Circular Economy Innovation Hub

A PILOT PROJECT FOR REGENERATIVE LAND DEVELOPMENT IN THE TWEED SHIRE

PROJECT PROPOSAL

Prepared by: Steven Liaros & Nilmini De Silva, Directors of PolisPlan (www.polisplan.com.au)
Prepared on behalf of: Beautility Developments (beautilitydevelopments.com.au)
For submission to: Tweed Shire Council
24 November 2017
Proposal number: CEIH 01

designing cities for
FREEDOM, EQUALITY & COMPASSION
using the circular economy

1. EXECUTIVE SUMMARY

In February 2016, Tweed Council adopted the Rural Villages Strategy, which provides:

> *"…for the implementation of regenerative development, as a concept guiding future development in the rural villages and their districts."*

> *In short, regenerative development leads to improved environmental and social outcomes. It is based upon the understanding that each development site is a living system into which the new development must integrate. In this sense, regenerative development is about achieving better integration between energy, buildings, transport, ecosystems, people, infrastructure, water, waste etc."*

Despite this clear guidance for future development, as yet, no implementation process or development controls have been established for this form of development.

PolisPlan (town planning and strategic engineering consultants) have—over a number of years—been developing an implementation plan for regenerative development and propose to build a pilot project, which will help to further refine and advance the land development model. The pilot project will involve planning and design (including supporting research and modelling), followed by the construction of a **Circular Economy Innovation Hub** for up to 200 people.

To this end they have set up Beautility Developments (beautilitydevelopments.com.au), which will act as the **developer**. A new entity was considered necessary in order to build partnerships for the pilot project and to allow these partners to potentially become stakeholders in the new entity. Preliminary discussions are currently being held with CSIRO, the University Queensland and Bond University to include them in various aspects of the project.

The aims of this project are as follows:

(a) To design and build a village with supporting infrastructure as an integrated system that provides a pre-determined population with comfortable and efficient living and work spaces, together with an abundance of water, food and energy.

(b) To explore a systems approach to designing cities, where cities are imagined as a network of nodes (Internet of Cities) and where each node is a settlement that provides those residing in that place at a particular time with their basic needs. Each settlement would also trade goods or services with the broader network and enable freedom of movement between settlements.

This proposal describes the land development model developed by PolisPlan in more detail and offers a discussion on how it responds to a number of important public debates, including:
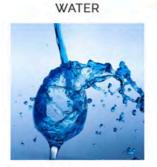
(a) How to address excessive congestion of large cities and the parallel depletion of rural and regional areas? Our proposal is to build on the existing natural and community assets of rural and regional communities and create an attractive resort-style, live and work hub that encourages an '**e-change**' (city to country relocation enabled by the internet)

(b) How to address the growing inequality in the distribution of income and wealth and also job losses due to automation? Some have argued for the provision by governments of an unconditional **basic income** for all, we argue for the building of resilient places that provide the **basic needs** of all residents.

(c) How to provide for the needs of all without exceeding the capacity of natural ecosystems? By planning for a discrete population it is possible to design local infrastructure that provides the water, food, energy as well as living and work spaces for that population. Matching local supply with local population demands (at least for basic needs) allows a community to strive towards **One Planet Living**.

The proposed design approach raises some interesting and challenging research, modelling and design questions, including the following:

(a) Integrating food systems into the built environment by translating a nutrition plan to an agricultural plan so as to maximise access to local, fresh and seasonal produce and minimise packaging, transport costs and waste

(b) Modelling the flow of resources, goods and people around the Tweed LGA to better understand the 'Urban Metabolism', reduce money lost to imports, minimise waste, identify potential local businesses (particularly those that convert waste to resource) and increase the money circulated locally

(c) Combined water and energy micro-grid to expand the concept of an electricity micro-grid by modelling and designing an integrated water+energy micro-grid that harvests, monitors, stores and distributes energy and water throughout a precinct

(d) Local Bio-Waste Management to connect food, water and energy systems by developing natural systems for cleaning water, generating energy and recycling nutrients from the 'waste' generated in the Hub.

The recommendations included at the end of this proposal, simply request that Council acknowledge receipt of this proposal and confirm that the development—as described in this proposal—conforms with the principles of, and framework for, regenerative development as provided in the Rural Villages Strategy (2016).

