

VAGO

Victorian Auditor-General's Office

The Effectiveness of Victoria Police's Staff Allocation

September 2022

Independent assurance report to Parliament
2022–23:4



This report is printed on Monza Recycled paper. Monza Recycled is certified Carbon Neutral by The Carbon Reduction Institute (CRI) in accordance with the global Greenhouse Gas Protocol and ISO 14040 framework. The Lifecycle Analysis for Monza Recycled is cradle to grave including Scopes 1, 2 and 3. It has FSC Mix Certification combined with 99% recycled content.

ISBN 978-1-921060-45-8

The Effectiveness of Victoria Police's Staff Allocation

Independent assurance report to Parliament

Ordered to be published

VICTORIAN GOVERNMENT PRINTER
September 2022

PP no 340, Session 2018–22



The Hon Nazih Elasmr MLC
President
Legislative Council
Parliament House
Melbourne

The Hon Colin Brooks MP
Speaker
Legislative Assembly
Parliament House
Melbourne

Dear Presiding Officers

Under the provisions of the *Audit Act 1994*, I transmit my report *The Effectiveness of Victoria Police's Staff Allocation*.

Yours faithfully



Andrew Greaves
Auditor-General
1 September 2022

The Victorian Auditor-General's Office acknowledges the Wurundjeri Woi Wurrung People as the traditional custodians of the land on which our office is located. We pay our respects to their Elders past and present.

Contents

Audit snapshot	1
1. Audit context	6
1.1 Victoria Police	7
1.2 Deploying police officers	8
1.3 Community Safety Statement	8
1.4 Staff Allocation Model	10
2. Victoria Police's staffing needs	13
2.1 Victoria Police's staffing needs	14
2.2 Benefits realisation reporting	15
3. SAM's governance and reporting structures	17
3.1 Final staff allocations and SAM recommendations	18
3.2 Management of SAM data inputs	18
3.3 SAM's further development	21
APPENDIX A. Submissions and comments	23
APPENDIX B. Acronyms, abbreviations and glossary	28
APPENDIX C. Scope of this audit	30
APPENDIX D. Gen 5 ROM data inclusions	32

Audit snapshot

Does Victoria Police understand its frontline staffing needs and use this information to make resourcing decisions aligned to its strategic objectives?

Why this audit is important

Victoria Police plays a critical role in ensuring a safe and secure society. Victoria Police's spending for staffing is significant and the majority of this is for sworn officers.

Given the large, ongoing government investment into its staffing, it is important to assess whether Victoria Police is using this funding effectively.

Who and what we examined

We examined Victoria Police's understanding of its staffing needs. We also looked at how Victoria Police uses this understanding to make strategic resourcing decisions. As part of this assessment, we looked at how it

developed and uses the Staff Allocation Model.

What we concluded

Victoria Police's staffing needs are not clear because it does not have a strategic workforce plan. It does not have any modelling or forecasting to understand or plan for its staffing requirements—both current and long-term.

Without knowing its future staffing needs, Victoria Police continues to rely on what it receives from the government, rather than providing evidence-based advice.

Victoria Police also cannot assure itself or the community that the 2,729 additional police officers it received as part of the \$2 billion

Community Safety Statement (CSS) program delivered community safety outcomes.

This is because the CSS program only had a short-form business case which was inadequate for the size of the investment. This diminishes transparency and information for decision makers. Victoria Police has not since attempted to assess the incremental benefits realised from the investment.

What we recommended

We made 6 recommendations to Victoria Police about understanding and documenting its staffing needs, benefits management and data management.

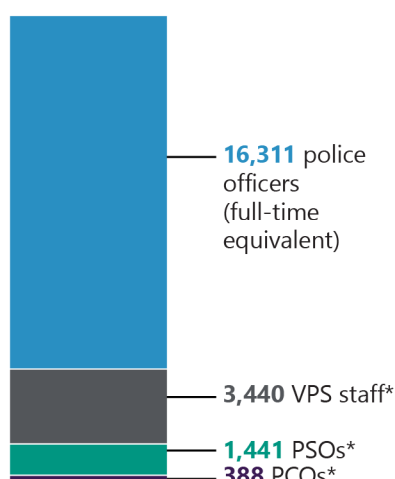
Key facts



Victoria Police expenditure on staffing in 2020–21 was

\$3.8b

Victoria Police staff in March 2022



2,729

new police officers recruited under the CSS

Note: *VPS = Victorian Public Service; PSO = protective services officer; PCO = police custody officer.
Source: VAGO.

What we found and recommend

We consulted Victoria Police and considered its views when reaching our conclusions. Its full response is in Appendix A.

Victoria Police's assessment of staffing requirements is not supported by robust evidence or analysis

Victoria Police has no modelling and forecasting capabilities to have a complete understanding or clear plan for its staffing requirements—both current and long term. There is no strategic workforce plan for future sworn officer positions and proposals submitted to the government are not evidence based.

In November 2016, Victoria Police drafted a short-form business case to support its request for 2,729 additional police officers. We found no evidence of how Victoria Police arrived at this number. Victoria Police told us that this number originated from a government decision.

Victoria Police tells us it undertook a consultative process with the government and other key stakeholders to refine its 2022–23 Budget bid for an additional 1,489 staff. In its Budget submission, Victoria Police noted that it needed more than 2,300 staff, which was also determined via a consultative process, but only asked for 1,489.

Without a strategic workforce plan or robust modelling or forecasting, Victoria Police cannot fully understand its staffing needs.

Benefit realisation reporting is inadequate

Monitoring government investments is critical to determine the impact of public funds. The Department of Treasury and Finance's guidance notes that without a benefits management plan (BMP), agencies focus less on benefits once a project has started and faces the challenges of business as usual.

Victoria Police cannot adequately measure and report on whether the 2,729 staff increase is improving the effectiveness of Victoria's frontline police response and reducing harm by meeting demand for police services. It did not complete or implement its initial BMP or the enterprise benefits framework it intended to develop. Its most recent project benefits plan is focused on inputs rather than outcomes.

Victoria Police drafted a BMP in 2018 but did not finalise it or track any benefits from the deployment of 2,729 police officers, which was part of the \$2 billion CSS

investment. There is no documentation to support why Victoria Police did not finalise the 2018 plan. Instead, it then decided to develop an enterprise benefits framework to report on the wider benefits of the Community Safety Statement (CSS) initiatives. Almost 5 years on, Victoria Police is yet to finalise this framework.

