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| Business response to Digital Cadastre Modernisation  BUSINESS CASE TEMPLATE  [Proponent]  [Version] [Date] |

Key Proposal Details

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| --- | --- |
| PROJECT INFORMATION | |
| Project name | **Alignment with State Government Victoria’s Digital Cadastre Modernisation** |
| Lead proponent  (Role & Business Unit) |  |
| Proposal partners  (Business Units) |  |
| LEAD CONTACT | |
| Name |  |
| Position |  |
| Phone |  |
| Email |  |
| PROJECT SCOPE | |
| Proposal summary for publication *Please provide 150 words or less* |  |
| SUPPORTING INFORMATION | |
| Attachments *Please list out all supporting information provided* |  |

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Text

Description automatically generated

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Executive Summary

This is essentially a summary of what’s in your business case and should capture all the key points.

The executive summary will be the first thing anyone reads which makes it important as it will set the tone for your whole business case.

A tip is to write this after you’ve completed the rest of your business case.

Note – in this document the person(s) preparing this business case is referred to as the “applicant”. Those within an organisation that will be assessing the business case are referred to as the “reviewer”.

# Case for Change

## Background

This section provides the applicant an opportunity to provide information to improve the reviewers’ understanding of the proposal. Types of information that are relevant to this section include:

* The objectives of the project
* The planned outcomes from the project
* Current level of use and reliance on business data that is aligned to Vicmap products: internally via business systems and your corporate GIS (ideally with approximate % and frequency of staff users) and/or external use by other agencies and utilities; community; Dial-Before-You-Dig (DBYD) customers; businesses and contractors.
* Challenges that have or will arise in the future from use of business data that will become misaligned with the improved Vicmap products (noting this may be compounded if your organisation is currently based on GDA94 and a move to GDA2020 is part of the scope of the business case).
* Brief description of the Digital Cadastre Modernisation project, impacts and overall expected benefits
* Brief description of role of datums and need to move to GDA2020 (if relevant)

### Digital Cadastre Modernisation Project

**The Victorian Government is investing $47 million to bring the authoritative map of Victoria’s property boundaries into the digital age, ensuring that one of the state’s most important datasets is accurate, modern and easily accessible.**

The Digital Cadastre Modernisation (DCM) project will deliver cost and time savings in property development and real estate and provide better information for utilities and local government, helping to improve location and maintenance of assets and may reduce incidents as a result of excavation, as well as enabling property boundary information to be more easily used in the broader spatial domain.

Vicmap™ is the state’s authoritative suite of spatial data products which provides the foundation of all mapping in Victoria.  It is available as open data and accessed by more than 6,000 customers over 100 million times per year.

This project will enhance the locational accuracy of Vicmap and is key to ensuring it provides the digital infrastructure Victoria needs, both now and into the future.

The digital cadastre upgrade is part of Land Use Victoria’s five-year initiative to transform the legacy map of Victoria’s property boundaries into a data-driven, spatially accurate, 3D digital representation of the cadastre.

Our business, like most in our industry, rely on the State Government’s Vicmap™ products for the location of properties, land parcels, addresses, transport infrastructure and other features. Location information is used to help undertake work in the field, inform decision making and communicate outcomes every day. A range of benefits are expected from this project including:

* increased confidence in decisions made using geospatial data, both Vicmap and business data dependent on property locations
* shorter timeframe for access to new or amended subdivision boundaries
* better alignment of geospatial information with aerial imagery
* improved data to support the development of digital twins
* increased confidence in provision of DBYD services
* greater reliability of manual or automated spatial processes

These and other benefits are further described in [3.2 Projected Benefits](#_Projected_Benefits).

### Project Objectives

Moving to the DCM upgraded Vicmap will necessarily impact a range of our internal business areas and may affect work we do with external stakeholders (such as Water Authorities). The following four stages of work are likely to be required. The State Government, through Land Use Victoria, are making tools available to support our organisation with the transition process.

**Figure 1. Four Transition Stages**

## Rationale for Investment

Outline the key challenges or issues that the project will overcome.

The challenges should be quantifiable and verifiable.

The challenges may relate to current as well as emerging challenges, as well opportunities that will arise from more accurate, reliable data that is aligned across datasets.