A resolution to this effect would allow the proponents to continue to develop the project in the Tweed Shire, working with Council's Strategic Planners, formally begin engaging with the local community and advance the proposed research grant applications.

WATER	FOOD	ENERGY	LIVING SPACES
The driving force of all nature	Food is the celebration of life	Everything is energy	Home is where your story begins

2. PROPONENTS

2.1. POLISPLAN & BEAUTILITY DEVELOPMENTS

PolisPlan is the consultancy practice of Steven Liaros and Nilmini De Silva, town planners and strategic engineers, which over the past few years has been developing a replicable model for sustainable and affordable land development. This model applies the principles of Circular Economy—zero waste and life-cycle planning—to village design, integrating emerging technologies and business models. The research and development process has included visiting and staying at a wide range of eco-villages, Transition Towns and CoHousing projects in Europe, the Asian subcontinent and Australia, as well as involvement in numerous mainstream land release and infrastructure planning projects. The research is now being formalised by Steven in a PhD project at The University of Sydney's Department of Political Economy—Building Sustainable Cities with Circular Economies.

PolisPlan (the **consultants**) intend to implement the ideas they have been developing through a pilot land development project and in doing so, further refine and advance the land development model. To this end they have set up a new entity—Beautility Developments—which will act as the **developer**. A new entity was considered necessary in order to build relationships and partnerships for the pilot project and to allow these partners to potentially become stakeholders in the new entity. PolisPlan is currently involved in preliminary discussions with CSIRO, the University Queensland and Bond University to include them in various aspects of the project.

The website beautilitydevelopments.com.au has been set up to describe the development model and to act as a point of reference for this project. The website also provides links to academic papers that outline some of the theory behind this approach.

Steven and Nilmini also bring their skills in town planning, water management, community consultation and project management to this project. They have a long history of working for various local governments in Sydney in a variety of roles, including in Local Infrastructure Planning, preparation of Development Control Plans, LEP Amendments and working with multi-disciplinary teams to deliver complex projects.

3. THE DEVELOPMENT MODEL

3.1. AIMS

The aims of this project are as follows:

(a)   To design and build a village with supporting infrastructure as an integrated system that provides a pre-determined population with comfortable and efficient living and work spaces, together with an abundance of water, food and energy.

(b)   To explore a systems approach to designing cities, where cities are imagined as a network of nodes (see **Figure 1. Internet of Cities**) and where each node is a settlement that provides those residing in that place at a particular time with their basic needs. Each settlement would also trade goods or services with the broader network and enable freedom of movement between settlements.

The proposed land development would be a pilot project for designing and building a village-scale settlement or node in such a network.
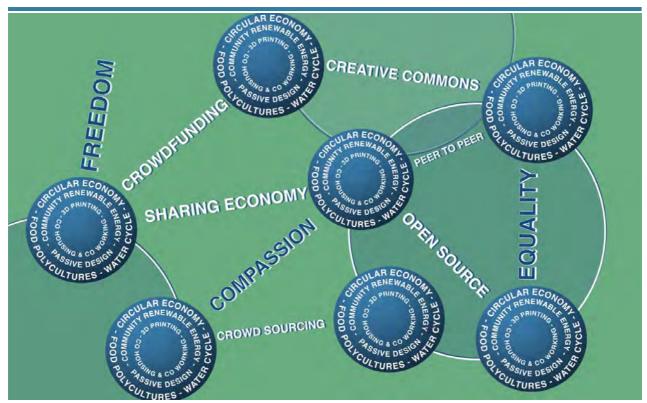
Figure 1. Internet of Cities

3.1. PURPOSES

Strategic Planning Purposes

(a)   To create healthy and beautiful living environments for the future residents

(b)   To create a new paradigm for regenerative land development that provides one solution to the global challenges of food and water security, while decarbonising our energy system and increasing biodiversity, offering one approach to addressing many of the UN Sustainable Development Goals (SDGs)

(c)   To create environmentally sustainable, socially resilient and economically affordable places for people to live and work

(d)   To develop a process that enables the replicable development of settlement nodes in a networked Internet of Cities

