Emergency Services Telecommunications Authority

CAPABILITY AND SERVICE REVIEW: FINAL REPORT

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Contents

Executive summary

The Emergency Services Telecommunications Authority (ESTA) plays a critical role in Victoria's emergency management response model. The services delivered by ESTA connect people in need of immediate emergency assistance with Victorian emergency service organisations (ESOs). These ESOs are Ambulance Victoria (AV), the Country Fire Authority (CFA), Fire Rescue Victoria (FRV), Victoria Police (VicPol) and the Victoria State Emergency Service (VICSES).

For some time now, there has been significant concern around the effectiveness of ESTA's capability and capacity to deliver consistent Triple Zero (000) services across Victoria. Acknowledging the importance of understanding and addressing the organisational and operational failures that continued to impact on ESTA's service delivery, the Victorian Government commissioned the ESTA Capability and Service Review (the Review) in 2021, which is the subject of this report.

The Review has considered all aspects of ESTA's operating model and assessed ESTA's capabilities against the core services it delivers. Such a comprehensive and fulsome understanding of ESTA's services has informed the 20 recommendations within this report. These insights have only been possible because of the willingness of the ESTA workforce, ESOs and other key stakeholders to engage with the Review and embrace the challenging conversations required to learn from the past. This spirit of cooperation and engagement throughout the Review reflects how highly valued ESTA's work is across the emergency management sector (the sector) and government departments generally, and this cooperation and engagement will need to continue as the sector looks to implement recommendations to achieve the necessary future state outlined in this report.

The Review has been completed during a particularly complex and challenging time for ESTA. Throughout the Review, ESTA and its leadership have continued to implement enhancements to improve its Triple Zero (000) call-taking and dispatch (CTD) service delivery. Equally, in response to continued and sustained high demand for ESTA services, the Victorian Government has committed to increasing ESTA's CTD workforce. These activities provide a strong foundation from which the reforms outlined in this report can be implemented.

The original intent of the legislation that established ESTA envisaged that ESTA and ESOs would operate in a partnership model to deliver emergency communication services (ECS). It is clear that this original intent has never fully been achieved. There were numerous reasons identified through consultation that may point to why, ranging from ESTA's governance structure to the competing priorities of the sector, through to the funding model that underpins the foundations of the relationship between ESTA and ESOs.

The absence of a partnership model alone does not fully explain, nor can it justify, the continued and systematic underperformance of an agency charged with connecting the Victorian community with critical services in times of an emergency. Looking to the future, it is vital that a new framework balances the importance of partnership with accountability. ESTA, along with ESOs, must have clearly defined roles and accountabilities, that are meaningful and measurable.

To achieve this, the Review recommends a number of reforms that are intended to transform ESTA into a more integrated entity within the ESO community and provide ESTA with the support and capabilities it needs to meet service delivery expectations of ESOs and the Victorian community for years to come. The reforms include establishing new governance arrangements that move ESTA into the Department of Justice and Community Safety (DJCS) and establishing a board of advisors to ensure ESTA's strategic priorities enhance operational capability. It is envisaged that placing ESTA under DJCS will strengthen its governance and accountability and enable ESTA to leverage the broader support that a large government department like DJCS can provide.

The Review recommends that ESTA's main focus must be on its core business of CTD. In reflecting on what this should look like, the Review determined that due to the increase in frequency and scale of all hazard emergencies, retaining an aggregated model of CTD, that is, having all CTD operators within one entity, is critical to support the interoperable emergency response model in Victoria. While ESTA's CTD model does have all operators within one entity, critical enhancements are required to improve service delivery outcomes.

The single most important role that ESTA plays within Victoria's emergency management sector, responding to Triple Zero (000) calls and supporting the dispatch of the emergency response, will provide a clear strategic and operational direction for the entity. It is for that reason that the Review recommends renaming and re-launching ESTA as 'Triple Zero (000) Victoria'. This will provide a clear vision and a renewed sense of focus for the dedicated staff at ESTA.

To truly establish the foundational elements underpinning the future state of ESTA, implementation of recommendations from the Review will be complex and should not be rushed, but equally must be progressed as a priority. ESTA and its leadership must continue to implement immediate enhancements to address critical service delivery issues impacting the community at the present time, however the desired future state is not a 'quick fix' and will require dedicated planning and sustained effort over time.

This is a significant juncture for ESTA, and the importance of getting this right cannot be overstated. The long-term systemic change will require commitment and investment from the government to ensure ESTA can deliver high-quality services to the Victorian community for many years to come. Accordingly, the Review has sought to make recommendations that support implementation through a partnership model, which, along with a systematic uplift in capability and capacity, will provide a strong foundation for success.

Introduction

1

EMERGENCY SERVICES TELECOMMUNICATIONS AUTHORITY

ESTA is a statutory authority that manages Victoria's emergency service operational communications services. Established under the *Emergency Services Telecommunications Authority Act 2004* (ESTA Act), almost 18 years ago, ESTA works in collaboration with all ESOs and other stakeholders to achieve positive community health and safety outcomes.

ESTA responds to 2.5 million emergency calls annually, and dispatches 2.1 million events. ESTA employs approximately 1,000 people across three purpose-built facilities that operate 24 hours-a-day, 365 days-a-year. In addition to performing a critical CTD service for the community, ESTA manages the provision of advanced operational communications for Victoria's ESOs. These operational communications support ESO personnel in the field carrying radio calls over the metropolitan and regional mobile radio services and data transactions on the mobile data network, and delivering pager messages to AV, CFA and VICSES volunteers and staff via the statewide Emergency Alerting System.

DELIVERING VICTORIA'S EMERGENCY OPERATIONAL COMMUNICATIONS SERVICE

The role that ESTA plays within the sector is central to Victoria's emergency management response model. ESOs rely upon ESTA to answer every emergency call for assistance. Once the call is answered and triaged ESTA works with the relevant ESO to dispatch the required frontline resources. The significance of this work is clear, and even more so when the call isn't answered, or there is no resource to dispatch. It is in these moments the fragility of Victoria's emergency management system becomes apparent.

Over its short history the number of times when the system has failed continues to grow, often with dire outcomes. Equally, the increasing frequency of complex major emergencies and the impact of the COVID-19 pandemic continues to push ESTA's CTD workforce to its limits.

These incidents are well documented in the media and have been the subject of numerous reviews over the years. ESTA's operations have also come within the remit of various inquiries. These reviews, inquiries and subsequent investment by government have focused on enhancing the services delivered by ESTA, and the sector more broadly.

A single workforce cannot sustain this continual barrage of stress, criticism, and heartbreak, and it should not be left to ESTA to resolve these issues alone. ESTA is part of the sector, and each organisation in the sector has played a role in where ESTA is today. Each of these organisations must now invest and commit to supporting ESTA in the delivery of the reform to come.

This Review is starting from the position that the current system is not delivering the expected services, nor is it sustainable in its current form. The discussion and recommendations within this report look to transform ESTA into an efficient and highly capable entity.

ACKNOWLEDGING THE ONGOING COVID-19 PANDEMIC OPERATING ENVIRONMENT

This report acknowledges that over the course of the Review there have been, and continue to be, challenges in the delivery of some of ESTA's CTD services. These include the ongoing COVID-19 pandemic that has pushed Victorian ESOs, particularly health services, to their limits.

This report does not intend to and will not address these issues. Rather, the Inspector-General for Emergency Management (IGEM) announced a separate thematic review of emergency ambulance call answer performance during the COVID-19 pandemic related 2021 surge (IGEM Review) in December 2021. It is noted that the scope of the IGEM Review does not replicate elements of this Review and that its scope is specific to 'COVID-19 call surge impacts'.

2 Purpose of the Review

The purpose of the Review was to deliver a final report to the Victorian Government in March 2022 on the desired future state capability and service delivery of ESTA, including recommendations to properly enable that future state.

The Terms of Reference (ToR) of the Review were developed following initial consultation with key stakeholders and approved by the Minister for Emergency Services.

The ToR outlined key elements of the Review, which are addressed throughout this report:

1. Baseline of the current state of ESTA's capability to deliver services to its contracted agencies, including AV, CFA, FRV, VicPol and VICSES.
2. Identify and undertake a deep dive analysis into areas that present a critical capability challenge for ESTA in the delivery of key services. These may include the following areas: resource and demand management, financial management, information and communications technology (ICT) project management, training of personnel, contract management and leadership.
3. Consider the efficacy of the current communications infrastructure including in-field radio and data communication services.
4. Examine the legislation and policy environment for inefficiencies, conflicts or gaps in accountabilities in respect of ESTA's operating environment.
5. Examine the current and future drivers of ESTA's service delivery demand and impact on the Victorian community, and the capability to respond to that demand.
6. Investigate options that could inform the future state capability and services managed by ESTA, including but not limited to restoring ESTA as a Triple Zero (000) CTD service only and opportunities for the re-alignment of emergency management managed services with whole-of-government telecommunications policy and management.
7. Provide recommendations to government on any required changes to the current service delivery and associated capability needs to enable the future state.

Review methodology

3

A substantial volume of information on the current state of ESTA and considerations to support the shaping of the future state was identified through stakeholder consultation. A full list of stakeholders consulted throughout the Review is included at Appendix A. The Review does, where appropriate, draw a distinction between the 'current state' prior to October 2021, and the program of work that has commenced to deliver an immediate uplift to CTD services since October 2021.

Primary stakeholders of the Review included ESTA and its Board, ESOs that ESTA provides its services to (AV, CFA, FRV, VicPol and VICSES), relevant Victorian Government departments and agencies including Department of Health (DH), DJCS, Emergency Management Victoria (EMV), IGEM and Safer Care Victoria (SCV). In addition, Corrections Victoria, Department of Environment, Land, Water and Planning (DELWP) and Department of Jobs, Precincts and Regions (DJPR) were also consulted.

To better understand the challenges and opportunities at the national level the Review also consulted the Commonwealth Department of Infrastructure, Transport, Regional Development and Communications, the Chair of the National Emergency Communications Working Group – Australia and New Zealand (NECWG–A/NZ), Resilience New South Wales and Telstra.

The Review team attended the Tally Ho and Ballarat ESTA State Emergency Communications Centres (SECCs) and met with ESTA staff at both locations, observing their operating environment and functions. In addition, ESTA staff from all three locations (Tally Ho, Ballarat and Williams Landing) were invited to participate in one of three specific staff consultation sessions.

Relevant unions including the Communications Workers Union (CWU), The Police Association Victoria (TPAV), the United Firefighters Union (UFU), and United Workers Union (UWU), which has coverage of ambulance officers through Ambulance Employees Australia – Victoria (AEAV) and Victorian Ambulance Union, participated in consultations and were invited to submit written confidential submissions to the Review. Written submissions were gratefully received from UWU (through AEAV), CWU and TPAV.

Given the importance of the issues that have been identified throughout the Review, sincere thanks are extended to all stakeholders that spent time responding to the issues as put to them throughout consultation. All submissions and feedback have been carefully reviewed and considered in the preparation of the recommendations for the future state of ESTA and have been an important source of data for the Review process.

PRICEWATERHOUSECOOPERS AS INDEPENDENT EXPERT ADVISORS

PricewaterhouseCoopers (PwC) were engaged as independent expert advisors to support the Review. PwC undertook detailed analysis of ESTA's current state focusing its capability and service delivery prior to October 2021. PwC did not undertake an assessment of ESTA's capability and service delivery during the recent period of high demand, October 2021 – March 2022. The analysis baselined ESTA's existing services, capabilities and role within the sector and informed the future state options for ESTA's eight key service areas, and the capabilities required to deliver these services into the future.

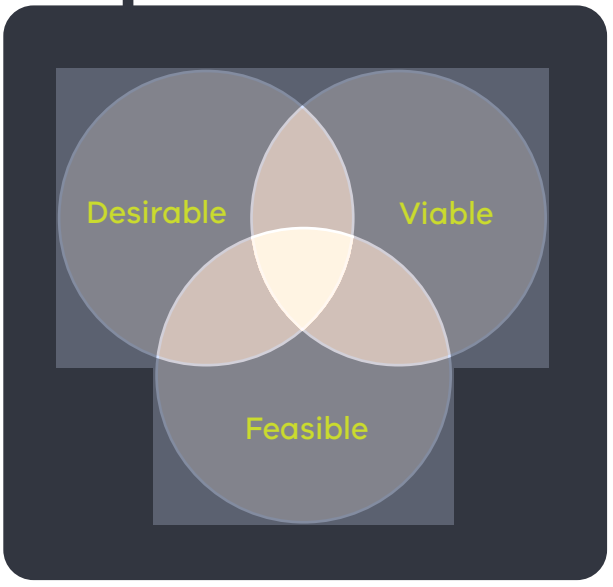
To inform this work PwC undertook deep dive stakeholder consultation, analysis of key areas of ESTA's services and capabilities and desktop research. This work included extensive consultation involving 156 stakeholders across all areas of ESTA's service model: technology, leadership, relationships and engagement, and strategy, policy and legislation. Desktop research included jurisdictional comparisons and evaluation of literature provided by ESTA and other stakeholders. A number of the figures and tables within the report were prepared by PwC.

PricewaterhouseCoopers' methodology for future state options

The focus of the Review is looking towards the optimal future state. To inform the recommendations of the Review, PwC identified ESTA's eight core service areas informed by stakeholder consultation and developed multiple future state scenarios across each of the eight areas. Future state scenarios were then assessed by their desirability, feasibility and viability to determine which scenarios should be considered potential future state options (Figure 1).

Figure 1: Desirability, feasibility, viability of future state options.

	Desirability	Feasibility	Viability
Definition	Desirability tests whether the solution is addressing the right community and emergency services problem, as well as being attractive to ESOs in future.	Feasibility tests whether the solution can be implemented in an effective manner, as well as being technically possible given current technological capability.	Viability focuses on the sustainability of the option, both now and into the longer-term future.
Key considerations	• What are the current pain points? • Is the solution a 'nice to have' or a 'must to have'? • What does success look like? • Is it likely that ESOs would support this future state view?	• How much does the solution leverage current strengths and capabilities? • Does the solution require technology that is not currently common across the public sector? • Will the solution require significant change to legislation that is unlikely to be supported by ESOs or government?	• Is the solution viable now and in the future? • Does the solution help to make the organisation more effective? • Does the solution align with broader government direction? • Does the solution allow a more agile, flexible approach in future?



Using this criteria to identify options

Where a scenario is found to meet the criteria of all three elements, it is considered a potential option in the future service model. For these scenarios, a more detailed optionality assessment was then completed.

Building on this, the Review developed a set of guiding principles to validate the desirability, feasibility and viability of each scenario becoming a potential future state option. This was developed to ensure strategic alignment of the future state recommendations (Figure 2).

Figure 2: Guiding principles for ESTA's services and capabilities.

Guiding principle	Description and what this means
Partnership	Clear accountabilities and responsibilities for all parties within the emergency management sector, with information and data shared to deliver on the partnership model intended for the sector.
Sustainable (and efficient)	The future solution is efficient and delivers both financial and technical sustainability for the long-term future, with the capabilities required to deliver the solution also available currently within the sector, or available within the market.
Sector aligned	The future solution is aligned with whole-of-government thinking and future direction, including the ability to integrate and collaborate with other state/national solutions in the future.
Outcome focused	Services are focused on providing the right outcomes for the Victorian community, with KPIs and associated measures in place to measure outcomes rather than isolated aspects of service delivery of individual ESOs/agencies.
Community experience	The future solution improves the end user experience, whether this be the experience of ESTA staff members, ESOs or the Victorian community who are contacting ESTA.
Scalable/adaptable/configurable	The future solution has the ability to grow and scale as ESTA's service offerings develop in line with legislation, but are also adaptable and configurable so that services do not become overly dependent on each other or enabling technology.
Emergency service culture/positioning	The future solution supports ESTA to be seen as an additional emergency service that is on the same level as other ESOs across the sector.
Health and safety	Both health and safety related ESOs are able to operate effectively with ESTA as part of the future solution, with clear funding, governance and accountabilities for both.

DISCUSSION PAPER TO TEST THE FUTURE STATE OPTIONS WITH STAKEHOLDERS

In January 2022 a discussion paper was circulated to AV, CFA, FRV, VicPol, VICSES and relevant Victorian Government departments and agencies, including DH, DJCS, EMV, IGEM and SCV, to test the options for ESTA's future state direction. The Review invited written feedback on these future state options, focusing on the options identified as desirable, feasible and viable. All stakeholders provided written feedback centred around the value, risks and potential challenges to the delivery of critical services, and implementation considerations. This feedback alongside all the other inputs have informed this report and the recommendations.

4 Current state capability and service

OVERVIEW OF CURRENT STATE FINDINGS

As noted in the Review methodology chapter, it is important to acknowledge that references to 'current state' within the report are referring to ESTA pre-October 2021. The ongoing program of work across ESTA since October 2021 to enhance CTD service delivery, has not been critiqued or assessed by the Review. Consultation throughout the Review period did not seek views of stakeholders on these activities, as that would have been premature.

Commencement of the Review required an understanding of the current state of ESTA's capability to deliver its services to contracted agencies: AV, CFA, FRV, VicPol and VICSES. Stakeholder engagement between October and December 2021, environmental scans, desktop review and analysis of annual reports, national models in place and performance data made available during the Review all ensured a comprehensive understanding of the current state of ESTA's service and capability. This enabled PwC to assess ESTA's capability across its eight core service areas (Figure 3) in accordance with PwC's Operating Model Framework and Capability Maturity Assessment Tool.

Figure 3: Capability maturity assessment of ESTA's eight core service areas.

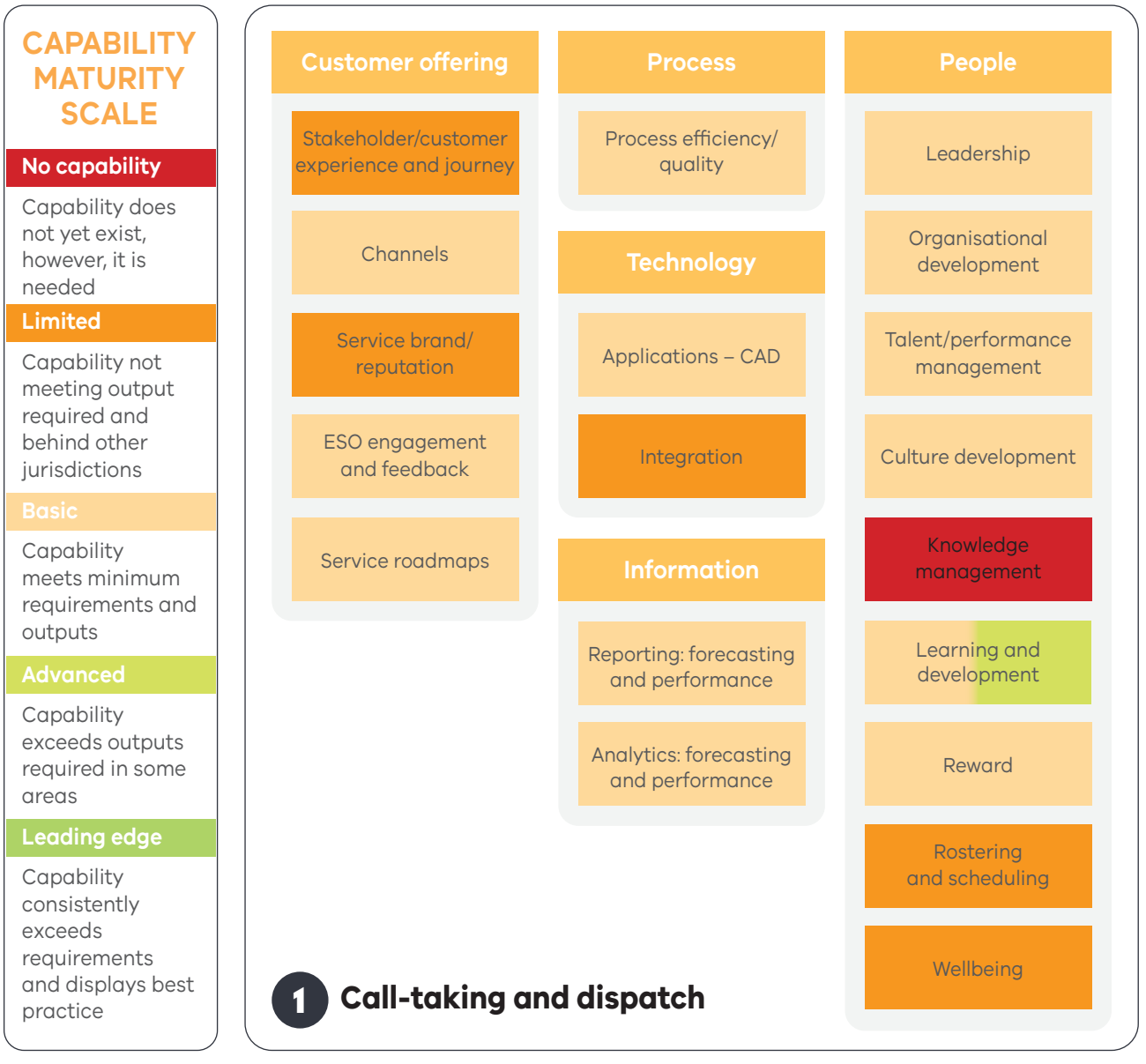


Figure 3: Capability maturity assessment of ESTA's eight core service areas (continued).

