Melbourne Water

Institute of Public Works Engineering Australia

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Hot Topics Series 2011

Starting an Asset Register for Water Sensitive Urban Design

Friday 3rd June

Facilitator: Bob Seiffert

Michael Godfrey

Clearwater

Project Officer

About Clearwater

- Aim is to increase the uptake of sustainable water management
- Not-for-profit government endorsed capacity building program
- Work with Stormwater Vic and AWA
- Partners with Cities as Water Supply Catchments program
- Technical training, events/seminars and tours
- Tailored solutions
- Hot Topics – Discuss emerging issues, share information, achievements

Objectives of today

Encourage set up of formal asset registers for WSUD

Outline advantages of setting up a WSUD asset register.

Showcase examples of processes in setting up a WSUD asset register.

Collect feedback to see how successfully WSUD data is being captured, current barriers, opportunities, needs and new ideas.

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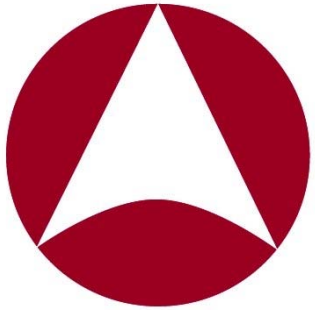

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http://www.ipwea.org.au/IPWEA/Victoria/HomeVIC/Default.aspx

Bob Seiffert

Facilitator

Overview

Welcome

Discussion Session: Why are we here ?
Peter Morison
Thomas Kuen
Martin Musgrave

Morning Tea

Voytek Lapinski
Peter Diprose
Discussion Session: How can we approach this?

Lunch

Discussion Session

Why are we here?

1. Why are you here: Why is it important to capture WSUD data?
   (5 minutes table discussion)

2. What is currently happening in the industry to capture WSUD data? What is working or not working?
   (10 minutes table discussion)

Highlight key points/ common themes at your table using the news flash template (10 minutes)

Report back table findings to the floor (10 minutes)

Peter Morison

Team Leader

Stormwater Quality
Melbourne Water

Thomas Kuen

Board member: Institute Public Works Engineering Australia –Vic Division

Manager, Asset Management Research
Melbourne Water

Why an Asset Register?

Thomas Kuen
IPWEAvic, NAMS.AU representative

Manager, Asset Management Research
Melbourne Water

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Why set up a register?

- Built / Natural Assets
- An asset register is …
- An asset register can …
- The importance of your decisions …

I’m not going to talk about …

any technical stuff …

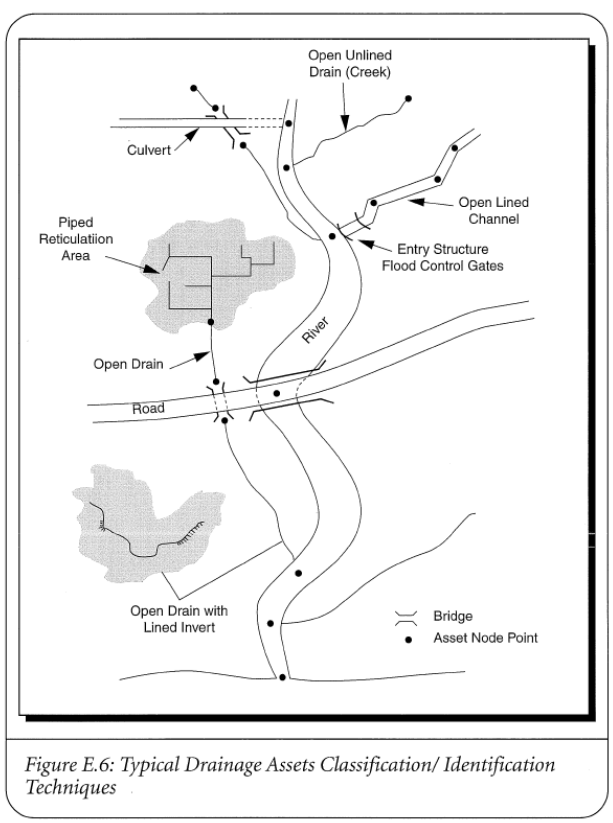
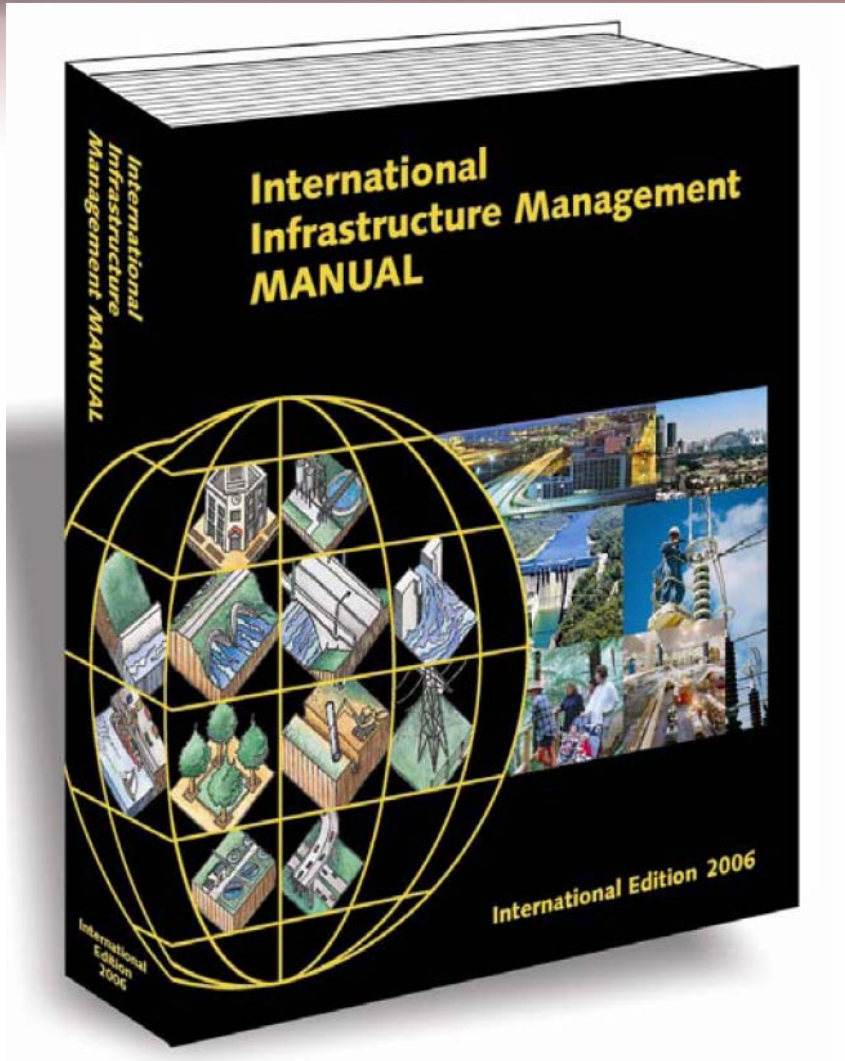


Figure E.6: Typical Drainage Assets Classification/ Identification Techniques



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... or accounting stuff.