In 2020, Victoria Police implemented a project benefits plan that focused on monitoring the recruitment and deployment of new staff. This plan is inadequate to track the benefits of a \$2 billion government investment because it does not show the actual benefit to the community.

Recommendations about Victoria Police's staffing needs

We recommend that:

Response

Victoria Police	1. develops a long-term strategic workforce plan of its staffing requirements including sworn police officers and uses this to inform future budget requests (see Section 2.1)	Accepted in principle
	2. produces a benefits realisation plan for projects that aligns with the Department of Treasury and Finance's guidelines and: <ul style="list-style-type: none"> reports on whether there has been a return on investment for the project for which it is funded has measurable key performance indicators that include ones for improvements to expected community benefits from the funding reports against these regularly (see Section 2.2). 	Accepted in principle

Staff Allocation Model governance and reporting structures

In November 2016, Victoria Police commissioned the Staff Allocation Model (SAM) to help it to allocate staff resources across the state. SAM is a modelling system that calculates, compares and prioritises demand based on various input data. It then recommends how Victoria Police should allocate new policing resources to different regions and commands.

Victoria Police did not document why it changed staff allocations

Victoria Police uses its professional judgement to adjust SAM's allocation recommendations. It told us it does this because of limitations in measuring emerging risks, trends and business improvements in the SAM.

For example, Victoria Police's Executive Command adjusted the SAM recommendations in Generation 3 (Gen 3) and Generation 4 (Gen 4) based on its professional judgement. It also diverted 200 staff from CSS positions to fill unfunded and discretionary positions.

However, Victoria Police has not documented why it has made these changes. Inadequate documentation makes decision-making less transparent. It also makes it harder to assess the limitations in SAM's recommendations and reduces opportunities to continuously improve the system.

Management of SAM data inputs

Victoria Police does not comply with government data quality standards

All government departments, including Victoria Police, must meet the requirements of the government's *Data Quality Guideline Information Management Framework* (Data Quality Guideline). However, Victoria Police's management of SAM data inputs does not comply with the Victorian Government's data quality standards.

To comply, Victoria Police should:

- have a custodian responsible for data quality management
- have a data quality management plan and statement
- assess its data regularly.

It has not done this.

SAM does not have a data dictionary

Victoria Police does not have a data dictionary to define and simplify how it manages SAM data. In 2019, Victoria Police started developing the dictionary as a solution to its inconsistent data capture methods but has not progressed it since.

Without a data dictionary, Victoria Police continues to have a higher risk of:

- inconsistent data capture
- mismatched understanding of technical requirements
- heightened risks to business continuity.

A **data dictionary** is a centralised repository of information about a dataset, such as meanings, relationships to other data, origins, usage, and formats that are used to define conventions of a project and drive consistency.

SAM's further development

Systems like SAM need key documentation to guide their development and ensure organisations are clear about their use. Victoria Police has not developed some key documentation for SAM, including:

- its business rules
- the data needed for the level of demand that Victoria Police wants to include in SAM over time
- ongoing monitoring and review for continuous improvement opportunities.

Victoria Police also lacks a long-term planning document, such as a strategic plan, to guide SAM's ongoing development.

Victoria Police could better guide the SAM development team by setting the level of demand it wishes to capture through SAM. While Victoria Police has made new plans for SAM each year, it now plans to treat all SAM-related work as a business-as-usual activity. With SAM transitioning to a business-as-usual tool, Victoria Police will not be producing formal project plans or closure reports to guide its ongoing use. A lack of business rules, strategic monitoring and review documents creates a risk that SAM will continue to operate with the issues already identified in internal and external reviews.

External review of SAM

In 2019, Victoria Police engaged a university to undertake a review of SAM Gen 3. This found that while SAM's allocation approach produced reasonable results, it could not guarantee the best results because of weaknesses in the SAM algorithm.

The review recommended that Victoria Police should investigate more sophisticated mathematical methods to enhance the model for potentially better results. However, Victoria Police chose not to pursue other methods because it could be too difficult to explain the complex process internally.

Recommendations about governance and reporting structures

We recommend that:

Response

Victoria Police	3. comprehensively and clearly documents: <ul style="list-style-type: none">the rationale for changes to Staff Allocation Model recommendations for staffing, such as increases or decreases to positions and how they link to demand and the strategic objectivesits consideration of whether these reasons can inform future releases of the Staff Allocation Model (see Section 3.2)	Accepted
	4. complies with the Victorian Government's <i>Data Quality Guideline Information Management Framework</i> to: <ul style="list-style-type: none">appoint an accountable data asset custodiandevelop and maintain a data quality management planassess data assets against the data quality dimensionscreate a data quality statement for all critical data assets (see Section 3.3)	Accepted
	5. documents for the Staff Allocation Model: <ul style="list-style-type: none">a comprehensive data dictionarya long-term strategic plan to guide the development of the Staff Allocation Modela formal approval process for Executive Command to continue approving Staff Allocation Model improvements as it moves to business as usual (see Section 3.2)	Accepted
	6. revisits the finding in the external review to investigate and assess alternative methods of allocating resources within the Staff Allocation Model algorithm (see Section 3.3).	Accepted

1.

Audit context

Victoria Police is responsible for preserving a safe, secure and orderly society. It does this primarily by employing sworn police officers based at police stations that operate 24 hours a day, 7 days a week.

To achieve its goals to improve community safety, it is important that Victoria Police effectively allocates and deploys newly sworn members to frontline policing positions where they can deliver reactive and proactive policing.

This chapter provides essential background information about:

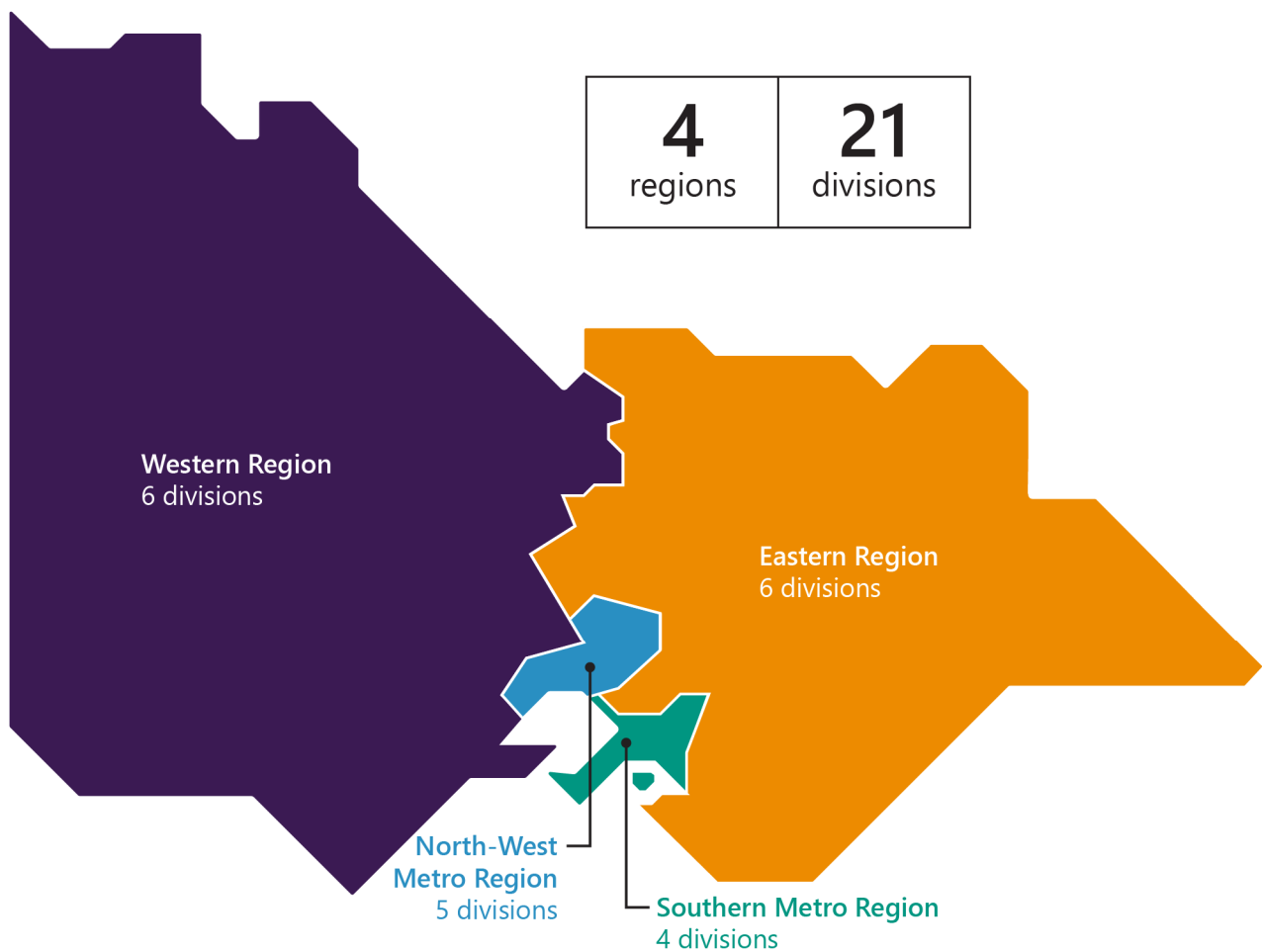
- Victoria Police
 - Deploying police officers
 - Community Safety Statement
 - Staff Allocation Model
-

1.1 Victoria Police

Victoria Police's role is to serve the Victorian community and uphold the law to promote a safe, secure, and orderly society. It does this by providing policing services to the Victorian community across 54 police areas within 21 divisions and 4 regions.

Figure 1A shows the regional breakdown of Victoria and the number of divisions per region.

FIGURE 1A: **Police regions in Victoria**



Source: VAGO, based on Victoria Police.

Victoria Police has around 21,600 staff. Sworn police officers, protective services officers and police custody officers account for about 18,100 staff.

Victoria Police also employs around 3,500 public service professionals. Its workforce budget makes up about 72.7 per cent of the annual funding that the government invests in Victoria Police, which was \$3.8 billion in 2020–21.

Victoria Police's senior leadership

The Chief Commissioner of Victoria Police is the head of Victoria Police. The *Victoria Police Act 2013* allows them to make decisions on the recruitment, allocation and deployment of Victoria Police employees, including sworn police officers. The Chief Commissioner is also responsible for implementing policing policies and priorities of the Victorian Government.

Victoria Police's senior leadership group is known as Executive Command. It is the primary advisory and decision-making body for Victoria Police. It is made up of the Chief Commissioner, all deputy commissioners and deputy secretaries and an independent member.

1.2 Deploying police officers

Regional and divisional police commanders make decisions to deploy sworn police officers for proactive and reactive operations:

- Proactive policing aims to deter criminal activity by showing police presence, such as road policing.
- Reactive policing is when officers respond to service needs reported in the community, such as traffic accidents, 000 calls or incidents of family violence.

1.3 Community Safety Statement

The Victorian Government launched the CSS in December 2016. This agreement between Victoria Police and the Victorian Government establishes a commitment to the community to set priorities to reduce crime and keep the state safe.

Figure 1B shows CSS's 5 priority areas.

FIGURE 1B: **CSS priority areas**



Source: VAGO, based on Victoria Police.

To meet these priorities, the government provided Victoria Police \$2 billion in additional funding over 4 years, starting in 2017–18. This funding was for an additional 2,729 sworn officers.

Victoria Police also received \$596 million for 406 new recruits in the 2016–17 state Budget under the Public Safety Police Response (PSPR) package.

These 2 funding packages were the largest recruitment investment in Victoria Police's history.

Implementation of the CSS

In 2017, the government appointed the Community Safety Trustee to report on the implementation of CSS actions and the delivery of key parts of the investment.

The trustee published 6 reports during their 4-year appointment that concluded in April 2021. Their final report, which was published on 3 May 2021, assessed the recruitment of 2,729 new sworn officers as ongoing but progressing. It reported that:

'Victoria Police advised that despite transient delays due to the introduction of COVID-19 [coronavirus] pandemic-related restrictions, the recruitment program is on schedule to complete full recruitment by 30 June 2021'.

1.4 Staff Allocation Model

Staff allocation in the modern policing environment is complex. Victoria Police commissioned the development of SAM in November 2016 as an input into its planning and decision-making. SAM helps Victoria Police allocate staff resources to meet demand across the state. SAM is intended to calculate, compare and prioritise demand across different regions and commands based on various input data. The inputs to SAM include factors such as:

- baseline staffing requirements for stations and patrol vans
- demand factors, such as calls for assistance, reported crime, event management and the time required to provide these services.

Victoria Police takes SAM's outputs as recommendations on how to allocate the staffing numbers from the CSS bid. Executive Command then reviews, amends and endorses allocations. SAM is not used to roster staff.

SAM's governance

Figure 1C lists Victoria Police's structures that govern SAM.

FIGURE 1C: **Governance arrangements for SAM**

Group	Role
Executive Command	Approving the ongoing development of SAM, including data inputs and the final SAM allocations
2,729 Steering committee	Prioritising tasks, issues and risks in relation to SAM
Executive sponsor	Overseeing SAM development and demand data inputs
Project advisory group (March to July 2020)	Advised on the scope of work for SAM Gen 5, including how to capture demand and reflect modern policing more accurately
Service Delivery Transformation Command (from March 2022)	Will lead SAM's future use and development

Source: VAGO, based on Victoria Police.

SAM's development over time

As shown in Figure 1D, Victoria Police has been developing SAM through various 'generations', which are successive releases that add enhancements and features. In 2016, Victoria Police used Gen 1 to allocate new staff under the PSPR. It then used Gen 2 to Gen 5 to allocate new staff under the CSS.

FIGURE 1D: **Timeline of SAM generations**

Release	2016–17	2017–18	2018–19	2019–20	2020–21
Version	Gen 1	Gen 2	Gen 3	Gen 4	Gen 5
Deployment	May 2017– April 2018	May 2018– April 2019	May 2019– April 2020	May 2020– April 2021	May 2021– April 2022

Note: After Victoria Police releases a SAM generation, the actual deployment of new staff happens the following financial year when police academy graduates are ready to be deployed to police stations.

Source: VAGO.

SAM's modules

SAM has 4 modules, which inform how it allocates:

- sworn officers for regional operations
- sworn officers for specialist operations
- Victorian Public Service (VPS) staff
- staff in corporate departments.

Regional operations

Regional operations cover policing activities across Victoria Police's 4 regions that involve interactions with the public. These include:

- general patrolling
- traffic management
- public order management
- highway patrol
- criminal investigation units
- family violence investigation units
- sexual offences and child-abuse investigation teams
- divisional intelligence units.

Specialist operations

Specialist operations refer to Victoria Police's commands and departments that oversee functions, such as:

- forensic services
- legal services
- intelligence and covert support
- family violence
- professional standards.

SAM Generation 5

Victoria Police released SAM Gen 5 in November 2020. It committed Victoria Police to including demand-and-supply modelling for regional VPS employees as well as bringing a revised methodology for specialist police and a maturing of the inputs for regional police.

Victoria Police has been expanding the demand data inputs SAM uses over time. Its SAM Gen 1 had only 8 data input categories. Victoria Police's SAM guidance for Gen 5 includes 22 input categories. We list these categories in Appendix D.

Earlier staff allocation models

SAM is Victoria Police's fourth staff allocation model. Victoria Police has told us it incorporated learnings from the earlier models to help it develop SAM. Figure 1E shows the earlier models.

FIGURE 1E: **Staff allocation models used by Victoria Police before SAM**

Model name	Description
Police Allocation Model (PAM)—2005	PAM used 13 variables, including estimated levels of crime against the person, crime against property and road trauma, and overlaid this information with special events affecting demand (such as major events), dispersed populations and custodial management.
Resource Allocation Model—2010	<p>Heavily influenced by the preceding PAM, this model included multiple demand ratios, such as the number of:</p> <ul style="list-style-type: none">• job requests per full-time equivalent police member• crimes against the person per police member and per capita• crimes against property per police member and per capita• road traffic collisions per police member. <p>Victoria Police applied these demand ratios across the police service areas to identify state averages and relative rankings of demand levels. It then used this information to determine how many resources it needed to equalise these demand levels.</p>
Demand Allocation Model—2011	Developed specifically to allocate 1,700 new resources in 2010–11, this model worked to 'top up' resources and help smooth out the resource spread. It used state demand indicators (that is, computer-aided dispatch (CAD) events) to establish the average workload.

Source: Victoria Police.

2.

Victoria Police's staffing needs

Conclusion

Victoria Police does not have a strategic workforce plan or well-developed forecasting to understand its current or future staffing requirements. It therefore cannot tell the government how many police officers it requires. Despite this, Victoria Police has received more than 3,200 new police officers since 2016.

Victoria Police's \$2 billion CSS funding was supported only by a short-form business case. This reduces transparency and information for decision-makers. Victoria Police tracked whether it deployed 3,135 new police officers as part of the CSS and PSPR packages. However, this is inadequate to track the benefits for the community of this significant investment.

This chapter discusses:

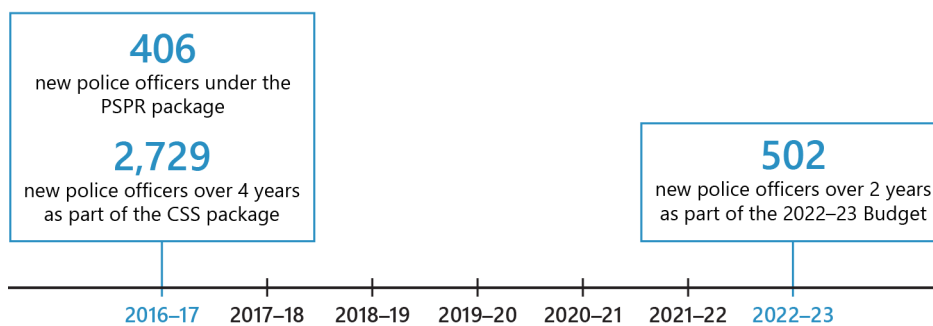
- Victoria Police's staffing needs
 - Benefits realisation reporting
-

2.1 Victoria Police's staffing needs

Victoria Police does not have a strategic workforce plan. It does not have a current and accurate understanding of its current or future staffing requirements. As a result, it cannot show if the number of police officers it has meets demand. Without a strategic workforce plan supported by forecasting of staffing it needs, Victoria Police cannot advise the government of its long-term staffing needs. Victoria Police advised us that it is developing a workforce plan as a priority for 2022–23. However, it was unable to provide any project scope, terms of reference or draft work plans to us.

Figure 2A shows the 2 significant increases in sworn police numbers approved by government since 2016.

FIGURE 2A: **Government announcements of new police officers from 2016 to 2022**



Source: VAGO.

Short-form business case for the \$2 billion recruitment of 2,729 new police officers

Victoria Police only had a short-form business case in November 2016 to support the \$2 billion CSS investment in 2,729 new police officers. It did not have a full business case. The short-form business case does not provide adequate information to decision-makers for such a large investment. Victoria Police cannot show that the 2,729 new police officers it said it needed were supported by any modelling of its future staffing requirements.

