PLUS +
Participation, Leadership & Urban Sustainability (+ Transitions)

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## ENVIRONMENTAL SUSTAINABILITY IN URBAN CENTRES
Seminar
Perth 11- 13 April 2011

Outline

- Talk draws together perspectives drawn from various roles – PhD, work with HASSELL – Dept of Planning & Infrastructure & current role
- Acknowledge Prof Rebekah Brown & stirling Alliance team & HASSELL team
- Why sustainable urbanism ?
- Opportunities to make a difference
- Application of alliancing, transition theory/ management, complexity leadership
- Getting things to happen
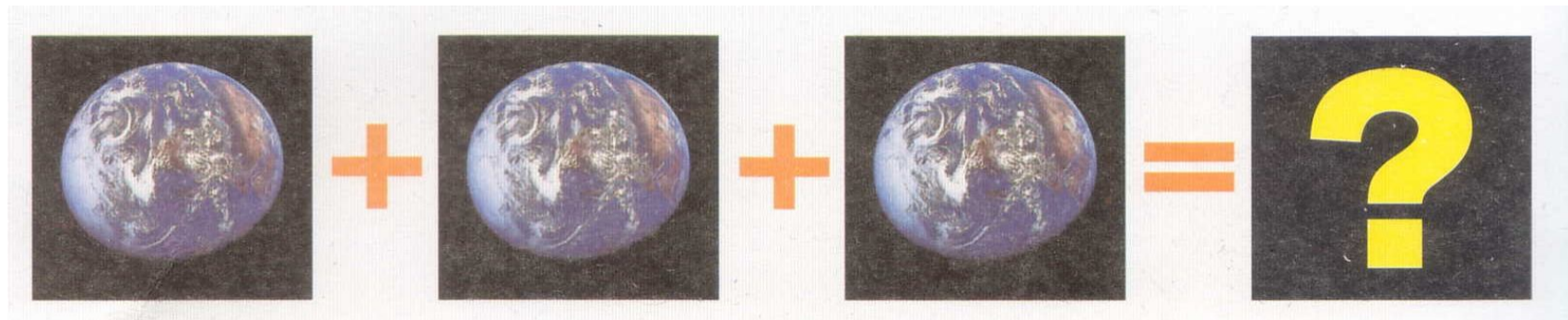
At HASSELL
we developed
a green city
strategy for the
Perth CBD

Perth Green City: Vision Outline

Strategies for a "Metabolic" City: The city is green in appearance and attitude with an economic advantage of being one of a handful of cities to live a 'one planet' ethos
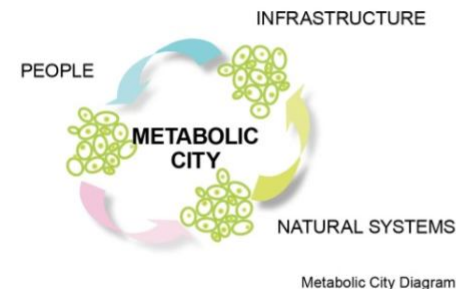
Issues:

Assertions: • 2Degree temperature increase • 2M increase in sea level • Decrease in rainfall • Decarbonised economy required • Population of 3.4 M people in the Perth Metropolitan Area	Water Consumption 860 000L per capita annually 2050 Target: 60% reduction in consumption per capita	Energy Consumption 17.2 Gigajoules per capita annually (Residential) 2050 Target: 25% reduction in consumption per capita	Greenhouse Gas Pollution 27.49 Tonnes per capita annually 2050 Target: 60% reduction in Greenhouse Gas emissions	Perth Metro Residential Average Area Consumption Approximately 105sqm per person 2050 Target: Reduction to 50sqm per person

Outlooks:

Green City Perth Must: • Be restorative • Decrease demand • Meet future needs Green City Perth Should: • Develop Management Systems • Utilise programmatic load shifting • Embrace evolving technology	Our quality of life will be highly dependent on the maintenance of natural systems; health and productivity through effective planning and design. Prospective Outlook: • Systematic Assessment and Review • Start now for the next 100 years	Integrated Response: Become connected across precinct boundaries; amalgamating local government agencies for a hyper-efficient city	Perth in 2050 will be advancing towards a One Planet Ecological Footprint as an evolving city engendered with new Social, Cultural and Economic Ideals of Sustainability and Livability	The focal point of a metabolic city approach in Western Australia will be the City of Perth. There is a clear opportunity: the city is already a central hub, is best connected and supported by a density of infrastructure.

Key Elements:

PEOPLE • Density + Built Form	INFRASTRUCTURE • Movement • Waste • Energy	NATURAL SYSTEMS • Water • Landscape + Micro Climate

INFRASTRUCTURE

PEOPLE

METABOLIC CITY

NATURAL SYSTEMS

PERTH CBD 2010: ECO FOOTPRINT 8.04 HECTARES/ PER PERSON

PERTH CBD 2050: ECO FOOTPRINT 2.1 HECTARES/ PER PERSON

Metabolic City Diagram

Ecological Footprint Comparison

Perth Green City: Infrastructure_Energy

Strategies for a "Metabolic" City: **A green city where we have decarbonised and localised our energy demand: the electrons we use come from green sources**
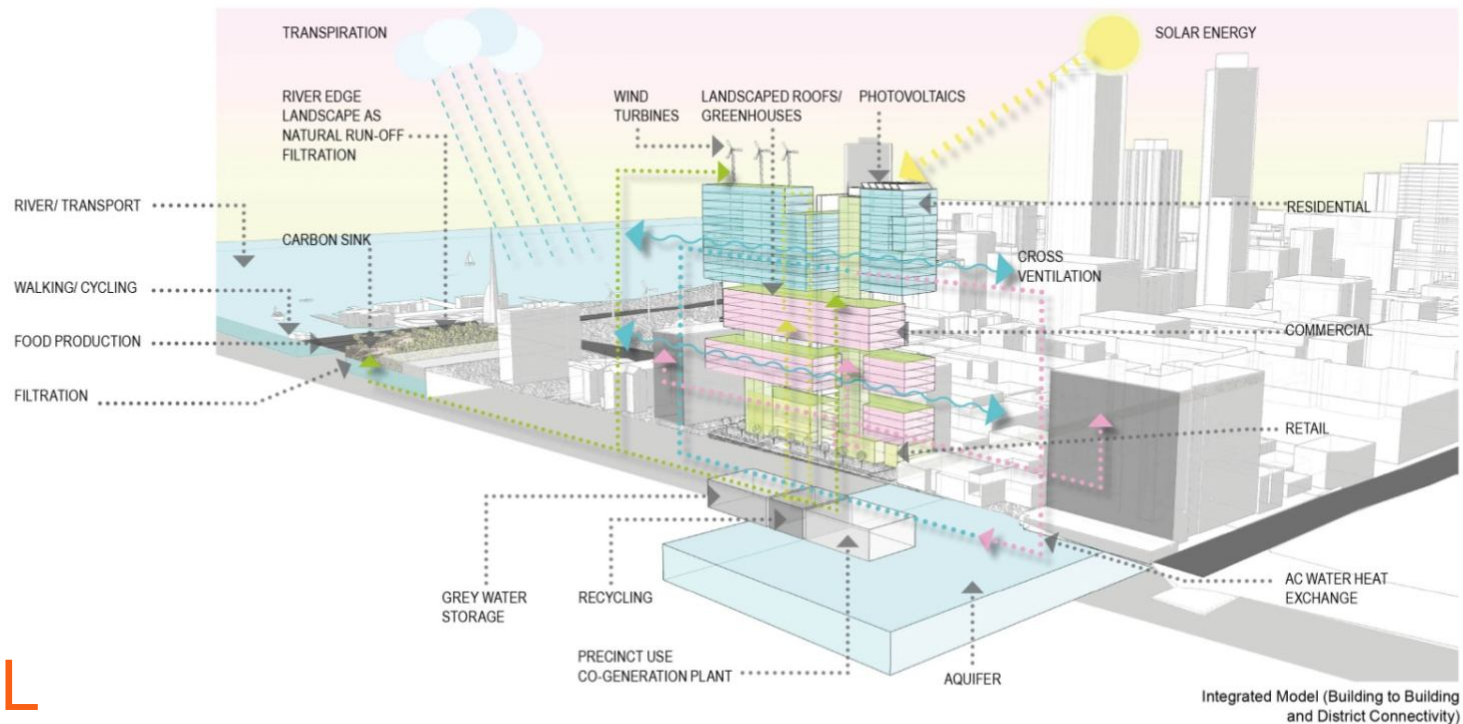
Issues:

