



**Unlock the full potential of
location information**

Welcome

Ollie Hedberg AM
Chairman, PSMA Australia

2011 is a special year for PSMA Australia as it marks nearly 20 years since the inception of PSMA following the 1991 Census of Population and Housing and ten years since the governments of Australia established PSMA Australia as an unlisted public company in 2001.

It has been quite a journey of challenge and achievement and I am proud to have been there all the way!

The journey has seen PSMA Australia become Australia's provider of authoritative location information and services and to a standard that is every bit as good as any other country in the world.

PSMA Australia has, and continues to focus on bringing together authoritative government information, expert technical partners and specialist resellers to maximise the value from location.

These linkages have delivered quality digital mapping products for the government and private sectors as well as the community.

PSMA Australia provides the national infrastructure that delivers the single point of truth to remove the efficiencies caused by multiples sources.

We are pleased that you have been able to join us today on International GIS Day to helps us celebrate this occasion.

As Chairman of PSMA Australia, it is particularly pleasing to be marking this event with the launch of PSMA Systems.

PSMA Systems is our new technology framework, technology which positions PSMA Australia to successfully move into its second decade of operation. I will now hand back to Dan who will tell you more about our exciting development, PSMA Systems

Realising the value of location

Dan Paull
CEO, PSMA Australia

The question of 'where' – Dan Paull

We all know that location can add considerable value to the decision making process (another dimension if you like!)

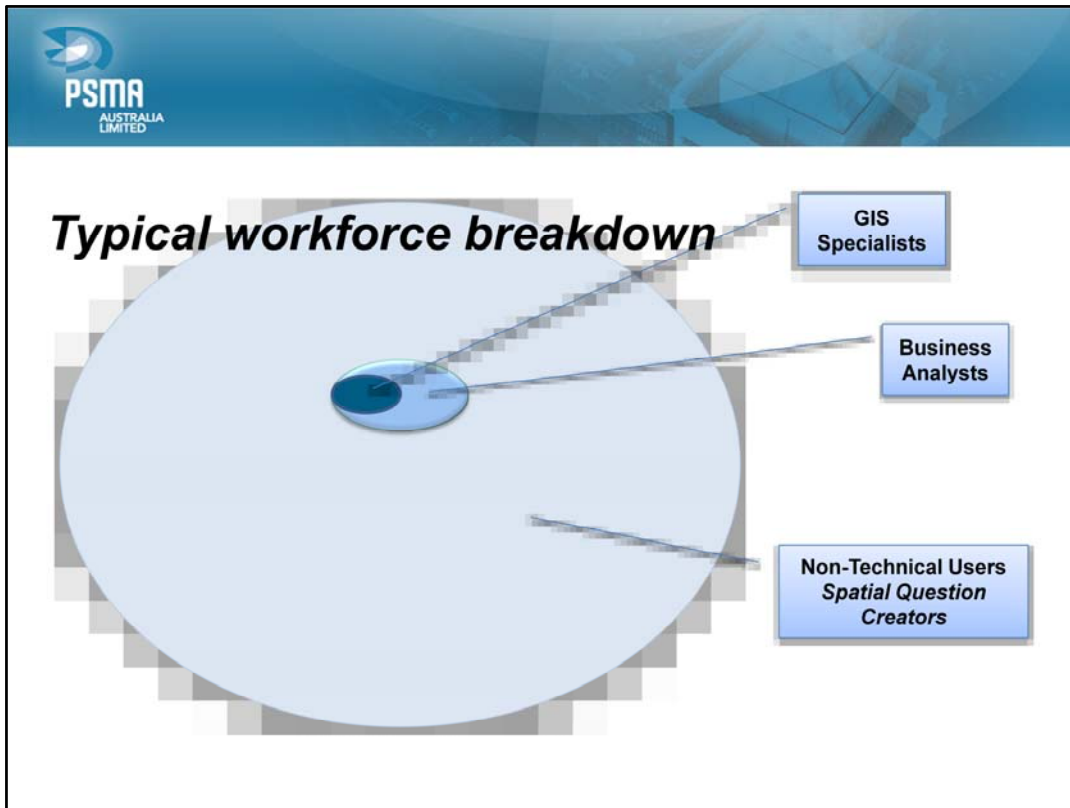
The challenge is to influence the process so that location becomes part of the thinking.