(e)   To challenge the presumed separation of urban from rural land and the consequent disconnection of urban-dwellers from their food systems by designing a place where food and water systems are integrated into the built environment

(f)   To create an attractor that draws people out of congested cities

(g)   To challenge the logic of land use-zoning in a post mass production, Internet-Age Society by designing a place with a broad range of living and work spaces—including boutique light industrial activities—thus reducing the economic, social and environmental costs of the work commute

Economic Purposes

(h)   To create a new economic model that is based on the Circular Economy as opposed to the linear 'take-use-dispose' model and strives toward zero-waste. The design will incorporate boutique industries that convert the outputs of any process into the inputs of another, thus creating new work opportunities for residents

(i)   To support start-up and small-scale businesses by reducing their cost base through the separate provision of basic needs

(j)   To maximise the work opportunities within the development for residents of the development, including organisational structures for engaging residents in the maintenance of the systems that provide their basic needs

(k)   To take advantage of the possibilities enabled by the internet by designing for telecommuting and other remote working opportunities

(l)   To explore alternative ownership structures

Social Purposes

(m)   To provide an abundance of food, water, energy and living spaces for a discrete population as an alternative to a Universal Basic Income

(n)   To maximise freedom from necessity for all residents, creating the time and space for innovation, art, relaxation and social connection

(o)   To create a safe and secure local community environment—a 'social womb'—for all, including the young, aged and disabled and a welcoming environment that will help recently arrived migrants and refugees transition to a new life

Environmental Purposes

(p)   To connect people with their food systems as a means of recognising our dependence on natural systems

(q)   To create a social system that has a positive impact on surrounding natural systems, including regenerating soils and setting aside land for wildlife

(r)   To support a transition to a distributed renewable energy system

Research & Educational Purpose

(s)   To utilise the pilot project for research and educational purposes. The village could be a centre for sustainability education through formal workshops and training, open days, as well as live-in options that will give a more hands on experience.

3.2. WHAT'S IN A NAME?

The development model is described in more detail at beautilitydevelopments.com.au and is referred to as a 'Circular Economy Innovation Hub'. The term has been carefully chosen to reflect its inherent characteristics and also to differentiate it from other 'alternative' approaches to land development.

The first characteristic implicit in the name is that the settlement is referred to as a '**Hub**' rather than a village. The aim is to emphasise that the development should be imagined as a node within a broader network and not an isolated entity. The aim is to remain at all times connected with, and a part of, the broader society, complying with its laws, participating in the public debate and broader economy in an open and transparent manner. Also, as a pilot project in a replicable process, the long term plan is to build other hubs.

Secondly, the hub will be designed according to the principles of the **Circular Economy**. A useful definition of the Circular Economy is provided by the Ellen MacArthur Foundation, a leading European advocate of the transition from the current environmentally damaging and wasteful, 'linear' economy to a Circular Economy:

Looking beyond the current "take, make and dispose" extractive industrial model, the circular economy is restorative and regenerative by design. Relying on system-wide innovation, it aims to redefine products and services to design waste out, while minimising negative impacts. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural and social capital.[1]

From the above definition we can extract some of the key design principles of our proposed land development project such as life-cycle planning, thinking in systems and striving for zero waste by adopting a restorative and regenerative approach.

The Circular Economy is underpinned by renewable energy but our proposed Innovation Hub will take this a step further. Taking a systems approach, an energy micro-grid will monitor and distribute the renewable energy that is generated and stored on site. The energy system will also power a water system that will be cycled through the site, providing for residents, irrigating crops and watering animals. The living and work spaces will be passively designed to minimise energy demand and more generally, the energy, water, food and built systems will be integrated to maximise efficiency.

The development is an **Innovation** Hub to emphasise that it is not a dormitory suburb but will integrate living spaces with work spaces. As well as a work hub that supports the transition away from the work commute to tele-commuting, the available work will include innovative product and business model development using the principles of the Circular Economy. Further work is available in the maintenance of the water, food and energy infrastructure as well as the shared spaces and facilities.

The reference to innovation also includes the innovative systems approach to the design of the infrastructure so as to efficiently provide the basic needs of all residents. The efficient provision of necessities, maximises the free time available for innovation, art, relaxation and social connection.