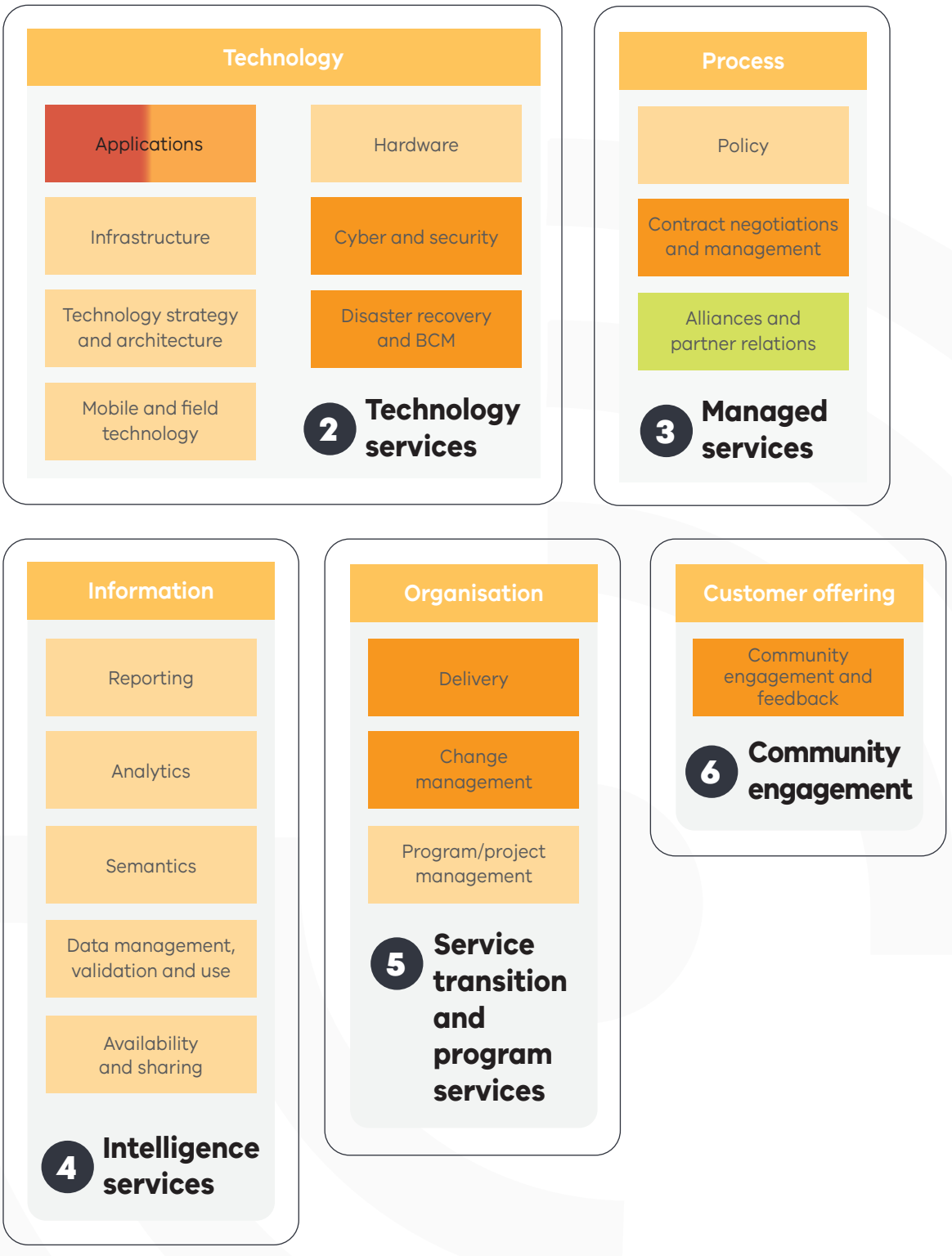
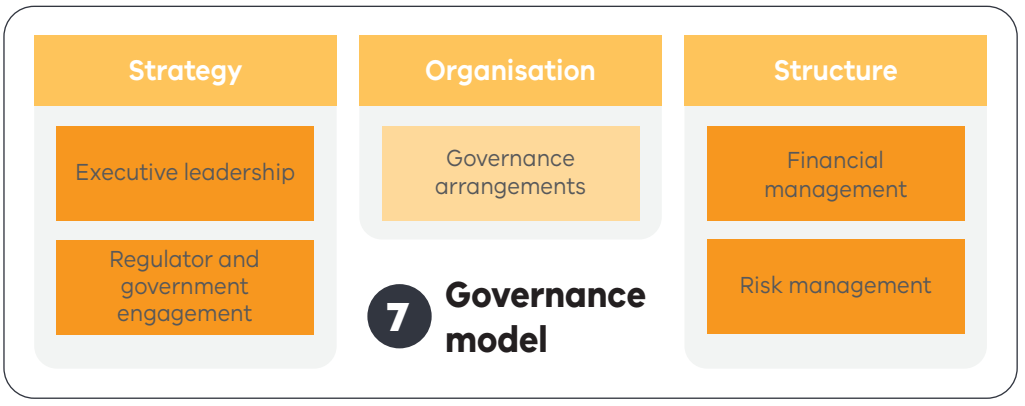
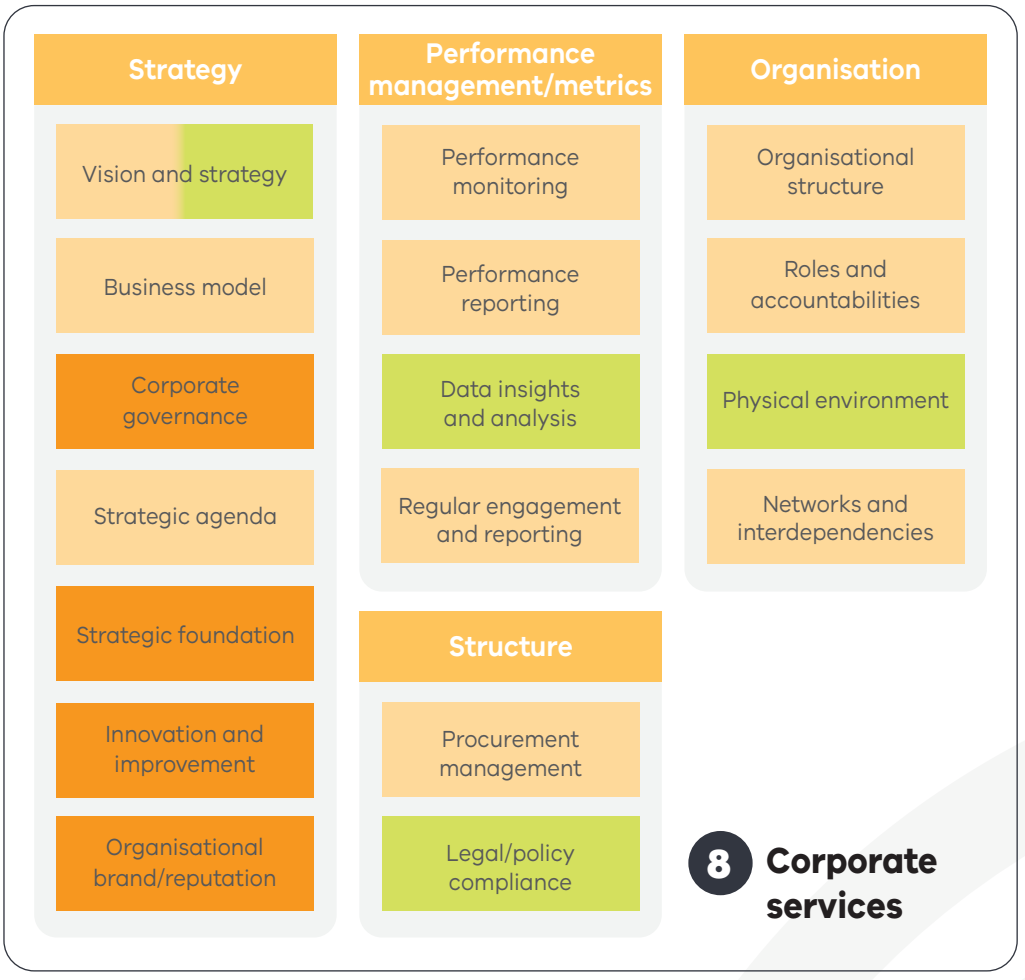


Figure 3: Capability maturity assessment of ESTA's eight core service areas (continued).





Whilst the areas of red, orange and yellow are clearly of most concern at present, the capability maturity assessment is useful in signalling where ESTA may wish to focus its resources in the future to better serve the Victorian community.

The current state assessment identified several areas where ESTA is performing well. This information has been captured in accordance with the key focus areas for the Review: strategy, leadership, delivery and technology (Figure 4).

Figure 4: ESTA's strengths across key focus areas of the Review.

Strategy

- Strategic planning and creating a strategic agenda is an area where ESTA has shown good capability, with clear goals, ambitions and vision clearly defined in the Integrated Strategy Planning 2023 (ISP2023) document, as well as in the Corporate Plans published each year. The challenge in this space is therefore based on the capacity and capability to implement these strategies, rather than the design itself.
- Established a service/customer focused organisation through recent changes, with over 50% of services now reporting customer experience statistics and acting on improvement opportunities. This is also supported by the newly embedded operating model.
- In-house legal counsel has significantly improved ESTA's legal and compliance capability, and is an area where further resourcing could help to improve a number of other related capabilities.

Leadership

- New leadership development programs with the Melbourne Business School have started to improve executive leadership capabilities and engagement with the workforce. This is also complemented by the Women in Leadership support program.
- Recent improvements in the wellbeing space have helped to enhance this capability for the organisation, providing a solid foundation for greater improvements to come, particularly with increased availability of support and training.
- As a recognised training organisation, ESTA's Learning and Development capability is another key strength for the organisation, however, there may be an opportunity to further enhance this capability by improving staff's ability to access all facets of this training.

Delivery

- CTD is seen as ESTA's core capability strength, and is universally recognised as performing as well as can be expected in challenging circumstances. Before these current challenges, this capability was performing highly, indicating resourcing and surge capacity may be an area for improvement rather than the actual CTD model itself.
- New surveys to understand community feedback from Triple Zero (000) callers has helped to enhance ESTA's community engagement capability and overall service delivery performance.
- Performance monitoring and Power BI dashboards to help identify issues or gaps in ECS performance and provide coaching to resolve issues has improved the performance management capability.
- Managed services capability contains a healthy mix of commercial and technical capability, however is limited by current demand and resourcing constraints.
- The physical environment of ESTA's locations is seen as a strong capability, with new sites and technology options identified to further help improve staff's experience.

Technology

- Refresh of technology leadership has brought in new capabilities that are more forward looking and aimed at improving the future direction of technology for ESTA.
- Introduction of advanced mobile location (AML) has improved ESTA's capability in this area, as well as enabling improvement across a number of delivery areas.
- Computer aided dispatch (CAD) upgrade has improved this capability slightly, however longer term systemic issues remain.
- Introduced *what3words* enabling more community members to be located faster when AML is not available.
- Relationships with vendors and EMV are collaborative, and show positive improvement.

The current state assessment also provided insights into challenges that remain for ESTA's capability and service across the key focus areas for the Review. High-level challenges are included at Figure 5, with further exploration of key areas of concern below.

Figure 5: ESTAs current state challenges across key focus areas of the Review.

Strategy

- The emergency management sector is changing, and it is perceived that **ESTA may struggle to adapt to new requirements** of individual agencies that are not aligned with the needs of others, raising a question around what ESTA's role should be in this ecosystem.
- Perception that the original purpose of creating a **partnership model is not working as effectively as it should be between ESTA and ESOs**, with some feeling they are tied in to a customer/supplier relationship with little collaboration or say in ESTA's strategy, future direction or service delivery.
- **Funding and investment** remain a key challenge for ESTA. ESOs are unclear how funding and prioritisation of investment is managed, with ESTA running a surplus in recent years despite resourcing challenges, and a more sustainable approach is required.
- ESTA's responsibilities and services have continued to grow, and there is a challenge around whether the **right services are currently optimised within the strategy**, as well as what the future plan is given known constraints.
- Due to current capacity constraints, ESTA is operating in a highly **reactive** model. There is a desire and a need to become more **proactive** in the way services are designed and delivered to more effectively serve ESOs, as well as enhanced engagement with the wider Victorian community and government.
- ESTA remain **disconnected from national and state-level initiatives**, slowing innovation for the organisation.

Delivery

- **Call taking and dispatch (CTD) is ESTA's core strength**, however there are still opportunities for improvement.
- An increased focus on **wellbeing and capability** development has been well received across the business, but challenges remain.
- **Surge capacity** constraints are a key challenge and have been highlighted in the current crisis environment, with ESTA unable to keep pace with the surge in call volumes experienced. A greater understanding of the changing nature of Triple Zero (000) calls is also required, particularly in the health space, where environmental events and an improved awareness of individual health are driving consistently high volumes.
- Current **performance standards** do not always drive behaviours that deliver the best community outcomes, nor do they always provide an accurate picture of the operational performance.
- A lack of sharing across business units and teams can lead to a **siloed approach**.
- Overall, **community confidence in ESTA has decreased** in light of recent media reports and experience, which in turn impacts staff morale.
- The reactive nature of service delivery means that there is a **focus on 'keeping the lights on'**, rather than proactive improvement or innovation.
- There is **limited managed services capability** across the organisation, with the shared responsibility of the service impacting on customer and ESO experience.
- While there are a number of activities as part of the ISP, overall there is a **lack of timely and appropriate delivery of initiatives**.

Figure 5: ESTAs current state challenges across key focus areas of the Review (continued).

Leadership

- It has been suggested that ESTA has a lack of **emergency management culture** within ESTA's leadership team, with individuals instead having a contact centre focus, which could be limiting effectiveness. This may also be impacting on organisational culture, with staff holding the perception that leaders do not always understand their issues, as it has been noted there is currently a divide between call taking and dispatch teams and others.
- **High turnover of staff**, particularly at the leadership level, has had a significant impact on both staff, delivery and relationships with ESOs.
- It has been noted that **governance arrangements** and Board leadership is a potential area for improvement for ESTA. **Ministerial oversight** is split across portfolios within the emergency management sector, and the current Advisory Committee is not working as effectively as it could be. There is a need for greater alignment across all stakeholders.
- A major challenge for ESTA that has been exacerbated by the pandemic is that of **staff wellbeing**, with mental health being a key challenge faced by teams. This in turn impacts resourcing requirements and attrition rates, and if left unresolved will severely impact ESTA's ability to recruit to meet increasing demand.

Technology

- With multiple sources of information and growing stakeholder and community expectations, there is a **need for greater channel integration** across services and ESOs to deliver a more aligned and comprehensive service to the community.
- **Legacy technology platforms** continue to present challenges for ESTA, both in terms of functionality and security, but also impacting the user experience for staff and stakeholders.
- **Security processes and procedures** have traditionally been under resourced, and despite recent improvements this remains an area for significant opportunity.
- Much like the siloed business areas in terms of staff behaviour and ways of working, **data is also siloed, with integration challenges** across the organisation.
- While ECIS is relatively new both in terms of structure and a number of personnel, there continues to be room for improvement in **strategy development and operating model evolution**.
- **Intelligence and data** is not utilised as effectively as it could be, both within ESTA and in how ESTA share this across the sector. ESOs are often unaware of the data that is available, and there is a significant opportunity to enhance this capability for the benefit of all in the sector, and improve operational planning for ESTA in particular.

KEY CHALLENGES

The current state analysis and consultations highlighted several key challenges that are fundamental to supporting ESTA and DJCS to achieve the outcomes of the recommendations outlined in this report. They include:

- operating in partnership
- lack of agility in responding to emergencies
- CTD staff welfare is reflective of the organisational difficulties
- meeting community expectations
- performance standards are not fit-for-purpose.

Operating in partnership

The original intent of the Victorian Parliament in 2004 was that ESTA and ESOs would work under a partnership model to deliver exceptional service, however, as noted earlier, this has not been fully realised. It is worth reflecting on this original intent to inform the future state of ESTA.

> *At present, Emergency Communications Victoria provides services to the emergency services organisations by a complex contract. This excessively legalistic model, whose origins can be traced back to the privatisation of this function in the 1990s, entrenches conflict rather than fostering cooperation, as well as leading to additional costs for the parties, and discouraging problem solving.*
>
> *The introduction of ESTA will see this approach replaced by a partnership model between ESTA and the emergency services organisations. Contracts will be replaced by a memorandum of understanding (MoU). The MoU will ensure that the parties have a clear understanding of their respective responsibilities and accountabilities for the delivery of emergency services telecommunications to the Victorian community. The MoU is currently being developed, and will be finalised before ESTA becomes operational in 2005, well before the Commonwealth Games in 2006.*[1]

Throughout the Review, it became evident that there are three major factors that have hindered the implementation of the partnership vision:

1. ESTA's funding model: the design of the current funding model has required funding arrangements between each ESO and ESTA, generating complexity and tension in the partnership arrangement for ESTA to manage. This means that ESTA has separate bespoke contracts with AV, CFA, FRV, VicPol and VICSES yet are expected to provide a seamless user experience for the community.
2. Customer and service provider relationship: the nature of the above contracts with each ESO has created a customer and service provider dynamic.
3. Independent Board – ESTA is governed by an independent Board and has exercised that independence to the point of becoming remote from government.

In the absence of the envisaged partnership model and in the presence of a customer and service provider dynamic, ESOs have developed their own ICT models. ESTA has found it difficult to achieve the required bespoke ICT architecture to meet the ever-growing and evolving needs of the five different ESOs.

In addition, and to add a further layer of complexity, it is also acknowledged that the Chief Executive, EMV, has responsibility for taking a lead role in coordinating investment planning and large-scale strategic projects on behalf of the responder agencies including but not limited to matters relating to the following:

i. major procurement
ii. communications and information systems
iii. emergency management planning processes for the purpose of achieving greater efficiency and effectiveness in the delivery of emergency management services.

While these legislative responsibilities under the *Emergency Management Act 2013* (EM Act) do not impede the establishment of a partnership model, they must be considered as governance arrangements are established.

Lack of agility in responding to emergencies

The Review established that internally ESTA, pre-October 2021, operated more as a corporate entity than an organisation delivering a critical emergency management service. The lack of true partnerships has been a factor in creating a culture at ESTA that is risk averse and an organisation that has difficulty being agile when responding to emergencies as they grow in scale and complexity.

1. *Victoria, Legislative Assembly, 7 December 2004,* Parliamentary debates*, Book 8, p.1808.*

This is particularly important for the leadership of ESTA, which should enable the dynamic and operational environment expected within an emergency service-focused organisation. The Review was provided examples of how flexible decision making on the frontline was impeded. Relatively simple time-critical decisions needed to be escalated through ESTA leadership until it reached a person who felt empowered to make the decision. This type of delay is an example that typifies a culture not consistent with ESTA's mission.

Observing the recent activities within ESTA to empower supervisors and managers to make time-critical decisions, the Review noted that this has been an important step in building agility to support high periods of service demand. This has been further supported through the introduction of a Tasking and Coordination model to build capacity of middle managers and supervisors in an operational environment. These activities appear to be having a positive impact within the workplace.

Call-taking and dispatch staff welfare is reflective of the organisational difficulties

It is recognised that the CTD staff at ESTA perform a very challenging and often confronting role, which has an ability to impact their welfare. Stakeholder consultation highlighted that CTD staff welfare appears to have been an ongoing issue. The nature of their work and the types of calls they receive exposes staff to many of the same situations other frontline responders experience on a daily basis. Over recent years there has been significant investment into wellbeing services for Victoria's ESOs, but ESTA and its workforce were not included.

Although the Review recognises that there has been some increased focus on wellbeing and capability development at ESTA, challenges remain. Staff welfare and infrastructure to support their mental health and wellbeing is not commensurate with the demands they face. This impacts resourcing requirements and attrition rates, and, if left unresolved, will severely impact ESTA's ability to recruit to meet increasing demand.

The Review found ESTA CTD staff very eager to engage and provide input into the Review. They have, for many years, been performing a vital emergency service for the Victorian community in increasingly difficult circumstances and their role is first response in every sense. Each day presents challenges to their resilience as they deal with the full ambit of calls for assistance, from supporting callers through childbirth to hearing the final words of the dying. The fact that some staff have been performing this role for decades should be applauded and valued by the community.

Through consultation sessions held with CTD staff, the Review reasonably found that there is an absence of trust between the CTD workforce and senior management. This is largely an unintended consequence of ESTA's operating structure. It is imperative, as a first response service provider, that ESTA can exercise agility in decision making and that this decision making is as close to the CTD staff as possible.

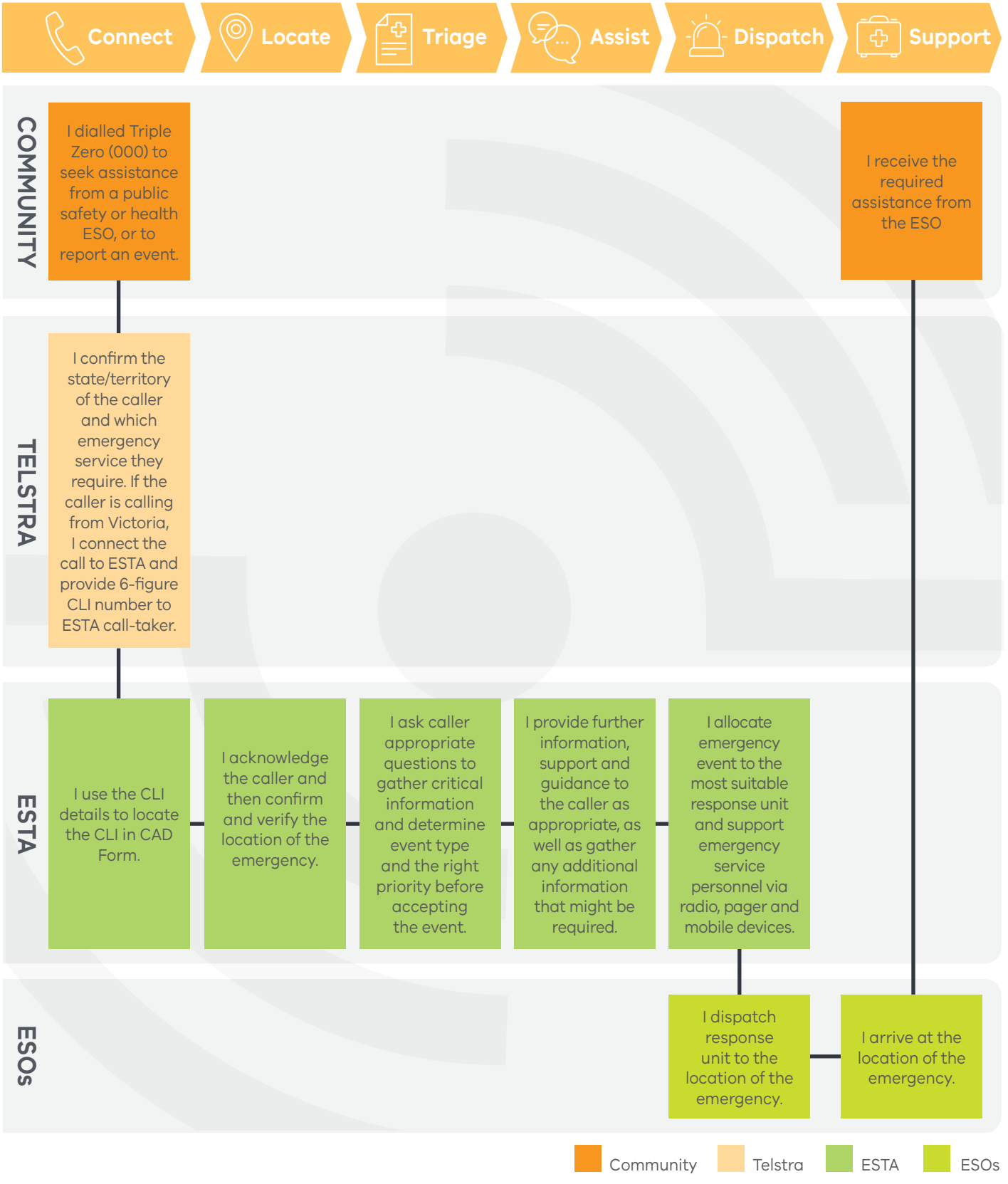
CTD staff at ESTA are very committed to the organisation but expressed frustration with a lack of proper, meaningful consultation in the corporate decision-making process and in developing potential solutions at ESTA. For balance, it is important to state that ESTA does have a staff consultation process in place, however CTD staff informed the Review that this process has traditionally, in their opinion, been used more to inform them of decisions made rather than obtain their input.

The Review acknowledges the changes across ESTA since October 2021, including increased engagement and consultation with CTD staff and union delegates, will take some time to see an increase in confidence across the workforce and trust that consultation is becoming an embedded practice within the agency.

Meeting community expectations

Throughout the Review, it became evident that ESTA may lack the capability to consistently evolve and grow its service and capability to meet community expectations. Community expectations are directly related to ESTA's capability to deliver its CTD services to the Victorian community. As context, the end-to-end Triple Zero (000) customer journey (Figure 6) demonstrates the process for community members and highlights the complexity in the delivery of these services.

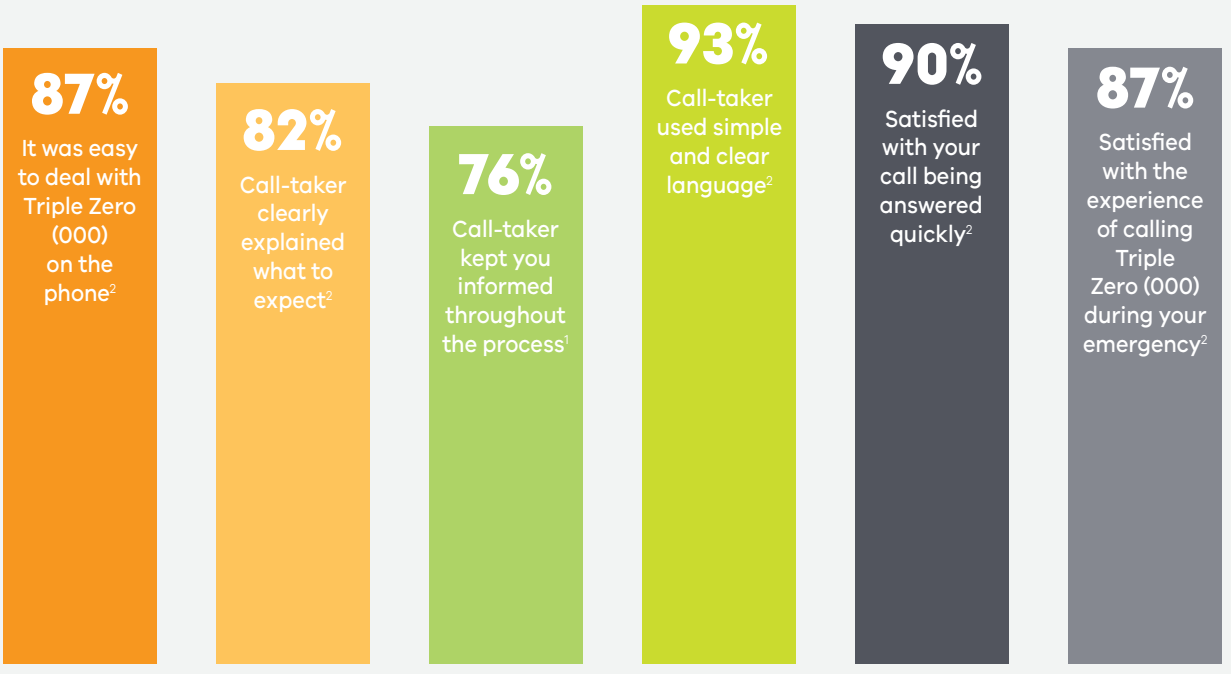
Figure 6: ESTAs end-to-end Triple Zero (000) caller customer journey.



