A 10-year strategy for advancing Victoria's cadastral system

FEBRUARY 2024

Accessible version of the document

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Acknowledgement of Country

We proudly acknowledge Victoria's Traditional Owners and their ongoing strength in practising the world's oldest living culture.

We recognise the diversity of Victoria's Traditional Owners in being distinctive communities with their own set of laws, customs and processes built upon tens of thousands of years of knowledge. We acknowledge the Traditional Owners' lands and waters on which we live and work and pay our respects to their Elders, past and present.

Whilst this strategy focuses on advancing Victoria's cadastral system, we acknowledge and recognise the long-lasting, far-reaching, and intergenerational consequences of colonisation and the dispossession of lands and waters had on Victoria's Traditional Owners to practice their laws, cultures, customs and traditions. We further acknowledge the impact of Victorian laws, policies, systems and structures that have inhibited Victoria's Traditional Owners from accessing, caring for, and mapping their Country.

In line with the Department of Transport and Planning's (DTP) commitment to self-determination, we must acknowledge and take steps towards rectifying past injustices by recognising Indigenous data sovereignty as an essential component of self-determination. Indigenous data sovereignty is essential for promoting self-determination and advancing the recognition of Indigenous rights, knowledge, and cultural practices in the digital age.

Description of artwork

Aaron (Gunaikurnai) 'Movements Between the Five Clans' 2019, acrylic on canvas.

'The tracks are going between the five clans of the Gunaikurnai and the hands are the symbols of my spirit travelling around the campsites.'

This artwork was created through programs provided by the Torch. The Torch provides art, cultural and arts industry support to Indigenous offenders and ex-offenders in Victoria. The Torch aims to reduce the rate of re-offending by encouraging the exploration of identity and culture through art programs to define new pathways upon release.

Contents

Minister for Planning Foreword

With Victoria's population set to reach over 10 million by 2051[1], we are experiencing a period of significant growth in property development, land subdivision, transport infrastructure, construction, and high-density urban renewal. At the same time, we are seeing rapid and widespread adoption of digital technology in almost every sphere of life – in our homes, our schools, our universities, and our workplaces.

Hon Sonya Kilkenny MP
Minister for Planning

As a result, expectations on government to deliver better services for Victorians are at an all-time high.

How we respond to these trends is crucial in ensuring our communities remain liveable, sustainable, safe and capable of servicing the needs of all Victorians.

To help create a thriving Victoria, the Victorian Government is investing in digital transformation. These initiatives will enhance the way land, assets and communities across Victoria are planned, developed and managed. This will better equip us to plan, respond and recover from emergencies, and empower Victorian businesses and individuals by making information more accessible.

Initiatives include:

- Modernising Victoria's digital cadastre, the state's authoritative digital record and map of land parcels and properties, and the systems for automated maintenance. Our digital cadastre is a key foundation stone that will underpin our future-state cadastral system.
- Developing world-leading digital twin infrastructure so that government, industry and the community can collaborate through shared open data, technology and algorithms, to enhance real world outcomes.
- Further investments to enhance our land titling and registration system, our online system for managing subdivision applications, and our core spatial data products and services.

The 10-year strategy for advancing Victoria's Cadastral System outlines the Department of Transport and Planning's (DTP's) vision and approach to delivering a future-ready land administration system to meet the needs of government, industry and the community for generations to come.

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[1]   *Plan Melbourne 2017-2050, DELWP (https://www.planmelbourne.vic.gov.au/).*

Executive summary

The cadastre is Victoria's official digital record and map of property boundaries for the state's 3.3 million land parcels.

The cadastre is critical to the Victorian economy, underpinning Victoria's annual $160 billion property market. It provides the foundation that supports the collection of more than $21 billion[2] in annual revenue for the government from council rates, property taxes and land transfer duty.

The cadastre helps us build liveable, sustainable, safe and resilient communities. It supports emergency service preparedness, response, and recovery, and empowers businesses and individuals through access to land information.

With Victoria's population set to grow from around 6.5 million today to over 10 million by 2051, the state is experiencing a period of accelerated property development, land subdivision construction and urban renewal.

The Victorian Government has invested $45 million in Digital Cadastre Modernisation to accurately display Victorian property boundaries in digital format. This has presented further opportunities to drive transformation across Victoria's cadastral system and realise even greater efficiencies and cost savings.

The 10-year Strategy for Advancing Victoria's Cadastral System outlines the vision and approach for a future-ready land administration system.

Key pillars

- A 3D digital cadastre that is data-driven, spatially accurate, easily visualised and readily understood.

- Streamlined processes that are customer-centric, collaboratively designed, supporting interoperability, and offering high levels of accessibility, automation, consistency, transparency, and integrity.

- Nationally agreed standards and protocols that enable the development of an Australia-wide digital cadastre.

The strategy also identifies guiding principles and priority areas to provide clear and consistent direction for delivering our future-state cadastral system. This includes digital by default, community focus, data and infrastructure assets, legislative framework, skills and capability, continuous improvement, co-design, connection, and collaboration.

Vision

A fully digital, highly automated and spatially accurate cadastral system that enables creating, managing and visualising the location and spatial extent of all known interests in Victorian land.

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[2]   *2023-24 Victorian State Budget,* Statement of Finances

Horizon

The 10-year strategy will be implemented over three horizons, with each horizon containing milestones to make our cadastral system future-ready by 2032.

Horizon 1: Establish the building blocks required for future transformation. This includes the finalisation of the Digital Cadastre Modernisation project, enhancements to ePlan to enable digital lodgement of survey plan data and the establishment of a pathway to mandatory submission for all digital plan and survey plan data.

Horizons 2 and 3: Expand and mature these building blocks, working towards the 10-year vision for Victoria's cadastral system.

Horizon 1: Build

2022-2024

Spatially accurate 2D digital cadastre

ePlan enhancements

Digital pipeline

New products

Legislation review

Horizon 2: Expand

2024-2027

Digital submission

Legislative support

Interoperability

3D digital cadastre

Treaty

Horizon 3: Mature

2027-2032

Future-state cadastral system

Underpinned by:　　Standards　　|　　Capability　　|　　Culture　　|　　Diversity　　|　　Engagement

The objectives of the strategy

The 10-Year Strategy for Advancing Victoria's Cadastral System outlines how we will advance the current system over the next ten years.

