Green Infrastructure for Ontario's Rural Communities: Using the Goods and Services of Nature for Community Economic Development and Resiliency

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Proposal

Abstract

This research proposal examines barriers/opportunities for using nature/natural systems as a mechanism for rural labour market development, and as a means to generate rural community resilience.

When working with Ontario's land use base, planners must often make trade-offs in priorities in striving for economic activity, managing resources and promoting public health/safety. The environment is often portrayed as a 'development constraint' which stifles progress. In southern Ontario this is especially so as a diversity of land uses vie for a limited land base – for agriculture, resource extraction, human settlements.

This proposal investigates the role of the environment as an essential ingredient for successful human settlements, for health and wellbeing and as a community asset that can stimulate economic activity.

The research includes a literature review here and abroad (the US), surveys and case studies that outline new types of 'green employment' that can be found embedded in the goods and services of our ecological system. Various forms of 'Green Infrastructure will be documented for use to build community wellness and health in Ontario municipalities.

Key Words - employment community resiliency nature/natural systems

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Objectives

1) To identify current rural municipal activities associated with approaches using the good and services of nature as an economic development tool.
2) To seek out innovative tools and approaches that offer lessons for other rural municipalities to promote economic activity associated with local nature/natural systems.
3) To examine the provisions of 'Green Infrastructure' as a useful, cost effective nature-based design tool for providing essential infrastructure in rural communities.
4) To develop resource materials (including case studies and best practices) that can assist rural municipalities in approaching nature/natural systems as a potential economic development tool as well as a means to improve community resiliency.
5) To examine and document the synergies that may occur between an environmentally resilient land use base and opportunities to address health and wellness challenges for rural areas, as well as other issues for Ontario including climate change adaptation and biodiversity protection.

Benefits

The examination of employment opportunities through the use of nature/natural systems as well as building community facilities using green infrastructure (GI) will assist in the promotion of rural community resiliency. GI is defined here to be human-constructed/utilized natural element systems (see lit review for references). In considering specific applications of GI, the following are indicative of the breadth of mechanisms and circumstances where the embedded goods and services of nature can be of use to the health and wellness conditions of humans, as well as provide employment opportunities. The following elements of GI are examples only: the protection of surface and groundwater quality, the provision of a water supply, groundwater recharge, increased health opportunities through outdoor recreation, improved air quality, reduction in summer heat island effects, reduced flooding, local agriculture promotion, improved community cohesiveness, reduction in traditional 'grey infrastructure' servicing need, opportunities for community education, community amenity and attractiveness, reduced energy need, improved wildlife habitat for enhanced tourism and biodiversity protection, reduced noise pollution, provision of resources (where available) of materials such as lumber and aggregates, climate change mitigation.

A variety of rural stakeholders will benefit from the research:
1) Rural residents and business owners (including agricultural producers) will have a greater understanding of opportunities for job creation using the goods and services embedded in nature.
2) Employment agencies and economic development offices will have new and creative opportunities for employment concerning natural attributes found within rural communities.
3) Rural municipality politicians and planners will have new methods for identifying projects concerning nature/natural systems that provide green infrastructure community benefits. The work will identify synergistic opportunities whereby development constraint lands (e.g. floodplains, unstable slope areas) can be utilized for other natural multifunctional purposes (e.g. treed landscapes, stream riparian buffer strips, pollinator plantings).
4) Community groups and agencies (e.g. Conservation Authorities, Public Health Units) that pursue environmental initiatives will have greater capacity to understand and acknowledge attributes of nature/natural systems.
5) KTT activities will occur to support Provincial objectives, e.g. actions associated with implementing the 2014 PPS; climate change adaptation mechanisms (e.g. tree plantings); renewable energy (e.g. biofuel production); biodiversity protection.

Milestones

The following activities are associated with the research methodology for the 2 year study:

1) Establish and meet with Advisory Committee; then meet again at critical junctures during the study process.

2) Complete literature review. The review is to consist of publications in Ontario and other parts of North America. Literature examining the role of nature/natural systems for the following topics to be included: reforestation and ecosystem reestablishment; private-public partnerships in environmental stewardship and economic gain; valuation and payment of goods and services of nature; community wide services provision for infrastructure, community outdoor recreation; community capacity

development through visioning; tourism and community niche marketing; health and wellness promotion.

3) Survey work of rural community leaders (organization representatives).

4) Case study work. Includes statistical compilation as well as key informant interviews.

5) Report preparation (draft)

6) Prepare final report

7) Deliver 'Knowledge Translation and Transfer' plan to interested parties (study participants, public presentations, scientific publications).

Literature Review:

The quest for promoting the sustainability of places, and in this instance for rural Ontario, continues (OPPI 2007).

One of the elements for sustainable development that is often overlooked (or taken for granted) is the recognition that a healthy local environment can also assist in promoting and developing a healthy local rural community. This is evident in recent work by Richard Florida in his examination of the creative class for rural areas (Florida, R. and Stolarick, R. 2009, 2010).

The consideration of a healthy environment in conjunction with economic activity is not a new notion. This has been studied by Caldwell over several decades (1994, 2013) and has been embedded within the well known and respected Ontario Environmental Farm Plan (since 1990). What distinguishes the work that is being proposed here is that many of the challenges that are facing Ontario's rural communities (OMAF/MRA 2013; Caldwell, 2010) can be examined and potentially addressed through a healthy nature/natural system lens with associated human benefits.

The recognition that humans are inextricably linked with the land, water and air is seen in numerous publications put out by various practitioners: health promoters like Public Health Canada, and Ontario Public Health; ecologists (Flora, C. 2001; Westra, L., Soskolne, C. L., & Spady, D. W. 2012); economists (Lawn 2009; Florida, R. and Stolarick, R. 2009; Victor 2008), and planners (OPPI 2007, CIP 2013). Caldwell and research associates at the University of Guelph have been working with Public Health Ontario during 2013 to devise a tool kit for assisting in the development of healthy rural communities. Research currently underway identifies the potential for greater attention being given to nature/natural systems as a basic foundation for healthy rural communities. Statistics Canada (2013) has a vast array of statistical indicators identifying elements of health and wellbeing in defined rural settings across Ontario, e.g. community 'sense of place' connectiveness, outdoor recreation pursuits and access to outdoor spaces, etc.

The opportunities to create new employment while at the same time protecting the natural areas of rural communities can be seen with history. Caldwell (2011) and Bacher (2011) outline instances where planning and development of natural infrastructure was essential for community development and growth during the 20th century. The topic is realistic and relevant as identified through green infrastructure literature for natural systems in other parts of the world – the United States (Center for

Neighborhood Technology 2010), (Benedict and McMahon 2007), (Karen Williamson 2003); Australia (University of Melbourne 2012); Europe (Allen, W. L. 2012), (European Union 2012), (Northwest England 2003), (United Kingdom 2011). These locales have significant competing interests for scarce lands in order to support their population, and economic interests.

Some identification of the potential for using nature/natural systems in cost effective community infrastructure provision (mostly storm water facilities) have been identified in Ontario (Ontario Green Infrastructure Coalition 2012). Opportunities for creative leveraging of natural assets in communities for tourism and employment purposes have also been documented (Anderson and Leal 1997). Community capacity development through strategic planning is also prevalent (Natural Step

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