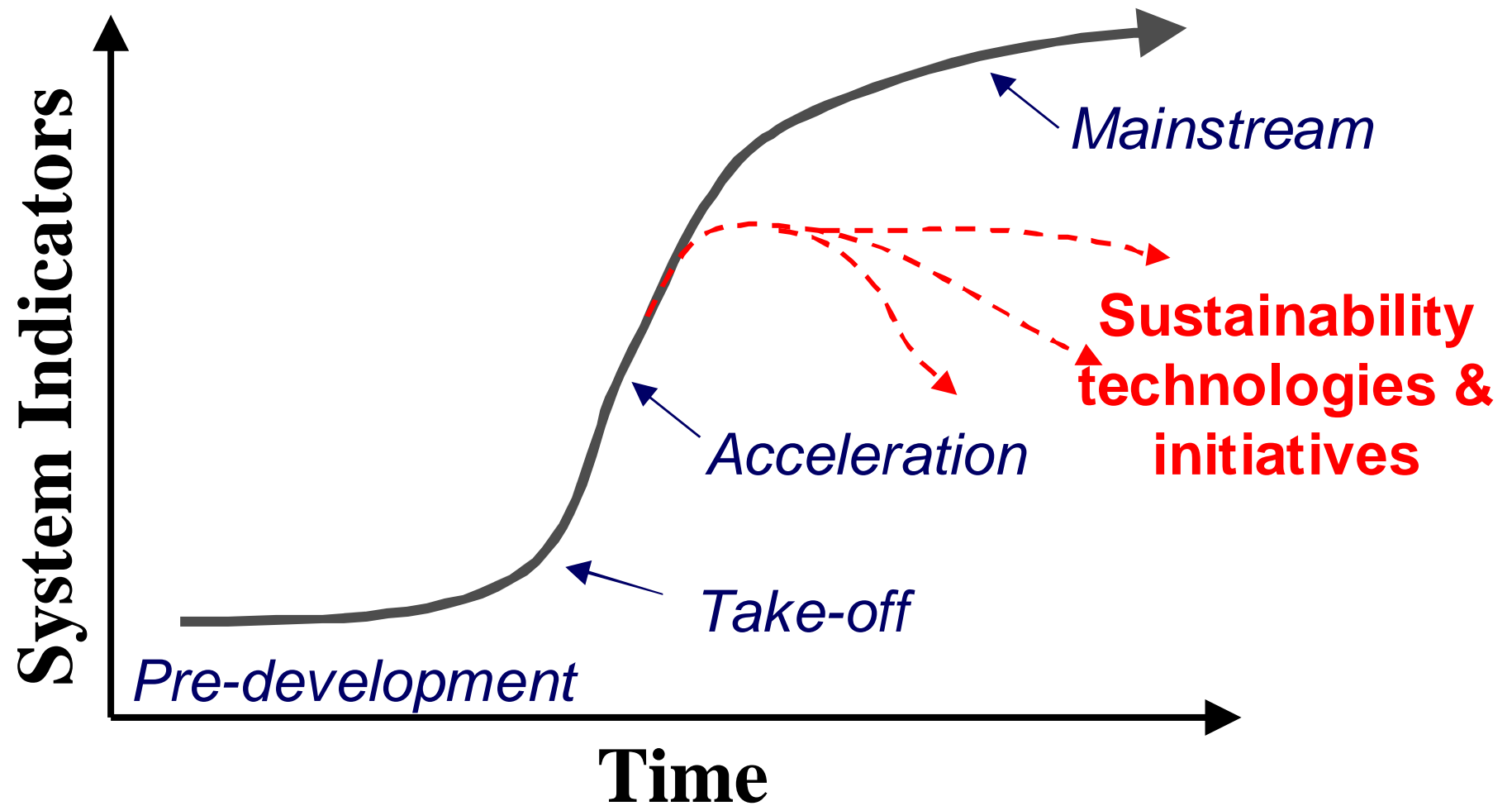|				
• The City of Perth will have a major role to play as Australia moves towards a decarbonised electricity grid	• Distributed energy could save $130 billion by 2050 - District energy systems must be embraced in Perth City	• Residential energy use per capita in Perth increased 15% over 15 years • Only 0.5% of Western Australian Households participate in the Green Power Program (the lowest rate in Australia	• Renewable energy consumption is currently @ 5% and needs to increase to 60% under the Government's mandatory renewable energy target	• Legal and systemic barriers presently limit innovative infrastructure and energy solutions within property boundaries, reducing opportunities for decentralised and cooperative systems

Targets:

• Reduce energy consumption by 25% per capita	• Achieve carbon neutrality and aim for carbon negative status by 2050	• Increase renewable energy consumption to 60% by 2050	• Embrace alternative energy sources:
			  - 4th Generation Nuclear
			  Bio Fuel
			  - Waste to Energy
			  - Mixed-use planning; predictive demand systems building to building and district connections
				• Decarbonised Energy grid by 2050

Vision:

Integrated Model (Building to Building and District Connectivity)

HASSELL

Technology-diffusion: Innovation Studies

System Indicators (y-axis)

Time (x-axis)

Mainstream

Sustainability technologies & initiatives

Acceleration

Take-off

Pre-development

Hough (1975), Rotman (2000) & Stirling (2003)

Value shifts

HASSELL

70's
Environmentalism

Weak
Sustainability

Strong
Sustainability

Regenerative
Society ??

Common practice   Best practice   Next practice

Activism   Compliance   Corp. est. reporting   opportunities

Society / Business Responses

Finding the way through the overcome inertia:
Understanding innovation in socio-technical systems