You may wish to highlight the risks that exist or would emerge in the future if the project does not proceed or is deferred.

The digital cadastre is the representation of land parcel and property boundaries that are crucial to understanding property ownership and service obligations. The digital cadastre mapbase is used to derive the location of many assets, features and boundaries relevant to our business objectives and operations.

The DCM project has been implemented to improve the spatial representation of the Victorian cadastre. Originally created in the 1990s, the current representation will be improved by integration of survey dimensions captured from original plans, mathematically adjusted (a least squares adjustment) to create a new digital cadastre. This is a new approach which will improve and upgrade the spatial representation and cadastral content.

There are well recognised discrepancies between the State’s current digital cadastre (Vicmap) and our business aligned data such as asset locations that arose from their original capture. This issue can be visualised when overlaying property boundaries with aerial imagery or asset location captured from accurate field surveys. Modern aerial imagery is highly positionally accurate. These issues of positional discrepancy are being faced by many organisations reliant on Vicmap and related spatial data.

Some of the implications of the digital cadastre legacy include:

* Uncertainty in the DBYD services regarding the location of assets and property boundaries, heightening the risk of inadvertent damage to infrastructure
* Community and internal business uncertainty regarding the onscreen representation of information especially when viewed with aerial imagery
* Unrealised potential to streamline and automate data processing and data and asset management procedures (the need for a “trained eye” to verify outputs should be reduced significantly)
* Reduction or elimination of the need to record additional location data for assets in cases such as:
  + accurate location based on a survey, and
  + location relative to map-view of property
* Misalignment of location data captured with GPS. The accuracy of consumer GPS devices is steadily improving and some cases exceeds the positional accuracy of the current digital cadastral representation.

As a state-wide digital cadastre improvement project, the DCM data will provide a much improved benchmark for reliable and highly accurate property and parcel mapping, although it will not replace the survey dimensions on land titles.

Once the DCM data is broadly adopted across government portfolios, local government, utilities, emergency services and the private sector it will become the framework to confidently integrate across sectors.

The risk to the business of not proceeding or deferring this project include:

* Increased double handling of data from external sources to determine source and alignment.
* Increased risk of misinformed decisions as there will further confusion in data origins. DCM data will be one more source to be recognised.
* In time, we may be faced with the requirement to realign external data provided in DCM alignment; the opposite process to this project.

## Strategic Alignment

Outline how the proposal’s outcomes align with (your) Organisation strategies, plans and policies and those of other agencies and the broader industry. The information may be presented in summary in a table or brief descriptions.

Applicants should consider how their proposal aligns with Vic Government Strategies and initiatives including:

- Digital Twin Victoria

- Victorian Digital Asset Strategy

|  |  |
| --- | --- |
| **Strategies, Plans and Policies** | **Alignment** |
|  |  |
|  |  |
|  |  |
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## Expected Outcomes

Outline the expected outcomes arising from the proposal, not just the outputs eg better data. For example:

- known spatial accuracies embedded within the mapbase leading to confident business decisions

- reduced time and reliability of information to support decisions on xxxx

- less disruption and costs from damaged assets (arising from better DBYD)

- significant savings from stopping internal cadastral data maintenance and double handling

Beneficiaries of the outcomes - may be Council, internal users, the community, businesses and other organisations.

Outcomes should be outlined in quantitative terms where possible. Outcomes may be described in qualitative terms if quantification is difficult.

Table 1.1: Key Outcomes examples

|  |  |
| --- | --- |
| **Project Outputs** | **Key Outcomes** |
| Complete data audit | Increased knowledge of and better management of our digital geodata resources. |
| Above | Efficient and effective plan to migrate to GDA2020. |
| Increased accuracy and reliability of digital cadastre that is aligned to our business data. | Increased confidence in information and decisions based on digital geodata. |
| Above | Opportunities to streamline business processes through automation. |
| Adoption of DCM aligned data by all agencies, contractors and our business | More seamless incorporation of geodata from multiple sources by replacing expert but essentially manual processing with automation. |
| Above | Opportunities to streamline the receipt and handling of as-built asset plans from contractors that utilise DCM data as their base. |
| Above | Open up opportunities in our business to take advantage of the potential for broader digital transformation projects. |
| Above | Faster turnaround between registration of subdivisions and the availability of updated digital cadastre through Vicmap. |
| Above | The ready availability of a reliable cadastral foundation to underpin digital twin representations of our business assets and operations. |
| Above | Opportunity to leverage and/or participate in the Victoria Government’s Digital Twin Victoria environment. |
| Above | Future opportunities to leverage Victoria Government’s eComply toolset to streamline the verification of planning applications. |
| Above | Reduced risk to asset damage through use of DBYD. |

## Stakeholder and Community Support

Please outline stakeholder and community support for the proposal and DCM.