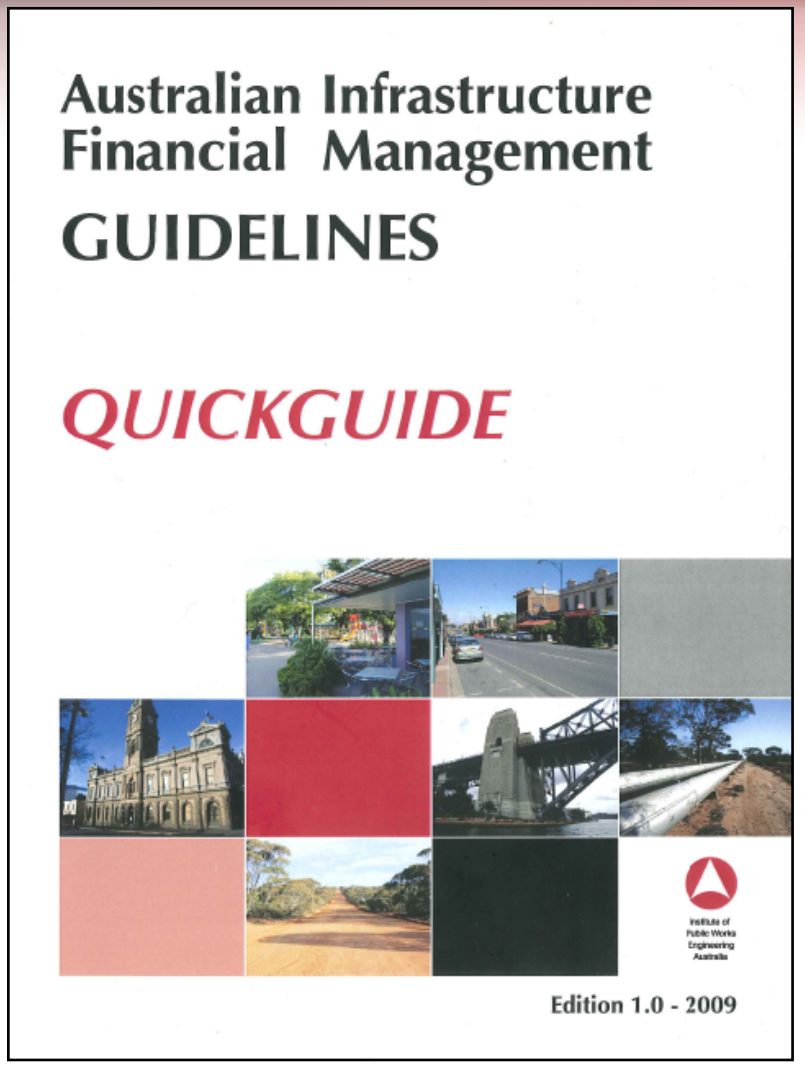
Others can tell you about valuation & depreciation.

Customers & LoS

- Asset planning

- Maintenance planning

- Renewal planning



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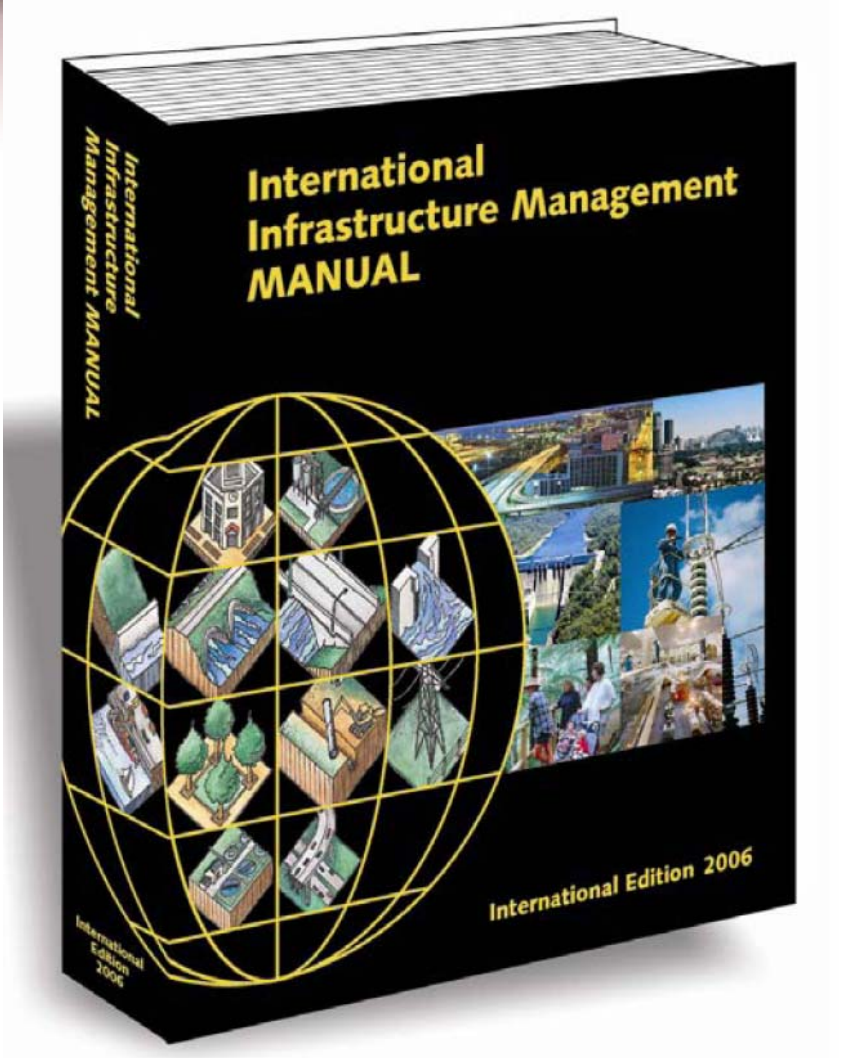
Why manage assets?

- Drainage
- Trees
- Roads
- Buildings
- Playgrounds
- Paths
- Waterways
- **WSUD?**



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Built or Natural ? = Physical Assets!