In 2021, ESTA commenced customer satisfaction surveys to capture and understand the public perception of their CTD services (Figure 7).
From these findings, PwC noted key takeaways:

- A potential need to improve the speed of answer, as 10 per cent of callers were unsatisfied with how quickly their call was answered. This may also highlight a challenge with ESTA's current targets, as public expectations of call answering speed may not align with current metrics. There is a need to further explore opportunities to not only improve the availability of call-takers, but also to divert non-emergency calls to other potential channels.
- Only 76 per cent of callers reported that their call-taker kept them informed throughout the process. This indicates a need to further explore how training, process improvements and technology can enable ESTA call-takers to keep callers informed on key information that matters most to them based on the event (for example, estimated time of arrival of an ESO), as well as exploring how this may be done through alternative channels.

Figure 7: ESTA customer satisfaction summary – September and October 2021.



1. *ESTA CSAT Summary – September and October 2021.*
2. *Percentage was calculated by dividing total number of satisfied customers (those who gave a rating of 8 and above) by total number of responses received in the ESTA CSAT Summary – September and October 2021.*

Observing the complexity of agencies involved in the end-to-end Triple Zero (000) customer journey (Figure 6), it is likely that members of the community do not understand the disconnect between the call-taking process and the corresponding arrival on scene by an ESO. This links directly to the need to re-brand ESTA (discussed in Chapter 5).

Performance standards are not fit-for-purpose

Under the ESTA Act, IGEM determines the non-financial performance standards for ESTA's delivery of CTD services to ESOs. IGEM establishes these standards in consultation with ESOs. The EM Act requires IGEM to monitor and investigate ESTA's performance and report any related issues to the Minister for Emergency Services.[2]

High-level challenges (Figure 5) note that current performance standards, which are time-based measures, rather than outcome-based measures, do not always deliver the best community outcomes, nor do they always provide an accurate picture of operational performance. At present the current standards consist only of time-based metrics (Table 1), which are reported monthly.

Current performance standards have played a role in the way ESTA structures its CTD service and must be enhanced in a future state. Current standards do not materially recognise the end-to-end customer experience and tend to be input rather than output focused. Performance standards should be reflective of the end-to-end journey for customers and considered in terms of overall outcomes and delivery of services to the community and ESOs.

Table 1: Standards for the performance of ESTA in delivering services to Victorian ESOs.[3]

Emergency service organisation	Performance standard
Call-taking	
Ambulance Victoria emergency (statewide)	90% of calls answered within 5 seconds
Ambulance Victoria non-emergency (statewide)	90% of calls answered within 30 seconds
CFA emergency	90% of calls answered within 5 seconds
CFA non-emergency	90% of calls answered within benchmark
FRV emergency	90% of calls answered within 5 seconds
FRV non-emergency	90% of calls answered within benchmark
VICSES emergency	90% of calls answered within 20 seconds
VICSES non-emergency	80% of calls answered within 20 seconds
Victoria Police (statewide)	80% of calls answered within 5 seconds

2. *Inspector General for Emergency Management,* Assurance Framework for Emergency Management: Performance monitoring, *State of Victoria,* www.igem.vic.gov.au/our-work/assurance-framework-for-emergency-management/performance-monitoring-0, *accessed 16 February 2022.*
3. *Collated from: Inspector-General for Emergency Management,* Standards for the Performance of the Emergency Services Telecommunications Authority in Delivering Services to the Ambulance Victoria, *2017; Inspector-General for Emergency Management,* Standards for the Performance of the Emergency Services Telecommunications Authority in Delivering Services to the Country Fire Authority, *2017; Inspector-General for Emergency Management,* Standards for the Performance of the Emergency Services Telecommunications Authority in Delivering Services to the Metropolitan Fire and Emergency Services Board, *2017; Inspector-General for Emergency Management,* Standards for the Performance of the Emergency Services Telecommunications Authority in Delivering Services to the Victoria Police, *2017; and Inspector-General for Emergency Management,* Standards for the Performance of the Emergency Services Telecommunications Authority in Delivering Services to Victoria State Emergency Service, *2014.*

Table 1: Standards for the performance of ESTA in delivering services to Victorian ESOs (continued).

Emergency service organisation	Performance standard
Dispatch	
Ambulance Victoria emergency (code 1) (statewide)	90% of calls dispatched within 150 seconds
Ambulance Victoria emergency (code 2) (statewide)	90% of calls dispatched within 300 seconds
CFA (priority 1)	90% of calls dispatched within benchmark
CFA (priority 3)	90% of calls dispatched within benchmark
FRV (priority 1)	90% of calls dispatched within benchmark
VICSES (priority 1)	90% of calls dispatched within 60 seconds
VICSES (priority 2 and 3)	90% of calls dispatched within benchmark
Victoria Police (priority 1) (statewide)	80% of calls dispatched within 160 seconds
Victoria Police (priority 2) (statewide)	80% of calls dispatched within 300 seconds
Victoria Police (priority 3) (statewide)	80% of calls dispatched within 900 seconds

Emergency service organisation	Priority 1	Priority 2	Priority 3
Dispatch rural and urban and during emergency and other response priorities			
CFA			
Urban	120 seconds	n/a	160 seconds
Rural	190 seconds	n/a	230 seconds
Alarms/EMR	28 seconds	n/a	n/a
Other Agency	60 seconds	n/a	n/a
FRV			
Urban	120 seconds	n/a	n/a
Rural	120 seconds	n/a	n/a
Alarms/EMR	28 seconds	n/a	n/a
Other Agency	60 seconds	n/a	n/a
VICSES			
Urban	n/a	160 seconds	160 seconds
Rural	n/a	230 seconds	230 seconds

5 Re-framing the foundations

The Review recommends a range of reforms required to ensure Victorians and the sector continue to receive timely and consistent CTD services into the future. As part of this, it is important to acknowledge that it is not necessary for ESTA to acquire leading edge capability maturity across all service areas to meet these service delivery expectations.

When contemplating how the work of ESTA might be re-framed to better address future state requirements and demands there were some key questions, foundational to the development of a future model. These have been considered throughout the Review:

- What should ESTA do in the future that it is not doing now?
- What needs to change at ESTA or how does ESTA need to change to enable it to be future ready?
- How 'feasible' is it to make those changes?

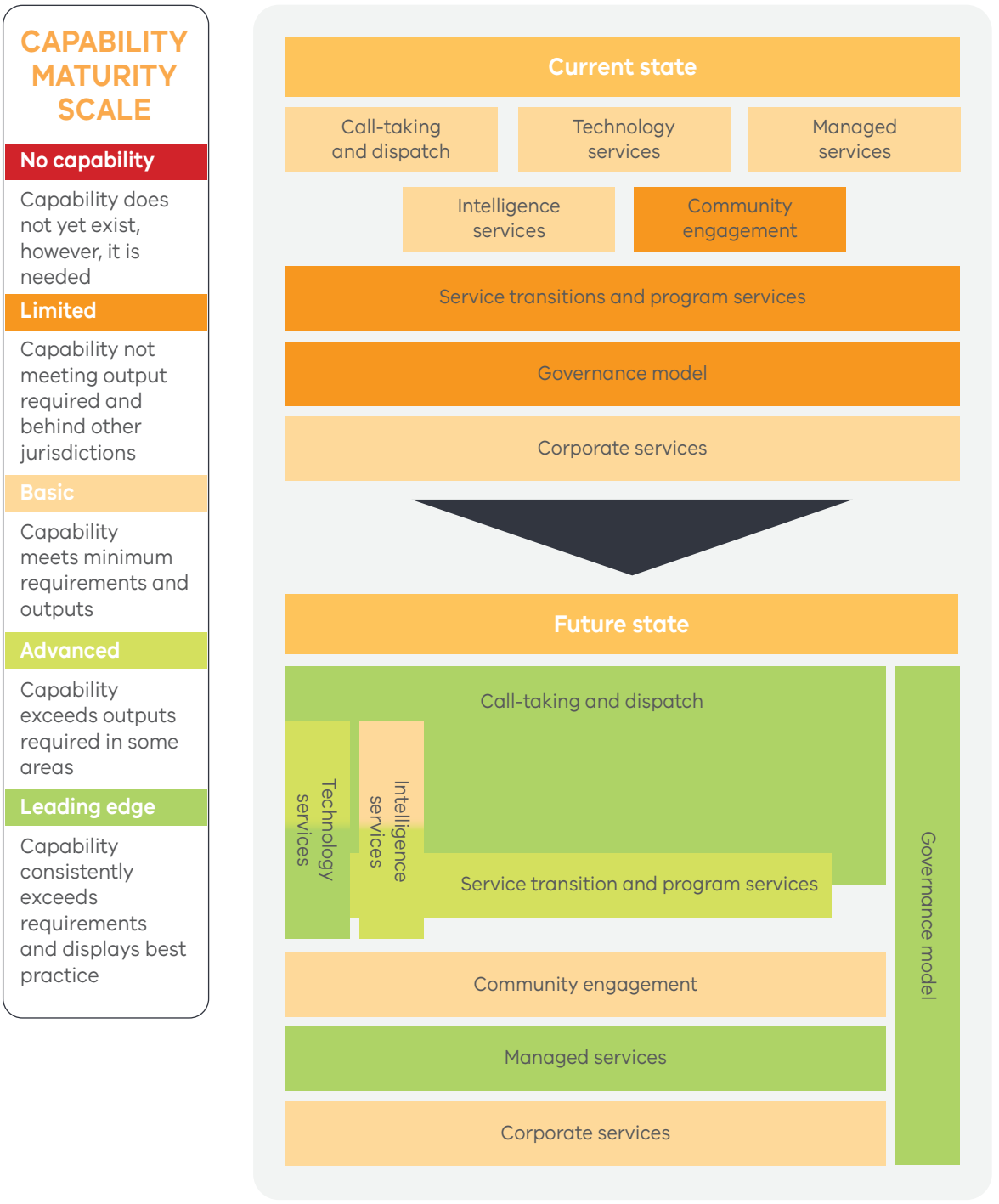
Figure 8 shows current and future capability requirements across the eight core service areas that ESTA currently provides. It demonstrates that a future service model requires ESTA to move from its current state to a streamlined organisation that focuses on its essential role of CTD, with additional services aligned as necessary to enable ESTA to be a highly capable and contemporary entity.

The Review notes that for some of the services requiring a capability uplift, consideration should be given to assessing where those services can be most efficiently delivered into the future. This may see some services transition from ESTA to another agency. By making these changes and increasing capability in specific service areas with a focus on CTD, ESTA becomes a more service specific organisation. It becomes highly specialised, holding non-replicable expertise and thus is a leading-edge performer in this service area.

The recommendations in this report support ESTA becoming a streamlined organisation that focuses on its core service of CTD in a future state. These recommendations are designed to re-frame the relationships between ESTA and its key stakeholders, particularly ESOs. This will seek to create a genuine partnership model, which will provide ESOs with more input on the strategic and operational direction of ESTA and bring ESTA closer to government for the purpose of its day-to-day governance and funding.

The Review presents an opportunity to re-frame ESTA and 'draw a line' under issues of the past, while building on the program of work across CTD that commenced in October 2021. The recent challenges ESTA experienced dealing with the COVID-19 related surge in calls for service makes this even more important as the community continues to have a diminishing trust in ESTA's service delivery capability.

Figure 8: Future capability maturity required across eight key services areas.



CURRENT GOVERNANCE MODEL

When examining governance, it is important to acknowledge the support provided to the Review by the ESTA Board. They have been enthusiastic about the Review from the outset and have continued to provide governance to ESTA during a period of sustained challenge. Similarly, ESTA's executive leadership have consistently provided timely assistance and support throughout the Review process. They have been quick to recognise the Review as an opportunity to address the many challenges they have been endeavouring to navigate for several years.

As a statutory authority, ESTA has nine (Board) members, with the requirement that at least one member has significant experience in the emergency services sector.[4] ESTA's executive leadership team reports to the ESTA Board.

The ESTA Act requires ESTA to appoint an Advisory Committee[5] to increase awareness between ESTA and the individual requirements of ESOs. The Advisory Committee is an avenue to enhance communication within a partnership model. The Advisory Committee includes a chairperson and persons nominated by AV, CFA, FRV, VicPol and VICSES. Membership can be extended to any other emergency service or other related services organisation as per the definition within the ESTA Act.[6]

KEY CHALLENGES WITH THE CURRENT GOVERNANCE MODEL

The current governance model of ESTA was considered at length by the Review. Consultation, including deep dive analysis, revealed that ESTA's current governance model requires change. These key concerns and issues are identified below and include:

- proximity to government support
- partnerships with ESOs
- role of ESTA's Advisory Committee.

Proximity to government support

The Review established that ESTA's governance has become isolated from government. It is understandable that, as an independent statutory authority, ESTA has had an arms-length relationship with key government departments. However, this distance has reached a point where it has become difficult for ESTA to obtain sufficient support in the delivery of operational and corporate services and, importantly, make a convincing case to government for investment.

It is important that an entity of ESTA's scale, even an independent entity, has a strong nexus with a government department so that it can access the necessary governance and corporate support to enable it to fulfil its purpose. These supports include human resources systems, financial administration and industrial relations expertise.

The current distance between ESTA and government has created an increasingly difficult position for the ESTA Board to support the leadership of ESTA to meet corporate and operational service delivery expectations. The ESTA Board have overseen an organisation in need of capability investment and modernisation but have found it challenging to engage with government to resolve these issues. The tension between ESTA and ESOs, which is discussed below, has further isolated ESTA and hampered its ability to present a cohesive narrative on capability investment to government.

While the ESTA Board reports to the Minister for Emergency Services, the ESOs receiving services through ESTA report to a number of additional ministerial portfolios including police and ambulance services. This has at times created competing priorities amongst the ESOs that has left ESTA with an ineffective governance model.

In a future state streamlining the governance and engagement across ministerial portfolios, as required, will ensure greater consistency and coordination.

The Review heard from some stakeholders that it is important for ESTA to maintain its independence from a government department. This view, whilst understandable, does not mean that ESTA cannot strike the right balance between maintaining independent operational decision making and receiving the corporate support it requires from a government department. In making recommendations regarding governance, this report seeks to strike that balance.

4. Emergency Services Telecommunications Authority Act 2004 *s 9 (3) (viii).*
5. Emergency Services Telecommunications Authority Act 2004 *s 21 (1).*
6. Emergency Services Telecommunications Authority Act 2004 *s 21 (2).*

Partnerships with emergency service organisations

The relationship between ESTA and ESOs is not clearly defined. This has resulted in ESOs not having a clear process and pathway to influence and/or collaborate with ESTA to ensure end-to-end service delivery, fit-for-purpose for the community.

As discussed in Chapter 4, it was the intention that ESTA, when enacted in 2004, that it would be formed as a partnership with ESOs. This was an important component to enable ESTA to effectively service the increasingly adaptive needs of ESOs and, in turn, require the ESOs to contribute equally to a partnership. As discussed earlier, this vision has not been fully realised.

Throughout the Review, all ESOs expressed concerns with various aspects of ESTA's capability and service delivery. The range of concerns were considerable and generally stemmed from a view that ESTA does not move to address issues with sufficient speed, is not responsive to ESO needs, particularly with the growing personalised needs of ESO dispatch requirements, and that communication with ESTA was difficult and often ineffective. All ESOs had the view that they were a customer of ESTA and that as a customer were not receiving the level of service for which they were paying via the annual fees to ESTA.

Role of the Advisory Committee

Most ESOs expressed a desire for more influence through ESTA's governance arrangements. The legislated Advisory Committee, populated by the heads of ESOs, was established to assist the ESTA Board by strategically advising them of any specific operational requirements or issues relating to the organisations represented on the committee. It was stated, during the consultation, that this committee has evolved into more of a report back mechanism rather than an opportunity for ESTA to receive strategic advice from ESOs. Further, the heavy work schedules of Chief Executive Officers (CEOs) on the committee made their regular attendance at meetings difficult and inconsistent, further diluting the effectiveness of the committee to achieve its aims.

FUTURE STATE GOVERNANCE MODEL OPTIONS

To address the above key concerns and issues, several potential governance model options were contemplated for the future state.

Figure 9 provides a succinct summary of the scenarios considered when making the recommendations regarding ESTA's future governance structure. Only scenarios meeting the desirability, feasibility and viability criteria were considered potential options for a future state model (depicted in green). High-level pros and cons for each scenario are at Figure 10.

Figure 9: Governance model scenarios.

	Current governance model	Enhanced current state /clarity of responsibilities	ESTA as an ESO	ESTA becomes part of another government department	Establish new authority
Services	No change to the current governance model, with ESTA remaining as a statutory authority, including current Board roles, powers and delegations.	ESTA continues to operate under the existing governance model, adopting process and procedural improvements to ensure leadership and oversight is fit-for-purpose. New legislation drafted to simplify current arrangements and clearly outline roles.	ESTA transitions to become an ESO in its own right, elevating their status to the same level as the other emergency services in the sector.	ESTA transitions to sit as part of another government department, therefore removing their status as a statutory authority and the need for the Board.	Establish a new authority for Victoria, responsible for managing all telecommunications for the state. This would be a similar model to that currently in use in NSW. Future entity focus on emergency response for CTD telecommunications for the state. This would be a similar model to that currently in use in NSW. Future entity focus on emergency response for CTD.
Governance model	x Desirable ✓ Feasible x Viable	x Desirable ✓ Feasible ✓ Viable	x Desirable ✓ Feasible ✓ Viable	✓ Desirable ✓ Feasible ✓ Viable	✓ Desirable ✓ Feasible ✓ Viable

Figure 10: Pros and cons for future state governance model scenarios.

	Description	Key pros	Key cons
Current governance model Current state	No change to the current governance model, with ESTA remaining as a statutory authority, including current Board roles, powers and delegations.	• Current Board members have an understanding and experience in their roles and can provide guidance based on this knowledge, and learn from previous challenges. • Limited change impact to the organisation, allowing a focus on uplifting capabilities in other areas.	• Current challenges are not resolved and the impact of the governance model on partnerships remain. • Current committees and forums do not meet the needs of all stakeholder groups, resulting in challenges across the sector.
Enhanced current state /clarity of responsibilities New roles and responsibilities across the sector	ESTA continues to operate under the existing governance model, adopting process and procedural improvements to ensure leadership and oversight is fit-for-purpose. New legislation drafted to simplify current arrangements and clearly outline roles.	• Clear roles and responsibilities and revised legislation remove some of the challenges and misunderstanding currently in the sector. • New capability introduced across ESTA to improve governance processes and procedures. • Board role revised to original purpose, allowing more time to provide guidance and forward-looking advice rather than respond to crisis.	• Additional resources and capabilities required to deliver this model would have a high cost impact. • Legislative change required may take some time to be completed, therefore not resolving immediate issues with the model. • ESOs/stakeholders may not be supportive of changing roles, and it is unlikely that enhancement would resolve systemic issues.
ESTA as an ESO ESTA becomes an ESO agency in its own right	ESTA transitions to become an ESO in its own right, elevating their status to the same level as the other emergency services in the sector.	• ESTA would have equal status with other ESOs, with this likely to greatly enhance the envisioned partnership model within legislation. • ESTA staff feel a greater sense of purpose and respect, improving relations with ESOs at all levels. • Board independence maintained, allowing advice role to continue.	• Does not resolve challenges around ministerial portfolios being split, and would need a number of additional forums to support this model. • ESOs have indicated they would not be supportive of this change. • Option would still require significant investment to fill existing capability gaps within the organisation and governance model.
ESTA becomes part of another government department	ESTA transitions to sit as part of another government department, therefore removing their status as a statutory authority and the need for the Board.	• Greater alignment with government is likely to provide ESTA with more backing and support to manage their services in the sector. • Government decision making is easier to manage via a Chief Commissioner who has direct contact with the responsible minister. • Simpler governance model for all stakeholders involved, with reduced reporting lines and one accountable minister.	• Significant change likely to have impact on staff, who may not want to work in such an arrangement, leading to higher attrition rates. • As part of a department, ESTA's capability to be flexible and reactive to ESO needs is likely to be reduced. Department's liability also increases. • Removal of ESTA's Board may impact the organisation's ability to receive independent guidance and advice.
Establish new authority Establish a new authority to manage telecomms for the state	Establish a new authority for Victoria, responsible for managing all telecommunications for the state. This would be a similar model to that currently in use in NSW. Future entity focus on emergency response for CTD.	• A new authority completely resets the current model, removing any baggage or history with ESOs and starting again. • Much greater capability included in the new model, allowing a wider remit of responsibility and services for all government bodies. • Statewide role likely to remove some of the funding pressures and allow the organisation to deliver a more innovative service offering.	• Likely to be the most financially expensive option, with significant additional resource and capability required to establish. • No previous example of a state or territory performing emergency response in such a model, and therefore likely only managed services aspect would perform in this way. • Significant legislative change required.

Feedback from key stakeholders on governance model options

The discussion paper circulated in January 2022 sought feedback from key stakeholders on the proposed options for governance. Thematically, feedback included:

- broad stakeholder support for ESTA becoming part of a government department
- clear opposition from some stakeholders to ESTA becoming an ESO, citing limited value in this governance option and concerns that it might create confusion about ESTA's primary purpose within the sector
- potential risk with the option to establish a new authority, in that it might be difficult to distinguish it from the current model without significant changes to its governance structures and business model.

FUTURE STATE GOVERNANCE MODEL

ESTA becomes part of the Department of Justice and Community Safety

In a future state it is essential that the governance model enhances ESTA's ability to operate strategically, and more effectively accounts for the medium to long-term challenges facing the sector. An effective governance model should empower ESTA to have a clear strategic direction, develop a strategic plan to support sustainable funding bids, have clear outcome-based performance standards and a technology strategy and roadmap.

To address the key concerns surrounding ESTA's current governance model and having considered the views expressed by key stakeholders, the Review considers that the best governance model option for ESTA's future is for it to become part of a government department.

This option allows ESTA to have greater support from government and influence in the sector. It could also help to simplify the relationship between ESTA and ESOs by removing the funding overlay creating tension and refocusing parties on delivering through collaboration. In doing so it will be important not to create additional administrative bureaucracy within these governance arrangements.

When considering which department is best suited to host ESTA, there are two obvious options – DJCS or DH. Whilst both are viable, most of ESTA's work rests within the justice and community safety portfolio and therefore it is recommended that ESTA sit within DJCS.

This organisational change would require an equivalent uplift to corporate support services in DJCS to deliver and sustain the entity. Government will also need to appropriately consider any implications associated to this change to the existing funding model for ESTA.

The Review will not specify what this move to DJCS should look like so as to not inhibit DJCS's ability to develop a future governance that is fit-for-purpose for both ESTA and the department. However, it would be prudent to include the following features:

- the entity should be led by a CEO who ideally will have emergency management experience
- the existing ESTA Board and Advisory Committee be consolidated into a board of advisors with a strategic function. It is also important that this board is established with sufficient independence to offer its expertise to the CEO
- a formal relationship with DH in acknowledgement that it is a significant stakeholder in ESTA.

Figure 11: ESTA future state governance model.

A new board of advisors

The Review found that there is merit in consolidating the existing ESTA Board and Advisory Committee into one board of advisors in the future state. This will ensure that the CEO of ESTA is adequately supported by a range of expertise (Table 2) including independent members. It is intended that this board will place the service delivery requirements of ESOs and the Victorian community at the centre of strategic and operational decision making moving forward.

Stakeholders should be represented at Deputy CEO or equivalent, to ensure that the required governance and advisory expertise underpins the work of the board. Further, it would be optimal if at least one of the independent members has ICT experience.

Table 2: Proposed membership for board of advisors.

Position	Experience/organisational alignment
Independent Chair – non-executive	
Independent Member** – non-executive	
Independent Member** – non-executive	High-level ICT experience necessary
Senior Representative*	Fire Rescue Victoria
Senior Representative*	Country Fire Authority
Senior Representative*	Ambulance Victoria
Senior Representative*	Victoria State Emergency Service
Senior Representative*	Victoria Police
Senior Representative*	Department of Health
Senior Representative*	Emergency Management Victoria
Senior Representative*	Inspector-General for Emergency Management (observer status only)
Senior Representative*	Safer Care Victoria (observer status only)

** Senior representative will usually be no lower than Deputy CEO level.*

*** At least one independent member having significant ICT expertise.*

NB: Some of the existing Board members should ideally be considered for membership of the new board to provide continuity.

