

Victorian Spatial Council

The Property Information Program – a vital infrastructure for Victoria

Report of the Proceedings of the VSC July 2006 Forum

The Victorian Spatial Council has been established under the Victorian Spatial Information Strategy 2004-07. The Victorian Spatial Information Strategy is a whole-of-Government strategy concerned with all aspects of Victoria's spatial information industry. It considers roles and requirements of the public and private sectors and academia in advancing Victoria's social, economic and environmental goals through the provision and application of spatial information.



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INTRODUCTION

On 19 July 2006, the Victorian Spatial Council hosted a public forum entitled ‘*The Property Information Program – a vital infrastructure for Victoria*’.

The objectives of the Forum were to:

1. present findings and recommendations of the 2005 PIP Evaluation;
2. provide a forum for the presentation of responses to the Report by Local Government, State Government and Users.
3. provide an opportunity for engagement of and input from major stakeholders.

This report is a key outcome of the Forum. It is being presented to the PIP Migration Stakeholder Project Management Committee, to inform the development of the proposed Migration Strategy and recommended strategic directions to State and Local Government, and key stakeholders.

Forum Program

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| Forum Overview | Olaf Hedberg, VSC Chair |
| Setting the Scene <i>Users’ perspectives on the fitness for purpose of Property data.</i> | Graham Thiessen General Manager Operations Emergency Services Telecommunications Authority |
| | Glendon Dickinson Executive Manager, Review and Property Warrnambool City Council |
| | Bruce Thompson Director, Spatial Information Infrastructure Department of Sustainability and Environment |
| The Property Information Program Evaluation <i>A summary of the challenges and recommendations identified by the PIP Evaluation</i> | David Alexander Alexander-Tomlinson Pty Ltd |
| Responses from PIP Collaborative Action Plan Working Group | John Hennessy Municipal Association of Victoria |
| | Diane Daniell Chair, Local Government Spatial Reference Group |
| | John Gallagher Manager, Stakeholder Management Spatial Information Infrastructure |
| Open Forum | |

A summary of the main messages from the Forum follows.

Summaries of the presentations given at the Forum and responses to issues raised in the open discussion at the end are also provided.

FORUM OUTCOMES

Executive Summary

The major messages that emerged from the Forum are summarised below.

- Everyone agrees that Vicmap relationships are highly important.
- All sectors are supportive of the Property Information Program.
- It is widely agreed that the PIP needs a Champion or Champions at different levels of Government.
- There is a need to determine the real information needs of all end users.

- Vicmap data is a fundamental resource for key Government operations, at both State and Local Government levels.
- There are significant risks associated with inaccurate or incomplete data, particularly for emergency services.
- PIP processes are cumbersome.
- There is a lack of awareness about the contribution PIP can make – in Local Government to maintaining efficient and effective service delivery; in State Government to delivering an e-State vision.
- Coordinated approaches between State and Local Government are required to ensure correct input and output of data.
- The key issue is ‘fitness for purpose’ – whether ‘complete’, ‘current’, or ‘correct’.
- However, in attempting to determine fitness for purpose, further questions start to arise – ‘how complete’, ‘how current’, ‘how correct’.
- There is a need to reconcile the needs of high and low end users.
- Suggested performance standards (to be further confirmed after ongoing analysis) are 98% line work accuracy, 99% attribute accuracy, and 24 hour currency.
- There is a lack of clarity about how PIP fits into the Whole of Victorian Government ICT strategy.
- Modernising the backend technology would replace many of the current practices at local government business unit level.
- There is growing recognition that PIP in its present form isn’t sustainable into the long term.
- Maintenance of Vicmap has become very complex.
- Vicmap is not meeting all Local Government requirements.
- There is a lack of a standard approach to property data maintenance in Local Government.