Traditional business processes are not inherently spatial, they traditionally have not considered the location dimension.

This is not surprising as the technology and data necessary to support such a process has been expensive, difficult to master and information hard to source.

So the first step in unlocking this value is recognising that location can easily be used to improve business outcomes and for the thinking that underlies the process to include consideration of the 'where'.

The second step is to be able to introduce location into the process itself but do so simply, quickly and cost effectively.



The questions of 'where'

The importance of location in decision-making means that most government agencies today have access to specialist GIS skills.

These are the individuals who can write 4000 character long complex queries in special databases.

They are highly skilled specialists, with unique backgrounds, skill and training.

They typically make up about 1% of the organisation's workforce.

There will also be a number of business analysts in the organisation, who are apply and interpret spatial information within business applications.

They have a strong proficiency in and deep understanding of spatial information applications.

They probably represent 5% of the organisation's workforce.

For the rest of the organisation, the capacity to use spatial applications is limited to web browsers and Microsoft Office applications.

Here lies the problem. This is the 94% of the workforce who create the questions.

This leads to the bottlenecks and the lack of flexibility in the use of location for problem analysis and solving that has undermined the achievement of 'spatial enablement'.

Essentially the tools that enable effective decision making and support informed policy development are not easily available to the majority of those who really need them.

How to answer the question of 'where'

PSMA Systems has been developed to push the functionality of location through the organisation.

It is designed to be a standard part of the operating environment.

And like Word or Excel, it designed to be easy for a new user to get a quality result.

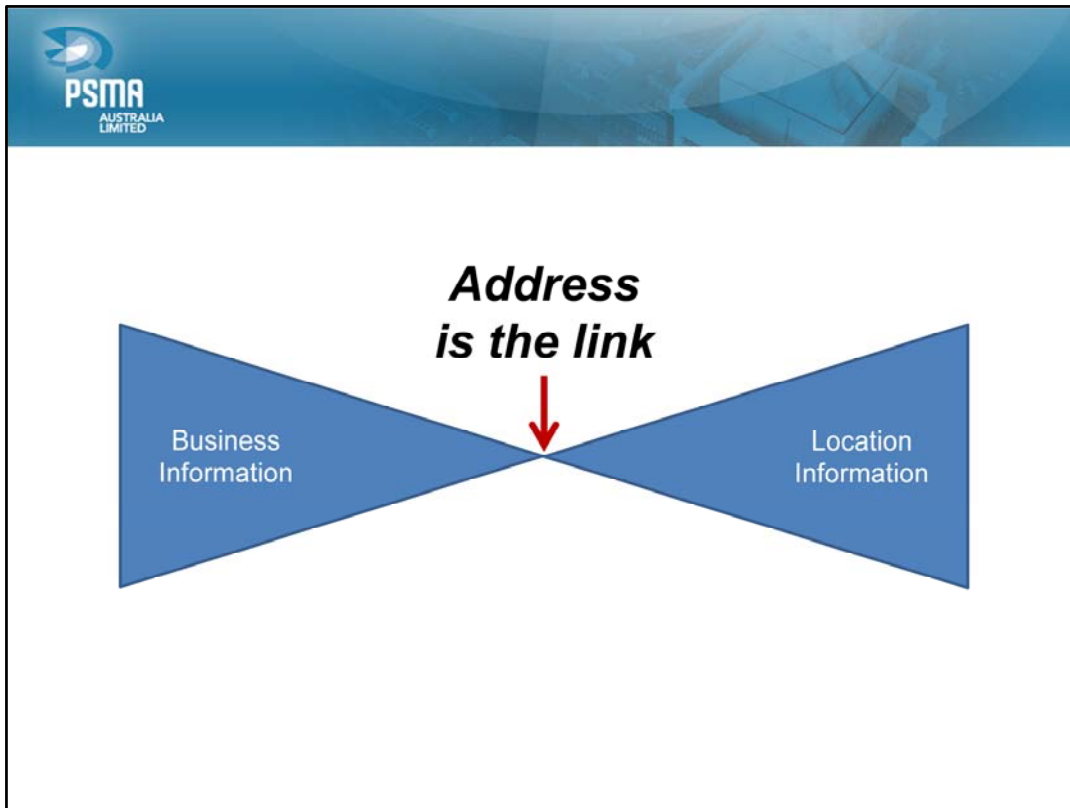
Just as simple, just as personalised (configurable).