Noting that the proposed membership of the board of advisors captures all key stakeholders, it will be important that the accountability of all members is clearly defined. These accountabilities should align with the following key aims of the board, that they:

1. Guide the strategic direction of the organisation, supporting alignment between ESTA and ESOs.
2. Ensure ESTA's strategic plan informs executive decision making and operational service delivery priorities, including in relation to future funding bids. All future funding bids should have the support of ESOs.
3. Align the prioritisation of investment in ESTA with its strategic plan and technology strategy and roadmap.
4. Guide the development of outcome-based performance standards, which reflect the end-to-end customer journey.
5. Support the CEO to ensure the organisation works collaboratively with DJCS to develop a technology strategy and roadmap for the future, that meets the requirements of ESOs and sets out a course that will allow the introduction of other reporting technologies for Triple Zero (000), such as internet-based reporting (video/artificial intelligence assisted calls etc.).
6. Assist the CEO to strike an appropriate balance between independent operational decision making and being an influential voice to government.

It will be important to have strong governance in place to support the transition of ESTA to the proposed future state. Prior to the commencement of a program of reform it will be important to consider the establishment of an interim board to provide strategic and operational leadership throughout the process.

Governance

RECOMMENDATION 1

ESTA move to become part of DJCS.

RECOMMENDATION 2

The current ESTA Board and Advisory Committee are disbanded and replaced with a new board of advisors.

LEGISLATION

The scope and scale of the reforms, in particular the reforms proposed to the governance of ESTA, outlined in this report will require significant legislative change to operationalise. The legislative environment is complex, and changes to one piece of legislation will invariably lead to changes in another. Detailed consideration of the legislative changes required must be contemplated as part of implementing the suite of recommendations from the Review.

Acknowledging that required legislative change may take some time to enact, DJCS should give consideration to appropriate interim measures, particularly regarding the establishment of the new board of advisors, to ensure it can be operationalised to support the delivery of these reforms.

STRENGTHENING CULTURE

A common issue raised throughout the Review was the need for urgent cultural reform at ESTA (detailed in Chapter 4). There are several layers to cultural reform required across ESTA, including building an agile emergency management culture and establishing a workplace culture that supports and promotes the health and wellbeing of staff. While the Review notes that since October 2021 executive leadership at ESTA has commenced activities to strengthen and build an inclusive and agile emergency management culture, there is still a long way to go to fully embed this work.

Within an established agency, responsibility for strengthening and building a positive workplace culture should rest with the CEO or Deputy CEO. Noting that ESTA, through the scope and scale of the reforms outlined in this report will have a significant period of transition from the current to future state, the Review proposes a fixed-term position is created to specifically prioritise and lead cultural reform during this period.

Once the new governance arrangements are in place and operating model established, it will be expected that responsibility for strengthening workplace culture rest with the CEO or Deputy CEO.

By way of guidance, the goals for this position should include:

- bridging the cultural gap between ESTA's executive leadership, senior management and CTD staff by establishing the building blocks of trust between these groups
- establishing the necessary consultation mechanisms to effectively elicit input from CTD staff
- developing an effective engagement plan to improve relationships with necessary industrial stakeholders
- ensuring that an agile and adaptive emergency management culture is established, with pillars of health and safety of the community and CTD staff as its focus
- embedding wellbeing education and access to support services across the organisation.

Culture

RECOMMENDATION 3

Creation of a dedicated fixed-term position to specifically lead cultural reform at ESTA during this transition.

ESTABLISHING A STRONG BRAND IDENTITY

ESTA is the entity within the sector that receives and triages calls via Triple Zero (000) whenever there is an emergency. This is a critical service that the Victorian community relies upon 365 days-a-year. The Review is recommending that ESTA's main focus must be on this core CTD function.

From an organisational perspective, building a sense of unity across the workforce and a positive workplace culture can be significantly influenced by brand identity. Positive and negative brand association are incredibly influential and play a role in setting the culture and strategic direction of an organisation.

To provide a platform from which these reforms will be delivered, the Review recommends that ESTA is re-branded to 'Triple Zero (000) Victoria' to better reflect its core CTD function and ensure its enabling role within the emergency services sector is well understood by the community.

Branding

RECOMMENDATION 4

ESTA should be re-branded to 'Triple Zero (000) Victoria'.

6 Call-taking and dispatch

CURRENT STATE CALL-TAKING AND DISPATCH MODEL

ESTA's CTD model, also referred to as ECS, includes a range of functions. For the purposes of this chapter, the focus is on:

- emergency event call taking and dispatch
- non-emergency event call taking and dispatch.

In Victoria, CTD is delivered through an aggregated model, with all ESO emergency CTD services performed by ESTA. Call-takers respond to emergency events for police, ambulance, fire and state emergency services and non-emergency events for ambulance, fire and state emergency services. The CTD service model also includes dispatch, emergency field responder support and safety monitoring. It is noted that police call-takers and dispatchers also service VICSES emergency and non-emergency CTD.

From an operational perspective, call-takers at ESTA receive and triage Triple Zero (000) emergency and non-emergency calls. Dispatchers then use the information obtained and recorded by the call-taker to facilitate the dispatch of emergency and non-emergency resources for ESOs (Figure 12). CTD staff use the CAD system, which integrates features such as maps, field communications, data reporting and analysis to provide a holistic CTD response.

The Review identified many positive features of the aggregated current state CTD operating model. Having a single organisation responsible for emergency telecommunications supports Victoria's interoperable emergency services response model and enhances the ability of ESTA to trigger multi-agency responses to emergencies in an increasingly complex environment. From a workforce perspective, CTD in a single organisation should enable multi-skilled staff to facilitate scaling-up or across operations during an emergency surge. In addition, there are significant operational and financial efficiencies from aggregating CTD in a single organisation, as is done currently by ESTA.

CTD staff are employed by ESTA and work at three SECCs across Victoria: Tally Ho, Williams Landing and Ballarat. CTD staff are employed to work in a particular ESO stream to take calls or facilitate dispatch, with the service delivery full-time equivalent (FTE) for ECS (operations) shown in Table 3. CTD staff can multi-skill across ESO streams.

Figure 12: ESTA CTD services provided by ESO.

	Services provided to (Y/N)			
	VicPol	AV	Fire	VicSES
Call-taking emergency	Y	Y	Y	Y
Dispatch emergency	Y	Y	Y	Y
Call-taking non-emergency	N	Y[1]	Y[2]	N/A
Dispatch non-emergency	N	Y[1]	N/A	N/A

1. Non-emergency patient transport (NEPT) booking and dispatch.
2. Burn-off notifications.

Table 3: ESTA 12-month rolling operation and support staff 2020–2021.[7]

June 2021	Operations	Support	ESTA total
Current employees	824	228	**1052**
Voluntary workers	55	22	**77**
Gender – female	592	128	**720**
– male	232	100	**332**
Redundant/terminated	19	15	**34**
12-month attritions	74	37	**111**
Turnover – voluntary	6.7%	9.6%	**7.3%**
Turnover – redundant/terminated	2.3%	6.6%	**3.2%**
Total turnover	9.0%	16.2%	**10.5%**

AV and VicPol deploy staff within ESTA SECCs in various roles to ensure effective responses for their organisation. FRV and CFA also have a limited presence. AV clinicians are onsite and can be consulted as required during call-taking and play a role in the dispatch of AV resources. VicPol have police onsite to assist with the dynamic nature of police calls. In addition to their presence at ESTA's SECCs, VicPol has an in-field supervisor model that effectively interacts with the police dispatchers at ESTA. If necessary, this in-field process can 'de-conflict' and resolve any dispatch issues and provides an excellent mechanism for ensuring the right expertise is sourced and arrives promptly at the scene. This is particularly true when specialist police units are required.

Interaction with the systems of emergency service organisations

In addition to the CTD services that ESTA provides, VicPol has a standalone service that the public can use to report non-emergency matters. This is known as the Police Assistance Line (PAL) whereby the community can make an online report or call the dedicated number to utilise this service. Where a non-emergency police call is received by ESTA, ESTA must manually transfer the call to PAL, as the two systems are not currently integrated.

AV has created a non-emergency referral capability known as REFCOMM. However, this is an internal service and cannot be accessed by the community. AV staff within ESTA SECCs use REFCOMM for non-emergency events, to enhance the quality of patient service.

ESTA CTD staff utilise REFCOMM to refer non-emergency events to AV, and AV contacts callers to provide medical information to assist them with managing their health emergency.

VICSES directs the community to call 132 500 to report flood, storm, tsunami and earthquake emergencies, rather report emergencies through its website. In addition, VICSES, CFA and FRV all refer people to the emergency.vic.gov.au website or app to monitor developing emergencies in their local area.

KEY CHALLENGES WITH THE CURRENT CALL-TAKING AND DISPATCH SERVICES CAPABILITY

CTD has been identified by the Review as ESTA's core strength, however, there are still opportunities for improvement that were reflected through the current state analysis. Consultation, including deep dive analysis, highlighted the following key concerns and issues:

- capacity to deliver consistent CTD services
- classification of calls for ambulance
- CTD learning and development
- management of surge events
- inconsistent engagement in national forums
- responsiveness to ESO requests for changes to the CAD system.

7. *Emergency Services Telecommunications Authority,* ESTA Annual Report 2020–21*, 2021, p. 109.*

Capacity to deliver consistent call-taking and dispatch services

For many years ESTA's CTD service has experienced challenges with recruitment and retention of staff and fixed-term funding for CTD staff. As a result, the capacity and capability of this service has eroded. The situation has been exacerbated, over the past two years, by the increase in CTD demand created by COVID-19 and the increase in significant emergency events, such as storms, floods and bushfires. From a service delivery perspective, a lack of experienced CTD staff has resulted in ESTA's CTD service being driven by workforce availability, rather than by Victorian community's demand for its services.

Classification of calls for ambulance

AV expressed concern regarding the error rate in the classification of ambulance calls, and the impact this has had on their qualitative approach to patient care. The concern regarding this error rate was raised as anecdotal evidence only. Verifying these concerns with data was not possible.

The Review did note that classification of ambulance calls is determined by the information provided to CTD staff in the form of a call-taker script, which is developed in collaboration with AV.

AV has, for some years, focused on improving the quality of end-to-end service to patients in an increasingly complex health environment. AV consider that the qualitative approach to servicing a patient extends from the first call to Triple Zero (000) to the end of AV care. AV have found it difficult to implement the required changes within ESTA to achieve a satisfactory standard across the patient care continuum.

Focusing on only the CTD component of a patient experience, which is the scope of the Review, it is important to step through the current processes. The classification of calls through the CAD system is based on system generated questions that the ESTA call-taker is prompted to ask. AV events can be classified as priorities (Table 4).

Table 4: Emergency ambulance response codes.[8]

Priority	Code	Definition	Example
0	1	Priority 0 denotes the highest priority incidents. They require a 'lights and sirens' response and usually involve sending additional resources such as a mobile intensive care ambulance. Priority 0 incidents are a subset of Code 1 incidents.	• Cardiac or respiratory arrest • Major trauma/severe injuries
1	1	Priority 1 incidents are high priority and time critical, requiring a lights and sirens response. Priority 1 incidents are a subset of Code 1 incidents.	• Chest pain • Shortness of breath • Overdoses
2	2	Code 2 incidents are urgent but do not require a lights and sirens response unless the responding ambulance encounters significant delays (e.g. heavy traffic).	• Broken leg • Minor haemorrhage
3	3	Code 3 incidents are the lowest priority emergency classification. These incidents are not urgent.	• Non-traumatic back pain • Headache

8. *Department of Health and Human Services,* Victoria's Ambulance Action Plan: Improving services, saving lives. Ambulance Performance and Policy Consultative Committee Final Report*, State of Victoria, 2015, p. 51.*

The initial assessment can be crucial to patient outcomes and therefore must be accurate. In practice, AV can reclassify events when they have been assigned an incorrect priority and this occurs through AV's physical presence in the dispatch area at ESTA SECCs and AV use of REFCOMM. This additional element of clinically informed input represents a critical safeguard.

To reduce incorrect classification of calls, AV continues to request, assess and seek updates from ESTA regarding call-taker scripts within the ambulance call-taking system. ESTA has not always been able to update call-taker scripts with the requested changes in an efficient timeframe, due to resourcing constraints, internal infrastructure challenges and more recently the ongoing impact of the COVID-19 pandemic on service delivery. AV sees the implementation of new scripts, in a timely manner, as essential to strengthening their approach to patient care.

Notably, there have been long standing conversations between AV and ESTA regarding ESTA's CTD capability. ESTA and AV have been working collaboratively to address interagency challenges regarding CTD service and capability, particularly since 2016. The Review noted that an MoU was signed between AV and ESTA in 2017, stating that both agencies would work collegiately to address current issues and that AV would ultimately assume responsibility for the ambulance dispatch function, although performance of dispatch would still be facilitated by ESTA. The Review noted that this MoU was never successfully enacted.

Call-taking and dispatch learning and development

ESTA currently conducts in house training for their CTD staff. ESTA is a Registered Training Organisation (RTO) and therefore its courses must meet Victorian Registration and Qualifications Authority requirements. This level of oversight ensures that the training of all CTD staff is delivered consistently and against agreed capabilities.

By way of example, in 2021 ESTA introduced a new five-week Emergency Ambulance (ERTCOMM) course. The process to alter the course was rigorous and included the completion of a full risk assessment, which was signed-off through agreed governance processes in 2021, followed by a training and risk options analysis specifically around course reduction options in October 2021. ESTA notes that the original course curriculum, including risks, was agreed to by relevant industrial stakeholders in 2017 and implemented in 2018. AV had also endorsed this program.

Training times vary depending on ESO stream, and the Review heard that the availability of trainers, along with ongoing service delivery demands, places pressure for staff to transition to the taking of live calls as soon as possible.

As part of consultations, CTD staff provided an overview of the ongoing training expectations on them. This included staff being expected to learn new processes and script changes whilst performing their roles of call-taking or dispatch. This expectation seems at odds with the formal overlay of an RTO. The Review acknowledges that there may be an opportunity for call-takers to learn new bulletins during quiet periods, however, under no circumstance should CTD staff be required to self-train at their work desks whilst also performing their duties. The consequences for staff and the community are obvious.

From a resourcing and continued professional development perspective, the Review noted that current training standards include a policy that dispatchers can only be recruited from the existing pool of call-takers. While sound reasons were provided to the Review to explain the policy, there is potential to review this policy given the small recruitment pool it creates. There is no doubt that dispatchers need a granular understanding of the call-taking environment, however, there may be alternative ways this could be achieved.

Management of surge events

There have been many statewide emergency events over the years that have led to an increase in emergency calls. These situations are commonly known as surge events. Whilst they can be difficult to predict, a surge event, can be planned for and doing so provides an opportunity to mitigate potential risks.

Surge events for fire services are generally seasonal, but follow weather extremes and therefore ESTA can be heavily impacted by a CTD surge for fire services during the bushfire season. As a result of the COVID-19 pandemic ESTA saw a sustained surge in demand for ambulance services, which is usually only seen in fire services and police. The call demand for VICSES assistance also aligns to surge events, such as extreme weather.

Throughout the Review, ESTA acknowledged that due to current CTD resourcing, a workforce pool of only 800 operational staff and a lack of flexibility in the enterprise agreements to roster to demand, it has had difficulties in meeting resource requirements needed to respond to the increase in CTD during a surge event. In addition, according to ESTA, a key challenge is an inability to quickly interchange call-takers and dispatchers across disciplines. For example, ESTA was unable to meet surge demand during significant storm events in 2021 and throughout peak periods in the COVID-19 pandemic. Although the latter event is considered unprecedented, these are the types of surge events where ESTA's aggregated model should have delivered an exceptional and coordinated emergency response.

Until more recently, according to union officials, there has been little regular formal engagement by ESTA, which is critical to establishing trust. For example, prior to October 2021, there were no identified regular meetings held between ESTA and union representatives. Building strong productive working relationships industrial stakeholders representing CTD staff will be essential for ESTA and to find timely solutions to manage surge events. The work by the current ESTA executive since October 2021 to improve this relationship has enabled parties to develop interim arrangements in response to continued surge demand in the AV space. This not only assists with meeting service delivery expectations, but also seeks to support CTD staff wellbeing and mental health.

Inconsistent engagement in national forums

NECWG–A/NZ provides a mechanism for CTD organisations across Australia to share knowledge, develop collective positions, coordinate cross jurisdictional responses and discuss improvements to workflows and technology solutions.

NECWG–A/NZ indicated that ESTA, until recently, has not been an active participant in the group. This has resulted in a lost opportunity for ESTA to participate in highly relevant projects, such as the work being undertaken to improve the management of surge risk. Over more recent months, the Review noted that ESTA's engagement with NECWG–A/NZ is being addressed, and the relationship has been better prioritised.

Responsiveness to requests for changes to the call-taking and dispatch system

ESOs routinely identify opportunities to enhance service delivery, which require a change within the CAD system, primarily relating to the scripts for ESTA call-takers. While there is a process in place to manage all requests for changes, the Review found that historically there were continual delays to the implementation of these enhancements. ESOs expressed frustration with ESTA's capability to manage the ever-growing list of CAD system change requests, to the point where significant delays continue to occur. At the extreme end of the spectrum, one ESO noted during consultation that they are yet to have a change delivered that was requested over 10 years ago. It is noted however that this historical request, has not been escalated with the current leadership for action. Systemic delays, in the progression of change requests has the potential to undermine the quality of service ESTA's CTD workforce strive to deliver each day.

Flowing on from this, the Review heard numerous examples of change requests not being promptly incorporated into the standard operating procedures (SOPs), which feed into the training environment for staff. The Review understood that instead of being captured within the relevant SOP, the instructions to implement the service delivery change is captured in a series of paper-based staff bulletins, creating a significant disconnect between SOPs and the training environment. It also creates uncertainty and confusion for staff who routinely call upon SOPs as the single 'source of truth'.

KEY CONSIDERATIONS FOR THE FUTURE STATE

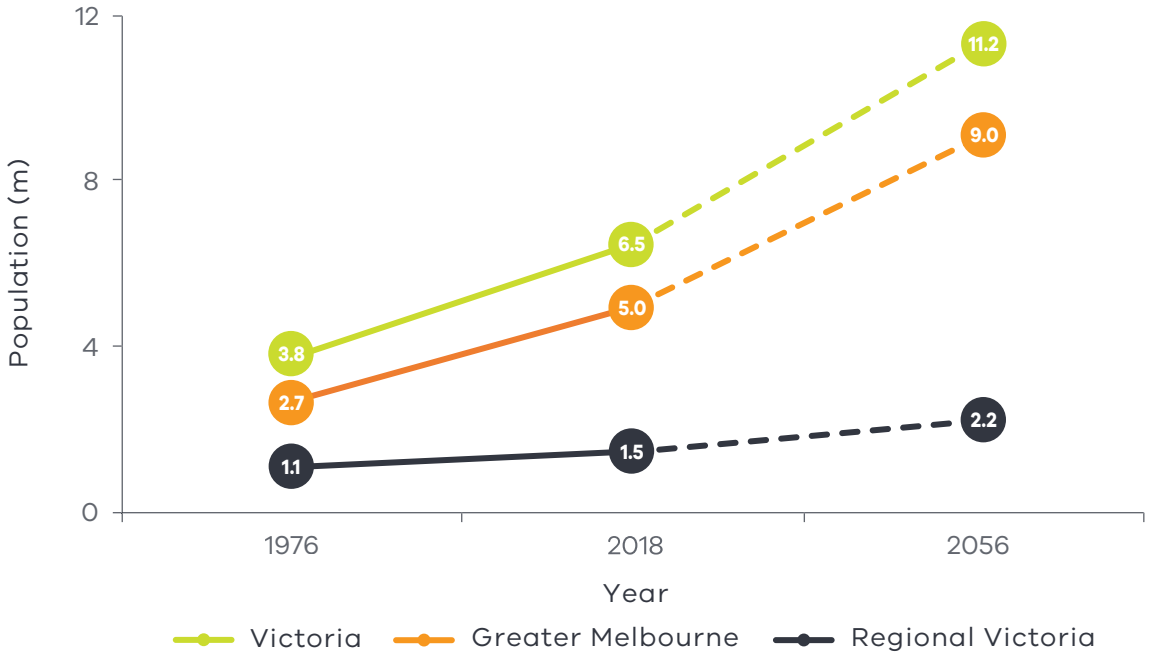
In examining ESTA's future state CTD requirements, the Review considered the changing external drivers of demand for emergency services in Victoria. Key considerations that must inform strategic planning include:

- population and demographic changes
- age, health and wellbeing of Victorians
- impacts of climate change.

Population and demographic changes

The size, distribution and composition of Victoria's population are significant drivers of demand and pressure points for all Victorian ESOs. Victoria's population is growing at an increasing rate, in both metropolitan Melbourne and regional Victoria.[9] Between 2011 and 2016, Census data reveals that Victoria's population increased by 10.7 per cent to 5.93 million.[10] Victoria's growth rate was two per cent faster than the 8.8 per cent population growth rate for Australia during the same period. By 2056 Victoria's estimated population will be 11.2 million people, with around nine million people living in Melbourne alone. [11]

Figure 13: Victoria's past and projected population, 1976–2056.[12]



With a large population increasing this fast, including more than two million people living regionally and rurally, demand for ESO services will rise. ESTA and ESOs must plan now for this increase in demand.

Victoria has the most diverse population in Australia. Approximately 50 per cent of Victorians were born overseas or have a parent born overseas. More than 20 per cent were born in a country where English was not the main language and more than 25 per cent speak a language other than English at home.[13] Having the right resources and skills to meet the needs of Victoria's culturally and linguistically diverse (CALD) communities, including accommodating language barriers between first responders and community members, must be a future consideration. This is particularly true for health service responses, which are, by their nature, more complex than other emergency services. In ambulance priority zero and one situations, communicating appropriately with a CALD patient becomes a matter of life and death.

Age, health and wellbeing of Victorians

Life expectancy is increasing for males and females across Australia (Figure 14). In 2017–18, the median life expectancy age of males and females was 78 years and 84 years respectively.[14] For people born in 2017–19, life expectancy has increased to 81 years for males and 85 years for females.[15]

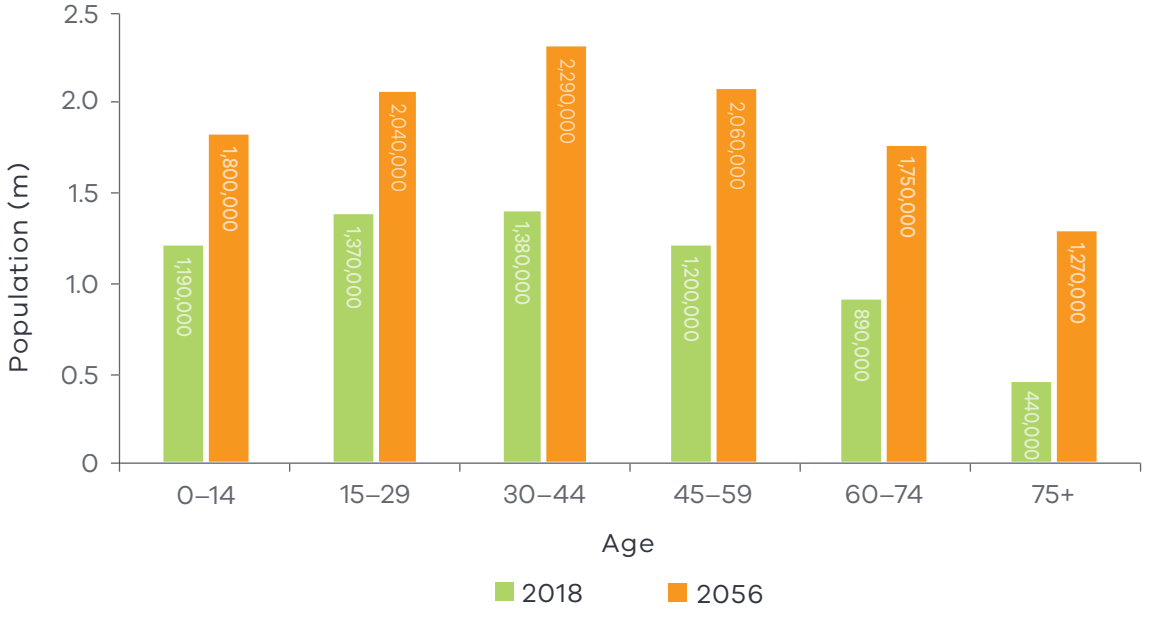
9. *Department of Premier and Cabinet,* Victoria's diverse population: 2016 Census*, State of Victoria, 2017, p. 2.*
10. *Department of Premier and Cabinet,* Victoria's diverse population: 2016 Census*, State of Victoria, 2017, p. 2.*
11. *Department of Environment, Land, Water and Planning,* Victoria in Future 2019: Population Projections 2016 to 2056*, The State of Victoria, 2019, p. 4.*
12. *Department of Environment, Land, Water and Planning,* Victoria in Future 2019: Population Projections 2016 to 2056*, The State of Victoria, 2019, p. 4.*
13. *Victoria, Legislative Assembly, 7 December 2004,* Parliamentary debates*, Book 8, p. 1808.*
14. *Australian Institute of Health and Welfare,* Deaths in Australia: Online report www.aihw.gov.au/reports/life-expectancy-death/ deaths-in-australia/contents/age-at-death*. Accessed 15 January 2022.*
15. *Australian Institute of Health and Welfare,* Deaths in Australia: Online report, www.aihw.gov.au/reports/life-expectancy-death/ deaths-in-australia/contents/age-at-death*. Accessed 15 January 2022.*

Victoria's population is ageing. There is a larger proportion of people aged over 65 and fewer children aged 15 years and under.[16] One in six Australians are 65 years or older. Low fertility rates and increasing life expectancy mean this ageing trend will continue.