What issues and concerns have stakeholders/ the community raised? How has the proposal responded to these concerns?

Where it is anticipated that the proposals will elicit complex feedback and/or involve multiple stakeholders, the development of a formal Stakeholder and Communications Plan may be required to complete this Business Case. This report should outline:

* Key stakeholders
* Key issues/ concerns/ expectations
* How the proposal has adapted to these issues/ concerns / expectations
* Consultation activities undertaken
* Future communications activities proposed.

Table 1.2: Stakeholder support

|  |  |  |
| --- | --- | --- |
| **Stakeholder Group** | **Organisation** | **Key Issues/ Interests** |
|  |  |  |
|  |  |  |
|  |  |  |

\*could replace table with a diagram mapping support

# Analysis of Proposal

## Objectives and Indicators

Outline what the proposal is seeking to achieve and how each desired outcome will be measured. For example:

* Audit of data resources, stewardship and ownership will improve confidence in resources (measured by metadata records)
* Transformation of asset data to DCM alignment will increase timeliness accuracy and reliability of decisions on xxxxx (measured by xx)
* DCM alignment will enable greater use of Vicmap products including web-based services to reduce data maintenance costs (measured by xx)
* Coordination with contractors and suppliers will ensure they utilise and deliver geospatial data in GDA2020 and DCM alignment leading to reduce data exchange/management costs (measured as xxx)

Table 2.1: Proposal objectives

|  |  |  |
| --- | --- | --- |
| **Key problem/issue** | **Key proposal objective** | **Key success indictor** |
|  |  |  |
|  |  |  |
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## The Base Case

Summarise what is the ‘base case’ to be used to assess the merits of the preferred solution? The base case is the ‘state of the world’ without the proposal, the case with no change or business as usual.

Describe the pros and cons of this solution.

The current situation:

* Users can be confused by detailed map views of assets, property boundaries over modern aerial imagery as the locations do not align.
* Varying degrees of alignment between map-based representations of assets against property boundaries and aerial imagery due to data capture with different levels of on-ground (positional) accuracy.
* Potentially risk of misinformed decisions for users of these data.
* Risk is attenuated by GIS officers inspecting outputs to verify them or the provision of advice or instructions to explain any differences. This situation leads to inefficiencies and/or delays in the provision of information and may engender a lack of trust by users.
* Over time as more organisations adopt DCM aligned data there will be:
  + Increased double handling of data from external sources to determine source and alignment
  + Increased risk of misinformed decisions as there will further confusion in data origins. DCM data will be one more source to be recognised.
  + Need to realign external data provided in DCM alignment back to our data.

### Recommended action

The recommended approach will:

* establish a transformation project and team to identify the data, tools and outputs at risk;
* plan the transformation of impacted data and tools using industry best practice methods; and
* communicate the significance of these changes to system users and stakeholders.

**(Option A)**

Substantial elements of the project would be undertaken by consultants that deliver the work within a set timeframe and hence minimise the disruption on data and systems in operation. The consultants would be expected to use the best available methods based on their expertise. The use of consultants will reduce the time impact on our staff. Staff will be required to define and oversee the project and facilitate access to stakeholders, data and tools.

A disadvantage of this approach is the cost of the consultants. However this is expected to be offset by the shorter period of time before realising the beneficial outcomes.

**(Option B)**

This proposal recommends that the project be undertaken using internal staff resources redeployed for a defined project period. This approach will limit the expenditure required and build the skills of team members. In addition, our staff are immediately aware of the data, tools and stakeholders that need to be considered for the delivery of the project.

A substantial risk of using internal resources that should be acknowledged is that project delivery may be delayed by staff members being expected to deal with other issues or their substantive tasks. Furthermore, our staff will need to develop skills and techniques to undertake the transformation element across the range of different data resources. This concern may be partially ameliorated by drawing on the tools provided by Land Use Victoria and reaching out to our industry peers who have already undertaken this transformation.