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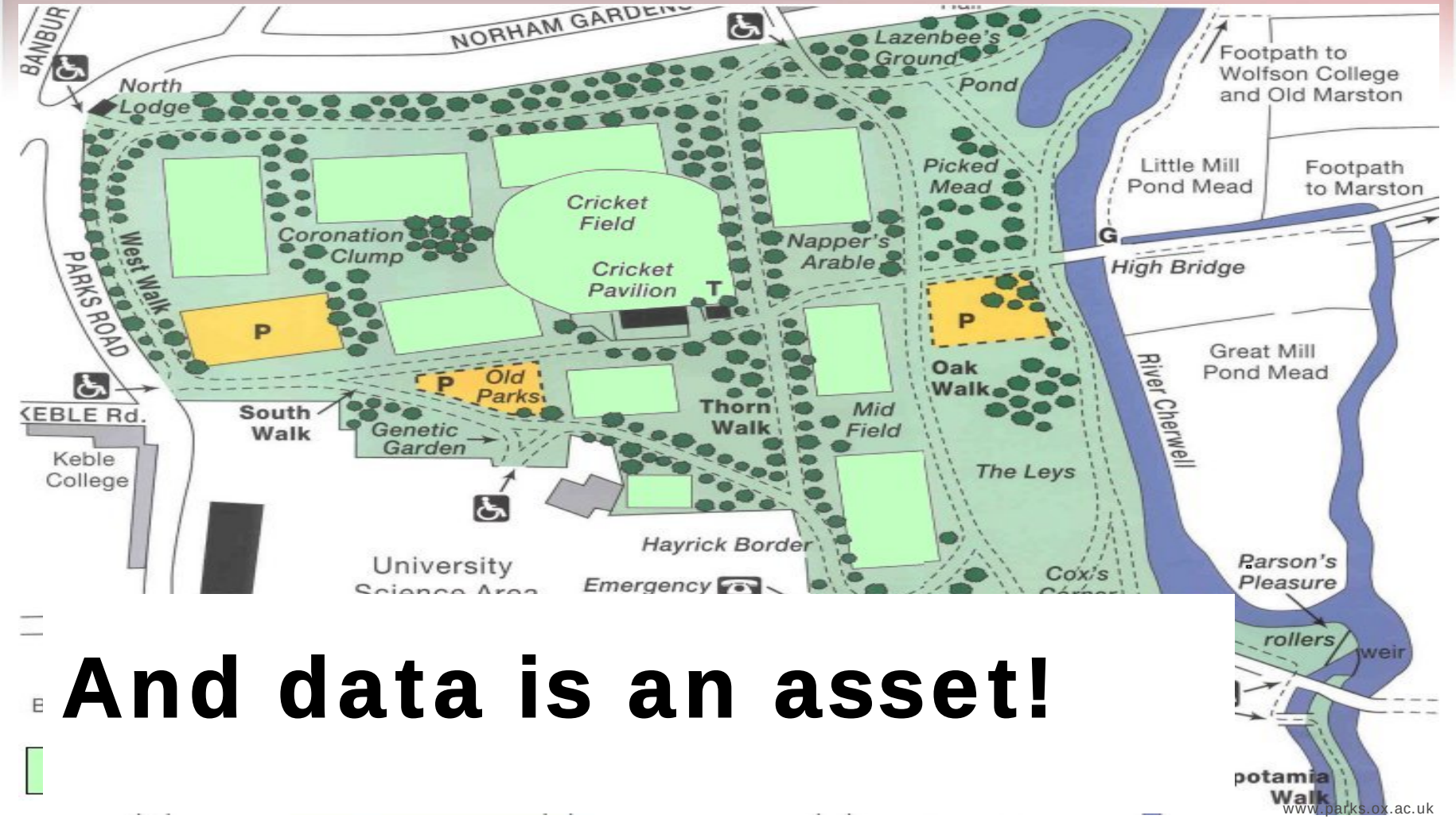
Do you want to “manage” the asset?



And data is an asset!

Why have data about an asset?

- **Data** is a collection of facts and figures which are meaningless to a user.
- **Information** is a collection of facts organised in such a way that they have additional value beyond the value of facts (or raw data).
- Knowledge involves “understanding”.

Decisions for an asset register …

…you need to make them!

- **Why** do you need to know?
- **What** do you need to know?
- **Who** do you need to share with?

- **How** are you going to share it?

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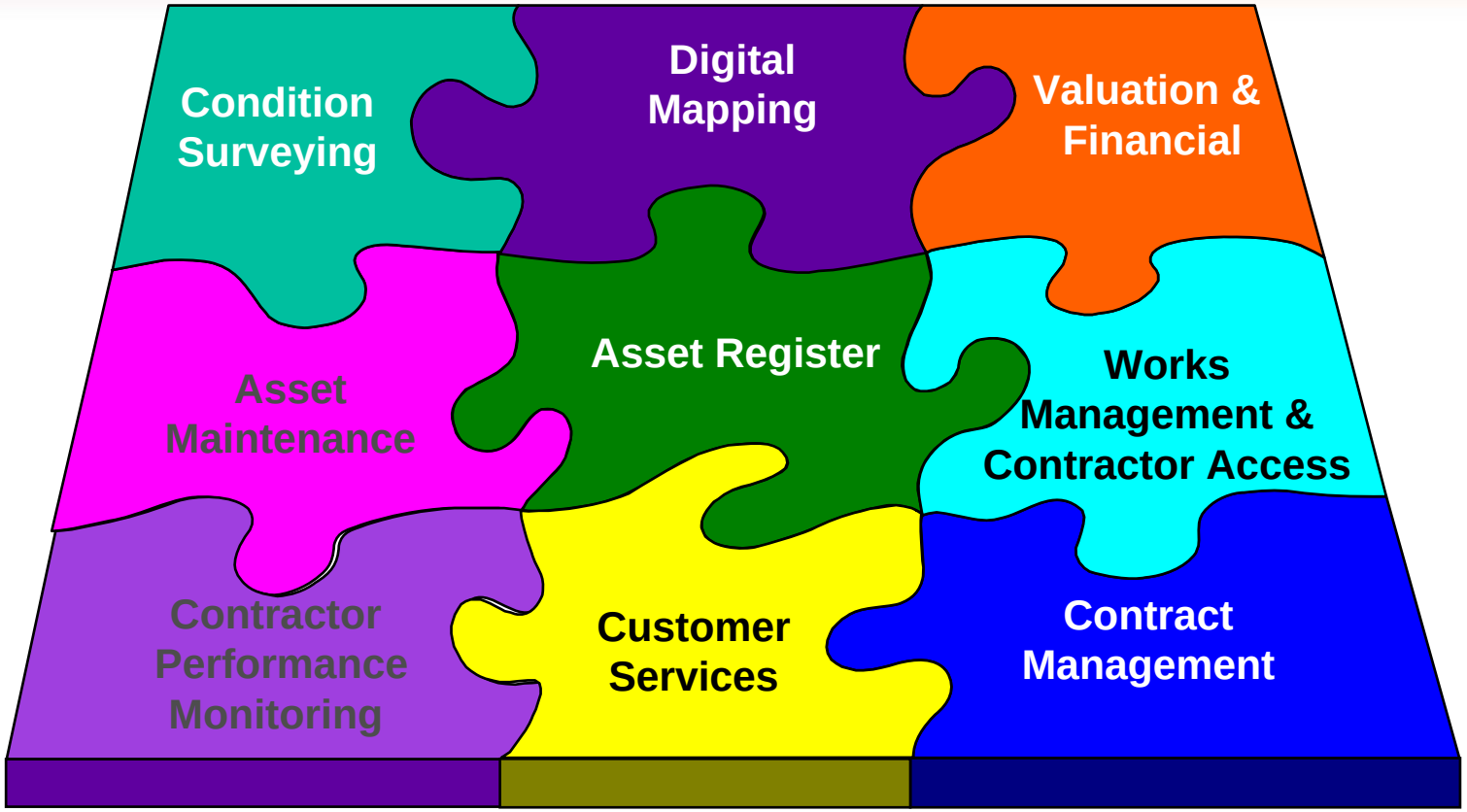
What is an asset register?

