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TRANSITIONSCAPE: GENERATING COMMUNITY-BASED SUSTAINABLE TRANSPORT INITIATIVES

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Abstract:

This paper gives a brief outline of the means by which the *TransitionScape* methodology, a toolkit for enabling communities to generate viable action towards becoming Transition Towns*, can facilitate the development of community based transport initiatives with a particular focus on a case study conducted in Oamaru, New Zealand earlier this year. The method was developed to overcome the five main challenges of sustainability. In this paper we present how it relates to transition of transport infrastructure, technology and behaviour.

Keywords: Sustainable Community Development, Transition Towns, Peak Oil, Transport, Energy Systems, Action Plan

* For more information on the Transition Towns movement see www.transitiontowns.org

Introduction:

The environmental and resource problems of Climate Change (IPCC 2007) and Peak Oil (Bentley 2002) are yet to be addressed in relation to transportation at a national policy level. The issue of Peak Oil has particular relevance to the transport sector. The movements of people and goods underpins many of the organisational structures within our present-day society. These structures must be changed in the face of a future of lower fossil fuel availability and an inability for renewable resources to meet these shortfalls in production. National policy and research incentives are not currently targeting adaptability and resilience measures which would be relevant to local communities. For example, biofuel targets, ocean wave energy, or carbon capture and storage (MED 2006) will not help a town such as Oamaru deal with high fuel prices and shortages. Rather, local structures must be developed which allow participation in activities and movement of goods from production to markets with lower fuel consumption. These resilient structures will have more to do with land use and local communication than with substitution of fuels or transport technologies.

Local communities worldwide are seeking sustainable development pathways, many having labelled themselves as *Transition Towns*.^{*} A local community will be defined operationally as a group of stakeholders forming an organisational structure with the aim of meeting the needs of its members. A local socio-economic structure will be defined organisationally as a system including the governance and regulatory bodies, the built environment and infrastructure, personal residences, appliances and vehicles, and the commercial, agricultural, and industrial assets in the local area. Twentieth Century community organisational structures are indicative of abundant energy availability and global supply chains. One of the precepts of *transition engineering* is that adaptation of existing socio-economic structures to reduced energy availability necessitates the creation and maintenance of strong local connections in order to meet basic needs for wellbeing and to foster the liberty to pursue a desired quality of life.

The transition engineering project requires changes in the organisational structure of the current community system. This requires transformation of the members' cognitive structures, regarding the destabilising consequences of the current growth paradigm, and new ideas must feed forward into future planning decisions. This mental adaptation to a changed virtual landscape (constrained oil future vs. 'business as usual') is used to identify barriers as well as opportunities for 'real-world' adaptation actions. Appropriate action can then be taken. We propose that helping people make this mental adaptation is part of the larger project of transition engineering. We have developed a method which we call **TransitionScape** (Dale et al 2008) as a way to move communities from a point of concern about the future into positive action focused on adaptive change as illustrated below.

recognition, by the community members,
of the situation being faced



awareness of how this environment is
functionally different to that for which many
of our community systems are suited



facilitation of **creativity** of adaptation
responses to the challenges of the new
environment



increased **connectivity** and organisational
structures appropriate to these challenges



acquisition of **skills** relevant to the new
landscape

Method:

The **TransitionScape** methodology is designed for a workshop or seminar setting to be led by a transition engineering supervisor and facilitated by assistants. The workshop is set out as a series of presentations and interactive sessions. **TransitionScape** was trialled at a weekend forum organised by the Natural Heritage Society Oamaru on the 15th and 16th March 2008.

Brief method outline:

Session 1 – Problem Identification:

This session is delivered in a conventional lecture format with content including: an analysis of future fossil fuel availability; projections of renewable energy generating capacity and their inability to cover 'shortfall' in oil production; projections of environmental disruption due to changing climate. The lecture also covers how we can move beyond the problems of constrained energy – the transition project.

Session 2 – Scenarios:

Four virtual landscapes are generated dealing with (1) disruption to the oil supply, (2) irregular but frequent electrical grid failure, (3) environmental degradation and (4) social dilapidation in order to enable participants to generate their own adaptation responses to these situations. Appropriately a number of these adaptation responses will be concerned with community based initiatives aimed at reducing demand on transport services and infrastructures.

Session 3 – Asset Mapping:

Participants are asked to make note of natural resources within the region; features of the local community that they felt should be kept 'at all costs'; negative features that effort should be made to change and to list three critical infrastructural assets. Participants are also asked to recognize skills that both exist and those that would be needed for the transition project within the region and to identify any existing barriers to the transition project. These are then collated into a resource 'map' of the community.