The strategy will:

- articulate a clear, shared vision for a future-state cadastral system
- outline our approach to aligning and delivering a range of existing and emergent digital transformation initiatives, staged across ten years
- establish guiding principles that set standards for change, growth, design and implementation
- articulate detailed Horizon 1 goals to be achieved by the end of 2024, with high-level focus areas to be achieved in future horizons
- identify the outcomes and benefits from delivering the strategy.
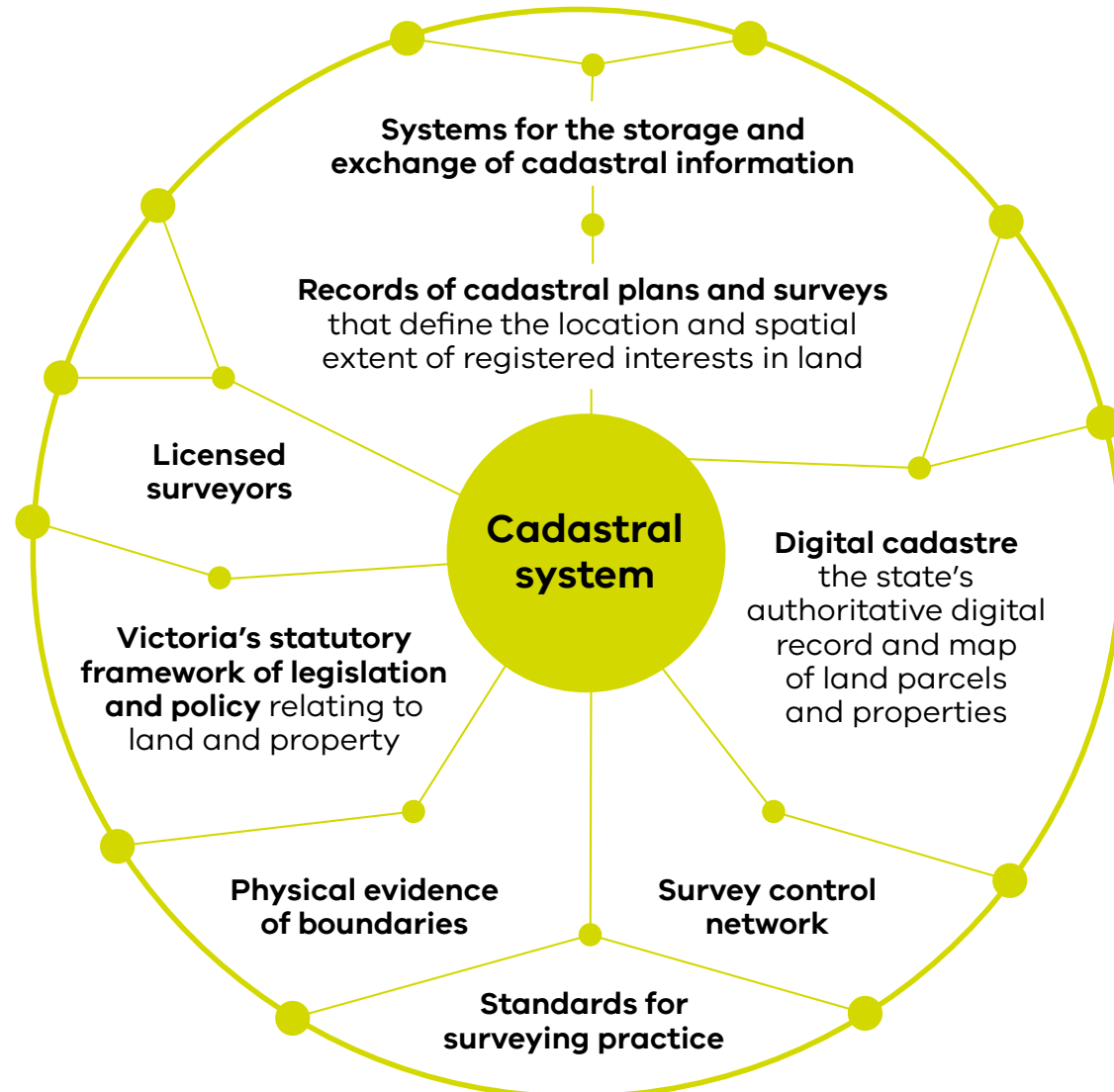
System-wide view

In preparing the strategy, we have worked closely with a broad range of stakeholders who interact with our cadastral system. The strategy harnesses their views about what a future-ready cadastral system must deliver to government, industry and community sectors. We thank stakeholders for their active participation in the development of this strategy.

The cadastral system

The cadastral system underpins the definition and identification of known property parcel boundaries.

Victoria's digital cadastre is designed to be a fully digital record of surveyed parcel boundaries, cadastral surveying measurements and related information about Crown and freehold parcels in Victoria. Coupled with data-driven validation and spatial analysis, it is used to calculate the best-fit location and spatial quality of land parcels on a cadastral map.

Cadastral system

Systems for the storage and exchange of cadastral information

Records of cadastral plans and surveys that define the location and spatial extent of registered interests in land

Digital cadastre the state's authoritative digital record and map of land parcels and properties

Survey control network

Standards for surveying practice

Physical evidence of boundaries

Victoria's statutory framework of legislation and policy relating to land and property

Licensed surveyors

Accessing cadastral data

The official cadastral map in Victoria is known as Vicmap Property. It enables people to access authoritative information about real property parcels, easements and roads from an address or location through services such as LANDATA and LASSI, and through information brokers licensed by the State.

When combined with other data sources, Vicmap Property enables people to conveniently visualise the location and spatial extent of their registered interests relative to natural and man-made features.