Victoria Police advised us that the process for building a funding submission is complex, requiring input and consultation with the government and key stakeholders to reach the final funding submission. Victoria Police advised us that the number of new police officers originated from this process and included this in its draft business case. Victoria Police should document this process, including consultation from future business case negotiations.

Without any workforce planning strategies or modelling of need, Victoria Police does not fully understand its staffing needs and could not provide reliable advice to the government of its staffing requirements.

2022 bid for new officers

In the 2022–23 Budget announced in May 2022, the government committed funding for 502 additional police officers to be recruited over two years. Victoria Police produced a business case for the government in February 2022 arguing the case for an additional 1,489 police officers because the 2,729 recruits do not meet current and future demand. The business case said that Victoria Police needed more than 2,300 additional police to meet its requirements. It said this figure was determined via consultation. Victoria Police told us it moderated this figure down to 1,489 staff over 4 years as a result of consultation with the government and key stakeholders.

We found 69 per cent of the total number requested by Victoria Police, or 1,030, were either supported by outdated information or no information was provided to support allocation under professional judgement.

Victoria Police's bid used ...	We found ...
professional judgement to decide on 403 new police officer positions (27 per cent)	Victoria Police has not documented its rationale for using professional judgement to support this need.
a 2016 staffing benchmark to decide on 408 new police officer positions (27 per cent)	<p>the issues register noted this benchmark has the potential to negatively impact outcomes. Victoria Police has tested other benchmarks and has told us the 2016 version is the most appropriate.</p> <p>We also found an error where Victoria Police double counted the requirements of one new police station.</p>
specialist operations module (SOM) modelling to decide on 219 new positions (15 per cent).	<p>the SOM modelling was completed in 2020 and not representative of demand in 2022.</p> <p>The detailed SOM modelling is different from what Victoria Police has used. Victoria Police has no explanation for why it changed the modelling.</p>

Victoria Police's business case also planned for 408 new police officers to improve its capacity to meet baseline minimum service levels (BMSLs). In March 2020, Victoria Police and the Police Federation of Australia (Victoria Police branch) committed to BMSL obligations.

Victoria Police acknowledges it is currently operating below those BMSL requirements. Victoria Police has advised us that this will be addressed through the additional 502 new police officers from the 2022–23 Budget announcement

2.2 Benefits realisation reporting

For the first 3 years of the CSS, Victoria Police did not have a BMP. In 2020, Victoria Police implemented a project benefits plan, which focuses on inputs not outcomes.

The project benefits plan does not measure and report on if and by how much the increase of 2,729 staff is reducing harm. As a result, Victoria Police cannot assure itself or the community that the \$2 billion CSS investment is meeting its aim.

Monitoring government investments is critical to understanding the impact of public funds. The Department of Treasury and Finance's guidance on benefits realisation states that without a BMP, agencies lose the focus on benefits once a project begins and starts to face the challenges of business as usual. A BMP will specify:

- the identified problem
- intended benefits of the investment
- measures of success.

Victoria Police's aim for the 2,729 police officer investment was to meet current and future demand for police services. Its draft business case in November 2016 stated that the staff investment would contribute to Victoria Police meeting its performance measures.

In March 2020, an internal Victoria Police brief noted that:

'a Benefits Management Plan (BMP) is required to determine return on investment for the additional 3,135 sworn resources (comprising 406 under the Public Safety Police Response package and 2,729 under the CSS)'.

The **PSPR package** was an initiative the government announced in the 2016–17 Budget for 406 new police officers and 52 support personnel.

However, after reviewing the draft BMP, Victoria Police chose not to finalise the BMP or report on the benefits of these staffing investments. Instead, it decided to develop an enterprise benefits framework to report on the wider benefits of CSS initiatives. As of July 2022, this framework had not been finalised.

In 2020, Victoria Police implemented a 'project benefits plan' that focused on monitoring the recruitment and deployment of the 3,135 new staff. The key deliverables this plan identified were to:

- attract, recruit and deploy 3,135 police
- increase cultural and linguistic diversity and gender representation in the police force.

This project benefits plan is inadequate to track the benefits of this significant investment because it does not measure how adding 3,135 more police impacts community safety.

3.

SAM's governance and reporting structures

Conclusion

Victoria Police's Executive Command uses its professional judgement to adjust the SAM allocation recommendations. However, it has not documented any details of the rationale of these adjustments. This means Victoria Police risks losing decision-making corporate knowledge and valuable information for improving SAM.

Victoria Police's management of SAM does not comply with the Victorian Government's 2018 Data Quality Guideline. There is a risk SAM data collection is not systematic and consistent.

Victoria Police also lacks a long-term planning document to guide SAM's ongoing development. Plans to make SAM-related work a business-as-usual activity risk making improvement of the model a lower priority in the future.

This chapter discusses:

- Final staff allocation and SAM recommendations
 - Management of SAM data inputs
 - SAM's further development
-

3.1 Final staff allocations and SAM recommendations

Victoria Police makes its final staff allocation decisions for divisions and regions after reviewing SAM recommendations. We found that Victoria Police does not always follow these recommendations and that Executive Command uses its professional judgement to reallocate resources. However, Victoria Police has not documented the rationale for most of these decisions.

For example, Victoria Police changed SAM recommendations in 15 out of 21 divisions for Gen 3 and changed 14 out of 21 divisions for Gen 4 with no supporting rationale.

Victoria Police also made significant manual adjustments to SAM's Gen 5 recommendations. Executive Command did document some reasons why it made these adjustments. The main ones were to:

- address supervision shortfalls
- address unsupported demand
- support north-west metro division 1 (CBD division) requirements.

By not documenting its rationale for amending SAM recommendations, Victoria Police has failed to retain corporate knowledge of its rationale and decision-making. Victoria Police also lost opportunities to better refine SAM according to factors that affect demand for police services.

CSS allocations diverted to fill other positions

Victoria Police diverted 10 per cent, or 200, of the CSS positions to fill unfunded and discretionary positions that it had not modelled as part of the CSS program. Victoria Police did not use SAM to allocate these positions, instead using professional judgement. Victoria Police's Executive Command did not document its rationale in choosing to fill these positions over the CSS allocations. It is unclear:

- why there was an ongoing need for these positions
- how Victoria Police determined that need was greater for these discretionary positions than the planned CSS positions
- how Victoria Police determined which positions should be filled.