4. RESPONDING TO PUBLIC DEBATES

An important aspect of this project is the objective is to connect research into various matters of public interest with the practical application of that research. The project responds to the three public debates described in the following sections.

4.1. FROM SEA-CHANGE & TREE-CHANGE TO E-CHANGE

Since at least the late Nineteenth Century, various solutions have been proposed to address the various issues arising from congestion in large cities. Ebenezer Howard (1898) was concerned that "the people should continue to stream into the already over-crowded cities, and should thus further deplete the country districts"[2]. Howard argued for the need to draw people out of large cities and into rural areas by designing places that provide a better balance between town and country life. He referred to these as 'Garden Cities'. Despite the significant role of the Garden Cities Movement in town planning in the UK, plans and policies in Australia to encourage people to leave the cities have been largely non-existent or ineffective.

---

[1] Ellen MacArthur Foundation https://www.ellenmacarthurfoundation.org/circular-economy

[2] From the introduction to Ebenezer Howard's *Tomorrow: A Peaceful Path to Real Reform* (1898), which was republished in 1902 as *Garden Cities of To-morrow*

Over recent decades, much of the migration from the cities to rural and regional areas has been attributed to individuals seeking a more relaxed lifestyle, that is, a sea-change (to coastal towns) or a tree change (to rural or farming areas).

Demographer and Business Analyst Bernard Salt argued in 2001[3] that the sea-change will continue and in 2016, he authored a report for NBN Co., in which he suggested that access to the internet is adding another dimension to this shift:

> *"We are witnessing a quiet lifestyle revolution in suburban Australia. The fusion of a relaxed lifestyle in tree-change and sea-change locations combined with super connectivity provided by the NBN network, is giving people even greater scope to take greater control of where they live and how they work.*
>
> *"I predict a cultural shift or 'e-change movement' which could see the rise of new silicon suburbs or beaches in regional hubs as universal access to fast broadband drives a culture of entrepreneurialism and innovation outside our capital cities." [4]*

We have been contacted by researchers at Queensland University of Technology (QUT) who are seeking to examine this idea of an 'e-change' and how it might represent a significant opportunity for rural areas. The proposed outcomes of the QUT research includes:

(a) Fresh Policy perspectives for lifestyle towns

(b) New Jobs and service models, and

(c) New Urban Design

The proposed Circular Economy Innovation Hub includes a **new model for urban design** that integrates food, water and energy systems into the built environment, providing **new jobs** converting waste-to-resources and goods, as well as in the management of infrastructure. If Council is supportive of this approach it may translate these elements into **strategic planning policies**.

This project is seeking to implement ideas that the QUT research intends to identify and study and so Circular Economy Innovation Hubs might be a case study in that research.

In our view, Council should take an active role in both the QUT research, which will be Australia-wide and in the development of the pilot Circular Economy Innovation Hub, as both will help inform future policy.

4.2. AN UNCONDITIONAL BASIC INCOME

There is a growing debate and interest in the concept of a Universal and Unconditional Basic Income (UBI). Some of the reasons for the debate include:

(a) Concern about the inequality in distribution of income and wealth,

(b) A desire to simplify highly strained welfare systems, and

(c) The need to address the issue of job losses caused by automation of economic processes.

---

[3] Salt, B. (2001) *The Big Shift: Welcome to the Third Australian Culture*

[4] National Broadband Network (NBN Co. Ltd.) Media Release (Monday 08 February 2016), *'e-change' is the new sea-change in 2016*

As technology continues to advance, making many traditional jobs obsolete, it is important to start creating resilient places where people can work to directly satisfy their basic needs, relying less on jobs that provide an income to satisfy these same basic needs. Rather than debating how to fund a basic income in monetary terms, we believe that it would be far more effective and efficient to create places that provide peoples' basic needs directly.

This also addresses a significant gap in the UBI debate, which aims to address the inequality in the distribution of wealth but does not address how that wealth is created. Regenerative land development complements the UBI debate as it aims to increase our **natural capital** through restoration and maintenance of land and water, and also plant and animal life, while minimising waste and other negative impacts.