Serving as a spatial index, Vicmap Property provides an approximate cartographic representation of property boundaries.
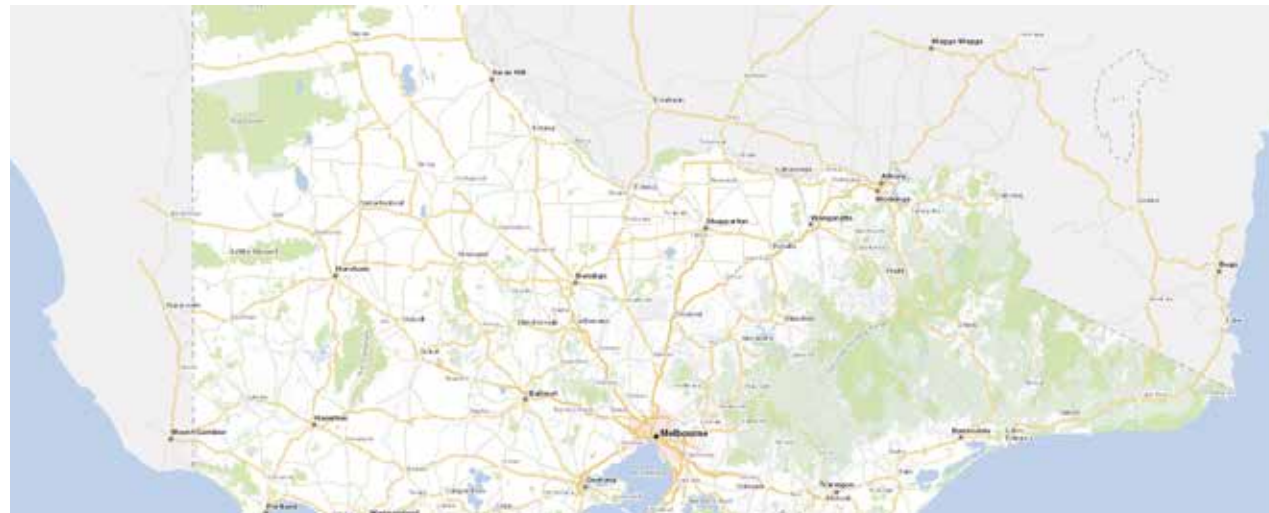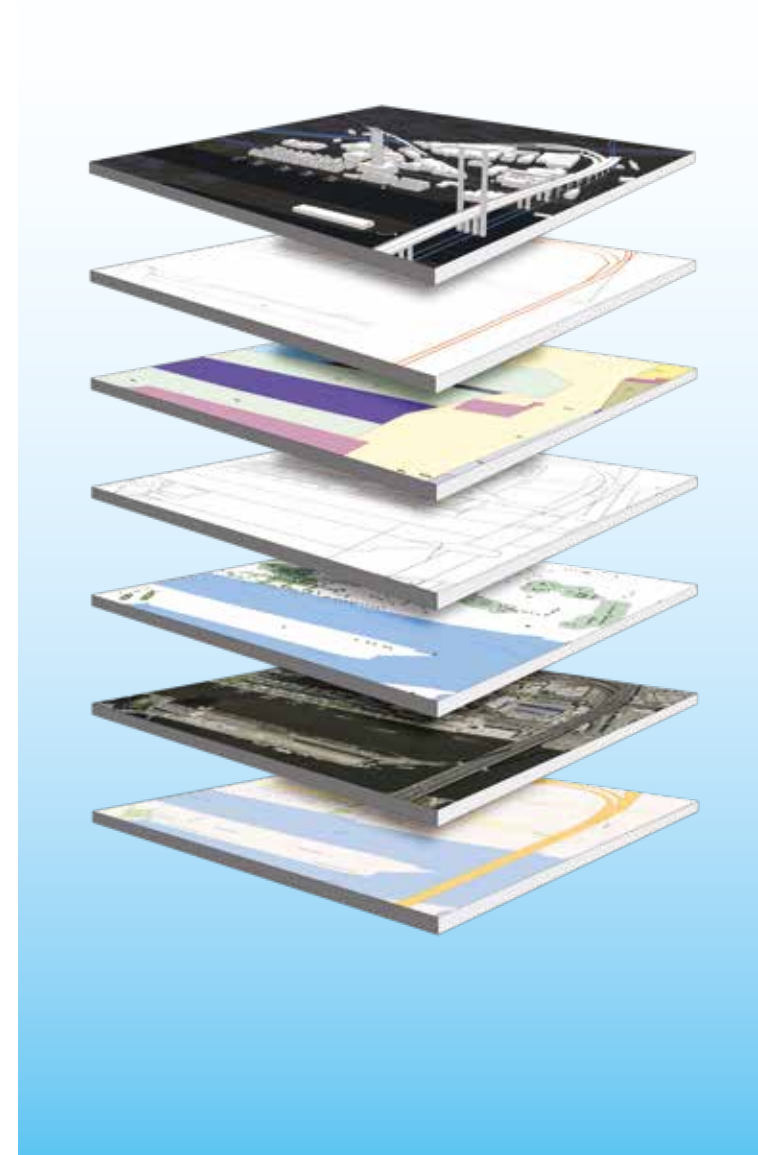
Who uses the cadastre?

Every day, a broad range of people and professions rely on Victoria's cadastral system.

Stakeholders

Each of these people, sectors and organisations will either use, depend upon, or contribute to Victoria's cadastral system.

Industry professionals involved in subdivision and land development including: surveyors, councils, referral authorities, architects, engineers, developers, owners corporation managers, planners, conveyancers, real estate agents, lawyers, valuers, and financial institutions.	**EXAMPLE**	Surveyors and land developers make changes to the cadastre through plans of subdivision.
Federal, state and local government; government infrastructure authorities; referral authorities; public services authorities; and emergency management.	**EXAMPLE**	Federal and state governments use the cadastre to map electoral boundaries.
Property owners and investors, including public and private.	**EXAMPLE**	A new home owner will receive a title to land that has boundaries defined in the cadastre.
Academic, research and development, and innovation sectors.	**EXAMPLE**	Researchers use cadastral data to model future urban and regional scenarios.
Individuals, communities, and businesses.	**EXAMPLE**	Every day, individuals access maps on mobile devices that use the cadastre to help locate businesses and residential addresses.

The journey so far

Land Use Victoria was established in 2016 to manage the State Government's land administration and property information services. However, the services provided by Land Use Victoria have been around a very long time.

The first land surveys and land grants were in the 1830s, before Victoria was established in 1851. There has also been land valuation and map publication since the mid-1800s.

In 1862, the Torrens title system that provides Victorians with a secure Register of land was introduced. Land Use Victoria maintains the state's Register of land and ensures that proprietorship changes, mortgages, new subdivisions and other property transactions are properly recorded and registered.

