Australian Cities: Liveable and Sustainable?

Presentation to Grattan Institute
Melbourne, 26 October 2010

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What do we mean by these sometimes troublesome terms: liveability and environmental sustainability?
And what is the best way to measure these concepts?
(For example, is there a good indicator of environmental sustainability?)
“The future strategic planning of cities should ensure that cities are: **globally competitive**, **productive**, **environmentally sustainable**, **liveable** and **socially inclusive** and are well placed to meet future challenges and growth”.

COAG Minister’s Meeting, Dec. 2009
City Indicators:

• Productivity
• Sustainability
• Liveability
• Social Inclusion
Model for Delivering Sustainable Urban Development

Exogenous Pressures
- Health Pandemic
- Migration & Tourism
- Capital investment, trade
- National & regional economy
- Climate change, Extreme events

Urban Systems & Processes
- Urban governance
- Technical sophistication
- Urban design & development
- Industrial & organizational processes
- Household behaviour
- Energy supply & demand
- Food supply & demand
- Transport supply & demand
- Housing supply & demand

Liveability
- Human Well being
  - Housing quality, affordability
  - Transport access, mobility, VKT
  - Human health – physical, mental
  - Human Capital
  - Social Capital

Urban Environmental Quality
- Ambient Air Quality
- Indoor Air Quality
- Noise
- Solar access
- Water Quality
- Green Space private & public

Waste & Emissions Recycling & reuse
- Solid, liquid & hazardous waste
- Wastewater
- Stormwater
- Air pollution
- Greenhouse

Source: Newton (2006)
# Community Indicators Victoria: Domains

## Healthy & Inclusive Communities

<table>
<thead>
<tr>
<th>Personal Health &amp; Wellbeing</th>
<th>Community Connectedness</th>
<th>Early Childhood</th>
<th>Lifelong Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Reported Health</td>
<td>Feeling Part of the Community</td>
<td>Early Childhood Development</td>
<td>Home Internet Access</td>
</tr>
<tr>
<td>Subjective Wellbeing</td>
<td>Social Support</td>
<td>Child Health Assessments</td>
<td>Apprenticeship &amp; Vocational Training</td>
</tr>
<tr>
<td>Life Expectancy</td>
<td>Volunteering</td>
<td>Immunisation</td>
<td>Enrolments</td>
</tr>
<tr>
<td>Adequate Physical Exercise</td>
<td>Parental Participation in Schools</td>
<td>Breast Feeding</td>
<td>Destinations of School Leavers</td>
</tr>
<tr>
<td>Fruit Consumption</td>
<td></td>
<td></td>
<td>School Retention</td>
</tr>
<tr>
<td>Vegetable Consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obesity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risky Alcohol Consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illicit Drug Use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological Distress</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Sustainable Built & Natural Environments

<table>
<thead>
<tr>
<th>Open Space</th>
<th>Housing</th>
<th>Transport Accessibility</th>
<th>Air Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to Areas of Open Space</td>
<td>Housing Affordability</td>
<td>Transport Limitations</td>
<td>Air Quality</td>
</tr>
<tr>
<td>Appearance of Public Space</td>
<td></td>
<td>Public Transport Patronage</td>
<td></td>
</tr>
<tr>
<td>Waste Management</td>
<td></td>
<td>Dedicated Walking &amp; Cycling Trails</td>
<td></td>
</tr>
<tr>
<td>Bio Diversity</td>
<td></td>
<td>Practical Non Car Opportunities</td>
<td></td>
</tr>
<tr>
<td>Native Vegetation Cover</td>
<td></td>
<td>Roads &amp; Footpaths</td>
<td></td>
</tr>
<tr>
<td>Carbon Sequestration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weeds &amp; Pests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recycling</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Dynamic Resilient Local Communities