Emerges here

Physical expression
Technical knowledge

Needs to be
institutionalised
here

**Artefacts &
Technical Systems**

**Socio-Political
Context**

**Professional
Praxis**

Expression in
institutional
form

Innovation
starts here

World views

**Biophysical
Realities**

Underlying
values
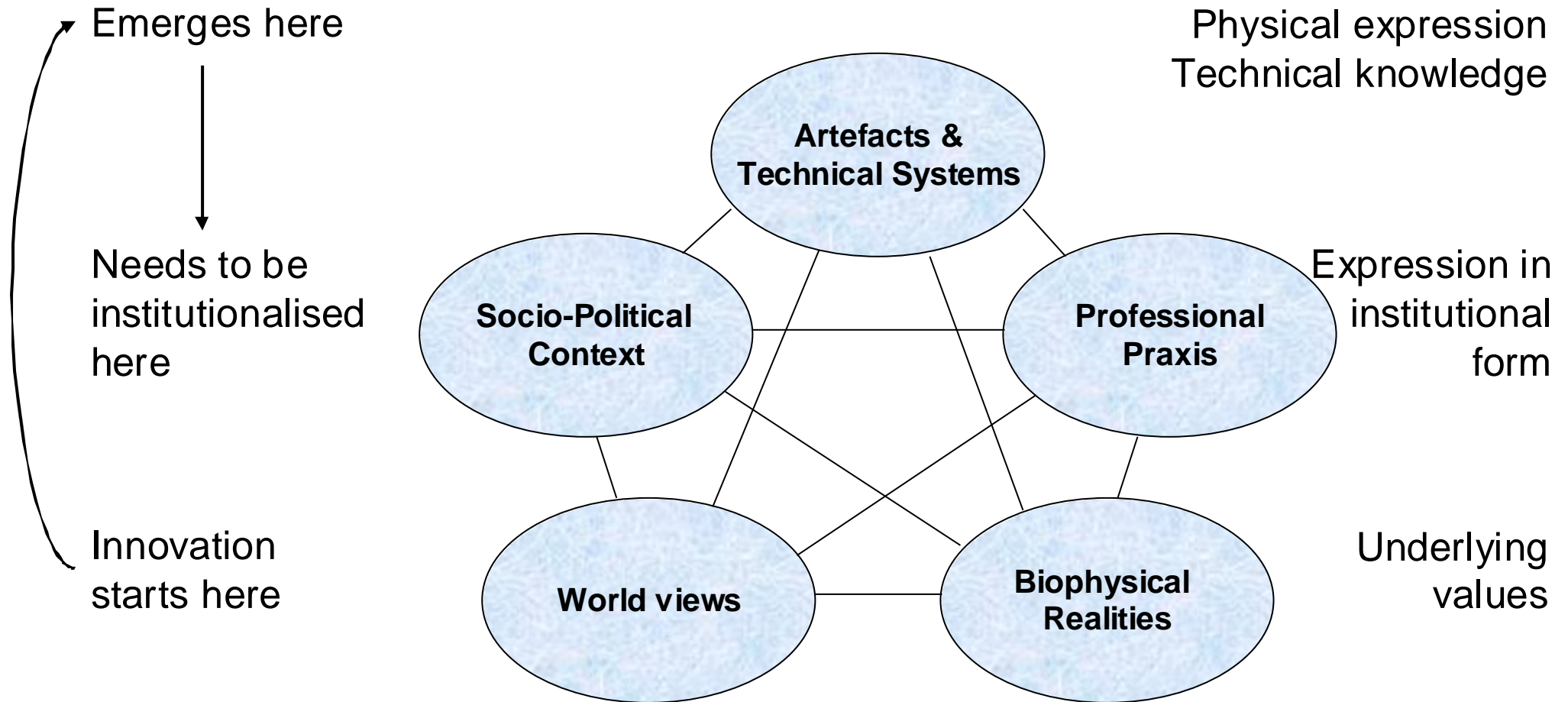
Dimensions in Technology – Framework for Change
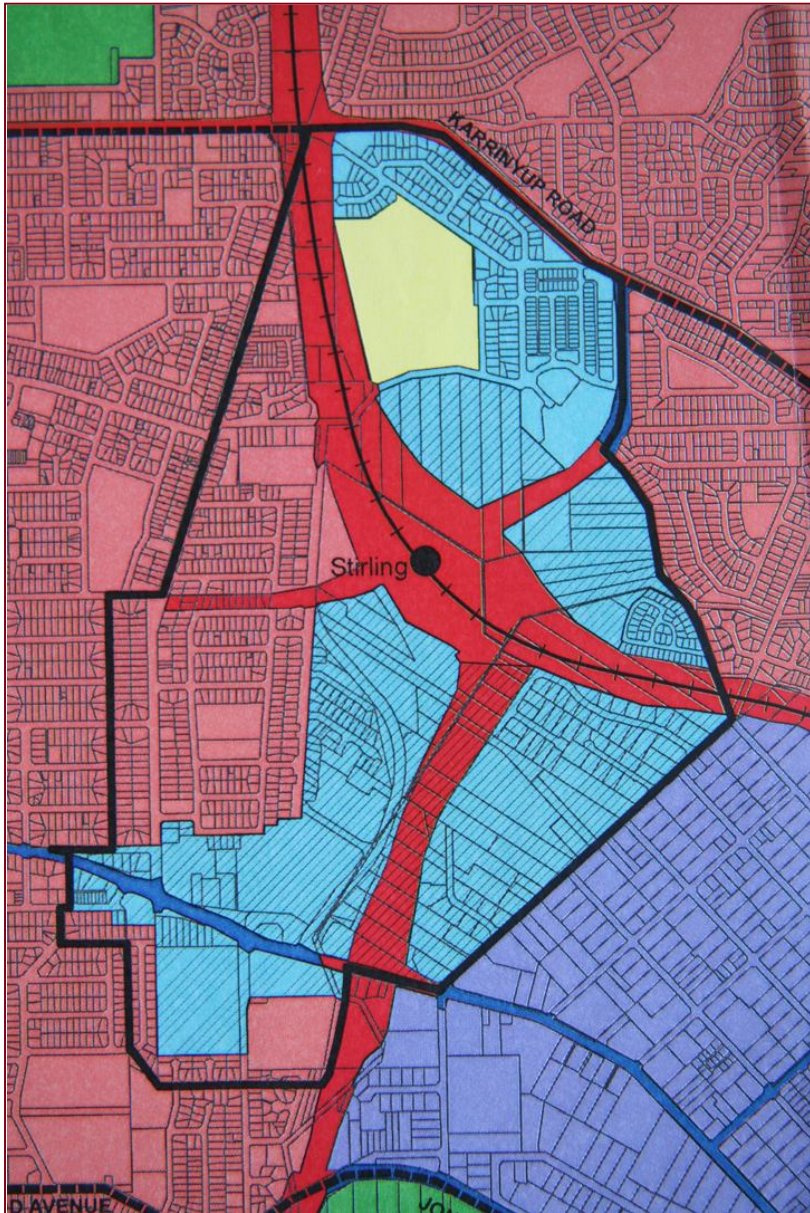*(Mouritz 1996)*

Example : transforming separated uses into a city centre – introducing sustainable technologies
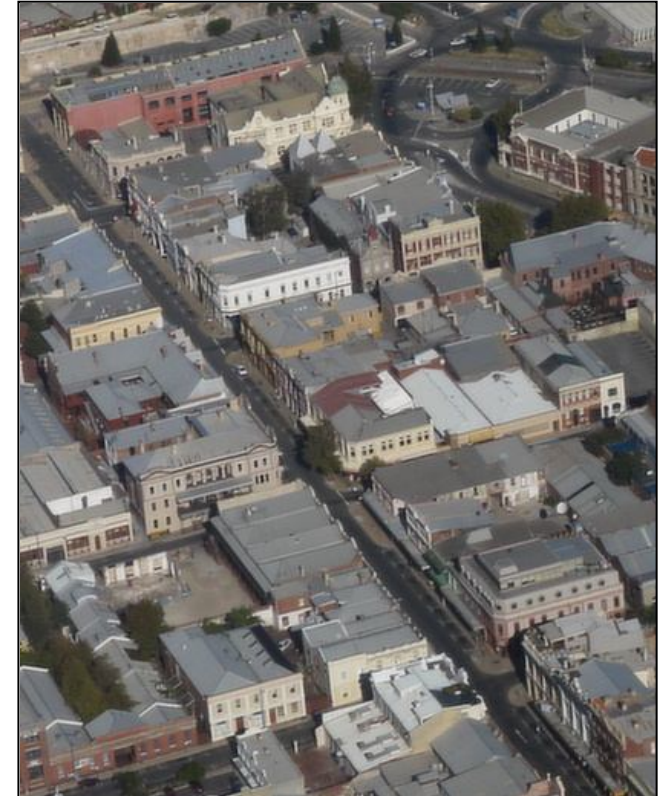
Urban form challenges:

- *Create an urban form that can sustain changes in the prevailing economic and social conditions.*
- *Design compact places that can bring uses together.*

Stirling Study Area

Linked Issues To Manage

Black Line – Landfill boundary

Transparent Red Polygons – High Risk ASS areas

Dashed Blue Line – Possible Urban Stream Alignment

Solid Blue Line – Probable Urban Stream alignment

Seepage (plume) of Contaminated
Groundwater from Landfill

Surface Water Drainage
into Stream

Shallow Localised Groundwater Seepage
From Peat Into Stream (potentially acidic)