Land Use Victoria also maintains Vicmap, Victoria's authoritative and most frequently accessed spatial datasets. For over 45 years, Land Use Victoria and our predecessors have collaborated with industry partners and research institutions in the production of high-quality Vicmap spatial data products and services.
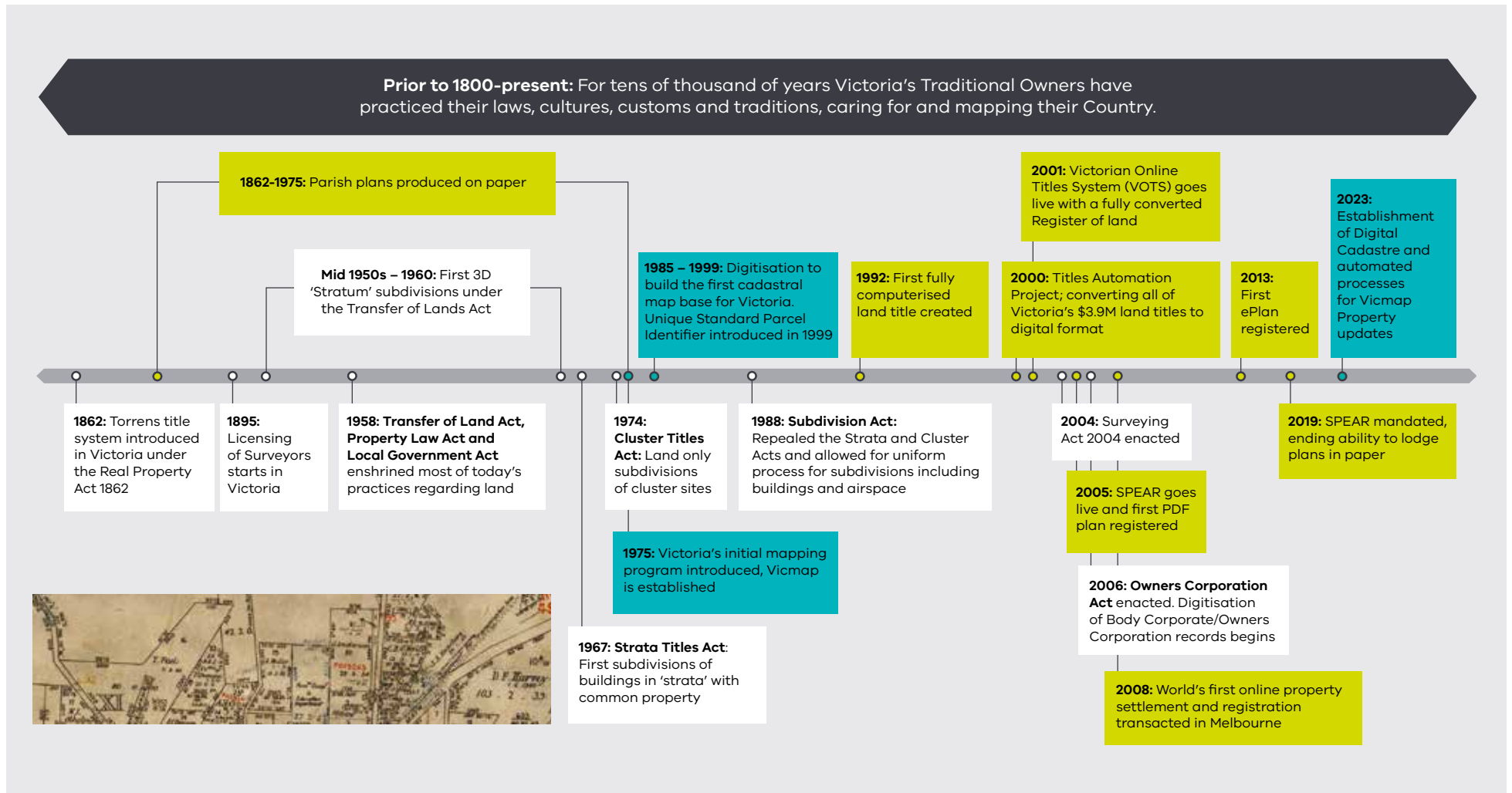
The Victorian Government continues this long-term commitment to excellence in land administration.

While many of the foundations have remained unchanged for decades, user demand and expectations of our data and services are changing rapidly.

Land Use Victoria snapshot

- Victoria's Register of land contains more than **3.5 million freehold titles**

- 19,000 land transactions **(almost 1 million annually)** processed each week

- Around **3 million property searches** administered through our commercial providers and brokers each year

- **8,000 plans of subdivision** captured and registered, creating on average **70,000 new lots each year** and **10,000 new addresses** each month

- Administer part of the state's Water Register that contains **38,000 water shares**

- Administer the Register of Crown land which comprises about **one-third of the area of Victoria**

- Over **10,000** unique customers access Vicmap web-based spatial data services more than **500 million times** per year

Timeline of Victoria's cadastre

Prior to 1800-present: For tens of thousand of years Victoria's Traditional Owners have practiced their laws, cultures, customs and traditions, caring for and mapping their Country.

1862-1975: Parish plans produced on paper

Mid 1950s – 1960: First 3D 'Stratum' subdivisions under the Transfer of Lands Act

1985 – 1999: Digitisation to build the first cadastral map base for Victoria. Unique Standard Parcel Identifier introduced in 1999

1992: First fully computerised land title created

2001: Victorian Online Titles System (VOTS) goes live with a fully converted Register of land

2000: Titles Automation Project; converting all of Victoria's $3.9M land titles to digital format

2013: First ePlan registered

2023: Establishment of Digital Cadastre and automated processes for Vicmap Property updates

1862: Torrens title system introduced in Victoria under the Real Property Act 1862

1895: Licensing of Surveyors starts in Victoria

1958: Transfer of Land Act, Property Law Act and Local Government Act enshrined most of today's practices regarding land

1974: Cluster Titles Act: Land only subdivisions of cluster sites

1988: Subdivision Act: Repealed the Strata and Cluster Acts and allowed for uniform process for subdivisions including buildings and airspace

2004: Surveying Act 2004 enacted

2019: SPEAR mandated, ending ability to lodge plans in paper

1975: Victoria's initial mapping program introduced, Vicmap is established

2005: SPEAR goes live and first PDF plan registered

1967: Strata Titles Act: First subdivisions of buildings in 'strata' with common property

2006: Owners Corporation Act enacted. Digitisation of Body Corporate/Owners Corporation records begins

2008: World's first online property settlement and registration transacted in Melbourne

DTP's commitment to Aboriginal self-determination

The Victorian Government has committed to Aboriginal self-determination through the Victorian Aboriginal Affairs Framework 2018-2023 and the Victorian Government Self-Determination Reform Framework. The Department of Transport and Planning has articulated this commitment through the Transport Portfolio Aboriginal Self-Determination Plan 2020-2023.

The transport and planning portfolio has significant capacity to advance Aboriginal self-determination through the creation of economic opportunities for Aboriginal Victorians and increasing transport access to health, education, justice, training and employment services and opportunities.

The size and footprint of our portfolio places us in a unique position to partner with Traditional Owners and local Aboriginal communities, form mutually beneficial relationships, and provide broad and diverse employment opportunities across the state. This will be complemented by Treaty in Victoria – seen as an enabler of Aboriginal self-determination – as well as outcomes from the truth-telling process in Victoria led by the Yoorrook Justice Commission.

DTP looks forward to utilising its increased digital capacity in a way that advances Aboriginal self-determination and Treaty in Victoria.

Digital visualisation created with the help of innovative high-density LiDAR imagery that has uncovered previously unrecorded stone huts in the Budj Bim World Heritage Site. This collaboration between Vicmap and Gunditj Mirring Traditional Owners Aboriginal Corporation is also one of the first examples of Indigenous data sovereignty for Victoria.

Underpinning Victoria's prosperity

The cadastral system is critical to Australia's economic stability, growth and prosperity.

The cadastral system directly supports real estate, which is the largest asset class in the Australian economy.

In Victoria alone, real estate including residential, commercial and government, is worth more than $3 trillion. Nationally, the combined value of real estate is more than three times the market value of the Australian Securities Exchange (ASX).

Victoria's cadastral system provides the foundation that supports the appraisal of mortgage lending, as well as the collection of more than $21 billion[3] in annual revenue for the government from council rates, property taxes and land transfer duty. This translates to 47.5 per cent of the state tax base.

The cadastre also supports (annually):

- 1 million land transactions and 3 million property searches
- $160 billion in property bought, sold, or refinanced
- $25 billion in government land valuations
- 3.3 million annual property valuations for rating and tax purposes.

The cadastre helps us plan, build and develop liveable, sustainable, safe and resilient communities. It supports emergency services preparedness, response and recovery, and provides access to information and data that empowers businesses and individuals.

[3]   *2023-24 Victorian State Budget,* Statement of Finances

Economic benefits

There are economic benefits for advancing Victoria's cadastral system through digital transformation. For example:

- The Digital Cadastre Modernisation project is forecast to deliver benefits exceeding $300 million over 30 years including avoided operating, duplication, and other project costs for a range of stakeholder sectors and professional communities.

- It has been estimated that even small improvements in the efficiency of the Victorian subdivision registration process could generate significant savings for property developers by reducing holding costs.

   - Enhancements to the ePlan creation service together with new digital examination tools and workflows currently in development, could reduce overall subdivision registration times for 2D subdivisions by up to five days.

   - Based on a yearly average of 60,000 lots created across Victoria, this could save developers more than $26 million per annum in holding costs and speed up the release of lots for community.

Other Australian jurisdictions undertaking comparable digital transformation initiatives to Victoria have likewise forecast economic benefits. For example, the New South Wales (NSW) Office of the Registrar General has forecast[5] $300 to $400 million in benefits over 30 years by developing an online process for the lodgment and registration of cadastral data, and transitioning from paper to digital survey plans.

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[5] *2022, CIE. Quantifying the impacts of moving to digital plans in NSW: Cost-benefit analysis. Centre for International Economics. Prepared for Office of the Registrar-General.*

Anticipating trends and the case for change

Real-time positioning is almost ubiquitous. Precise positioning is just around the corner[4]. Access to high-accuracy satellite and airborne imagery is commonplace, and the application of digital twin technology to understand, estimate and predict the real world is expanding.

Combining and analysing multiple data themes from a range of sources is no longer a specialised task, but rather a typical scenario undertaken every day.

With these trends, there is an increasing demand for real-time access to data and services that have spatial accuracy consistent with precise positioning capability. Similarly, the requirement for foundational spatial data themes aligned to international themes and interoperability standards is increasing.

With the rapid and widespread use of digital technology, the expectations upon government to deliver digital services that meet the community's needs will increase. Furthermore, with Victoria's population set to grow from around 6.5 million today to over 10 million by 2051, this demand is expected to grow exponentially.

We must respond effectively, strategically and in a timely way.

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4   *Positioning Australia is accelerating the adoption and development of positioning technology and applications in Australia* www.ga.gov.au.

With support from our commercial providers, we must continue to ensure our data and services are efficient and reliable for buyers and sellers, property developers, conveyancers and lawyers, and financial institutions. We must also continue to safeguard our digital workflows for cyber-security.

The density of new developments is increasing, as is the number of complex, multi-storey and high-rise spaces sharing mixed (living and working) use, facilities, and services. These trends demand greater sophistication and capability to measure, model and transact in three and four dimensions. At the same time, there is a call for greater simplicity in visualising the associated complexity.

$160 billion + 40% gov

The land administration services we provide support $160 billion in property transactions. The Victorian Government holds approximately 40 per cent of the total land area of Victoria. We must remain effective stewards of both private and government interests in land.

The number of customers is increasing. At the same time, customer expectations for digital land transactions and services are growing. This means we will need to be more efficient and provide robust, adaptable services able to process large volumes of transactions.

The trajectory of current trends shows a range of factors emerging that will become commonplace for the community, industry and government in the future. These include:

- economic, social and environmental trends in the way people live, move and behave, particularly in cities and across regional areas
- technology trends and associated pace of change, for example digital twins; smart cities; and communication including 5G, Internet of Things (IoT) and satellite
- skills and workforce changes.

In every case, there is an imperative to develop processes that will enable our land administration system to sustain the anticipated growth of Victoria and maximise our potential for achieving efficiency and productivity, for both government and industry. While most transactions are processed digitally in the Register, there are many opportunities to improve our service delivery:

- transitioning cadastral plans and surveys from PDF to fully digital
- minimising processes that are manual and labour intensive
- utilising more efficient ways for checking and verifying information
- creating robust audit frameworks to ensure quality and accuracy
- maximising the re-use of digital data in the cadastral information lifecycle
- integrating or consuming data from trusted sources.

What stakeholders told us

Desired outcomes and benefits of advancing Victoria's cadastral system over the next ten years include:

- simpler and easier access to land information that enables reuse of data, minimises duplication of effort, and eliminates digitisation costs
- greater awareness of and clarity on issues in the cadastre, leading to more informed decisions on cadastral surveys by licensed surveyors
- fewer requisitions for land transactions submitted for lodgment
- reduced manual registration processes, leading to more efficient processing times
- greater certainty, efficiency, consistency and transparency in lodgment and registration processes

- faster and more effective town planning decisions, and greater assurance in issuing compliance approvals
- improved accuracy of Crown land records to enable public land to be managed more effectively for the benefit of the community
- improved asset management capability and support for utilities, local government and state government
- higher spatial accuracy in, and more timely updates to Vicmap Property
- clear knowledge of interests in 3D space (below and above ground)

- improved auditing processes that check all data elements, leading to greater surety (or confidence) in land information products and services
- new collaborative opportunities for government, industry and academia to create innovative digital products and services
- a clear roadmap for academia to develop next generation surveying and spatial skills and capability, drive innovation, and tackle challenging issues through research and development
- maps that maximise the potential made possible by the Commonwealth's investment in precise positioning and the Geocentric Datum of Australia 2020.

The future Victorian cadastral system

Vision

A fully digital, highly automated and spatially accurate cadastral system that enables creating, managing and visualising the location and spatial extent of all known interests in Victorian land.

The cadastral system is a key pillar of Victoria's economy, and will continue to underpin almost all investment decisions relating to urban and rural planning, land and property development, infrastructure development, construction, environmental protection and natural resource management.

Given the rapid advancement and adoption of digital technology across industry and government and increasing demand for more accurate, efficient and robust information and services, we have taken a fresh look at our opportunities to deliver what Victorians need from our cadastral system in 10 years' time.

We are committed to delivering citizen-centric digital services, developed with end users in mind.

Pillars of a future-ready cadastral system

3D digital cadastre

A 3D digital cadastre that is data-driven, spatially accurate, easily visualised and readily understood.

Streamlined processes

Streamline processes to:

- offer high levels of automation, consistency, transparency, and integrity
- facilitate a fully interoperable data sharing ecosystem across public and private sectors that is accessible, secure, and designed for user needs
- enrich the system with a skilled, diverse and innovative workforce capable of servicing tomorrow's customers.

Standards and protocols

- Nationally agreed standards and protocols that enable the seamless collation of jurisdictional datasets to form an Australia-wide digital cadastre.

There are enormous opportunities and possibilities for change. However, before we can seize these opportunities, we must address some important challenges facing the transition to our desired future state.