<table>
<thead>
<tr>
<th>Economic Activity</th>
<th>Employment</th>
<th>Income &amp; Wealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Spending</td>
<td>Employment Rate</td>
<td>Income</td>
</tr>
<tr>
<td>Highly Skilled Workforce</td>
<td>Unemployment</td>
<td>Distribution of Income</td>
</tr>
<tr>
<td>Business Growth</td>
<td>Local Employment</td>
<td>Per Capita Wealth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distribution of Wealth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Financial Stress</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food Security</td>
</tr>
</tbody>
</table>

## Culturally Rich & Vibrant Communities

<table>
<thead>
<tr>
<th>Arts &amp; Cultural Activities</th>
<th>Leisure &amp; Recreation</th>
<th>Cultural Diversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Reported Health</td>
<td>Feeling Part of the Community</td>
<td>Early Childhood Development</td>
</tr>
<tr>
<td>Subjective Wellbeing</td>
<td>Social Support</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Obesity</td>
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<tr>
<td>Smoking Status</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Psychological Distress</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Democratic & Engaged Communities

- Citizen Engagement
  - Opportunity to Have a Say on Important Issues
  - Participation in Citizen Engagement
  - Female Local Councillors
  - Opportunity to Vote for a Trustworthy Political Candidate
  - Membership of Local Community
  - Organisations & Decision-Making Bodies
City Liveability Rating (Economist Intelligence Unit)

Category 1: Stability (25%)
- Prevalence of petty crime
- Prevalence of violent crime
- Threat of military conflict
- Threat of civil unrest/conflict
- Threat of terrorism

Category 2: Healthcare (20%)
- Availability of private healthcare
- Quality of private healthcare
- Availability of public healthcare
- Quality of public healthcare
- Availability of over-the-counter drugs
- General healthcare indicators

Category 3: Culture & Environment (25%)
- Humidity/temperature rating
- Discomfort of climate to travellers
- Level of corruption
- Social or religious restrictions
- Level of censorship
- Sporting availability
- Cultural availability
- Food and drink
- Consumer goods and services

Category 4: Education (10%)
- Availability of private education
- Quality of private education
- Public education indicators

Category 5: Infrastructure (20%)
- Quality of road network
- Quality of public transport
- Quality of international links
- Availability of good quality housing
- Quality of energy provision
- Quality of water provision
- Quality of telecommunications

Source: EIU (2009)
### Liveability Ratings of Australian Cities 2009

<table>
<thead>
<tr>
<th>City</th>
<th>Rank</th>
<th>Overall Rating (100=ideal)</th>
<th>Stability</th>
<th>Healthcare</th>
<th>Culture &amp; Environment</th>
<th>Education</th>
<th>Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melbourne</td>
<td>3</td>
<td>97.5</td>
<td>95.0</td>
<td>100.0</td>
<td>95.1</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Perth</td>
<td>5</td>
<td>96.6</td>
<td>95.0</td>
<td>100.0</td>
<td>91.4</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Sydney</td>
<td>9=</td>
<td>96.1</td>
<td>90.0</td>
<td>100.0</td>
<td>94.4</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Adelaide</td>
<td>11</td>
<td>95.9</td>
<td>95.0</td>
<td>100.0</td>
<td>94.2</td>
<td>100.0</td>
<td>92.9</td>
</tr>
<tr>
<td>Brisbane</td>
<td>16</td>
<td>94.9</td>
<td>95.0</td>
<td>100.0</td>
<td>93.5</td>
<td>91.7</td>
<td>92.9</td>
</tr>
</tbody>
</table>

### Regional Average

<table>
<thead>
<tr>
<th>Region</th>
<th>Average rank</th>
<th>Average rating</th>
<th>Stability</th>
<th>Healthcare</th>
<th>Culture &amp; environment</th>
<th>Education</th>
<th>Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>World average</td>
<td>70.3</td>
<td>76.1</td>
<td>74.5</td>
<td>75.4</td>
<td>76.1</td>
<td>81.1</td>
<td>76.2</td>
</tr>
</tbody>
</table>