Draft Indicative Plan
Ecologically Sustainable Design, Melbourne
May, 2009

SMEC
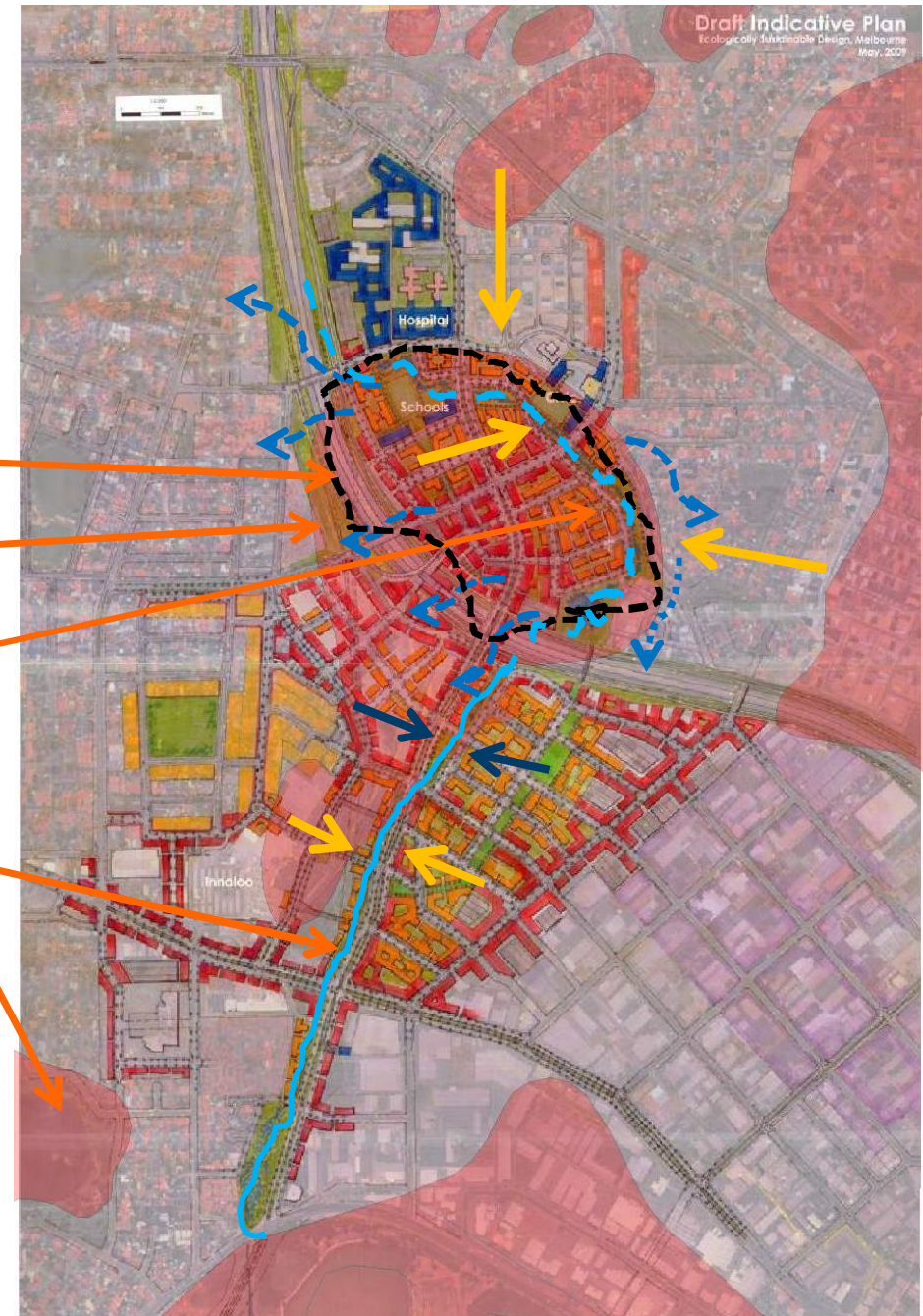
Becoming un blocked:
Excepting Complexity – acknowledging the wickedness

We had got 18 /24 months or more and got no where

could not just keep on spending / wasting $$$$

Pointed out that it was all about different world views – values in conflict

the Minister wanted a solution and the team did not want to give up

offered alternative approach – lessons from Alliancing + +

Some different people (Psychologist !!!!, the Greek & diversity)

A more high powered governance structure – Heads of Dept & Mayor and stakeholders

Lessons from Alliancing - also – transition theory and complexity leadership

Light bulb moment – strings of thought and knots of consciousness
 _Alliance – innovation in delivery
 _Transition theory – all about processes to rapidly bring sustainability into reality
 _ Complexity leadership – language for leaders and mangers to understand

Wicked problem: Complexity – acknowledging the wickedness

Wicked problems: Complexity

CHOICE in approach to design challenges:
REDUCING COMPLEXITY
make problem tame - complicated
restrict to narrow or single issue goals
seek to reduce uncertainty
limit stakeholders
choose traditional solutions

COPING WITH COMPLEXITY
Accept the wickedness of the problem – complexity
include many urban goals
develop strategies to deal with uncertainty
involve many stakeholders
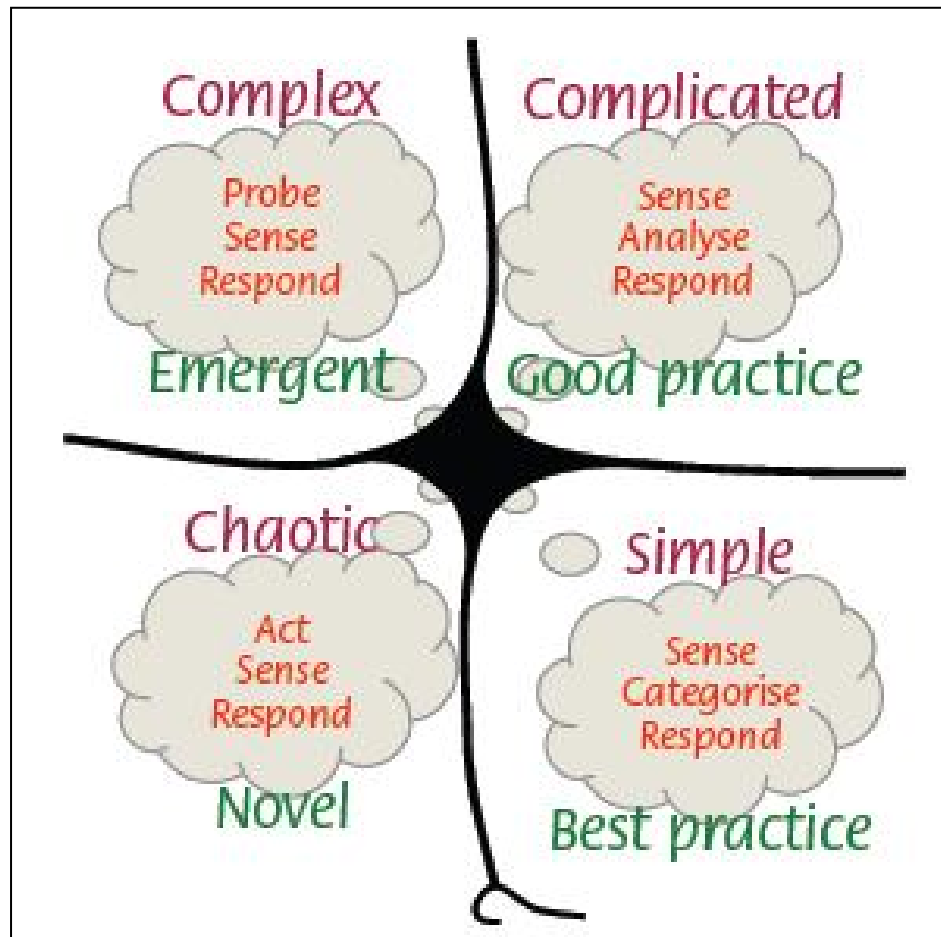search for optimal combination of solutions

