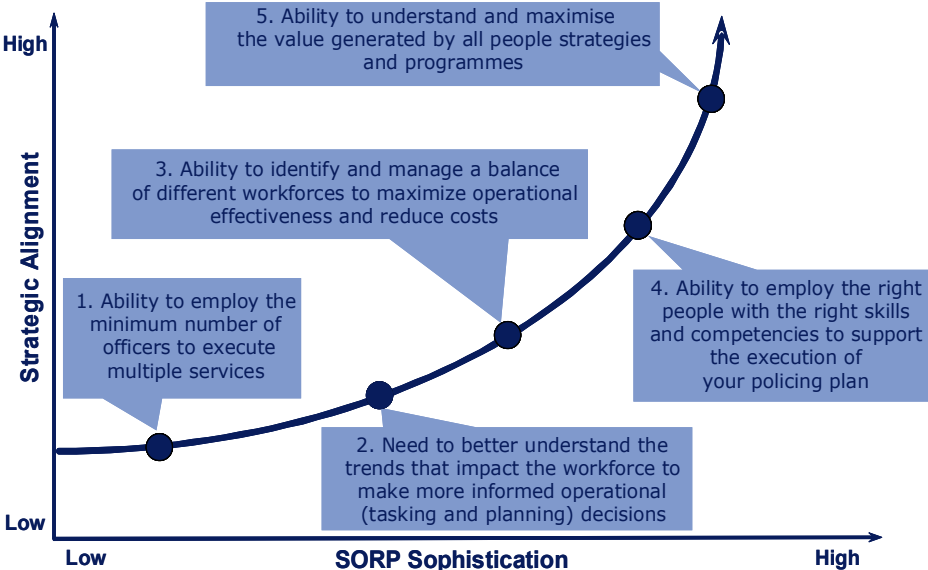
#### Key inputs

- Findings from the data and tools inventory.
- Defined governance and reporting structures.

**Tips and traps**

**Where are you on the Strategic and Operational Resource Planning sophistication curve?**

Plotting your current status will help you to determine the next level of maturity in SORP that you could be aiming to achieve.

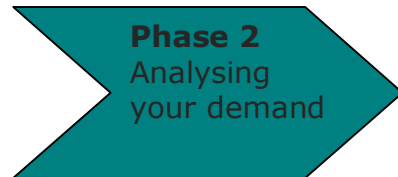


**Key questions to address**

- Is data collection consistent across the force/BCU? For example is the process of recording incidents the same across all neighbourhoods?
- How often is the data collected and how accurate is historical data?
- What is the data used for and who uses it? For example household surveys may be used by neighbourhood policing teams to assess the level of presence required.
- What data can be gathered using current tools/systems for Strategic and Operational Resource Planning purposes? For example Outlook to provide data for time and motion analysis or Airwave to support incident tracking and resource scheduling.
- Is there an infrastructure to manage the data on an on-going basis i.e. available resources with the appropriate skill-sets? For example your force may have an established resource management function.
- Are you able/willing to invest in technology to support SORP?

*Depending on your responses to the above questions there will be specific actions you can begin to take to improve your capacity and capability to deliver effective Strategic and Operational Resource Planning.*

## Phase 2: Analysing your demand



Understand  
current demand

Project future  
demand

### Summary

A detailed understanding of demand is the foundation of the SORP approach - and the police service is still behind other sectors in the sophistication of its understanding. SORP demands we move beyond analysis just of the timing of calls for service across the day/week, and develop an understanding of the implications of demands for the numbers, skills and powers of staff in different policing capabilities – and how this will vary in the future.

You will need an expert operational understanding of policing to complete this Phase appropriately – the activities should therefore be owned, validated and completed by a member of the operational team. The first iteration of this Phase is likely to take significant effort to complete – however the benefits are clear and it will provide the necessary basis for future operational decisions.

### Key objectives

- To establish a baseline level of demand for a force/BCU/team, and specifying the implications for the numbers, powers, skills and deployment patterns of the police resources needed to meet it.
- To project how this demand might change over the next 2-5 years.

### Steps

1. **Understand current demand:** The guide takes you through identifying your units of demand (both reactive and proactive); mapping the process and activities of responding to each unit of demand; assessing the staffing requirements in terms of skills, powers and numbers; and, assessing how these requirements vary over time of day/week.
2. **Project future demand:** Crucially, the outputs of these activities are *projections not commitments* – no-one can project precisely how demand for policing services will change, but following these methods will inject a greater level of rigour and evidence to your planning process, and enable you to understand the implications for your resource requirements of any potential changes.

### Key outputs

- Baseline demand-profiles converted into numbers, skills and powers of policing capabilities.
- Time-based demand distribution that allow resources to be rostered effectively.
- Projections of how demand might change over time.

## Phase 2

### Step 1: Understand current demand

#### Why is it important?

Demand analysis in policing has often been limited to profiling calls for service or deployments for response teams. A modernised service requires a broader and more sophisticated understanding of demand, and one that is built from the bottom up and takes account of the skills and powers of different workforces – and enabling you to estimate resource requirements at each stage of your policing processes.

#### Key activities

1. Identify and agree parameters for demand assessment. These include: scale (force/BCU/team); categorisation of powers; level (Level 1, 2 or both); capability; and, unit of demand (both reactive and proactive).
2. Develop 'generic' process-flow diagrams for different unit of demand (e.g. calls for service, crime report); use process categories to classify activities by skills/powers.
3. For each key activity in the process, use workshops and "case-study process maps" to specify volumetrics: time taken; percentage of demand that require a response; average staff numbers; and, the time dependency of the response.
4. Use calls for service or deployment data to generate a demand profile across day/week for the unit of demand identified.
5. Combine the time-and-motion study findings with the demand profile data to develop weighted demand profile for each capability and each of the powers – i.e. which skills/powers/capabilities are required at different times, and in what numbers.
6. Quantify how many of the activities in the profile demand a response that is time dependent (e.g. immediate response).
7. At the capability or team level, using NIM, incorporate 'proactive demand' into the analysis (e.g. drugs raid, visible patrolling) and, again, determine the numbers and powers of staff required, and the time taken.
8. Convert demand into resource requirements by capabilities and powers.
9. 'Sense check' and refine assumptions by assessing results using a range of validation techniques.

*NOTE: This process can be time consuming – other sectors invest a considerable amount of resources in understanding demand, at both national and local levels. We do suggest some lighter-touch alternatives below (see page 26) – but a rigorous approach will put you in a much stronger position to match resources to demand and will provide a sound basis for year-on-year refinements.*

**Key inputs**

- Agreement on the units of demand and activities by policing capability.
- Calls for service data by time of day and day of week for each type of crime.
- Process flow of key activities, and associated time-and-motion data.

## Phase 2 Step 1: Understand current demand

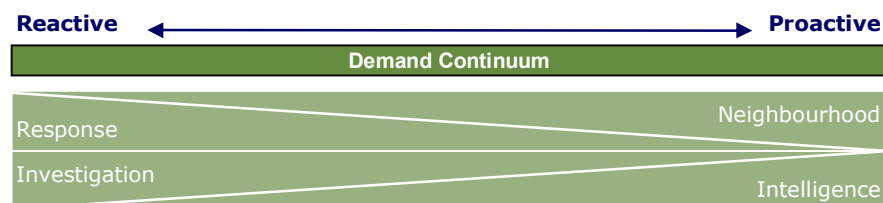
### Activity 1: Agree parameters for your demand analysis

The first thing your analysis team needs to agree is where to start: force, BCU or team level? In one or more policing capabilities? And which units of demand to focus on first?

There is no right answer here – best practice for the private sector suggests that, eventually, you should have a clear understanding of all your policing business. But we recommend you start small and build up.

Think about:

- Which area of your business has the biggest impact on policing outcomes?
- Which areas have the most urgent workforce issues, or you know are under particular demand pressures?
- Where are workforce mix issues of most relevance?
- Within that business area, which demand units (e.g. crime types) comprise the bulk of your demand?
- Demand looks different in each policing capability. Even if the original driver (e.g. call for service, crime report) might be the same, the nature, volume and timing of the response will vary. It can be useful to think of policing demand existing on a continuum:



- Neighbourhood and intelligence capabilities both have reactive components, but a more significant proportion of their demand is 'proactive' – i.e. there is more discretion over the nature and timing of their activity.
- What is important for you at this stage is that you define clearly the scope of your analysis; the people that you need to involve; and the data that you will need to collect and analyse.

## **A neighbourhood policing view of demand**

The National Neighbourhood Policing Programme has developed a view of how the level of demand for neighbourhood policing can be identified. This includes:

- Recorded levels of anti-social behaviour – crime and incidents
- Recorded levels of criminal damage
- Outputs from crime and disorder audits
- Community activities
- Community priorities
- Basic demographics including vulnerable localities index
- Social and economic measures including employment rates
- Public perception data from surveys
- Community tensions (can be gathered from KINs and IAGs)

## **Tips and traps**

- Start with a single capability, and at a BCU/sub-BCU level in order to refine your approach.
- Reactive demand can be easier to model – but benefits exist right across the demand continuum.

## Phase 2 Step 1: Understand current demand

### Activity 2: Develop process flows of demand

If you are to estimate the resources required across each capability accurately, it is necessary to break down your key policing processes for each unit of demand, classifying them into activities and defining the skills/powers required for each activity.

- 1. Develop 'generic' process maps for units of demand:** Process maps are best developed through a combination of facilitated workshops with experts, and observation – for a detailed guide see 'Changing the workforce mix toolkit'. <http://www.npia.police.uk/en/16716.htm>. We recommend starting with a particular unit of demand (e.g. crime type) for a particular capability (e.g. investigation).
- 2. Classify key activities in each process:** It may be useful to develop a high-level classification of activities to standardise steps within the process flow, for example travel, data entry, phone call, interview, forensics, reassurance visit, etc.
- 3. Define powers required for each activities:** For each activity, use workshops with experts to assign the powers required to carry out each activity within each capability (i.e. police constable, designated powers, non-designated powers). You may also wish to extend this classification to include key skill-sets (e.g. from PIP handbook).

## Phase 2 Step 1: Understand current demand

### Activity 3: Refine analysis by quantifying the volume of demand and any time dependency

If you are to deploy the right resources at the right time, you need to estimate some key characteristics of your units of demand:

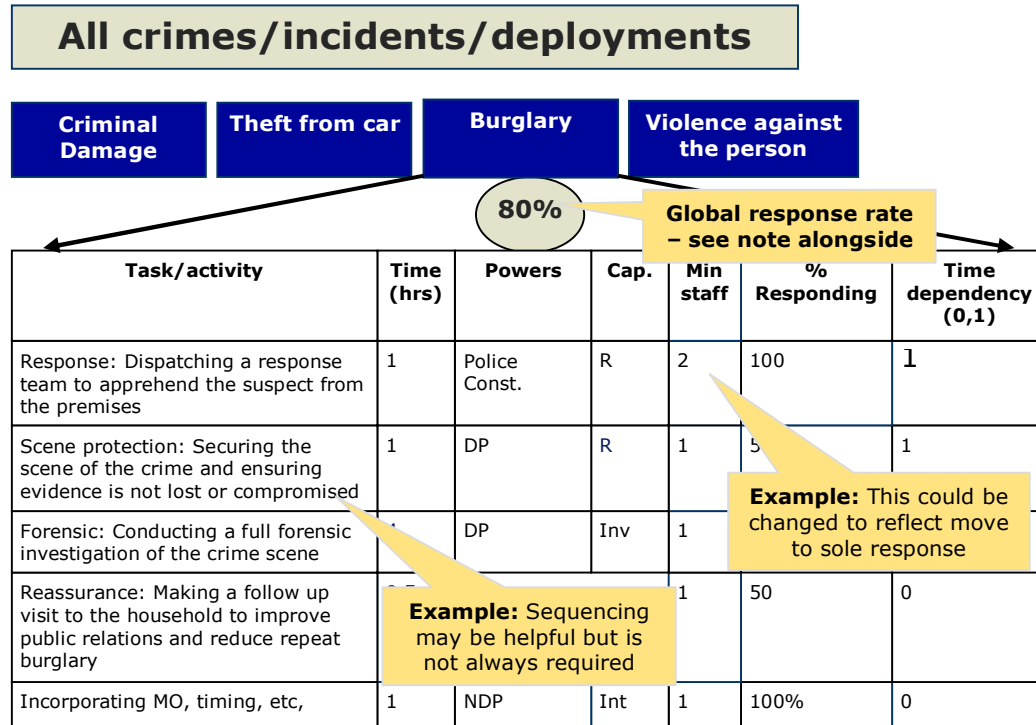
- How long each activity takes.
- When that activity needs to be done (e.g. immediate response or a scheduled activity).
- In what proportion of cases does the activity need to be undertaken (e.g. forensic recovery not necessary at every burglary).
- Given the capability/powers, how many staff are required for each activity.

The most effective way of generating answers to these questions is a combination of workshops with experts, time-and-motion studies, and data from force crime systems. See illustrative example of burglary below.

#### Tips and traps

- The nature and timing of responses varies enormously – but common patterns do exist – use large samples to test.
- The timings, etc. do not need to be 100 per cent accurate – even if this were possible – you are looking for indicative resource requirements for the majority of your demand (apply the 80/20 rule).