An economic system should also provide everyone's basic needs as efficiently as possible both in order to minimise energy demand for these activities and also to maximise the free time and space for everyone to pursue more useful and interesting activities.

4.3. MATCHING SUPPLY WITH DEMAND FOR ONE PLANET LIVING

In the process of satisfying everyone's needs and aspirations, an economic system should not exceed the capacity of the natural environment to regenerate itself. This is sometimes referred to as living within the means of the planet or 'One Planet Living'.

It is a well known principle in economics that, for basic necessities, people buy the same amount whether the price rises or falls. The demand for basic needs is said to be 'inelastic', which also means that the **total** amount of food, water and energy needed by households is relatively stable or constant. It is therefore possible to design a place for the needs of a **discrete population** by estimating their demand for food, water, energy and also living and work spaces.

A key design approach for the development is that it will start with an assumed population size of no greater than 200 persons. The final design size will be determined by the capacity of the chosen site and its supporting infrastructure to sustain the population. The community demographics will initially be assumed to be consistent with the age profile of New South Wales.

Table 1. Proposed demographics by Age of the Hub population

based on the age demographics of New South Wales
(source ABS 2016 Census, General Community Profile: New South Wales, table G04)

Age (years):	Males	Females	Persons
0-4 years	6	6	12
5-9 years	7	6	13
10-19 years	12	12	24
20-34 years	21	21	42
35-49 years	20	20	40
50-64 years	18	19	37
65-79 years	12	12	24
80+ years	4	5	9
TOTALS	99	101	200

5. FURTHER RESEARCH & MODELLING

The proposed design approach raises some interesting and challenging research, modelling and design questions. Consequently, the proponents have commenced discussions with research institutes to examine these in more detail. Should Council wish to participate in framing these research projects, their outcomes could could also inform future Council policy.

5.1. FOOD SYSTEMS

Integrating Food Systems into Regenerative Urban Development (Professor Bill Bellotti and Dr. Lisa Schubert, University of Queensland, Brisbane): Translate a nutrition plan for a pre-determined population into a local integrated polyculture agricultural plan, including comparison of agricultural plans arising from different nutrition plans.

5.2. FLOW OF RESOURCES, GOODS AND PEOPLE AROUND THE LGA

A distributed economy for an efficient Urban Metabolism (Dr. Anthony Halog, Ms. Laurel Johnson, University of Queensland): By conceptualising the spatial organisation of economic activities as a network of towns/hubs in a local government area (LGA), the project team will investigate the urban metabolism—the flow of resources, goods, energy, people and waste into, around and out of, the LGA. Setting aside the productive efficiency of the economic activities themselves, this Project aims to maximise the distributive efficiency in the LGA.

This Project expects to generate new knowledge in the area of urban and regional planning using the innovative approach of Circular Economy modelling of the urban metabolism and expects to **inform local government strategies for economic planning, waste management, transport and land use**. Expected outcomes of this Project include the development of an innovative regional planning tool as well as specific outcomes for the subject LGA with respect to identification of potential boutique industries, an energy efficient transport plan and a waste management strategy.

5.3. COMBINED WATER & ENERGY MICRO-GRID

Expanding the concept of an electricity micro-grid to integrate harvesting, storing and distributing water (Dr. Simon Toze, CSIRO, Brisbane): Model and design of an integrated water+energy micro-grid that harvests, monitors, stores and distributes energy and water throughout a precinct to provide an abundance for a discrete population.

(**NOTE**: CSIRO have indicated that they are interested in this project participating in their network of 'Urban Living Labs' projects).

5.4. OTHER PROJECTS

Bio Waste Management: Connect food, water and energy systems by developing natural systems for cleaning water, generating energy and recycling nutrients from the 'waste' generated in the Hub.

Architectural Design: Develop an integrated and flexible architectural and landscape design for the Innovation Hub that minimises energy demand, maximises accessible shared spaces and facilities, while also optimising the balance between private and shared spaces.

Strategic Planning (Steven Liaros, The University of Sydney): 'Building Sustainable Cities with Circular Economies' explores how economic systems influence the physical configuration of cities and asks how cities might change as a result of a transition from a linear (take-use-dispose) economy, to a Circular Economy.