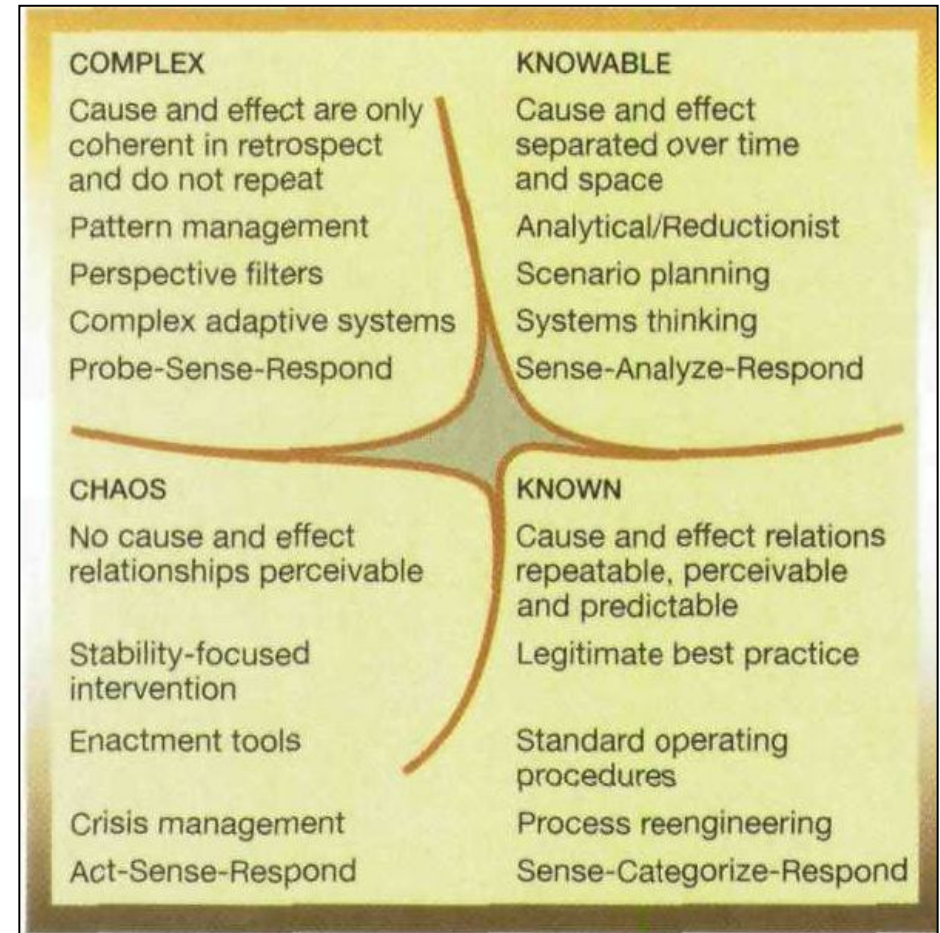**(ADAPTED FROM GOVERT GELDOF 2009)**

Cynefin Framework & Domains

adapted by Robert Letchford , Curtin University from David J Snowden & Mary E Boone (2007) "A Leader's Framework for Decision Making" , Harvard Business Review (Nov 2007)

Ways into complexity

Framework

Domains

# FINDING THE WAY THROUGH THE MAZE: DEALING WITH COMPLEXITY

Alliance Approach (from Darryl Whitely 2004)

The project alliance approach is characterised by attributes not associated with conventional contracting strategies. The defining attributes of project alliances are; they are founded on a set of governing principles; the integrated organisation and team structure; the unique partner selection process; the commercial and legal framework of alliance agreements and the ongoing coaching and support given to the alliance team through its life.

The project alliance approach delivers benefits to all parties in the alliance, with each party valuing some benefits more than others, depending on the nature of their business.

The project alliance approach led to the development of strong relationships between the parties and project team members that extended beyond the life of the project.

Transition Theory: Changing Large Socio-Technical Systems

Macro

Meso

Micro

Climate change

Institutions

Niches

Technical Innovation
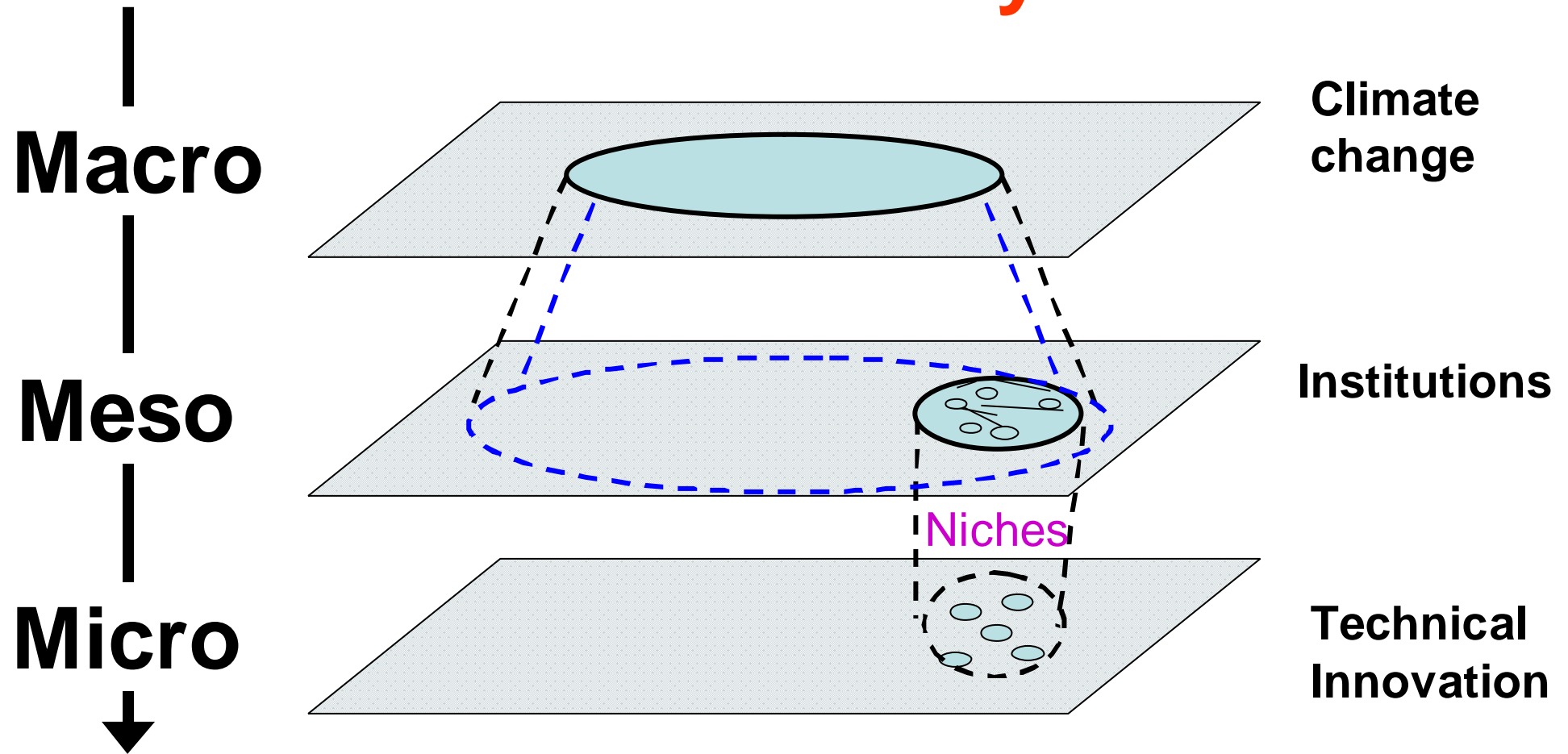
Rip and Kemp (1998), Geels (2002)

How can we transition to the Water Sensitive City?

Water Supply City · Sewered City · Drained City · Waterway City · Water Cycle City · Water Sensitive City
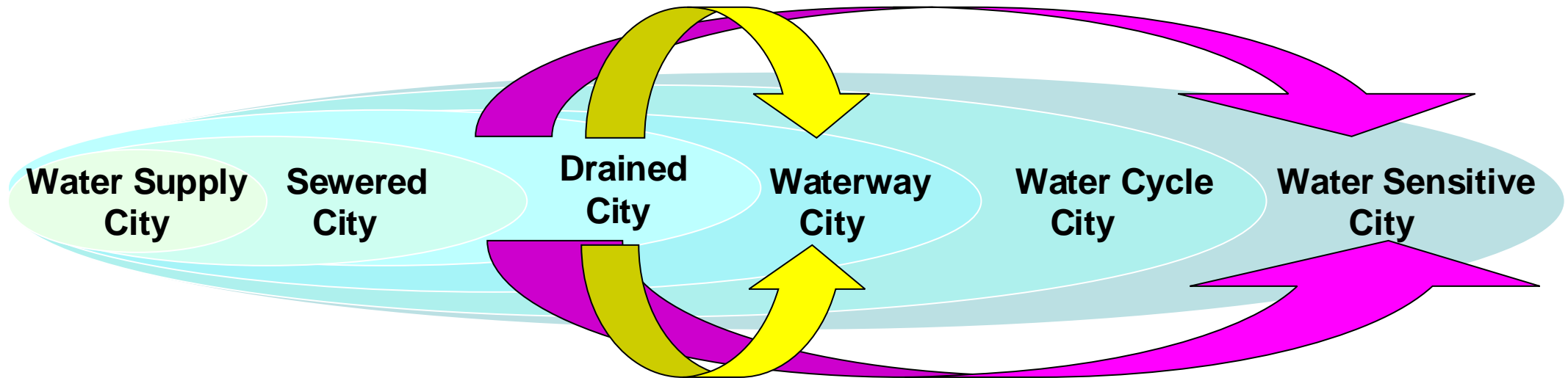
Learning transition from the 'Drained City' to the 'Waterway City'