Source: EIU (2009)
### Ecological Footprint of Australia’s Capital Cities

#### Per Capita Resource Consumption

<table>
<thead>
<tr>
<th>City</th>
<th>Ecological Footprint (ha per person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>6.6</td>
</tr>
<tr>
<td>Melbourne</td>
<td>6.4</td>
</tr>
<tr>
<td>Brisbane</td>
<td>6.7</td>
</tr>
<tr>
<td>Perth</td>
<td>7.4</td>
</tr>
<tr>
<td>Adelaide</td>
<td>6.8</td>
</tr>
<tr>
<td>Canberra</td>
<td>7.0</td>
</tr>
<tr>
<td>Hobart</td>
<td>5.7</td>
</tr>
<tr>
<td>Darwin</td>
<td>7.1</td>
</tr>
<tr>
<td>Australia</td>
<td>6.5</td>
</tr>
<tr>
<td>World</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Source: Turner & Foran (2008)
How liveable AND sustainable are our cities?

Are there cities out there that do it better?
The Liveability-Sustainability Nexus -- 2010

Liveability
Mean 76.18
St.Dev: 17.34

Ecological Footprint
Mean: 4.39
St.Dev: 2.83

Source: Newton (2010)
## Liveability – Sustainability Quadrants

<table>
<thead>
<tr>
<th>Quadrant</th>
<th>Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: High Liveability/3+ Planet Living</td>
<td>Melbourne, Sydney, Brisbane, Perth, Adelaide, Auckland, Wellington, Copenhagen</td>
</tr>
<tr>
<td>Q2: High Liveability/2-3 Planet Living</td>
<td>Vienna, Calgary, Montreal, Toronto, Vancouver, Helsinki, Paris, Osaka, Tokyo, Oslo, Stockholm, Geneva, Zurich</td>
</tr>
<tr>
<td>Q3: High Liveability/1-2 Planet Living</td>
<td>Berlin, Frankfurt, Hamburg</td>
</tr>
<tr>
<td>Q4: High Liveability/Within 1 Planet Living</td>
<td></td>
</tr>
<tr>
<td>Q5: Moderate-to-Good Liveability/3+ Planet Living</td>
<td>Atlanta, Boston, Chicago, Cleveland, Detroit, Honolulu, Houston, Lexington, Los Angeles, Miami, Minneapolis, New York, Pittsburgh, San Francisco, Seattle, Washington DC</td>
</tr>
<tr>
<td>Q6: Moderate-to-Good Liveability/2-3 Planet Living</td>
<td>Brussels, Prague, Lyon, Athens, Reykjavik, Dublin, Milan, Rome, Lisbon, Barcelona, Madrid, London, Manchester, Montevideo</td>
</tr>
<tr>
<td>Q7: Moderate-to-Good Liveability/1-2 Planet Living</td>
<td>Buenos Aires, Santiago, Dusseldorf, Munich, Budapest, Amsterdam, Warsaw, Moscow, St. Petersburg, Singapore, Bratislava, Seoul</td>
</tr>
<tr>
<td>Q8: Moderate-to-Good Liveability/Within 1 Planet Living</td>
<td></td>
</tr>
</tbody>
</table>

Source: Newton (2010)
21st Century Challenge for High Income Societies

Maintain Liveability

AND

Wind Back

Unsustainable Consumption
You’ve suggested there are *three pathways* to achieve both liveability and environmental sustainability – can you talk about these?
1. Where technological innovation can deliver infrastructure for the sustainable provision of urban resources and services
   • (TRANSITIONS, Springer, Dordrecht, 2008)

2. Where new planning and design paradigms can underpin a transition to more sustainable urban development
   • (TECHNOLOGY, DESIGN & PROCESS INNOVATION IN THE BUILT ENVIRONMENT, Taylor & Francis, London, 2009)