- Six major areas for upgrading Vicmap are emerging:
 - Spatial upgrades to correct displacement
 - Defining ‘fitness for purpose’ (through engagement with stakeholders)
 - Developing On-line Notification and Editing capacity
 - Recognising Local Government as the custodian of property (and potentially Land Registry as custodian of parcel)
 - Developing on-line improvement processes
 - Implementing e-Plan (digital subdivision standards)

- Standardisation is required across Councils and within Councils.
- There is a need to agree on a definition of ‘property’.
- There are still duplicated datasets in use – even within organisations.
- Unless users are able to access the most current, up to date version of data available, they will continue to want to retain their own versions of the data.

FORUM PRESENTATIONS - SUMMARY

Overview

The Property Information Program (PIP) is a collaborative initiative between State and Local Government that began in 1998 to improve the quality of land parcel and property records held in their respective systems.

A major Evaluation of PIP was commissioned in 2005 by the Municipal Association of Victoria, the Local Government Spatial Reference Group and the Department of Sustainability and Environment, and released in March 2006.

The purpose of the Evaluation, conducted by Alexander Tomlinson Pty Ltd, was to assess Council performance against 'best practice' in executing PIP maintenance processes; and to recommend a Migration Plan that will assist each Council to move closer towards that goal within a sustainable Program environment.

The Report found that the PIP is largely unrecognised in Government strategy and policy, yet is potentially one of the fundamental building blocks of an e-State Strategy and a major component of a State Land Information Infrastructure.

The report recommends the establishment of a high-level inter-government–industry committee of key PIP stakeholders, to implement the Migration Plan and to achieve the recommended performance targets of 98% and 99% accuracy of graphic and attribute information, respectively. These performance targets represent the benchmark (minimum) standard for user acceptance of the PIP products derived from Victorian property and cadastral land records.

Setting the Scene – Users' perspectives on the fitness for purpose of property data

Emergency Services Perspective

The Vicmap data and the Property Information Program are both key to the Emergency Services Telecommunications Authority's (ESTA) emergency services communication role in Victoria.

ESTA is supplied Vicmap Road and Address data by Spatial Information Infrastructure, which is fundamental to the dispatch of emergency services vehicles by the computer-aided dispatch system.

There are significant risks associated with any inaccuracies or incompleteness in the spatial information used by the dispatch system – omissions or errors can often lead to extended response times, which in turn can have major consequences. For example, missing information or incorrect data can significantly extend core processing time, which has an ongoing impact on the ability to dispatch emergency resources in a timely manner. This can have a compounding impact upon subsequent calls for assistance (one operator tied up on a call for 5 minutes, which could have been addressed in 45 seconds, means that subsequent calls may not be addressed as quickly as they might otherwise have been).

Last financial year ESTA answered 1.48 million calls for emergency assistance, which equates to more than 4,000 calls each day. At present, the system covers the greater metropolitan and Geelong regions. It will be expanded to Regional Victoria in 2007, increasing the reliance on Vicmap for emergency vehicle dispatch. It is of

critical concern to ESTA that the standard of the data for regional Victoria matches that in the metropolitan areas.

The first question asked by ESTA operators for each call they receive is ‘where is your emergency?’ This is the critical piece of information in any emergency call.

Once the location is verified, the computer-aided system uses address data to locate the appropriate emergency vehicle and dispatch it. The units are tracked by an automatic vehicle location system and their status is known to their operators. Clearly missing information or inaccurate information in the system will as a minimum lead to delays, and potentially may lead to resources being deployed to the wrong location.

There are obvious benefits associated with using Vicmap data for emergency call taking dispatch, because it has whole of state coverage on a large scale, data management for Vicmap is based on solid principles including custodianship, and the data comes from a single authoritative source.

However, it is essential to ensure that the spatial data used for emergency call taking dispatch meets a consistently high standard across the whole State.

Local Government perspective

There has been a sense for sometime that senior management in local government has not fully understood the requirements for the provision of accurate property data and the consequences of not maintaining it.

The key to the map base is accurate linkages to an accurate property database; all other uses of GIS subsequently flow from this, be they for managing and responding to flooding, assets, valuations, forestry. In other words, the capacity to display data visually on a locally based spatial mapping system.