## Other Options Considered

Summarise how the preferred solution was selected.

What alternative options were considered that would also solve the abovementioned problems?

Alternative options that proponents may need to consider include:

* A do-nothing option
* A do-minimum option
* A do-later option

Briefly describe and summarise each approach in a table with pros and cons.

The recommended approach of xxxx to this project was made after consideration of several alternatives. The alternative options considered included:

### A do-nothing option

Must our organisation undertake transformation to align with DCM digital cadastre?

### A do-later option

How long can we delay the transformation activities? The same risks apply as described under Do-nothing.

### A do-minimum option

Is there an option to consider a smaller scope of work and hence a reduction in costs and resources required?

Table 2.2: Comparison of Approaches

|  |  |  |  |
| --- | --- | --- | --- |
| **Pros/ Cons** | 1. **(Consultant)** | 1. **(Internal)** | 1. **(Do-nothing)** |
|  |  |  |  |
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## Information about the Proposal

### Scope of Work

Provide a brief description of the work proposed.

This description may include:

* Quantifiable details including number of datasets, number and value of assets or properties or customers, capacity of team and level of effort necessary etc.
* Any relevant standards that apply
* Software and data adjustments or tool acquisitions
* Concept diagrams and sketches
* Photos

The scope of works should include what the key elements are and why each element is needed.

The scope of works should also include allowances for planning and management including project management (including allowances for cost, benefit, and risk, asset, stakeholder, and change management), consultation, design, preliminaries and procurement activities.

### Proposal Exclusions

Please outline, if relevant, which elements are outside the scope of the proposal.

### Related Projects/Interdependencies

Please outline, if relevant, if the proposal is related to another project or is dependent on another project proceeding.

* Such as IT environment changes
* Data capture projects
* Subdivision activity
* Staffing resources and upcoming changes

# Projected Costs and Benefits

## Project Costs

Assemble the project costs of the proposal. Compare these costs with the current “business as usual” scenario.

Cost estimates should include:

* Staff time and cost inc project management
* Contractor / consultant costs
* Software tools or platform costs
* Contingency.

All cost estimates should be exclusive of GST.

Separate out capital costs from recurrent costs

For longer term projects, set out cost projections or escalation assumptions over, say, a five year period.

Explain how the cost estimates were derived.

Table 3.1: Project costs inclusive of contingency ($000s)

|  |  |  |  |
| --- | --- | --- | --- |
| **Items** | **2021 - 2022** | **2022 - 2023** | **Total** |
| Item 1 |  |  |  |
| Item 2 |  |  |  |
| Item 3 |  |  |  |
| Item 4 |  |  |  |
| Contingency (15%) |  |  |  |

## Projected Benefits

### Full Benefits

Identify all the benefits expected to arise from this proposal. For each benefit describe the impact and relevant stakeholders. Where possible, cross reference stakeholders identified in Section 1.5.

Consideration should also be given to both quantifiable and non-monetary benefits such as increased customer or ratepayer satisfaction. The benefits may include:

* Cartographic representation of assets, features and boundaries overlay correctly on base-maps including aerial imagery.
* Increased certainty, trust and accuracy of property boundaries that will lead to improvements in efficiency and reliability of service delivery.
* Close matching of property and asset alignment with aerial imagery will lessen confusion of users and increase reliability of measurements.
* Assets sit within the correct property.
* GIS officers no longer asked to explain issue or move data.
* Provide purpose and imperative to audit and examine existing data resources and how they are used.
* Increase confidence and support for automation.
* Greatly improved accuracy and reliability of offsets to assets.
* Greater accuracy of property alignments for capture of ‘as-constructed’ drawings by developers and contractors.
* Increased confidence in provision of automated DBYD services.
* Lessen the possibility of confusion when investigating post incident response to a property or address when using GIS.
* Enhance engagement with users and the community.
* Quicker access to new properties and parcels through Vicmap.
* Enable integration with digital ecosystem being developed by Digital Twin Victoria. This includes utilisation of eComply.