**Illustrative example: burglary analysis**



The global response rate (in the example left, 80 per cent) allows you to reflect local, customer or political priorities. For example if local citizens have identified anti-social behaviour as a key concern, you may wish to reflect this by setting the global response rate to 100 per cent - effectively prioritising the incident.

To increase simplicity you may wish to “task/activity bundle” in line with changing the workforce mix guidelines.

**Why do we need such a detailed approach?**

Although a time and motion study may sound heavy-handed, it is essential that our operational resource planning decisions are based on robust evidence of actual workload – and that requires an understanding of how long things take. Other sectors are leaving the police service behind in terms of their understanding of demand – and tightening resource requirements in policing mean that it will need to catch up quickly.

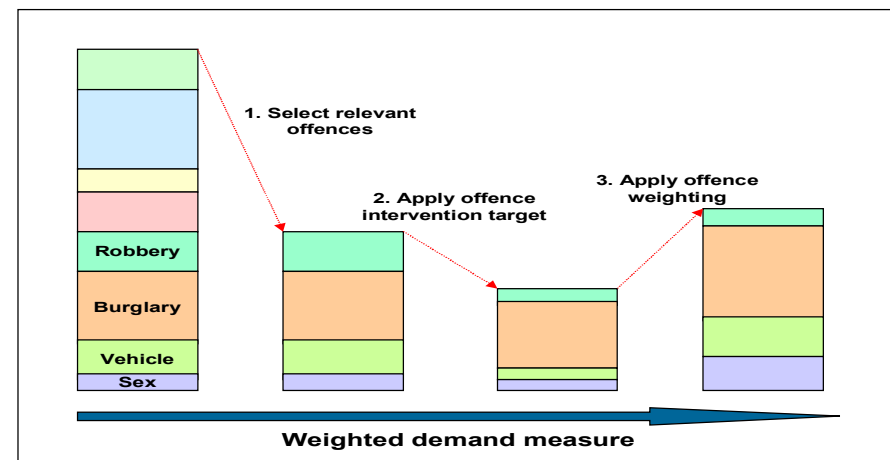
*Remember, the output of this exercise should not be a single number that you then resource to. You are generating an indicative resource requirement to which you will add contingency, and that will be just one input into your workforce plan – alongside professional judgement.*

### A lighter-touch approach: police forensics

During a short review of demand for crime scene investigators, demand was quantified by deriving a weighted demand measure by following the steps outlined below. The first step towards determining demand was to establish what tasks a crime scene investigator (CSI) undertakes in any standard day. Through discussions it became apparent that the main driver of demand is the incidents attended by the CSI. While it is understood that only a small portion of the day is actually spent at the scene of crime, the other requirements, such as statements, submissions and travelling all derive from the incident.

Given this core assumption it was possible to determine a demand curve for CSIs by analysing the incident data from the incident recording system. The method for determining demand is outlined below in three key steps:

1. **Select relevant offences:** Total volume of offence by type within specified period. Offence types included in model - burglary residential, burglary non-residential, street robbery, vehicle crime (of and from), sex offence. All other offences were discarded as CSI involvement with them is too irregular to map.
2. **Apply offence intervention target:** The target intervention rate was applied to each category of offence. This provides an indication of the number of offences which the DFS expect staff to attend.
3. **Apply offence weighting:** These incident volumes were then weighted according to average time to resolve. If required, each weighting could also be adapted to prioritise or demote the offence.



This approach could be applied more broadly – however it assumes a fixed level of resources as it does not attempt to model all demand.

## Phase 2 Step 1: Understand current demand

### Activity 4: Profile the timing of demand across the day using calls for service data

#### What data to collect

You should collect a data sample of calls for service or deployments from your force Communications Centre. This is relevant not just to reactive demand (i.e. response) as there are components that relate to the other capabilities. This data should detail the number of incidents by:

- Type of incident (crime type)
- Time of day (by 24 hour)
- Day of week (Sun – Sat)
- Ideally, the sample would be over a period of at least one year, to reduce the risk of seasonal variations.

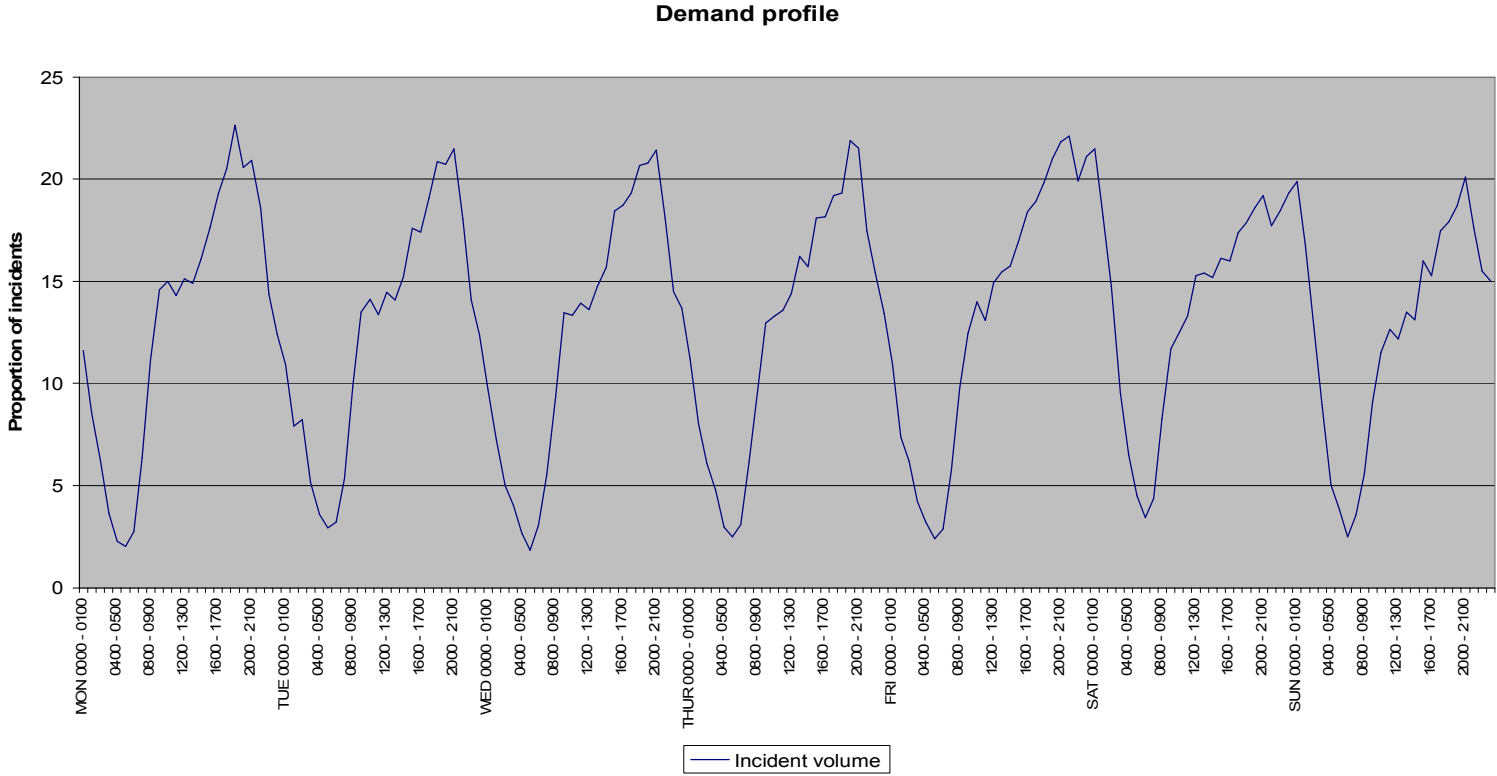
As the workforce segments, this analysis will need to become more sophisticated. Furthermore, analysis needs to be carefully constructed as calls for service data has a number of known limitations, for example, assaults are generally reported immediately whereas burglaries are not.

### How to model the data

For each crime/incident type plot the average number of incidents per hour of day, day of week across a seven day period.

To develop a 'normalised demand curve' (helpful for general resource planning work):

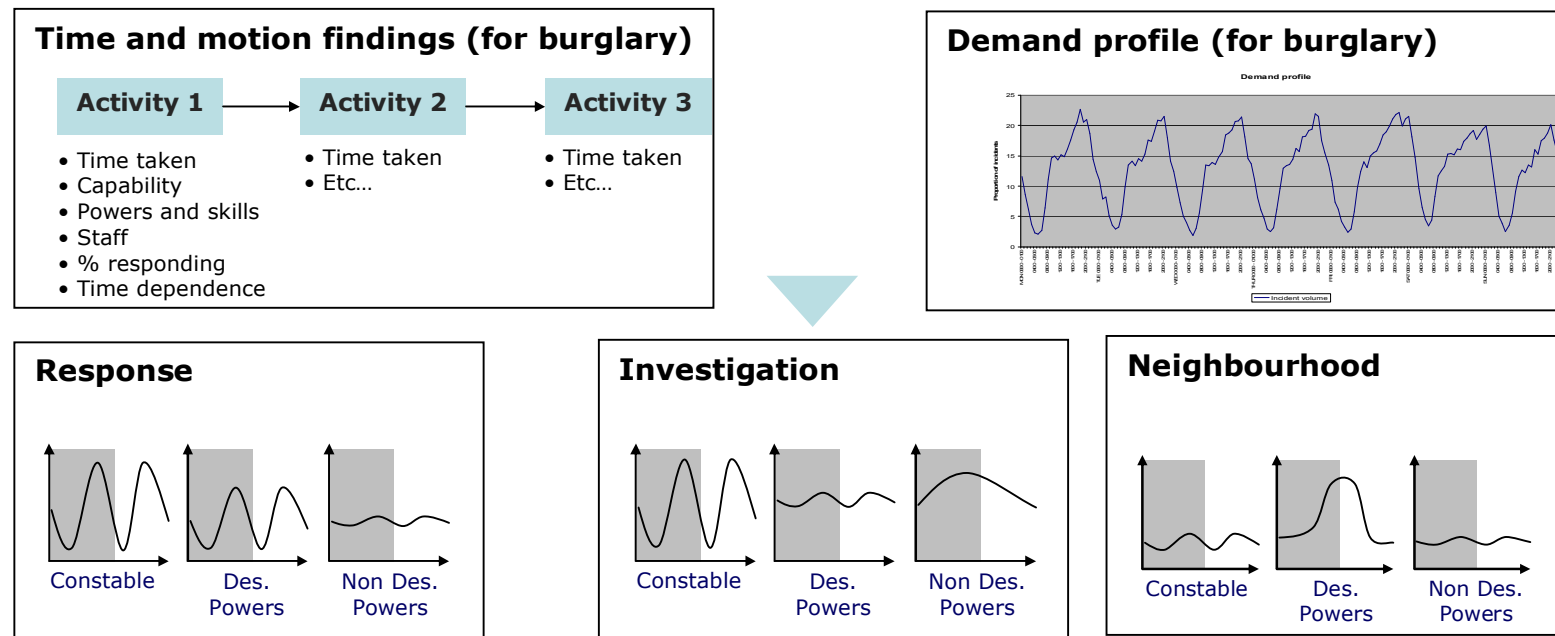
- Aggregate all incidents/crimes together, again by hour of day, day of week
- Determine the average number of incidents per hour across the seven day period
- Determine the deviation from the average by hour of day, day of week (see graph below).



## Phase 2 Step 1: Understand current demand

### Activity 5: Combine time and motion findings with the time-based demand profile

Traditionally the 'normalised demand curve' has been sufficient to understand the pattern of demand faced by response officers. However the need to determine demand across the capabilities and at the different powers, requires a more sophisticated, bottom-up approach. This can be derived by combining the findings from the time and motion study with the calls for service data.



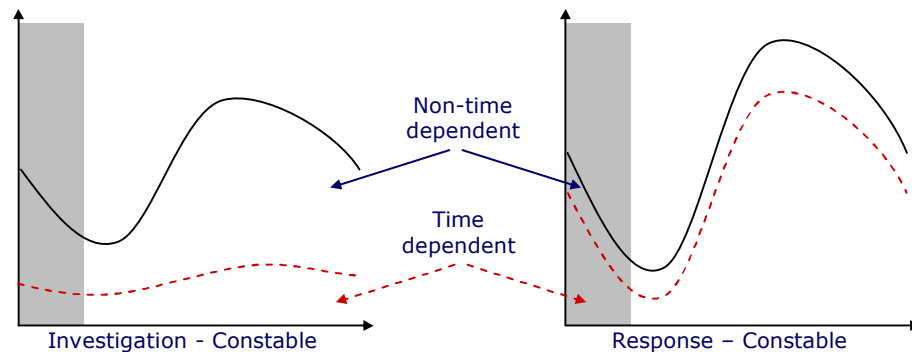
The Demand Modelling Tool can then be used to generate graphs that plot the total workload for each activity, in each capability, across the time of day and day of week. If it were possible to determine service level standards for each unit of demand, this would make modelling easier.

## Phase 2 Step 1: Understand current demand

### Activity 6: Examine time dependency – i.e. *when* a particular activity needs to be undertaken

Activity 3 identified whether demand was time-dependent or non time-dependent (i.e. whether activities needed to be carried out immediately or could be scheduled for another time). This variable can be incorporated into the workload-demand profiles we have generated, as illustrated here. The extent of time-dependent activities will vary by policing capability. By using the demand model to plot the sum of these two components the charts exemplified opposite can be generated. This allows non time-dependent demand to be smoothed across the day.

