Property Projects Australia

Attachment A – Economic Impact Assessment

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Toowoomba Technology Park: Location Analysis and Economic Impact Assessment

Commercial-in-confidence:
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EXECUTIVE SUMMARY

Lawrence Consulting was commissioned by FKG Group to undertake a locational analysis and to determine the total direct and indirect economic benefit to the economy of the Toowoomba local government area (LGA) of the proposed Toowoomba Technology Park precinct and to assess the demand for and requirement to locate the park adjacent to the Pulse Data Centre, which is currently under construction.

Target Industries

The proposed Toowoomba Technology Park (TTP) – located within the Toowoomba Trade Gateway (TTG), a 2,000ha zoned business and industrial park to the immediate west of Toowoomba – will be a business community focused on accommodating technology based research and development centric businesses. The 29ha development will target the following businesses:

- Agriculture / AgTech;
- Advanced manufacturing (e.g. pharmaceuticals, bioscience products, medical devices, composites & ceramics, robotics & automation);
- Software and cloud based services;
- Mining, equipment, technology and services (METS); and
- Defence.

The industries identified for inclusion in the TTP can be classified on the basis of two distinct industry clusters – namely, technology innovation and advanced manufacturing – due to their suitability for the park (as opposed to more restrictive locations such as the Toowoomba central business district), the potential capacity to boost regional output and economic growth and a strong comparative advantage from being located in the Toowoomba Enterprise Hub precinct.

Table E1: Identified Industry Clusters, Toowoomba Technology Park

Technology Innovation:	Advanced Manufacturing:
Electronic Information Storage Services	Pharmaceutical and Medicinal Product Manufacturing
Data Processing and Web Hosting Services	Medical, Surgical, Optical and Ophthalmic Equipment Manufacturing
Computer System Design and Related Services	Composites and Ceramics Manufacturing
Scientific Research Services	Computer, Robotics and Electronic Equipment Manufacturing
Software Publishing	

Location Analysis

The Toowoomba Technology Park is the preferred site for the establishment of a technology innovation and manufacturing cluster than comparative areas such as the Toowoomba CBD, due to the following factors:

- The establishment of the Pulse Data Centre is a catalytic development for the growth of technology and innovation industries, not just in the Toowoomba LGA, but for South East Queensland and Queensland;

- These regions are currently underserviced – specifically, there is currently a low concentration of employment and consequent comparative disadvantage and net import of services – in both technology innovation and advanced manufacturing industries;

- The Toowoomba West region (incorporating the TTG), in which the TTP will be located, has an existing established concentration in some advanced manufacturing industries such as composites and computer product manufacturing, providing a comparative advantage for this cluster and supportive industry for the development of the TTP, whilst also aligning with the target businesses identified for the precinct;

- By comparison, the Toowoomba CBD has little to no supporting industry for the development of either an advanced manufacturing or technology innovation cluster and is unlikely to attract new generation jobs;

- An analysis of land use patterns – specifically, the development of larger sites utilising a complementary mix of office, laboratory and industrial spaces – demonstrates that the industries targeted for development within the TTP, as well as those comprising more broadly the technology innovation and advanced manufacturing clusters, generally require larger sites based on higher indicative floor area per employee and floor space to site area ratios that will be available in the TTP and not in the Toowoomba CBD; and

- The technology cluster will attract office type uses that will not be attracted to the Toowoomba CBD;

Economic Impact

The estimated economic output of the proposed Toowoomba Technology Park indicates an employment forecast of approximately 1,544 FTEs when fully developed, with associated direct annual turnover of $734.0 million. The net annual regional economic impact – i.e. direct, indirect and consumption-induced – associated with the operations of the Toowoomba Technology Park, upon full development, on the economy of the Toowoomba LGA include (refer Table E2 below):

- An estimated direct output of $734.0 million and total output of $1.5 billion;
- Estimated direct income (wages and salaries) of $151.4 million and total income of $339.0 million;
- Approximately 1,544 direct full-time equivalent (FTE) employment positions, with a total employment impact of 4,385 FTEs; and
- An estimated contribution to GRP of $301.8 million from direct effects, with a total value added impact of $691.1 million, representing an increase of 5.9% to the GRP for the Toowoomba LGA ($10.4 billion in 2016/17).

Table E2: Economic Impact of Toowoomba Technology Park

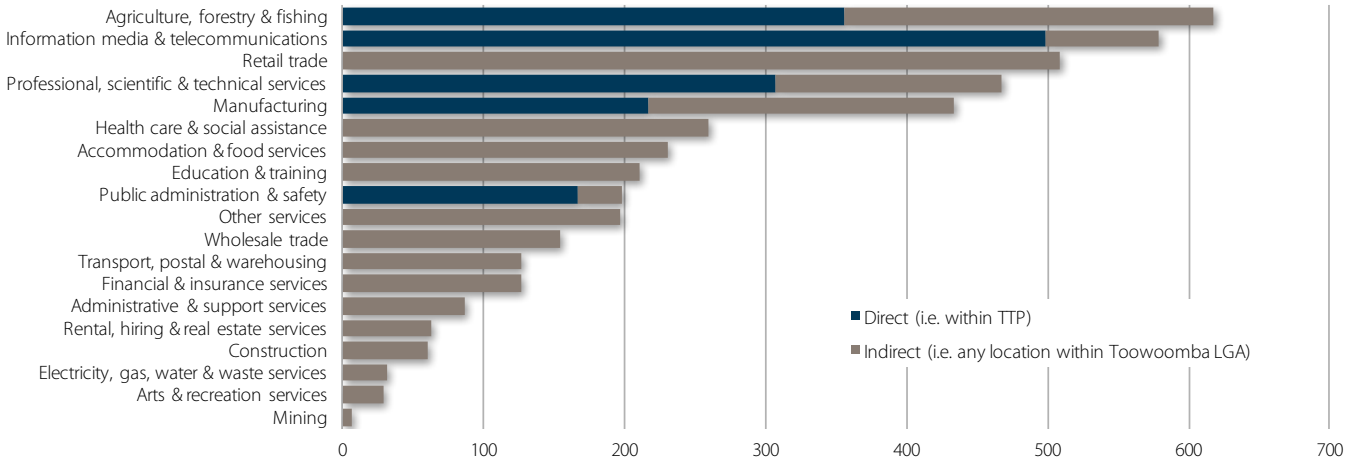
	Toowoomba LGA	DD & SWQ	Queensland	Australia
Output ($ million)				
Direct	734.0	734.0	734.0	734.0
Total	**1,502.3**	**1,503.0**	**1,648.0**	**2,090.4**
Income ($ million)				
Direct	151.4	151.4	151.4	151.4
Total	**339.0**	**404.0**	**443.4**	**539.8**
Employment (fte persons)				
Direct	1,543.7	1,543.7	1,543.7	1,543.7
Total	**4,384.7**	**5,623.4**	**6,081.9**	**7,207.2**
Value added ($ million)				
Direct	301.8	301.8	301.8	301.8
Total	**691.1**	**809.7**	**944.0**	**1,158.8**
% change in baseline GRP				
Direct	2.91%	2.91%	0.09%	0.02%
Total	1.71%	1.72%	0.07%	0.02%

Note: Annual impact from full development

The flow-on impacts from additional household expenditure and business turnover associated with the proposed Toowoomba Technology Park development to other industries across the Toowoomba LGA has been disaggregated in order to measure the contribution in other areas of the economy. The Information Media & Telecommunications industry benefits most in terms of total output ($387.0 million), followed by Agriculture, Forestry & Fishing ($319.0 million), Professional, Scientific & Technical Services ($130.7 million) and Manufacturing ($120.0 million).

Estimated Annual Employment (FTEs) Supported by Toowoomba Technology Park

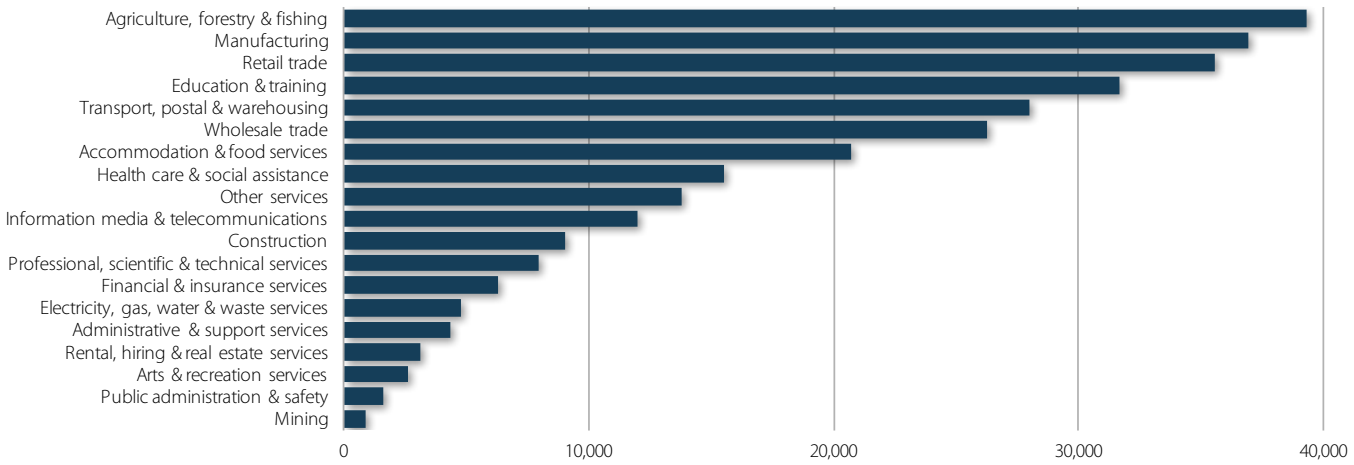
Toowoomba LGA



The Toowoomba Technology Park will support significant associated floor space and land requirements for additional employment impacts to other industries across the Toowoomba LGA (i.e. not location specific and outside of the TTP).

Estimated External Floor Space (m2) Supported by Toowoomba Technology Park

Toowoomba LGA



CONTENTS

INTRODUCTION

Lawrence Consulting was commissioned by FKG Group to undertake a locational analysis and to determine the total direct and indirect economic benefit to the economy of the Toowoomba local government area (LGA) of the proposed Toowoomba Technology Park precinct and to assess the demand for and requirement to locate the park adjacent to the Pulse Data Centre. The state-of-the-art Data Centre is the catalyst for the technology park and will be delivered over 3 stages, the first stage of which was completed in early 2018.

The Toowoomba Technology Park, incorporating the Pulse Data Centre, is a major development within the Toowoomba Trade Gateway (TTG), a 2,000ha zoned business and industrial park to the immediate west of Toowoomba that has been identified as a Project of Regional Significance in the Queensland Government's RegionsQ Framework and as a key employment sector within the South-East Queensland Regional Plan, under which it is estimated to generate up to 15,000 direct jobs. Assuming that the TTG will be fully developed as an enterprise zone by 2051, with total direct employment within the precinct of 15,000 FTEs, the estimated direct annual output of the precinct is approximately $4.0 billion and the contribution to the gross regional product (GRP) of the Toowoomba LGA is $1.3 billion from direct effects.

The proposed Toowoomba Technology Park will be a business community focused on accommodating technology based research and development centric businesses. The 29ha development is planned to host a technology innovation centre, Pulse Data Centre, conference/meeting facilities, cafes, disaster recovery and business continuity solutions, office space, laboratories and industrial spaces. A concept masterplan for the development is contained in Appendix A. The Toowoomba Technology Park will include the following target industries:

- Agriculture – AgTech;
- Advanced manufacturing;
- Software and cloud based services;
- Biosciences;
- Mining, equipment, technology and services (METS); and
- Defense.

The economic impact assessment has concentrated on modelling the impact (direct, indirect and induced) on the economy of the Toowoomba LGA of the increased annual turnover from the Toowoomba Technology Park precinct in terms of the following: output; income (wages/salaries); employment; and value added.

The following sections of this report present the results of the economic impact analysis.

Prepared by:

LOCATION ANALYSIS

Targeted Industries

The proposed Toowoomba Technology Park will be a business community focussed on accommodating technology-based research and development-centric businesses. The vision for the TTP is to create a community which fosters a collaborative and creative culture across co-located businesses, transforming food production and manufacturing industries and unlocking value for the Toowoomba region. The development is planned to host a technology innovation centre, Pulse Data Centre, conference/meeting facilities, cafes, disaster recovery and business continuity solutions, office space, laboratories and industrial spaces. The Toowoomba Technology Park will target the following businesses:

- Agriculture / AgTech;
- Advanced manufacturing (e.g. pharmaceuticals, bioscience products, medical devices, composites & ceramics, robotics & automation);
- Software and cloud based services;
- Mining, equipment, technology and services (METS); and
- Defence.

The ecosystem of the TTP has strengthened over the past year and will be implemented with particular emphasis on agtech, biosecurity and advanced manufacturing. The innovation centre has strong support and will proceed as the "Global Agrifood Innovation Centre". Some of the main ecosystem partners in that centre include:

- FKG Group;
- Siemens;
- Telstra;
- KPMG;
- University of Queensland;
- Queensland University of Technology;
- University of Southern Queensland; and
- The Queensland Government.

This ecosystem is now attracting a range of small scaleup companies for large multinational and national manufacturers.

Potential Tenants

The following are examples of the types requirements which will drive the need for office space.

Disaster Recovery Facility

FKG Group is presently confidentially negotiating with a large institutional organisation for a 1,500m^2 open plan office building to act as a disaster recovery centre. The Brief is for a large open area which has the capacity to become quickly operational for 300-400 staff in the event that the current head office is unable to be occupied for some reason. The requirement is driven by risk management to identify a location outside the CBD with sufficient separation from the current head office and with good data connections and in close proximity to the Pulse Data Centre. For a facility they hoping to never use, they are also looking for cost efficiencies in land and construction costs.

Global Agri-Food Innovation Centre

This will be a specially designed facility to provide access to best technical expertise, infrastructure, skills and equipment. By providing co-located space, where industry and research partners collaborate on projects, the Global Agri-Food Innovation Centre will create a critical mass of activity driving industry innovation and creating a reputation to work closely with the best Universities and other leading edge technology organisations in Australia and Internationally. To this end, we are presently in discussions with several of our industry partners, including Telstra, Siemens and KPMG, who have a particular requirement to be in the proposed Innovation Centre and adjoining the Pulse Data Centre. These companies are currently not in Toowoomba and will begin to establish shortly. They will only establish in the Aatlis precinct due to their relationship with FKG and the technology projects which are being implemented in the precinct and region with the other ecosystem partners.

The creation of the ecosystem is now creating drivers for the establishment of new office space for companies wanting to locate next to the Pulse Data Centre and in connection with the ecosystem and the technology projects. To date we are fielding enquiries for approximately 1,500m^2 of this new purpose driven office space.

Smart Farm

FKG is establishing Smart Farm on agricultural land adjacent to the innovation centre and within the greater Aatlis precinct. Smart Farms provide the opportunity for an on-farm environment to seek best practise methodologies and field and machine / device testing. Companies are proposing to establish office space in Aatlis with close access to the Smart Farm. Organisations like the University of Queensland, require a presence in AATLIS to showcase the latest technologies. AATLIS provides the unique opportunity to locate an office presence with on site testing in close proximity.

Cluster Analysis

The industries identified for inclusion in the TTP can be classified on the basis of two distinct industry clusters – namely, technology innovation and advanced manufacturing – due to their suitability for the park (as opposed to more restrictive locations such as the Toowoomba central business district), the potential capacity to boost regional output and economic growth and a strong comparative advantage from being located in the Toowoomba Trade Gateway precinct.

Business clusters are strong networks of related enterprises that produce a common product or service that is delivered to the market. Organised cluster development can raise the productivity, competitiveness and profile of identified business clusters, resulting in growth in output and employment.

Business clusters are separated into traded clusters (i.e. those involved in the production of goods and services that can be traded between regions) and local (those that rely predominantly on a local population catchment). Strong traded clusters provide the drivers for regional income generation, increased investment, reduced unemployment and strong population growth, whilst also generating a greater level of activity in the local sector.

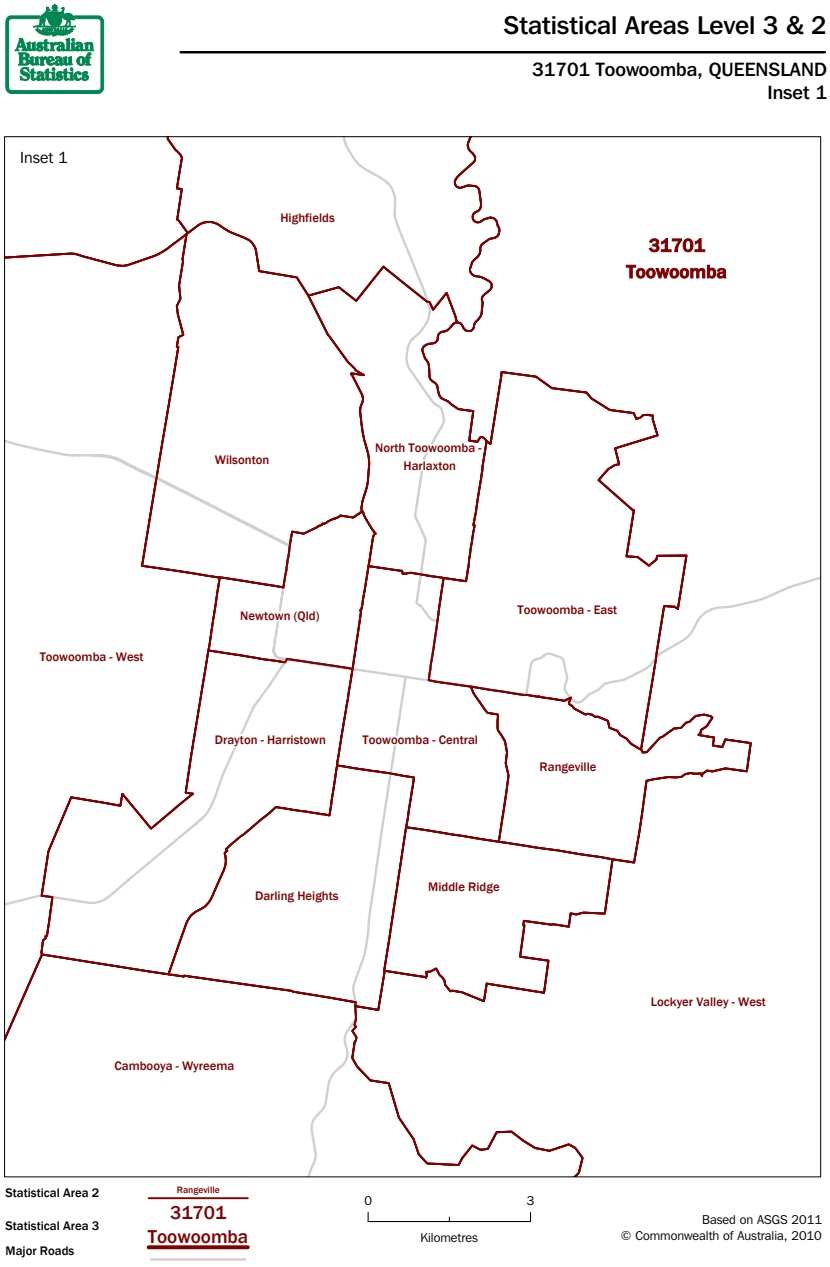
The industry sub-classes included in the two identified clusters – i.e. technology innovation and advanced manufacturing – are summarised in the following table.

Table 1: Identified Industry Clusters, Toowoomba Technology Park

Technology Innovation:	Advanced Manufacturing:
Electronic Information Storage Services	Pharmaceutical and Medicinal Product Manufacturing
Data Processing and Web Hosting Services	Medical, Surgical, Optical and Ophthalmic Equipment Manufacturing
Computer System Design and Related Services	Composites and Ceramics Manufacturing
Scientific Research Services	Computer, Robotics and Electronic Equipment Manufacturing
Software Publishing	

An analysis has been conducted into the concentration of technology innovation and advanced manufacturing clusters across a number of geographic areas, specifically:

- Toowoomba – West and Toowoomba – Central statistical areas (SA2s) (see map below);
- Toowoomba local government area (LGA);
- South East Queensland; and
- Queensland.



Location density utilises the concentration factor or location quotient to measure the concentration of a particular industry or cluster within a region, compared with the industry's concentration at a national level. A region typically enjoys has a greater industry concentration than the national economy – and is therefore considered to have net exports of goods and services – if an industry records a location quotient greater than 1, with the higher the location quotient, the greater the comparative advantage.

The following table contains a summary of employment concentration and location quotients for the two industry clusters and component sub-classes for each of the relevant geographic areas.

Table 2: Industry Cluster Concentration, Toowoomba Technology Park

Concentration factor	Toowoomba - Central	Toowoomba - West	Toowoomba (R)	SEQ	Queensland
Employed persons					
Technology Innovation:	**110**	**24**	**483**	**25,147**	**27,977**
Software Publishing	0	0	0	120	122
Data Processing and Web Hosting Services	6	0	10	521	552
Electronic Information Storage Services	0	0	0	386	406
Scientific Research Services	8	12	136	2,951	3,724
Computer System Design and Related Services	96	12	337	21,134	23,139
Advanced Manufacturing:	**5**	**12**	**75**	**4,752**	**5,478**
Pharmaceutical and Medicinal Product Manufacturing	0	0	4	1,431	1,613
Medical, Surgical, Optical and Ophthalmic Equipment Manufacturing	5	0	12	1,100	1,202
Composites and Ceramics Manufacturing	0	5	18	795	1,014
Computer, Robotics and Electronic Equipment Manufacturing	0	7	41	1,426	1,649
Location quotient					
Technology Innovation:	**0.323**	**0.251**	**0.372**	**0.911**	**0.700**
Software Publishing	0.000	0.000	0.000	1.273	0.894
Data Processing and Web Hosting Services	0.810	0.000	0.354	0.868	0.636
Electronic Information Storage Services	0.000	0.000	0.000	0.866	0.629
Scientific Research Services	0.163	0.870	0.726	0.742	0.647
Computer System Design and Related Services	0.346	0.154	0.319	0.942	0.712
Advanced Manufacturing:	**0.072**	**0.618**	**0.285**	**0.850**	**0.677**
Pharmaceutical and Medicinal Product Manufacturing	0.000	0.000	0.042	0.711	0.554
Medical, Surgical, Optical and Ophthalmic Equipment Manufacturing	0.350	0.000	0.220	0.951	0.718
Composites and Ceramics Manufacturing	0.000	1.843	0.489	1.017	0.896
Computer, Robotics and Electronic Equipment Manufacturing	0.000	1.229	0.530	0.869	0.694

Source: ABS Census 2016

The major implications from the industry concentration analysis for the development of the Toowoomba Technology Park include the following:

- The establishment of the Pulse Data Centre is a catalytic development for the growth of technology and innovation industries, not just in the Toowoomba LGA, but for South East Queensland and Queensland as a whole, given the relatively low concentration of employment in these industries (i.e. location quotients of less than 1) in all three areas.

- Similarly, the Toowoomba LGA (0.285), SE Queensland (0.850) and Queensland (0.677) all have a lower concentration of advanced manufacturing industries than the national average. In contrast to the level for the Toowoomba region, the Toowoomba – West SA2, in which the TTP will be located, has established concentration in some advanced manufacturing industries such as composites and computer product manufacturing – although, notably still a relatively low employment base – providing a comparative advantage for this cluster and supportive industry for the development of the TTP, whilst also aligning with the target businesses identified for the precinct.

- By comparison, the Toowoomba – Central SA2 has little to no supporting industry for the development of either an advanced manufacturing or technology innovation cluster, given lower to negligible location quotients for component industry sub-classes.

Further consideration has been given to the preference of establishing complementary industry clusters in technology innovation and advanced manufacturing at the Toowoomba Technology Park as opposed to the Toowoomba CBD through analysis of land use patterns, specifically, the development of larger sites utilising a complementary mix of office, laboratory and industrial spaces. The industries targeted for development within the TTP, as well as those comprising more broadly the technology innovation and advanced manufacturing clusters as previously outlined, generally require larger sites based on higher indicative floor area per employee and floor space to site area ratios, as summarised in the following table.

Table 3: Indicative Floor Area and Employment Ratios, Selected Industry Sectors

Sector	Indicative floor area per employee (m^2)	Indicative floor space to site area ratio	Implied land area per employee (m^2)
Manufacturing:	100	30%	333
Petroleum, coal & chemical products	280	30%	933
Transport equipment	70	30%	233
Other machinery and equipment	90	30%	300
Miscellaneous manufacturing	90	30%	300
Information media & telecommunications	160	40%	400
Professional, scientific & technical services	50	50%	100
Transport and storage	310	30%	1,033

In general, the Toowoomba Technology Park is far better situated to accommodate a mix of industry uses as required in the establishment of a technology innovation and manufacturing cluster than comparative areas such as the Toowoomba CBD, particularly as it is a greenfield site.

ECONOMIC IMPACT

Major commercial and industrial projects such as the proposed Toowoomba Technology Park precinct generate economic benefits for the regional economy through expenditure associated with the development and construction of the site and infrastructure along with the on-going benefits associated with increased expenditure / turnover within the region that would otherwise not have occurred. If the proposed development will generate increased economic activity for the region over and above that of the economic activity generated by the existing or alternative land uses then it may be considered a positive development for the region in economic terms.

This section outlines the input-output methodology that was used to examine the expected economic activity generated by the proposed development on the economy of the Toowoomba LGA. All input data, except where referenced in the report, has been supplied by the proponent, FKG Group.

Approach

The contribution made by the proposed Toowoomba Technology Park development to the economy of the Toowoomba LGA has been assessed using the Toowoomba **LocalImpact** economic model developed specifically for the region by Lawrence Consulting. The stimulus from economic activity can be traced through the economy in several different ways:

- The first-round effect, or direct effect, are those from the activity's expenditure in purchasing goods from other industries;

- The second-round effects are those from the supplying industries increasing their purchases to meet the additional demand. The second and subsequent rounds of purchasing are termed the indirect effects;

- The consumption-induced effects, which recognise that the level of local production is important in determining regional levels of household consumption, that this in turn will be spent locally to a large extent and therefore influence the level of regional consumption and the level of output of each sector; and

- Direct public tax revenue, or financial return to local government (e.g. rates and levies).

(Note: Caution should be exercised when interpreting the consumption impacts as they are generally expected to overestimate the actual impact.)

These effects can be represented by multipliers. There are commonly four different types of multipliers:

- Output;
- Income;
- Employment; and
- Value added.

Output

The output impact measures the increase in gross sales throughout the whole economy by summing all the individual transactions resulting, directly and indirectly, from the economic stimulus. The output impacts, are however, regarded as overstating the impact on the economy as they count all goods and services used in one stage of production as an input to later stages of production, hence counting their contribution more than once.

Income

The income impact measures the additional amount of wages and salaries paid to employees of the industry under consideration and to other industries benefiting from the stimulus to the economy.

Employment

The employment impact measures the number of jobs created by the stimulus, both directly and indirectly. It should be noted that the short-term response to increased demand might be for employers to ask existing staff to work overtime. As a consequence, lower employment than the level indicated by the economic impact of the stimulus will result. This short-term scenario is particularly true where the demand stimulus is seen as temporary or where there is spare capacity in the economy (i.e. unemployment).

Value Added

The value added or Gross Regional Product[1] (GRP) impact measures only the net activity at each stage of production. GRP is defined as the addition of consumption, investment and government expenditure, plus exports of goods and services, minus imports of goods and services for a region. The GRP impacts are the preferred measure for the assessment and contribution of a stimulus to the economy.

Limitations

Limitations or qualifiers that should be raised when using input-output analysis include:

- The inputs purchased by each industry are a function of the level of output of that industry. The input function is generally assumed linear and homogenous of degree one (which implies constant returns to scale and no substitution between inputs);

- Each commodity (or group of commodities) is supplied by a single industry or sector of production. This implies that there is only one method used to produce each commodity and that each sector has only a single primary output;

- The total effect of carrying on several types of production is the sum of the separate effects. This rules out external economies and diseconomies and is known simply as the additivity assumption. This generally does not reflect real world operations;

- The system is in equilibrium at given prices. This is obviously not the case in an economic system subject to external influences;

- In the static input-output model, there are no capacity constraints so that the supply of each good is perfectly elastic. Each industry can supply whatever quantity is demanded of it and there are no capital restrictions. This assumption would come into play depending upon the magnitude of the changes in quantities demanded, brought about through changes in taxation levels; and

- The input-output model is an optimisation model that allocates resources between sectors to their most efficient use. This is not expected to happen all of the time in the "real world" and as such results from the input output analysis may overestimate the actual impact delivered on ground.

Input-output techniques provide a solid approach for taking account of the inter-relationships between the various sectors of the economy in the short-term and hence are an appropriate tool for determining the direct and indirect economic impact of the proposed Toowoomba Technology Park development.

[1] This is also known as Gross State Product (GSP) or Gross National Product (GNP) depending on the level of the analysis.

Displacements & Leakages

Displacement arises when an economic stimulus such as the proposed Toowoomba Technology Park precinct development takes market share from other existing local firms or organisations, or 'displaces' alternative uses of project funds that might otherwise have occurred. Leakages are defined as the proportion of project outputs that flow out of the catchment area, i.e. purchases from outside the region.

In relation to both the construction phase and the ongoing expenditure generated by the proposed Toowoomba Technology Park development, for the purpose of this analysis it has been assumed that the Toowoomba LGA is a closed economy, i.e. any displacement and leakages are considered marginal. All expenditure related to the stimulus has been assumed to be made within the region – where not otherwise identified – in order to represent the additional economic activity generated by the Toowoomba Technology Park precinct.

Data Inputs

In assessing the economic output of the Toowoomba Technology Park, a number of assumptions regarding specific land use patterns have been adopted. As per the masterplan, the precinct has approximately 59,740 sqm of GFA across a number of identified industry uses, in addition to the 61,000 sqm of GFA dedicated to the Pulse Data Centre. Indicative floor area per employee and floor space to site area ratios for a range of industry uses were considered, including separate benchmarks for office, laboratory and industrial spaces.

Assuming a mix of commercial and industrial industry uses within the precinct – specifically, agriculture and associated technologies, manufacturing and engineering, information media and software development, professional and technical service, public administration and defence – along with the associated indicative floor area per employee and implied land area per employee ratios as identified, the resultant employment forecasts for the Toowoomba Technology Park is approximately 1,544 FTEs when fully developed. The associated direct annual turnover related to this level of employment is estimated at $734.0 million, again following the assumption that predominantly technology-related businesses will be located within the precinct as per the masterplan. A summary of employment impacts for each precinct is contained in the following table.

Table 4: Indicative Employment by Precinct, Toowoomba Technology Park

Industry use	Potential GFA (m^2)	GFA allocation by use			Forecast employment (FTEs)
		Office	Laboratory	Industrial	
Data Centre	28,218				100
Agriculture & AgTech	14,935	2,987	4,481	7,468	356
Manufacturing & engineering	11,948	2,390	0	9,559	216
IT & media	11,948	11,948	0	0	398
Professional & Technical Services	11,948	3,584	3,584	4,779	307
Public administration & defence	8,961	1,344	1,344	5,377	166
Total	**87,959**	**22,253**	**9,409**	**27,182**	**1,544**

Disaggregated industry outputs were provided as part of the analysis to demonstrate the impacts of the proposed Toowoomba Technology Park development on all 114 sectors included in the input-output model; these are provided in Appendix B.

Impact Assessment

The net annual regional economic impact – i.e. direct, indirect and consumption-induced – associated with the operations of the Toowoomba Technology Park, upon full development, on the economy of the Toowoomba LGA include (refer Table 5 below):

- An estimated direct output of $734.0 million and additional flow on increases in output of $367.0 million through other industries, for a total industry impact of $1.1 billion. A further $401.3 million in output in the region can be associated with consumption-induced effects;

- Estimated direct income (wages and salaries) of $151.4 million, with $71.7 million in additional income generated through flow on effects in other industries and a further $115.9 million from household spending;

- Approximately 1,544 direct full-time equivalent (FTE) employment positions, with an estimated additional 2,841 employment positions supported indirectly through other industries and household consumption for a total employment impact of 4,385 FTEs; and

- An estimated contribution to GRP of $301.8 million from direct effects, with a further flow on impact of $177.0 million through other industries for a total industry value added of $478.8 million. An additional $212.3 million in gross regional product can be attributed to consumption-induced effects. The total value added impact of $691.1 million would constitute an increase of 5.9% to the GRP for the Toowoomba LGA ($10.4 billion in 2016/17).

Table 5: Economic Impact of Toowoomba Technology Park

	Toowoomba LGA	DD & SWQ	Queensland	Australia
Output ($ million)				
Direct	734.0	734.0	734.0	734.0
Indirect	367.0	367.7	441.7	706.5
Consumption	401.3	401.3	472.4	649.9
Total	**1,502.3**	**1,503.0**	**1,648.0**	**2,090.4**
Income ($ million)				
Direct	151.4	151.4	151.4	151.4
Indirect	71.7	72.1	95.7	151.9
Consumption	115.9	180.5	196.3	236.5
Total	**339.0**	**404.0**	**443.4**	**539.8**
Employment (fte persons)				
Direct	1,543.7	1,543.7	1,543.7	1,543.7
Indirect	1,041.4	1,046.6	1,304.8	1,944.7
Consumption	1,799.6	3,033.1	3,233.4	3,718.7
Total	**4,384.7**	**5,623.4**	**6,081.9**	**7,207.2**
Value added ($ million)				
Direct	301.8	301.8	301.8	301.8
Indirect	177.0	177.9	224.2	343.1
Consumption	212.3	329.9	418.0	513.8
Total	**691.1**	**809.7**	**944.0**	**1,158.8**
% change in baseline GRP				
Direct	2.91%	2.91%	0.09%	0.02%
Total	1.71%	1.72%	0.07%	0.02%

Note: Annual impact from full development

Impacts on Other Industries

The flow-on impacts from additional household expenditure and business turnover associated with the proposed Toowoomba Technology Park development to other industries across the Toowoomba LGA has been disaggregated in order to measure the contribution in other areas of the economy. The following table (Table 6) demonstrates that the Information Media & Telecommunications industry benefits most in terms of total output ($387.0 million), followed by Agriculture, Forestry & Fishing ($319.0 million), Professional, Scientific & Technical Services ($130.7 million) and Manufacturing ($120.0 million).

Estimated Annual Employment (FTEs) Supported by Toowoomba Technology Park

Toowoomba LGA

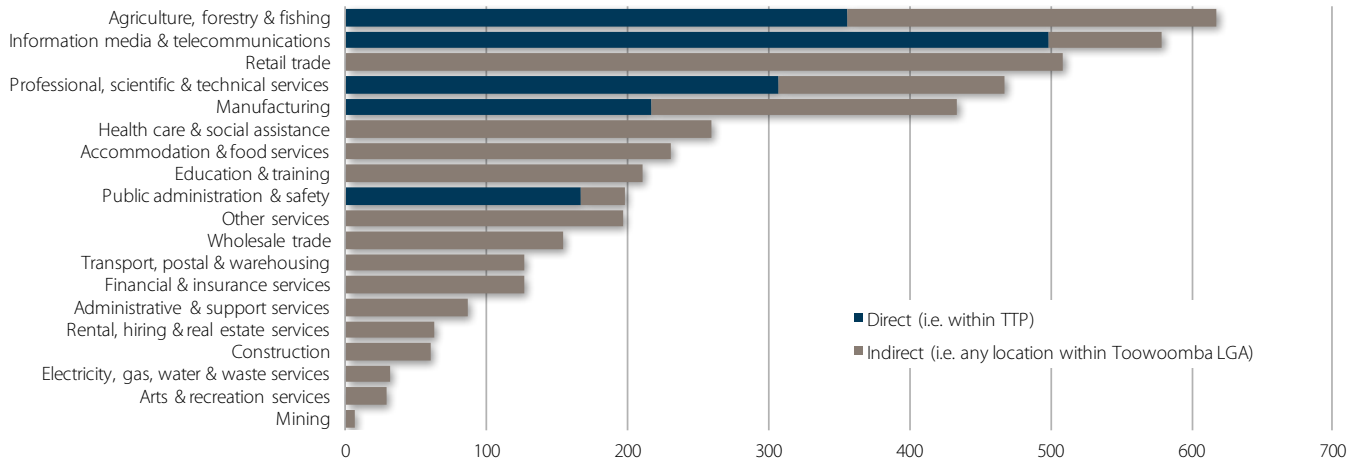


Table 6: Disaggregated Industry Impacts of Toowoomba Technology Park

Industry	Industry output ($ million)			Direct employment (FTEs)		
	Direct	Indirect	Total	Direct	Indirect	Total
Agriculture, Forestry and Fishing	225.1	94.0	319.0	355.6	262.1	617.7
Mining	0.0	6.7	6.7	0.0	6.2	6.2
Manufacturing	38.7	81.3	120.0	216.2	217.0	433.2
Electricity, Gas, Water and Waste Services	0.0	28.3	28.3	0.0	31.8	31.8
Construction	0.0	29.3	29.3	0.0	60.2	60.2
Wholesale Trade	0.0	53.2	53.2	0.0	154.4	154.4
Retail Trade	0.0	57.6	57.6	0.0	508.1	508.1
Accommodation and Food Services	0.0	28.2	28.2	0.0	230.2	230.2
Transport, Postal and Warehousing	0.0	41.0	41.0	0.0	127.1	127.1
Information Media and Telecommunications	332.5	54.5	387.0	498.3	80.2	578.5
Financial and Insurance Services	0.0	73.5	73.5	0.0	126.5	126.5
Rental, Hiring and Real Estate Services	0.0	51.9	51.9	0.0	63.2	63.2
Professional, Scientific and Technical Services	85.1	45.5	130.7	307.2	159.7	467.0
Administrative and Support Services	0.0	21.7	21.7	0.0	86.7	86.7
Public Administration and Safety	52.6	5.9	58.5	166.4	31.8	198.3
Education and Training	0.0	27.0	27.0	0.0	211.0	211.0
Health Care and Social Assistance	0.0	31.8	31.8	0.0	259.3	259.3
Arts and Recreation Services	0.0	5.9	5.9	0.0	28.8	28.8
Other Services	0.0	30.9	30.9	0.0	196.6	196.6
Total	**734.0**	**768.3**	**1,502.3**	**1,543.7**	**2,841.0**	**4,384.7**

Note: Annual impact upon full completion of project

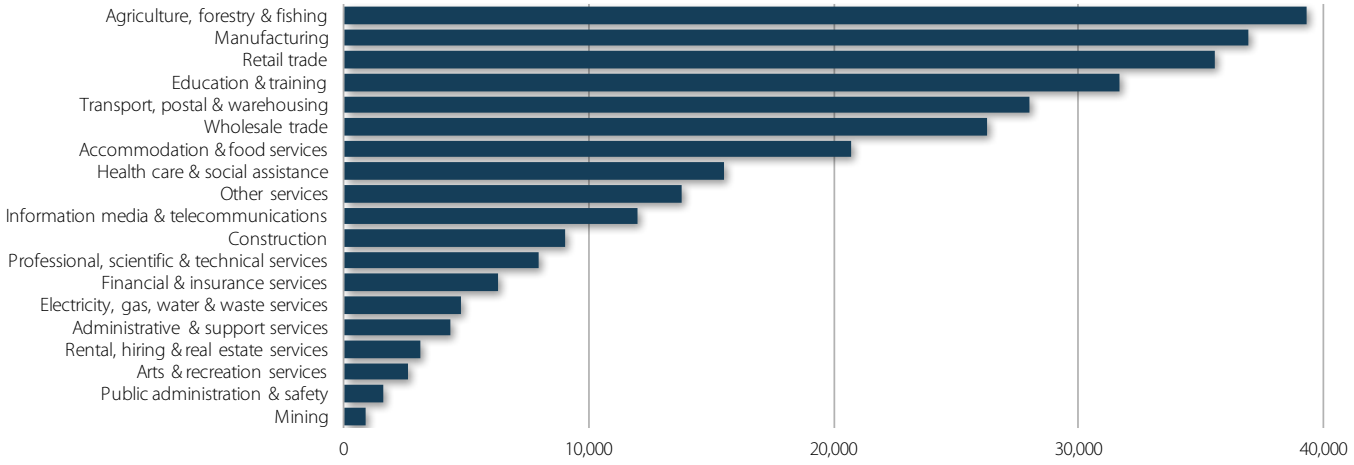
The associated floor space and land requirements for the additional employment impacts to other industries across the Toowoomba LGA (i.e. not location specific and outside of the TTP) are detailed in the following table and graph.

Table 7: Estimated Indirect Floor Area and Land Requirements Supported by TTP

Sector	Indicative floor area per employee (m^2)	Implied land area per employee (m^2)	Estimated additional floor area generated (ha)	Estimated additional land area required (ha)
Agriculture, Forestry and Fishing	150	375	3.9	9.8
Mining	150	375	0.1	0.2
Manufacturing	170	567	3.7	12.3
Electricity, Gas, Water and Waste Services	150	375	0.5	1.2
Construction	150	375	0.9	2.3
Wholesale Trade	170	340	2.6	5.2
Retail Trade	70	140	3.6	7.1
Accommodation and Food Services	90	180	2.1	4.1
Transport, Postal and Warehousing	220	733	2.8	9.3
Information Media and Telecommunications	150	375	1.2	3.0
Financial and Insurance Services	50	100	0.6	1.3
Rental, Hiring and Real Estate Services	50	100	0.3	0.6
Professional, Scientific and Technical Services	50	100	0.8	1.6
Administrative and Support Services	50	100	0.4	0.9
Public Administration and Safety	50	100	0.2	0.3
Education and Training	150	375	3.2	7.9
Health Care and Social Assistance	60	120	1.6	3.1
Arts and Recreation Services	90	180	0.3	0.5
Other Services	70	140	1.4	2.8
Total			**30.0**	**73.6**

Estimated External Floor Space (m2) Supported by Toowoomba Technology Park

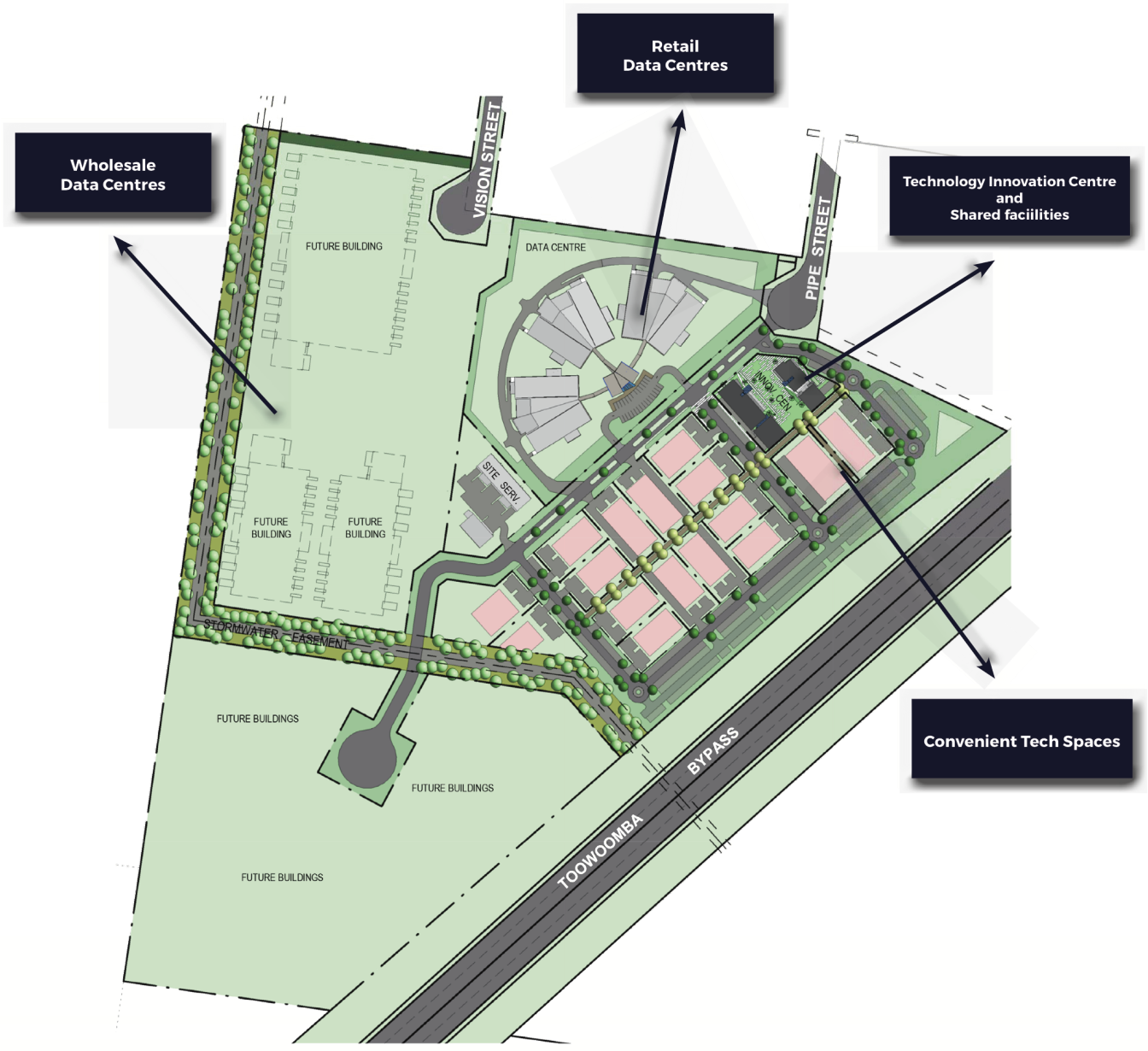
Toowoomba LGA



In summary, even excluding the significant benefits flowing from the development / construction phase, the economic activity generated from the annual business turnover associated with the proposed Toowoomba Technology Park development are substantial and therefore, based on the conservative assumptions presented in this analysis, the net economic impact from the project on the Toowoomba LGA is highly positive.

APPENDIX A: TECHNOLOGY PARK CONCEPT PLAN

Toowoomba Technology Park Site Plan



MASTER SITE PLAN - COLOUR

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APPENDIX B: DISAGGREGATED INDUSTRY IMPACTS

Table B1: Estimated Annual Disaggregated Industry Impacts of Toowoomba Technology Park

Industry sector	Industry output ($ million)	Total employment (FTEs)
Sheep, Grains, Beef and Dairy Cattle	12.7	45.9
Poultry and Other Livestock	4.8	11.2
Other Agriculture	68.6	192.1
Aquaculture	0.0	0.0
Forestry and Logging	1.6	3.1
Fishing, hunting and trapping	0.0	0.0
Agriculture, Forestry and Fishing Support Services	231.3	365.5
Coal mining	1.4	1.5
Oil and gas extraction	3.2	1.3
Iron Ore Mining	0.0	0.0
Non Ferrous Metal Ore Mining	0.3	0.3
Non Metallic Mineral Mining	0.9	1.6
Exploration and Mining Support Services	0.9	1.5
Meat and Meat Product Manufacturing	18.2	35.2
Processed Seafood Manufacturing	0.0	0.0
Dairy Product Manufacturing	4.2	6.3
Fruit and Vegetable Product Manufacturing	0.8	2.1
Oils and Fats Manufacturing	0.4	0.4
Grain Mill and Cereal Product Manufacturing	1.7	2.7
Bakery Product Manufacturing	3.6	24.7
Sugar and Confectionery Manufacturing	1.4	2.1
Other Food Product Manufacturing	7.5	16.9
Soft Drinks, Cordials and Syrup Manufacturing	1.0	1.6
Beer Manufacturing	1.2	1.3
Wine, Spirits and Tobacco	0.4	0.9
Textile Manufacturing	0.1	0.3
Tanned Leather, Dressed Fur and Leather Product Manufacturing	0.1	0.1
Textile Product Manufacturing	0.6	3.6
Knitted Product Manufacturing	0.0	0.0
Clothing Manufacturing	0.1	2.2
Footwear Manufacturing	0.0	0.4
Sawmill Product Manufacturing	0.4	1.3
Other Wood Product Manufacturing	0.8	4.0
Pulp, Paper and Paperboard Manufacturing	0.4	0.7
Paper Stationery and Other Converted Paper Product Manufacturing	1.1	3.0
Printing (including the reproduction of recorded media)	0.0	0.2
Petroleum and Coal Product Manufacturing	0.3	0.1
Human Pharmaceutical and Medicinal Product Manufacturing	0.0	0.0
Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.1	0.1
Basic Chemical Manufacturing	5.6	7.3
Cleaning Compounds and Toiletry Preparation Manufacturing	0.5	1.3
Polymer Product Manufacturing	1.7	5.5
Natural Rubber Product Manufacturing	0.0	0.0
Glass and Glass Product Manufacturing	0.6	1.7
Ceramic Product Manufacturing	0.0	0.0
Cement, Lime and Ready-Mixed Concrete Manufacturing	0.7	0.9
Plaster and Concrete Product Manufacturing	0.3	1.0
Other Non-Metallic Mineral Product Manufacturing	0.1	0.8
Iron and Steel Manufacturing	1.7	6.7
Basic Non-Ferrous Metal Manufacturing	1.4	1.3
Forged Iron and Steel Product Manufacturing	0.0	0.0

Table B1: Estimated Annual Disaggregated Industry Impacts of Toowoomba Technology Park

Industry sector	Industry output ($ million)	Total employment (FTEs)
Structural Metal Product Manufacturing	3.2	6.6
Metal Containers and Other Sheet Metal Product manufacturing	0.7	1.7
Other Fabricated Metal Product manufacturing	1.8	4.7
Motor Vehicles and Parts; Other Transport Equipment manufacturing	5.5	19.3
Ships and Boat Manufacturing	1.8	5.4
Railway Rolling Stock Manufacturing	0.5	0.8
Aircraft Manufacturing	0.8	2.1
Professional, Scientific, Computer and Electronic Equipment Manufacturing	40.4	226.0
Electrical Equipment Manufacturing	0.8	3.3
Domestic Appliance Manufacturing	0.2	0.5
Specialised and other Machinery and Equipment Manufacturing	5.9	19.6
Furniture Manufacturing	0.6	4.2
Other Manufactured Products	0.4	2.1
Electricity Generation	7.4	4.6
Electricity Transmission, Distribution, On Selling and Electricity Market Operation	13.1	12.1
Gas Supply	0.5	0.6
Water Supply, Sewerage and Drainage Services	5.8	7.6
Waste Collection, Treatment and Disposal Services	1.5	6.9
Residential Building Construction	3.1	8.4
Non-Residential Building Construction	2.5	3.3
Heavy and Civil Engineering Construction	5.3	4.0
Construction Services	18.4	44.5
Wholesale Trade	53.2	154.4
Retail Trade	57.6	508.1
Accommodation	2.8	20.2
Food and Beverage Services	25.4	210.0
Road Transport	19.2	77.9
Rail Transport	3.7	10.0
Water, Pipeline and Other Transport	1.1	1.8
Air and Space Transport	3.0	5.1
Postal and Courier Pick-up and Delivery Service	3.5	17.3
Transport Support services and storage	10.6	14.9
Publishing (except Internet and Music Publishing)	3.5	13.1
Motion Picture and Sound Recording	0.9	2.7
Broadcasting (except Internet)	4.8	10.1
Internet Publishing and Broadcasting and Services Providers, Websearch Portals and Data Processing Services	334.0	500.5
Telecommunication Services	43.7	51.7
Library and Other Information Services	0.1	0.4
Finance	37.3	55.5
Insurance and Superannuation Funds	20.9	35.3
Auxiliary Finance and Insurance Services	15.3	35.7
Rental and Hiring Services (except Real Estate)	13.5	25.2
Ownership of Dwellings	13.8	0.9
Non-Residential Property Operators and Real Estate Services	24.6	37.2
Professional, Scientific and Technical Services	122.8	443.3
Computer Systems Design and Related Services	7.9	23.7
Employment, Travel Agency and Other Administrative Services	16.7	43.2
Building Cleaning, Pest Control and Other Support Services	4.9	43.5
Public Administration and Regulatory Services	3.8	18.7
Defence	52.6	166.6
Public Order and Safety	2.0	12.9

Table B1: Estimated Annual Disaggregated Industry Impacts of Toowoomba Technology Park		
Industry sector	**Industry output ($ million)**	**Total employment (FTEs)**
Primary and Secondary Education Services (incl Pre-Schools and Special Schools)	14.1	135.2
Technical, Vocational and Tertiary Education Services (incl undergraduate and postgraduate)	11.1	55.1
Arts, Sports, Adult and Other Education Services (incl community education)	1.7	20.7
Health Care Services	21.3	166.1
Residential Care and Social Assistance Services	10.5	93.2
Heritage, Creative and Performing Arts	1.4	9.0
Sports and Recreation	4.3	19.2
Gambling	0.2	0.6
Automotive Repair and Maintenance	9.8	58.7
Other Repair and Maintenance	10.2	54.3
Personal Services	5.6	51.2
Other Services	5.3	32.4
Total	**1,502.3**	**4,384.7**

lawrence consulting

Capability Statement

CONTENTS

BUSINESS DESCRIPTION

Business Information

Business Name:	Lawrence Consulting Economic Research & Analysis
Company Name:	Lawrence Family Investments Pty Ltd trading as Lawrence Consulting Economic Research & Analysis
ABN:	84 114 198 408
Registered Address:	1 Mayes Street Toowoomba QLD 4350
Postal Address:	PO Box 2567 Toowoomba QLD 4350

Contact Details

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Position:	Principal
Phone / Fax:	+61 7 4613 0206
Mobile:	0437 180 566
Email:	reuben@lawrenceconsulting.com.au
Web:	www.lawrenceconsulting.com.au

Vision

Lawrence Consulting aims to become the leading source of economic and business expertise in regional Australia.

Personnel

Reuben Lawrence is the founder and principal of Lawrence Consulting (established 2004), having completed a Bachelor of Economics (Honours) degree from the University of Queensland, Brisbane. Reuben has almost twenty years experience in consulting to and advising government and corporate clients across a wide scope of projects and industries, including mining and resources, agriculture, tourism, construction and aviation.

Reuben has worked with many government and business organisations across Australia, providing consultancy services in the areas of:

- Economic impact analysis;
- Modelling and forecasting;
- Strategy development;
- Economic and corporate publications; and
- Feasibility studies and business planning.

Reuben is also a specialist in the area of regional economic profiling and benchmarking and economic modelling and has developed innovative tools such as the **LocalEconomy** online dashboard and **LocalImpact** economic model.

Reuben was previously employed as Senior Economist with the AEC Group Limited, a professional service firm specialising in economic and business consulting, market research, design and information technology.

Business Services

Lawrence Consulting provides specialised professional services to businesses and government agencies across Australia. We aim to provide our clients with an integrated approach that blends information access, analysis and evaluation.

Lawrence Consulting has significant consultancy experience in undertaking economic and statistical research and analysis and the production of marketable economic reports and related products across a broad range of industries, projects and skill areas.

Economic Consultancy

Lawrence Consulting specialises in economic and industry sector intelligence and analysis. We provide corporate decision makers with objective, actionable assessments of events, trends and forces shaping the competitive environment. Lawrence Consulting provides economic advice across a wide range of issues:

- Market design and analysis: including project feasibility and impact analysis
- Economic impact assessment: measuring how a business, industry or project contributes to economic performance
- Economic development strategy: advising on the design, impact, implementation and evaluation of regional development policies
- Macro and sector forecasting: using the rigorous framework provided by our unique suite of models
- Business and product market: translating economic forecasts into forecasts for key markets and metrics
- Regional analysis: analysing the dynamics of regional economies
- Opportunity and risk assessment: modelling, monitoring and assessing the risks associated with individual economies and sectors
- Business engagement and surveying: design, delivery, collation, analysis and presentation of specific survey instruments for market research purposes
- Model building: creating and maintaining bespoke economic models to meet particular needs

Corporate Design & Publications

Lawrence Consulting provides a full range of services, from discussion of client requirements, through functional specification, design, implementation, testing, documentation, and ongoing support. Specific services include:

- Corporate Identity and Branding
- Economic and Business Publications
- Investment Prospectuses
- Specialised Publications

Regional Analysis & Benchmarking

Lawrence Consulting specialises in analysing the dynamics of regional economies. We provide timely, accurate and authoritative economic and industry data and analysis on a regional basis that can assist business, government and individuals in their decision making process. Key business services include:

- Regional Analysis
- Regional Modelling
- Economic Benchmarks for Local Government

RELEVANT EXPERIENCE

Lawrence Consulting has significant consultancy experience in undertaking economic and statistical research and analysis and the production of marketable economic reports and related products across a broad range of projects and skill areas. Our technical capacity in these areas is demonstrated through the wide scope of work performed, with specific analytical and statistical interpretation skills applied extensively. Key strengths of our organisation are:

- Extensive experience in economic analysis and profiling and associated production of reports and marketing material;
- Experience in undertaking economic impact analysis, feasibility studies, project evaluation and cost benefit analysis across a wide range of industry sectors;
- Experience in producing comprehensive regional economic reports analysing the economic, environmental, demographic and social structures of specified regions;
- Experience in regional economic development strategies and a knowledge of regional economic development theory and practice;
- Extensive experience in conducting employment and training strategies, skills audits and training needs analyses;
- Experience in undertaking complex financial and economic modelling projects;
- Experience in undertaking specific market research through the design, delivery, collation and presentation of survey instruments for various organisations, involving samples of up to 3,000 businesses / individuals;
- Ability to undertake stakeholder consultation to compliment analytical and strategic objectives;
- Experience in the conduct of general research for a diverse group of public and private organisations;
- Experience in extensive data processing of cross sectional and time series databases both for internal and external use;
- Experience in the analysis, presentation, timely completion and dissemination of databases and reports; and
- Ability to support clients beyond normal project completion.

The following sections provide further details of our experience across a range of key skill and competency areas.

Economic Impact Analysis

Lawrence Consulting has significant consultancy experience in undertaking economic impact analyses across various industries and developments. The fundamental construct behind the type of modelling required for economic impacts is an input-output table. Our project team has extensive experience with all aspects of input-output modelling that includes the construction and balancing of input-output tables. Additionally, Lawrence Consulting has developed its own economic input-output model to identify the impact of industry or economic shocks within a defined economy.

Lawrence Consulting's impact studies assess the contribution of a particular sector, company or investment project to the economy as a whole, at a regional, national and sometimes global level. Our economic impact studies typically quantify the total economic impact via four channels:

- Direct impacts - such as the employment, output and fiscal contributions generated by the sector/company itself;
- Indirect impacts - employment and output supported by the sector/company via purchases from its supply chain;
- Induced impacts - employment and output supported by the spending of those employed directly or indirectly by the sector/company; and
- Catalytic or spillover impacts - the extent to which the activities of the relevant sector/company contribute to improved productivity and performance in other sectors of the economy.

As well as providing written reports, we are also experienced in presenting our research to governments, the media and other organisations, and supporting our clients' representations to decision-makers.

Lawrence Consulting also has extensive experience in the analysis of industry structures, particularly through the development of a Gross Regional Product (GRP) model, which estimates the economic contribution of 19 separate industry sectors (and subsequent industry sub-sets) to regional economies across Australia. Lawrence Consulting has completed significant analyses, including feasibility studies, economic impact assessments, industry appraisal and cycle analysis, and economic development strategies specifically for the agricultural, manufacturing, retail, tourism / accommodation, banking, construction, property, transport, health and education industries.
The analysis completed above typically includes:

- Size of the sector;
- Market characteristics (past and future trends);
- Supply and demand analysis;
- Regulatory environment; and
- Growth potential.

Economic Planning & Strategy Development

Economic strategy development is a core business area of Lawrence Consulting. We have strategy development experience at a variety of levels including local, regional, state and sub-national areas. In addition, we have conducted strategy development at the individual firm/project and broad industry sector level.

In addition, Lawrence Consulting also has experience in undertaking major economic audits and statistical profiles of markets and regions for a wide variety of clients involving:

- Audits of key regional economic drivers including business and industry structure, technology, education and training, liveability and infrastructure;

- Analysis of key issues regarding the economy of regions, such as economic diversity, intra- and inter-regional linkages, competitive advantages, economic framework and investment attraction, integration between industry sectors and the identification of domestic and international markets; and

- Detailed census analysis of regions.

Economic & Statistical Profiling

Lawrence Consulting has extensive experience in the compilation and presentation of economic and statistical profiles and publications for various local and regional organisations across Australia

Regional Analysis

As a means of providing timely, accurate and authoritative data and analysis on a regional basis that can assist business, government and individuals in their decision-making process, Lawrence Consulting has the capacity to produce reports on regional economies of any area within Australia and New Zealand. Lawrence Consulting has developed a Gross Regional Product model which can be applied to each region to further assist in evaluating industry performance in each region, along with the performance of the overall regional economy.

Typically, analysis of a region's economy would include the following economic indicators:

- Gross regional product;
- Productivity;
- Industry structure;
- Economic diversity;
- Business investment (including total/average turnover);
- Population;
- Demographic profile;
- Labour market;
- Private consumption and investment;
- Property market;
- Tourism;
- Transport;
- Public investment and other developments; and
- Economic forecasting.

Throughout the analyses, indicators are examined and compared at the Local Government, Regional and State level. Importantly, outlooks are developed from the trends in indicators and with regard to other relevant regional, state, national and international developments. Overall, the reports are used by organisations for planning purposes as well as promoting the region internationally as a place to do business.

Specific recent consultancy experience relating to the production of economic audits and statistical profiles of markets and regions includes:

- City of Parramatta Regional Benchmarking: Comparative Economic Performance Indicators (EPIs);
- City of Knox Economic Profile;
- City of Manningham Economic & Demographic Profile;
- Hurstville/Canterbury/Sutherland Comparative Indicators Study;
- City of Blue Mountains Economic Profile;
- Dubbo LGA Economic and Demographic Profile;
- City of Orange Industry Study;
- Western Downs Economic & Demographic Profile;

- Scenic Rim Economic & Industry Profile;
- Coffs Harbour Economic Profile;
- Clarence Valley Economic Profile; and
- Richmond Valley Economic & Demographic Profile.

Economic Profiles

Lawrence Consulting currently produces a number of regular economic and industry profiles for local governments and regional organisations, including:

- Randwick City Economic & Demographic Profile – Randwick City Council;
- City of Busselton Economic & Demographic Profile – City of Busselton;
- Parramatta: The Facts – Parramatta City Council;
- Bankstown Economic Profile – Bankstown City Council;
- Blacktown City Business & Economic Indicators – Blacktown City Council;
- Canterbury Economic Brief – City of Canterbury;
- Kogarah Economic Profile – Kogarah City Council;
- BizScope Economic Indicators – Hurstville City Council;
- Blue Mountains Economic Brief – Blue Mountains City Council;
- Penrith Economic Brief – Penrith City Council;
- Auburn Economic Profile – Auburn Council;
- Liverpool Economic Profile – Liverpool City Council;
- Macarthur Economic Profile – Macarthur Regional Organisation of Councils (MACROC);
- North Sydney Economic Profile (www.northsydney.net.au) – North Sydney Council;
- Bathurst Regional Profile and Bathurst: Live, Work, Study, Invest & Play – Bathurst Regional Council;
- Coffs Economic Update – Coffs Harbour City Council;
- Clarence Valley Economic Monitor – Clarence Valley Council;
- Bellingen Shire Economic Profile – Bellingen Shire Council;
- Ballina Shire Economic Profile – Ballina Shire Council;
- economic snapshot – Lismore City Council;
- Richmond Valley Economic Brief – Richmond Valley Council;
- Snapshots – Port Macquarie Hastings Council;
- Kempsey & Macleay Valley Economic Brief – Kempsey Shire Council;
- Moree Facts & Figures – Moree Plains Shire Council;
- Lachlan Shire Economic Profile – Lachlan Shire Council;
- Guyra Economic Brief – Guyra Shire Council;
- Tenterfield Facts & Figures and Tenterfield Business & Lifestyle Opportunities – Tenterfield Shire Council;
- Toowoomba Regional Council Economic Brief – Toowoomba Regional Council;
- Scenic Rim Economic Brief – Scenic Rim Regional Council;
- Warwick Economic Brief & Stanthorpe Economic Brief – Southern Downs Regional Council;
- Lockyer Valley Economic & Industry Brief – Lockyer Valley Regional Council;
- Gympie Regional Economic Profile – Gympie Regional Council;
- Bundaberg Region Facts & Figures – Bundaberg Regional Council;
- South Burnett Economic Brief – South Burnett Regional Council;
- North Burnett Economic Profile – North Burnett Regional Council;
- Central Highlands Economic Profile – Central Highlands Development Corporation;
- InvestWest Regional Profile – Western SEQ Regional Organisation of Councils (WestSEQ);
- Murweh Shire Facts & Figures – Murweh Shire Council;
- Diamantina Economic Profile – Diamantina Shire Council; and
- Ipswich – The Facts – Ipswich City Council.

The publications are concise, colourful documents that aim to provide Councils and regional development organisations with:

- Regular economic analysis on a sub-regional level;
- Opportunity to promote regions as a business and economic hub;
- Monitoring of economic movements to provide an indication of current and future business trends;
- An important tool in attracting business investment given its capacity to market the region to both a national and international audience; and
- A suitable medium for communicating business and economic development information to the community.

The publications are produced at varying frequencies – typically, quarterly or bi-annually – and are designed in-house.

Regional Model

Lawrence Consulting specialises in the identification of structural and strategic issues which affect the growth and investment prospects of local economies – in overall, sectoral and regional terms – using quantitative and modelling techniques. Our regional model quantifies the implications of macro and sectoral developments for defined regions across Australia. In addition, Lawrence Consulting has a range of detailed local area economic models, which can be used to analyse in detail the impact of, for example, new investment proposals and local policy initiatives.

Investment Prospectuses

Lawrence Consulting produces brochures and multimedia for marketing and investment purposes for the public and private sector throughout Australia. Typically, these documents provide details on the regional economy, key industries and sectors, competitive advantages of the region and the benefits of living and locating business in the particular area, along with positive comparisons to competing regional centres. These brochures and supplementary materials are used for a variety of purposes including investment / relocation decisions, finance / capital raising and as background for marketing of properties and services.

Lawrence Consulting can also deliver specialised publications for specific industries / purposes (e.g. tourism, annual reports, business plans, etc.) through our outstanding design capabilities and organisational knowledge.

Regional Benchmarking

Lawrence Consulting has extended our capacity to produce critical economic indicators on a local and regional level to prepare a suite of key economic benchmarks for local government areas across Australia. We have developed a set of headline indicators that provide a coherent picture of regional economic performance, based on a sound economic framework, using the best available data:

- Economic growth;
- Regional productivity;
- Employment ratios; and
- Index of economic diversity.

The Economic Benchmarks for Local Government report contains indicators for every Local Government Area (LGA) across Australia, ranking by State and Australian Local Government Classification (ALGC).

Financial & Economic Modelling

Lawrence Consulting has significant expertise in undertaking economic impact assessments, cost benefit analyses and feasibility studies, all of which combine economic concepts with financial evaluation. Examples of assorted modelling tools and software packages developed include:

- Feasibility/Cost-Benefit Analyses;
- Project Evaluation;
- Financial Modelling Tool;
- Budget Scenario Planning Tool;
- Full Cost Pricing Software;
- Two-Part Tariff Cost Effectiveness Evaluation Models;
- Two-Part Tariff Design and Incidence Models;
- Cross Subsidies Evaluation Models; and
- Landfill Costing Software.

Feasibility Studies / Business Cases

Lawrence Consulting has significant project experience in completing numerous feasibility studies for small, medium and large projects, incorporating both cash flow requirements and profit and loss scenarios, along with a number of projects on financial and business planning incorporating the development of a financial model to forecast cash flows and profit and loss scenarios. Lawrence Consulting has a comprehensive range of skills and a proven track record for undertaking feasibility analyses in all disciplines essential to the successful completion of such projects, including the following key tasks:

- Demand and needs assessment;
- Market research and analysis;
- Functional and site assessment, including concept planning;
- Commercial and risk assessment, including financial analysis;
- Project evaluation, including net present value, break-even and scenario analyses;
- Property analysis;
- Cost planning;
- Operational strategies;
- Regulatory requirements;
- Stakeholder consultation;
- Marketing strategies; and
- Professional presentation of reports and project material.

In broad terms, each study completed requires an evaluation of demand, recommendations as to both site planning, design of development options, cost planning, and subsequent financial analysis and feasibility assessment.

Corporate Identity & Branding

Lawrence Consulting has worked with various clients in developing corporate logos and branding through the proliferation of marketing material and media. Branding and strategy can determine the level of success that a company or organisation will have. We recognise that the brand as an entity must deliver its own characteristics to form a singular and cohesive identity.

In servicing the specific design needs of its clients, Lawrence Consulting can assist with:

- Advertising
- Corporate identity design
- Corporate brochure design
- Corporate literature
- Logo design
- Web design
- New media

One of our key services is the design development and delivery of corporate brochures and corporate literature. Our understanding of corporate guidelines and implementation ensures your corporate identity is represented correctly in all literature we produce on your behalf.

From company brochures, annual reports, folders, leaflets, booklets and general corporate literature we provide not only a full design service but also copywriting and photography all of which combine to make very high quality documents.

Public Sector Business Reform & Management Advice

Lawrence Consulting has significant experience in the area of business and management reform having completed a large number of full cost pricing and other related consultancies for over 70 Councils of varying sizes (including commercialised business units) over the past eight years. This has enabled the principal consultant of Lawrence Consulting, specifically Reuben Lawrence, to obtain a thorough knowledge of council operations across the full spectrum of business and regulatory activities as well as local government and commercial accounting standards.

Reuben was also a principal consultant in the development and delivery of the Local Government Association of Queensland (LGAQ) Business Management Assistance Project (BMAP), which was recognised with a Queensland Public Sector Award for improving management and efficiency of council operations throughout Queensland.

The implementation of business reform initiatives has involved the following consultancies:

- Identification and allocation of administrative and corporate overhead costs;
- Implementation of pricing methodologies such as Full Cost Recovery and Full Cost Pricing;
- Commercialisation of business activities / units;
- Identification and calculation of assets, including depreciation, optimisation and contributed assets;
- Determination of appropriate rates of return on capital, involving Weighted Average Cost of Capital (WACC) calculations;
- Identification and measurement of community service obligations and competitive neutrality adjustments;
- Management reporting and accounting structure; and
- Performance measurement and benchmarking, including derivation of Key Performance Indicators (KPIs).

Areas of council operations to which reforms have been applied and which Lawrence Consulting have subsequently developed a thorough comprehension of management and operations include:

- Water and Sewerage Services;
- Waste Management;
- Plant Operations;
- Road Maintenance and Construction;
- Recoverable Works, including Private Works and Main Roads Contract Works;
- Building Certification;
- Quarry Operations;
- Airport Operations;

- Land Development;
- Recreational Facilities, including Swimming Pools;
- Theatres;
- Tourism Activities; and
- Cultural / Community Centre.

Water & Sewerage Pricing Reform

Lawrence Consulting has extensive experience in utilities pricing reform, in particular water, sewerage and waste management, for over 30 Local Councils and other agencies, consistent with COAG water reform initiatives. All of the models developed for assessment by each Council for the evaluation and introduction of two-part water tariffs have revolved around the tariff design requirements outlined in the State Government Guidelines for Evaluation of Introducing and Improving Two-Part Tariffs, although it is important to note that innovative solutions outside of these guidelines may often be required for Councils with special supply and demand characteristics.

The scope of consultancies undertaken regarding pricing reform for utility services includes:

- Cost Effectiveness Evaluation of the Introduction of Two-Part Water Tariffs;
- Two-Part Water Tariff Design;
- Cost Benefit Model of Waterways Projects;
- Review of Water, Sewerage and Trade Waste Charges;
- Public Benefit Assessment of Water, Sewerage and Refuse Services;
- Identification and Measurement of Community Service Obligations for Water and Sewerage;
- Full Cost Pricing of Water and Sewerage Operations;
- Commercialisation of Water and Sewerage Business;
- Incidence Analysis of Two-Part Water Tariff Structures and Sewerage Tariff Structures;
- Identification and Measurement of Water and Sewerage Cross Subsidies;
- Advice on Public Relations Relating to the Implementation of Two-Part Water Tariffs;
- Development of Performance Indicators for Business Activities;
- Review of Pricing Approach – Submission to Department of Local Government and Planning;
- Economic Analysis of Bulk Water Supply Agreements; and
- Econometric Forecasting Model for Water Demand.

The model for evaluating the cost effectiveness of introducing two-part water tariffs incorporated the forecasting of future demand requirements and costings, identification of the net benefits of delaying augmentation infrastructure costs from the installation of water meters and new pricing structures, and the inclusion of sensitivity analysis for model assumptions.

The models developed for the design and incidence analysis of two-part water tariffs have incorporated the design of alternative two-part water tariff structures according to fixed and variable cost structures, the evaluation of impacts on ratepayers and different classes of ratepayers, the linking of tariff structures to full cost pricing requirements, and the inclusion of sensitivity analyses for model assumptions. The impact analyses are designed to provide Council officers and Councillors with the ability to adjust inputs relating to water and sewerage service provision and observe the resulting impacts on each ratepayer or class of ratepayer.

The identification and measurement of water and sewerage cross subsidies involved modelling which calculated, at a minimum, average revenue per unit for each consumer class and water/sewerage scheme and the measurement of the long-run marginal cost of service supply for each class and scheme.

Labour Market Analysis & Skills Audits

Lawrence Consulting has experience in undertaking a large number of skills audits, training needs analysis and other projects involving labour market analysis and research. Typically, these consultancies involve:

- Market research covering expectations of main user groups, identification of key competitors, setting of market share goals and fees structures, identification of niche markets and forecasts of market size;
- Employment and training needs of business, involving detailed interviews with businesses of varying size in each marketplace; and
- Labour market surveys providing detailed information on labour market skills and attitudes.

Market Research & Surveying

Lawrence Consulting has extensive experience in the design, delivery, collation and presentation of specific survey instruments for market research purposes for various organisations, involving samples of up to 6,000 businesses / individuals. Examples of previous surveys undertaken include the following:

- Business confidence and outlook surveys;
- Industry surveys;
- Competitor and market analysis;
- Community attitude surveys;
- Household / consumer surveys;
- Tourism research (visitor, accommodation and attractions);
- Employment and labour market intentions; and
- Skills and training needs.

Stakeholder Consultation

Stakeholder consultation is an integral part of the consultancy work undertaken by Lawrence Consulting specifically for strategy development, market research, feasibility and economic impact assignments. Our knowledge of local issues and our close relationship with many stakeholder groups provides us with the ability to interpret information both analytically and intuitively.

Lawrence Consulting is vastly experienced in handling a broad range of community and stakeholder interactions from focus groups to one-on-one interviews. In addition, our long association with local government ensures we are experienced in working with a diverse range of stakeholders and groups that include community members, business leaders and industry operators.

TECHNICAL CAPACITY

Data Analysis

Lawrence Consulting applies our technical skills in a range of data analysis methods to help our clients develop appropriate economic evidence and to use it in policy making or implementation. We rely on our knowledge of the purpose of the work to deploy our data analysis expertise most effectively.

In addition to our work for policy makers, we assist clients seeking influence over policy in compiling, analysing and using economic evidence. Our skills in data analysis are also useful in making commercial decisions.

Modelling

Our experience in modelling includes:

- Financial models;
- Technical-economic cost models;
- Risk analysis; and
- Econometric, statistical and input-output modelling.

Lawrence Consulting are experts in the design, development and use of econometric models.

Econometric Analysis

We have expertise in all areas of econometric and statistical analysis, including cross-sectional, time-series and panel data analysis. We know how to use econometric tools for efficiency studies, demand forecasting, trend analysis, hypothesis testing and market research.

At the same time, we know that the data analysis that is feasible cannot always answer the relevant questions, and we are careful not to allow data analysis to be pushed beyond what it can reliably deliver.

We have practical experience of applying econometric methods to a range of issues across regulated and unregulated sectors of the economy, and are aware of the impact of data limitations on the reliability of empirical work, and of ways of mitigating that impact.

As well as conducting empirical analysis in particular cases, we can provide advice about the strengths and weaknesses of particular quantitative techniques and their relevance (or lack thereof) to specific real-world questions, and staff training in the use of quantitative techniques.

OTHER INFORMATION

Consultancy Rates

Lawrence Consulting is able to maintain high quality of consultancy advice and end material, whilst delivering outputs to clients at a lower cost structure. Consulting rates are set on a project-by-project basis to ensure clients receive the greatest value depending on the particular budget.

Referees

Mr Andrew Barger
Director Economics and Infrastructure
Queensland Resources Council
Tel: 07 3316 2522

Mr David Frith
Director Industry and Environment
NSW Minerals Council
Tel: 02 9274 1415

Ms Ildi Vukovich
Economic Development Manager
Parramatta City Council
Tel: 02 9806 5552

Mr Cameron Bisley
Manager, Commercial Business & Economic Development
Bundaberg Regional Council
Tel: 07 4130 4003

Quality Assurance

Lawrence Consulting has in place procedure and quality assurance documentation, which meets 3rd party certificate requirements under the Australian Standard ISO 9001:2000.

Insurances

Lawrence Consulting presently holds insurance coverage policy for public liability and professional indemnity as per the details below.

Insurance Details		
	Professional Indemnity	**Public Liability**
Insurer:	CGU Professional Risks Insurance	CGU Insurance
Policy Number:	04MIS0532288	To be advised
Currency Dates (from/to):	15/04/17-15/04/18	18/04/17-18/04/18
Amount of Cover per individual claim and in total:	$1,000,000/$2,000,000	$10,000,000/$10,000,000

Privacy, Confidentiality & Security

Lawrence Consulting assures that confidentiality of client details will be observed and that all materials and data collected will be returned at the conclusion of each project.