A home for details you want to manage!

- Ideas & Opportunities
- MMI = Managed Maintenance Item
  - Location / ownership / responsibility
  - Quantity / size
  - Type / condition
  - Records / inspections / photos
  - Valuation / depreciation / **renewals**

An Asset Management Systems is

…whatever you need / want it to be.



An example

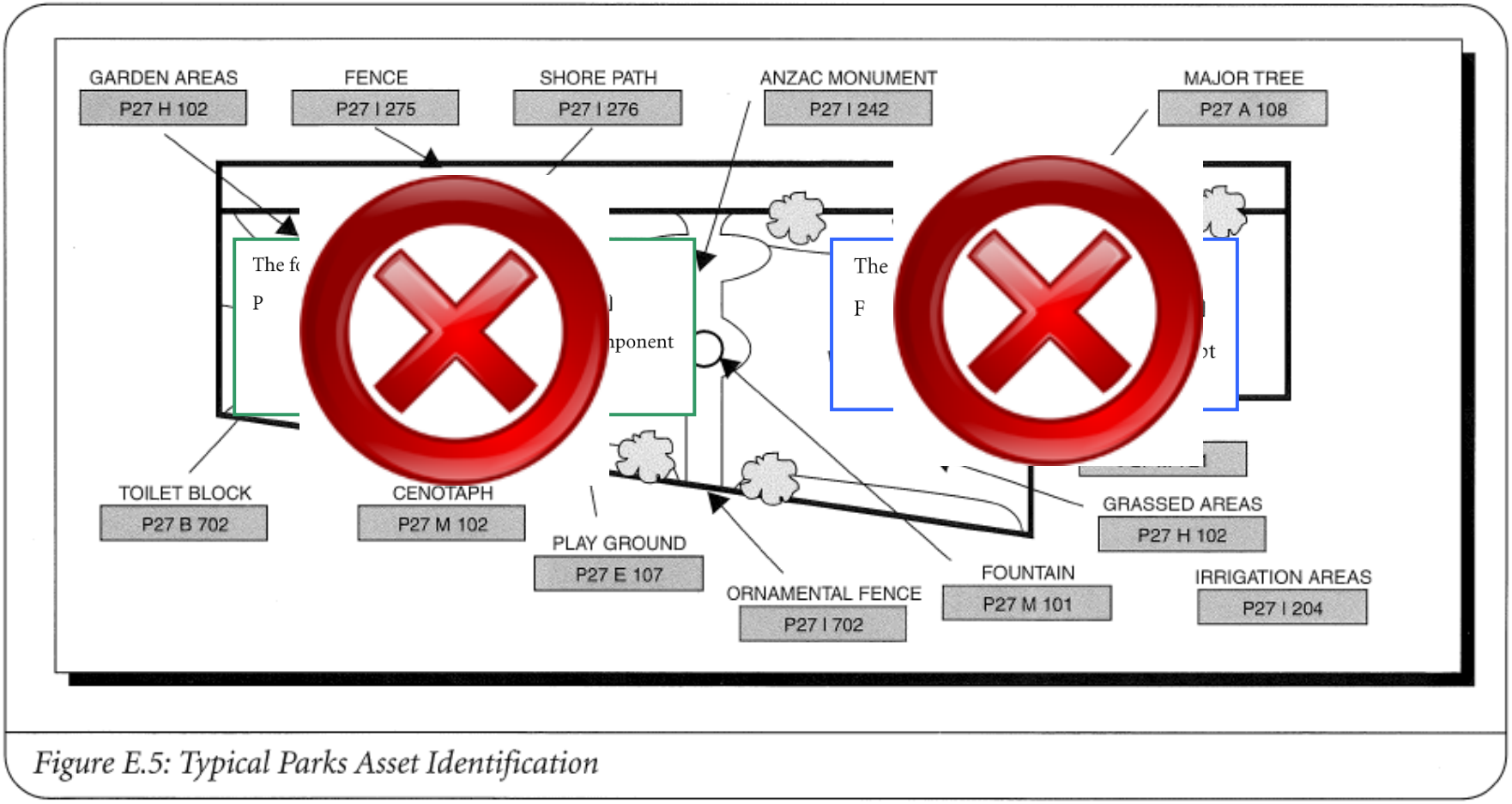
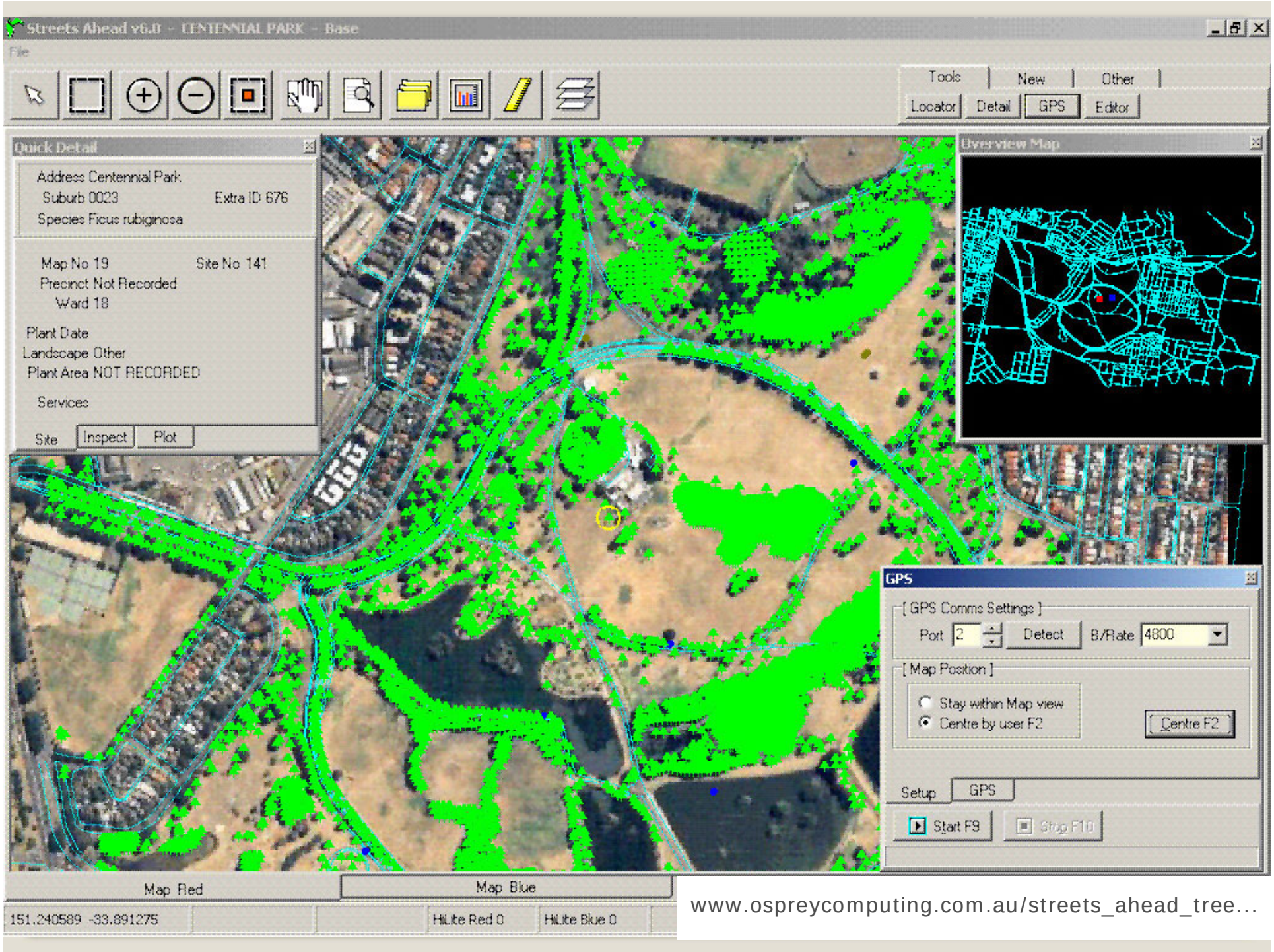