Demand for AV's services is likely to increase considerably due to the ageing population. Older people are more likely to suffer a serious illness or chronic disease and have higher disability rates.

For AV, the health and wellbeing of Victorians, especially those suffering from chronic illness or disease, is a major driver of demand and a pressure point for its services. For example, the Australian Institute of Health and Welfare (AIHW) lists 10 major chronic conditions.[17] Fifty per cent of hospitalisations in Australia and 90 per cent of deaths are associated with one of the 10 chronic conditions.[18] Dementia is now the leading cause of death in Australia for females, and the second leading cause of disease for all Australians.[19] AV will be operating in a complex future state that consists of an increasing and ageing population, high levels of people suffering ongoing chronic health issues and a rise in dementia patients. This is likely to lead to an increase in demand for ambulance services and therefore calls for ambulance assistance.

Figure 14: Victoria's population by age group, 2018 and 2056.[20]



Impacts of climate change

ESOs are already adapting their services to the implications of climate change such as more frequent and intense weather events. For CFA and FRV, this means responding to longer bushfire seasons and having to attend fires in locations that were not previously bushfire prone. CFA will have to consider the reach of its rural network within these new circumstances.

Climate change is also a significant concern for AV as heat kills more Australians each year than any other natural disaster.[21] Global research of 30 million deaths over three decades in 42 countries found that 37 per cent of heat-related deaths were attributable to climate change.[22] Some older Australians, including people over 75, and those with pre-existing medical conditions or a disability, are particularly vulnerable to extreme heat.

16. *Department of Environment, Land, Water and Planning,* Victoria in Future 2019: Population Projections 2016 to 2056, *The State of Victoria, 2019, p. 4.*
17. *Australian Institute of Health and Welfare,* Chronic Disease: Overview, www.aihw.gov.au/reports-data/health-conditions-disability-deaths/chronic-disease/overview. *Accessed 15 January 2022.*
18. *Australian Institute of Health and Welfare,* Chronic Disease: Overview, www.aihw.gov.au/reports-data/health-conditions-disability-deaths/chronic-disease/overview. *Accessed 15 January 2022.*
19. *Dementia Australia,* Dementia statistics: Facts and Figures, www.dementia.org.au/statistics. *Accessed 15 January 2022.*
20. *Department of Environment, Land, Water and Planning,* Victoria in Future 2019: Population Projections 2016 to 2056, *The State of Victoria, 2019, p4.*
21. *Gerard Mansour, Commissioner for Senior Victorians, 'Heat kills more Australians than any natural disaster – take care of yourself, and others',* Seniors Online *https://www.seniorsonline.vic.gov.au/News-Opinions/Blogs/Blog-Collection-Page/Heatkills-more-australians.*
22. *Vicedo-Cabrera, A.M., Scovronick, N., Sera, F. et al., 'The burden of heat-related mortality attributable to recent human-induced climate change'. Nature, 2021, 11, pp. 492–500, https://www.nature.com/articles/s41558-021-01058-x. Accessed 22 February 2022*

FUTURE STATE CALL-TAKING AND DISPATCH MODEL OPTIONS

To address key concerns and issues, several potential CTD options were developed for the future state to ensure recommending the most appropriate model.

Figure 15 is an overview of the potential scenarios for a future CTD model for ESTA. Only scenarios that meet the desirability, feasibility and viability criteria are considered potential options for a future state model (depicted in green). The pros and cons of these options for emergency and non-emergency CTD are included at Figure 16.

Figure 15: Scenario analysis – call-taking and dispatch.

	Call-taking				Dispatch			
	ESTA current state	**ESTA enhanced current state**	**Hybrid health + safety***	**ESOs**	**ESTA current state**	**ESTA enhanced current state**	**Hybrid health + safety***	**ESOs**
Services	ESTA continues to perform this service with no changes made to current state.	ESTA continues to perform this service with additional investment in improvement ideas.	Health services are provided by AV. Public safety services are provided by ESTA with additional investment in improvement ideas.	ESOs perform their own CTD.	ESTA continues to perform this service with no changes made to current state.	ESTA continues to perform this service with additional investment in improvement ideas.	Health services are provided by AV. ESTA would continue to take Fire non-emergency calls, VicPol continue to manage their own non-emergency calls.	ESOs perform their own CTD.
Emergency Call-taking and dispatch	x Desirable ✓ Feasible x Viable	✓ Desirable ✓ Feasible ✓ Viable	✓ Desirable ✓ Feasible ✓ Viable	x Desirable x Feasible x Viable	x Desirable ✓ Feasible x Viable	✓ Desirable ✓ Feasible ✓ Viable	✓ Desirable ✓ Feasible ✓ Viable	x Desirable x Feasible x Viable
Non-Emergency Call-taking and dispatch	x Desirable ✓ Feasible x Viable	✓ Desirable ✓ Feasible ✓ Viable	✓ Desirable ✓ Feasible ✓ Viable	x Desirable ✓ Feasible x Viable	x Desirable ✓ Feasible x Viable	✓ Desirable ✓ Feasible ✓ Viable	✓ Desirable ✓ Feasible ✓ Viable	✓ Desirable ✓ Feasible x Viable

** Health refers to Ambulance and safety refers to Fire, Police and VICSES.*

Figure 16: Pros and cons for future state call-taking and dispatch model scenarios.

Emergency call-taking and dispatch	Description	Key pros	Key cons
Current state	ESTA continues to perform this service with no changes made to current state.	• No change management impact or additional funding required.	• Current challenges with building a flexible and scalable resourcing model to meet demand during surge events will continue. • Due to resource constraints, focus will continue being on 'keeping the lights on" for support services. • Current preference to meet performance standards instead of shifting to community outcomes is not resolved. • AV do not believe that this scenario will meet their needs and deliver the services that they require effectively.
Enhanced current state	ESTA continues to perform this service with additional investment in improvement ideas.	• Improve utilisation of multi-skilled staff and increase capacity to respond to surge events. • Handling all Triple Zero (000) requests through one organisation would continue to make co-ordination during multi-agency events effective. • Align performance measures to community health and safety outcomes. • Improved transparency through ongoing information and data sharing. • Increased consistency in community experience.	• Questions to whether ESTA would be able to develop capability to meet AV's need as a health service. • Unclear whether ESOs will be open to driving standardisation of process and procedures between health and public safety.
Hybrid health + safety	Health services are provided by AV. Public safety services are provided by ESTA with additional investment in improvement ideas.	• Simplifies ESTA's operations, with ESTA becoming a Centre of Excellence in Public Safety. • Improves utilisation of multi-skilled staff and increases capacity to respond to surge events. • Aligns ESTA's performance measures to community safety outcomes. • Improved transparency through ongoing information and data sharing.	• Not entirely aligned with whole-of-government thinking of centralisation of capabilities of emergency management within Victoria. • Could potentially create challenges with coordination of multi-agency events involving AV and other ESOs. • Unclear whether AV would have the capabilities (and/or capacity) to take over this role.
ESOs	ESOs perform their own CTD.	• Each ESO has autonomy over their respective CTD service.	• Question as to whether all ESOs would accept this approach. • Unclear whether ESOs have capability to take over this role. • Could potentially create challenges with coordination of multi-agency events. • Not entirely aligned with whole-of-government thinking of centralisation of capabilities of emergency management within Victoria. • Potentially result in inconsistent community experience across ESOs.

Figure 16: Pros and cons for future state call-taking and dispatch model scenarios (continued).

Non-emergency call-taking and dispatch	Description	Key pros	Key cons
Current state	ESTA continues to perform this service with no changes made to current state.	• No change management impact or additional funding required.	• Focus would continue being on keeping the lights on due to resource constraints. • Capability to divert non-emergency requests away from Triple Zero (000) to less resource intensive alternate channels could remain low.
Enhanced current state	ESTA continues to perform this service with additional investment in improvement ideas.	• Reduce non-emergency requests coming through Triple Zero (000) by providing alternate channels to community for communicating these requests would free up call-taking staff's capacity to focus on emergency requests. • Alternate channels such as online forms or portals are generally less resource intensive. These channels can also be leveraged across various ESOs, creating economies of scale.	• Questions on whether ESTA has the right capability to plan, build and run alternate channels to handle non-emergency requests.
Hybrid health + safety	Health services are provided by AV. ESTA would continue to take fire non-emergency calls.	• Moving non-emergency health requests away from ESTA to AV would simplify ESTA's operations. • In addition, it would free up ESTA's call-taking staff's capacity to focus on emergency requests coming through the Triple Zero (000) channel. • AV providing non-emergency CTD could potentially create integrated public health experience and improve patient outcome. • No change management impact or additional funding required.	• Unclear whether AV would have the capabilities (and/or capacity) to take over this role. • Not entirely aligned with whole-of-government thinking of centralisation of capabilities of emergency management within Victoria. • Potentially result in inconsistent community experience across ESOs.
ESOs	ESOs perform their own CTD.	• Each ESO has autonomy over their respective CTD service.	• Question as to whether all ESOS would accept this approach. • Unclear whether ESOs have capability to take over this role. • Could potentially create challenges with coordination of multi-agency events. • Not entirely aligned with whole-of-government thinking of centralisation of capabilities of emergency management within Victoria. • Potentially result in inconsistent community experience across ESOs.

Stakeholder feedback on the future state options

The discussion paper circulated in January 2022, sought feedback from key stakeholders on the proposed options for CTD. Thematically, feedback included:

- stakeholder support for an enhanced current state model
- clear opposition from some stakeholders to a hybrid health and safety CTD model due to concerns that this model may jeopardise the value of centralised Triple Zero (000) emergency CTD services and the view that it was unnecessary for such an important service to be placed at risk through a diluted model
- for an enhanced CTD model to be effective, a detailed plan must be developed in collaboration with ESOs so that ESO individual service delivery needs are met.

FUTURE STATE CALL-TAKING AND DISPATCH MODEL

The Review recommends that the current aggregated CTD model is retained and enhanced. The Review considers that this model presents the best future state option for Victoria despite some of the inherent challenges. Into the future the need for an enhanced aggregated model is going to become more acute due to the increase in complexity and severity of statewide emergencies that require an immediate multi-agency response. A key advantage of the aggregated environment is that multi-agency emergency responses, such as dealing with serious vehicle collisions, benefit from a coordinated dispatch of services across different ESOs. An enhanced aggregated model will ensure effective allocation of CTD resources within a multi-skilled environment and develop confidence in the end-to-end customer experience, as well as an ability to manage increased demand and surge events.

As noted at the beginning of this chapter, ESTA's core service area will continue to be CTD services. To provide the necessary capacity required to deliver this service with leading-edge capability, ESTA will require funding to ensure stability of its CTD workforce. This will allow ESTA to meet community expectations and protect the health and wellbeing of its CTD staff.

Enhancing the classification of calls for ambulance

In examining the future state of CTD requirements for AV, the Review has taken on board the fact that over recent months the COVID-19 surge in requests for ambulance attendance has required both AV and ESTA to critically examine the efficacy of their relationship. The Review noted that there is significant progress being made to improve their relationship. Both agencies have agreed to work collaboratively within the spirit of the 2017 MoU for Ambulance Dispatch Services and have put in place a fit-for-purpose model, that supports the delivery of CTD within ESTA.

The commitment improving this relationship was recently demonstrated through the collaborative approach taken by AV and ESTA staff in the review of ESTA's AV call taking course in December and January. This collaboration assisted ESTA to reduce the course from seven to five weeks.

Call-taking and dispatch training in the future state

The Review recommends that a comprehensive review of ESTA training standards is independently conducted by an accredited training expert, to ensure they are fit-for-purpose. While acknowledging the views of all stakeholders on this matter, the cost of inadequate, rushed, or ineffective training is borne by both ESTA staff and the community.

A comprehensive review will assist in ensuring staff training in processes and script changes occur outside of staff performing their CTD duties. A comprehensive review should also explore the possibility of re-framing dispatch training requirements so they allow for a wider pool of applicants.

The Review recognises that there would be a benefit in AV having more ongoing input into curriculum development and the delivery of training at ESTA, as it relates to the ambulance environment. This would allow for a more integrated approach to continuous learning, including script changes that eliminates the practice of CTD staff having to learn such changes whilst responding to calls for emergency assistance for the Victorian community.

The Review also recommends a focus on leadership training for CTD supervisors. The supervision responsibilities of CTD supervisors, such as team leaders, are significant. The Review received varied anecdotal evidence about the opportunities provided for leadership training. Formal training in leadership, including mentoring and mental health literacy, is essential. This is why a focus on leadership training is an important feature of the CTD future state.

Workforce management plan

ESTA would benefit from a rostering solution that integrates with a comprehensive workforce management plan for the organisation. This would create greater flexibility in dealing with surge events, and result in more efficient rostering practices during non-peak periods.

ESTA currently utilises a 12-hour standard roster for CTD staff, which creates inefficiencies when compared with a rostering to demand mode, or a blended roster model. A blended roster model, which incorporates multiple shift durations across a 24-hour period, would allow for staffing to accurately mirror demand peaks, further optimising ESTA's delivery of CTD services.

Both ESTA and industrial stakeholders have recognised that the current state does not allow for rostering flexibility that matches demand and have taken temporary steps to solve this problem. A flow on from this will be working collaboratively to develop long-term solutions to these workforce planning challenges.

The Review concludes that enormous benefit for ESTA, industrial stakeholders and CTD staff will need to be realised through amending the current enterprise agreements to allow for a permanent and more expansive implementation of a blended roster model for CTD staff. Transitioning away from the majority of CTD staff working a 12-hour standard roster will also have a significant impact on staff health and wellbeing, and their families. Improvements to workforce management is something that should be progressed, as a project, in collaboration with industrial stakeholders and staff.

Alternative channels

In a future state, DJCS, ESTA and the ESOs must develop a roadmap to achieve greater integration of existing non-emergency assistance channels into ESTA's CAD system. It may be worth considering building a fully-fledged non-emergency health capability for the community in addition to the current NURSE-ON-CALL services, similar to the VicPol PAL service. There may also be opportunities to move reporting of non-emergency VICSES incidents online, which would enable more people to report simultaneously, and allow VICSES personnel to focus on the triage of reports during major storm events. Likewise, the technical integration of VicPol PAL service into CAD is an essential future state requirement for improving efficiency.

The Review also recommends that ESTA, in partnership with ESOs, explore alternative call management practices to deliver efficiencies for large-scale emergencies. The Review identified considerable potential for the use of web-based requests for assistance and two-way interface platforms that callers could use to track progress or receive updates in relation to their requests. The Technology services and Community engagement and experience sections of this report, at Chapter 8 and 11 respectively, also outline how alternative CTD channels are an important and beneficial feature of ESTA's future state. For CTD, having multiple channels that the public can use beyond a telephone call, is likely to reduce call wait time for people requiring urgent emergency assistance and decrease the pressures placed on ESTA call-takers, particularly during times of surge or large-scale events.

Management of surge events

A robust understanding of emergency surge events, and therefore ESTA's required capacity into the future, is needed to inform ESTA's workforce planning to better respond to shifts in service delivery demand. This includes, fully understanding the triggers and parameters of surge events, and the workforce capability required to meet the service delivery requirements of ESOs and the Victorian community. Senior management and CTD staff need to be able to forecast and respond to surge and know their individual contribution is to the overall organisational, and emergency management sector, surge response.

Following organisational understanding of emergency surge events, the associated risks related to surge must be integrated into ESTA's forward planning and inform operational workforce decisions. Noting the ongoing risk for ESOs and the Victorian community in the absence of robust arrangements to adequately meet the service delivery demand during a surge event, addressing this must be a key priority for ESTA.

Once workforce requirements are clearly understood, through a review of previous surge events and additional modelling, ESTA would benefit from working with industrial stakeholders to agree and include an employment agreement provision that has a more adaptable set of rules. This includes flexibility in shift patterns, to be applied for periods where a defined surge event occurs.

Greater national engagement

Although national engagement is obligatory for strategic reasons, it provides a critical operational benefit during surge events when demand for services outstrips Victoria's call taking response capacity. ESTA must pursue a national engagement strategy that facilitates relationships with emergency services from other states and territories based on mutuality, reciprocity, and equality. This will put ESTA in the right position to be able to literally pick up the phone to ask for, and receive, help during surge events.

Enhancing call-taking and dispatch operations

The Review was impressed with the work of CTD staff, who have a very granular understanding of in-field ESO resource capability, availability, and capacity. It is clear however that they would benefit from receiving better information regarding traffic congestion and other hazards that might impact on their decisions, particularly for dispatchers. Dispatchers have recently started receiving more screens at their workstations to assist their situational awareness.

There is an opportunity to explore ESTA call-takers being able to initiate a recorded response to a caller, which informs them that the emergency service is aware of the incident and is responding. For example, this could be applied when multiple calls come through for one emergency (such as during a large storm). The recording could also contain some simple safety messages for the caller. It is accepted that such an initiative would not be applicable in all circumstances, however, it could present a means for dealing with surge in response to some events. Lessons from providing up-front advice, including through recordings, during the COVID-19 pandemic could be examined, as a starting point.

Improved responsiveness to requests for system changes

In a future state, DJCS, in partnership with ESTA and ESOs, must develop and implement guidelines to support the prioritisation of ESO CAD system change requests, underpinned by processes with clear escalation pathways to support timely and transparent delivery of the changes. The implementation of a computer-based system would assist, as it should allow the request to be mediated, agreed and then subjected to a transparent workflow process that works towards incorporating these changes into ESTA SOPs and the staff training environment.

This transparency is particularly critical for ESOs as it provides assurance that their requests, once agreed, are being actioned and prevents simpler requests being constantly delayed due to more complex ones. It should be noted that ESTA has recently commenced work on a knowledge management system, which would effectively provide for such a process. This work needs to continue in the future state and collaborate with CTD training developments, to ensure that all changes are efficiently communicated to CTD staff.

Ensuring a productive call-taking and dispatch working environment

The Review noted that there are mental health projects underway at ESTA, however the mental health of CTD staff was portrayed as a prominent issue throughout the Review. In a future state, the general investment and capability uplift for CTD will be a significant step to improving the mental health of staff, ensuring there are enough CTD staff during periods of both business-as-usual and surge. Staff must have time to take breaks, speak to a team leader or recalibrate after challenging events.

A time-limited review of current mental health support arrangements at ESTA should be undertaken by a person, or persons, with sufficient professional qualifications, with a view to developing a program focused on prevention of mental health injury. Policies that include time out and hot debriefing of critical incidents so that learnings can be identified and harnessed also needs to be a key component of a future state program.

The Review regards ESTA's open plan office environment as the optimal model to ensure an efficient flow of information. It is also seen as important in an aggregated service model that team leaders and supervisors continue to be co-located physically in a central pod to ensure cross agency emergencies are properly dealt with from a resource and coordination perspective. There should be no discernible silos or physical barriers to collaboration between ESTA staff and ESO staff working on the CTD floor.

It is also important that the open plan environment is quiet and as distraction free as possible, including free of clutter. Small things matter in this regard, including replacing chairs when they are not fit-for-purpose and removing boxes from hallways and pedestrian traffic zones. Organisations involved in air traffic control provide some good examples to follow in this regard.

Call-taking and dispatch

RECOMMENDATION 5

ESTA should retain responsibility for CTD under the aggregated model in its current form but include enhancements such as:

a. working collaboratively with AV to ensure the required level of clinical input into the CTD system, including active involvement in ambulance CTD of resources

b. strengthening and embedding a continuous improvement mechanism across CTD

c. developing a roadmap to achieve greater integration of existing non-emergency assistance lines into ESTA's CAD system

d. implementing guidelines to support the prioritisation of ESO CAD system change requests

e. exploring alternative call management practices to deliver efficiencies for large-scale emergencies.

RECOMMENDATION 6

ESTA, in partnership with ESOs, commission an independent review of ESTA training standards, to ensure that they are fit-for-purpose.

RECOMMENDATION 7

The Victorian Government allocate ongoing funding to ESTA so they can employ a sufficient CTD workforce, based on current and future demand for emergency services, to meet community expectations and protect the health and wellbeing of CTD staff.

RECOMMENDATION 8

ESTA must work with DJCS and industrial stakeholders to develop and implement an industrial relations strategy that will address the limitations that prevent flexibility, meet surge demand and support appropriate workforce management.

RECOMMENDATION 9

ESTA should increase its participation and advocacy at the national level, including through NECWG–A/NZ.

RECOMMENDATION 10

ESTA, in partnership with ESOs, must commission a time-limited independent review of the mental health support arrangements to inform a new person-centric wellbeing and support program, focussed on prevention of mental health injury. This review should include the creation of policies that include time out and hot debriefing of critical incidents so that learnings can be identified and harnessed.

7 Managed services

CURRENT STATE MANAGED SERVICES MODEL

Managed services refers to procurement and contract management services for operational communications contracts on behalf of the state. It ensures effective service delivery of the Emergency Alerting System, Metropolitan Mobile Radio, Regional Mobile Radio and Mobile Data Network contracts.

Responsibility for managed services is currently distributed between EMV and ESTA, with EMV procuring the services and ESTA responsible for managing the contracts. Initial contract negotiation with providers and the setting of contract arrangements is managed by EMV, however, it is not within the scope of the Review to examine this capability within EMV. Once the contract is signed with a provider, they are transferred to ESTA for ongoing management. Figure 17 describes the relationship between radio technology providers, EMV, ESTA and ESOs. As the diagram demonstrates, the current model for managed services is complex, with multiple stakeholders engaging in separate dialogue and engagement.

It is acknowledged that there is some operational overlap between managed services, technology services and CTD. For example, managed services, technology services and intelligence services are assets, enablers and optimisers for CTD services. The Review has considered key elements of each category from a capability and service delivery perspective. The Review has not undertaken an assessment of each individual system or contract.

KEY CHALLENGES WITH THE CURRENT MANAGED SERVICES CAPABILITY

The Review was impressed by the capability within ESTA for contract management but identified multiple challenges. Consultation with key stakeholders, including deep dive analysis, revealed that the current managed services model needs to be improved. Key concerns and issues include:

- shared responsibility for managed services delivery
- lack of process and people to meet ESO expectations
- the radio platform and staff expertise.

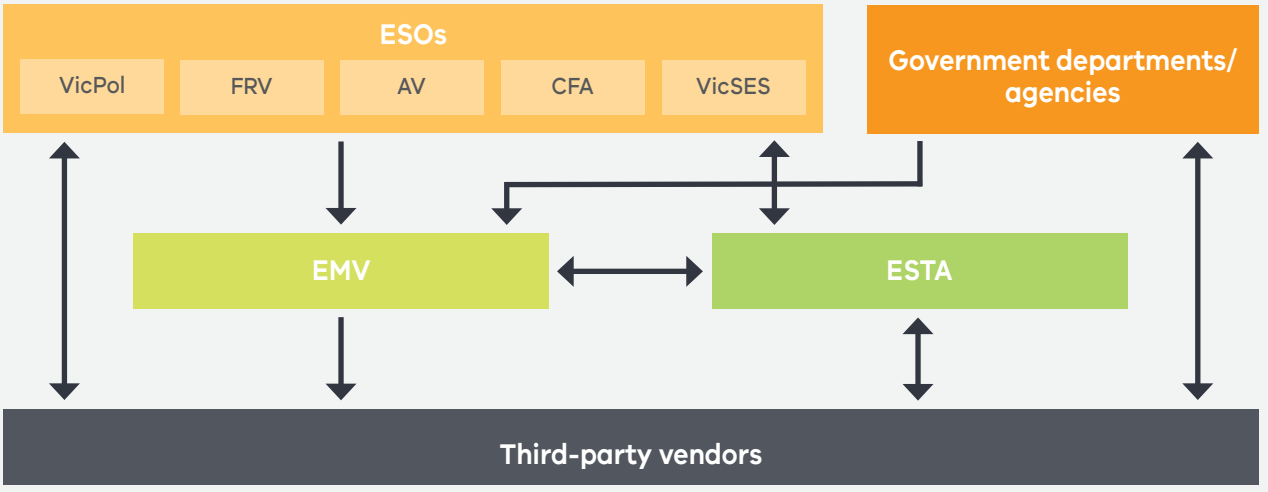
Shared responsibility for managed services delivery

The current model with EMV and ESTA splitting responsibility for managed services delivery results in several issues and has caused confusion for stakeholders in the sector. It has also resulted in an overall lack of customer advocacy on behalf of organisations who are the end users of the services, leading to a sense that their own individual needs and requirements are often misunderstood or overlooked.