#### Exemplifying time dependency



- Non time-dependent demand can be smoothed throughout the day.
- Time-dependent must be responded to immediately.

## Phase 2 Step 1: Understand current demand

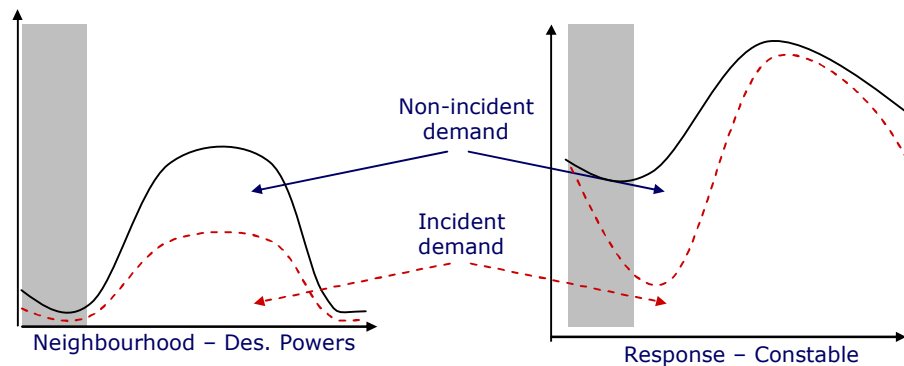
### Activity 7: Add 'proactive' demand

Reactive demand only constitutes a proportion of the demand profile, with some teams having a greater percentage of demand that they can schedule themselves (e.g. TSGs and drugs raids). But it may still have time dependencies (e.g. visible patrolling when schools are finishing). This demand can still be modelled.

Again, use workshops to identify and classify activities that make up proactive demand. This is likely to be most effectively achieved at the team-level, as opposed to the force-level, as there are likely to be local variations, e.g. number of community events.

Feed the results into the demand model.

### Adding 'proactive' demand



- Time dependent demand must be justified either operationally or through citizen focus – rather than just assumed

## Phase 2 Step 1: Understand current demand

### Activity 8: Convert the workload-demand profiles into specific resource requirements

The overall objective of this Phase is to enable you to generate a demand-based resource profile – for each team or powers being modelled. This profile will allow you to *estimate a range* for how many resources are required across each powers type and for each hour of the day.

To develop this resource profile you will need to follow four simple steps:

1. First, determine the average weekly hours offered by each resource within the capability. The best method of determining this is working back from the standard working week (35-40 hours). This starting figure should be reduced to reflect all the elements of policing that have not been included in the activity analysis, e.g. unavailable hours (e.g. abstraction default data from Ximes of 30-33 per cent). These deductions can be summed as a percentage and then removed from the standard hours – giving a figure for Net productive hours per resource.
2. Next, determine the weekly timed volume of demand from the demand profile for each of the powers within each capability. This is represented by the area under the final demand curve – in effect you need to sum the demand identified for each hour of the day, day of the week.
3. Finally, you need to divide the total weekly demand by the Net productive hours per resource to give the number of resources required to meet the demand. This figure will include all standard abstractions but will not provide any resilience.
4. Record your resource requirements in the demand model – by powers and capability.

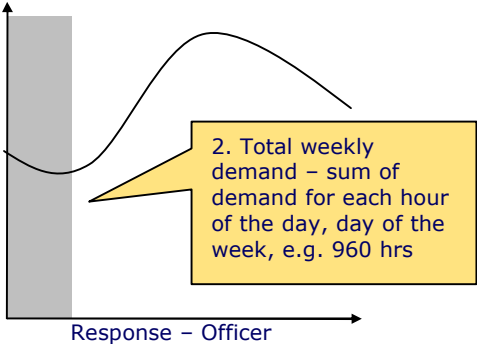
*(There are a number of companies that provide software to assist with demand modelling and shift pattern design. The NPJA currently sponsors one user licence per force in England and Wales for the Ximes shift pattern software provided by Process Evolution who also provide software for profiling response, custody and investigation.)*

Converting workload to resources

1. Net available hours for a response officer, e.g. 70 per cent of 40 hrs = 28 hrs



Available / Unavailable



3. Total hours / Net productive hours = Resource requirement. E.g. 960 / 28 = 34 response officer



4. Record demand requirements

| Ref | Level | High Level     |   |     |     |   |
|-----|-------|----------------|---|-----|-----|---|
|     | L1    | Management     |   |     |     |   |
|     | L2    | Supervisor     |   |     |     |   |
|     | L3    | Police Officer | 0 | 160 | 360 |   |
|     | L4    | Police Officer | 0 | 200 | 470 |   |
|     | L5    | Police Officer | 0 | 10  | 50  |   |
|     | L6    | Police Officer | 0 | 10  | 50  |   |
|     | L7    | Total          | 0 | 370 | 980 | 4 |
|     | L8    | Police Officer | 0 | 200 | 500 |   |
|     | L9    | Police Officer | 0 | 0   | 200 |   |
|     | L10   | Police Officer | 0 | 0   | 200 |   |

## Phase 2 Step 1: Understand current demand

### Activity 9: Sense-check and refine assumptions

The previous activities will produce volume-driven demand profiles for each BCU, capability or team included within the parameters of the demand management exercise (established in Activity 1). Given the dependence on assumptions it is important that these profiles are tested before they are used to inform decisions.

**Volume test** - Volume divided by volume per individual resource identifies the number of resources required. This volume derived resource level should be comparable to the number of resources currently used by the force - although there may be a different balance across capabilities and authorities. If the demand volume is too high, check assumptions for over-estimations. If the demand volume is too low, check for under-estimations.

**Intuitive validation** - Bring together experienced operational officers and staff to test the profiles through a series of workshops.

**Resilience validation** - The NPIA resilience assessment guidance details how you can also test these assumptions against resilience criteria <http://www.npia.police.uk/en/16744.htm>.

## Phase 2

### Step 2: Project future demand

#### Why is it important?

Understanding how the level of demand for policing may vary in the future at the local level is a fundamental step in Strategic and Operational Resource Planning. It is not a precise science – and we are talking about forecasts and projections, not commitments – but it will allow your force to make more informed workforce decisions based not just on the current situation, but on future trends. This is particularly important given the time lags involved in reshaping a workforce.

#### Key activities

1. Develop local level (CDRP/BCU) demand baseline including historical trends for key crime types – include national crime data, local crime data and calls for service.
2. Drawing on the National Strategic Assessment, understand the drivers of crime for national crime rates – documenting key drivers within a PEST (political, economic, social and technological) framework.
3. Factor in the position of the national economy within the economic cycle as an indicator of how the individual drivers will change over the coming 4 years.
4. Collect local data on the main drivers of crime and any local characteristics which have a particular impact on demand for crime and agree a timescale. Data should be relevant at force, BCU and CDRP level.
5. Interpret the impact of the local data on the drivers of crime using a directional framework allowing a view of force level projections and capability level projections.
6. Convert demand projections to resource estimates – these are intended to give an indication of scale, direction and timing and cannot be expected to generate precise numbers.
7. Build in an allowance for major events (Major sporting or cultural events, royal visits, etc) and local variations – including a contingency for unforeseen events.
8. Document the projections, track actual crime figures against projected figures and evaluate the accuracy of the system looking for consistent errors which bring bias to the local estimations.

**Key inputs**

- National Strategic Assessment.
- Home Office statistical research plus any anticipated government interventions.
- Local sources of data (may involve a small data collection operation).

**Key outputs**

- Future demand projections – quantified both in terms of expected crime levels and resources by capability/powers, etc.

## **Phase 2 Step 2: Project future demand**

### **Activity 1: Develop demand baseline**

Before projecting future demand, it is important to understand historical trends. To do this you will need to develop demand baselines for the units of demand (e.g. crime types) that constitute the biggest proportion of your demand. These baselines should draw on national crime data, local crime data and calls for service. While this activity is retrospective, the objective of the series of activities within this step (Step 2) is to extend the baselines into the future.

## Phase 2 Step 2: Project future demand

### Activity 2: Understand key drivers of crime

In this context, drivers are the variables that have an impact (positive or negative) on the national and local crime rate. Much of this insight can be found within Home Office reports from the Research, Development and Statistics (RDS) Unit.

<http://www.homeoffice.gov.uk/science-research/research-statistics/>

A good indication of crime trends can be obtained from the output of this RDS team (see link below), however a fuller understanding of the drivers of crime is essential if you are to successfully tailor their forecasts to the local force and capability level.

<http://webarchive.nationalarchives.gov.uk/20110218135832/http://rds.homeoffice.gov.uk/rds/crimeew0910.html>

Further insight on the drivers for crime will be included in the **National Strategic Assessment** and **Strategic Policing Requirement**. You should review these documents to assess what drivers are likely to have the biggest impact in your local area (force, BCU or CDRP).

*See Activity 5 below on how to apply this in your area.*

## PEST analysis

|   |  |
|---|--|
| <b>Political</b><br>e.g. Policy announcements | <b>Economic</b><br>e.g. Incomes, growth                        |
| <b>Social</b><br>e.g. Divorce rate            | <b>Technological</b><br>e.g. Growth of online purchasing/fraud |

- Impact analysis can only be effective when the specific factors are identified. The PEST analysis is a commonly used framework to gauge the importance of specific policy initiatives or changes.
- In this case, we are using the framework to identify and classify some of the drivers of crime which fall into the four areas – from the percentage of young males in the local population, to the growth in the use of mobile data devices.

## Technology: crime life-cycle

Changing technological products can generate new crime. Products go through a “crime life-cycle” where new items are highly desirable and valuable. When crime becomes a problem, security features are built in and the risk to the criminal is increased. Consequently, criminal activity is channelled into different products which could change the policing requirements e.g. a shift from muggings to theft from a vehicle.

## Tips and traps

- Be careful to understand fully the meaning of lagged variables. For example, if economic growth is strong, that may reduce crime in the next six months, but from 6-24 months there could be a different effect from the same bout of strong economic growth (see RDS research).

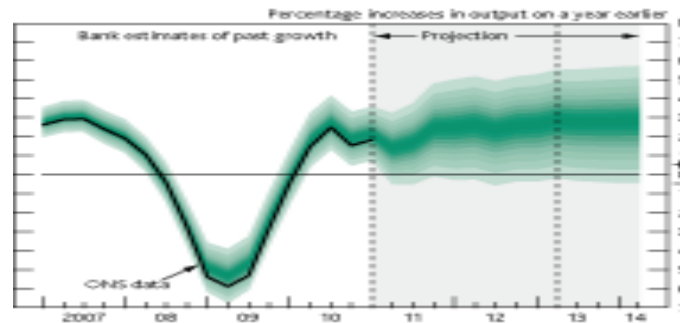
## Phase 2 Step 2: Project future demand

### Activity 3: The national economy

Research shows that the national economy provides an indicator of how individual drivers of crime will change over the next four years. This information can be obtained from Treasury reports or from the Bank of England.

While the Home Office Statistical research model (link above, p38) will already have incorporated this information into the projections, it is important to have an understanding of the key messages because it provides a good sense check when converting national projections into local forecasts.

#### Economic forecasting



This is a typical fan chart published by the Bank of England in the Quarterly Inflation Report and shows:

- The historical movements of Gross domestic product (sum of everyone's income) from which a cycle is clearly visible.
- Future predictions in the darker colours.
- Certainty of these predictions shown by the width of colour.

## Phase 2 Step 2: Project future demand

### Activity 4: Collect and analyse local data

Previous activities have enabled you to identify the drivers of crime at a national level, this activity requires you to identify sources of data, aligned to the national drivers, that will enable you to develop a picture of demand at the local level.

The collation of this data should not require the development or identification of new data sources, merely an extension in the use of existing data. Existing NIM and environmental scanning processes will certainly provide valuable input – it is therefore important that the intelligence individuals responsible for these processes are engaged within this SORP phase. These individuals will also be able to identify the existing data source and frequency for each driver – likely to be a combination of nationally published and locally collected.

Taking these existing data sources it is important to identify what it is telling you about the local picture at the force, BCU and CDRP level:

- Is there a history of one particular crime being higher than the national average in the local area? If so, what specific drivers are causing this?
- Are there specific short-term factors which require attention (e.g. development of a derelict building site)?
- What are crime and disorder visual audits telling you about trends in a specific area?
- Which crimes are local residents most concerned about?

You may wish to form a working group which collectively agrees the scope of local data collection supervises the analysis and defines the presentation timings and standards.

## Phase 2 Step 2: Project future demand

### Activity 5: Model directional impact of local factors on future demand

Your next activity is to use the data sources (e.g. C&D Audits, Index for Social Deprivation), to interpret the impact of the local data on the drivers of crime using a directional framework allowing you to develop a view of force/BCU/CDRP level projections, and what these mean for the different policing capabilities.

Given the complexity of the Home Office Statistical research model, we suggest using a simple but effective approach which relates their national projections to your policing area. The proposed method is to use the Home Office input, take into account whether your local factors (identified in the previous activity) are placing upward/downward pressure on crime and then modify your projection accordingly.