PIP processes at the Council level continue to be technical and cumbersome. There is a view that PIP has been designed from a State Government point of view:

- the PIP solution has been developed by State Government without involvement of Local Government providers of mapping and property based software solutions and to meet State requirements;
- the M1 process and subsequent processes are not cost effective;
- in many cases, Council rates and revenue department staff, while supplying address data to Government and having a clear knowledge of the importance of this data, have not been aware that their Council has a PIP agreement in place.

Local Government has used its own limited resources to give address information in exchange for the State maps relating to their communities.

As awareness of the PIP process has increased, it has become evident that there is a need to develop a solution that both provides the best outcomes for residents in each Local Government Area and meets the State Government’s objectives.

However, before introducing any operational changes, the role, purpose and relevance of PIP as a component of a State information exchange need to be examined.

In order to address data currency and accuracy there is an urgent need to develop a coordinated strategy to ensure that the input and output of data is correct, in particular improving the standard of parcel, property and street addresses.

A solution is needed that:

- is not technical, that Council staff can administer as it relates to the rate paying residents;
- provides accurate Address and map data for use by emergency organisations;
- has built in reconciliation, automatic address delivery and address accuracy alerts at Council level;
- all Councils can utilise and afford with the resources available to them.

It is also important that

- Council Address data, which has evolved through generations of different Local Government Software Vendors, is cleansed to conform to standards that enable it to be compared and transferred with confidence.
- Vicmap can be assured as a quality database.
- Councils believe that they have the most accurate address data. In recent times this may not be so, however the birth of Vicmap has generated a database that Council can now compare to ensure that our residents get the best results.

Address data cleansing is now a large component of PIP and will be critical before address data is provided by any automated processes.

However, Councils have not benefited from past activities to cleanse address data. In many cases, their addresses have remained in the same state as when PIP commenced.

Address reconciliation is just as important as reconciling rate balances with Councils' general ledgers or bank accounts. Residents take it for granted that their addresses, which Council are responsible for are correct in the State Government records. This reconciliation process needs to be ongoing.

State Government perspective

The key issue is 'fitness for purpose', ie supplying data that will enable users to achieve their objectives.

Anything that prevents the data, in this case Vicmap Property, from being fit for purpose in this context is a defect; making Vicmap Property fit for purpose is about improving its quality by getting rid of defects.

In removing defects, three fundamental questions need to be asked:

1. What is the 'fitness for purpose' quality standard that we want, for all users in Victoria?
2. What is the current quality standard?

The responses to these first two questions will demonstrate the gaps between the desired and current quality, leading to the third question:

3. How do we move from where we are to where we want to be?

'Completeness', 'currency' and 'correctness' are the issues under consideration:

- Completeness – every property in Vicmap Property,
- Currency – the data is up to date, and

- Correctness – all attributes and spatial extent being right.

However, in attempting to determine ‘fitness for purpose’, further questions start to arise:

- ‘how complete’ – which can be further extended into asking:
 - is it every marketable property – because in a sense that’s what the land administration component of the State Government is interested in, or
 - is it every rateable property – because that is what Local Government is interested in, or
 - is it just 99% of properties?

A major deficiency in Vicmap Property is that it is not a complete representation of the State; at present it covers primarily marketable properties.

- ‘how current’ – is it 10 working days? 100 working days? 4 hours? or real time?
- It would be ideal to have real time, but what is the cost? What is the benefit?
- ‘how correct’ – does this refer to the attributes, the spatial extent and all the attributes of a parcel and property that are in Vicmap? Is it a percentage or a defined number?

In summary then, it is not simply a case of saying Vicmap is ‘complete’, ‘current’, or ‘correct’, but rather ‘how complete/current/correct’, for what purpose is the data being used, what is required to meet the needs of users, where can compromises/trade-offs be made?

It is arguable that Local Government should be considered the highest and best user of Vicmap Property. In this case highest and best means that they have the most demanding use. Local Government is also the major source of Vicmap Property data, so they can also be considered in effect as the custodian of property related data.