To support a future-ready cadastral system, we must have:

- **System-wide information management**
  Effective information management across the entire cadastral system to achieve more cost-effective outcomes for the state. This also means removing systemic issues associated with legacy paper-based and siloed processes.

- **Availability of data products and services**
  Digital data products and online services that support the needs of industry, and provide for increased productivity and efficiency.

- **Data interoperability**
  Data interoperability enabling seamless exchange and aggregation of cadastral information with other user-centric information.

- **Workforce availability**
  Continued availability of a skilled, diverse and inclusive workforce.

- **Ongoing stakeholder engagement**
  Strong and effective relationships with our stakeholders.

We must also maintain critical business services as we concurrently co-design and transition to our future state together.

Guiding principles and priority areas

1. Digital by default

- Adopt a digital by default approach consistent with the Victorian Government Digital Strategy 2021-2026.
- Develop robust standards, services and systems to support a successful transition to a digital operating environment and long-term sustainability.
- Ensure all information is acquired, curated, exchanged, validated, visualised, processed, submitted, registered, aggregated (or value-added) and published digitally.
- Maximise digital ways of working throughout the cadastral system.
- Develop and implement streamlined processes that increase quality, productivity and efficiency.
- Adopt a privacy-by-design and security-by-design approach, to safeguard against actual and potential risks associated with digital technology.
- Remove unnecessary barriers to information management and enable new opportunities to innovate and create value.

2. Focus on the community

- Deliver an accessible fit-for-purpose digital cadastral system that meets the changing needs of the Victorian community.
- Deliver faster processing times.
- Provide open access to all available cadastral information, while respecting classification and/or commercial arrangements.
- Develop products and services based on user needs.
- Deliver a simple and seamless user experience for the exchange of cadastral information.
- Provide all users with an increased level of certainty in the location and spatial extent of interests in land.
- Develop procedures that drive continual improvement and higher integrity in the digital cadastre.
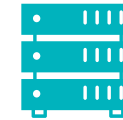
3. Data and infrastructure assets

- Deliver a spatially accurate, modernised digital cadastre in 3D that recognises change over time (4D).
- Support modernised, high-precision foundational spatial data in 3D and 4D using standardised and interoperable formats.
- Deliver an end-to-end digital pipeline for ongoing digital cadastre maintenance.
- Deliver fast, robust digital cadastral processing and auditing.
- Ensure intellectual property rights are maintained for cadastral surveyors who define, record and submit parcel boundary information.

4. Legislative framework

- Ensure Victoria's legislation, regulations and policy relating to land and property support a fully digital operating environment.

5. Skills and capability

- Build and maintain a culture that cultivates collaboration, promotes innovation, and provides greater accountability.

- Develop a capable, diverse, and inclusive workforce operating in a fully digital working environment.

- Embrace new ways for building capacity and capability, training a new generation of people, and maintaining our core and highly specialised skills.

- Foster and promote the development of skills and capabilities of professionals who will contribute to, or interact with, the digital cadastre.

6. Continuous improvement

- Ensure digital data that can be continually updated and or enhanced using automated digital processing.

- Maintain information about land, including responsibilities, restrictions and rights, is captured accurately, consistently verified, to the highest possible integrity.

- Innovate through prototype solutions to digitally display 2D, 3D and 4D cadastral plans, survey-based applications and title diagrams.

- Test and experiment with new and emerging technologies, and embrace global interoperability standards.

- Promote innovation through building prototype solutions and release them through open-source channels.
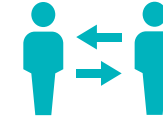
7. Co-design, connect and collaborate

- Identify opportunities to increase value for the broader community and economy.

- Realise opportunities by innovating, collaborating and delivering with third parties.

- Understand the different levels of maturity and appetite for change among government and industry stakeholders with whom we work.

- Expose data as openly as possible so that others can seize new business, research and development opportunities.

- Pursue continuous and open communication, and actively seek feedback from customers to improve user experience, data quality and service effectiveness.

Strategic Plan

Projects and initiatives underway

The following projects and initiatives are key areas of investment in Victoria's cadastral system that DTP is currently undertaking.

Digital Cadastre Modernisation

The Digital Cadastre Modernisation (DCM) is a $45 million project that is upgrading Victoria's official digital record and cadastral map of property boundaries for the state's 3.3 million land parcels. Now complete, it will reduce financial costs and boost productivity for government, private sector and everyone involved in the planning stage of large infrastructure projects.

ePlan

ePlan provides the enabling technology and infrastructure to support the encoding and exchange of digital cadastral information. The benefits of ePlan include the re-use and pre-population of cadastral information; streamlined validation; and minimised duplication of effort, requisitions and plan amendments. ePlan is being progressively implemented through the Single CAD Format File (SCFF) to increase the efficiency of creating and submitting digital information. Our future-state system will support 3D cadastral plans and surveys using a nationally consistent standard known as a 3D Cadastral Survey Data Model (3D CSDM).

## SPEAR and other land administration services
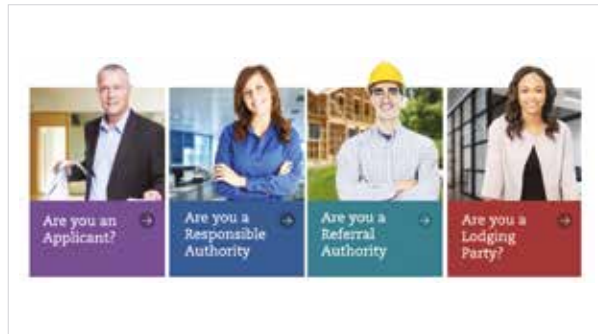
Several initiatives are underway to transform our services to fully digital ways of working. This includes a simpler and more seamless process for the submission and processing of planning and surveying applications, referrals and lodgments. For example, SPEAR already allows plan and survey documents to be submitted electronically. The next step is to enable plan and survey information to be submitted as digital data.

Digital Twin Victoria

Faster subdivision registration

This initiative will develop the enabling technology and infrastructure to support the digital examination and validation of subdivisions. It is designed to enhance the integrity of the cadastre, deliver more consistent and efficient processes and decisions, and achieve faster registration times. When complete in June 2024, systems and processes will be in place to enable mandating the submission of digital cadastral data.
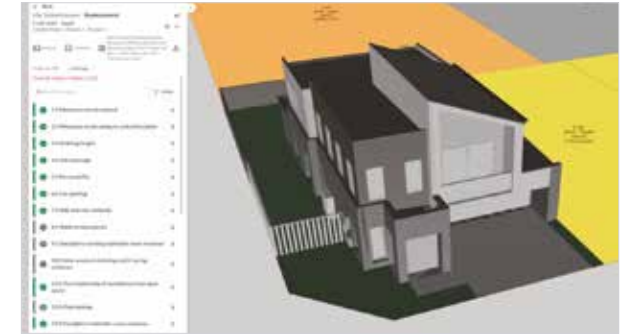
eComply

eComply is a 3D building assessment framework that uses digital compliance tools to streamline the planning approvals process for residential housing. The solution will enable architects, builders and developers to pre-check their designs against building codes, leading to more consistent compliance checking and faster approval times.