Figure E.5: Typical Parks Asset Identification



www.ospreycomputing.com.au/streets_ahead_tree...

An example

Yes / No

x No.

y m^2

Item

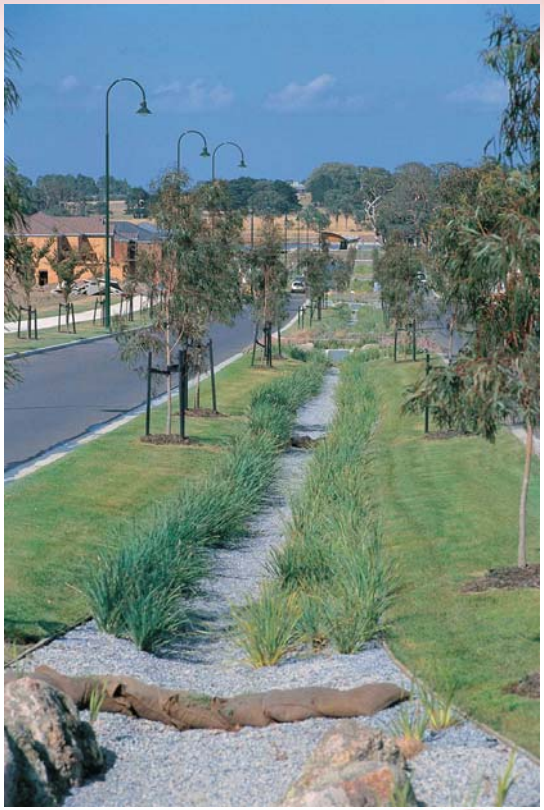
Future asset

Third party asset

Work in Progress

Agreements

Lynbrook Estate



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Summary - WSUD and assets …

Drainage

Trees

Roads

Buildings

Playgrounds

Paths

Waterways

~~WSUD~~

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http://www.aila.org.au/victoria/awards2005....
Accessed 26 May 2011

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WSUD and Asset Registers

Yes, and existing tools can help!

1. **Know your needs**
2. **Be clear on your reasons**
3. **Have others do the technical stuff**

Good management is good business.

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Martin Musgrave

Policy Officer

Urban Development
Institute of Australia

ALL IN IT TOGETHER

WSUD, Developers, Councils and Melbourne Water

MARTIN MUSGRAVE

POLICY DIRECTOR

Urban Development Institute of Australia (Vic)

OUTLINE

Urban Development Institute of Australia
VICTORIA

1.0 The UDIA and the significance of the industry
2.0 Drivers of WSUD
3.0 Issues
4.0 Handover
5.0 What needs to be done

UDIA

- The Urban Development Institute of Australia (UDIA) is the peak industry body for residential property developers in Victoria.
- UDIA is a member-owned and run industry organisation and has 350 corporate members, ranging from large publicly listed companies to smaller private developers, planners, lawyers, engineers and other related companies.
- We lobby local, state and Commonwealth

Economic Impact

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- The property development industry is a major contributor to the Victorian economy.
- The direct impact of $1 million invested in the Victorian property development industry results in:
  - 6.5 full-time equivalent jobs generated in the property development industry.
  - State and federal taxes increasing by $61,762.
  - Wages and salaries increasing by $205,262.

Economic Impact

Urban Development Institute of Australia VICTORIA

- The total (direct and indirect) impact of the $1 million invested generates in Victoria:
  - 12.2 full-time equivalent jobs.
  - State and federal taxes of $136,234.
  - Wages and salaries increasing by $506,766.

Drivers of WSUD

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- WSUD is being led by legislation but also by industry.
- As a result, there are more and more WSUD assets that are being created.
- Assets include hard assets such as water tanks, swales, ponds, etc, but also soft assets like vegetation around ponds and rain gardens.

Drivers of WSUD

- UDIA's EnviroDevelopment rewards developers for using integrated water cycle management principles in development design, including water sensitive urban design devices such as swales, bioretention basins and wetlands utilised as water treatment devices where appropriate.
- Developers must set quantifiable quality targets and verify design through accepted modelling.

Drivers of WSUD

- Recognition can also be given for stormwater reuse where appropriate water treatment measures and infrastructure are to be utilised.
- Developers must demonstrate the sufficiency of WSUD features and the impact of the development of natural hydrology, stormwater quantities and sedimen

Drivers of WSUD

Urban Development Institute of Australia VICTORIA

- Many developers see water as a feature of their developments, so invest for commercial reasons.
- Aside from industry-led initiatives, Clause 56-7 outlines the obligations with regard to water.
- Where WSUD is a feature of the development, developers want to be able to use the water to increase the amenity of residents, including through watering ovals, paths, furniture and connections over the waterway, and gardens.

Issues

- The quality and usefulness of run-off water is important to developers. Breakdowns of tanks, bad smells and degraded waterways reduce the amenity of the development, which can reflect on the developer, the council and Melbourne Water.
- With a natural waterway, unless paths, etc are within the setback or very close, they really can't be made a feature of – an issue for Melbourne Water and councils.

Issues

- In the case of a waterway (natural or manmade) regardless of the assets put in place, it is likely that residents will use the waterway informally if there is access to it, so it is better for the community, council and the waterway to formalise this interaction through paths, furniture, etc.
- It is then important that it is clear upfront what assets are to be handed over to who and when.

Handover

- Usually before the development commences, the developer, council and Melbourne Water (if a Melbourne Water waterway is involved) will have discussed the WSUD elements of the development and any way that these elements will be incorporated into the development.
- WSUD elements will be on engineering and landscape plans, as well as on the masterplan.