Most importantly, it is about enabling the 94% to answer their own question without having to wait on someone to do this for them.

This includes:

1. enabling the question asked today to be answered today
2. having the ability to ask a different question tomorrow
3. not having to wait in a queue to have the questioned answered
4. the answer is provided as quickly as framing of the question; and
5. Delivering consistent results so that the same question gets the same answer where ever it is asked in the organisation but without the loss of flexibility

All within an environment that is drawing on authoritative sources of data.



How to answer the question of 'where'

There are two parts to how PSMA Systems makes this possible.

The first is the central focus on address.

Address is the one attribute that is virtually universal across business and government

Address provides the link between complex spatial information and business applications.

Address is the key to extracting value from location.

From address you can obtain latitude and longitude or a geocode. And once you have a geocode, a whole world of location opportunity is opened up.

The governments of Australia have recognised the important role of address by establishing, across all governments, a framework for its management called NAMF – the national address management framework.

This framework ensures that location is available to government business is a consistent way – all government business, all governments.

Consistency equals efficiency

Simple, fast, cost-effective enabling services

The second part is web services that allow the seamless shift from ‘thinking location’ to business processes ‘using location’.

Using Web Services, Location is applied to existing processes, workflows and applications in an easy and reliable way.

Web Feature Services provides direct access to data – reading, writing, and updating geographic features and information.

The **Web Mapping Services** concerns the transformation of data into a map as an image.

These web services provide access to features – either directly or as images (maps) – in a standardised way independent of who created the server or the actual format the data is stored in.

In essence, web services can deliver location functionality to the existing business processes of the 94% of staff who would otherwise not have access to this functionality.

By using address as the key entry point and web services as a delivery mechanism PSMA Systems facilitates a variety of functionality.

It makes it possible to easily integrate existing business systems a wide range of third party address management, validation, spatial directories look-up and geocoding services.

All in a NAMF compliant framework.

Applying PSMA Systems: Scenarios

So that's the theory, but the real test is to understand what you can do with it.

Today we are going to offer a few ideas to show how PSMA Systems can be applied.

We will look at emergency response where fast access to authoritative data and proximity information is critical

We will then look at some more 'everyday' applications for which we will use government's management of grants for the example

- Incident in Sydney Harbour Region
 - Need to evacuate affected residents & businesses
 - Call centre needs to be established
 - Operators need to provide details of:
 - Nearest evacuation centre
 - Approximate distance via road network

Emergency Response

Emergency response is clearly an area where accurate understanding of location and proximity in a timely way are critical.

Lets consider this scenario: A significant incident has occurred in the Sydney Harbour Region and a call centre has been established to assist with the emergency response.

The location of calls is used to find the nearest evacuation centre and approximate distance of travel via the road network

1. The operator is takes the call, confirms and enters the address.
2. The system then validates the address and corrects errors before allocating a geocode to the address record
3. Once geocoded, a Find nearest call made to determine nearest evacuation centre to the logged address.
4. Distance along road network from call to evacuation centre is calculated.
5. Incident Area Map is called via WMS – web map service
6. Map of calls to date and evacuation centres returned WMS.

Demonstrates

Need for speed – timing and [relevance/specificity] critical to the effectiveness of the response and the information provided to the public.