Session 4 – Planning Solutions:

The final sessions organise the responses according to natural groupings:

- | | |
|------------------------------------|--------------------------------|
| 1. Demand Management | 5. Community Networks |
| 2. Infrastructure and Technology | 6. Re-localising Economy |
| 3. Knowledge, Skills and Education | 7. Governance and Regulation |
| 4. Local Produce and Markets | 8. Restoration and Reclamation |

These topics were felt to be both trans-disciplinary and interconnected as well as transcending conventional community organisational structures. For these reasons some projects fall under two (or more) headings for planning. It is hoped that members from the different planning groups represented by these headings will co-operate with members of another planning group (or groups) on various projects thus strengthening an integrated planning approach.

Finally project teams are organised from among the participants. This paper will discuss the transport related responses, assets identified and projects developed during the ***TransitionScape*** workshop in Oamaru.

In response to the 'collapse' scenarios a number of participants proposed projects related to transport which were organised into categories for project planning:

Demand Management:

Transport mode change – bike, walk, etc.
Ride sharing
Cars only for essential trips
Work from home

Infrastructure and Technology:

Build up rail network
Prospect for more oil
Bio-fuels

Community Networks:

Ride sharing
Shared use of community resources
Communal shopping
Community gardens

Re-localising Economy:

Work from home
Use local resources locally
Don't export local resources

Knowledge, Skills and Education:

Conservation education: Transport
Get experts in for help with planning

Local Produce and Markets:

Market gardens
Farmers market
Community garden
Home grown food
Use local resources locally
Don't export local resources

Governance and Regulation:

Work from home
Prioritise/Restrict fuel use
Use local resources locally
Don't export local resources

Restoration and Reclamation:

No projects

Within the asset identification segment of the forum "low population density" was identified as a positive asset whilst both the "unused railway station", the rail line being "not well utilised" and the "high road accident rates" were noted as aspects of the community in need of change, further the "road and rail networks" and "long-service buses" were recognised as critical infrastructural assets. Within the skills identification portion of the forum many capabilities directly related to the achievement of some of the transportation projects were acknowledged. These being "people management", "communication", "organisational" and "leadership" skills as well as many community members with IT skills. "Disability preventing walking and cycling" was recognised as a potential barrier to change.

Assessment of proposed projects:

Within the community development literature (James & Lahti 2004), (Roseland 1998) there is an awareness that priority should be given to those projects that can be undertaken easily and provide the greatest benefit for the least investment – picking the 'low hanging fruit'.

Several of the adaptation responses, listed above, require no more than the establishment of information networks within the community; those being the creation of ride-sharing networks, communal/community shopping trips. One, but by no means the only, method by which to achieve this end would be the construction of an on-line database or webpage designed specifically for these purposes.

These projects can easily be carried out by community members allowing recognition and utilisation of the current skills base within the community and serving as well as the explicit aims, multiple other purposes within the transition process; firstly, reducing demand on transport services whilst simultaneously creating and strengthening organisational structures aligned with increasing sustainable and community value as well as enabling community members to feel empowered all of which serve as a solid platform from which to increase the likelihood of success of future projects.

Creation of a bio-fuels initiative, especially one utilising waste resources such as used vegetable oil, may possibly be undertaken using the skills base within the community. Initial action would probably take the form of a feasibility study,

investigating, amongst other things, resource availability and cost, possible market for bio-fuel product and capital and running costs.

Further projects may require acceptance and assistance from the wider community. Facilitating change to lower energy transport modes, e.g. walking or cycling, or enabling people to work from home might necessitate research into community members' transport choices and then action based upon findings. Infrastructural changes, such as introduction of cycle lanes or cycle only streets, may be necessary, needing cooperation of the town council.

Action on "building up the rail network" would require collective initiative on a regional and national level, although lobbying could begin at the local level. Research into the feasibility of introducing local rail services has already been carried out by the Hampden Community Action Group.

Governance to protect and prioritise local use of local resources may be possible but would require extensive research into the complex, interacting mechanisms of many interconnected systems; legislative, economic, social, etc.

Conclusion:

The ***TransitionScape*** methodology can serve as a means for generating community driven projects aimed at both increasing community connectivity and development toward achieving desired ends via increasingly sustainable means. The design of the method, although loosely connected with transport issues in the more general systemic sense can be given a greater focus on specific transport issues by tailoring the 'collapse' scenarios accordingly. Further trials of the transport-tailored scenarios method would be needed to ascertain levels of success.

The great power of the method is that all of the creativity comes from within the community itself increasing the likelihood of community members to claim ownership of the projects being proposed thus increasing the likelihood of their successful implementation. Despite this many communities will lack the specific expertise to carry out some transport initiatives and it is hoped that use of the ***TransitionScape*** methodology will increase connections between participating communities and any necessary outside assistance (planners, engineers, etc).

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