Handover

- It is important that developers, council and Melbourne Water talk up-front about the WSUD assets that are being installed, so that a clear understanding for their management pre- and post-handover is shared.
- Talking over a masterplan for the development upfront is likely to save angst at the handover stage.

Handover

- In the case of a natural waterway with furniture within the setback, Melbourne Water and council need to work out early who is and will be responsible for the assets.

Handover

- Developers collect a lot of information already on assets in their development for handover, including road assets and street furniture.
- It should not be an onerous requirement, but it is possible for an asset register for WSUD to be incorporated into this data collection.
- Systems can be established to facilitate this, but it can be tailored and should be collaborative.

What Needs To Be Done?

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- Early discussions about what is handed over, when and to which authority is important.
- Melbourne Water and councils need to work together on who is responsible for what.
- Reputations are at risk with poor maintenance both before and after handover, including:
  - water tanks that service community facilities
  - furniture beside a waterway
  - swales (including vegetation), ponds and wetlands and raingardens.

Thank you

Floor Questions

Peter Morison
Thomas Kuen
Martin Musgrave

Morning Tea

Voytek Lapinski

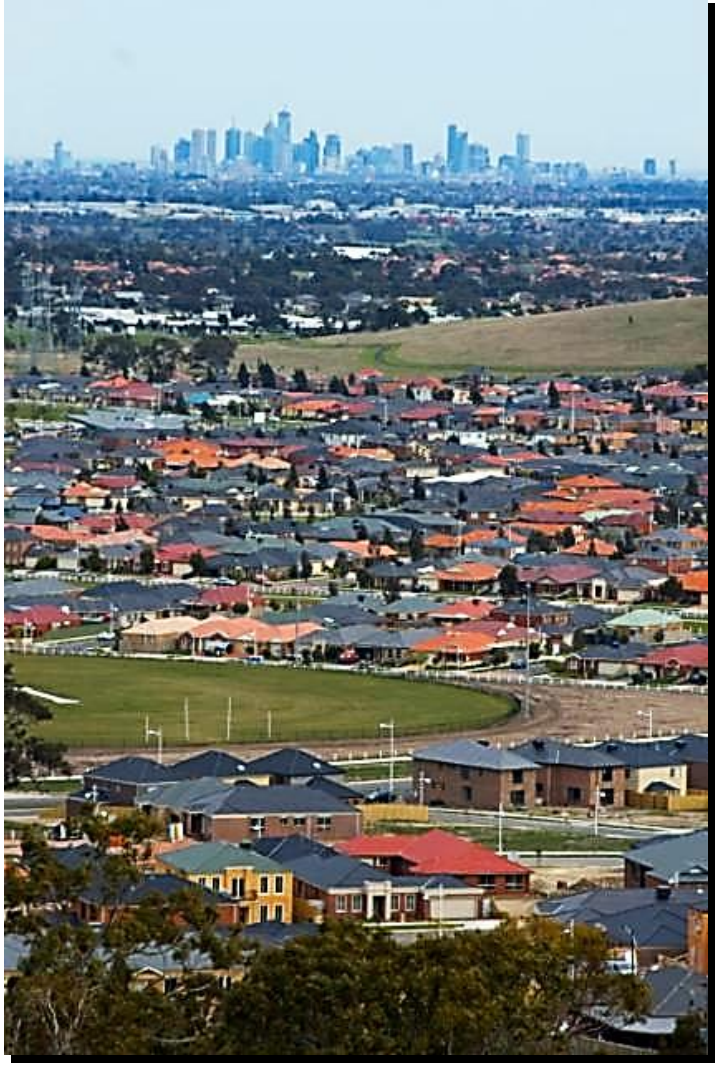
Environmental Infrastructure Officer

Whittlesea City Council

The City of Whittlesea
WSUD Asset Database
Clearwater Hot Topics
Starting a WSUD Asset Register
3 June 2011