The Digital Twin Victoria (DTV) program is a $37.4 million investment in digital twin technology, geospatial data and spatial innovation over four years. Faster subdivision and eComply are two projects being delivered through this program.

Vicmap modernisation

Vicmap is Victoria's state-wide portfolio of authoritative spatial data products that provide the foundation for Victoria's primary mapping and spatial information systems. Developments in Vicmap will continue to enhance and inform our cadastral system.

- Several initiatives are being implemented to improve the accuracy and reliability of the core datasets, the way the datasets are maintained, and how users experience the data and services.

- We are also working on publishing a new Vicmap product known as Vicmap Survey, which will provide licensed surveyors with a digital record of cadastral boundaries and state borders, as well as an indication of survey differences and cadastral re-establishment issues.

- In every case, we are seeking to adopt cutting-edge machine learning technologies and automation to help streamline, reduce costs and speed up how we keep our data accurate and up to date.

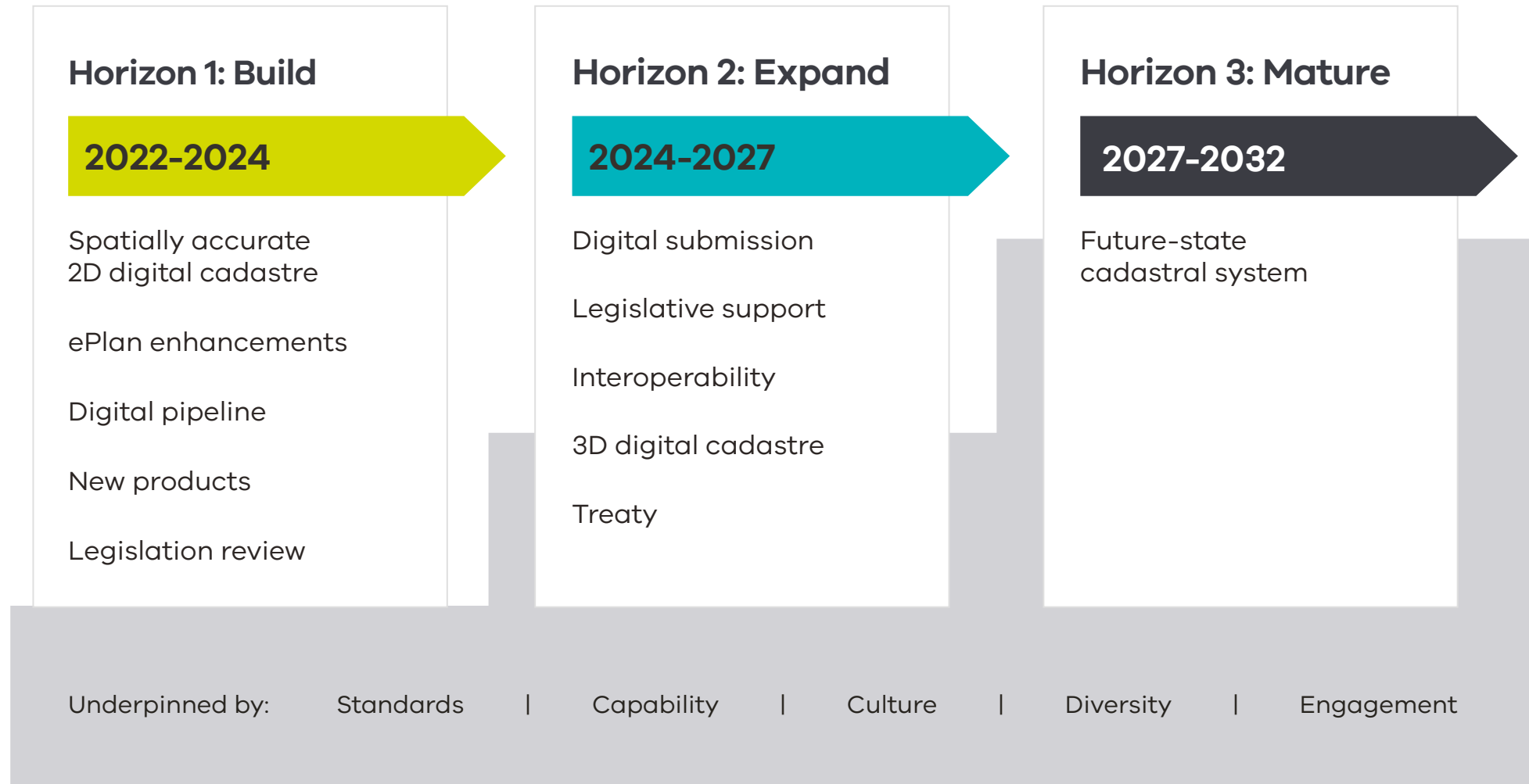## Review of licensing of cadastral surveyors

The Surveyors Registration Board of Victoria (SRBV) is responsible for the registration and licensing of cadastral surveyors. Victoria needs more licensed surveyors to meet growing demands from the construction and land development sectors. Following a review of the licensing process, SRBV is working on streamlining the process for registering licensed surveyors. This work is progressing in collaboration with the Council of Reciprocating Surveyors Board of Australia and New Zealand.

Digital twins such as Victoria's DTV platform are providing cadastral system stakeholders with accessible advanced visualisation of the cadastre together with other high-value data to co-design, connect and collaborate. Image shows Vicmap 3D Buildings and aerial imagery of the Geelong foreshore in the DTV platform.

Timeline and milestones

The strategy for advancing Victoria's cadastral system over the next ten years will be implemented across three horizons, with each horizon containing milestones for delivering our desired outcomes.

Horizon 1: Build

2022-2024

Spatially accurate 2D digital cadastre

ePlan enhancements

Digital pipeline

New products

Legislation review

Horizon 2: Expand

2024-2027

Digital submission

Legislative support

Interoperability

3D digital cadastre

Treaty

Horizon 3: Mature

2027-2032

Future-state cadastral system

Underpinned by: Standards | Capability | Culture | Diversity | Engagement

Horizon 1: Build

2022-2024

Spatially accurate 2D digital cadastre

1. Digital cadastre modernisation project complete, delivering a spatially accurate 2D digital cadastre and automated systems for its maintenance.

ePlan enhancements

2. Single CAD Format File pilot complete, with enhancements that enable automatic PDF rendering of digital data according to cadastral surveying drawing requirements.
3. Cadastral plans capable of being fully represented in digital form.
4. Partial support for digital representation of information contained in Abstracts of Field Records.
5. A phased pathway to mandatory submission of digital plan and survey data, commencing in the second half of 2024.
6. Initial adoption of digital data exchange between the cadastral surveying profession and Land Use Victoria using Single CAD Format File (SCFF).