6. IMPLEMENTATION IN THE TWEED

6.1. WHY TWEED?

The proponents have selected the Tweed Shire as one of the preferred locations for this project for a number of reasons but principally because of the close alignment between Council's strategic direction and the aims of this project. As a new form of village-scale project, this project is not consistent with Council's current development controls and policies as this form of development was not anticipated when those documents were prepared. Nevertheless, the aims of this project are consistent with the desired future direction described in Council's Rural Villages Strategy, which we understand was prepared with significant input from the local community.

Other reasons for selecting the Tweed include its proximity to major cities and airport infrastructure, its relatively high rainfall, fertile landscape and rural living character, as well as a local community that is already trying new ideas for local community resilience and environmental sustainability such as off-grid energy.

6.2. COUNCIL'S STRATEGIC PLANNING

The strategy most relevant to the proposed development is the **Rural Villages Strategy** (February 2016), the strategic goals of which are quoted below (from Part 1.2), with emphasis added to illustrate the alignment with Circular Economy Innovation Hubs:

> *The Rural Villages Strategy seeks to achieve the following strategic goals:*
>
> *1. **Ensure that the future of the rural villages and settlements is based on environmental, social and economic resilience and sustainability**.*
>
> *2. **Identify initiatives and opportunities** based on key assets of the rural villages: their people, culture and nature.*
>
> *3. Provide actions aimed at **establishing Tweed's rural villages as creative hubs**, known not only for crafts and arts, but also for **entrepreneurship**.*
>
> *4. Ensure that future development occurring in the rural settlements **provides a variety of housing choice** for existing and future needs, and is consistent with community's visions and aspirations and is based on principles that **strengthen Tweed's role as a proactive, inspirational leader in sustainability**.*
>
> *5. Establish a long-term strategic planning framework for the rural villages.*

It is proposed that the pilot Circular Economy Innovation Hub should be located in close proximity to a rural village to build on the existing key assets of that village, complementing the infrastructure and supporting the cultural and environmental values of the area.

In addition to the above strategic goals, we believe that the planning and development approach that we propose, could essentially be regarded as an implementation plan for Councils Rural Villages Strategy, as evidenced by the following extracts:

> *"Whilst there are concerns about the impact that any new development may have on the villages, a prevalent view was that most of the villages need additional development" (Part 3.1: Overview of the region-wide initiatives).*

This confirms that the view of the community and the Council, as expressed in the Strategy, does support further development. The Strategy then provides guidance as to the form of that development.

> *"The planning system in New South Wales requires any expansion of a rural village, or residential development in rural land to be justified and supported by an adopted strategy. In this context, one of the purposes of this Strategy is to provide justification and outline principles guiding any future development".*

One of the key principles guiding development is set out in Part 3.2 of the Strategy: 'Developing in Harmony with Nature'. This provides the following:

> *"**Outcomes - from sustainability to regeneration***
>
> *To address the challenges of climate change, cities and regions around the world are transforming and pioneering innovative planning and design tools. These planning tools have different names: sustainable planning, eco-cities, low-carbon or zero-energy cities, but share key characteristics, such as reduced energy use, minimal encroachment on ecological spaces, fewer harmful building materials or more closed-looped systems to manage waste. ...*
>
> *In short, regenerative development leads to improved environmental and social outcomes. It is based upon the understanding that each development site is a living system into which the new development must integrate. In this sense, regenerative development is about achieving better integration between energy, buildings, transport, ecosystems, people, infrastructure, water, waste etc."*

It is considered that the proposed Circular Economy Innovation Hubs are entirely consistent with the principles of regenerative development outlined in Council's Strategy.

The strategy clearly supports additional development of the rural villages, provided that this development is regenerative in character. The next step is outlined in Action 3.1:

> *"Implement the regenerative development framework through locality plans for the rural villages"*

One of recommendations of this report will request that "Council strategic planning staff commence discussions with the proponents to advise any specific planning criteria for the location of the pilot Circular Economy Innovation Hub, with this information to be incorporated into the Locality Plans to be prepared pursuant to Action 3.1 of the Rural Villages Strategy."