Voytek Lapinski
Environmental Infrastructure Officer
City of Whittlesea

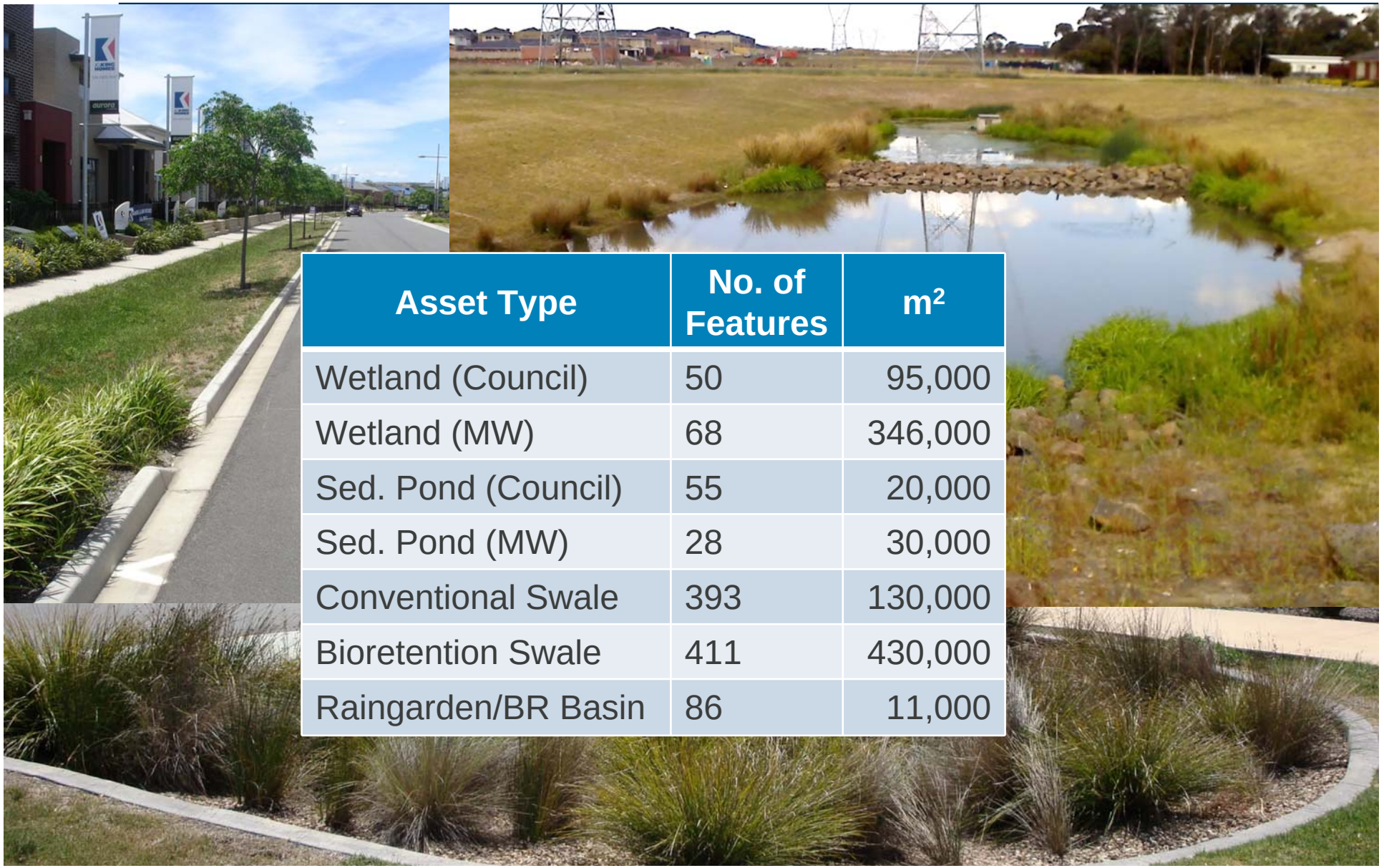
WSUD at the City of Whittlesea



- Peri-urban fringe municipality
- Growth areas
  - South Morang
  - Epping
  - Mernda
  - Doreen
- Rapid growth in WSUD assets
  - Clause 56.07 – Subdivisions
    - Mandated stormwater treatment
  - Melbourne Water Drainage Schemes
    - Often split maintenance responsibilities for large MW systems
  - Increasing number of retrofits and inclusion in Council projects

City of Whittlesea

WSUD Asset Types

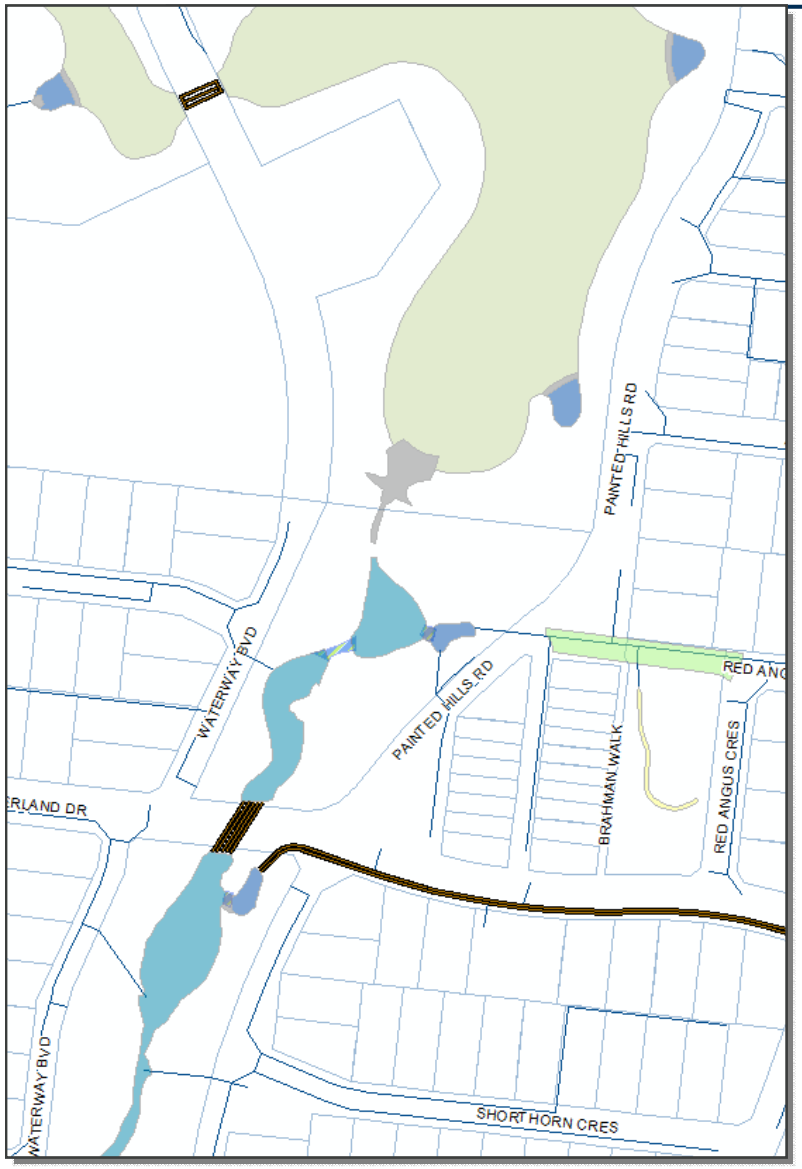


Asset Type	No. of Features	m²
Wetland (Council)	50	95,000
Wetland (MW)	68	346,000
Sed. Pond (Council)	55	20,000
Sed. Pond (MW)	28	30,000
Conventional Swale	393	130,000
Bioretention Swale	411	430,000
Raingarden/BR Basin	86	11,000

Why a WSUD Asset Database?

- Enable Maintenance
  - Knowing the assets exist!
  - Maintenance responsibility
  - Budgeting
- Financial Planning and Reporting
- Asset handover status?
- Understand catchment environmental performance
  - Catchment treatment targets being considered at Whittlesea
  - Enable catchment scale modelling

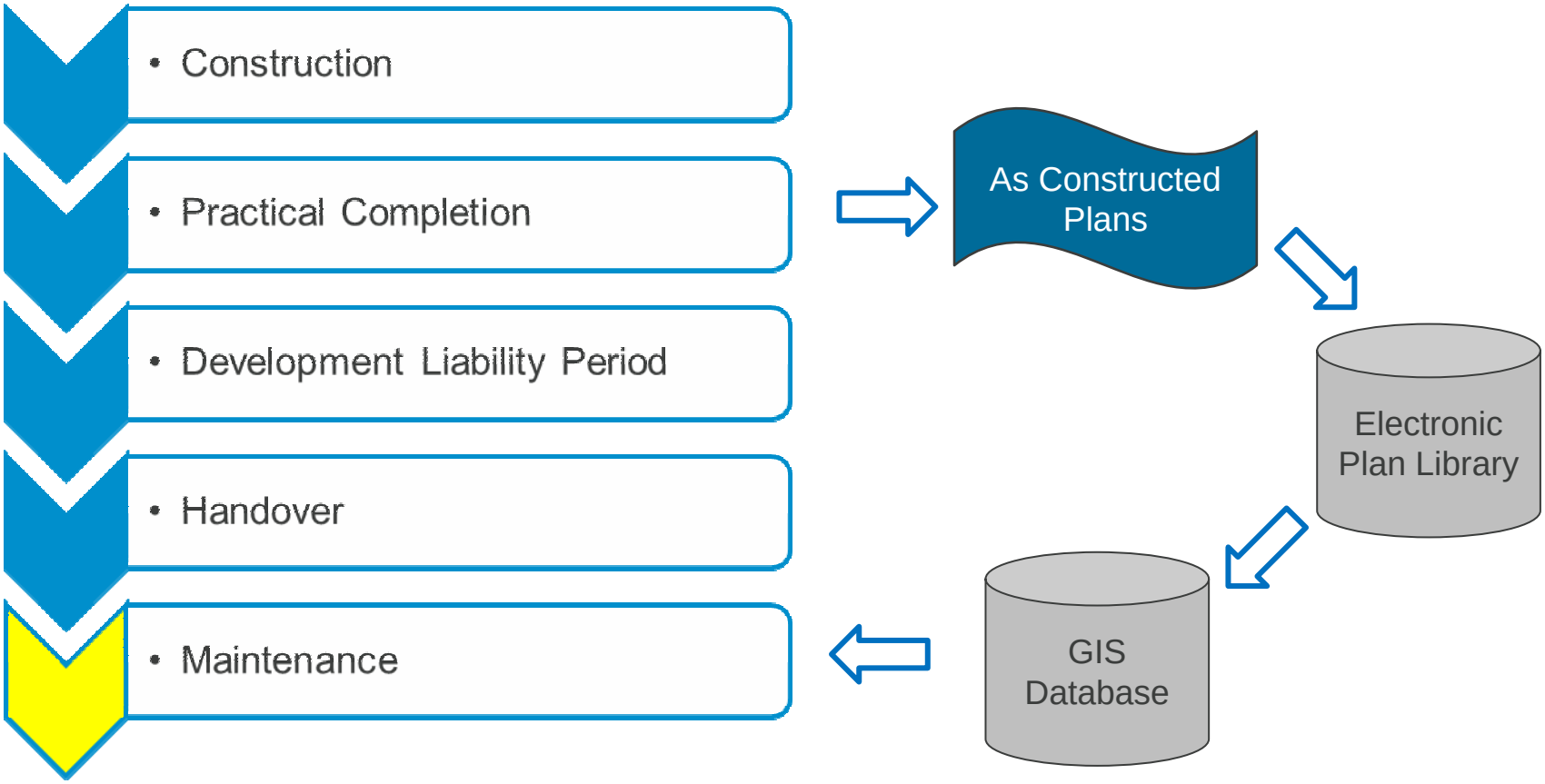
What Does it Look Like?