www.urbanwatergovernance.com
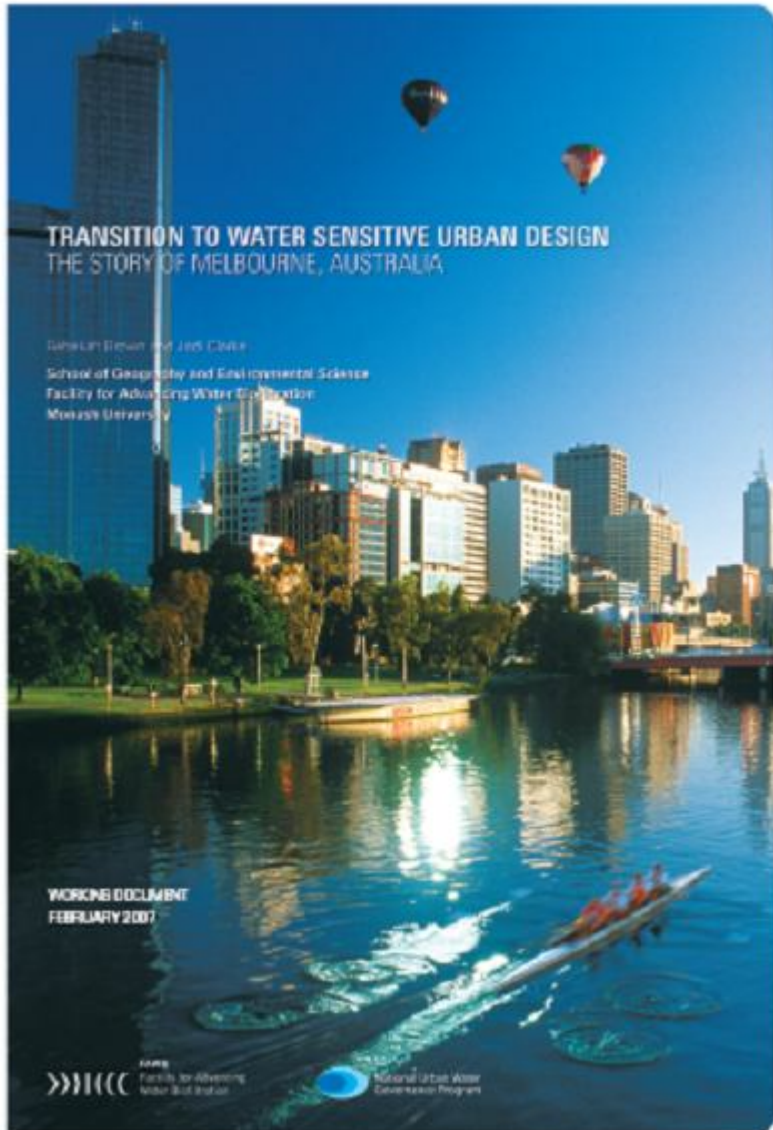
Transition to Water Sensitive Urban Design:

The Story of Melbourne, Australia

Rebekah Brown & Jodi Clarke

July 2007

Key Transition Factors

Champions ◄ *INTERPLAY* ► **The Enabling Context**
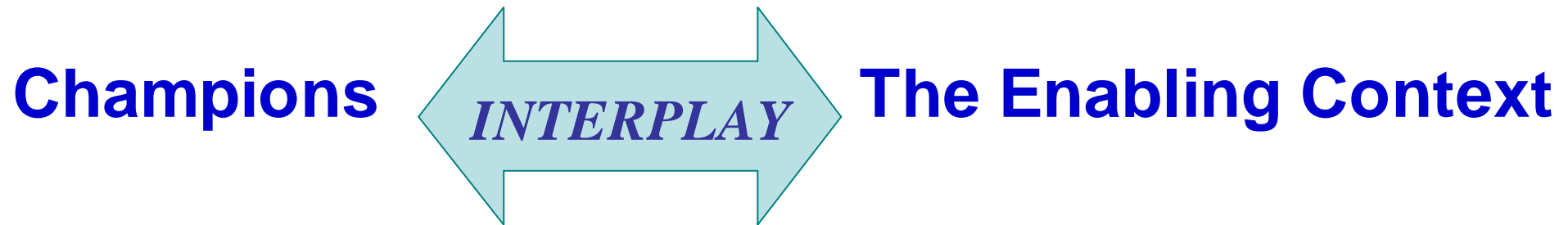
Champions	The Enabling Context
1. Vision for Waterway Health	1. Socio-political Capital
2. Multi-sectoral Network	2. Bridging Organisations
3. Environmental Values	3. Trusted & Reliable Science
4. Public Good Disposition	4. Binding Targets
5. Best Practice ideology	5. Accountability
6. Learning by doing	6. Strategic Funding Points
7. Opportunistic	7. Demonstration Projects & Training
8. Innovative & Adaptive	8. Market Receptivity

Complexity Leadership Theory

Complexity Leadership Theory: Shifting leadership from the industrial age to the knowledge era ☆

Mary Uhl-Bien [a,*], Russ Marion [b,1], Bill McKelvey [c,2]

[a] Department of Management, University of Nebraska-Lincoln, P.O. Box 880491, Lincoln, NE 68588-0491, USA
[b] Educational Leadership, School of Education, Clemson University, Clemson, SC 29631-0710, USA
[c] The UCLA Anderson School of Management, 110 Westwood Plaza, Los Angeles, CA 90095-1481, USA

3 entangled leadership roles
_Administrative leadership – normal structures of managerial leadership
_ Enabling leadership – a willingness to create and protect innovation processes (provide the $)
_ Adaptive leadership – patience and flexibility to deal with uncertainty and drive value explicit innovation

The importance of knowledge capture

1. Creating new alliances to solve complex problems

2. Demonstration projects or transition experiments creating new solutions

3. Lessons and insights transferred back into the system

4. Future projects build on lessons from past projects

Transition progress

Emerging transition trajectory (influenced by transition experiments)
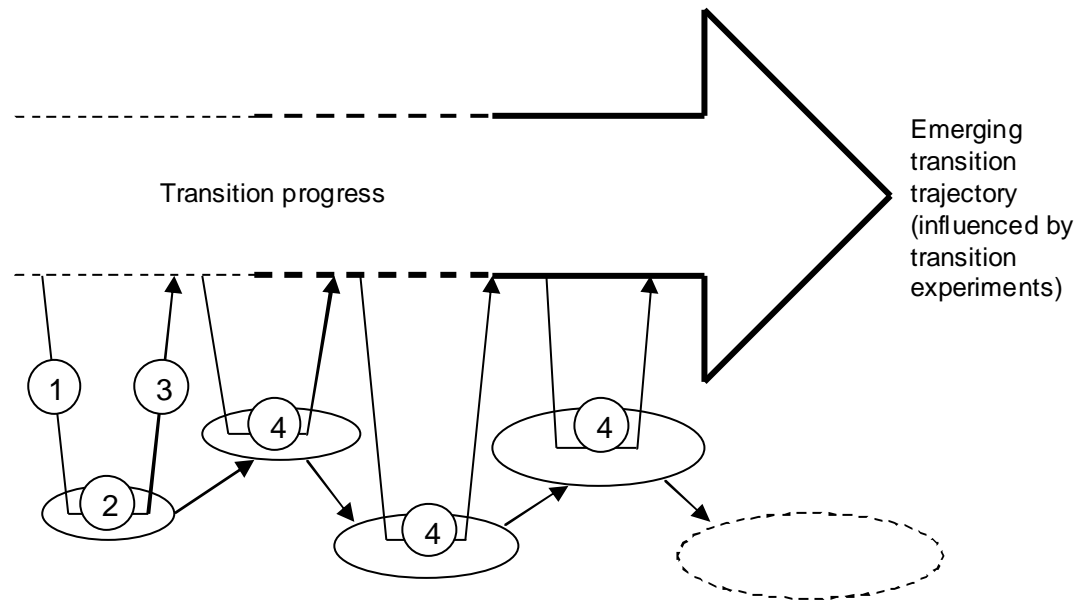
A The role of demonstration projects in the transition process and the critical activity of knowledge capture