3. Where interventions can be identified to trigger behaviour change among individuals and households to modify their patterns of resource consumption
   • (LANDSCAPES OF URBAN CONSUMPTION, CSIRO Publishing, 2011)
Pathways to Liveable and Environmentally Sustainable Cities

Transition Arena

Technological Innovation in Urban Infrastructure + Innovative Urban Planning & Design + Change in Household Consumption Behaviour = Liveable + Sustainable

Rate of Change

Slow + Moderate + Fast
PATHWAY # 1: TECHNOLOGICAL INNOVATION

1. 3 Horizons of Technological Innovation

2. Urban Domain Innovations
Technological Innovation

HORIZON 1
Implementable now. Capturing maximum potential from existing technologies, structures and processes...

HORIZON 2
Implementable over the next 3 – 10 years. Requires some challenging extensions or combination of technology; modified policy, governance, regulatory environment etc

HORIZON 3
Implementable 15 – 20 years out. Based on planning concepts and technologies which are radically different to those currently operating; major barriers will need to be overcome

Source: Newton (2007)
### 3 HORIZONS OF URBAN INNOVATION
(Source: Newton, 2010)

<table>
<thead>
<tr>
<th>Urban Environmental Domain</th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy</strong></td>
<td>Energy efficiencies in housing and industry; dwelling energy rating; appliance rating etc</td>
<td>Distributed renewable energy and low emission energy generation systems; methane bridge (substitution of gas for coal)</td>
<td>Renewables-based solar-hydrogen economy</td>
</tr>
<tr>
<td><strong>Water</strong></td>
<td>Water-smart appliances; domestic rainwater tanks; desalination</td>
<td>Sewer mining; water sensitive urban design</td>
<td>Integrated urban water systems (recycled stormwater, wastewater)</td>
</tr>
<tr>
<td><strong>Waste</strong></td>
<td>Product stewardship; waste separation and recycling; domestic composting</td>
<td>Extensive cradle to cradle manufacturing based around single enterprises (e.g. motor vehicles, computers, building products etc.)</td>
<td>Eco-industrial clusters based on utilisation of multiple waste streams</td>
</tr>
</tbody>
</table>
### 3 HORIZONS OF URBAN INNOVATION (cont’d)

<table>
<thead>
<tr>
<th>Urban Environmental Domain</th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transport &amp; Communications</strong></td>
<td>Road pricing; high speed rail; telepresence via broadband internet communications</td>
<td>Hybrid / electric vehicles; telecommuting, teleshopping, telebanking etc.</td>
<td>Integrated transport and landuse; intelligent transport systems; green transport</td>
</tr>
<tr>
<td><strong>Buildings</strong></td>
<td>Check-box system for green building design; tall buildings</td>
<td>Real-time life cycle sustainability performance assessment during design; building information models; hybrid buildings</td>
<td>Ultra-smart building and linked infrastructures; green building materials with embedded intelligence</td>
</tr>
<tr>
<td><strong>Urban Development</strong></td>
<td>Smart Greenfield development</td>
<td>Brownfield development</td>
<td>Comprehensive Greyfield regeneration</td>
</tr>
</tbody>
</table>

Source: Newton 2008, 2010
PATHWAY # 2: URBAN DESIGN & PLANNING

1. Building Scale

2. Precinct Scale
City of Bits

Cities comprise millions of physical built environment objects: buildings, roads, rail, utility networks, automobiles etc. as well as natural environment objects: trees, lakes, parks etc.

Translation to Object-based Technologies

Built environment objects can also be represented digitally as combinations of elements:

- geometry (3D)
- attributes
- behaviour(s)
AUTOMATED PERFORMANCE ASSESSMENT & VISUALISATION

Direct from CAD to Analysis

Source: CSIRO
HYBRID BUILDING / PRECINCT

Energy Efficient Building Shell

Energy Efficient Appliances

Local Energy (Distributed/Embedded) Generation

Hybrid Building / Precinct

Link to National Energy Grid

NET CO₂-e EMISSIONS FOR SELECTED SCENARIOS IN TRANSITION TO ZERO CARBON DWELLINGS

Source: Newton & Tucker (2010)
MELBOURNE @ 5 MILLION… what shape will it take?