If Local Government is the highest and best user, it should be the arbiter of the fitness for purpose of Vicmap Property. However, we then need to take a whole of Victoria view and reconcile the requirements and expectations of other users of the data and supplement that core role.

Almost everyone needs parts of Vicmap Property, especially address. The data is used in:

- land administration
- emergency management and counter terrorism
- asset management
- navigation and dispatch
- environment management
- natural resource management
- service planning and delivery across State, Local Government and Federal Government.

The fundamental and distinctive character of Vicmap Property is that it is the holder of the four fundamental indices:

1. Coordinates – where an object is in space, ie its location
2. Standard Parcel Identifier
3. Council property number, and
4. Address.

Business processes are about the relationships between these four indices. The fundamental role for Vicmap Property is the establishment and the creation and the links between them.

The fact that those four indices are bundled up in Vicmap means that it can underpin a very broad range of transactions and processes.

Property Information Program Evaluation

Alexander Tomlinson prepared three reports as a result of collaboration and cooperation with representatives from State Government, Local Government and affected users.

Three aspects were considered in establishing the forward direction for PIP:

Performance targets

The starting point is establishing a product or a service standard and the customer or the end user requirement for the product.

During the course of the Evaluation, the suggested target performance standards (to be further confirmed after ongoing analysis) were 98% in line work accuracy, 99% in attribute accuracy and 24 hour currency.

Infrastructure

A lot of activity has been undertaken since the Program began in 1998, however there is a lack of clarity about how it fits into the State whole of government ICT strategy.

PIP is highly significant to Victoria, with the land records it produces underpinning a range of legislation, such as the Valuation of Land Act, the Local Government Act and the Road Management Act.

These records are also relevant to emergency services, utilities, State and Local Government.

The worst outcome of data errors is loss of life, but it also impacts the State and Statewide delivery of services.

Because accurate land records such as Parcel/Property, Street Address and Suburb Administrative Boundaries Records are significant to State and Local Government, there are a range of issues that need to be taken into account, such as compliance and service delivery, interests in land, legal implications on land, acquisition and disposition, property valuation, Certificates on Land.

These all show the significant risks if PIP is not working well. They impact on customer service delivery and on the ability of Councils to demonstrate to rate payers that they are performing well.

The Vicmap suite comprises 13 products, of which 5 are typically related around the central Vicmap Property. It is critical that these fundamental datasets are available and highly accurate for the State. They are

- Vicmap Address
- Vicmap Administrative Boundaries
- Vicmap Planning
- Vicmap Property
- Vicmap Transport

The problem is that there are multiple systems and databases generating these products. PIP is a system within a system, and there are many other linkages required between property information and Vicmap Product databases:

- Councils require access to land titles to validate their records
- utilities are either maintaining their records independently or possibly using Vicmap Property
- Vendor Statement Certificates Online and the SPEAR project (Streamlined Planning through Electronic Applications and Referrals) require the use of consistent records.

The 79 Local Government systems have also evolved over time and Councils have developed their own GIS and rating systems, so there is potential for inconsistent content and form of data and systems across the local government network.

The PIP is relatively unrecognised in Government strategy and policy; it is potentially the State's flagship spatial program to achieve an e-State vision. It is a window into the financial, legal, public safety, commercial, and environmental dealings that emanate from or are delivered to a property.

Best practices

With respect to best practices, the Evaluation examined system sustainability from a program or administration/operational perspective, in particular system functionality and work flows, which influenced the local government business unit practices. Modernising the backend technology would replace many of the current practices at local government business unit level.