1. Creating new alliances to solve complex problems

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Transition progress

Emerging transition trajectory (influenced by transition experiments)

(Steps 1-3 expanded in detail)
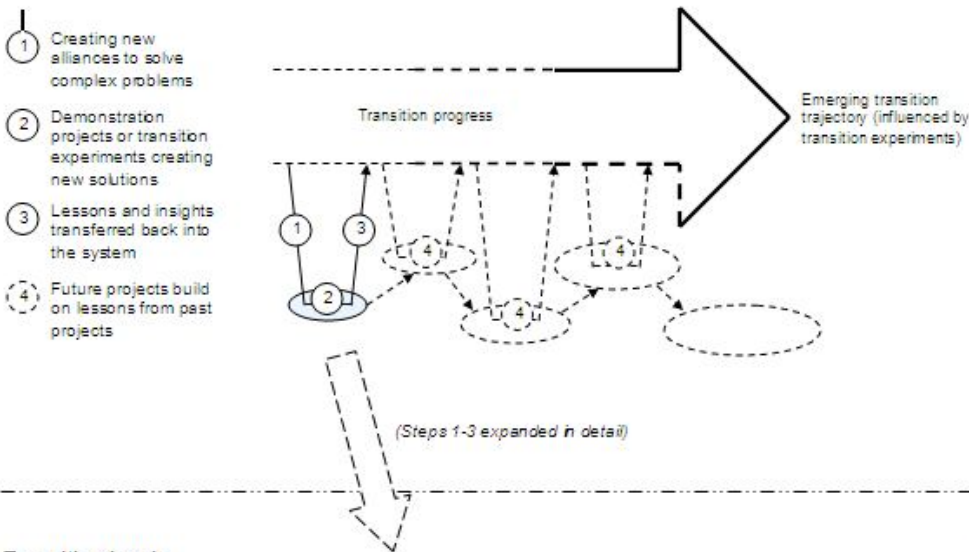
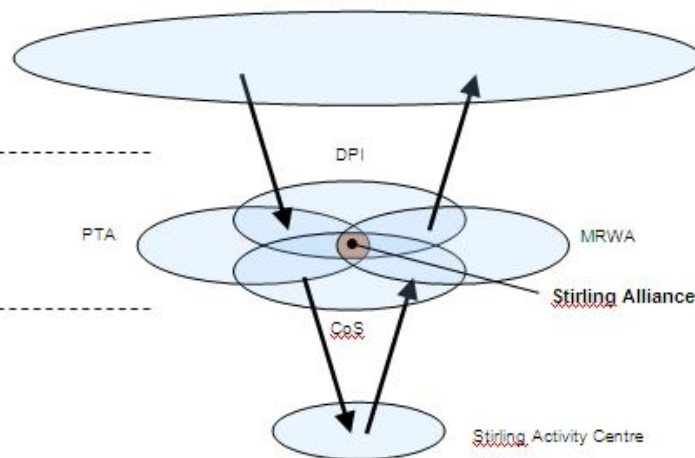*Stirling Alliance* – knowledge capture ideas expanded …

Draft for discussion purposes

Transition levels

Marco level
(Socio-cultural Landscape, context or policy level)

Meso level
(Regime or agency level)

Micro level
(Niche, transition experiment or demonstration project level)

DPI

PTA

MRWA

Stirling Alliance

CoS

Stirling Activity Centre

Key transition goals (examples)

- **Creating a better city for current and future generations**
  Working towards a shared city vision created in dialogue with the community (e.g. Network City)

- **Implementing Network City**
  Government agencies enhancing planning practices and process to deal with the increasing complexity of land use and transport issues under the Network City vision (e.g. urban redevelopment, increased mixes of land-uses and densities, increased traffic volumes, and public transport infrastructure).

- **Creating an activity city centre at Stirling**
  Enhancing the Stirling city centre to deliver community, environmental and commercial needs.

Key transition learning outcomes (examples)

Marco to Meso: *Progressing/ testing policy concepts e.g.*
- Activity centers
- Transport corridors
- Activity corridors
- Regional road networks

Meso to Micro: *refining/ creating new planning techniques and practices e.g.*
- New planning processes
- Interagency planning
- Problem solving techniques
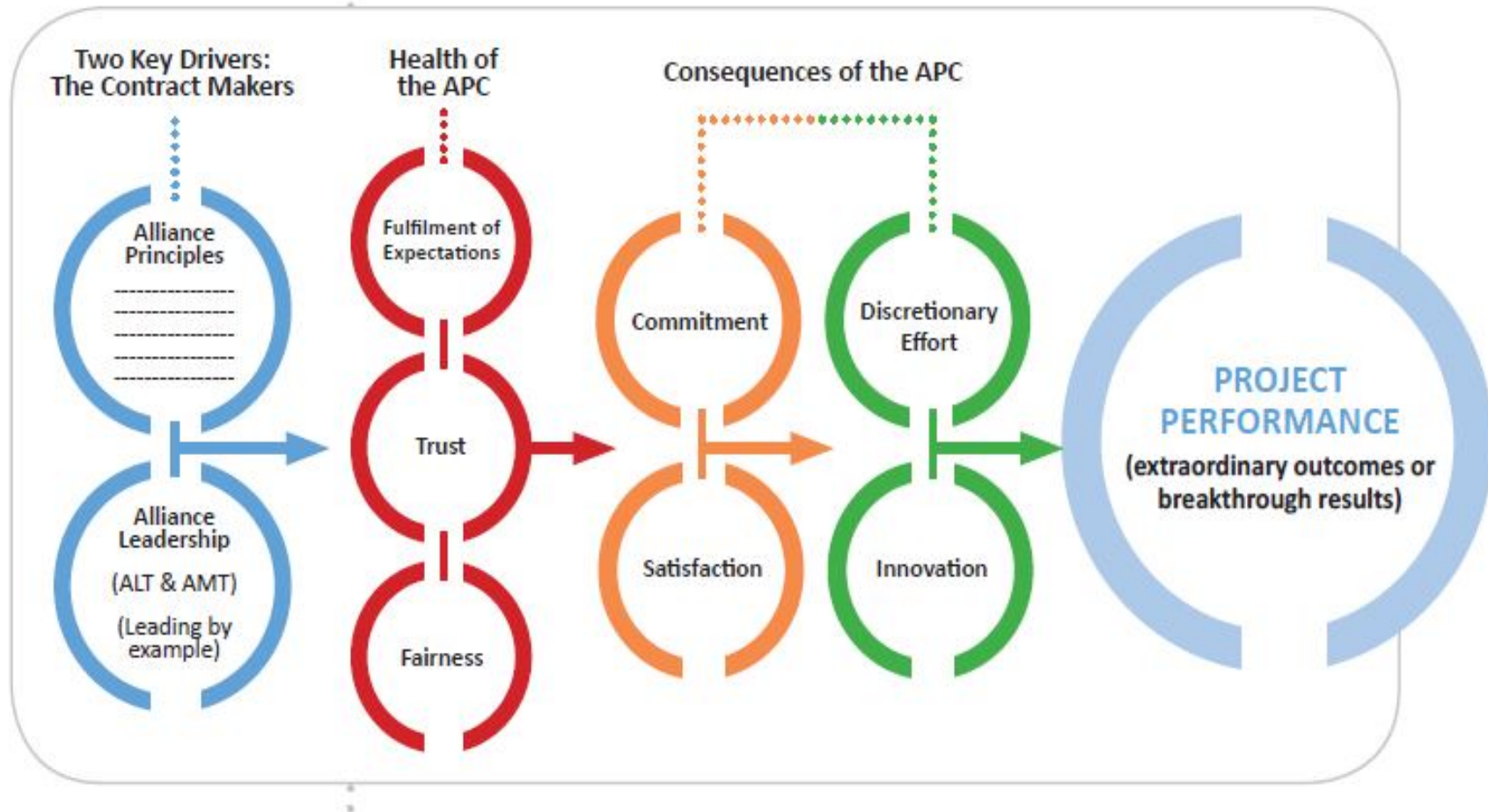- Application of urban design concepts, ITS etc