#### Framework for local projections – applicable at force, BCU and CDRP level

| Driver of demand        | Level | National | Local data | Primary impact    | Capability | Direction            |
|-------------------------|-------|----------|------------|-------------------|------------|----------------------|
| Per capita consumption  | Force | £23,400  | £16,600    | Burglary          | R & Inv    | High upward pressure |
| Unemployment %          | BCU   | 5.3      | 16.9       | Theft from Person | R & N      | Med upward pressure  |
| Divorce rate (per 1000) | CDRP  | 13       | 21         | Violent crime     | R & N      | Low upward pressure  |

Clear overall upward pressure on crime at a local level

*Illustrative example data only*

- This tool is for projecting demand not predicting it scientifically. It has the advantage of being simple and providing a flexible tool for translating national into local. The benchmark against national data lends the framework credibility and the local modifications will significantly improve the value at the force level. You could extend the table to record 'softer' local trends identified too for example a new school opening up, immigration to a particular neighbourhood, etc.
- Disadvantage: there is no account of the extent to which the driver of crime deviates from the national level. Thus, if per capita consumption is very low but the rate of unemployment is slightly better than average, the framework would give equal weighting to both. This problem must be monitored by the data collection steering group who should use operational judgement.
- Greater sophistication can be obtained by attributing specific crimes which are highly responsive to changes in the driver. This will form the basis for analysing the impact of demand planning on specific areas of the local police force.

The aim of this activity is to convert 'pressures' into projections. Collating all of the information generated in the previous activities (literature, national drivers, local variations, economic cycle) and combining this with the understanding of pressures generated within this activity – operational judgment is required to project future demand against the baseline established within Activity 1.

## Phase 2 Step 2: Project future demand

### Activity 6: Convert demand projections to resource estimates

The next step in the process is to derive resource estimates for each capability at a force/BCU level. Given the high dependence on assumptions and the nature of variability in policing, these estimates are intended to provide **an indication of scale, timing and direction, not a commitment to precise numbers**. There are two key stages to this conversion:

1. Firstly, you need to combine the demand profile developed in this Step with the Demand Management Model and the outcomes of Step 1. In Step 1 of this Phase you developed an existing demand based resource estimate for each team and capability included within the plan. This estimate was based on the existing levels of call for service. By adjusting the levels of calls for service by the percentage identified in the previous six activities you will be able to generate a new demand-based resource estimate. For example, if you are projecting burglary to rise by 10 per cent over a two-year period you can feed in the associated rise in calls for service and calculate the impact across the teams and capabilities you are modelling. An example of this process is presented below.
2. Critically, in the context of Changing the Workforce Mix, if you are expecting changes in the staff powers necessary to respond these changes should also be applied to the model. For example, if you now expect Neighbourhood PCSOs to reassure the victim of a burglary, then change the powers associated with this activity within the model to reflect this. A further example could be a change in the 'global response rate' (introduced in Step 1) – this could be used to reflect a change in local priorities.

Adjusting the demand-based resource baseline

**Stage 1:** Push calls-for-service projections through Demand Management model

**Stage 2:** Amend assumptions to reflect changes to the workforce mix and responsibilities or changing local priorities

| Ref | Level | High Level Capability           | Fully Warranted Powers |              |              |               | DP         |         |         |       | NDP     |         |         |              | Force Total FY07/08 | Force Total FY09/10 |
|-----|-------|---------------------------------|------------------------|--------------|--------------|---------------|------------|---------|---------|-------|---------|---------|---------|--------------|---------------------|---------------------|
|     |       |                                 |                        |              |              | Total Officer |            |         |         | Total |         |         |         | Total Staff  |                     |                     |
|     |       |                                 | FY07/08                | FY08/09      | FY09/10      | + / -         | FY07/08    | FY08/09 | FY09/10 | + / - | FY07/08 | FY08/09 | FY09/10 | + / -        |                     |                     |
| 1   | L1    | Investigation                   | 657                    | 630          | 585          | -72           | 0          | 0       | 0       | 0     | 28      | 44      | 55      | 28           | 685                 | 640                 |
| 2   | L1    | Response                        | 1,890                  | 1,980        | 2,070        | 180           | 0          | 0       | 0       | 0     | 0       | 0       | 0       | 0            | 1,890               | 2,070               |
| 3   | L1    | Neighbourhood Policing          | 576                    | 495          | 450          | -126          | 582        | 720     | 840     | 258   | 99      | 110     | 132     | 33           | 1,257               | 1,422               |
| 4   | L1    | Intelligence                    | 221                    | 225          | 270          | 50            | 0          | 0       | 0       | 0     | 226     | 275     | 330     | 105          | 446                 | 600                 |
| 5   | L1    | Custody                         | 117                    | 117          | 90           | -27           | 0          | 0       | 0       | 0     | 220     | 165     | 165     | -55          | 337                 | 255                 |
| 6   | L1    | Command & Support               | 185                    | 185          | 185          | 0             | 0          | 0       | 0       | 0     | 0       | 0       | 0       | 0            | 399                 | 460                 |
|     | L1    | <b>Total</b>                    | <b>3,645</b>           | <b>3,632</b> | <b>3,650</b> | <b>5</b>      | <b>582</b> |         |         |       |         |         |         | <b>5,014</b> | <b>5,447</b>        |                     |
| 7   | L2    | Serious/Organised Crime         | 203                    | 225          | 270          | 68            | 0          |         |         |       |         |         |         |              | 274                 | 338                 |
| 7   | L2    | Serious/Organised Crime - Sp    | 36                     | 45           | 54           | 18            | 0          |         |         |       |         |         |         |              | 53                  | 98                  |
| 8   | L2    | Public Order                    | 122                    | 90           | 63           | -59           | 0          |         |         |       |         |         |         |              | 122                 | 63                  |
| 9   | L2    | Civil Contingencies             | 0                      | 0            | 0            | 0             | 0          |         |         |       |         |         |         |              | 0                   | 0                   |
| 10  | L2    | Roads Policing - Collision Inve | 9                      | 9            | 9            | 0             | 0          | 0       | 0       | 0     | 6       | 6       | 6       | 0            | 15                  | 15                  |

**Important:** Spreadsheets will always generate 'precise' numbers, however you should always convert them to ranges when making planning decisions

Projected demand-based resource by capability and powers

## Phase 2 Step 2: Project future demand

### Activity 7: Account for major events or local developments

Projecting ahead over two years, there may be events at a local or national level for which your force will be required to support or respond to. These may be occasions such as major sporting events and royal visits or a local development such as the building of a place of worship.

Once the projections for local-level crime have been converted to resource expectations (Activity 7) you will need to adjust these projections to take account of these factors and unforeseeable events. This will require operational judgement but should be based on previous experience or information from other forces.

**NB.** This Activity is completed at this time because it is likely to be easier to estimate demand in terms of resource rather than calls for service for particular types of demand. However this demand projection should still be documented, tested and refined as appropriate.

#### Local factors to consider

Hertfordshire Constabulary have used the following factors to model the predicted level of demand for neighbourhood policing:

- Regional government deprivation indices – which take account of statistics including teenage pregnancy, single parent and employment rates <http://www.communities.gov.uk/publications/corporate/statistics/indices2010>.
- All agency incident demand levels (not crime levels).

These are not monitored to identify any changes that may impact projections. It is also interesting to note that they dismissed the use of population samples. They were considered too out-of-date and unreliable given the mobile working population.

## Phase 2 Step 2: Project future demand

### Activity 8: Evaluate and continually appraise

Having created the local demand profile for policing services, it is important you monitor the accuracy of projections. This should be undertaken to improve the accuracy of projections over time. Do this by comparing previous projections of demand and the underlying assumptions, over what is actually realised. It is important you look out for:

- Permanent over or under estimation of crime. This indicates a bias originating from an assumption you have made about crime. So long as the bias is predictable over time, you can make a standard adjustment to the workforce.
- Poor projective capability. You should expect the Home Office Statistical Research, combined with the local data you are collecting to explain about 70-80 per cent of the variation in crime rates. If you find the projective power is significantly below this, then question the reliability of the local data.

Professionalising the recording of trends, the projections made, the underlying assumptions and the accuracy thereof is a critical requirement of effective demand planning. It will provide the force/BCU/CDRP with an opportunity to develop a solid evidence base from which to learn from and ultimately it will improve operational decision making.

## Phase 3: Analysing your supply

### Phase 3 Analysing your supply

Understand  
current supply

Project future  
supply

### Summary

Before you can develop a workforce plan for the future you need to know more about the size, shape and diversity of your current workforce (or 'supply'). As with the demand analysis, this is a two-step process to look firstly at your current supply of staff (e.g. numbers, capabilities, when they are deployed) and how this might change in the future.

### Key objectives

- Generate sufficiently detailed resource information to support analysis of current and future supply of staff, and the drivers of change in supply.
- Examine rostering profiles for each policing capability and team to establish when staff are working, across the time of the day and day of the week.
- Understand the labour market trends that will impact your workforce decisions.
- Identify and collect appropriate supply metrics and develop a baseline to support projections of future resource levels.
- Understand the projected impact on diversity.

### Steps

- 1. Understand current supply:** Develop a detailed view of your force's resource profile by team and capability. Populate a detailed supply baseline with the relevant information, including: FTE; capability; powers; ranks, grades and bandings; diversity; and shift pattern. Profile each shift pattern to understand how resources are distributed across the time of the day and day of the week.
- 2. Project future supply:** In order to project your future supply you need to look at the individual sources of that supply and understand the contribution each will have, based on previous trends, on your overall resource levels. Projecting the future supply on the basis of this analysis will in turn inform the gap analysis, and allow you to determine the nature and extent of specific interventions required to close the projected gaps. As with demand projections it is not a precise science but a means of determining meaningful projections.

### Key outputs

- Supply baseline ('as is') – numbers of staff, in which capabilities, and when they are deployed.
- Review of external labour trends.

## Phase 3

### Step 1: Understand current supply

#### Why is it important?

Before being able to determine future supply requirements, it is essential that the current situation is fully understood. This will provide an agreed baseline from which future expectations can be modelled. There are a number of key dimensions that need to be included in the assessment of your current supply, these include: number (FTE) of officers and staff; roles; skills and capabilities; powers; ranks, grades and bandings; diversity; and, rostering arrangements. These dimensions need to be understood at the force/BCU level and within the policing capabilities by any proposed changes to the workforce mix.

#### Key activities

Agree structure for analysis. Using the structure and the scope identified within Phase 1, identify the appropriate boundaries for the supply analysis – see opposite. The capabilities highlighted within Level 1 are likely to be your starting point. We do not expand on this here.

Develop tool to capture and collate standard resource data (if needed). Populate tool with relevant information – including FTE, roles, skills and capabilities, ranks, grades and banding, and rostering arrangements.

Examine shift patterns to identify the distribution of workforce across the day and week.

#### Key inputs

- Home Office Rostering Study (November 2004)
- HR data and records

| Level 1  | Level 2   | Strategy/admin   |
|--|---|--|
| <ul style="list-style-type: none"> <li>• <b>Investigation</b></li> <li>• <b>Response</b></li> <li>• <b>Neighbourhood</b></li> <li>• <b>Intelligence</b></li> <li>• <b>Custody</b></li> <li>• <b>Command and support</b></li> </ul> | <ul style="list-style-type: none"> <li>• Serious/Org crime</li> <li>• Public order</li> <li>• Roads policing</li> <li>• Major crime</li> <li>• Counter terrorism</li> <li>• Operational support</li> <li>• Intelligence</li> <li>• Contact/command</li> <li>• Forensic support</li> <li>• Criminal justice</li> <li>• Professional standards</li> <li>• Training</li> </ul> | <ul style="list-style-type: none"> <li>• CD/ACPO/HR/finance</li> <li>• ICT/policy/support</li> <li>• Estate/facilities/fleet</li> <li>• Media/PR</li> <li>• Welfare</li> </ul> |

## Phase 3 Step 1: Understand current supply

### Activity 1: Capture and collate resource data

Having agreed the scope and scale of your supply analysis, you are in a position to generate an 'as is' picture of your current workforce supply. Standardised HR data is a pre-requisite, and you may need to change the existing reports generated by your HR system – for example, you may not routinely collect HR data aligned to policing capability. The output becomes an 'as is' baseline from which future supply expectations can be modelled and allow for simple comparisons with relevant benchmarks. Your force's Home Office returns could also be a useful source.

#### Outlining the process

For each team, powers or policing capability identified in Activity 1, you should look to:

- Collate data, and identify standard presentation for supply baseline.
- Evaluate baseline against benchmark ratios.

#### Collate and present HR data

Your HR system should be able to generate FTE information; this activity is about converting this data into a user friendly format that will enable non-HR staff to readily understand the size, shape and make up of a given team or capability.

Where data gaps are identified, a plan to address the gaps should be developed.

Numbers may be presented as ranges or averages but should not try to model a level of spurious 'accuracy'.

| Ref | Level | High Level Capability           | Officers  |            |              |               | DP         | NDP        |            |           |             | Force Total  |
|-----|-------|---------------------------------|-----------|------------|--------------|---------------|------------|------------|------------|-----------|-------------|--------------|
|     |       |                                 | Inspector | PS/DS      | PC/DC        | Total Officer |            | A          | B          | C         | Total Staff |              |
|     |       |                                 | #s        | #s         | #s           | Headcount     | #s         | #s         | #s         | Headcount | Headcount   |              |
| 1   | L1    | Investigation                   | 0         | 110        | 620          | 730           | 0          | 20         | 5          | 0         | 25          | 755          |
| 2   | L1    | Response                        | 0         | 245        | 1,855        | 2,100         | 0          | 0          | 0          | 0         | 0           | 2,100        |
| 3   | L1    | Neighbourhood Policing          | 0         | 90         | 550          | 640           | 485        | 70         | 20         | 0         | 90          | 1,215        |
| 4   | L1    | Intelligence                    | 0         | 35         | 210          | 245           | 0          | 110        | 75         | 20        | 205         | 450          |
| 5   | L1    | Custody                         | 0         | 75         | 55           | 130           | 0          | 200        | 0          | 0         | 200         | 330          |
| 6   | L1    | Command & Support               | 0         | 15         | 190          | 205           | 0          | 175        | 20         | 0         | 195         | 400          |
|     | L1    | <b>Total</b>                    | <b>0</b>  | <b>570</b> | <b>3,480</b> | <b>4,050</b>  | <b>485</b> | <b>575</b> | <b>120</b> | <b>20</b> | <b>715</b>  | <b>5,250</b> |
| 7   | L2    | Serious/Organised Crime         | 0         | 35         | 190          | 225           | 0          | 30         | 30         | 5         | 65          | 290          |
| 7   | L2    | Serious/Organised Crime - Sp    | 0         | 5          | 35           | 40            | 0          | 0          | 0          | 15        | 15          | 55           |
| 8   | L2    | Public Order                    | 0         | 15         | 120          | 135           | 0          | 0          | 0          | 0         | 0           | 135          |
| 9   | L2    | Civil Contingencies             | 0         | 0          | 0            | 0             | 0          | 0          | 0          | 0         | 0           | 0            |
| 10  | L2    | Roads Policing - Collision Inve | 0         | 0          | 10           | 10            | 0          | 0          | 5          | 0         | 5           | 15           |
| ... | ...   | ...                             |           |            |              |               |            |            |            |           |             |              |

### **Evaluate against benchmarks**

The baseline can be more meaningful when compared to relevant benchmarks. This will not determine the supply–demand gap, since at this stage it is not informed by the true picture of demand developed within Phase 2, but it does provide a useful context for the baseline.

### **The value of experience**

There may be other factors you wish to consider when defining your 'as is' workforce position. For instance you may want to assess the distribution of more experienced officers across the force. If they are concentrated in a few BCUs, the force may benefit from a changed approach to allocating probationers and re-deploying some officers to redress the balance.

### **The importance of diversity**

The make up of a police force must reflect the community it is serving. It impacts on the culture of the force and the level of trust and confidence placed in it by the community. Several forces have seen the recruitment of PCSOs as a sound option for addressing their historic imbalance, however the time lags involved in this process highlight the importance of retaining an up-to-date understanding of your forces position.

## Phase 3 Step 1: Understand current supply

### Activity 2: Examine shift patterns to see *when* staff are deployed

In addition to staff numbers by capability, etc, your supply analysis needs to take account of when staff are deployed across the hours of the day and days of the week, as determined by their shift pattern. Matching this profile of supply against the profile of demand can be a key driver of improved performance, resource utilisation and staff welfare. In spite of research, presented in the Home Office Rostering study (November 2004), there still remains a significant mismatch between demand and supply in many forces.

#### Evidence Based Demand Analysis

In 2010 Process Evolution were commissioned by the NPIA to deliver a Programme of Evidence based Demand Analysis (EBDA) which involved 4 forces. EBDA is a proven approach within the emergency services to realise efficiency savings and improve service to the public. EBDA combines a suite of analytical tools and techniques into a powerful methodology:

- **Value Stream Analysis**
  - To provide a baseline of current performance and workload.
- **Computer Simulation Modelling**
  - To evaluate alternative processes, structures and operating practices.
  - To optimise the hourly availability profile of officers to respond.
- **Shift Pattern Design**
  - To design shift patterns and rosters to meet the desired resource profile.

Individual case studies detailing the results of this programme can be found by following the link below

<http://www.npia.police.uk/en/16707.htm>.

*(There are a number of companies that provide software to assist with demand modelling and shift pattern design. The NPIA currently sponsors one user licence per force in England and Wales for the Ximes shift pattern software provided by Process Evolution who also provide software for profiling response, custody and investigation.)*

## Phase 3

### Step 2: Project future supply

#### Why is it important?

Having understood what your existing supply of staff looks like you are now in a position to project your future resource pool based on historical and organisational trends. Understanding your future supply will allow you to plan for the actions and interventions required to meet demand.

What we term 'supply drivers' fall into the four main categories of Recruit, Develop, Redeploy and Retain. You can use these key headings to structure your analysis, develop the supply baseline and project your future supply.

The extent to which you can use supply drivers to your advantage will always be constrained by the wider labour trends so a review of these external forces will be useful to you when assessing the viability of your final Strategic and Operational Resource Planning (SORP) recommendations.

#### Key activities

1. Review labour trends to gain a deeper insight into the external factors that will impact your SORP decisions, and help you to assess the viability of options that you will generate during Phase 5.
2. Identify the organisational trends which might impact your workforce. There is a wide range of metrics you can use to describe trends in your workforce, and the more detailed your analysis the more valuable your assessment of supply will be. Work with HR to understand how the data is collected and assess the accuracy of the information – this will help you to apply the appropriate level of judgement and caution when interpreting data.
3. Develop the supply baseline based on the metrics you have collected. This will give you the annual rates of supply and attrition needed to calculate future supply.
4. Project your future supply over the chosen plan period. The output will form the basis of the gap analysis in Phase 4, allowing you to compare projected demand against future supply.

#### Key inputs

- National and regional labour trends <http://www.statistics.gov.uk/regionaltrends/>
- Internal HR data on recruitment, retention, redeployment and development.
- Skills and competency frameworks.

### **Tips and traps**

- Drivers of turnover should not be assumed. Deeper analysis through surveys, interviews and other more qualitative measures may be required to understand the true drivers.
- Ensure that you do not double count transactions (e.g. an individual is simultaneously promoted and transferred) as this will distort your data.

## Phase 3 Step 2: Project future supply

### Activity 1 – Review labour trends

Forecasts of external change can run with or against your workforce objectives and alter necessary actions to meet requirements. For example a national shortage of a specific skill set that you require to meet demands will constrain your options to recruit into those positions; developing existing staff to acquire those skills may therefore be a more effective strategy. Conversely, an increase in the number of undergraduates studying relevant degrees, for example Forensic Sciences, represents an opportunity to invest in young talent to succeed retiring forensic staff.

#### Examples of relevant economic and demographic supply drivers:

- **Labour wages and costs** – benchmarking wages in the police force against other job markets will help you to assess how attractive a career with the police is and the potential costs of becoming a more competitive employer.
- **Unemployment rates** – could be an indicator of the potential pool of new recruits. However a closer look at the skill sets to assess suitability would be needed.
- **Opportunities outside of policing** – who are your main competitors for supply/resources? Why would a potential or existing employee choose them over the police force?
- **New communities** – for example an increase in ethnic minorities could help support meeting diversity targets.
- **Education and professional qualifications** – an increase or decrease in relevant educational and professional qualifications is an indicator of the potential pool of suitably qualified recruits.

#### The forensics labour market (illustration only)

##### Education

- Approximately 1500 students, nationwide, are graduating per year in this area.
- The police service accounts for approximately 25 per cent of the overall forensic employees in the UK.
- There is some degree of oversupply in generic forensics skills such as DNA analysis.
- Computer forensic analysis is an area where there is a short supply of suitably qualified employees.

##### Competitors

- There is a growing desire to work in the private sector as investigators or independent forensic consultants.
- LGC Forensics is the largest private sector employer of forensic scientists. Specialist laboratories and research establishments are also large recruiters.

### Phase 3 Step 2: Project future supply

#### Activity 2 - Identify workforce trends in your force

Your analysis of future supply should draw on previous organisational trends in your workforce. Understanding where your current supply has come from will give you the historical data you need to project what your supply pool will look like given existing patterns of movement into, out of, and within your workforce remain constant. This will then provide the basis for you to identify opportunities for intervention and change the course of these trends to meet your needs.

Your analysis of organisational trends in supply can be broken down by four main categories:

- **Recruit**
- **Retain**
- **Develop**
- **Redeploy**

Examples of the types of analysis and metrics for you to collect under each of these categories are given below.

- **Recruit**

All external new recruits into a particular policing capability from the external market place and other forces including recent recruits and experienced recruits and graduate entrants. Re-hiring retired staff is also an increasingly common practice so this should also be considered.

- **Retain**

All employees exiting the capability i.e. **attrition**. Attrition is defined as both internal and external movement out of the workforce segment including promotions, demotions, transfers, retirements, voluntary and involuntary attrition.

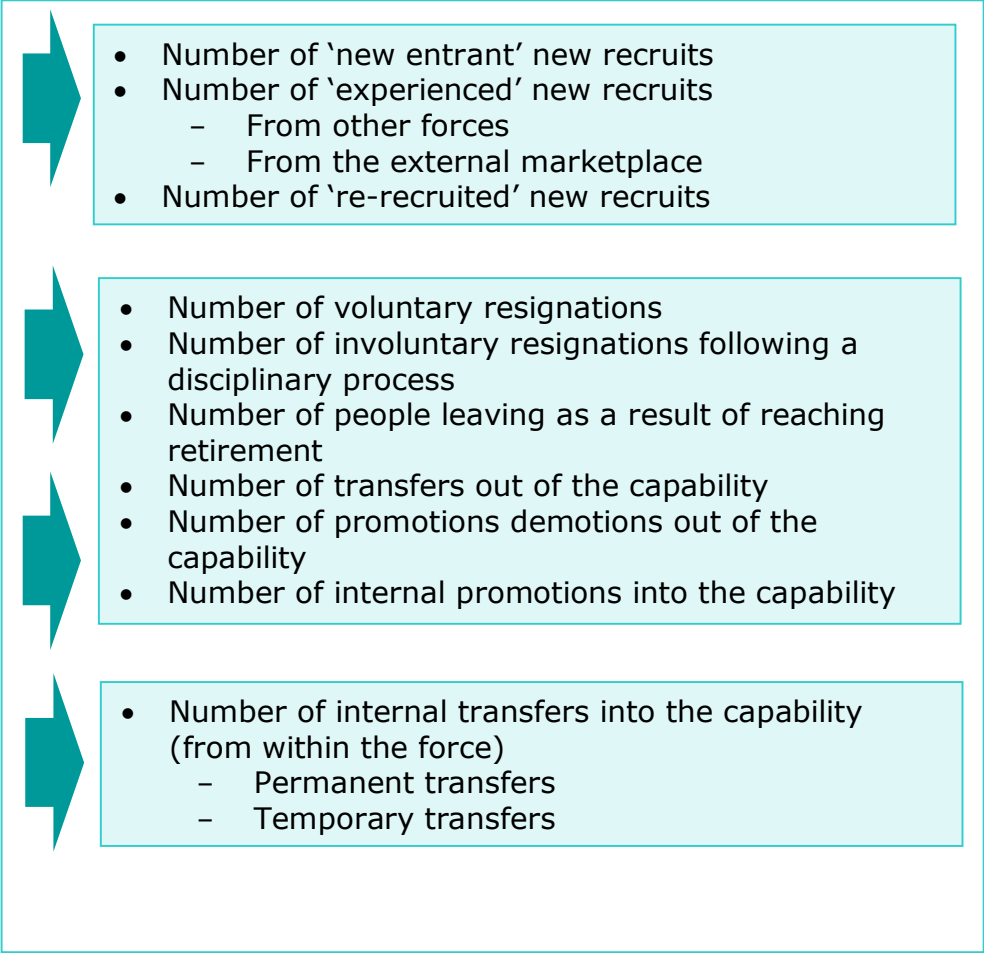
- **Develop**

All internal movement into the capability as a result of staff developing new skills and competencies, including obtaining accreditations and powers.

- **Redeploy**

All internal movements and transfers, either permanent or temporary across capabilities.

**Example metrics to collect**



**Phase 3 Step 2: Project future supply**  
**Activity 3 – Develop supply baseline**

With the historical data of supply sources that you have collected you can now develop the baseline which will inform your future projections.

Enter the historical data for the time periods you have, ideally over a 24-month period.

Calculate the Annual Rates for each supply driver using a percentage of the number of 'actions' e.g. number of promotions into the segment over the total number of actions for that period.

If you have data for more than a 12-month period, calculate the average annual rate.

**Supply baseline (example)**

| <b>Intelligence officers 200</b> |                         |                         | CWS = Critical Workforce Segment |                         |                |
|----------------------------------|-------------------------|-------------------------|----------------------------------|-------------------------|----------------|
|                                  | <b>Oct10-<br/>Oct11</b> | <b>Oct11-<br/>Oct12</b> | <b>Oct10-<br/>Oct11</b>          | <b>Oct11-<br/>Oct12</b> | <b>Average</b> |
| <b>Attrition</b>                 |                         |                         |                                  |                         |                |
| Promotion out of CWS             | 3                       | 5                       | 1.50%                            | 2.50%                   | 2.00%          |
| Transfer out of CWS              | 5                       | 8                       | 2.50%                            | 4.00%                   | 3.25%          |
| Resignations                     | 12                      | 8                       | 6.00%                            | 4.00%                   | 5.00%          |
| Dismissals                       | 1                       | 0                       | 50.00%                           | 0.00%                   | 25.00%         |
| Retirement                       | 5                       | 7                       | 2.50%                            | 3.50%                   | 3.00%          |
|                                  |                         |                         |                                  |                         |                |
| <b>Develop</b>                   |                         |                         |                                  |                         |                |
| Promotion into CWS               | 25                      | 15                      | 12.50%                           | 7.50%                   | 10.00%         |
|                                  |                         |                         |                                  |                         |                |
| <b>Hire</b>                      |                         |                         |                                  |                         |                |
| Graduate Hires/Recruit           | 7                       | 4                       | 3.50%                            | 2.00%                   | 2.75%          |
| Experienced Hires/Recruit        | 10                      | 12                      | 5.00%                            | 6.00%                   | 5.50%          |
| Rehire                           | 4                       | 2                       | 2.00%                            | 1.00%                   | 1.50%          |
|                                  |                         |                         |                                  |                         |                |
| <b>Redeploy</b>                  |                         |                         |                                  |                         |                |
| Permanent transfer into CWS      | 5                       | 7                       | 2.50%                            | 3.50%                   | 3.00%          |
| Temporary transfer into CWS      | 2                       | 4                       | 1.00%                            | 2.00%                   | 1.50%          |

**Phase 3 Step 2: Project future supply**  
**Activity 4 – Project future supply**

All other things being equal, the supply baseline will allow you to project the baseline future supply i.e. what would exist in the future based on current practices and dynamics?

- Calculate the supply rate sub-totals and total for Develop, Recruit and Redeploy.
- Calculate the Attrition total.
- Use the Annual Rates to determine the supply and attrition of FTEs based on current practices over your chosen plan period.
- Calculate the net supply over the plan period: number of projected incoming staff less the number of projected outgoing staff.

**Future supply (example)**

| Name of Critical Workforce |                    | Intelligence Officers |        |        |        |        |   |
|----------------------------|--------------------|-----------------------|--------|--------|--------|--------|---|
| Future Supply Baseline     | 2013               |                       | 2014   |        | 2015   |        |   |
|                            | Rate               | FTE                   | Rate   | FTE    | Rate   | FTE    |   |
|                            | Promotion into CWS | 10.00%                | 3      | 10.00% | 3      | 10.00% | 4 |
| Develop Sub Total          | 10.00%             | 3                     | 10.00% | 3      | 10.00% | 4      |   |
| Graduate Hires             | 2.75%              | 1                     | 2.75%  | 1      | 2.75%  | 1      |   |
| Experienced Hires          | 5.50%              | 1                     | 5.50%  | 2      | 5.50%  | 2      |   |
| Retire                     | 1.50%              | 0                     | 1.50%  | 0      | 1.50%  | 1      |   |
| Hire Subtotal              | 9.75%              | 2                     | 9.75%  | 3      | 9.75%  | 3      |   |
| Permanent Transfer         | 3.00%              | 1                     | 3.00%  | 5      | 3.00%  | 6      |   |
| Temporary Transfer         | 1.50%              | 0                     | 1.50%  | 8      | 1.50%  | 10     |   |
| Redeploy Subtotal          | 4.50%              | 1                     |        | 16     |        | 19     |   |
| Annual Supply Rate         | 24.25%             | 6                     | 19.75% | 30     | 19.75% | 35     |   |
| Annual Attrition Rate      | 13.50%             |                       |        |        |        |        |   |
| Net                        |                    |                       |        |        |        |        |   |

**Phase 3 Step 2: Project future supply**  
**Activity 5 – Populate the projected supply model**

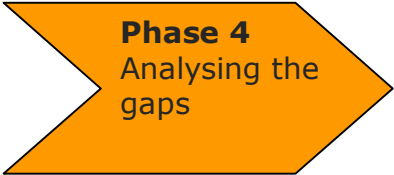
Use the forecasted net supply data that you have generated for each segment to populate the Projected Supply Model. For each team and capability being modelled, bring across the net figures resulting from Activity 4 to populate the overall Projected Supply Model. This will be required to undertake the gap analysis in the next Phase.

Information from Activity  
 Above as seen in projected supply

| Ref | Level | High Level Capability           | Fully Warranted Powers |              |              |                   | DP         |            |            |            | NDP        |            |            |                 | Force Total  | Force Total  |
|-----|-------|---------------------------------|------------------------|--------------|--------------|-------------------|------------|------------|------------|------------|------------|------------|------------|-----------------|--------------|--------------|
|     |       |                                 | FY07/08                | FY08/09      | FY09/10      | Total Officer +/- | FY07/08    | FY08/09    | FY09/10    | Total +/-  | FY07/08    | FY08/09    | FY09/10    | Total Staff +/- |              |              |
| 1   | L1    | Investigation                   | 730                    | 700          | 500          | -80               | 0          | 0          | 0          | 0          | 25         | 40         | 50         | 25              | 755          | 700          |
| 2   | L1    | Response                        | 2,100                  | 2,200        | 2,300        | 200               | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0               | 2,100        | 2,300        |
| 3   | L1    | Neighbourhood Policing          | 640                    | 550          | 500          | -140              | 485        | 600        | 700        | 215        | 90         | 100        | 120        | 30              | 1,215        | 1,320        |
| 4   | L1    | Intelligence                    | 245                    | 250          | 300          | 55                | 0          | 0          | 0          | 0          | 205        | 250        | 300        | 95              | 450          | 600          |
| 5   | L1    | Custody                         | 130                    | 130          | 100          | -30               | 0          | 0          | 0          | 0          | 200        | 150        | 150        | -50             | 330          | 250          |
| 6   | L1    | Command & Support               | 205                    | 205          | 205          | 0                 | 0          | 0          | 0          | 0          | 185        | 250        | 250        | 55              | 400          | 455          |
|     | L1    | <b>Total</b>                    | <b>4,050</b>           | <b>4,035</b> | <b>4,055</b> | <b>5</b>          | <b>485</b> | <b>600</b> | <b>700</b> | <b>215</b> | <b>505</b> | <b>640</b> | <b>670</b> | <b>155</b>      | <b>5,250</b> | <b>5,625</b> |
| 7   | L2    | Serious/Organised Crime         | 225                    | 250          | 300          | 75                | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0               | 290          | 380          |
| 7   | L2    | Serious/Organised Crime - Sp    | 40                     | 50           | 60           | 20                | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0               | 55           | 100          |
| 8   | L2    | Public Order                    | 135                    | 100          | 70           | -65               | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0               | 135          | 70           |
| 9   | L2    | Civil Contingencies             | 0                      | 0            | 0            | 0                 | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0               | 0            | 0            |
| 10  | L2    | Roads Policing - Collision Inve | 10                     | 10           | 10           | 0                 | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0               | 15           | 15           |
| ... | ...   | ...                             |                        |              |              |                   |            |            |            |            |            |            |            |                 |              |              |

**Important:** Spreadsheets will always generate 'precise' numbers, however you should always convert them to ranges when making planning decisions

# Phase 4: Analysing the gaps



Analyse existing gaps

Analyse future gaps

### Summary

The purpose of the previous two phases was for you to quantify both demand and supply in resource terms – by capability and by powers required. Now this is complete, you are able to compare demand and supply and determine the size and make up of any gaps. You can then analyse these gaps to determine if any action is required to address them.

### Key objectives

- To identify and analyse existing gaps between supply and demand using rostering patterns.
- To bring together future projections for supply and demand to allow you to identify projected gaps in the workforce. You will be able to identify gaps by capability and by powers and understand the timings and trends associated with each gap.

### Steps

- 1. Analyse existing gaps:** This step walks you through the supply and demand match methodology used to quantify the gap between the supply profile generated by a shift pattern and the demand profile faced by the capability. The methodology also allows you identify the times in the day, and days of the week where this mismatch is greatest. Furthermore where confronted with an irregular demand pattern, this method can be used to identify opportunities for resource pooling or centralisation.
- 2. Analyse future gaps:** The analysis of future gaps revolves around the simple steps of bringing together future demand and supply projections and determining the size, shape and make up of any projected gaps between the two.

### Key outputs

- Quantification of the shift pattern-derived supply and demand match for each capability and powers.
- Quantification of the projected gap in supply and demand for each capability and powers.

## Phase 4

### Step 1: Analyse existing gaps

#### Why is it important?

Understanding how your current supply compares with your current demand allows your force to identify the size of the gap between the two. This gap may result from either a surplus or lack of resources within a certain capability or BCU – it may also result from a poorly fitted rostering pattern. Examining the resource gap in the short term will not provide the force with a great deal of insight – as projected future demand and supply conditions may remove any problem. We therefore propose that this is delayed until the next step in the process. Examining and addressing a rostering gap, however, can provide your force with sizable benefits in terms of improved performance and resource use.

#### Key activities

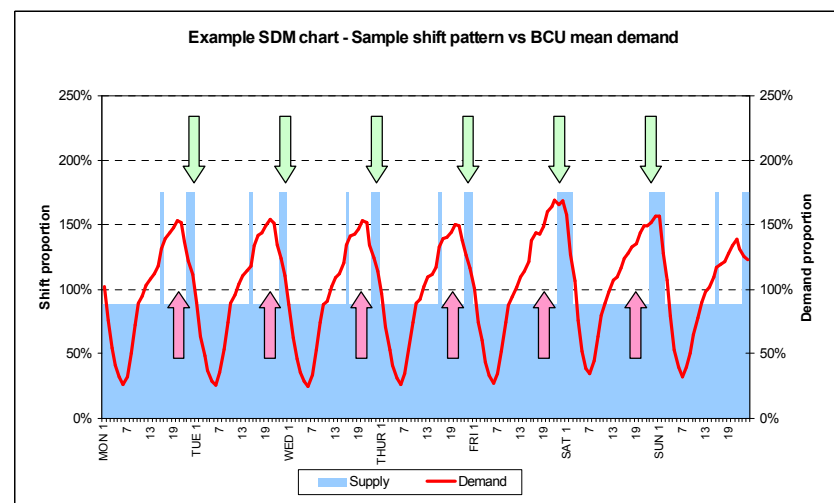
1. Use a Supply and Demand Model to overlay the demand profile developed within Phase 2 and the supply profile developed within Phase 3 to identify the rostering gap.
2. Evaluate the size and nature of the gap (under and over supply). Identify the times and days at which the gap is biggest.
3. Using the same method to develop the supply profile, test other possible shift patterns to see if a closer Supply Demand Match (SDM) can be generated with a different shift pattern.
4. If an improved match can be generated, assess the new shift pattern against the balanced scorecard introduced within the Home Office Rostering Study. Assessment should include broad consultation regarding officer/staff welfare, manageability, and external factors.

#### Key inputs

- Home Office Rostering Study (November 2004).
- Baseline projections of operational supply and demand.
- Supply and demand model.

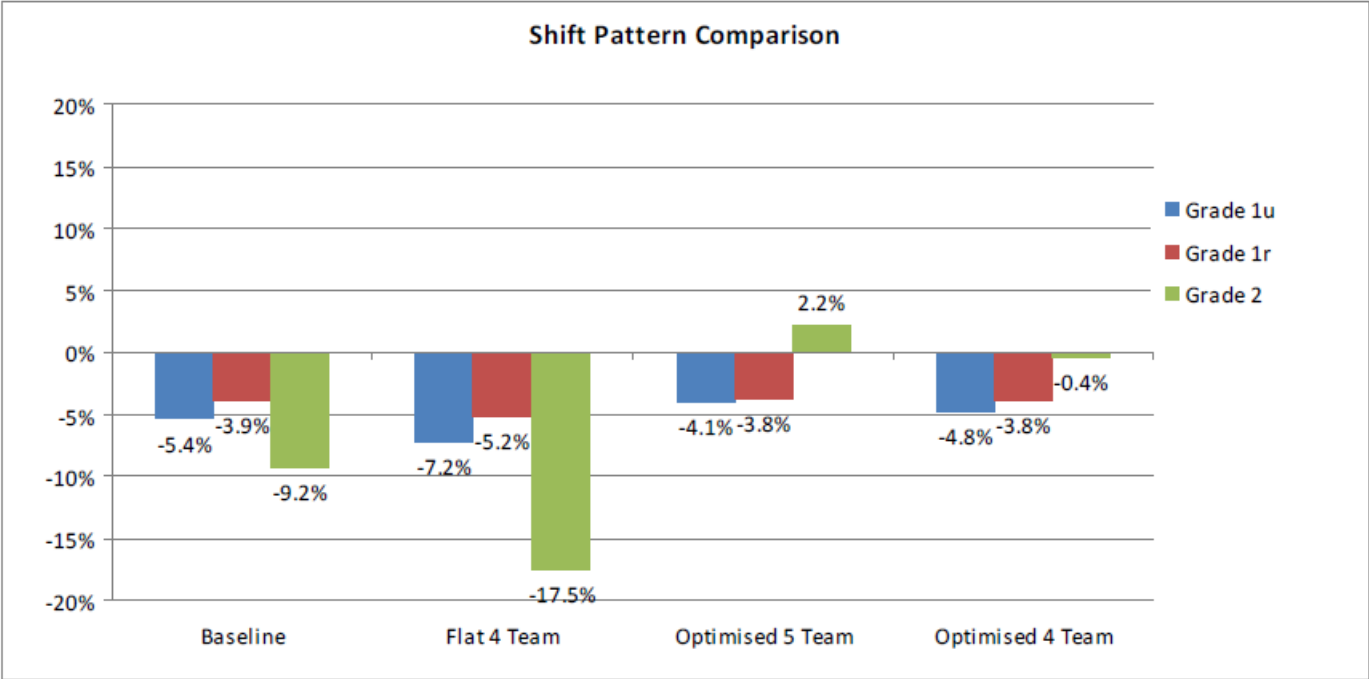
#### Supply and demand matching

The relative under and over supply for each hour of the day, day of the week can now be determined. The chart below depicts the typical SDM analysis. The red arrows indicate times of undersupply; the green arrows indicate times of oversupply.



The Effective Deployment Programme carried out in 2010 mentioned earlier found that often shift rotas are not well aligned to demand.

A number of scenarios were developed in an effort to resolve this problem as well as considering whether five team rotas would perform better than four team rotas. The graph below outlines the findings for one of the forces:



The findings concluded that:

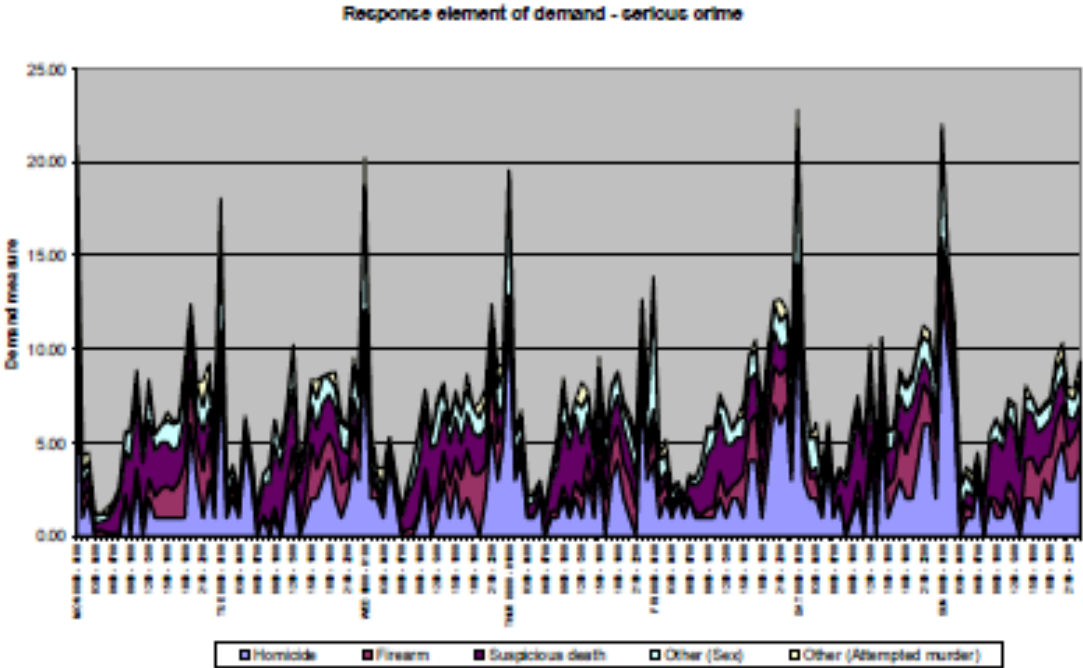
- A flat four team rota yields a worse performance than the five team force rota with the same level of resource.
- An optimised five team rota performs better than an optimised four team rota with the same level of resource.
- Both optimised rotas significantly out perform the baseline.
- Grade 2 performance is impacted more than grade 1.

*Baseline scenario uses force own data.*

### A further use of supply and demand matching

You can also use supply and demand matching to identify non-rostering opportunities. The main additional benefits of the approach are the identification of resource pooling or centralisation opportunities.

By following the process below, you will be able to identify where your force may benefit from these additional opportunities. When you generate a demand profile (Phase 2) that is erratic, indicating no obvious pattern of demand, it is often difficult to find a supply pattern to fit. This is often the case for Level 2 teams operating in small numbers, facing a relatively low level of crime. See below for an example profile.



You can often address this scenario by pooling the demand profiles of the individual teams to generate a smoother, more predictable profile. You may then find it easier to develop a supply pattern to match the new pooled demand profile.

Where you find this to be the case, you should consider the benefits of pooling resources either physically or virtually – as there may be efficiencies to be gained from doing so.

## Phase 4

### Step 2: Analyse future gaps

#### Why is it important?

The purpose of this step is to compare the projected workforce demand with the supply projections. The outcome of this analysis may be either a surplus or a gap in resources.

The gap analysis will generate information to assist your understanding of where the most significant staffing gaps are, when they will occur and the level of effort required to close the gaps. Essentially it will help you proactively to plan ahead in order to meet your resource demands. For example, it will enable you to quantify the size of the Level 2 gap and understand the dynamics surrounding how it might be addressed, e.g. timescales.

#### Key activities

1. Compare existing and projected workforce supply and demand. Use the demand profiles derived in Phase 2 and the supply profiles derived in Phase 3 to inform your analysis.
2. Identify and quantify gaps and surpluses in the workforce at the level appropriate to your analysis – either force, capability or team. Identify trends.
3. Calculate the staffing capacity to understand what percentage of your total requirements can be met based on current staffing numbers and projections.
4. Summarise the findings from your analysis by capability and powers (constable, designated powers, non-designated powers). This will consist of any combination of the following three scenarios:
  - Gap – forecast demand will exceed current workforce supply.
  - Surplus – forecast workforce supply exceeds forecast demand.
  - Balance – forecast supply meets forecast demand.

#### Key inputs

- Demand profiles – existing and projected.
- Supply profiles – existing and projected.

#### Key outputs

- Figures confirming the size and nature of any workforce gaps/surpluses.

Summary of all activities

A summary of all the activities involved in this step is outlined below.

Supply and demand gap analysis

| Ref | Level | High Level Capability  | Fully Warranted Powers |         |         |               | DP      |         |         |       | NDP     |         |         |       | Total Staff | Force Total | Force Total |   |
|-----|-------|------------------------|------------------------|---------|---------|---------------|---------|---------|---------|-------|---------|---------|---------|-------|-------------|-------------|-------------|---|
|     |       |                        | FY07/08                | FY08/09 | FY09/10 | Total Officer | FY07/08 | FY08/09 | FY09/10 | Total | FY07/08 | FY08/09 | FY09/10 | Total |             |             |             |   |
| 1   | L1    | Investigation          | 750                    | 700     | 650     | 0             | 0       | 0       | 0       | 0     | 0       | 0       | 0       | 0     | 0           | 0           | 0           | 0 |
| 2   | L1    | Response               | 2,100                  | 2,200   | 2,300   | 0             | 0       | 0       | 0       | 0     | 0       | 0       | 0       | 0     | 0           | 0           | 0           | 0 |
| 3   | L1    | Neighbourhood Policing | 600                    | 650     | 700     | 100           | 485     | 600     | 700     | 215   | 90      | 100     | 100     | 30    | 0           | 0           | 0           | 0 |
| 4   | L1    | Intelligence           | 245                    | 250     | 300     | 0             | 0       | 0       | 0       | 0     | 205     | 250     | 300     | 0     | 0           | 0           | 0           | 0 |
| 5   | L1    | Quality                | 130                    | 130     | 100     | 0             | 0       | 0       | 0       | 0     | 200     | 150     | 100     | 0     | 0           | 0           | 0           | 0 |
| 6   | L1    | Command & Support      | 205                    | 205     | 205     | 0             | 0       | 0       | 0       | 0     | 105     | 200     | 200     | 0     | 0           | 0           | 0           | 0 |
| L1  | Total |                        | 4,065                  | 4,035   | 4,055   | 0             | 485     | 600     | 700     | 215   | 715     | 790     | 870     | 185   | 0           | 0           | 0           | 0 |

1. Compare profile ranges

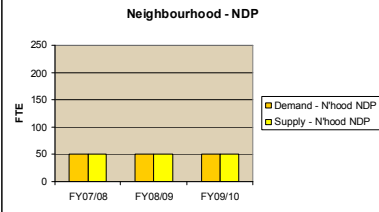
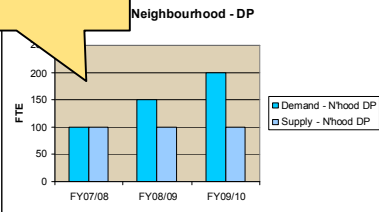
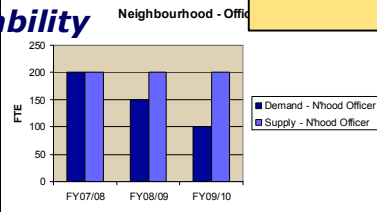
Demand profile – includes existing and future profile

Supply profile – includes existing and future profile

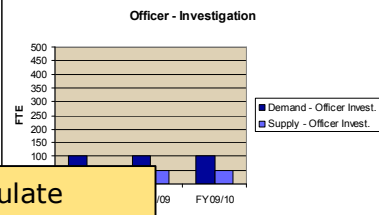
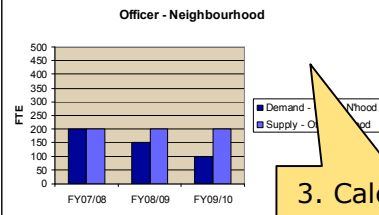
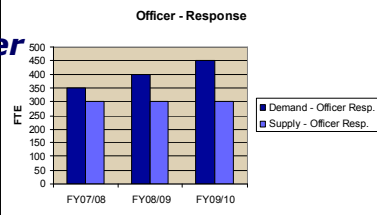
2. Identify gaps

4. Summarise findings

By capability



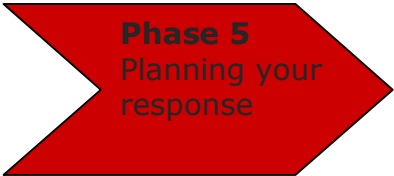
By power



3. Calculate capacity

- Summary of findings:**
- Neighbourhood capability faces oversupply of officers (+100) and undersupply of DPs (-100)
  - Officers in undersupply in response (-100) and Invest (-50) and oversupply in neighbourhood (+100)
  - Overall demand [...] etc.

# Phase 5: Planning your response



Consider demand reduction

Choose your combination of supply options

Evaluate your options

Develop objectives and workforce plan

### Summary

This final phase brings together the lessons, data, information and analysis from the previous phases to assess your final recommendations and develop the actual workforce plan.

### Key objectives

- Identify opportunities to reduce the level of demand.
- Choose the best combination of supply options to meet demand.
- Assess the viability of final recommendations against strategic, operational and financial constraints.
- Develop a comprehensive workforce plan which includes short and long term objectives, and has clear alignment with existing resource management solutions and programmes.

### Steps

1. **Consider demand reduction:** Re-engineering processes (based on your previous process mapping) and filtering out certain crimes/incidents based on agreed prioritisation criteria are two approaches to reducing or 'managing-out' demand that you now have the right tools to consider. Also consider use of 'triggers' as means of actively managing demand in real-time.
2. **Choose your combination of supply options:** Using scenarios based on your internal workforce data and external economic and labour information, you can test the impact of different supply solutions on closing the gap with demand. This will allow you to choose the most appropriate combination of solutions to base your recommendations on.
3. **Evaluate your options:** Before committing recommendations to the workforce plan it is important for you to assess the costs, benefits and risks associated with implementation and weigh these factors up against the value they potentially generate. The outputs of your evaluation will provide the business case to support each of the solutions you recommend in your workforce plan.
4. **Develop objectives and workforce plan:** The actual workforce plan will be the tool you use to specify your objectives and the short and long-term actions you will implement **to meet** them.

### Key outputs

- Scenario-based supply and demand forecasts.
- 'Cost/benefit/risk' analysis for final recommendations.
- Workforce plan.

## Phase 5

### Step 1: Consider demand reduction

#### Why is it important?

Demand reduction should be a natural consequence of effective policing, with demand for policing services reducing in a virtuous circle of effective prevention and detection. However, there are several ways in which forces have attempted to reduce directly both the level and the impact of demand, including:

- Re-engineering key policing processes in order to deal with demand more efficiently.
- Filtering out certain crimes/incidents based on agreed prioritisation criteria or striking agreements with partner agencies over roles and responsibilities.

There are many examples of successful process re-engineering in the public sector (especially in healthcare) where large resourcing payoffs have been realised. Recently in policing, a Workforce Modernisation pilot has realised significant efficiencies in investigation through re-configuring business processes alongside its workforce changes.

#### Key process re-engineering activities (only when 'steady state' is reached)

This guide is not intended to provide a full introduction to lean process re-engineering. Yet the process maps generated in Phase 2 offer an ideal opportunity to quality assure processes and re-configure where gains can be identified – as outlined within the Changing the Workforce Mix Toolkit. Among the key analyses that should be considered when a steady state has been established (following the initial process redefinition required for changing the workforce mix):

1. Measuring the delays and elapsed time during the response to or investigation of a crime or incident – e.g. when is an investigation stationary, and why? What actions can be taken to reduce these delays? Can we remove dependencies?
2. Assessing which activities in the process were non-core and did not contribute to the overall objective – e.g. wasted journey times – and which activities could be conducted in parallel?
3. Identifying the incentives in a process for staff to make it more efficient – e.g. giving individual investigators a 'cap' on their case load gives them little incentive to get through their backlog.

### **Key demand limitation activities**

- Agree prioritisation methodologies with relevant policing capabilities, based on a balance between efficiency and what would be publicly acceptable (e.g. not responding to burglaries where entry has been forced, not investigating bike thefts, etc.). Where possible, agree to deflect demand to other agencies (e.g. abandoned vehicles to local authority).
- Formalise internal processes for screening out such demand and communicating implications to public/staff.
- Identify and utilise 'triggers' to identify times when demand can be managed in real-time – see Changing the Workforce Mix Toolkit for further details.

### **Key inputs**

- Process maps from current demand analysis phase.
- Stakeholder consultations on resourcing priorities.

### **Key outputs**

- Revised policies on policing response.
- More efficient policing processes.

## Phase 5

### Step 2: Choose your combination of supply options

#### Why is it important?

This step will help you to address the question "*What is the most efficient and effective combination of actions the force/BCU can take to meet forecasted demand?*" This is achieved through developing reasonable forecast scenarios to test various strategies and to determine the optimal combination of supply drivers (e.g. redeploy, recruit) to close the workforce gap. These strategies should also consider broader objectives of improving diversity.

To forecast alternative scenarios you will adjust the baseline rate for each supply driver to understand the impact on the workforce gap/surplus over multiple planning periods. Using this analysis you can recommend a mix of objectives that is achievable through workforce actions. The scenarios should be based on both **internal information** (strategies and workforce data that help to establish the likely range of possibilities for each action) and **external information** (industry, education, workforce demographic and other data that indicate whether each action will be more or less difficult to accomplish in the future).

**Key activities**

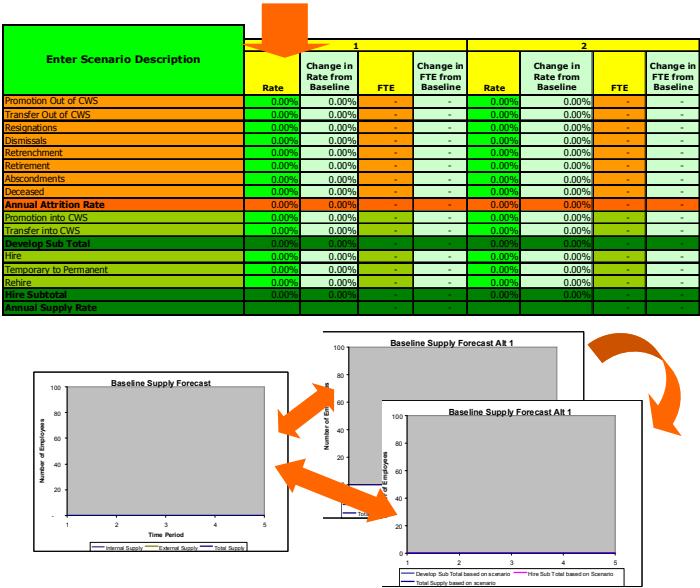
1. Define the option that you want to test based on internal and external information. For example your workforce data indicates that you are experiencing significant attrition of response officers but also that a large percentage of your supply comes from movement of PCSOs into this segment.
2. Adjust the results of the baseline data to create the planning scenarios and test the impact. Enter a new annual rate for each relevant factor that affects either the attrition or supply of staff, based on the assumptions for the scenario. For example, using the scenario given above, increase movement of PCSOs by 4 per cent and decrease attrition of response officers by 2 per cent.
3. Compare the data generated by scenarios with the supply baseline and compare scenarios with each other to spot the relative impacts of the planning scenarios.
4. Based on the outputs make the appropriate recommendations. For example, given the negative impact of increasing movement from the PCSO supply pool, you recommend decreasing attrition of response officers by 3 per cent.

**Key inputs**

- Baseline Supply Data.
- Gap analysis.
- Internal and External Information (as defined above).

**Forecasting scenarios**

Adjust baseline date based on forecast scenario



Compare data generated by scenarios with the supply baseline and compare the relative impacts between the scenarios

## Tips and traps

Selecting the most effective solution begins with understanding its characteristics. Consider both the advantages and disadvantages of options when forecasting the optimal mix.

|                 | <b>Advantages</b>   | <b>Disadvantages</b>  |
|-----------------|---|---|
| <b>Retain</b>   | <ul style="list-style-type: none"> <li>• Immediate impact</li> <li>• Low cost</li> <li>• Maintains/improves morale</li> <li>• Retains skills and knowledge in the organisation</li> </ul>             | <ul style="list-style-type: none"> <li>• Attrition can be positive</li> <li>• Retention of poorly skilled staff can be costly and counter productive</li> </ul>                                   |
| <b>Develop</b>  | <ul style="list-style-type: none"> <li>• Long term proposition</li> <li>• Moderate cost</li> <li>• Positive impact on retain and recruit</li> <li>• Positive for organisational reputation</li> </ul> | <ul style="list-style-type: none"> <li>• Potential negative impacts on other parts of the organisation</li> <li>• Resource intensive in terms of training</li> </ul>                              |
| <b>Recruit</b>  | <ul style="list-style-type: none"> <li>• Near-term option</li> <li>• Opportunity to introduce new talent and new skills</li> <li>• Directly fills open positions</li> </ul>                           | <ul style="list-style-type: none"> <li>• High cost</li> <li>• Does not improve retention</li> <li>• Negative impact on productivity</li> <li>• Resource intensive in terms of training</li> </ul> |
| <b>Redeploy</b> | <ul style="list-style-type: none"> <li>• Immediate impact and low cost</li> <li>• Minimal requirements for training</li> <li>• Can be used to re-size departments</li> </ul>                          | <ul style="list-style-type: none"> <li>• Not always a long-term solution</li> <li>• Does not necessarily address skill shortages</li> </ul>   |

Further options include outsourcing, contingent workforces, temporary registers or collaborating with partnership organisations.

## Phase 5

### Step 3: Evaluate your options

#### Why is it important?

The optimal combination of supply drivers is not always feasible, given certain constraints in the force/BCU. The next step after determining the sourcing solutions is to confirm that they are realistic to implement within the constraints of available budget, available timescales, and the ability to deliver. The evaluation should also consider alignment of the recommendations with existing resource management policies and programmes.

A goal of every organisation is to maximise the value delivered to the organisation while minimising the costs incurred. So even where a workforce plan is viable, the value generated may not justify the level of investment (financial or people) needed to execute it. Your experience and judgement will be key in understanding the relative benefits of different options.

You may find it useful to develop your evaluation and business case around three main categories - **costs, benefits and risks**.

#### Key activities

1. Compare the costs, benefits and risks associated with each of your recommendations.
2. Revisit findings and observations from your review of labour market trends that you carried out during Phase 3, 'Analysing Your Supply'.
3. Develop a business case to support each of the initiatives in your workforce plan based on your evaluation.
4. Test/validate any assumptions with finance and training teams. Through the documentation and testing of assumptions, a body of knowledge can be developed that should be used to inform your future operational and SORP decisions.
5. Risk assessment. If you are not considering the whole force or BCU, you should undertake a short risk assessment in relation to your identified options, i.e. what is the impact to workforce areas outside the scope of the planning review that may need to be considered?

#### Key inputs

- Costs associated with recruitment, training and staff turnover.
- Review of external labour trends.
- Local policing plans and financial plans/budgets.

**Costs, benefits and risks of different supply options**

| <b>Costs, benefits and risks considerations</b> |  | <b>Examples</b>   |
|---|--|---|
| <b>Costs</b>                                    | <ul style="list-style-type: none"> <li>• Take into consideration the additional resources and infrastructure required to implement and sustain each initiative</li> <li>• Remember to factor in the opportunity costs associated with directing resources from other initiatives</li> <li>• Cost calculations should consider the long and short terms</li> <li>• Don't forget to calculate the cost of inaction</li> <li>• Intangible costs, for example to morale and reputation, should also be taken into account</li> </ul>   | <ul style="list-style-type: none"> <li>• Cost per recruit</li> <li>• Cost associated with implementation:               <ul style="list-style-type: none"> <li>- Training</li> <li>- Technology</li> <li>- Additional resources</li> <li>- Time away from critical activities</li> </ul> </li> <li>• Cost of replacement</li> </ul>         |
| <b>Benefits</b>                                 | <ul style="list-style-type: none"> <li>• How sustainable are the benefits? If the benefits are short-lived you may just be delaying the associated costs rather than addressing them directly</li> <li>• Consider how you can replicate the benefits across the forces/BCUs with no or little additional investment</li> <li>• Remember not all attrition is bad – consider also the opportunities it may present</li> <li>• Consider the benefits outside of your direct area of interest i.e. could your recommendation have a positive knock on effect on other forces/BCUs?</li> </ul> | <ul style="list-style-type: none"> <li>• 'Value' generated by each additional employee</li> <li>• Benefits associated with using internal supply pool:               <ul style="list-style-type: none"> <li>- Cost</li> <li>- Skills retention</li> <li>- Time to start</li> </ul> </li> <li>• Immediacy of benefits realisation</li> </ul> |
| <b>Risks</b>                                    | <ul style="list-style-type: none"> <li>• What is the probability of the initiative not being successful? This could incur costs associated with implementation</li> <li>• Consider the level of control you have over any risks and what tools and support you have access to, to mitigate those risks</li> <li>• Consider the impact of the initiative and whether the associated risks are justified by the potential value it could generate i.e. what level of risk is acceptable. Validate your assumptions with others</li> </ul>  | <ul style="list-style-type: none"> <li>• Risk of failure (either in part or whole)</li> <li>• Risk to performance and productivity</li> <li>• Negative impacts on other areas of the force</li> </ul>   |

## Phase 5

### Step 4: Develop objectives and workforce plan

#### Why is it important?

The outputs from all previous steps are now ready to be brought together to develop the specific workforce objectives and plan. The workforce plan is essentially an action plan and therefore needs to be deliverable with clear, prioritised actions which have assigned owners and timescales.

The level of detail in the plan will be dependent on the process you followed to reach your conclusions and how you intend to communicate and share the plan with others. The important thing is to develop a plan which addresses the gaps identified in the previous phases and is something you can commit to and reference during your planning activities.

#### Key activities

1. Based on your cost/benefit/risk analysis, develop specific objectives to retain, develop, recruit, redeploy and roster.
2. Outline the actions, programmes or initiatives you plan to implement in order to meet these objectives. Consider both the short term and long term view.
3. Document the business case/rationale behind each of your suggestions referencing where appropriate any findings from the process you followed. This can sit behind your workforce plan and does not necessarily need to feature in the actual document.
4. Identify HR and other service programmes that will have an effect on the objectives. For example HR may have existing retention programmes in place that could support your recommendations and you would need to work closely with them to ensure alignment.
5. Communicate your workforce plan to key 'partners' and provide the opportunity to feedback any suggestions or concerns. Your plan may have an impact on teams that had not been considered during your analysis and it is essential to obtain this feedback at the earliest opportunity.
6. Obtain 'sign-off' from senior management to execute the plan.
7. Implement a process to review and revise the plan on a regular basis.

#### Key inputs

- Cost/benefits/risk analysis
- All previous analysis and findings, as appropriate

**Response workforce plan example**

| Driver          | WFP objective  | Examples of targeted workforce plan programmes  |   |
|-----------------|--|---|---|
|                 |  | Short term  | Long term   |
| <b>Retain</b>   | Promotions (increase by 5 per year)  | Accelerate identification and movement of investigative officers into sergeants   | Career ladder transparency and key staff segment development  |
|                 | Transfers (decrease by 5 per year)   | Create internal transfer guidelines i.e. time in role to reduce the number of transfers   | Develop a more structured transfer process to minimise disruption   |
|                 | Retirements (no change)  |   |   |
|                 | Voluntary attrition (Reduce by 2 per cent per year)                        | Quick effort to analyse and identify recommendations from existing attrition data   | Implement retention programme to address key concerns of response officers  |
|                 | Involuntary attrition (no change)  |   |   |
| <b>Develop</b>  | Promotions (increase by 10 per year)                                       | Identify potential internal candidates from existing pipelines e.g. job roles that feed into response officer role, to evaluate transfer/promotions into roles annually | Develop a clear internal career path into response officer role. Includes competency development and training curriculum<br><br>Establish a more structured mechanism to enrol employees into the career path<br><br>Consider rotational programmes |
| <b>Redeploy</b> | Transfer in (increase by 5 per year)                                       | Identify potential candidates from internal supply pool   | Develop effective relationships between areas to implement effective transfer process and ensure individual transactions are mutually beneficial  |
| <b>Recruit</b>  | New recruits (increase new graduates and experienced by up to 80 per year) | Establish stronger presence with existing core/key schools to increase interest<br><br>Consider hiring from associate degree programmes and other relevant programmes   | Increase internship opportunities for students earlier in education careers<br><br>Recruit from an international labour pool<br><br>Establish an 'employer of choice' brand to attract new graduate and experienced recruits                        |

Alongside each short or long term action should be a timeline dimension – identifying whether there are any timing dependencies.