Eleven issues were worked through with each local government:

1. PIP processes including M1, M2, Plans of Subdivision, Road Naming and Rural Addressing.
2. Output specification
3. Data specification
4. Technology
5. Procedures
6. Standards
7. Skills and expertise
8. Performance Measures

9. Outputs
10. Outcomes
11. Benefits

Achieving fitness for purpose is a challenge for PIP. The following types of considerations need to be taken into account:

- Creating one ‘single point of truth database’ that can meet all users’ needs
- Raising awareness in Councils of their responsibilities in maintaining the integrity of Vicmap Property records and data
- Developing smarter processes to increase data maintenance efficiency
- Moving away from proprietary software to open systems
- Developing an overall strategy for an integrated Government land records system
- Raising awareness about the contribution of accurate land records to Victoria’s economy
- Achieving interoperability through the use of common standards, compliant technical infrastructures
- Ensuring close interaction between business process reform and information architecture development

Responses from the PIP Collaborative Action Plan Working Group

Municipal Association of Victoria

In the mid 1990’s PIP was considered a leading edge concept and a good practice application in terms of exchanging data between Local and State Government. There is now a growing recognition however, that PIP in its present form isn’t sustainable into the future and that it needs to be re-engineered.

Councils are currently spending between \$3 and \$5 million per annum on their participation in PIP. At the same time however, some Councils run parallel systems as a result of a lack of confidence in what PIP is delivering.

Key concerns are substantial delays in errors being corrected, a lack of agreed performance standards, and inconsistent data structures between stakeholders that do not enable exchange of information in a consistent manner.

The time has come when Councils are having to decide whether they are going to continue to participate in PIP or not.

The PIP collaborative action plan working group’s vision is to lead Australia in the effective use of a common State map base as a decision making tool through a controlled and sustainable data maintenance process. The system in its current form needs to be radically re-engineered to make sure that it can actually meet that vision.

Across Australia, up to 100 Councils have adopted the Electronic Development

Application process as part of the Federal Government's campaign to cut red tape. Funding has been allocated to integrate the EDA into Councils' software, with the potential for it to become a standard among Vendors and Councils in the not too distant future.

The trend over the last couple of years has been towards Local Government accepting common national standards and specifying those standards in their systems and software and to vendors. There is no reason why that type of approach cannot be reflected in PIP, with its defined data structure and architecture. Councils and the State Departments are already reflecting this approach in terms of data interchange and vendors supporting that common standard, thereby facilitating interoperability.

The key elements for securing the PIP:

- Users to define the required performance standards
- Quality information delivered from a single source on demand (98/98/24 approach), supported by agreed data structures and interoperable systems.
- The PIP Migration Stakeholder Management Committee
- A defined vision
- A structure to deliver the required standards
- A strategy to build the system.

Local Government Spatial Reference Group

Local Government regards PIP as a worthwhile mechanism for exchange of information. It removes the duplication of effort, which is one of the reasons it was created. Prior to PIP, Councils performed their own cadastral updates, something that should be done only once. Councils and utilities also had their own map bases, so that in exchanging information they had to manage different asset layers, and the follow up work required to support their integration.

Councils don't want to go back to that position, which is what makes the whole concept of PIP a good thing.

A lot of Councils that didn't have GIS before PIP now have it, and it has now become a primary resource. They use it for managing and capturing address and road related data, for which they are an authoritative source.

PIP has evolved, but it hasn't necessarily grown in the way the different partners thought it would. For some Councils it does just enough, but for others it nowhere near meets their needs. A significant number of Councils have invested in adaptations to ensure it meets their needs.

PIP and the Property data are part of the Spatial Data Infrastructure. They are an asset, not only to Councils, but also for the entire State and nationally.

The PIP Report has been excellent. It has given us the foundations for something really worthwhile.

Some of the problems with PIP are technical, so technical solutions can be found.

There are policies and procedures that Local Government can start working on internally. The first driver is the requirements of the Road Management Act.

There are also resource issues, as Councils still need people on the ground with the local knowledge collecting the data.

While PIP is an important part of Councils' data related activities, it is for many of the staff only one small part in a very large workload. There needs to be an awareness that some Local Councils, especially rural ones, are struggling a little even though they certainly believe in the PIP.

Spatial Information Infrastructure (DSE)

From simple beginnings 8 years ago, the maintenance of Vicmap has become very complex.