> 2001: population 3.2 million
Pathways to More Sustainable Cities
3 Horizons of Urban Development

HORIZON 1
Greenfields development

HORIZON 2
Industrial brownfields redevelopment

HORIZON 3
Comprehensive, precinct-level regeneration of occupied, greyfield suburbs

The 21st century challenge:
Re-generating the city,
Creative destruction,
Re-cycling the suburbs,
Urban retrofits...

Source: Newton (2010b)
Greyfield Precinct Redevelopment Approaches

- Activity Centres
- Transport Corridors
- Housing Precincts

Source: Newton (2010c)
Housing Infill in Monash 2000-2006 (Source: Phan et. al. 2008)
Residential Redevelopment Potential
Middle Suburbs of Melbourne

The middle suburbs are where we find the greatest concentration of greyfield dwellings (220,000+ properties where land value represents $\geq$ 80% of total asset).

“Greyfields” are those ageing but occupied tracts of inner and middle ring suburbia that are physically, technologically and environmentally failing and which represent under-capitalised real estate assets”

Source: Newton (2010c)
“... with residential development becoming increasingly synonymous with regeneration – is a different model required to generate shareholder value?” (Jones 2008)

- Property Developers
- Government Regulators
- Community of Property Owners
- Urban Designers and Planners
- Financial Investors
- Manufacturing and Construction
- etc
PATHWAY # 3: HUMAN BEHAVIOUR

1. Determinants of Urban Resource Consumption

2. Behaviour Change
Conceptual Model of Urban Resource Consumption

Source: Newton & Meyer (2010)
Living in Melbourne Survey Precincts

Inner

Middle Established

Outer New
## Determinants of Urban Resource Consumption

<table>
<thead>
<tr>
<th>Determinant Level</th>
<th>Water</th>
<th>Energy</th>
<th>Appliances</th>
<th>Carbon Intensity of Travel</th>
<th>Housing Space</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual Demographics</strong></td>
<td>.035</td>
<td>.167***</td>
<td>.045</td>
<td>.030</td>
<td>.017</td>
<td>.082**</td>
</tr>
<tr>
<td><strong>Individual Attitudinal</strong></td>
<td>-.010</td>
<td>.144***</td>
<td>.029</td>
<td>.136***</td>
<td>.021</td>
<td>.095***</td>
</tr>
<tr>
<td><strong>Household Context</strong></td>
<td>.405***</td>
<td>.522***</td>
<td>.730***</td>
<td>.313***</td>
<td>.654***</td>
<td>.715***</td>
</tr>
<tr>
<td><strong>Dwelling Context</strong></td>
<td>.438***</td>
<td>-.035</td>
<td>-.036</td>
<td>.180***</td>
<td>.460***</td>
<td>.117***</td>
</tr>
<tr>
<td><strong>Locational Context</strong></td>
<td>.004</td>
<td>.122*</td>
<td>.068*</td>
<td>.132***</td>
<td>.047**</td>
<td>.037</td>
</tr>
</tbody>
</table>

R-Square (%)
- Water: 45
- Energy: 43
- Appliances: 56
- Carbon Intensity of Travel: 37
- Housing Space: 78
- Total: 67

Standardised Regression Weights for Per Capita Consumption
(* p<.05, ** p<.01, *** p<.001)