- ArcGIS Geodatabase
- Spatial Information
- Attribute Information
  - Type
  - Data History
  - Data Origin
  - Maintenance Responsibility
  - Asset ID
- Melbourne Water Assets included
  - we need to know they are not ours

City of Whittlesea

How Does It Work?



Getting Up and Running

- Project started in 2008
- Exhaustive data entry from plan library
- Other investigation to fill in the gaps
  - Large Melbourne Water systems – Maintenance Agreements
  - Some very old systems mid 1990s, no electronic plans
  - Files and Correspondence
  - Staff knowledge
  - A lot of driving around and taking photos!
- Coordination of all relevant departments
  - Engineering Services – Main Data Entry
  - Asset Management – Ensure rigorous processes, data tracking
  - GIS – technical expertise and database management
  - Infrastructure, Parks & Gardens – Maintenance
  - Environmental Operations - Maintenance, the WSUD “go-between”
- Data released to organisation in 2010

How Does It Work? - Issues

- Overall a success - works really well, but some nagging issues.
- As Constructed Drawings
  - Can be hard to get
  - Not a priority for developers
  - “Soft Engineering” often inaccurate or not considered
  - We often use approved plans + aerial photography
- “Wetland By Others” – Melbourne Water projects
  - Council often left out of the loop
  - No documentation received, also common for regular drainage.
  - Maintenance responsibility unclear
  - Maintenance agreements not finalised until much later
  - Duplication of assets in Council/Melbourne Water data
- Minor data issues are inevitable – Ongoing feedback of errors/omissions to asset data staff vital.

Future Challenges

- Formalise maintenance processes
  - Dedicated WSUD Programmed Maintenance
  - Programmed Inspections
  - Need for integration with the WSUD Asset Database
- Asset IDs? (eg. RG010004)
  - System developed but use is still ad-hoc.
  - Not used for maintenance, work orders etc.
  - Reporting could be easier.
  - What constitutes an asset? (GIS Feature? Body of water? Wetland System?)
- Maintenance Agreements/Responsibilities
- Where does WSUD belong organisationally? Ongoing jurisdictional issues complicate data management
- WSUD Retrofit program and catchment planning

Peter Diprose

Stormwater Victoria

Southern Region Manager
Water Solutions
Holcim Australia

How Case Study:
Barry Bro's eMaintenance – Asset register

Presented by
Peter Diprose
Southern Region Manager – Water Solutions
Humes Water Solutions

How Case Study:
Barry Bro's eMaintenance – Asset register

- Context of Barry Brother's operation. Collation of information.
- Learning's from GPTs – Process is applicable to softer WSUD assets.
- Opportunities through developing a register: What can you record and ways of doing it?
- Understanding the requirements for recording assets. – What could be recorded and who should be recording assets?
- Deciding on the level of service required for these assets.
- Risks of not collating information.

Hume

Barry Bros - Vacuum Contractors

- Drive to be pro-active
- Offer survey, identification & monitoring of assets
- Reference to information in the public domain
- Use of GPS for location
- Access to Internet for dissemination of information

Humes

Learning's from GPTs

- Cost is not a good indicator of efficiency
- Monitoring is essential
- Pollutant content is snapshot of the catchment
- GPT can become an auditor of effective controls
- No GPT is effective if not regularly maintained
- Location is important

Hume

Opportunities through developing a register

- Identifying polluting trends
- Determining effectiveness of other resources
- Public consultation, education & engagement
- Drive towards At-Source Control
- Identifying opportunities for recovery & re-use

Understanding requirements for recording assets

- Source / method of identification (As Constructeds?)
- Concise location & identification
  - avoid potential for mistaken / wrong identity
  - avoid sub-contractors wasting time
  - ensure time & money being spent on correct asset
  - avoid ambiguity – pond / sed basin / wetland?
- Identify target audience – who wants what
- Break down the silo boundaries, encourage participation

Humes

Deciding on the level of service required for these assets

- What do you expect?
- What do you require?
- What minimum levels are yo prepared to accept?
- What is achievable?
- What is your end goal?
- Who else is interested / invested?

Risks of not collating information

- No champions, no change
- People leave / move, loss of continuity
- Assets fall into disrepair
- Protected assets lose protection, ecosystems die
- Investments wasted / lost
- Community / ratepayers lose faith
- No progress, no improvement

Thank you for your time and attention

Any Questions?

Floor Questions

Voytek Lapinski
Peter Diprose

Melbourne Water

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Discussion Session

How can we approach this?

1. Would you be willing to start an asset register?
   How would you do it and who would you involve in this process? (5 minutes table discussion)

2. How would an asset register assist management of WSUD in your organisation? (10 minutes table discussion)

3. Would it be useful sharing asset register information to among local government and authorities?
   How do you see this working? (10 minutes table discussion)

Highlight key points/ common themes at your table (10 minutes)

Report back table findings to the floor (15 minutes)

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Open Discussion Session

Comments and considerations

Questions for the floor!

Further suggestions and ideas?

Did you hear anything new? What was helpful today?

Concluding Points

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Thankyou

Contact Clearwater:

www.clearwater.asn.au

03 9235 5335

Lunch