From a Spatial Information Infrastructure perspective, the PIP Evaluation comes down to two principal issues:

1. Vicmap is not meeting all Local Government requirements.
2. There is a lack of a standard approach to property maintenance in Local Government – there are 79 Local Governments, with 79 ways of doing things.

There are a number of things Local Government needs to agree to in relation to management of property data and maintenance:

- That, as a sector, it is the Property Data Custodian, ie it is the authority on Property. To be the Data Custodian, it needs to hold and exchange data more consistently to standards.
- That there should be sector wide agreements on best practice for property maintenance.

For example, defining a 'property'. Non-rateable properties, crown land, reserves, common properties, are dealt with in different ways in different Councils. There is a huge gulf between Metropolitan and Rural Victoria on how they deal with things as simple as new subdivisions.

- When a property is created.

There is approximately a 50/50 split between Councils who say that a property is not created until it's sold (generally the case in the rural areas). That can be 3 years after Land Registry has approved a parcel. It will be kept in the developer's parent property until then. In other Councils, eg Casey, a property is created almost the day the plan comes in. As a result, there is a wide spectrum of approaches, flowing into how property data is held and distributed.

Development/upgrade requirements

SII has begun to consider the immediate requirements for upgrading Vicmap. Six major areas are emerging.

- Up to now, the focus has been on content. However, with the proliferation of imagery through Victoria, it's now becoming very obvious that a spatial upgrade needs to be considered. Vicmap as a whole over parts of Victoria has considerable spatial displacement, up to 30 or 40 metres in some cases.
- Engaging users in determining 'fitness for purpose' of the products. This will incorporate considering the need to revise the Vicmap product models and agreeing quality levels.

- Consulting major custodians and maintenance providers to develop On-line Notification and Edit capacity. SII is aiming to design a prototype On-Line Notification and Edit System this year.
- Examining the impact of Local Government being the custodian of property data, and potentially Land Registry as parcel custodian.
- Developing on-line improvement notice processes. The desire is to develop a prototype this year just to see what's involved.
- An implementation plan for the introduction of the National e-Plan or digital subdivision standard through Land Victoria. E-Plan is about to be accepted nationally as the digital subdivision and transfer standards, with Land Victoria looking to implement it in the next couple of years.

OPEN FORUM

The purpose of the Open Forum was to

- Engage stakeholders to obtain further perspectives on the issues raised
- Facilitate identification of other issues
- Provide input into the report to the proposed PIP Migration Stakeholder Management Committee.

It took the form of a question and answer session. The following paragraphs summarise the major issues and responses.

The Emergency Services use of Vicmap data also identified the importance of roads data as opposed to property data. This highlights the necessity of bringing Vicmap Transport into the debate.

As a user ESTA is interested in location information, however that might be provided, whether it's property address, or Common Place Names, or other data.

ESTA is initiating, with Victoria Police and the State Emergency Services, a system designed to place signs in pedestrian spaces where there is no obvious address point of information so that the location can be identified in the event of an emergency.

How to achieve standardisation of data among vendors across 79 Councils.

There is an onus on Councils to standardise the representation of parcels, properties and addresses within their own environments – ie the vendor platforms that are employed within a single Council.

Councils also need to deal with resourcing issues and the effort they are able to put into capturing data and populating their databases and standardising their approaches.

Local Government and SII need to work together to agree on a definition of 'property' so that there is a standard set of data being supplied into Vicmap. Without this standard, many of the issues existing today will not be resolved.

Whole of Government and multi-sectoral approaches are difficult to achieve because all players are heavily involved in meeting their own priorities and sets of responsibilities with limited resources.

Consideration being given to restructuring the PIP project to encompass roads – where potentially 50% of the assets within Local Government and utilities reside.

The sum total of parcels and road casings Vicmap Property should tally with the Transport dataset. Until we know whether that is the case, we won't know how complete the Property base is.

There are still duplicated datasets in use – even within organisations.

Unless users are able to access the most current up to date version of data available, preferably via the web, they are more likely to want to retain their own versions, particularly if it also takes 2 or 3 months to get the latest version.

Legislation is an option.