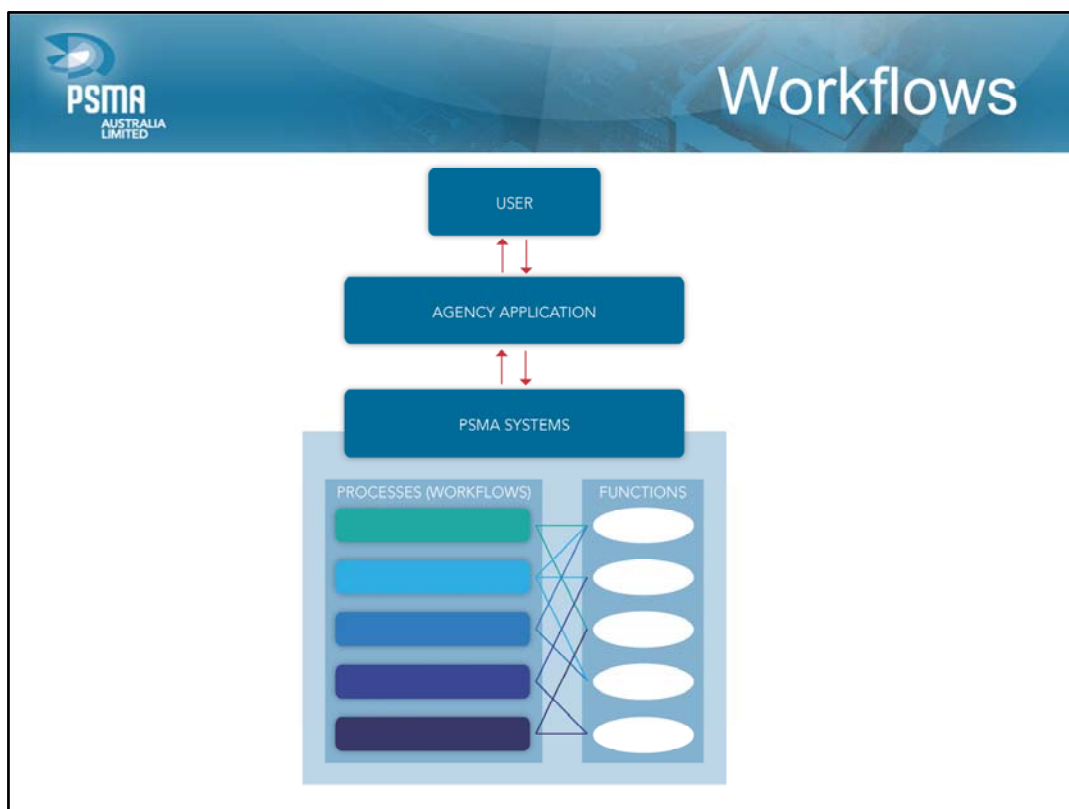


CALL LOCATION

ID	ADDRESS
321	15 ANNANDALE RD POTTS POINT NSW 2011
322	13 ROBINS ST DALINGHURST NSW 2011
323	15 AGRIPPA DR WOOLLOMOLLOO NSW 2011



ID	ADDRESS	LATITUDE;LONGITUDE	ADVISED NEAREST EVACUATION CENTRE	DISTANCE TO EVACUATION CENTRE (KM)
321	15 ANNANDALE RD POTTS POINT NSW 2011	-33.86743874;151.22544801	CENTENNIAL PARK	1.4
322	13 ROBINS ST DALINGHURST NSW 2011	-33.87791412;151.21946124	CENTENNIAL PARK	2.1
323	15 AGRIPPA DR KIRRIBILLI NSW 2011	-33.84771642;151.21591648	NORTH SYDNEY OVAL	4.2



Services chaining - PSMA Systems

It's the concept of chaining services together that provides significant flexibility and allows the development of quite detailed workflows to be built in PSMA Systems.

It enables 'best of breed' services to be selected and chained together

Each service or function is Autonomous and independent but can easily be linked together to create a workflow.

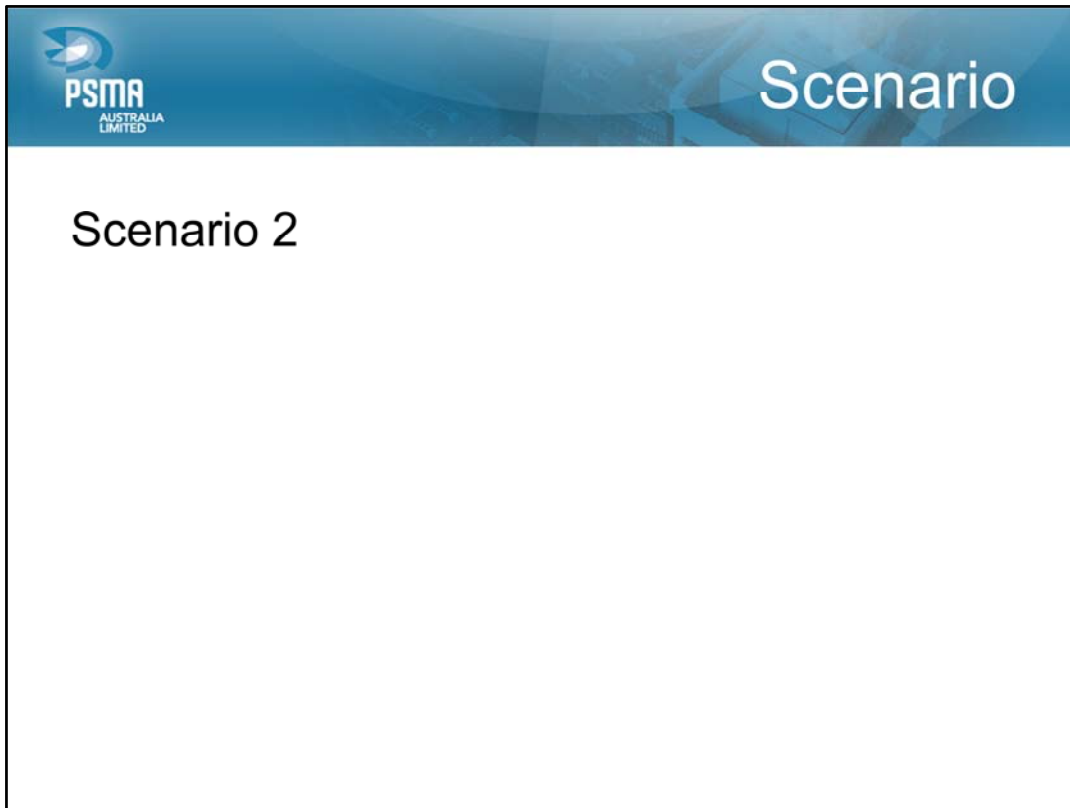
This is a kind of simplified Orchestration that can be built and controlled by your organisation and delivered through existing applications.

Function/workflow

1. Address Verification
2. Geocode
3. Spatial directories lookup
4. Attribute search
5. Map presentation

Importantly, the functions are each web services so that they can be located anywhere.

They could be services within PSMA Systems, within your organisation or services supplied by any other organisation anywhere in the world!



Grants program management

Governments are increasingly seeking to put in place rigorous management frameworks for the broad range of grant and funding programs operated by different agencies.

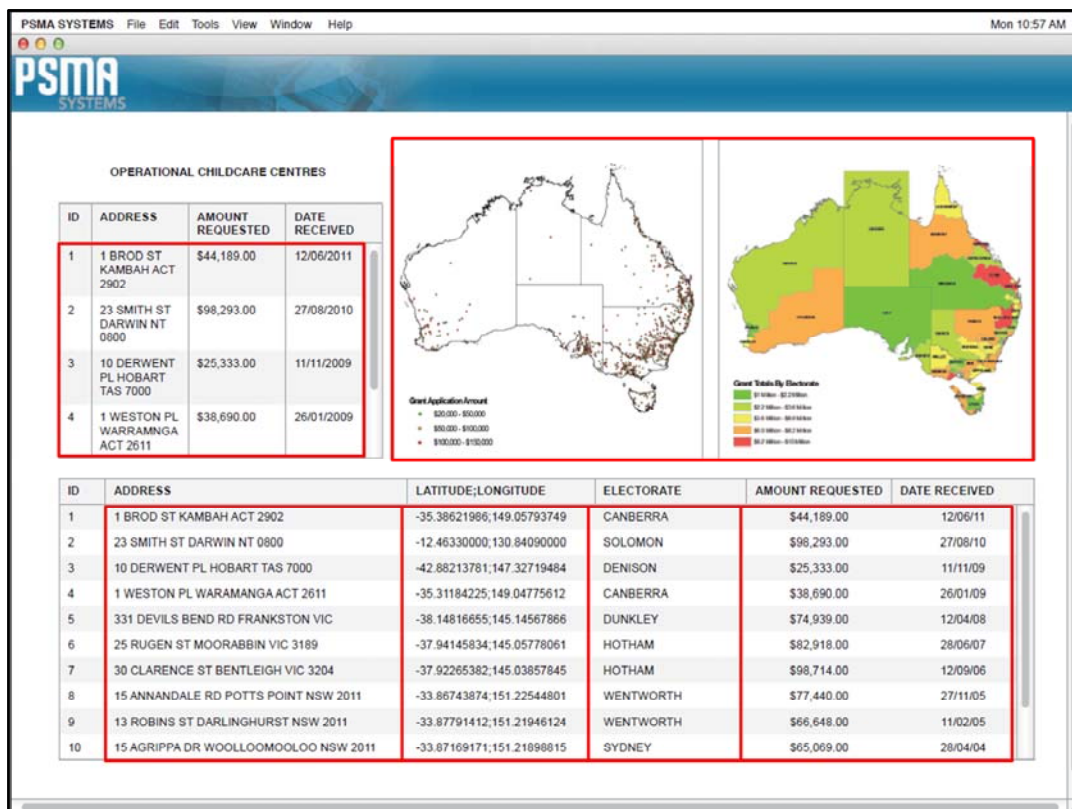
Location can be a valuable factor in understanding the program's effectiveness and whether it is delivering on the program's objectives.