3.2 Management of SAM data inputs

Victoria Police's management of SAM data inputs does not comply with the Victorian Government's 2018 Data Quality Guideline. Gaps in its guidance and processes mean that despite improving data collection across SAM's different generations, some data issues remain unaddressed. There is a risk that the data collection for SAM is not systematic and consistent.

Compliance with the Victorian Government Data Quality Guideline

The Data Quality Guideline gives government departments, including Victoria Police, high-level advice on how to assess, maintain and improve the quality of data assets. The guideline is a part of the whole-of-government information management framework.

The *Data Quality Information Management Framework Standard* defines a **data asset** as a dataset containing data that can be organised and stored in fixed fields, such as in a relational database record or spreadsheet

The Data Quality Guideline requires Victoria Police to meet the 2018 *Data Quality Information Management Framework Standard* (Data Quality Standard). Our assessment in Figure 3A shows that Victoria Police’s management of the SAM data inputs does not meet the standard’s minimum requirements.

FIGURE 3A: Assessment of SAM data inputs against the Victorian Data Quality Standard

Data Quality Standard requirement	Does Victoria Police meet the requirement for SAM?
Ensure the accountable data asset custodian is responsible for data quality management	No. Victoria Police has not nominated a data asset custodian for SAM.
Develop and maintain a data quality management plan for each critical data asset	No. Victoria Police does not have data quality management plans for any SAM data assets. These are critical to Victoria Police's ability to objectively assess demand and allocate new frontline staff.
Create a data quality statement for all critical data assets, datasets to be shared with other departments or external parties, and datasets to be released to the public	No. Victoria Police has not identified any critical data assets and does not have any data quality statements for any of the datasets that SAM uses.
Assess data assets against the data quality dimensions (accuracy, validity, completeness, representation, timeliness, fitness for purpose, collection method)	No. Victoria Police has not assessed the SAM input datasets against the 7 data quality dimensions.

Source: VAGO analysis using the Victorian Government Data Quality Standard.

Data collection practices

Victoria Police does not have an overarching data policy, strategy, framework or business rules governing the SAM inputs. Instead, 4 documents serve as the guiding framework for its SAM data inputs, as Figure 3B shows.

FIGURE 3B: **The documents in Victoria Police’s guiding framework for SAM data inputs**

Document	Purpose
Project plan	Describes the project method that will be used to deliver each generation of SAM, including the project’s scope and limitations, governance structures to monitor project delivery, resource requirements and project risks
Inputs master	Identifies the input datasets and explains how the model treats them, such as what aspect of demand the data measures and how much police time that aspect of demand requires (for example, 45 minutes for a CAD job)
Regional operations module (ROM) data collection instructions (from SAM Gen 5)	Documents information on the Gen 5 input datasets, including some collection information, such as data sources and datasets used
SAM/ROM modelling documentation	Primarily describes the model components and how the model works

Source: VAGO.

Collectively, these documents have many of the elements needed to support consistent data collection. However, Victoria Police does not have any overarching guidance explaining how the documents:

- relate to and complement each other
- should be used and updated over successive generations.

Gaps in the guidance for these documents means the information does not fully support systematic and consistent data collection.

None of the documents ...	Which means ...
record the location of input data or the file structure in Victoria Police’s information technology systems	it is harder for new staff working with SAM to access data.
provide a current list of known errors or issues, information on corrections, or a consolidated record and history of improvements and updates	there is no structured way to record and track errors and concerns with SAM’s operation and progress in resolving these matters. This can create inconsistencies and lead to errors in selecting the right dataset to use.
describe how data derived from consultation processes is generated, collected and validated	Victoria Police is less able to ensure that the consultation data it relies on is consistent between years.

A SAM data dictionary is needed

In 2019, Victoria Police's Gen 4 closure report recommended Victoria Police develop a data dictionary as a solution to inconsistent data capture methods. Victoria Police has not developed one and its data collection documents only contain some of the information that a data dictionary includes.

A data dictionary catalogues and communicates the structure and content of data and gives meaningful descriptions of individually named datasets. The Victorian Government's Data Quality Guideline explains that a data dictionary is used to increase understanding about the data and make this information readily available, including through:

- documenting data formats and standards
- defining the intent of each data field.

Victoria Police developed terms of reference for the dataset dictionary working group in August 2019. However, no meetings have occurred and Victoria Police has made no progress advancing the data dictionary.

Without a data dictionary, Victoria Police continues to risk:

- inconsistent data capture
- mismatched understanding of technical requirements
- heightened risks to business continuity.

3.3 SAM's further development

SAM is critical for Victoria Police's staff allocation and decision-making. Victoria Police has invested resources into creating SAM but its development as a modelling system is still very fragmented. Victoria Police needs to better plan for SAM's future development.

Strategic direction for SAM's development

Victoria Police does not have any planning documents, such as a strategic plan, to guide SAM's ongoing development. Such a document should include what aims Victoria Police wants to achieve in terms of modelling accuracy and what further data should be incorporated into SAM. This would help Victoria Police guide its ongoing development.

Victoria Police's SAM team develops annual project plans for each SAM generation. These outline the objectives and scope of that year's improvement and use of SAM. This planning is focused on the short term and does not consider a long-term vision of what SAM should be. This creates the risk that SAM does not develop to its full potential or evolves too slowly to provide the most useful allocation advice.

Victoria Police told us that SAM transitioned to the Service Delivery Transformation Command in March 2022. SAM has now become a business-as-usual allocation tool and will no longer have formal project plans or closure reports, but there may be informal planning discussions to guide its ongoing use.

Victoria Police does not have any finalised documentation on what it intends to do with SAM for further generations. It is unclear how Victoria Police will develop SAM Gen 6.

External review of SAM

In April 2019, Victoria Police engaged a university to undertake a review of SAM Gen 3. It found that while SAM's allocation approach produced reasonable results, the model could not guarantee the best possible allocations because of the nature of the algorithm SAM uses. The review said that more sophisticated resource allocation methods are available that Victoria Police should investigate for potentially better results.

The review made 19 recommendations focused on the structure and format of the code to prevent errors, and some improvements and alternatives to the overall methodology. Victoria Police's response did not make clear which of these recommendations it accepted.

Victoria Police did not take up the review's recommendation to investigate alternative methods of allocating resources. Victoria Police said that due to the possible difficulty in explaining the complex process to its workforce, it would not accept the recommendation.

This means Victoria Police did not fully utilise the expert advice it paid for and has missed an opportunity to potentially improve its allocation processes.

APPENDIX A

Submissions and comments

We have consulted with Victoria Police, and we considered its views when reaching our audit conclusions. As required by the *Audit Act 1994*, we gave a draft copy of this report, or relevant extracts, to this agency and asked for its submissions and comments.

Responsibility for the accuracy, fairness and balance of those comments rests solely with the agency head.

Responses were received as follows:

Victoria Police	24
-----------------------	----



VICTORIA POLICE

Shane Patton APM
Chief Commissioner of Police

Victoria Police Centre
311 Spencer Street
Docklands Victoria
3008 Australia

Telephone +61 3 8335 6400

P.O. Box 913
Melbourne Victoria 3001 Australia

Your Ref: File No. 34671 22
Our Ref: FF – 211403 1

Victorian Auditor-General
Mr. Andrew Greaves
Level 31/35 Collins Street,
Melbourne VIC 3000

Dear Mr Greaves

Victoria Police response to the Performance Audit Report 'The Effectiveness of Victoria Police's Staff Allocation.'

Thank-you for the opportunity to provide a response to your report regarding the performance audit on 'The effectiveness of Victoria Police's staff allocation.'

All additional police numbers funded by government through the Public Safety Police Response (PSPR) and Community Safety Statement (CSS) have been recruited, trained, and deployed to improve community safety. Victoria Police are strongly committed to and have a long-demonstrated history of keeping the community safe. The Community Safety Statement investment of 2729 resources assist police in maintaining this tradition, further enhancing the capabilities of police serving the community and enhancing our motto of working to 'uphold the right'.

As directed by the Victoria Police Act 2013, the Chief Commissioner is responsible for the management and control of Victoria Police, which includes its performance and operations. As acknowledged by VAGO, the Victoria Police Act 2013 allows the Chief Commissioner to make decisions on the recruitment, allocation, and deployment of all Victoria Police staff. The Chief Commissioner is informed in this process through various inputs from across community, unions, and the government, to ensure effective service delivery to all communities within Victoria.

The Staff Allocation Model (SAM), a mathematical model that draws on a range of statistical inputs, was developed in 2016 as an assistance tool for the Chief Commissioner and the Executive Command team to effectively allocate resources funded by the Victorian

Government. The SAM capabilities do not accommodate the immediate changing environment of policing. Victoria Police's staff allocation requires flexibility and is based on agility to respond to significant community concerns, such as COVID, emergency management events and operational priorities, whilst maintaining a consistent level of resourced response for all Victorian communities.

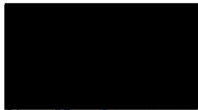
Like any model, validation by human experts is still essential, and the Chief Commissioner can make alterations to the SAM allocation based upon his professional judgement. It is an ongoing challenge to assign resources in a manner that is effective, sustainable, and fair across all facets of an organisation that is constantly evolving in its ability to respond to ever changing needs and demands.

SAM was designed to inform and guide Victoria Police on the best way to allocate additional sworn resources provided by Government. The system was not designed as a tool to inform Government how many additional resources Victoria Police require.

Victoria Police has accepted recommendations three (3), four (4), five (5) and six (6) and accept in principle recommendations one (1) and two (2). It is important to note that some recommendations may have resourcing and financial implications that would need to be addressed.

Please find attached a summary of proposed Victoria Police actions and anticipated completion dates (Attachment A).

Yours sincerely



Shane Patton APM
Chief Commissioner
Victoria Police

29 / 8 / 2022

Appendix A:

Victoria Police action plan to address recommendations from *Effectiveness of Victoria Police's staff allocation audit*

No.	VAGO recommendation	Action	Completion date
1	Develops a long-term strategic workforce plan of its staffing requirements including sworn police officers and use this to inform future budget requests.	Accept in Principle – Victoria Police will develop a strategic workforce plan to inform future budget requests subject to availability of resources (both personnel and financial).	December 2023
2	Should produce a benefits realisation plan for projects that aligns with DTF's guidelines and: <ul style="list-style-type: none"> • Reports on whether there has been a return on investment for the project for which it is funded • Has measurable KPIs that include ones for improvements to expected community benefit from the funding • Report against these regularly. 	Accept in Principle – Victoria Police will include a benefits realisation plan in future business cases. Victoria Police will monitor and report on benefits realisation if funded as part of the business case.	March 2023
3	Comprehensively and clearly document: <ul style="list-style-type: none"> • The rationale for changes to SAM recommendations to staffing, such as increases or decreases to positions and how they link to demand and the strategic objectives • Its consideration of whether these reasons can inform 	Accept – Victoria Police to articulate rationale for changes to SAM recommendations in briefing papers to Executive Command.	September 2022

	future releases of SAM.		
4	<p>Comply with the Victorian Government's Data Quality Guideline to:</p> <ul style="list-style-type: none"> • Appoint an accountable data asset custodian • Develop and maintain a data quality management plan • Assess data assets against the data quality dimensions • Create a data quality statement for all critical data assets. 	<p>Accept – Victoria Police aligns with the wider Information Management strategies of Victorian Government which also include Data Governance and Data Management. In line with updates being made to the WOVG Information Management Framework being undertaken in 2022, Victoria Police is also updating its Information Management Framework which includes more detailed guidance around Data Governance and Data Management.</p>	December 2023
5	<p>Should document for SAM:</p> <ul style="list-style-type: none"> • A comprehensive data dictionary • A long-term strategic plan to guide the development of SAM • A formal approval process for executive Command to continue approving SAM improvements as it moves to business as usual. 	<p>Accept – Victoria Police to undertake a regeneration process annually however consideration required as to what extent Victoria Police 'strategically plan' and how this fits into the organisational new strategic framework.</p> <p>Dot point three (3) – A formal approval process for Executive Command to approve SAM improvements as it moves into business as usual has already been established.</p>	November 2023
6	<p>Revisit the finding in the external review to investigate and assess alternative methods of allocating resources within the SAM algorithm.</p>	<p>Accept – Victoria Police will revisit the findings and assess if there are alternative methods of allocating resources within the SAM algorithm.</p>	November 2023

APPENDIX B

Acronyms, abbreviations and glossary

Acronyms

BMSL	baseline minimum service level
BMP	benefits management plan
CAD	computer-aided dispatch
CSS	Community Safety Statement
PAM	Police Allocation Model
PSPR	Public Safety Police Response
ROM	regional operations module
SAM	Staff Allocation Model
SOM	specialist operations module
VAGO	Victorian Auditor-General's Office
VPS	Victorian Public Service

Acronyms

Data Quality Guideline	<i>Data Quality Guideline Information Management Framework</i>
Data Quality Standard	<i>Data Quality Information Management Framework Standard</i>
Gen	generation number of SAM (for example, generation 1 or 2 or 3)

Glossary

Reasonable assurance	We achieve reasonable assurance by obtaining and verifying direct evidence from a variety of internal and external sources about an agency's performance. This enables us to express an opinion or draw a conclusion against an audit objective with a high level of assurance. We call these audit engagements. See our assurance services fact sheet for more information.
Limited assurance	We obtain less assurance when we rely primarily on an agency's representations and other evidence generated by that agency. However, we aim to have enough confidence in our conclusion for it to be meaningful. We call these types of engagements assurance reviews and typically express our opinions in negative terms. For example, that nothing has come to our attention to indicate there is a problem. See our assurance services fact sheet for more information.

APPENDIX C

Scope of this audit

Who we examined	Their key responsibilities
Victoria Police	Victoria Police's role is to serve the Victorian community and uphold the law to promote a safe, secure and orderly society.

What we examined	Activities
We assessed whether Victoria Police has been making effective resource allocations since 2016 that serve to deliver its strategic objectives.	Victoria Police received \$2 billion in 2016 in funding for the Community Safety Statement initiative. It used the Staff Allocation Model to help allocate staff resources to meet demand across the state.

Objective

To determine if Victoria Police understands its staffing needs and uses this to make resource allocation decisions that are aligned to its strategic objectives.

How we assessed performance

To form our conclusion against our objective we used the following lines of inquiry and associated evaluation criteria:

Line of inquiry	Criteria
Victoria Police understands the demand for services to maintain community safety	<ol style="list-style-type: none">1. Victoria Police ensures its SAM inputs cover the breadth of its operations, are current and fit-for-purpose (in line with the Data Quality Dimensions within the Whole of Government Information Management Policy) and that its outputs reliably represent Victoria Police's policing strategies to maintain community safety.2. Inputs other than SAM, that Victoria Police uses to understand demand for police to maintain community safety, are reliable, assist to address any gaps or

Line of inquiry	Criteria
	limitations of SAM, and support Victoria Police's resource planning to meet its strategic objectives.
Victoria Police's allocation and deployment of sworn police aligns to its strategic objectives.	<ol style="list-style-type: none"> Victoria Police's allocation decisions for sworn police align to its understanding of demand for services to meet community safety. Victoria Police monitors actual deployment of sworn police against its allocation decisions. Victoria Police responds to address discrepancies between allocation decisions and actual deployment, or changes of need, to maintain alignment of resourcing to strategic objectives. Victoria Police assesses and can demonstrate the extent to which its allocation and deployment decisions are supporting its strategic objectives.

Our methods

As part of the audit we:

- reviewed and analysed Victoria Police's briefs and advice to government and supporting data on resource/staff modelling, resource needs and demand, including business cases, budget bids and related staff planning documents
- reviewed and analysed demand drivers and input data to SAM and how SAM's outputs are used in decisions for staff allocation
- reviewed and analysed internal reporting on actual resource deployment and utilisation
- reviewed and analysed any lessons learnt and proposed refinements to resource planning or SAM
- interviewed relevant Victoria Police staff involved in developing and using SAM and decision-makers who allocate and deploy resources.

We conducted our audit in accordance with the *Audit Act 1994* and ASAE 3500 *Performance Engagements* to obtain reasonable assurance to provide a basis for our conclusion.

We complied with the independence and other relevant ethical requirements related to assurance engagements.

We also provided a copy of the report to the Department of Premier and Cabinet.

Cost and time

The full cost of the audit and preparation of this report was \$720,000. The duration of the audit was 15 months from initiation to tabling.

APPENDIX D

Gen 5 ROM data inclusions

FIGURE D1: **Gen 5 ROM input data inclusions**

Label	Input		
Baseline	Reception—shifts are allocated in accordance with the station subclass classification and attributed as 2 members		
	Custody sergeant—only for mandatory police cells		
	Station commander		
	Section sergeant		
	Shopfront facilities		
Minimum service levels	Warrants and files		
	251 (with driver)		
	265 (with driver)		
	Divisional van		
	CIU and SOCIT shift requirements		
Demand	Calls for assistance (CAD)	Collision data (TIS)	Crime (attendance and investigation)—25 LEAP categories at the sub-incident level: <ul style="list-style-type: none"> • homicide • rape • sex (non-rape) • robbery • assault • abduction/kidnap • arson • property damage • burglary (agg) • burglary (res)
	Event management	Reportable deaths	
	Mental health transfers	Hospital guards	
	Vehicle impounds	En route travel	
	Registered sex offender management	Crime scene services (attendance and travel time)	
	Travelling for training (western and eastern region)	Emergency Management Incidents (Oracle codes K1–K8)	
	Attendance and custody management	Infringement notices (only uniform)	

Brief management	Information reports and licensed premises information reports	<ul style="list-style-type: none"> • burglary (other) • deception
Court security	Highway patrol—proactive	<ul style="list-style-type: none"> • theft from m/car • theft (shopsteal)
Family violence management (FVIU)	Preventative uniform demand	<ul style="list-style-type: none"> • theft of m/car • theft (bicycle) • theft (other) • drugs (cult/man/traf) • going equipped to steal • justice procedures • regulated public order • weapons/explosives • harassment • behaviour in public • other

Source: Victoria Police.

Auditor-General's reports tabled during 2022–23

Report title

<i>Results of 2021 Audits: Technical and Further Education Institutes (2022–23: 1)</i>	July 2022
<i>Results of 2021 Audits: Universities (2022–23: 2)</i>	July 2022
<i>Follow-up of Protecting Victoria's Coastal Assets (2022–23: 3)</i>	August 2022

All reports are available for download in PDF and HTML format on our website
www.audit.vic.gov.au

Auditor-General's responsibilities

Our fact sheets provide you with more information about our role and our audit services:

- [About VAGO](#)
Information about the Auditor-General and VAGO's work
- [Our assurance services](#)
Information about the nature and levels of assurance that we provide to Parliament and public sector agencies through our work program

Victorian Auditor-General's Office
Level 31, 35 Collins Street
Melbourne Vic 3000
AUSTRALIA

Phone +61 3 8601 7000
Email enquiries@audit.vic.gov.au