Throughout the Review, ESOs and ESTA have expressed that the initial contract negotiations with managed services providers have not effectively catered for their needs. As ESTA is not involved in the procurement process, they have limited input into contract requirements and the application of learnings from previous contracts are not often included in future ones. In addition, ESTA has expressed frustration that they have little room to move with suppliers who operate within the parameters of the contracts.

As a result, many stakeholders indicated a need to bring together the contract negotiation role that is currently performed by EMV and the contract management function that is currently performed by ESTA, to ensure the needs of end users are considered from the first point of contract negotiation and continued through the contract management phase.

Figure 17: Current operational structure of managed services.



Emergency service organisations (ESOs)

ESOs provide their needs and requirements for managed services to EMV as part of contract procurement and negotiation. They also then engage with ESTA once the contract commences as part of contract management, reporting any issues they have with the service, and will also often engage EMV as part of this. They will also go directly to vendors where they believe they can get a faster response, or need further information.

Other government departments (i.e. DELWP or Corrections Victoria)

Other government departments and agencies are also increasingly becoming reliant on managed services, such as DELWP and Corrections Victoria. They too will engage in the same way as other ESOs, often reporting similar challenges. It is likely that more organisations will utilise this service in the future, and as such this is an emerging group for whom the future of managed services will be vitally important.

Emergency Management Victoria (EMV)

EMV are responsible for engaging with ESOs to understand their requirements as part of negotiating contracts with vendors. They then handover the management of the contract to ESTA, but will likely continue to be engaged by ESOs, other departments and vendors throughout the lifecycle of the contract. In their role discovering ESO needs, EMV also have some responsibility for customer advocacy.

ESTA

ESTA are responsible for the contract management of managed services, receiving the agreed contracts with vendors from EMV. They will engage directly with all stakeholders, attempting to resolve issues on behalf or ESOs and other government departments with the vendor.

Third Party Vendors (i.e. Telstra and Motorola)

Vendors are the group who actually provide the technical hardware, software and capability as part of managed services. They will engage predominantly with ESTA when there are issues, but will also be approached by ESOs through more informal channels. EMV will also negotiate with vendors as part of contract procurement, and throughout the lifecycle of the contract where required.

Lack of process and people to meet the expectations of emergency service organisations

ESTA has strong capability in contract management from a service level agreement (SLA) governance and management perspective, however a key area of concern identified by the Review was the lack of processes and people available to meet the needs of ESOs. For example, responsibility for issue tracking, escalation and problem management is unclear, with limited process standardisation to support end-users in the resolution of incidents. Whilst monthly supplier performance reporting of SLAs and key performance indicators are reviewed in service management meetings, there is limited ability to interrogate the data, meaning that incidents are mainly managed in isolation.

Due to process limitations, ESOs expressed dissatisfaction with ESTA's overall contract management, whilst ESTA said their ability to manage contracts was tied to the effectiveness of the contracts themselves, as detailed above. This disconnect has had a dampening effect on the overall relationship between ESTA and ESOs, with ESOs also expressing frustration that they do not have the opportunity for input into negotiations on operational issues with the relevant vendors as part of contract management.

ESOs who depend heavily on effective radio communications, highlighted a concern that there are no formal avenues for them to engage with ESTA on remedying operational issues that arise from managed services. For example, situational awareness over radio to in-field firefighting units is critical and lifesaving. Despite the best efforts of all involved, radio 'black spots' still exist due to the wide variations of geographic terrain that ESOs are required to operate in. Whilst ESTA has been able to negotiate some solutions with third-party vendors, all ESOs feel that they should have an opportunity to communicate their operational concerns to infrastructure providers, rather than being wholly reliant on ESTA to negotiate solutions on their behalf.

The radio platform and staff expertise

ESTA communicates with ESOs through a common radio platform known as the P25 Victorian Radio Network. This platform, which includes radios, towers and associated infrastructure has been in place for many years. Radios are often considered a 'yesterday' technology, with global directions focusing on more modern data delivery options, however, radios are still critical in emergency management. Radios are always the vital backup option when modern data solutions, which are increasingly being used by ESOs, fail.

For example, metropolitan and regional firefighting and rescue, whilst conducive to developments of in-field data delivery, are very reliant on radio communications to support their work in dealing with structural fires. There is a view that current radio technology is not meeting the modern requirements of firefighting and rescue activity.

The Review considered the efficacy of the current communications infrastructure, including in-field radio and data communication services. The Review found that a significant capability uplift is required to modernise Victoria's communications infrastructure, including in-field radio and data communication services, to address current challenges. The Review acknowledges that work has already commenced and that a comprehensive Victorian Radio Network Service Delivery Model Review is being conducted by EMV, as a first step in this journey of modernisation.

While it is likely that radios will continue to rely on the P25 Victorian Radio Network for at least the next decade, the work being led by EMV, in partnership with ESOs, captures, and is actively responding to the challenges identified by the Review. The overarching principles, scope and approach being applied in the delivery of the Victorian Radio Network Service Delivery Model Review, are robust and appropriate, and the Review is comfortable that this work supports the outcomes sought within this report.

The Review heard that a concern for managed services is the decline in the number of people that have the required expertise in radio technologies. ESTA's pool of expertise has been diminishing, with staffing numbers in managed services declining over recent years. To address this issue, further investment by the government will be important to increase the technical capability and capacity.

FUTURE STATE MANAGED SERVICES MODEL OPTIONS

To address the above key concerns and issues, several potential managed services model options were contemplated for the future state to ensure the most appropriate is recommended.

Figure 18 shows the managed services scenarios considered as part of a future state model. Only scenarios that meet the desirability, feasibility and viability criteria are considered potential options for a future state model (depicted in green). Figure 19 shows high-level pros and cons for each scenario.

Figure 18: Scenario analysis – managed services.

Services	Shared managed services			End-to-end managed services	
	Current state	Enhanced current state including customer advocacy	New roles and responsibilities across the sector	ESTA	Another agency/ department
	The current Managed Services arrangement remains in place, with EMV procuring, ESTA managing contracts and no customer advocacy.	ESTA continues to perform this service with changes to structures and additional investment.	Keep the separation between procurement, contract management and advocacy, but change the organisations responsible.	ESTA become responsible for the end-to-end control of managed services – procuring the contract, managing the contract and completing advocacy.	Another body/ agency takes on the end-to-end control of managed services – procuring the contract, managing the contract and completing advocacy.
	x Desirable	x Desirable	x Desirable	✓ Desirable	✓ Desirable
	✓ Feasible	✓ Feasible	✓ Feasible	✓ Feasible	✓ Feasible
	x Viable	✓ Viable	x Viable	✓ Viable	✓ Viable

Figure 19: Pros and cons of scenarios for managed services model scenarios.

Shared managed services	Description	Key pros	Key cons
Current state	The current managed services arrangement remains in place, with EMV procuring, ESTA managing contracts and no customer advocacy.	• No change management impact or additional funding required.	• ESOs have indicated that they do not believe that this scenario will ever meet their needs and deliver the services that they require effectively. • There is a lack of accountability for who is responsible for the overall delivery of managed services, with none of the parties involved satisfied with the current arrangement.
Enhanced current state including customer advocacy	The current service is enhanced, so that EMV procure, with ESTA managing and performing customer advocacy.	• ESOs provided with a greater voice and are able to clearly raise issues, which are escalated and resolved appropriately. • Multiple parties involved each with clear accountabilities and responsibilities can help to reduce the risk involved in managed services.	• Question as to whether this will actually resolve some of the underlying issues about sharing responsibility, and whether ESOs would support this model given the history of this arrangement not working well. • It appears that ESTA may not have the capability required to truly perform the customer advocacy role and meet the needs of ESOs.
New roles and responsibilities across the sector	Keep the separation between procurement, contract management and advocacy, but change the organisations responsible.	• Complete reset should help to immediately improve ESO relations and satisfaction with the service. • ESTA allowed to focus more on core role of CTD. • The service can be managed by organisations who are specialist in this space, and leverage existing capabilities across Victorian Government.	• Does not resolve the challenge that exists in having each of these functions owned by separate entities. • Unclear whether capabilities exist in other areas of the public sector, or whether there would be any appetite from other organisations or from ESOs to support such a scenario.
End-to-end managed services	**Description**	**Key pros**	**Key cons**
ESTA	ESTA becomes responsible for the end-to-end control of managed services – procuring the contract, managing the contract and completing advocacy.	• All aspects of managed services in one place means a single point of accountability and responsibility for all aspects of the service. • ESTA are then able to fully act on behalf of ESOs, using their advocacy to inform contract negotiations and then hold vendors accountable.	• It appears that ESTA may not have the capabilities required to complete all aspects of end-to-end managed services i.e. customer advocacy. • Question as to whether other stakeholders would accept this approach, and whether the relationship and ESTA's reputation with ESOs will significantly limit the success of this scenario.
Another agency/ department	Another body/agency takes on the end-to-end control of managed services – procuring the contract, managing the contract and completing advocacy.	• All aspects of managed services in one place means a single point of accountability and responsibility for all aspects of the service. • A new organisation taking over the service is likely to improve relations with ESOs feeling that a fresh start gives them a better service. • ESTA allowed to focus more on core role of CTD.	• Unclear whether there are other organisations who would have the capabilities (and/or capacity) to take over this role.

Feedback from key stakeholders on managed services model options

The discussion paper circulated in January 2022, sought feedback from key stakeholders on the proposed options for managed services. Thematically, feedback included:

- all stakeholders supported the option that end-to-end managed services rest with one organisation
- stakeholders were equally divided between ESTA managing the end-to-end delivery of managed services and EMV (or another organisation) managing the end-to-end delivery of managed services
- whether managed services stays with or moves out of ESTA, a significant resource uplift will be crucial alongside maintaining a level of stability when changes occur.

FUTURE STATE MANAGED SERVICES MODEL

In a future state it is critical that one entity is accountable for the end-to-end delivery of managed services and that there is appropriate customer advocacy on behalf of end users. All aspects of managed services in one place means a single point of accountability and responsibility for all aspects of the service. It will also assist with the establishment of strong partnerships with end users and third-party vendors to deliver better service delivery outcomes.

The organisation responsible for managed services in the future must be sufficiently resourced and this requires additional funding to ensure a sustainable level of service and capability. The organisation will need to ensure that all vendors are equally accountable, there is a meaningful forum to address the views of end users and that there is consistent policy to embed these practices. This change also allows for increased synergy between strategic contract negotiation, design, execution and management.

To address the key concerns surrounding ESTA's current managed services model and having considered the views expressed by key stakeholders, the Review noted that this future state combined capability could exist at either EMV or ESTA due to the service both organisations currently offer. This capability in either location requires investment.

The Review considers that end-to-end managed services is the best model in the future state. In reviewing the evidence to hand, the Review has identified that EMV would be the best option to deliver this function, noting it would:

- provide a fresh start and create significant improvement in customer experience for end users
- assist in keeping ESTA focused on their core service of CTD
- allow for user needs to be better understood through EMV harnessing years of experience gathering requirements as part of the procurement process
- improve the partnership between ESTA and ESOs for their core CTD functions by strengthening channels of communication
- ensure integration between managed services and ICT capability, which already exists within EMV
- ensure integration between managed services and outcomes of the Victorian Radio Network Service Delivery Model Review being conducted by EMV.

A decision as to where managed services should sit in the future state must also take into account the new governance structure and other changes to the delivery of key services. This will be an important consideration for DJCS and ESTA to consider as part of implementation.

8 Technology services

ESTA's technology services provide enabling technology to support front office services delivered to the Victorian Community and ESOs. Previous efforts to deliver on stakeholder expectations have been constrained by legacy technology platforms, such as the CAD system, and a lack of integration and channel options.

ESTA has recently carried out a refresh of their technology leadership, which has brought in new capabilities that are more forward looking and aimed at improving the provision of technology services for ESTA. In addition, an upgrade of ESTA's core CAD system has improved this capability slightly, however longer term and systemic issues remain.

KEY CHALLENGES WITH THE CURRENT TECHNOLOGY SERVICES CAPABILITY

Throughout the Review, stakeholders expressed significant concern regarding the capability of ESTA's current technology services as confirmed through the capability maturity assessment (Figure 3). This assessment found that ESTA's technology services are basic and meet only the minimum requirements. Some of the key concerns are related to not meeting community expectations and its legacy technology platforms, like the CAD system. As ESOs rely mostly on ESTA's CAD system to dispatch and manage responses, limited and poor functionality is not acceptable.

Technology services do not meet community expectations

In a society where the community is provided instant consumer services almost 24/7 in metropolitan Melbourne, community expectations of optimum service are now being applied to public services. Other service providers offer a range of channels such as online services, text, social media, and mobile applications. The current single-channel approach, of telephoning Triple Zero (000), is resource intensive and no longer aligned with the communities' expectations as a customer of a government service.

A single-channel approach does not meet customer needs across a range of circumstances when the community may require assistance from an emergency service. ESTA's own research shows that this expectation is growing each year, and new channels are now a must for the organisation.

In addition, the community is increasingly demanding technologies that provide feedback to them as their expectations around receiving a comprehensive service offering evolves. For example, implementing technologies that allow the caller to monitor the progress of non-emergency incidents, such as requiring assistance from the VICSES following a storm event. ESTA does not have this type of capability in the current state through their technology platforms. Therefore, there is a need for introduction of newer digital channels that are integrated across services and ESOs to deliver a more aligned and comprehensive service to the community.

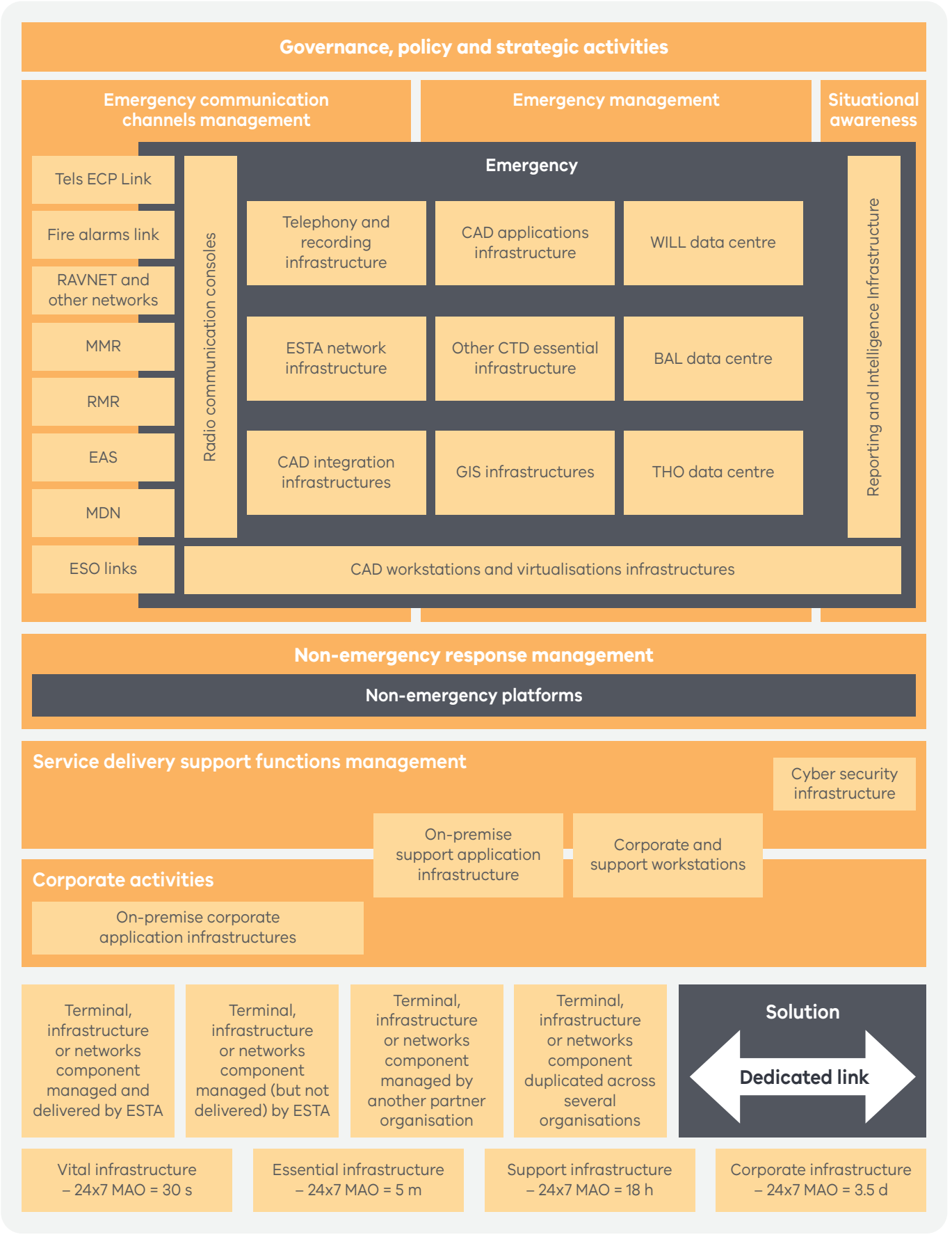
Legacy technology platforms

As explained in Chapter 6, CTD staff use the CAD system to receive calls and dispatch ESO resources. ESTA have found it challenging over time to adapt this system to allow for the growing needs of the organisation as well as the bespoke needs of each ESO it provides CTD services to. The current CAD system has a monolithic architecture, and the core platform is hosted on-premises at ESTA SECCs, which hampers ESTA's ability to transition to a modern CAD system.

The CAD system integrates with other technologies such as pagers, mobile data terminals, applications, and radio telecommunications to enable ESOs to respond to emergencies effectively. The total reach of ESTA's emergency communications mission critical footprint, including the technology infrastructure that supports the CAD system, is captured in Figure 20.

Other key components of the technology platforms that are currently being invested in include an integration layer and cloud migration program, which are essential to meet the future needs of the community and ESOs. The integration layer is a key dependency to connect new digital channels with back-end systems such as CAD. In addition, the investment in a cloud migration program will support modernisation of the CAD system that is currently on-premises.

Figure 20: ESTA's emergency communications mission critical footprint.



Minimal focus and investment in key technology enablers such as workforce

ESTA's current matrixed organisational structure does not align resources and investments to key service outcomes and inhibits agile ways of working. In addition, the workforce is very reactive, trying to keep up with high workloads and competing demands. As the organisation moves towards building contemporary and modern technology infrastructure there is a need to invest in the workforce, however, there is currently an absence of a strategic workforce plan in the technology space.

KEY CONSIDERATIONS FOR THE FUTURE STATE

The future of the Computer Aided Dispatch system

As previously raised in this report, the Review identified that the current CAD system will not meet the future needs of ESTA staff, ESOs and the community. ESTA is currently transitioning to a new CAD solution, which includes shifting their hosting capabilities into the cloud to reduce reliance on the current platform and enable an easier transition to a more modern application architecture.

Another key aspect of modernising the CAD system is investment in an integration layer. The Review notes that ESTA is currently progressing activities to develop an integration layer. This will enable ESTA to reduce its reliance on legacy infrastructure and applications, improve its resilience, responsiveness and overall capabilities. For instance, the CAD system does not meet the needs of dispatchers in the current geospatial solution. Dispatchers often have a third screen dedicated to Google Maps so they can more accurately direct first responders. It is possible, through the integration layer, to make mapping open source, allowing for multiple map layers to be added and updated continuously.

Figure 21 demonstrates a proposed transformation for ESTA from an on-premises, 'plug-in' CAD system to a fully-integrated CAD system hosted in a cloud platform.

Integrated digital channels

The future for emergency communications requires omni-channel capability and a real-time flow of information to support fast and effective decision making. This includes new digital channels alongside existing voice call-taking to enable the community to request assistance and provide situational awareness on their terms, through any device, whenever it is required. Additional digital data sources and ICT functionality could include text and translation services, photos and video sharing, social media platforms and applications.

Cyber security

Cyber security and capability is a priority for all government departments and entities. It is particularly vital for ESTA if it is to fulfil its role as Victoria's emergency services communications gateway in an enhanced future state. Cyber security processes and procedures need to reach a defensible level must be considered in future strategic planning and investment.

FUTURE STATE TECHNOLOGY SERVICES MODEL OPTIONS

The Review considered whether technology services could be enhanced if they were disaggregated across three phases of plan, build and run, as opposed to being managed end-to-end by ESTA, as is done in the current state.

Figure 22 is an overview of the potential scenarios for recommending a future technology services option for ESTA. Only scenarios that meet the desirability, feasibility and viability criteria are considered potential options for a future state model (depicted in green). High-level pros and cons for each scenario across plan, build and run are at Figures 23, 24 and 25.

Figure 21: Future of the CAD system.

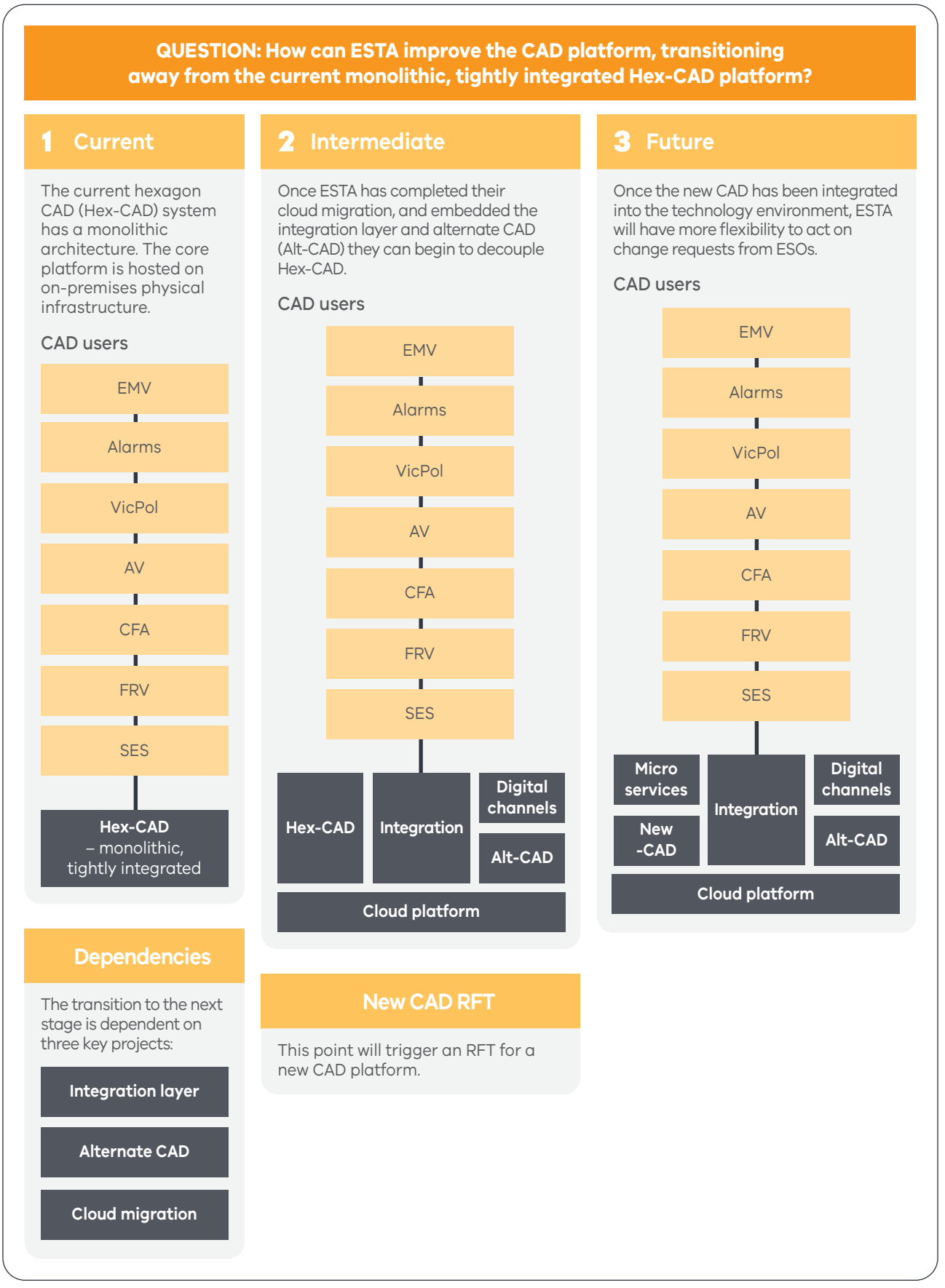


Figure 22: Scenario analysis – technology services.

Technology services	Plan		Build		Run	
	Desirable, feasible, viable	Rationale	Desirable, feasible, viable	Rationale	Desirable, feasible, viable	Rationale
Current state	x Desirable ✓ Feasible x Viable	Technology has existing strategic plans, roadmaps and operating model changes that will strengthen the organisation (**feasible**), but might not be completed given the current workforce constraints. This will mean that ESTA might not meet ESO demands in a timely manner (**desirable**), jeopardising the long-term sustainability of this scenario (**viable**).	x Desirable ✓ Feasible x Viable	Under the current arrangement, technology is not able to effectively draw value from their vendors, thereby not meeting the needs of the ESOs (**desirable**). Their current digital roadmap looks to solve these issues in the future (**feasible**), but without additional investment the long-term sustainability is in question (**viable**).	x Desirable ✓ Feasible x Viable	The technology roadmap for plan can easily be leveraged to strengthen the organisation (**feasible**). However, it is questionable if the organisation has the capacity and skills needed to support the capabilities being developed (**desirable**), thereby jeopardising this scenario's long-term viability (**viable**).
Enhanced current state	✓ Desirable ✓ Feasible ✓ Viable	Providing more resources will alleviate the current workforce constraints, allowing ESTA to deliver on their existing strategic plans, roadmaps and operating model to better serve the ESOs (**desirable**, **feasible**). This investment will strengthen existing capabilities and provide new roles that are needed to develop its service offering and improve its baseline maturity in key areas (**viable**).	✓ Desirable ✓ Feasible x Viable	Executing on technology's roadmap with additional funding for build will allow ESTA to be better positioned to meet the demands on ESOs (**desirable**, **feasible**). However, due to the emerging shortages in the labour market for technical build skills, particularly for the niche skill sets required to work at ESTA, securing the workforce at ESTA might not be viable in the short (and hence the long) term (**viable**).	✓ Desirable ✓ Feasible x Viable	With additional resources and leveraging the existing digital roadmap (**feasible**), ESTA will be able to effectively run the technology that addresses the right problems (**desirable**). However, the future viability of this scenario is uncertain, given that a lot of investment is being provided to the whole-of-Victorian Government platform and there may no longer be any appetite to fund a service that can be provided by another entity (**viable**).
Hybrid/ strategic partnerships	✓ Desirable x Feasible ✓ Viable	This scenario reflects that ESTA already works within the broader emergency management services ecosystem and that strategic partnerships are essential to deliver on ESO needs (**desirable**). Understanding leading practice from a strategic partner will strengthen ESTA's position to plan without needing to build new capability (**feasible**), and is a solution that is viable into the future (**viable**).	✓ Desirable ✓ Feasible ✓ Viable	Leveraging the build capability of a strategic partner, as well as engaging with vendors, will free up resources for ESTA to focus on ESO needs (**desirable**). This will require no new capability build (**feasible**), but still strengthen ESTA's position by leveraging partner assets in a sustainable way (**viable**).	✓ Desirable ✓ Feasible ✓ Viable	Leveraging partner technology will still allow ESTA to address the right problems (**desirable**) and avoid resource duplication (**feasible**, if partnering with the Victorian Government), while also giving them influence over the long-term sustainability of run (**viable**). May require additional investment, but will strengthen the organisation (**feasible**).

Figure 22: Scenario analysis – technology services (continued).

Technology services	Plan		Build		Run	
	Desirable, feasible, viable	Rationale	Desirable, feasible, viable	Rationale	Desirable, feasible, viable	Rationale
Third-party provider	✓ Desirable **x** Feasible **x** Viable	This scenario empowers ESOs to build relationships directly with strategic partners and the vendor community to meet their needs (**desirable**), without having ESTA as the middleman. However, implementing this could be a time consuming process as it doesn't capture ESTA's existing relationships (**feasible**), and might not be a viable solution into the future, as it simply creates ESTA lite without addressing the core issues of plan (**viable**).	✓ Desirable ✓ Feasible ✓ Viable	Completely shifting the build function from ESTA to a third party will allow ESTA to focus on new technologies and projects that bring value to ESTA (**desirable**). This will reduce ESTA's reliance on hiring SMEs in an already tight labour market (**feasible**), a viable solution now and into the future (**viable**).	✓ Desirable ✓ Feasible ✓ Viable	Outsourcing commodity activities to a third party is considered common practice (**viable**), will give ESTA more capacity to focus on solving ESO pain points (**desirable**, **feasible**). This solution requires no new capability uplift and will leverage the existing infrastructure of the third party (**feasible**).

Figure 23: Plan – future state pros and cons.

1 Enhanced current status

Technology delivers against the current roadmap of initiatives with improvements to the operating model requiring additional investment and resources aligned to key services.

Pros

- Investing in roles such as business engagement, BA and CX/UX will increase voice-of-customer insights for ESTA and EMV.
- Investment in workforce strategic planning will improve employee cross-skilling and improve an outcomes oriented culture.
- Investment in category owners for managing strategic vendors will enable ESTA to derive more value from new and existing contracts.
- ESTA retains the large amount of work done within the last six months to fundamentally change the operating model to deliver on ESO needs.
- The existing strategic plans and roadmaps can be accelerated to meet the needs of ESOs with minimal disruption to ESTA's operations.
- Aligning resources to product lines will improve agility and service quality in key areas.
- Lower attrition of key managers/SMEs as they are now empowered to deliver valued outcomes.

Cons

- Emphasis focuses on outputs for ESTAs contribution to emergency services rather than adopting a holistic approach to emergency management.
- Investing in more resources (money/people) does not necessarily translate into value generated.

2 Hybrid/strategic partnerships

Technology partners with other entities (including EMV, ESOs and/or technology vendors) for the development of a technology strategy and roadmap focused on emergency management and response.

Pros

- Reflects an understanding that the role of ESTA and its ability to contribute to emergency management outcomes is contingent on effective partnership with other entities, joint investment and collaboration to deliver.
- Partnering benefits include leveraging external thought leadership and the comparative advantage of other entities.
- ESTA still maintains its influence in the emergency management sector as a key part in the value chain.
- This approach is in line with whole-of-government thinking as it emphasises partnerships with key stakeholder groups.
- Provides ESTA with an opportunity to jumpstart their relationships across the sector with clearly defined roles and responsibilities.
- Embeds strategic partners directly into ESTA product lines, giving product owners a direct line of communication with the end user.

Cons

- Rigid organisational structures and competing priorities may reduce decision-making agility with unclear accountability for decision rights and approval processes.
- Requires significant changes to governance, operating models and funding across the emergency management ecosystem.

Figure 24: Build – future state pros and cons.

1 Hybrid/strategic partnerships

Development efforts leverage strategic partnership arrangements for development, testing and deployment, blending internal and external resources with central technology functions and key services.

Pros

- Leveraging comparative advantages of partners may reduce costs and improve capabilities while enabling ESTA to focus on its strengths.
- The combined buying power of ESTA and a strategic partner will provide synergistic advantages to both organisations.
- ESTA is still able to have influence over the development of services without needing to build the required capabilities in-house.
- Aligning strategic partners to ESTA's product lines will ensure that product owners have easier access to the required capabilities.
- The risks ESTA have can be shared with strategic partner(s), creating more accountability across the sector.

Cons

- ESTA depends on the stability of other entities for critical services.
- May be difficult to keep to development objectives over time if ESTA and its strategic partner(s) do not have aligned priorities.
- If roles and responsibilities with strategic partner(s) aren't articulated, then it runs the risk of further fracturing relationships.

2 Third-party provider

Technology completely outsources build activities to a third-party provider.

Pros

- Reduces reliance on development, testing and release capabilities internally.
- Enables a transition of focus towards innovation, strategic planning and execution management/ oversight.
- Contingent outsourced resources are more suitable where demand is inconsistent and more project orientated.
- ESTA will reduce their reliance on hiring SMEs in an already tight labour market.
- Development time of key services can be shortened as the third party does not need to balance the competing priorities that ESTA handles.
- The third-party's project management capabilities are directly aligned to development without ESTA needing to acquire or build specialised project management capabilities in-house.

Cons

- The provider might lack the flexibility to quickly adapt to ESTA's and the ESOs' needs. The provider will require time to understand the needs, processes, technology landscape if it is to build/configure successfully.
- As ESTA delivers critical services to the community, there might not be any appetite to completely relinquish input into the build phase.
- Could create a siloed structure for technology if the interface between plan–build and build–run isn't structured correctly.

Figure 25: Run – future state pros and cons.

1 Hybrid/strategic partnerships

Technology leverages outsourced partners for commodity based activities such as service desk, server patching and infrastructure support while investing in dedicated resources for critical infrastructure and domain specific expertise.

Pros

- Leveraging existing Government assets (e.g. whole-of-Victorian Government platform) to run ESTA's services can eliminate waste and duplication.
- Partnering with multiple organisations could inform ESTA of best practice and identify future improvement opportunities in the market.
- Delivered resilience through a web of microservices (including channels, compute, networks and platforms) rather than focusing to reduce single points of failure.
- As a key part in the value chain, ESTA retains their influence over the enhancements and maintenance of critical services.
- An accelerated cloud transition through a strategic partnership will allow for product lines to no longer be limited by physical infrastructure.

Cons

- Leveraging a strategic partner's existing assets as their primary infrastructure (e.g. Vic Gov Platform) might not provide the resilience required by ESTA, or allow as much input into design decisions.
- Adding additional strategic partners into Victoria's emergency management sector may add unnecessary complexity.

2 Third-party provider

Technology completely outsources run activities to a third-party provider.

Pros

- Technology can focus their resources and time on planning and delivering on projects that bring value to ESTA.
- Uses already existing infrastructure without the need for ESTA to build new capability to manage it.
- Provides a wider pool of resources to recruit the required capabilities from.
- Able to rapidly scale and support ESTA's technology services where necessary.
- Prevents resources dedicated to run from being pulled into other parts of ESTA.
- Can leverage the third party's vendor management capabilities, rather than enhancing that capability within ESTA.

Cons

- As ESTA manage critical services, there might not be an appetite to release full control of their run function.
- Long-term viability of this option could be called into question if the strategic partner suddenly discontinues their support without ESTA having a backup plan.
- Managing any vital on-premises infrastructure may be challenging, particularly for the rural Ballarat centre.

Stakeholder feedback on the future state plan, build and run options

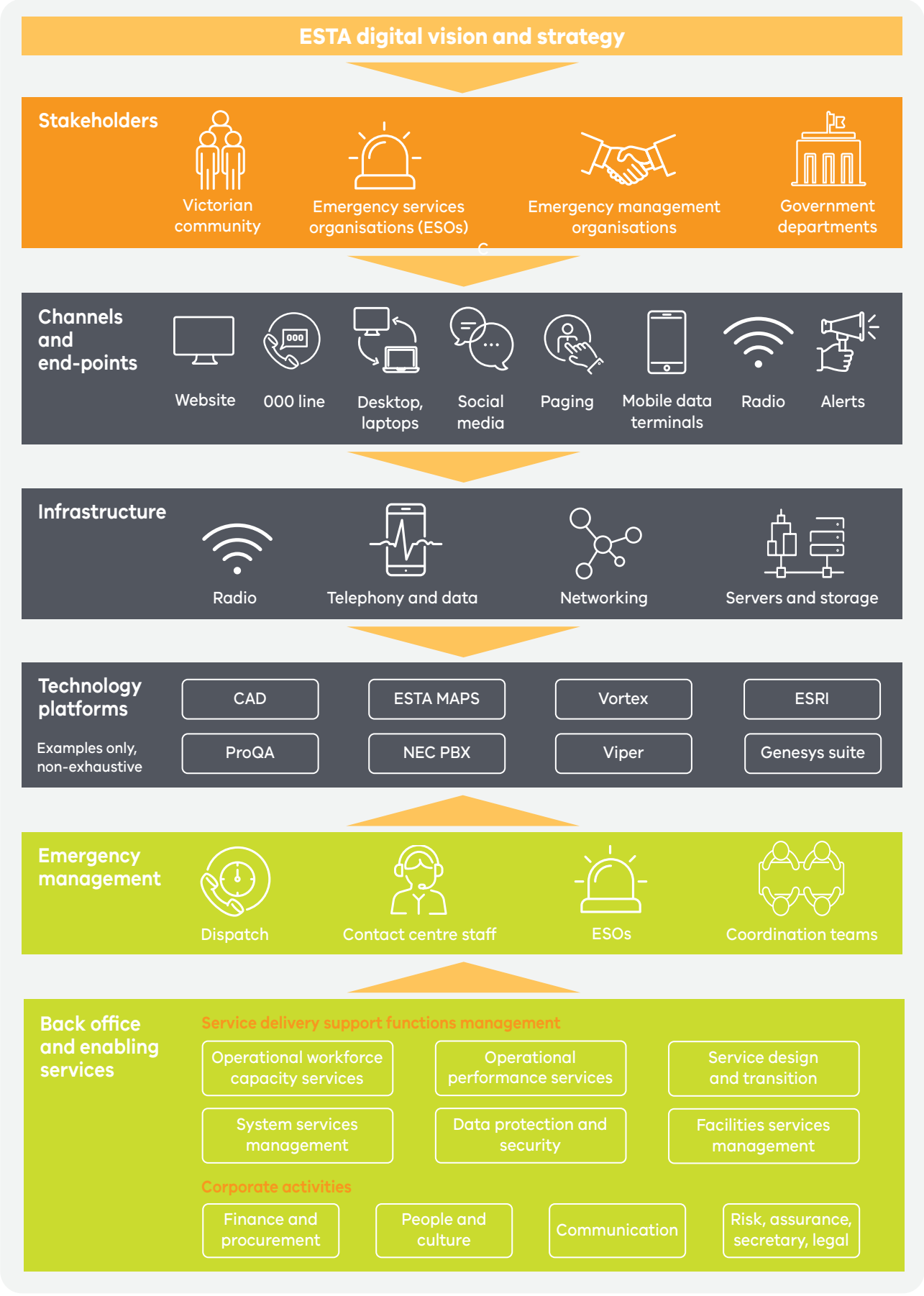
The January 2022 discussion paper sought feedback from key stakeholders on the proposed options for technology services. Thematically, feedback included:

- technology services must be recognised as the critical enabler to the delivery of ESTA's CTD service (existing technology platforms have hampered innovation at ESTA and within the sector)
- the modernisation of existing platforms requires a general technology capability uplift, and an enhanced integration layer should be a priority to ensure the safe, secure and seamless flow of information
- there must be full integration between ESTA and ESO current and future technology services
- support is required for the end-to-end management of technology services through a single organisation or government department
- there is a need for a whole-of-sector approach to investment for technology services
- there was no support from stakeholders for a model that included a permanent role for an external vendor as this would:
  - reduce the ability to influence the design, impacting on functionality
  - reduce the ability of ESOs and ESTA to advocate or negotiate robustly with vendors
  - potential slow response time for upgrades and changes
  - establish strict service delivery contracts producing legal hurdles that may hinder emergency responses
  - reduce engagement with ESOs during procurement, which may result in their needs, priorities and non-negotiables being overlooked.
- significant investment and capability uplift is required regardless of which plan, build, and run option is selected.

FUTURE STATE TECHNOLOGY SERVICES MODEL

Significant inroads have been made in the development of ESTA's *Digital Strategy and Operating Model* that includes roadmaps and initiatives as shown in Figure 26. ICT initiatives are aligned across multiple roadmaps illustrating how the organisation plans to achieve its target end-state.

Figure 26: ESTA digital vision and strategy.

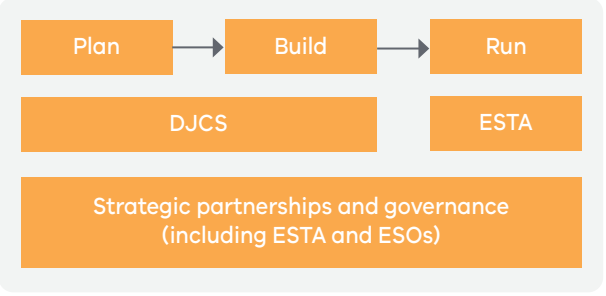


Evolving the operating model to support agile ways of working, community focused and modern operating practices requires a shift towards grouping technology, data, processes, people and budgets to a set of key products and/or services.

The Review identifies an opportunity for the plan and build functions of technology services to move from ESTA to DJCS. Regardless of where the plan and build functions sit, ESTA must retain the technology service and capability necessary to support their day-to-day operations, that is the run component of the function. This is primarily to ensure that ESTA to continue to have control of the technology that supports its daily business activities, and most importantly the CAD system, on a 24/7 basis. A decision as to where technology services should sit in the future state must also take into account the new governance structure and other changes to the delivery of key services. This will be an important for DJCS and ESTA to consider as part of implementation.

Moving the plan and build requirements from ESTA to DJCS (Figure 27) will ensure technology services that enhance ESTA's ability to operate strategically and more effectively take into account the medium to long-term challenges facing the sector when advocating for investment. In addition, DJCS is better positioned to embed a whole-of-government perspective of technology services and enable a transition towards innovation, strategic planning and management oversight. This will allow ESTA to focus on delivering a high-quality CTD service, which includes enabling technology. In recommending that these functions transition to DJCS it is acknowledged that investment in a capability uplift will be required for DJCS to have the best chance of success in the future.

Figure 27: Future of technology services.



To enable the future state to be effective, the Review recommends a sector-wide technology strategy be established to provide a pathway for this capability. In addition to determining where technology functions should sit across DJCS and ESTA, the plan should have strategic alignment with the data strategies of all ESOs. This strategic work may benefit from the involvement of an external technology partner to bring in the necessary expertise. The strategy should provide a clear pathway forward that takes into consideration:

- future compatibility with national partners
- compatibility with emerging online reporting technologies
- flexibility to adapt to CALD community needs
- usability for CTD staff.

It will be essential that the sector-wide technology strategy has the support of ESOs through a new ICT strategic governance mechanism to present a cogent and persuasive business case to government for technology investment.

Technology services

RECOMMENDATION 13

DJCS and ESTA develop and implement a strategic roadmap for the future delivery of technology services, ensuring alignment with whole-of-sector ICT strategic planning and investment.

RECOMMENDATION 14

The Victorian Government allocate funding to support a capability uplift, through an increase in FTE, to strengthen emergency management technology services.

9 Intelligence services

CURRENT STATE INTELLIGENCE SERVICES MODEL

Intelligence services refers to ESTA's provision of data analysis, data science, business reporting, data integration and data storage services for ESTA's internal operations and/or to ESOs, other government departments, IGEM or the Victorian community.

ESTA has collected significant de-identified CTD data relating to call volumes, times, and locations, along with other associated data sets over many years. ESTA currently use dashboards, reports and data science methods to provide intelligence to inform aspects of forecasting and performance measurement. The ability to provide real-time data and insights enables and empowers the sector and supports community outcomes.

ESTA's current data strategy sets out a three-phased set of migration initiatives and a transition toward cloud-based platforms. Leveraging platforms such as Azure and Data lakes, will enable a focus on improving data collection and analytical maturity to enhance intelligence products. At present ESOs rely on multiple data sets, including raw data from ESTA, and delivery of ESTA's data strategy will significantly improve the intelligence available.

KEY CHALLENGES WITH THE CURRENT INTELLIGENCE SERVICES CAPABILITY

Consultation with key stakeholders revealed that the current intelligence service model can be improved in a future state. Key concerns and issues identified include:

- limited information sharing and alignment to broader strategic direction
- data is siloed and difficult to access
- intelligence services are not meeting stakeholder expectations.

Limited information sharing and alignment to broader strategic direction

Overall, the Review found there is limited engagement with and alignment across activities to improve intelligence and data capture across the Victorian public sector. The Review found that ESOs were often unaware of the type, amount and span of data available from ESTA and therefore unaware of the future capability that may exist. As a result, the Review identified that ESOs are only accessing a small component of the data captured by ESTA.

While noting these limitations, when accessing the capability of ESTA in this area, the Review found that ESTA possesses advanced data and analytics capabilities but does not fully utilise these intelligence sets in operational decision making and forward planning. This provides a strong foundation for the future state, allowing ESTA to focus on the presentation of intelligence to support strategic and operational decision making.

Data is siloed and difficult to access

Intelligence and data services are siloed in ESTA with integration challenges across the organisation. Data is captured but is not easily accessible to CTD staff and ESOs, and some system integration requires manual intervention. For example, data integration with the CAD system can be a slow and an often manual process, which is not efficient in an operational environment.

The Review was concerned to learn that where ESOs believe data exists, there was reluctance to request it because it would require too much negotiation with ESTA to access.

Intelligence services are not meeting stakeholder expectations

The lack of clarity around ESTA's intelligence capability has led ESOs to assume that their emerging data needs are outstripping ESTA's capability to meet their needs. There is also an assumption that this issue has been exacerbated by a gap in investment.

During statewide emergencies ESTA has a presence in the State Control Centre. There is no mature understanding within the sector of the depth of ESTA data intelligence, and therefore ESOs are not using this information to inform operational decisions. As a result, there is a lost opportunity to draw from its data sources when managing incidents and statewide emergencies.

Separately, but relevant to the release of data, stakeholders did raise concerns about the lack of visibility they have when ESTA shares data with another body, whether an ESO or government department, without prior consultation. This creates a challenge for stakeholders in retrospectively managing the interpretation and use of the data, which is often complex.

FUTURE STATE INTELLIGENCE SERVICES MODEL OPTIONS

To address the above key concerns and issues, potential intelligence services model scenarios were tested for the future state to ensure recommending the most appropriate model.

Figure 28 shows the scenarios considered as part of a future state model. Only scenarios that meet the desirability, feasibility and viability criteria are considered potential options for a future state model (depicted in green). High-level pros and cons for each scenario are at Figure 29.

Figure 28: Future state intelligence services options.

	Current state	Enhanced current state	Hybrid	Other
Services	Intelligence services maintains status quo and executes on its current strategies.	Creating a BI Product/ Service Line with additional investment. Operating model changes include integrating teams for insight generation as well as the creation of a central capability for governance.	Creating a central capability for BI in partnership and collaboration with other entities.	ESTA no longer delivers this service. Rather, it is outsourced to an external provider, or provided as part of the move to another government department.
	x Desirable	✓ Desirable	x Desirable	✓ Desirable
	✓ Feasible	✓ Feasible	✓ Feasible	✓ Feasible
	x Viable	✓ Viable	x Viable	✓ Viable

Figure 29: Pros and cons of the future state intelligence services options.

1 Enhanced current state

Creating a BI Product/Service Line with additional investment. Operating model changes include integrating teams for insight generation as well as the creation of a central capability for governance.

Pros

- A central D&A function will improve governance over time and maximise utilisation of new technologies as they become available (e.g. platforms and cloud infrastructure).
- Developing and integrating information and reporting with data science teams will improve employee cross-skilling and collaboration for value delivery where insights are generated.
- Developing intelligence services into product lines for key services will align teams to outcomes that meet both ESTA and ESO needs.

Cons

- Resources from multiple entities may cause confusion and duplication of efforts in the division of accountability and responsibility for insight generation.
- Investing in more resources (money/people) does not necessarily translate into value generated.

*NB: a data dictionary and intelligence services catalogue are key dependencies to provide clarity on the **scope of data analytics related services and who they are provided by**. In scenario 1, 'Enhanced current state' the intelligence services that ESTA offers internally vs externally to ESOs/IGEM/Victorian Community should be clearly defined.*

2 Other

ESTA no longer delivers this service. Rather, it is outsourced to an external provider, or provided as part of the move to another government department.