It can help address questions of value for money, transparency and provide protections against the risks of fraud and duplications.

Grants – Batches

Lets imagine an agency running a grants program receives the latest list of grant applications.

With PSMA Systems as the enabling framework, a grants program officer is able to geocode all of the applications as a single batch job so that the electorate that they fall in can be determined.



Note: While the longitude and latitude for the locality is roughly correct, the childcare centres and their addresses are fictional.

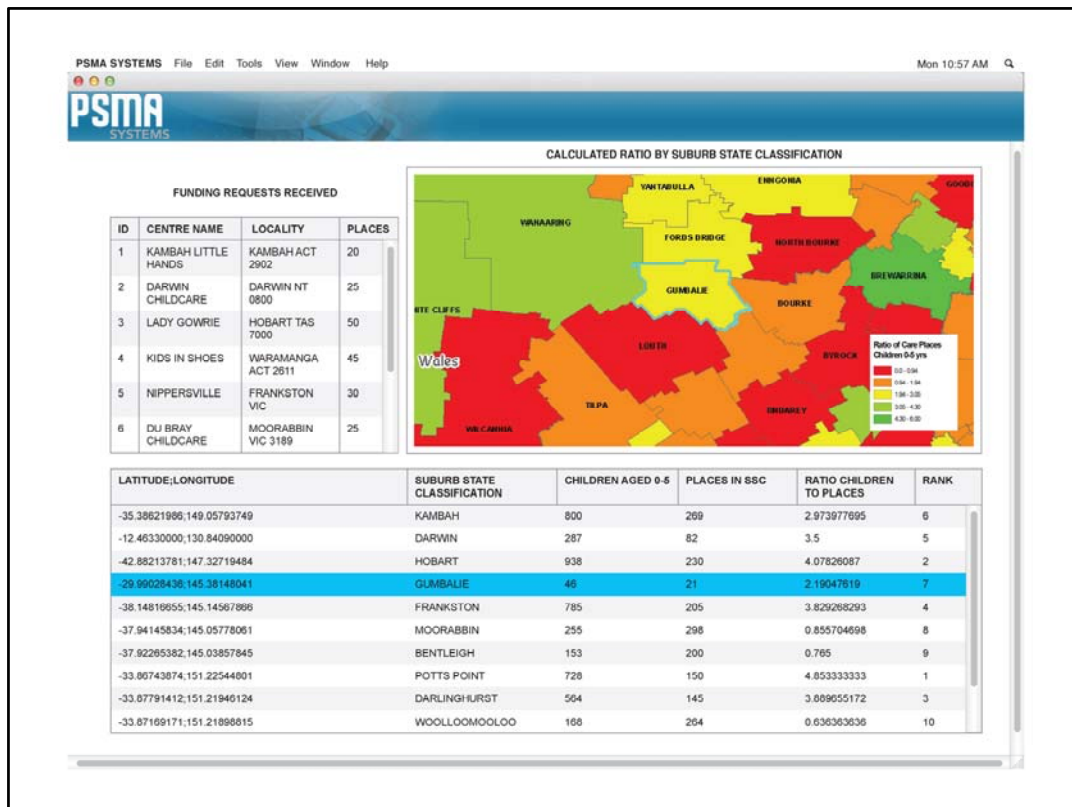
1. Agency officer submits batch request
2. Location of all requests determined and electorate included in result set (WFS)
3. National map showing the location of all requests could be returned via WMS National_Map.jpg (use legend to make sense of it)
4. Current status of grants program showing all electorates map returned (WMS) Current_Status_Map.jpg (use legend)

Demonstrates

Administrative efficiency – part of the day-to-day process, not a special request

Supports transparency in delivery

Incorporate visualisation tools to assist understanding of program impacts.