Table 3.2: Benefits Identified with Beneficiary

|  |  |  |
| --- | --- | --- |
| **Benefit name** | **Impact** | **Stakeholder Group/s** |
|  |  |  |
|  |  |  |
|  |  |  |

### Projected Quantified Benefits

Please outline the projected quantifiable benefits expected to arise from the proposal.

These estimates may include:

* Savings per year (negative $) – use case studies
* Revenue generated
* Costs no longer incurred (negative $)

All estimates should be exclusive of GST. Identify capital and recurrent benefits.

Table 3.3: Projected benefits ($000s)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Items** | **2021 – 2022** | **2022 - 2023** | **2023 - 2024** | **2024 - 2025** | **2025 - 2026** | **2026 - 2027** | **Total** |
| Item 1 |  |  |  |  |  |  |  |
| Item 2 |  |  |  |  |  |  |  |
| Item 3 |  |  |  |  |  |  |  |
| Item 4 |  |  |  |  |  |  |  |
| Item 5 |  |  |  |  |  |  |  |
| … |  |  |  |  |  |  |  |
| Item n |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |

## Cost Benefit Summary

Summarise all costs and material benefits that are expected to arise and who the beneficiaries are from each outcome.

The total cost is expected to total $xxx based on the items as described in Section 3.1. The expenditure is not recurrent.

A series of benefits arising from the effective transformation and alignment to Vicmap include $xxxx in total value over the coming five years as described in Section 3.2. Further non-quantified benefits are also identified.

Table 3.4: Total Costs and Projected benefits ($000s)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Cost/ Benefits** | **2021 – 2022** | **2022 - 2023** | **2023 - 2024** | **2024 - 2025** | **2025 - 2026** | **2026 - 2027** | **Total** |
| Total Costs |  |  |  |  |  |  |  |
| Total Benefits (Quantified) |  |  |  |  |  |  |  |
| **Total** |  |  |  |  |  |  |  |

## Proposed Funding Arrangements

Please outline how the proposal’s costs are to be funded.

Table 3.5: Proposed funding requirements ($000s)

|  |  |  |  |
| --- | --- | --- | --- |
| **Funding** | **2021-22** | **2023-23** | **Total** |
| Proposal costs |  |  |  |
| Proposal costs |  |  |  |
| **Sub total** |  |  |  |
| Internal budgets xxxx |  |  |  |
| Internal budgets xxxx |  |  |  |
|  |  |  |  |
| **Sub total** |  |  |  |
| **Request for additional funding** |  |  |  |

Separate capital from recurrent funding.

Funding Sources (if known)

* Internal funding allocation
* Grant application
* etc

# Implementation

## Program and Milestones

Please outline the key stages, actions and decision points associated with the proposal.

Key events to consider for incorporation into the program:

* Planning and detailed design
* Approvals
* Procurement
* Auditing, assessment, transformation and communication
* Final reporting on outcomes.

Recommended attachment: a project timeline/GANTT Chart

Table 4.1: Key events

|  |  |  |  |
| --- | --- | --- | --- |
| **Stages / Actions** | **Start** | **Finish** | **$ Amount** |
|  |  |  |  |
|  |  |  |  |
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|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  | Total $ | $ |

## Governance

Please outline the project team that will oversee the management (during delivery and operations) of the proposal. Outline the way the proposal will be organised, including:

* Key decision makers (e.g. proposal sponsor)
* Governance bodies (e.g. steering committees, advisory groups)
* Proposed personnel
* Key stakeholders (e.g. stakeholder groups, internal and external)
* Interfaces with industry peers and Government agencies (DELWP, ESOs)
* Interfaces with contractors

Please outline responsibilities and roles of key personnel.

## Risk Management

Please outline the key risks that the proposal will face, proposed mitigations and how serious each risk is.

What activities have been undertaken during the planning stage to identify and reduce the proposal’s risks?

What activities are proposed during the delivery stage to identify, monitor and mitigate the proposal’s risks?

Key risk areas to consider include:

* Scope creep
* Stakeholder engagement
* Data integrity issues.
* Procurement
* Change management, staff resourcing changes
* Assumed future revenues
* Project interdependencies

Table 4.2: Key proposal risks

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risk** | **Proposed mitigation** | **Risk rating after mitigation** | | |
| **Consequence** | **Likelihood** | **Rating** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |