



Central Highlands Connections

Project Business Case

Clean Growth Choices



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Extensive resources including case studies are available at: <https://www.cleangrowthchoices.org/>

Cover Photo Credit: <http://www.centralhighlands.qld.gov.au/facilities-recreation/emerald-saleyards/>

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1 Executive Summary

This project will allow sectors to plan and develop opportunities based on the achieving the best outcome for the sector rather than the best available infrastructure option.

Accordingly, the product will be a prioritised infrastructure plan and strategy to allow infrastructure investment decisions to be made based on investments that will have the most positive impact on the region. It provides the basis for whole of region investment planning which may see an Internet connectivity investment prioritised over a particular road connection once a source of funding has been identified.

[Our Future State](#): This business case advances the project that address a number of key government objectives including:

- Giving our children a great start
- Keeping Queenslanders healthy
- Creating jobs in a strong economy.

The business case also links to *Queensland Partnering for the future – Advancing Queensland’s community services industry 2017-25* & the *Queensland Social Enterprise Strategy*.

Importantly the Central Highlands business cases identify not only low emissions opportunities, but offer the tools and structures to build resilience in regional economies. This is an innovative project and the Central Highlands would be one of the first regions that establish this type of structure: Local leaders making local solutions for local people.

This business case acknowledges that a significant amount of regional infrastructure planning is occurring in the Central Highlands and offers a new basis for coordinated infrastructure development to maximise economic and social opportunities.

1.1 Communities in Transition (CiT) : Clean Growth Choices

The CiT Pilot Program delivers on the *Queensland Climate Transition Strategy’s* action to build leadership capacity within communities to develop place-based climate transition roadmaps.

These roadmaps, and this business case, identify opportunities for economic and social development and climate resilience in regional Queensland. The opportunities range across a number of sectors including agriculture, waste, water supply, tourism, energy, manufacturing, transport and human services.

The multidisciplinary nature of these sectors means that other Queensland Government priorities are indirectly being addressed, thus offering an opportunity to leverage efforts across government.

The CiT Pilot Program contributes to reducing emissions contributions by identifying economic opportunities that support the transition to a low carbon economy, under the *Queensland Climate Transition Strategy*.

Importantly this business case identifies low emissions opportunities, and offers diversification into new economies that may be less subject to disruption.

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2 Introduction/Background

This project has been prioritised by the Central Highlands Working Groups under a pathway advancing world-class agriculture through innovation and leadership for the region, with relevance to the national and global economies.

The Working Group discussed a number of options to enable greater connectivity between our region and its industries, and the national and global economies and to inform infrastructure planning.

This project will make the region more adaptive by enabling it to generate more value locally and by building the capability for bringing manufacturers to the region, which in turn attracts others. The project will also allow businesses to return greater value to producers and consumers by reducing logistical and infrastructure bottlenecks. Automation changes the shape of jobs, so an expansion of manufacturing may allow for the replacement of jobs that are lost in other sectors.

The *Central Highlands Digital and Communications Action Plan 2017-2022* notes that “in this context the multiplicity of fibre cables in the region are not used as effectively as they could be to reduce the impact of natural disasters.” The Working Group contends that the same can be said of other infrastructure. Existing infrastructure is not being used efficiently and effectively as it could be to maximise productive capacity for the Central Highlands, the State, and the nation.

3 Overview

3.1 Vision

Unleash additional sustainable activity in Central Queensland by improving connectivity between the region and national and international markets, and grow our region’s capacity to feed the world.

3.2 Organisational Objective

Identify constraints on the sustainable economic development of the region due to a lack of connectivity and integrated infrastructure planning.

4 The Business Case

4.1 Purpose of the Business Case

The purpose of the Business Case is to:

1. Identify connectivity pipelines between the Central Highlands, other states and global markets
2. Identify blockages and/or choke points in connectivity between the Central Highlands, other states and global markets
3. Analyse a number of options as proposed by the Clean Growth Choices Working Group
4. Identify costs, benefits and risks
5. Develop a proposal to proceed with the project, or identify a funding source for the project.

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The business case is a pre-feasibility level proposal. It proposes a project option to achieve the above outcome.

This is a preliminary business case that will provide the Working Group with:

1. A sound basis for a decision to proceed to the development of a map
2. The next steps and estimated costs to develop the integrated Map



4.2 Sustainable Development Goals

The project aims to achieve sustainable economic development in the Central Highlands and in particular, work towards achieving the following of the [United Nations Sustainable Development Goals](#) (SDGs).

Goal	Title	Details
SDG 7	Affordable and Clean Energy	Energy is central to nearly every major challenge and opportunity the world faces today. Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential. Working towards this goal is especially important as it interlinks with other Sustainable Development Goals. Focusing on universal access to energy, increased energy efficiency and the increased use of renewable energy through new economic and job opportunities is crucial to creating more sustainable and inclusive communities and resilience to environmental issues like climate change.
SDG 8	Decent Work and Economic Growth	Roughly half the world's population still lives on the equivalent of about US\$2 a day with global unemployment rates of 5.7%, and having a job doesn't guarantee the ability to escape from poverty in many places. This slow and uneven progress requires us to rethink and retool our economic and social policies aimed at eradicating poverty
SDG 12	Responsible consumption and production	Sustainable consumption and production is about promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. Its implementation helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty.

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<p>SDG 13</p>	<p>Climate Action</p>	<p>Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow. Weather patterns are changing, sea levels are rising, weather events are becoming more extreme and greenhouse gas emissions are now at their highest levels in history. Without action, the world’s average surface temperature is likely to surpass 3 degrees centigrade this century. The poorest and most vulnerable people are being affected the most.</p>
<p>SDG 17</p>	<p>Partnerships for the Goals</p>	<p>A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These inclusive partnerships built upon principles and values, a shared vision, and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local level.</p>

4.3 Business Case Sponsor

The Sponsor of the Business Case is the Queensland Department of Environment and Science (DES).

5 Situational Assessment and Problem Statement

This section outlines the benefit to the region for proceeding with the one or more of the proposed options and contains:

- A description of the current situation, challenges and opportunities
- An assessment of how the opportunities are currently being met or not met
- An analysis of the gap between the current situation and the stated objective(s).

The Central Highlands is located at a critical point in Central Queensland, with road and rail access to Central Queensland’s Ports, and valuable agriculture and resource industries underpinning a significant services economy. Digital connectivity is improving though more comprehensive digital coverage would increase the potential of the region.

Regional land use and infrastructure planning is generally mode-based, or a combination of modes, aiming to reduce bottlenecks.

The Working Group considered that the region may be missing the opportunity to add value to goods and services that originate in, or pass through, the Central Highlands such as beef, cotton, horticulture and some of the mined resources. These are currently moved through the region without adding value. A Working Group member illustrated the challenges in cost-effectively exporting from the region with a case study where export costs were compared for the export of a shipping container of chickpeas and the costs were:

- Port of Brisbane: \$800
- Gladstone: \$2,400

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The Working Group identified that there are greater opportunities for the region based on its location within industry supply chains. If these opportunities were identified, then infrastructure planning could be prioritised around what infrastructure would deliver, the most significant regional benefit, and benefits to the national economy. For example, what infrastructure would the Central Highlands need to develop a greater value-added beef economy and what is the potential based on the volume of beef that is transported through the region?

This project will examine where the Central Highlands fits in the various supply chains and will take a supply-chain-based approach to infrastructure planning.

The Working Groups felt that this approach may help take full advantage of potential circular economy and regenerative agriculture projects by fundamentally resolving connectivity blockages at the supply chain level rather than by mode.

The Working Group recognises that extensive regional planning has been undertaken, including but not limited to:

- *Central Highlands Economic Development Strategy*
- *Central Highlands 2022 Community Plan* (which considers the social, environmental, economic and governance themes that contribute to the long-term wellbeing of the community)
- *Corporate Plan 2017-2022* (which sets a strategic direction for the Central Highlands Regional Council to deliver progressive outcomes for the region that create opportunities for all)
- *Central Highlands Economic Master Plan* (an economic master plan to 2047 and action plan for 2017-2022)
- *Central Highlands Digital Communications Action Plan 2017 – 2022*.

An example of how this project could add significant value is in the combination of the following three points from a recent report highlighting: (a) The opportunities to add value to products and (b) The additional costs placed on products exported from the Central Highlands:

1. In 2016, Matthew Hall and John Frew of KPMG identified significant opportunities for coordination of participants in the supply chain (producers, freight operators, infrastructure providers, regulators consumers and communities)¹
2. AgriFutures Australia notes that delivering food and fibre to port is one of the most significant costs, with the potential to reduce the global competitiveness with freight costs for grains and horticulture representing 27.5% and 21% of Gross Value of Farm Production compared to Poultry at 1%². The report shows a significant amount of produce passing through the region, particularly cattle (p. 21) and horticulture (p. 33). These figures also show the volume of produce that bypasses the Central Highlands Region destined for southern ports (particularly cattle en route to Brisbane, and horticulture en route to Sydney and Melbourne)

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¹ https://www.atrf.info/papers/2016/files/ATRF2016_Full_papers_resubmission_84.pdf

² <https://www.agrifutures.com.au/product/the-impact-of-freight-costs-on-australian-farms/>

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3. The Department of Transport and Main Roads (Queensland) *Moving freight* report³ highlights freight movement routes, volumes of commodities and outlines priorities and actions for the freight system.

A number of major supply chain and/or infrastructure projects are underway in Central Highlands:

Project	Scope
CH Inland Port/Yamala Industrial Area	<p>In 2016, CHRC rezoned twelve properties surrounding a special industry zone in Yamala.</p> <p>The CQ Inland Port is a regionally significant freight, logistics and industrial project at Yamala, 25km east of Emerald. CQ Inland Port is designed for the handling and transfer of freight from one transport mode to another. It will be a multi-functional, multi-user facility that contributes to the effective transit of goods and materials and provide for 24/7 operations.</p> <p>The project comprises:</p> <ul style="list-style-type: none"> • State of the art \$18.5 million GrainCorp bulk grain handling facility • Intermodal and container terminal • 56 lot special industrial park providing for 24/7 operations for major industrial activities • New road interchange and upgraded local roads • New 1.6km rail siding <p>Through road-to-rail intermodal and bulk commodity facilities connecting to the major ports of Brisbane, Gladstone, Mackay and Townsville, CQ Inland Port provides a prime location for a diverse range of commercial and industrial style businesses.</p> <p>http://cqinlandport.com.au/</p>
Agricultural food processing facility	This project is under a feasibility investigation. It envisages the processing of bovines initially, followed by other animal species and eventually, plant-based food products.
Industrial hemp production	This project is being investigated by an already-established private company with significant experience.
Agricultural robotics	Swarm Farm is already a world-leading agricultural robotics company headquartered in the Central Highlands and is one of the few companies worldwide with real robots working on farms. Swarm Farm was placed third in the World Future Agro Challenge 2019 held in Greece. https://www.swarmfarm.com
<i>Innovation Audit Industry and Innovation Survey</i>	<p>This short survey is designed to establish the status of innovation, entrepreneurship and business development in the Central Highlands to enable the CHDC to:</p> <ul style="list-style-type: none"> • Identify gaps and tailor support accordingly. • Form connections between idea makers and innovators and those who can help. • Assist local businesses to access support (grants, training, mentoring programs and seed funding) from Federal, State and regional agencies and investors.

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³<http://www.tmr.qld.gov.au/-/media/busind/Transport%20sectors/Freight/Moving%20Freight%20final/FinalMovingFreightfull.pdf>

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Situational Assessment and Problem Statement

	https://chdc.com.au/agtech-agribusiness/industry-and-innovation-survey
<i>Central Highlands Digital and Communications Audit</i>	A detailed assessment of the telecommunications infrastructure in the region in order to identify where high speed services are not likely to be available. It describes in detail what infrastructure/enablers currently exist throughout the Central Highlands region and how the region can best utilise them. https://chdc.com.au/mining-energy/digital-and-communications-audit
<i>Central Highlands Digital and Communications Action Plan 2017-2022</i>	This document identifies a number of infrastructure and service gaps across the Central Highlands Region and provides case study identification of what actions might be progressed to improve services provision. https://chdc.com.au/mining-energy/digital-communications-action-plan
<i>Agriculture Audit Grown in the Central Highlands</i>	<i>Grown in the Central Highlands</i> is a one stop shop to search for authentic, seasonally-available food and fibre products, and for our farmers to showcase their quality produce. This is a free resource provided for Central Highlands producers, consumers and retailers. https://growninthecentralhighlands.com.au/
Growing Central Queensland Project	The Growing Central Queensland Project is an initiative of a number of regional stakeholders to capture sustainable agribusiness opportunities for individuals and communities across Central Queensland. The initiative is a key mechanism for encouraging the development of catalytic agriculture infrastructure, by attracting public and private investment. This will lead to a number of infrastructure priorities and individual investment prospects being identified. http://cgroc.org.au/projects/
AgFrontier Regional Agtech Incubator	The AgFrontier Regional Agtech Incubator provides start-ups with the opportunity to work and grow in a dedicated program designed specifically for rural businesses and individuals in regional Queensland and northern NSW who have a practical understanding of agriculture.
AgTech Industry Forum	A major biennial innovation and technology event for the Australian agricultural community held in Emerald, Central Highlands. AgTech includes in-field demonstrations of agricultural technology in action.
Innovation	The Central Queensland region is home to many innovative businesses with a number of local innovation projects supported by Advance Queensland. https://advance.qld.gov.au/sites/default/files/AQ-Strategy-2019-part3-02-centralqld.pdf

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Situational Assessment and Problem Statement

Beef abattoir	<p>A feasibility assessment was conducted on the potential for a beef abattoir in the Central Highlands with a throughput of up to 100,000 per annum. The study notes that there are up to 575,000 cattle in the region, with 335,000 sold through the saleyard system and that most are processed nearby or in Brisbane, indicating a strong potential for value-adding in the region.</p> <p>https://chdc.com.au/site/files/CHDC_AbattoirFeasabilitySummary_Oct18.pdf</p> <p>The Council fact sheet highlights the comparative advantage in location with significant local infrastructure including sale yards and 59 feedlots as well as transport connections.</p> <p>http://www.centralhighlands.qld.gov.au/wp-content/uploads/2016/02/Meat-Processing-plant-fact-sheet.pdf</p> <p>Beef Central recently assessed the current status of abattoir proposals throughout Queensland.</p>
Emerald solar farm (completed)	Further opportunities may be available to develop renewable energy locally, providing reliable local power to new industries.

The potential economic, environmental and social value of these projects may be constrained due to connectivity blockages that obstruct movement of goods and information. Removing these blockages would result in improvements in:

- Employment
- Safety
- Road deterioration
- Animal welfare
- Carbon emissions
- Market access.

The Group considered a number of opportunities, by industry sector, as summarised below:

Industry	Existing	Opportunities
Minerals	Mining, washing	minerals processing, waste processing, reuse of by-product materials.
Beef and other livestock	Farming, feed lotting, passing through	Meat processing, waste processing. How are processing opportunities improved with additional infrastructure?
Cotton	Farming, ginning	Spinning, other processes. Value-adding from gin trash.
Horticulture	Farming, some processing, storage	Greater export potential, local supply with reduced food miles. Value adding opportunities such as by-product processing What opportunities are local producers missing out on by not having processing opportunities locally? For example, sunflower meal processed interstate and brought back to Queensland.
Construction	Building	Product manufacturing, prefabrication.

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Situational Assessment and Problem Statement

Education	School, tertiary, VET, CQU (only regional dry topic university), Ag College site	Courses for skills of the future, online modules, support local industry and projects with research. Accredited testing and research.
Tourism	Destinations, experiences, accommodation and food	Experience building, online booking, self-guided tours, better routes, electric vehicle charging.
Technology development, Start-ups	Support networks	Internet connectivity.
Local services	Business services, health and well being	Internet connectivity for customers to access online services, shopping etc.
Broadacre farming	Farming, storage	Processing for use locally, processing for value-add. Internet connectivity.

The Group considered the potential value flows (Figure 1), and a number of challenges and opportunities by infrastructure type as summarised below:

Infrastructure	Existing	Challenges/Opportunities
Roads	Approved routes for heavy vehicles	Additional heavy vehicle routes (refer Figure 2), tourist routes, new technologies such as electric vehicles. Examine measures of road use – wrong measures being used (tonnage, people fed, food miles).
Rail	New CQIP. Connected to three deep water ports	Ease of access to rail network for new freight. Frequency of services.
Internet	Current speeds in towns suitable for business?	Speeds outside centres unreliable – limits ability for regional businesses to access, and for remote residents to access on-line services.
Air	Domestic Services	Potential for freight services.
Water	Large storage and irrigation scheme	Potential for reduced water availability over the long-term. Potential for greater water productivity. Focus on yield per ML. Where else in the region would water availability add significant value? What is the highest and best use of land that is within the irrigation area?
Electricity	Some constraints on network, for example at the cotton gins. Issues with reliability and costs	Potential for local supply of low carbon electricity. Link to waste for generation. Demand response and microgrid opportunities.
Carbon footprint	Generic	Identify carbon footprint. Reduce food miles or commodity miles. Develop a low carbon CH brand.

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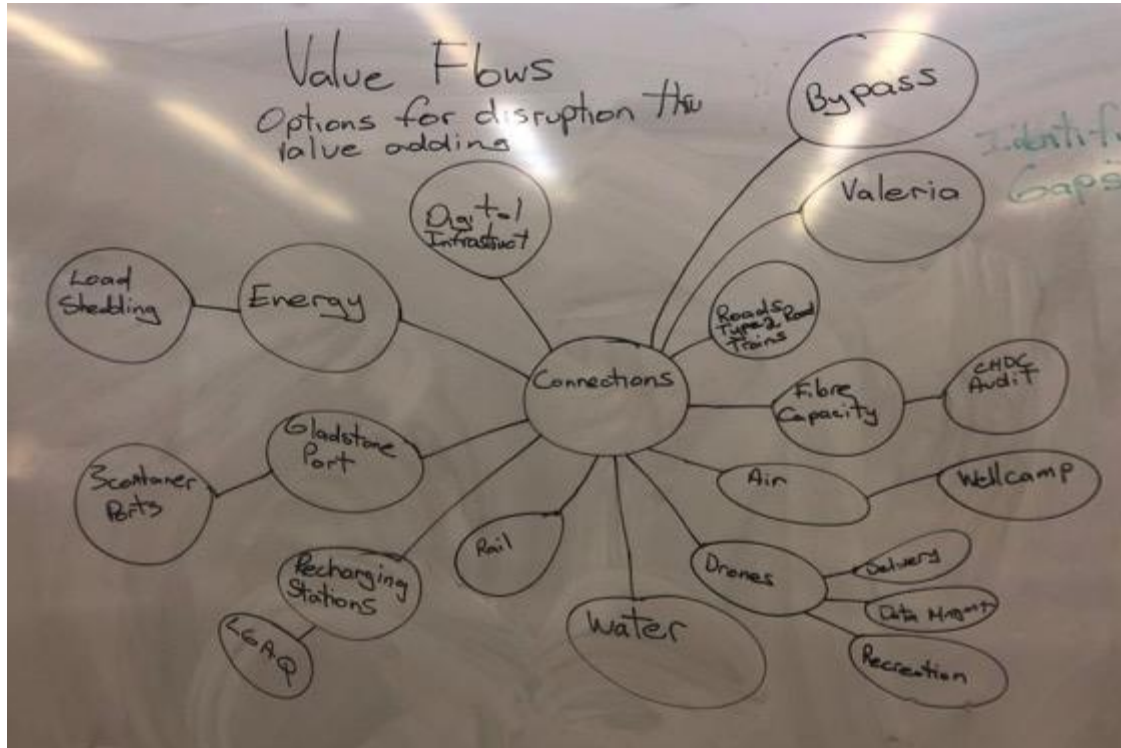


Figure 1: Working group identification of potential value flows

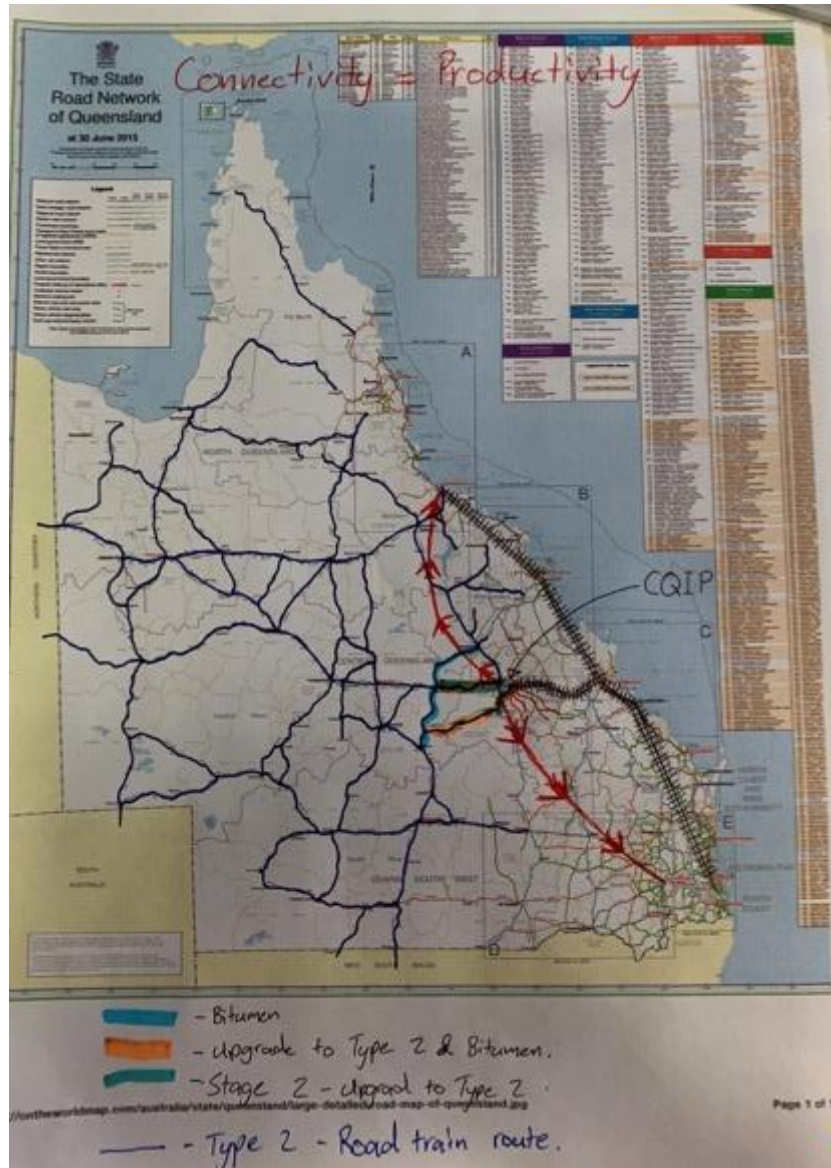


Figure 2: Indicative road route planning

6 Assumptions and Constraints

The business case has been prepared by an Emerald Working Group under the Clean Growth Choices Program, with guidance and input from the Clean Growth Choices team.

Assumptions

Holders of data and information will be willing to participate and provide what is needed (e.g. food producers, mining companies).

Constraints

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The business case provides a pre-feasibility level assessment of the project. It has been prepared by the Clean Growth Choices Consortium under the direction of the Clean Growth Choices Working Group. The Working Group largely consists of volunteers who are providing guidance and input voluntarily. Accordingly, the accuracy and reliability of data is referenced where available and provided to a prefeasibility standard.

Methods for measuring and planning transport infrastructure are inadequate and do not measure the economic benefits associated

Use of food miles as a metric. The UK Department for Environment, Food and Rural Affairs ('DEFRA') has determined that total food miles are an inadequate indicator of sustainability. Furthermore, DEFRA has noted that differences in the eco-efficiency of food production systems can often offset the environmental impact of transport, especially in respect of long distance sea carriage. See more about food miles from two reputable sources:
https://law.unimelb.edu.au/__data/assets/pdf_file/0009/1683189/Waye.pdf and
<https://ceres.org.au/wp-content/uploads/pdfs/Resources/CERES-Farm-Food-Miles-Report-2007.pdf>

7 Stakeholders

The key stakeholders who may be partners to develop the plan and strategy are:

- Agribusiness and industry bodies
- General industry
- CHDC
- CHRRUP
- RDAs
- Any business or industry that has a supply chain in or out of the region.

Government departments and Government owned corporations:

- Transport and Main Roads
- State Development
- Small Business
- Natural Resources, Mines and Energy
- Sunwater
- Queensland Rail
- Aurizon Network
- Mining companies as major users of transport infrastructure to ship materials, but also bring significant amounts of mining consumables in to the region
- CQUniversity.

8 Identification and Analysis of Options

This is a high level analysis of the possible alternatives that could be employed to bridge the gap between the current situation and what is proposed, as outlined in Section 4.

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8.1 Identification of Options

The Working Group has identified a key opportunity from:

Option 1: Integrated Supply Chain Map and Infrastructure Plan

Option 2: Do Nothing Option.

8.1.1 Option 1 – Integrated Supply Chain Map and Infrastructure Plan

The Map and Plan:

1. Map regional supply chains (including where supplies may currently pass through the region)
2. Identify opportunities to value-add to these supply chains
3. Identify blockages to these opportunities
4. Gather data on existing and planned infrastructure
5. Develop strategies to overcome blockages with augmentation of existing infrastructure, new business opportunities or new infrastructure
6. Develop a prioritised plan and list to inform infrastructure planning initiatives.

The data analysis of existing infrastructure would include but not be limited to:

- Meta-study of road infrastructure studies previously conducted, including CSIRO Transit Model and Yamala Economic area
- Map connectivity of existing infrastructure and gaps, and ground-truth (road, air, rail, digital)
- Map food miles (and miles of other commodities passing through Brisbane and Gladstone for comparison)
- Carbon emissions calculations for the region
- How many people does the region feed?

Strategies might identify possible options for:

- Road infrastructure changes
- Air linkages
- Cost effective digital upgrades (own towers eg. Blackall), partners, technologies, Queensland Government fibre capacity)
- Cost savings across the supply chain
- Increased value of goods and services produced
- Local power supply and charging for electric trucks, farm vehicles and cars.

8.1.2 Option 2: Do Nothing Option

Continue to plan infrastructure by mode.

8.2 Comparison of Options

A summary of the benefits and disbenefits of each of the two options is provided in the table below. A more comprehensive analysis is at Appendix A.

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Criteria	Option 1: Integrated Supply Chain Map and Infrastructure Plan	Option 2: Do Nothing Option
Benefits: <ul style="list-style-type: none"> CHRC Agricultural producers Community External to CHRC 	<ul style="list-style-type: none"> Potential for infrastructure planning to be based on wider economic development needs. Inform land use planning so that planning for value adding opportunities such as processing plants, waste transfer facilities, etc are located in optimum locations for whole-of-system efficiency Greater value-added potential in the region 	<ul style="list-style-type: none"> Existing planning initiatives remain in place
Disbenefits: <ul style="list-style-type: none"> CHRC Agricultural producers Community External to CHRC 	<ul style="list-style-type: none"> Potential to reduce the life of existing planning initiatives 	<ul style="list-style-type: none"> No change to planning methodology Infrastructure planning continues to be conducted modally

8.3 Recommended Option

Option 1 is recommended as it provides the framework for integrated regional infrastructure planning to best take advantage of supply chain opportunities.

9 Risks and Benefits

9.1 Potential Benefits

There are a number of potential benefits to the project and these are outlined and categorised into direct and indirect benefits. A more comprehensive analysis is provided in Appendix A.

	Direct/Indirect	Details
Economic	Direct	Managing risks for producers if alternative to live cattle trade is mandated Value add to our own produce Encourage new industries Economic diversification
Social	Direct	Increased employment in CH Agri food processing, Inland Port High-value horticulture/crops (e.g. macadamias) Circular economy Potential to increase rural populations
Environmental	Indirect	Less trucks (doubles to triples) = reduced emissions per unit of freight

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Animal welfare	Direct	Less vehicle transfers for animals
Local investment	Direct	Agri food processing
New business opportunities	Direct	Better infrastructure targeting local needs
Cost savings	Direct Indirect	Gladstone Port vs Brisbane Port Road degradation
Knowledge	Indirect	Should there be something here?
Skills	Direct	More complex economies require more and different skills.
Economic	Direct	Added value of products, either because the value is higher or there is further processing of goods from the region, leading to higher value products.
Transport	Direct	Safer roads

9.2 Potential Benefits

An analysis is provided in Appendix B.

9.3 Other Opportunities

Other ideas for the project

Carbon footprinting: The project will allow consideration of the whole life cycle of food (or other commodity) including production efficiencies and increases in logistical efficiency.

10 Implementation Strategy

10.1 Project Title

Central Highlands Connections

10.2 Target Outcomes

The target outcomes will be agreed through investment-grade business cases for the options identified in the business case.

10.3 Outputs

The outputs of the project will be:

1. A map of the Central Highlands showing:
 - a. Key commodities and their current flow through the region
 - b. Potential locations for value adding facilities for these commodities based on best-for-sector analysis
 - c. Infrastructure required to facilitate the supply chain development
2. Existing road, rail, air and digital connections and gaps
3. Expanded rail, air and digital connections, showing area of increased economic impact

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4. Proposed measures for infrastructure upgrade business cases
5. Estimates of increased economic, environmental and social benefits.

10.4 Work Plan

The broad steps likely to be required to develop the Integrated Central Highlands Connections Strategy and Map are outlined below. Consultation with industry sectors will be key.

No	Element	Details
1	Research supply chain	Develop a resource library of reports, maps and information to determine the existing flow of goods and services through the region.
2	Consultation	Wide industry consultation to confirm known information above, identify new information and gain support for the concept.
3	Infrastructure	Develop a list and map of existing and planned infrastructure from providers and government.
4	Develop overlay mapping	Develop a GIS mapping system consolidating all the above.
5	Opportunities and blockages	Engage local industries, governments and the community in planning to determine the key blockages and opportunities.
6	Holistic Planning	Develop the opportunities and blockages planning outcomes into a proposed infrastructure plan.
7	Gain support	Consult widely on the plan and gain business, community and political support
8	Final plan	Publish a final plan with infrastructure priorities.

10.5 Budget

A proposed budget for the project includes suggested costs for each of the key work packages and disciplines:

Work Package	Details Discipline	Est Cost.
Project management	Establish steering group and coordinate all activities over 12 months initial period	\$130,000
Regional supply chain map	Gather and map data on known supply chains in consultation with regional and industry bodies	\$40,000
Consolidate existing plans	Gather and consolidate information on existing infrastructure and planned infrastructure. Review global best practice	\$15,000
Detailed mapping	Develop overlay GIS mapping for the region to consolidate supply chain information as well as known and planned infrastructure projects	\$30,000
Opportunities and blockages	Identify blockages and develop a list of opportunities and priorities with a series of planning exercises including:	\$30,000

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	<ul style="list-style-type: none"> • CH supply chain planning hackathons • Infrastructure planning 	
Technical and scientific advice	Review identified opportunities and suggest technologies. Develop some conceptual plans and strategies	\$50,000
Integrated Central Highlands Connections Strategy and Map	A series of training, workshops and introductory meetings to facilitate materials exchange and circular economy thinking	\$50,000
Legal advice, agreements etc	Should there be something here?	\$30,000
TOTAL		\$375,000

10.6 Other Resources

There are a number of other resources available to facilitate or fund the project:

- Building Better Regions Fund with two streams for ‘Infrastructure Projects’ and for ‘Community Investments’- <https://www.business.gov.au/assistance/building-better-regions-fund>).

A number of other background resources include:

- CH production data - <https://chdc.com.au/agtech-agribusiness/central-highlands-agribusiness-capability-statement> and <https://chdc.com.au/agtech-agribusiness/central-highlands-agribusiness-regional-stocktake>
- Digital audit <https://chdc.com.au/mining-energy/digital-and-communications-audit>
- Measures of road use – contact DTMR Russell Hoelzl, Director (Freight), Russell.J.Hoelzl@tmr.qld.gov.au and Dr Andrew Higgins from CSIRO TransIT model
- TransIT CSIRO model contact Andrew above plus this doesn’t quite make sense <https://www.csiro.au/en/Research/LWF/Areas/Landscapes/Transport-logistics-TRANSIT>. Note that you need to pay for their services beyond the free information available on the website
- Connecting Australia: Small Business - <http://www.connectingaustralia.com.au/?fbclid=IwAR0F2-XtgieRFzK0632MbKPZrzLXYKPAQhe3ZZAXsWbN0QqZu--cr5w2Rz8#small-business>
- *Emerald regional water supply security assessment* - https://www.dews.qld.gov.au/_data/assets/pdf_file/0005/1262777/emerald-rwssa.pdf
- Food miles discussions - https://law.unimelb.edu.au/_data/assets/pdf_file/0009/1683189/Wave.pdf and <https://ceres.org.au/wp-content/uploads/pdfs/Resources/CERES-Farm-Food-Miles-Report-2007.pdf>

11 Project Management Framework

11.1 Governance

A key question for this project is “Who Owns the Project?”

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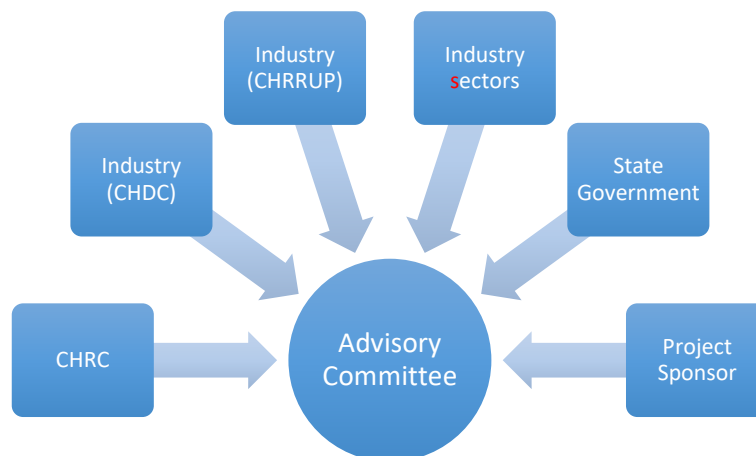
The governance system is proposed to deliver the project as follows, with the exact representation to be determined at the commencement of the project.

- **Steering Committee:** Responsible for the delivery of the project, meeting its objectives on time and within budget. The Steering Committee members will also consult strategically with external stakeholders to ensure that the project has the support of a wider network
- **Working Group:** Responsible for advising the Project Manager on technical and operational aspects of the project and will meet to advise the project manager
- **Project Manager:** Reporting to the Advisory Committee. The Project Manager should sit within the RAPAD or BRC structures and have access to relevant expertise, including through regular meetings of the Working Group.

The Project Manager will be responsible for the delivery of the project.

The Advisory Committee should be established with representatives from the Central Highlands Regional Council, Central Highlands Development Corporation and industry representatives. The Project Sponsor should be represented, particularly if funding is provided.

Suggested Project Advisory Committee Structure:

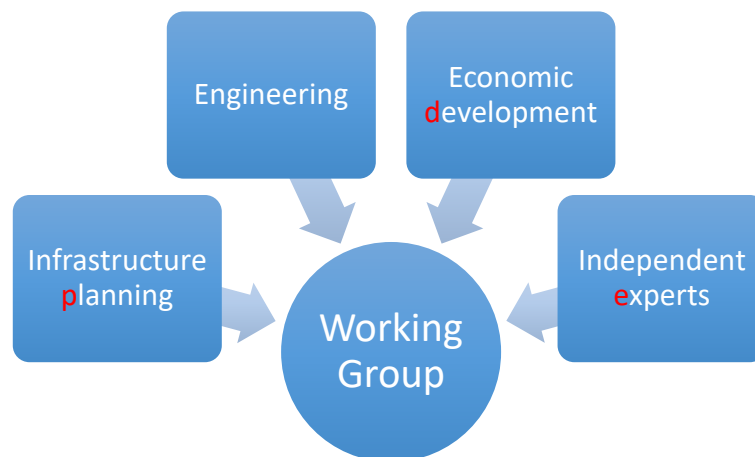


Suggested Project Working Group Structure:



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The business case should be progressed by a Project Manager, with the close advice of key agencies and advisors in an operational working group as suggested above.

11.2 Project and Quality Management

A detailed project plan will need to be prepared for the project incorporating a number of factors including:

1. Organisational Impact: How the work undertaken during the project will impact on the organisation and how these impacts will be addressed
2. Outcome Realisation: How outputs will be managed once they are delivered, and who will be accountable. This may change as the project evolves
3. Quality Management: Define suitable standards, requirements and best practices for the project to deliver against, and the internal quality requirements
4. Post-project Review: How the group will capture the lessons learnt throughout the project and what review will be done to assess whether the initiative delivered the intended benefits.

The Project Manager will need to ensure that the final project developed is robust and based on sound science. Financial analysis should be sufficiently robust to allow decision-making, so initial consultation (about the level of detail required) should occur with potential funders and financiers.

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Appendix A: Benefit Analysis

This section assesses how each key stakeholder group (or individual stakeholders) may be impacted by the project and how they may impact on the project. These impacts may be positive or negative.

Option 1: is there a reason that the table header isn't blue?

Stakeholder	Positive Impact	Negative Impact	Overall
CHRC	Less road maintenance costs with shift from road to rail	Changes existing model of infrastructure planning	Positive
Agricultural producers	Quicker and easier export through regional ports	Nil	Positive
Community	Reduced emissions from transport Linking with other projects going on in the region	Nil	Positive
Existing projects		Nil	Positive
Exporters	Quicker and easier export through regional ports	Nil	Positive
Transport infrastructure projects	May assist departments in long-term planning	Nil	Positive

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Appendix B: Risk Analysis

As a pre-feasibility level business case, this is an initial consideration of risks, and strategies that can be put in place, or investigations into further work that can mitigate these risks.

Option 1: is there a reason that the table header isn't blue?

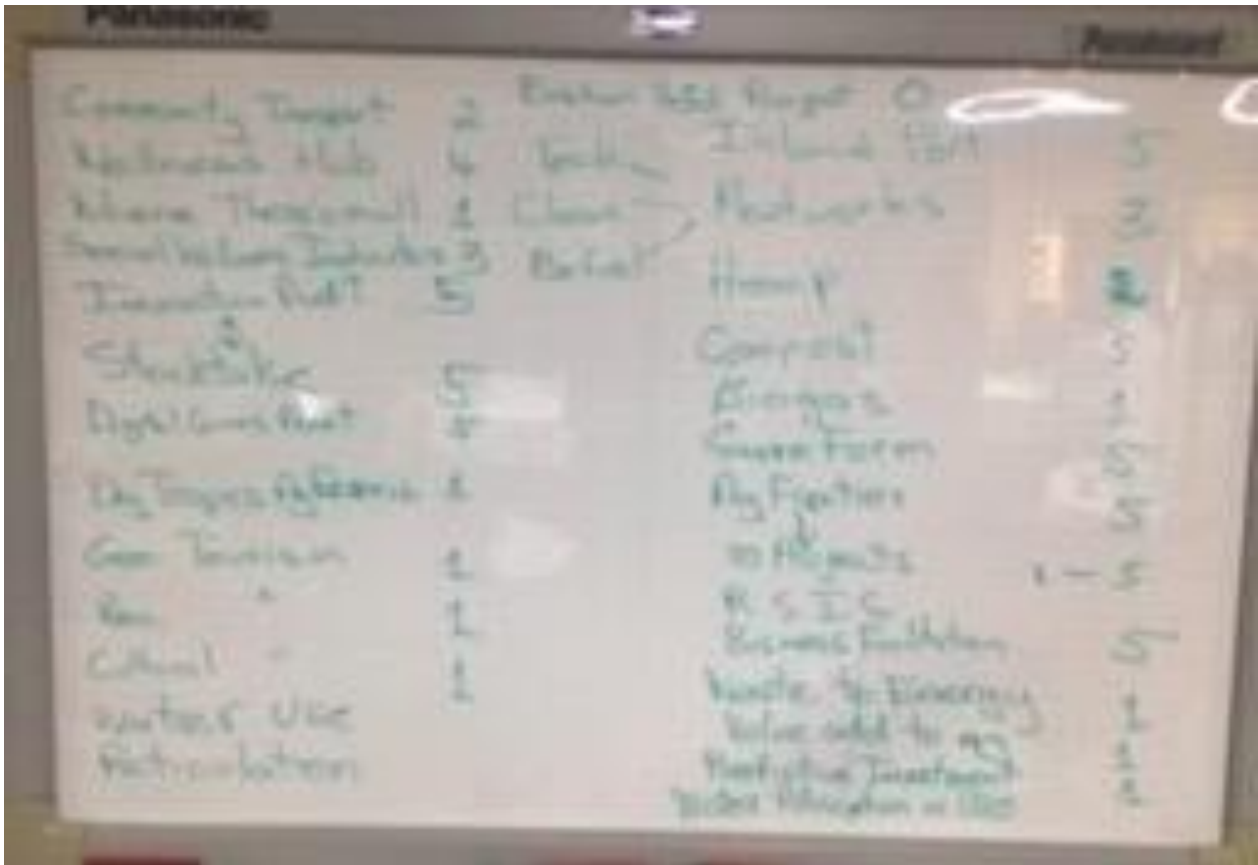
Major Risk and what does it do to the project	Mitigation Strategy
Failure to explain the project	The project may be interpreted as an infrastructure plan consolidating the range of infrastructure plans. It will be important to communicate that is an infrastructure plan based on identifying the flow of goods and services then prioritising opportunities for supply chain growth.
Are we looking at issues that have been looked at extensively over time	Put a value on what could be achieved if the blockages can be removed.
Failure to engage with government departments, or government departments do not see the objectives	Recognise planning cycles for infrastructure developers and government departments so that the findings of the project can be contributed at the right time
The model is unable to shift so that despite the plan, infrastructure funding continues to be distributed by existing government regions rather than prioritised best-for-region approach	Communication strategy
GOCs competing - Investments in infrastructure in other areas competing with projects	Establish early communications with and between the GOCs to outline the scope and method, then seek input.
Initial perception of loss of jobs – a full train will reduce 48 truck loads	The project intends to establish new networks and plans to increase economic opportunities in the area. The proposal will be seeking best-for-region opportunities. There may be cases where some areas of employment will be gradually superseded over time, and the project seeks to reduce the shock of that.
Objection from trucking industry	The communications plan and initial consultations should reinforce that the project is not pro-rail or anti-truck, but best for region. Ideally it would result in an increase of value-added exports from the region.
Perception that the regions do not have the capability for advanced manufacturing	In early consultation, profile case studies of regional businesses including successful manufacturers that are innovating.

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Appendix C: Background Information

Background Information



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