Grants – Gap Analysis

An agency wants to analyse their current data holdings to make an assessment about suitable coverage of child care centres to identify any gaps.

The evidence will be presented to inform a policy change to support a proposed rebate.

Agency officer geocodes list of known child care centres

Based on the location of centres a WFS call is made into an environment containing ABS demographic data (children 0-5 yrs) by suburb state classification

A calculation is made to determine the ratio of children to places (WPS???)

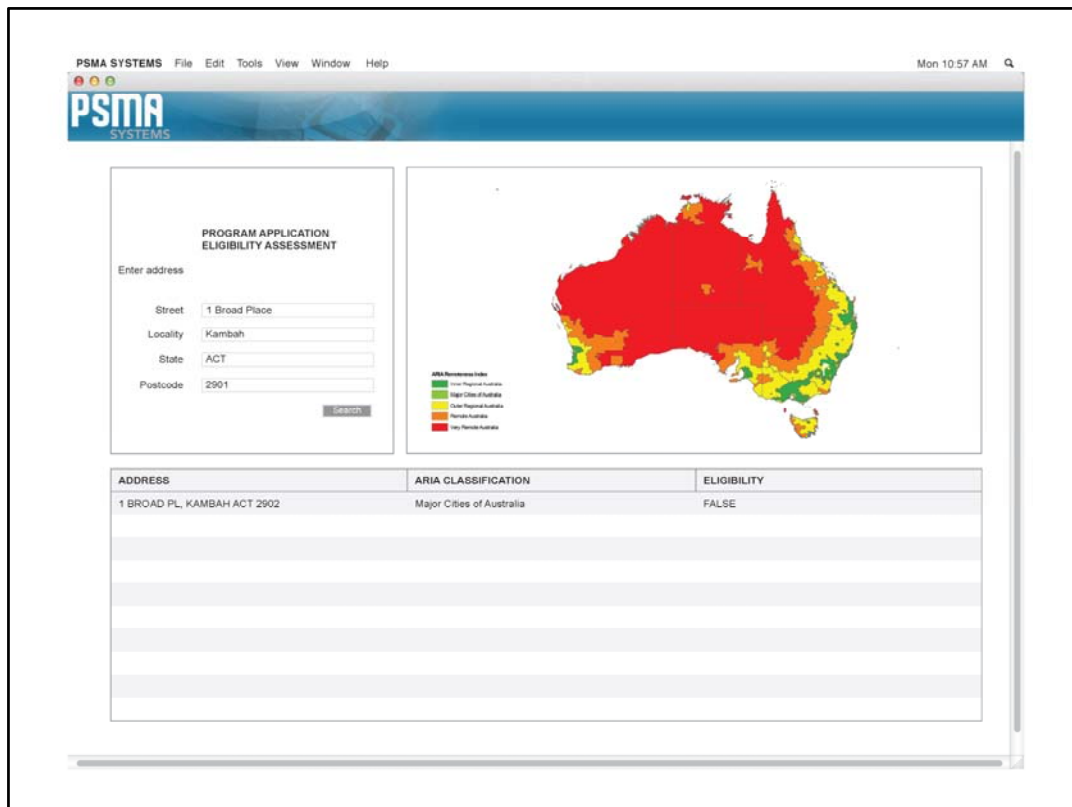
A thematic map is produced showing the calculated ratio on localities with a single locality “GUMBALIE” highlighted on the map (need legend to interpret values)

Location can assist in gap analysis for service delivery

Demonstrates:

Use of ABS data

Use of a range of web services



Grants - Assessments

An agency has received an application for funding under its grant program from an organisation seeking assistance.

The eligibility criteria for assessment are based on the location of the organisation with respect to the ABS remoteness criteria.