The ultimate vision for this project is to develop a replicable process that can be adjusted for the catchment conditions at each locality. The locality plans could, for example, identify a network of such hubs, connecting the interior villages with Tweed Heads and the airport at Coolangatta. The hubs could be connected to each other by a network of electric vehicle (EV) charging stations, enabling car sharing between these hubs and creating new regional tourism opportunities.

6.3. STATUTORY PLANNING FRAMEWORK

Apart from Council's strategic direction and spatial planning, the proposal must also be developed within the legislative and regulatory planning framework. The following sections identify some of the key Planning Instruments, Plans and Policies that must be addressed and the current proposed approach.

Tweed Local Environmental Plan 2014

The proponents intend to identify rural land, probably zoned RU2, within reasonable proximity to an existing township and then divide it into three precincts as indicated in Figure 2. below.
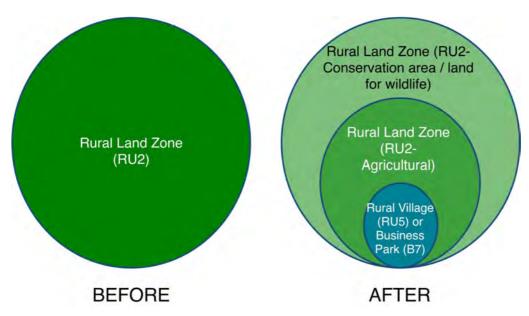

Figure 2. Development Precincts and Proposed Rezoning

A small proportion of the site (perhaps around 15 percent but yet to be determined) would need to be rezoned for the living and work spaces and so a Planning Proposal seeking to amend Tweed LEP 2014 would be submitted.

Although the three precincts must be clearly delineated for regulatory purposes, the intention 'on the ground' is to blur and blend these activities. For example, some productive gardening would be integrated into the live/ work landscape, while the principal agricultural zone may take the form of agro-forestry thus blending into the conservation zone.

The principal objective of this approach is to internalise the land value uplift. That is, it is well understood that the process of rezoning land increases the value of that land. This increased land value—the land value uplift—currently benefits the land owner at the time the land is identified for rezoning. They may then sell the land and retain all the financial benefit of this value uplift. As the process of rezoning land is a public function, the increased value should provide a public benefit, either in the form of public infrastructure, lower housing costs or a combination of the two. This project intends to fund the local water, food and energy infrastructure by capturing this land value uplift.

Beyond the proposed LEP amendment, the proposal is intended to comply with the provisions of Tweed LEP.

Tweed Development Control Plan 2008

As the proposed development of Circular Economy Innovation Hubs is a substantially new development form it would be inappropriate to apply development controls currently included in the DCP. In the absence of a relevant DCP, the proponents intend to develop a Concept Development Application (DA), pursuant to s83B of the EP&A Act 1979, for the site.

If Council supports the future replication of this pilot project, it may wish to incorporate principles from the Concept DA into a new DCP chapter. A chapter for 'Circular Economy Innovation Hubs' would not be dissimilar in approach to a chapter for example, for 'Child Care Centres'.

Comprehensive Planning Control Regime

In the absence of a comprehensive planning control regime for this form of development, the proponents intend, in preparing the Concept DA, to establish certain criteria for development that Council may later wish to incorporate into a possible new DCP chapter to ensure consistency when this form of development is replicated in the future. These could include the following requirements as a minimum:

(a) The minimum land area and the proportions of the site area for the three (3) precincts (ie. (a) Conservation and/or bush regeneration, (b) Agriculture and (c) Live/ Work hub),

(b) Trigger points for a Planning Proposal to rezone land (eg. what must be done prior to Council resolving to refer to the Department of Planning at 'Gateway' stage, and what must be done prior to final referral to Minister for signing and publication in the government gazette),

(c) Minimum requirements for harvesting, management, storage and distribution of water, food and energy,

(d) Design principles for buildings,

(e) Identification of other infrastructure requirements and allocation of responsibilities within a Voluntary Planning Agreement framework.

It is considered that **the process of planning and developing the pilot project, informed by the various research projects, could be a useful approach to preparing the new DCP chapter** for Circular Economy Innovation Hubs. This might be an iterative process, whereby the research would set some initial guidelines, these would inform the concept DA, which could help further refine the controls. Essentially, the three processes—research, planning controls and pilot project—could be advanced in parallel, supporting and informing each other.