Digital pipeline

7. Digital processing of cadastral plan and survey documents, and automated update of digital cadastre.
8. Digital subdivision examination tools developed.
9. eComply (first phase) delivered.

New products

10. Creation of new and responsive ways for rendering digital data and visualising interests in land.
11. Creation of Vicmap Survey, Vicmap Buildings and Vicmap Utilities.

Legislation review

12. Preliminary review of legislation and policy to support Horizon 1 complete.

Horizon 2: Expand

2024-2027

Digital submission

1. Abstract of Field Record information fully represented in digital form.
2. ePlan support for 3D plans (e.g. building subdivisions, consolidations, tunnels, corridors and vistas) through the 3D Cadastral Survey Data Model (3D CSDM).
3. Progression towards mandatory digital submission of 3D cadastral data in digital form.
4. Capability to support all plan and survey based dealing types implemented.
5. Digital data replaces PDF as the instrument for cadastral plan and survey-based applications.

Legislative support

6. Ensure Victoria's legislation, regulations and policy relating to land and property support a fully digital operating environment.
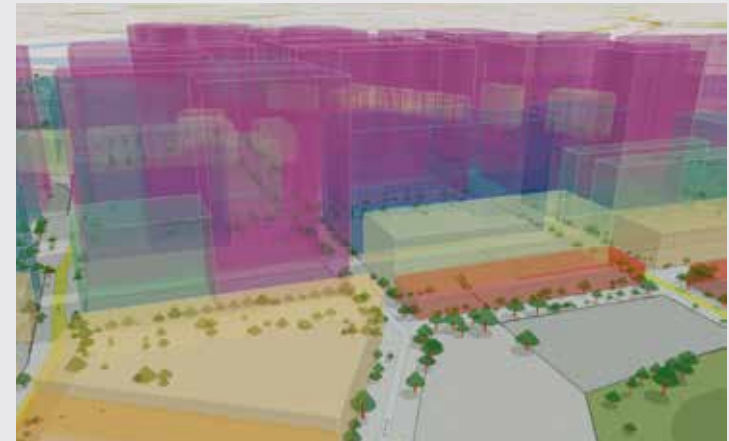
Interoperability

7. Data interoperability between cadastral and geospatial datasets achieved through 3D CSDM implementation.

3D digital cadastre

8. Extend the 2D digital cadastre to 3D space, such as buildings, tunnels, overpasses, corridors and vistas.

Treaty

9. Extend digital capability and resources to support Treaty negotiations.

Horizon 3: Mature

2027-2032

Future-state cadastral system

1. Fully digital, highly automated, spatially accurate 3D cadastral system.
2. Full capability to handle 3D cadastral data.
3. Mandatory digital submission and lodgment for all plan and survey information.
4. Vicmap Survey is the product of choice for obtaining authoritative digital data relating to cadastral boundaries.
5. Seamless end-to-end exchange and processing of cadastral information.
6. Building Information Modelling (BIM) integration.

Enduring alignment

The strategy for advancing Victoria's cadastral system is underpinned by Victoria's legislative framework.

The main acts, regulations and statutory rules and legislative instruments relevant to the cadastral system include:

- Transfer of Land Act 1958
- Subdivision Act 1988
- Participation Rules for SPEAR ELN
- Registrar's Requirements for Paper Conveyancing Transactions
- Surveying Act 2004 and Surveying (Cadastral Surveys) Regulations 2015
- Survey Co-ordination Act 1958 and Survey Co-ordination Regulations 2014
- Geographic Place Names Act 1998
- Owners Corporation Act 2006
- Victorian Cadastral Surveys Practice Directives 2021
- Land Act 1958
- Crown Land Reserves Act 1978
- Planning and Environment Act 1987
- Local Government Act 2020
- Major Transport Projects Facilitation Act 2009
- Traditional Owner Settlement Act 2010
- Sale of Land Act 1962
- Property Law Act 1958
- Road Management Act 2004
- Advancing the Treaty Process with Aboriginal Victorians Act 2018

The strategy for advancing Victoria's cadastral system is aligned to and supports the principles embedded in various national, state and departmental strategies, including:

ANZLIC	Strategic Plan 2020-2024
ICSM	Cadastre 2034
	Elevation and Depth 2030
Victoria	Victorian Digital Asset Strategy 2020
	Victorian Government Digital Strategy 2021-2026
	Victoria's Housing Statement
	DataVic access policy
	Infrastructure Victoria Strategy 2021-2051
DTP	Plan Melbourne
Land Use Victoria	Land Use Victoria 10-year plan 2022-2032
	Vicmap Core Spatial Data Services Strategy
	SGV Strategic Plan
	Strategy for Victoria's positioning system
	ePlan strategy
	Plan Branch strategy

As part of Horizon 1 and 2, we will undertake a programme of work to ensure legislation and policy supports digital ways of working with cadastral information.

Systems and technology index

Systems

LASSI

The Land and Survey Spatial Information (LASSI) mapping service is provided by Land Use Victoria to search property details. The LASSI mapping service provides a suite of four applications that can be used to find information about a parcel of land or property online and geographic place names throughout Victoria.

LANDATA

LANDATA provides access to property information held in the Victorian Register of Titles. You can use LANDATA to search for land titles, mortgage details, surveys, land valuations, property sales, property and planning certificates.

SPEAR

The Surveying and Planning through Electronic Applications and Referrals (SPEAR) system allows subdivision planning permits, certification applications and other land administration dealings to be compiled, lodged, managed, referred, approved and tracked online. Complete end to end workflows are built into SPEAR allowing applications to be lodged online with Land Use Victoria for registration.

VOTS

The Victorian Online Titles System (VOTS) is the digital platform and database used in Victoria to manage and record information related to land ownership and associated interests.

ePlan

ePlan is a digital data file that contains cadastral surveying and administrative information related to a plan produced by a licensed surveyor.

Technology

PDF

Portable Document Format (PDF) is an international standard (ISO 32000) used to store, exchange and present documents, including text formatting and images, in a manner independent of application software, hardware and operating system.

CAD

Computer Aided Design (CAD) is a concept for the use of computers to create, modify and analyse 2D and 3D designs, models and technical drawings. This Information can be stored in a CAD file in either an open, standard file format or as a proprietary format associated with the software application used to create the information.

BIM

Building Information Modelling (BIM) is an international standard (ISO 19650) used to manage information over the life cycle of built assets.

3D CSDM

The 3D Cadastral Survey Data Model (3D CSDM) is a concept initiated by the Intergovernmental Committee on Surveying and Mapping (ICSM). It aims to create a long-term and widely adopted standard across Australia and New Zealand for exchanging digital cadastral survey information between the survey industry and government land administration agencies.

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