Source: Newton & Meyer (2010)
TRANSITION PATHWAY: BEHAVIOUR CHANGE - TOWARDS MORE SUSTAINABLE LIVING

Phases of Behaviour Change

HORIZON 1
Awareness, Knowledge, Understanding

HORIZON 2
Concern

HORIZON 3
Responsibility, Action

Sustainability

Phases of Behaviour Change
**Levels of Environmental Concern**
**Question: Are you concerned about any environmental problem?**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No</strong></td>
<td>7.7</td>
<td>16</td>
<td>15.8</td>
<td>18.3</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
<td>92.3</td>
<td>84</td>
<td>84.2</td>
<td>81.7</td>
</tr>
<tr>
<td>• A great deal</td>
<td>30.7</td>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• A fair amount</td>
<td>48.3</td>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• A little</td>
<td>13.3</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Australian Bureau of Statistics (2008); Sustainability Victoria (2008); Living in Melbourne Survey (2008)
**Level of Environmental Activity**

Question: Over the past 12 months would you say you have been

<table>
<thead>
<tr>
<th>Level of Activity</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very active in responding to environmental issues</td>
<td>13.1</td>
</tr>
<tr>
<td>Reasonably active in responding to environmental issues</td>
<td>76.3</td>
</tr>
<tr>
<td>Not at all active in responding to environmental issues</td>
<td>10.6</td>
</tr>
</tbody>
</table>

Source: Living in Melbourne Survey (2008)
What would you be prepared to do for a clean environment?

<table>
<thead>
<tr>
<th>Type of Action</th>
<th>Yes</th>
<th>Maybe</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay more Tax</td>
<td>19.7</td>
<td>19.4</td>
<td>61.0</td>
</tr>
<tr>
<td>Pay more for water, electricity</td>
<td>22.4</td>
<td>16.8</td>
<td>60.8</td>
</tr>
<tr>
<td>Volunteer time to environmental projects</td>
<td>36.8</td>
<td>33.4</td>
<td>29.8</td>
</tr>
<tr>
<td>Travel less by car</td>
<td>48.9</td>
<td>26.7</td>
<td>24.4</td>
</tr>
<tr>
<td>Give up plastic bags</td>
<td>72.2</td>
<td>17.1</td>
<td>10.7</td>
</tr>
<tr>
<td>Buy ‘green’ labelled products</td>
<td>70.0</td>
<td>21.8</td>
<td>8.1</td>
</tr>
<tr>
<td>Buy local products</td>
<td>82.9</td>
<td>13.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Recycle more</td>
<td>90.9</td>
<td>6.2</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Source: Newton & Meyer (2011)

Source: Newton & Meyer (2011)
Barriers to Environmental Action

Ownership of Problem
• Not my responsibility (22.5%)
• I rent – its up to my landlord (28.5%)
• It won’t help Melbourne’s environment (19.7%)
• No regulation requiring me (27.9%)

Information Shortage/Access
• Lack of information (55.4%)
• Can’t work out what’s best (47.9%)

Organisational Challenges
• Too difficult to organise (54.6%)
• Can’t work out what’s best (47.9%)
• Difficult to get right trades people (39.3%)

Financial
• Lack of money (68.2%)
• Expense not work benefits (52.3%)
• I rent – up to the landlord (28.5%)

Time Constraints (Level of Priority)
• Planning to, but haven’t got to it yet (54.4%)
• Lack of time (51.1%)

Source: Newton & Meyer (2011)
Q4. TRANSITION GOVERNANCE

What has stopped us making these changes to date?

..Are our governance arrangements and institutions up to the challenge?
THE FUTURE OF CITIES:
TRANSITION PATHWAYS FOR URBAN REGENERATION

System Breakdown
Backlash
Path-dependant Lock-in
Transformation
Successful adoption of H2 & H3 innovations

Acceleration
Adoption of only H1 efficiency innovations

Transition
Unsuccessful adoption of H2 & H3 innovations

Arena
Continuation of 20th century business as usual practice

Pre-development

Sustainability

Time

△ = Application of New Process / Transition Management

Source: Newton (2010a)


Peter W. Newton (2010c) *Towards a New Development Model for Housing Regeneration in Greyfield Residential Precincts*, Australian Housing and Urban Research Institute, Discussion Paper 1, August, Melbourne