Voluntary Planning Agreement and Section 94

The proposed development will include various facilities, assets and open spaces to service the population within the development site and some will also be available to the proximate township and broader Tweed communities. As a result the intention will be to enter into a Voluntary Planning Agreement (VPA) that offsets any requirements to pay developer contributions in exchange for the provision of these assets and infrastructure.

Section 64 Water and Wastewater Infrastructure

The proposed development intends to provide full water cycle management, including water provision as well as grey and blackwater treatment. This does not preclude integrating the development infrastructure with existing Council assets.

The preferred approach would be to offset any developer charges against the cost of new or upgraded infrastructure provided.

Council might also consider amending its Planning Agreements Policy to appropriately address how future VPAs would be negotiated in relation to this form of development for local community infrastructure and water infrastructure.

6.4. COMMUNITY ENGAGEMENT

In addition to workshops with Councillors on 14 September and 23 November 2017, the proponents have been actively connecting with residents and local businesses in the Tweed community, to identify an appropriate location for the pilot project and to identify local businesses and activities that could contribute. The response to the proposal has been overwhelmingly positive and informal conversations will continue.

Initial discussions with Tyalgum Energy suggest there are avenues to build on and integrate with existing plans for off-grid energy if our development is situated in close proximity to the Tyalgum village. PolisPlan are also building relationships with local farmers and other businesses who will help identify business opportunities to be incorporated into the Hub design.

If Council supports the commencement of this project, discussions with Council officers will also establish a formal Community engagement process. The project should be viewed as one that can accommodate new and existing members of the Tweed community.

6.5. BENEFITS TO COUNCIL

This project offers a range of benefits to Tweed Council including:

(a) A structured process for implementing the strategic goal of regenerative land development in the rural villages

(b) Minimal impact on existing infrastructure and services, with the potential to create business opportunities that harvest waste and convert it into resource material or new goods, thus reducing Council's waste management costs

6.6. BENEFITS TO THE TWEED COMMUNITY

This project also offers a range of benefits to the local community of Tweed, including:

(a) Access to new community spaces and work facilities such as a work hub

(b) Opportunities for the development of business opportunities, particularly with respect to Circular Economy business models that convert waste into resources

(c) Opportunities to leverage off the research and develop new agricultural models

(d) Opportunities for eco-tourism, including study tours of the project

(e) Positive impact on the natural environment

(f) An option that creates a healthy living environment through social connection, access to organic food and a walkable environment

(g) Affordable housing options.

7. NEXT STEPS

As indicated above, the three processes—research, preparation of planning controls and pilot project—could be advanced in parallel, supporting and informing each other.

The proponents' priority is to advance the pilot land development project and so their next steps are to:

(a) Discuss location criteria with Council to identify preferred location for the pilot project

(b) Further advance discussions regarding research projects and funding options

(c) Complete first iteration of food system design

(d) Complete first iteration of integrated energy and water micro-grid

(e) Prepare preliminary architectural design for Concept Plan, incorporating preliminary designs for water, food and energy infrastructure.

(f) Undertake comprehensive cost analysis and prepare financial plan

(g) Explore governance arrangements for the hub including how the infrastructure will be maintained.

8. RECOMMENDATIONS

The proponents respectfully request that this proposal be placed on the public record, the matters included within it be considered by Council and, if Council supports the further development of this project that it resolves as follows:

1. That the development as described in this proposal is generally consistent with Council's vision for regenerative development as set out in the Rural Villages Strategy (February 2016).

2. That Council supports—without prejudice to any future regulatory assessment—the proponent's intention to commence planning and development for a multi-use, integrated-activity, land development project—in the form described in this proposal—in the rural area of the Tweed Shire. This will include the following activities:

   (a) Discussions with Council's Strategic Planners with respect to the pilot project location, preparation of a Planning Proposal and negotiation of a Voluntary Planning Agreement

   (b) Engagement with local businesses and communities

   (c) Advancement of associated projects with various research institutes, noting that if Council is to be a partner, relevant staff will have the opportunity to assist in framing the research questions and desired outcomes.