Institutional capacity building

B Knowledge capture expanded: transition levels, goals and learning outcomes for the Stirling Alliance

Strategic Relationships Framework

Alliance Board
CEO's, DG's
Stakeholders

Strategic Sphere

Institutional systems
Administrative leadership

Operational Sphere

Enabling leadership

Alliance Leadership Group
Stakeholder reps – boundary champions

Productive Range of Distress

Collaborate /empower

Inform / consult

Creative Paradigms
Aspirational – lead indicators, project opportunities, planning & research, vision

Technical Paradigms
Alliance Delivery Team
Lag indicators
Plan and assess
Project management
Risk assessment and mitigation

Adaptive leadership

The APC model

Two Key Drivers: The Contract Makers
- Alliance Principles
- Alliance Leadership (ALT & AMT) (Leading by example)

Health of the APC
- Fulfilment of Expectations
- Trust
- Fairness

Consequences of the APC
- Commitment
- Satisfaction
- Discretionary Effort
- Innovation

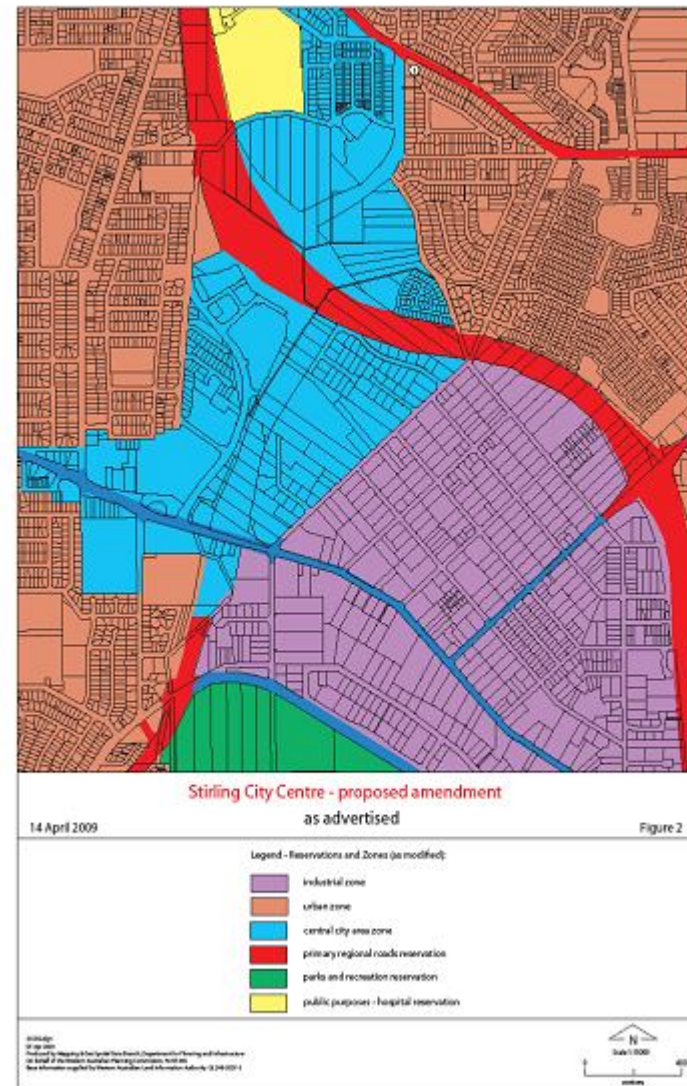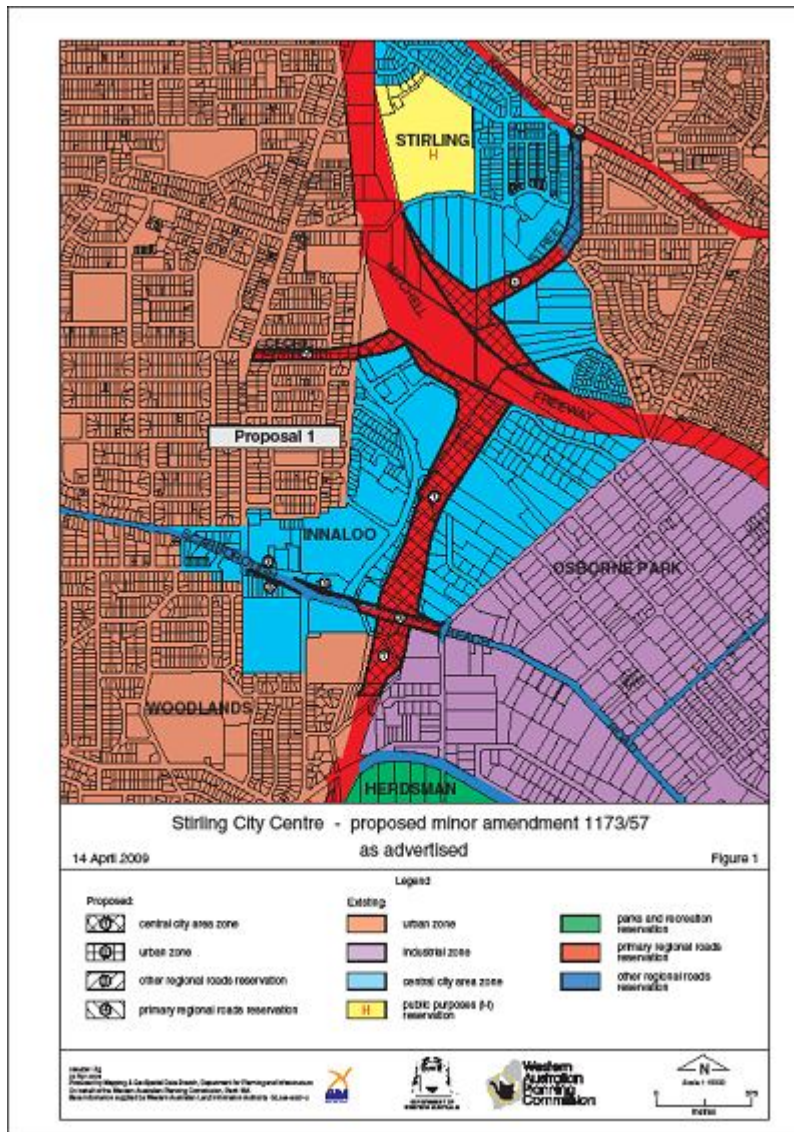**PROJECT PERFORMANCE** (extraordinary outcomes or breakthrough results)

Alliance Psychological Contract - Health check of the process along the way – It has not been all plain sailing

Achievements – MRS Amendment

Stirling City Centre - proposed minor amendment 1173/57 as advertised — Figure 1

Stirling City Centre - proposed amendment as advertised — Figure 2

Achievements – Premier and Mayor Opening Alliance Office And funds next phase of investigations

- Achievements
- Substantive business case for nearly $500m for infrastructure

Stirling City Centre Alliance
Infrastructure Australia
Submission

SOUTH STATION PRECINCT

NORTH STEPHENSON BLVD.

November 2010

Urban Sustainability

- Not about just widgets and gadgets
- Acknowledge that need ways to overcome inertia to get past the invisible structure that hold up innovation
- Acknowledging Complexity – or the Wickedness – but not ever part of the project is complex
- Transitions – pathways & leaning projects
- Participation (community, professionals)
- Leadership (challenging world views)
- Design & integration into city management

- I commend a PLUS + approach