Organisation's address is geocoded

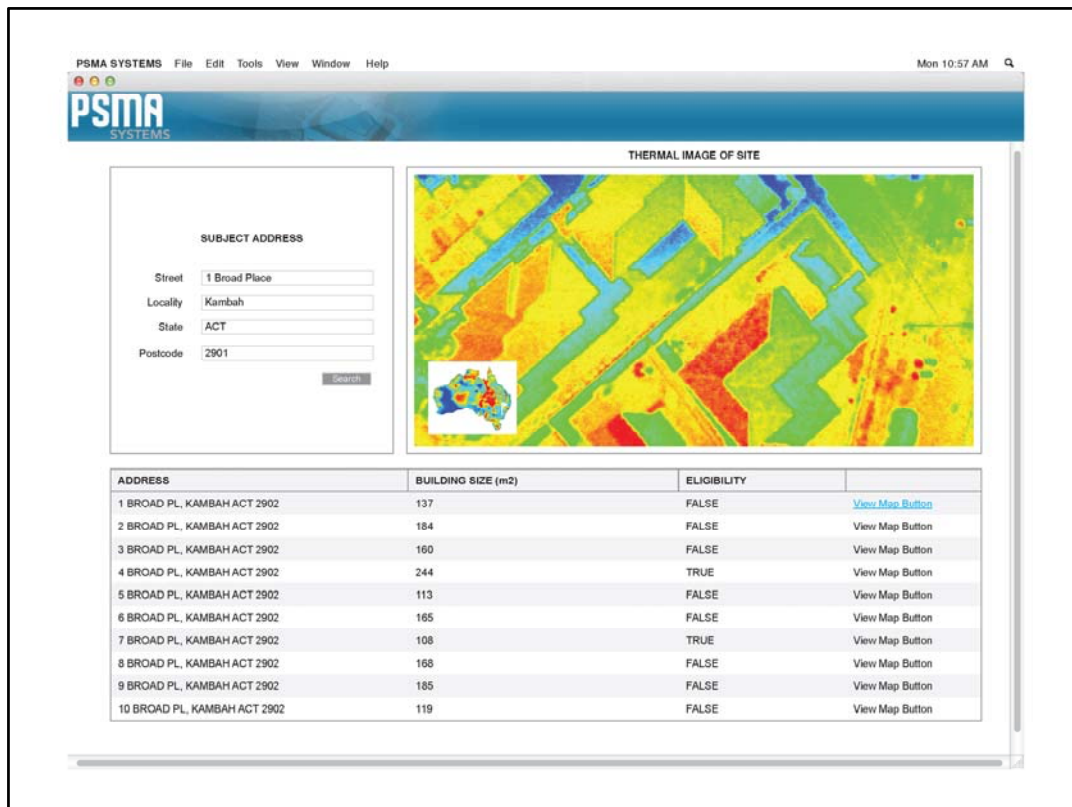
Based on the location of the address a WFS call is made to look up the ABS ARIA remoteness category

A report is returned containing a title, legend, scale bar and WMS of affected area confirming the eligibility for the applicant

Demonstrates

Immediate, straightforward assessment of key eligibility criteria

Provides transparent information to support response to the unsuccessful applicant in a very prompt and transparent manner.



Environment

An agency is responsible for the rapid roll-out of new program and needs to make an assessment about the effectiveness of the proposed eligibility criteria.

For this program, the agency officer is checking if a home has a building area > 200m².

If the area is greater than 200m² then the property may be eligible for grant to assist in improving the thermal efficiency of the dwelling.

Agency officer enters address (geocoding call)

List of candidate addresses are returned which includes information about building area (WFS call)

User selects the correct candidate

Map of thermal properties of affected area returned (WMS call)

Demonstrates

Use of location to test a range of scenarios to support policy development

Use of different map types

***By introducing 'location' into
your thinking, problem-solving
and decision-making,
PSMA Systems makes spatial
enablement possible.***

Why has PSMA Australia developed this?

PSMA Australia has always tried to ensure that the data delivers as much value as possible.

We've come to realise that we are well placed to assist in this process by providing some fundamental services that are closely related to our data as well as a simple means of accessing others' services as well within the same platform.

This enables greater levels of value to be delivered.

Spatial Enablement is actually about including 'location' in your thinking, problem solving and decision making. –

How can 'where' help you?

Two problems (outcomes):

1. Getting people to consider location in their thinking; and
2. Enabling people to include location in their decision making processes

By including 'location' in your thinking, problem solving and decision-making, PSMA Systems makes spatial enablement a reality.