Pros

- ESTA can access advanced analytics and reporting capabilities (e.g. from the Victorian Centre for Data Insights) without having capability in-house.
- Leveraging existing whole-of-Victorian-Government platforms for data storage and integration will reduce duplication and cost for the state.
- Immediate access to advanced analytics and data mining capabilities will bring forward ESTA's ability to forecast and plan for surge events.

Cons

- ESTA loses control over its own data, which is critical to its operations.
- As ESTA sits closest to the data, they are best positioned to understand it and derive valuable insights. If they are removed, then this value is lost.
- Valuable business insights might not be delivered by the provider when needed if priorities aren't aligned.
- ESTA will need to retain some business reporting capability to prepare IGEM reports.

Stakeholder feedback on the future state intelligence services options

The January 2022 discussion paper sought feedback from key stakeholders on the proposed options for governance. Thematically, feedback included:

- ESTA was well placed to provide intelligence services, building on its own data stores and current capability
- there needs to be a significantly greater focus on multi-lateral data and information sharing between ESTA and ESOs across the entire sector
- the supply of meaningful analysis and intelligence from ESTA in a timely and transparent manner will strengthen relationships and this could be strengthened through joint reporting
- intelligence services for forecasting and predictive services are critical for stakeholders
- some stakeholders would like to access real-time intelligence and data services
- intelligence services and business analytics must focus on supporting service delivery improvements, allowing investment to be directed towards enhancing current capabilities and to supporting ESO and sector decision making

- a major risk is that providing an intelligence service to all stakeholders with vast requests for information has the potential to distract ESTA from its core role of delivering its CTD service
- some concern that enhancing ESTA's intelligence services would lead to it capturing data and reporting on factors and metrics outside the agreed performance standards.

FUTURE STATE INTELLIGENCE SERVICES MODEL

As stakeholders continue to rely on data and intelligence for decision making, ESTA has an opportunity to build a fully-integrated data and analytics/business intelligence end-to-end service offering. Retaining intelligence services within ESTA is preferable because the immediate priority must be on further integration with the CAD system to enhance operational decision making. Any use of data for broader emergency management and government purposes must be done in partnership. This will ensure that a high degree of sector knowledge and expertise inform intelligence products and ensure that they enable service delivery improvements and accurate forecasting.

For example, live tactical intelligence available during emergencies could inform ESOs as to the aggregated locations of emerging events based on the locations of callers. In a strategic context, this could inform long-term planning around geographic response models, particularly in Victoria's fast-growing peri-urban and rural locations. This would require ESTA to receive intelligence collection priorities from ESOs and to have the capability to process them into intelligence products in real time.

To that end, consistent and transparent information sharing and communication is a key requirement of the future state and has a direct link to the proposed governance model that aims to foster partnerships. Throughout consultation, stakeholders reiterated that intelligence and information sharing is the bedrock for an effective future in which the sector can better respond to both short and long-term challenges.

Enhanced intelligence services will support the work of the new board of advisors and maximise the use of new technologies, allowing for cross-skilling of data and intelligence employees. Intelligence services also have the potential to create significant efficiency gains and allow ESTA to better adapt and mitigate risks due to enhanced insights and forecasting.

Although there may be some efficiencies if ESTA partnered with another agency, such as the Victorian Centre for Data Insights (VCDI) to further strengthen a whole-of-government approach, the Review has not undertaken a capability assessment of the VCDI and does not know if it has the capacity or capability to expand its service offerings.

Intelligence services

RECOMMENDATION 15

Enhance ESTA's current intelligence capability to meet the intelligence needs of ESOs.

RECOMMENDATION 16

ESTA should utilise live monitoring of call data to alert ESOs to potential large-scale emergencies.

RECOMMENDATION 17

ESTA should invest in building its intelligence capability and implement practices to effectively utilise this intelligence to inform strategic planning and preparedness for emergencies across the sector.

10 Performance standards

CURRENT PERFORMANCE STANDARDS MODEL

As discussed in Chapter 4 of this report, ESTA's performance standards are a key area of concern and are not fit-for-purpose.

Under the ESTA Act, IGEM determines the non-financial performance standards for ESTA's delivery of services to ESOs. IGEM establishes these standards in consultation with ESOs. Current ESTA performance standards have played a role in the way ESTA structures its CTD service. There is an opportunity to further enhanced these performance standards in the future state, recognising that current standards do not materially take into consideration the end-to-end customer experience and are output rather than outcome focused.

KEY CHALLENGES WITH CURRENT PERFORMANCE STANDARDS

The Review has identified that stakeholders have fundamental concerns regarding ESTA's current performance standards. These include:

- current performance standards do not measure the effectiveness of outcomes
- adherence to current performance standards promotes an unsustainable CTD model.

Current performance standards do not measure the effectiveness of outcomes

Stakeholders regarded the current measures as one dimensional because they are exclusively output-based standards and provide little insight into community outcomes. Recently, ESTA has endeavoured to augment this through customer satisfaction survey sampling, as outlined in Chapter 4.

While time-based metrics have a role in assisting with quantifying demand management, they do not measure the effectiveness of the response or the experience of the caller. In addition, these standards do not provide insights into the outcome of the event.

Adherence to current performance standards promotes an unsustainable call-taking and dispatch model

The current performance standards promote a particularly inflexible CTD model in which meeting time-based targets is the primary goal.

The Review heard examples of poor rostering practices that impact ESTA's ability to consistently deliver exceptional services to the community, particularly during surge events. One such practice, reported by multiple stakeholders, involved rostering overtime at the end of each month to reduce monthly response time averages and improve metrics to meet performance standards.

Tracking standards within a timeframe, for example monthly, does not necessarily provide an accurate picture of community outcomes, as poor compliance during peak hours can be masked by high performance in off-peak hours. The Review did note that roster inflexibility, which is driven through the current enterprise agreements, has restricted ESTA's ability to achieve meaningful change in this area.

Current performance standards do not adequately measure patient outcomes

The current standards are not centred around health and safety measures, such as patient outcomes for ambulance events. As a result, they do not input into more meaningful reporting that seeks to map to the patient journey through the health system from Triple Zero (000) call to release from hospital. This is particularly troubling for health service stakeholders, who commented that health and safety standards, in terms of patient outcomes, are critical in an era where AV's role is evolving to be more a health service than an emergency service.

Stakeholder feedback on the future state performance standards

The January 2022 discussion paper sought feedback from key stakeholders. Feedback included:

- general agreement that outcome-based performance standards should be developed, and that these should complement, not replace, the current output-based performance standards
- data and information sharing is critical to developing and evaluating outcome-based standards
- there is a requirement to be clear to what extent ESTA is accountable for outcomes in the CTD process, and at what point ESOs become accountable for outcomes
- ensuring that non-emergency obligations are not included in emergency event performance standards
- a core challenge is to develop standards that deliver on both health and public safety outcomes; health stakeholders advocated for standards to explicitly include a focus on safety outcomes
- any role that SCV might have in a future state, must not duplicate IGEM's role.

FUTURE STATE PERFORMANCE STANDARDS MODEL

Performance standards should be reflective of the end-to-end process for CTD customers and considered in terms of overall outcomes and delivery of services to the community.

Stakeholders supported performance standards that focus on outcomes that complement and build upon the existing time-based standards for which ESTA is currently accountable. It is important to note that this report is not calling for a measurement of response times for all ESOs, as this is not an effective measure of quality of service or outcome, and can in fact, have the opposite effect. What is most important is that the right asset arrives at an event to deliver the best outcome, or in the case of non-emergency requests, the right information is conveyed to the caller. This is the primary benefit of developing outcome-based performance standards for ESTA, in addition to existing time-based metrics. All outcome-based performance standards will be required to align with the *Assurance Framework for Emergency Management*, which seeks to drive a more coordinated, less burdensome, and more valuable approach to assurance activities in the sector and generate continuous improvement of the emergency management system in Victoria.[23]

Outcome-based standards will benefit ESTA by driving behaviour that encourages service improvements and efficiencies, while reducing the focus on meeting targets that do not necessarily result in an uplift of service to ESOs or the community. This shift will support ESTA in resetting the current workplace culture, that has driven an over-reliance on overtime to manage inflexible rostering restrictions that continues to lead to an oversupply of services during off-peak demand simply to meet time-based performance standards does not truly measure ESTA's CTD performance.

Outcome-based standards that complement time-based measures will benefit the sector by further fulfilling the partnership model and promoting a culture of shared ownership of success at a sector level. Outcome-based standards will only be possible if they seek to measure customer experience from the time the first call is made through to the report being responded to by the relevant ESO and therefore must align with ESO outcomes frameworks. Whilst these standards should be created in alignment with ESO outcomes frameworks, the Review notes final outcomes (i.e. for ambulance services) are not solely attributable to ESTA and that ESTA's performance standards are only one element of assessing improved service delivery across the sector.

This report recommends that responsibility for approving outcome-based performance standards should sit with the Emergency Management Commissioner and Minister for Emergency Services to ensure IGEM, with the support of SCV, can maintain an independent monitoring, investigation and reporting role of ESTA's performance.

23. *Inspector General for Emergency Management,* Assurance Framework for Emergency Management*, 2019, p. 6.*

Performance standards

RECOMMENDATION 18

ESTA, in partnership with DJCS, ESOs, and in consultation with IGEM and SCV, must develop and implement outcome-based performance standards that properly reflect the end-to-end process of incident management.

RECOMMENDATION 19

Responsibility for approving the outcome-based performance standards should sit with the Emergency Management Commissioner and the Minister for Emergency Services to ensure IGEM, with the support of SCV, can maintain independent monitoring and reporting of ESTA's performance.

RECOMMENDATION 20

A formal consultation mechanism must be established between SCV and IGEM in the monitoring and investigation of ESTA's performance against outcome-based performance standards for AV.

Community engagement and experience

11

CURRENT COMMUNITY ENGAGEMENT AND EXPERIENCE MODEL

The community often call Triple Zero (000) at critical moments in their lives. The response they receive from ESTA can have a resounding impact on them during these moments and for a long time after. As identified in Chapter 4, community engagement and experience is an important consideration in the future state of ESTA.

KEY CHALLENGES FOR THE CURRENT COMMUNITY ENGAGEMENT AND EXPERIENCE CAPABILITY

The Review found that ESTA's current approach to community engagement needs to be improved. Key concerns, issues and considerations included:

- there is currently no strategic approach to community engagement
- call-taking timeframes fail to meet community expectations
- limited channels for the community to request assistance.

No strategic approach to community engagement

The absence of a strategic community engagement framework has impacted ESTA's external facing presence including brand awareness and has resulted in a lack of understanding of the services delivered by the entity. To address this gap ESTA has recently reinstated customer satisfaction surveys. The surveys seek feedback from Triple Zero (000) customers, to help identify opportunities for improvements to current service delivery and design. This is a reactive approach to engagement and is not being used to inform or support future planning.

Call-taking timeframes fail to meet community expectations

In simple terms, the community expects that an ESTA call-taker will answer the phone (after the Telstra national 000 operator has connected the call to ESTA). ESTA's ability to answer that call, when transferred by Telstra, determines whether the caller's engagement with ESTA's services is a positive experience. When a member of the community calls Triple Zero (000) they are often highly emotional and experiencing or witnessing a traumatic event. Their experience with the timeliness of response by the ESTA call-taker therefore plays a significant role in the community's perceptions and expectations of the Triple Zero (000) call-taking service provided by ESTA. Often, community experience of the end-to-end customer journey is linked back to the initial call to Triple Zero (000), particularly when there is an adverse outcome.

An important impact on the community's experience when calling Triple Zero (000) is the time it takes for a call to be answered and the ability to be kept informed after they have reported the event. While some callers may be kept on the line until the appropriate ESO is at the event, for many reports, particularly those classified as non-emergency, there is no ability to track the response. At present ESTA does not have a mechanism to keep callers up to date on their case in real-time, prompting repeat calling, and creating further anxiety for the caller during an already emotional situation.

Limited channels for the community to request assistance

Currently, the only way that the community can seek emergency assistance is via telephone. Whilst voice communications will continue to provide the backbone of ESTA's service delivery, the community has a high readiness and capability to use other channels to both request and track the delivery of ESTA's services. Having a single channel, through a call to Triple Zero (000) does not provide the diversity of access options to which consumers of other services have become accustomed, for example, text, social media, mobile applications. The absence of this capability within ESTA may result in the community feeling under-serviced. If the community had the ability to track their request, be updated during the service delivery process and engaged in two-way communication with ESTA or the relevant ESO beyond the first phone call, this would likely help to reduce a caller's stress level and alleviate pressure on CTD staff, particularly during times of surge.

FUTURE STATE COMMUNITY ENGAGEMENT AND EXPERIENCE MODEL OPTIONS

To address the above key concerns and issues, several potential community engagement options were contemplated for the future state, to ensure recommending the most appropriate model.

Figure 30 shows the scenarios considered as part of a future state model. Only scenarios that meet the desirability, feasibility and viability criteria are considered potential options for a future state model (depicted in green). See Figure 31 for the high-level pros and cons of each scenario.

Feedback from key stakeholders on community engagement and experience model options

The discussion paper circulated in January 2022, sought feedback from key stakeholders on proposed options for community engagement. Feedback included:

- all stakeholders supported the streamlined current state option
- stakeholders saw a need for clearer messaging to reduce confusion about ESTA's scope and role and the need for enhanced community awareness of Triple Zero (000).

Figure 30: Scenario analysis – community engagement.

	No capability	Streamlined current state	Current state	Enhanced current state
Services	ESTA has no public facing role.	ESTA continues to perform this role with minimal public-facing responsibilities, supporting ESOs to perform this level of engagement.	ESTA continues to perform this role with the existing structure.	ESTA continues to perform this role with changes to structure and additional investment to uplift its capability to play an extensive public-facing role.
	x Desirable	✓ Desirable	x Desirable	x Desirable
	✓ Feasible	✓ Feasible	✓ Feasible	✓ Feasible
	x Viable	✓ Viable	✓ Viable	✓ Viable

Figure 31: Pros and cons for community engagement scenarios.

Community engagement	Description	Key pros	Key cons
No capability	ESTA has no public-facing role.	• Reallocates resources to be focused on ESTA's key services. • Reduces community confusion from conflicting messages provided by the different ESOs and ESTA.	• Questions on whether lack of brand awareness would be demotivating for staff due to lack of awareness in the community about the critical role ESTA plays within emergency management sector in Victoria. • Additionally, further dilution in brand recognition would continue to make it harder for ESTA to attract wider pool of job applicants. • There will be a gap in seeking feedback from community as the ESOs would not potentially prioritise feedback regarding the community's call-taking experience.
Streamlined current state	ESTA continues to perform this role with minimal public-facing role.	• Setting up a Community Engagement Framework would help with clearly defining ESTA's public-facing communication role and responsibilities within the broader emergency services sector. • Reduces community confusion from conflicting messages provided by the different ESOs and ESTA. • Potentially improve ESTA's attractiveness as an employer. • Enable ESTA to directly seek feedback from the community to improve service delivery to align it with the needs of the community.	• ESTA's ability to directly engage with the community would be limited.
Current state	ESTA continues to perform this role with minimal public-facing responsibilities, supporting ESOs to perform this level of engagement.	• No change management impact or additional funding required.	• Likely that issues with ESTA's poor brand recognition in the community would continue. This would also continue to make it harder for ESTA to attract a wider pool of job applicants. • Questions on whether lack of brand awareness would be demotivating for staff due to lack of awareness in the community about the critical role ESTA plays within emergency management sector in Victoria. • Community confusion from conflicting messages provided by the different ESOs and ESTA.
Enhanced current state	ESTA continues to perform this role with additional investment to uplift its capability to play an extensive public-facing role.	• This solution would support ESTA to be seen as an additional emergency service that is on the same level as other ESOs across the sector. • Empower ESTA to significantly improve its brand awareness and seek feedback from the community to improve service delivery to align it with the needs of the community.	• An unlimited mandate could potentially result in conflicting messages being delivered to community. • This would require significant financial investment to market ESTA at part with the other ESOs.

FUTURE STATE COMMUNITY ENGAGEMENT AND EXPERIENCE MODEL

In a future state, ESTA should be a streamlined organisation that focuses on its essential role of CTD, however, this does not mean that it needs to be a public-facing organisation to the same extent as other ESOs. Community engagement focusing on enhancing awareness of when to phone the Triple Zero (000) number and other numbers for non-emergencies, and not ESTA the organisation, together with an improved brand awareness focusing on ESTA being an 'employer of choice' in the sector is an appropriate starting point.

The development of a clear community engagement framework will be critical and will rely on fully understanding the customer journey from incident and initial call, to dispatch and response by the relevant ESO. This could be achieved through creation of a series of end-to-end journey maps. The framework would also need to consider how ESTA can best engage with the community during critical emergency events, in addition to running Triple Zero (000) awareness campaigns as part of its as business-as-usual activities.

The community engagement framework should aim to promote the voice of the Victorian community throughout the culture of ESTA to drive alignment and prioritisation of investment to improve customer satisfaction. This could be achieved by establishing a mechanism to utilise community members with lived experience, those who have had engagement with ESTA through the reporting of an event, to inform ESTA decision making.

To address key concerns surrounding ESTA's current approach to community engagement, the Review notes the following opportunities:

- improve the end user experience, whether this be ESTA staff members, ESOs or the Victorian community
- provide ESTA with an opportunity to move non-urgent emergency requests away from Triple Zero (000) to less resource intensive channels
- improve brand recognition of ESTA and attract a wider pool of talent
- allow ESTA to retain community engagement and experience responsibility, whilst minimising their public-facing communication role within the sector
- enable ESTA to engage with the community to receive feedback and utilise those insights to enhance service delivery across those moments that matter to the community and ESOs.

Recommendations

12

This report details key findings and future state recommendations from an independent review of ESTA's capability and service. The scale of reform recommended through this report is significant and will require government investment and a focus on partnerships between ESTA, DJCS and ESOs to be successful into the future.

It is important throughout the period of transition toward the proposed future state outlined in this report, that core CTD service capability is not compromised. Delivering a high-quality CTD service to the Victorian community and continuing to support ESOs in the delivery of emergency services, must continue to remain at the forefront of any implementation strategy. It is acknowledged that this reform is significant, and the changes will present a cultural shift for staff at ESTA, and it is incumbent upon all across the sector to embrace the change in a respectful and inclusive way.

Governance

RECOMMENDATION 1

ESTA move to become part of DJCS.

RECOMMENDATION 2

The current ESTA Board and Advisory Committee are disbanded and replaced with a new board of advisors.

Branding

RECOMMENDATION 4

ESTA should be re-branded to 'Triple Zero (000) Victoria'.

Culture

RECOMMENDATION 3

Creation of a dedicated fixed-term position to specifically lead cultural reform at ESTA during this transition.

Call-taking and dispatch

RECOMMENDATION 5

ESTA should retain responsibility for CTD under the aggregated model in its current form but include enhancements such as:

a. working collaboratively with AV to ensure the required level of clinical input into the CTD system, including active involvement in ambulance CTD of resources

b. strengthening and embedding a continuous improvement mechanism across CTD

c. developing a roadmap to achieve greater integration of existing non-emergency assistance lines into ESTA's CAD system

d. implementing guidelines to support the prioritisation of ESO CAD system change requests

e. exploring alternative call management practices to deliver efficiencies for large-scale emergencies.

RECOMMENDATION 6

ESTA, in partnership with ESOs, commission an independent review of ESTA training standards, to ensure that they are fit-for-purpose.

RECOMMENDATION 7

The Victorian Government allocate ongoing funding to ESTA so they can employ a sufficient CTD workforce, based on current and future demand for emergency services, to meet community expectations and protect the health and wellbeing of CTD staff.

RECOMMENDATION 8

ESTA must work with DJCS and industrial stakeholders to develop and implement an industrial relations strategy that will address the limitations that prevent flexibility, meet surge demand and support appropriate workforce management.

RECOMMENDATION 9

ESTA should increase its participation and advocacy at the national level, including through NECWG–A/NZ.

RECOMMENDATION 10

ESTA, in partnership with ESOs, must commission a time-limited independent review of the mental health support arrangements to inform a new person-centric wellbeing and support program, focussed on prevention of mental health injury. This review should include the creation of policies that include time out and hot debriefing of critical incidents so that learnings can be identified and harnessed.

Managed services

RECOMMENDATION 11

DJCS and ESTA develop and implement a strategic roadmap for the future delivery of managed services.

RECOMMENDATION 12

The Victorian Government allocate ongoing funding to support a capacity and capability uplift, through an increase in FTE, to ensure managed services meets the needs of its users and includes enhanced customer advocacy capability.

Technology services

RECOMMENDATION 13

DJCS and ESTA develop and implement a strategic roadmap for the future delivery of technology services, ensuring alignment with whole-of-sector ICT strategic planning and investment.

RECOMMENDATION 14

The Victorian Government allocate funding to support a capability uplift, through an increase in FTE, to strengthen emergency management technology services.

Intelligence services

RECOMMENDATION 15

Enhance ESTA's current intelligence capability to meet the intelligence needs of ESOs.

RECOMMENDATION 16

ESTA should utilise live monitoring of call data to alert ESOs to potential large-scale emergencies.

RECOMMENDATION 17

ESTA should invest in building its intelligence capability and implement practices to effectively utilise this intelligence to inform strategic planning and preparedness for emergencies across the sector.

Performance standards

RECOMMENDATION 18

ESTA, in partnership with DJCS, ESOs, and in consultation with IGEM and SCV, must develop and implement outcome-based performance standards that properly reflect the end-to-end process of incident management.

RECOMMENDATION 19

Responsibility for approving the outcome-based performance standards should sit with the Emergency Management Commissioner and the Minister for Emergency Services to ensure IGEM, with the support of SCV, can maintain independent monitoring and reporting of ESTA's performance.

RECOMMENDATION 20

A formal consultation mechanism must be established between SCV and IGEM in the monitoring and investigation of ESTA's performance against outcome-based performance standards for AV.

Appendices

APPENDIX A : STAKEHOLDERS

Table 5: Stakeholders consulted throughout the Review.

Category	Stakeholder
Victorian Government	Minister for Emergency Services
	Minister for Health/Ambulance Services
	Minister for Police
Primary stakeholders	Ambulance Victoria
	Country Fire Authority
	Department of Health
	Department of Justice and Community Safety
	Emergency Management Victoria
	Emergency Services Telecommunications Authority
	Emergency Services Telecommunications Authority Board
	Fire Rescue Victoria
	Inspector-General for Emergency Management
	Safer Care Victoria
	Victoria Police
	Victoria State Emergency Service
National alignment	Chair of the National Emergency Communications Working Group – Australia and New Zealand
	Commonwealth Department of Infrastructure, Transport, Regional Development and Communications
	Resilience New South Wales
	Telstra
Unions	Communications Workers Union
	The Police Association Victoria
	United Firefighters Union
	United Workers Union (through Ambulance Employees Australia – Victoria)
	Victorian Ambulance Union
Additional stakeholders	Corrections Victoria
	Department of Environment, Land, Water and Planning
	Department of Jobs, Precincts and Regions

APPENDIX B : ACRONYMS

Acronym	Organisation
AEAV	Ambulance Employees Australia – Victoria
AIHW	Australian Institute of Health and Welfare
AV	Ambulance Victoria
CAD	Computer Aided Dispatch
CALD	Culturally and linguistically diverse
CEO	Chief Executive Officer
CFA	Country Fire Authority
COVID-19	Coronavirus disease
CTD	Call-taking and dispatch
CWU	Communications Workers Union
DELWP	Department of Environment, Land, Water and Planning
DH	Department of Health
DJCS	Department of Justice and Community Safety
DJPR	Department of Jobs, Precincts and Regions
ECS	Emergency communication services
EMV	Emergency Management Victoria
ESOs	Emergency service organisations
ESTA	Emergency Services Telecommunications Authority
ESTA Act	*Emergency Services Telecommunications Authority Act 2004*
FRV	Fire Rescue Victoria
FTE	Full-time equivalent
ICT	Information and communications technology
IGEM	Inspector-General for Emergency Management
MoU	Memorandum of Understanding
NECWG–A/NZ	National Emergency Communications Working Group – Australia and New Zealand
PAL	Police Assistance Line
PwC	PricewaterhouseCoopers
SECC	State Emergency Communications Centres
SCV	Safer Care Victoria
SLA	Service level agreement
SOPs	Standard operating procedures
ToR	Terms of Reference
TPAV	The Police Association Victoria
UFU	United Firefighters Union
UWU	United Workers Union
VCDI	Victorian Centre for Data Insights
VicPol	Victoria Police
VICSES	Victoria State Emergency Service

APPENDIX C : LIST OF FIGURES

APPENDIX D : LIST OF TABLES