

Lincoln University

Strategic Options Assessment

21 July 2016

Commercial in Confidence

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Lincoln-Telford

Glossary

CAGR	Cumulative Annual Growth Rate
COR	Core Operating Revenue
EBITDA	Earnings Before Income Tax Depreciation and Amortisation
EFTS	Equivalent Full Time Students
FMF	Financial Monitoring Framework
FTE	Full time equivalent (refers to staff)
GDP	Gross Domestic Product
Lincoln-Telford Division	Division that provides all Lincoln's sub-degree offerings i.e. level 1 -6 provision. It includes diploma programmes previously provides by Lincoln University as well as previous provision from Telford Rural Polytechnic at Telford and throughout NZ.
ITO	Industry Training Organisations
ITP	Institutes of Technology and Polytechnics
MOE	Ministry of Education
MPI	Ministry for Primary Industries
NZQA	New Zealand Qualifications Authority
P&L	Profit and Loss
PBRF	Performance-based Research Funding
QS	Quacquarelli Symonds
REF	Research Excellence Framework
SAC	Scottish Agricultural College
SRUC	Scotland's Rural College
SUAS	Swedish University of Agricultural Sciences
Sustainability	As defined by TEC's Financial Monitoring Framework: "Sustainability provides a longer-term view, to provide analysis of the financial performance and cost structures of the institution and whether these are enduring
TEC	Tertiary Education Commission
TEI	Tertiary Education Institution
Telford Rural Polytechnic	Telford Rural Polytechnic (acquired by Lincoln)
Telford	Shorthand for the current Lincoln Telford Division
UC Davis	University of California Davis
UK	United Kingdom

US	United States of America
Viability	As defined by TEC's Financial Monitoring Framework: "Viability focusses on the shorter-term financial performance, to enable judgments to be made about the ability, or otherwise, of the institution to meet its financial obligations as they fall due"
Wageningen	Wageningen University and Research Center
YOY	Year Over Year
YTD	Year to Date

1. Executive Summary

The Tertiary Education Commission (TEC), in collaboration with Lincoln University ('Lincoln' or the 'University'), has commissioned EY to prepare a Strategic Options Assessment to inform the decision making process on the strategic direction of the University.

The goal of this engagement is to identify and assess for the TEC and Lincoln University strategic options that maintain or enhance the educational and economic outcomes for the land-based sector within a "normalised" education funding approach.

1.1 Summary of Conclusions and Recommendations

A successful land-based degree and post-degree offering in the South Island needs a university structure over the medium to long term that is able to operate within the same targets set by TEC's Financial Monitoring Framework, and under the same funding/subsidy arrangements as all other universities in New Zealand.

In order for this to happen, the courses and programmes need to provide a high quality, contemporary education and research offering that presents a leading example on the evolving international course delivery arena.

This structure should also support post-degree research and innovation that drives improvements to economic outcomes for NZ. In doing this, the University will also be able to maximise alternate (and in most cases well-established) income streams that support economic development activity.

Lincoln needs to undergo a transformational process that would align its business model with the future requirements of students and researchers and provide cutting edge course delivery platforms that include virtual training relevant to students and industry.

Alongside this, costs for both course/research delivery and services to students and the wider university need to be aligned with accepted practice.

1.1.1 Current and Future State

Through a comprehensive analysis of Lincoln's current and forecast financial position, combined with its current strategy, and execution of that strategy, we have concluded that there is a significant risk to the University and the Crown that Lincoln will not be a financially sustainable and high performing University within the period currently forecast by the University without significant transformation. This is due to several key factors:

- ▶ Lincoln has not generated an operating surplus since 2007. This spans across a historical period of nearly 10 years and predates the Canterbury earthquakes and is also pre and post Lincoln's restructure to a specialist land-based offering and its acquisition of Telford Rural Polytechnic.
- ▶ While the University forecasts a return to an acceptable operating surplus within 10 years, (with recent changes in government funding rates for science and agriculture students further assisting this) the downside risks to the forecasts have both a high probability of occurring and high impact if they do occur.
- ▶ Our research and experience suggests the success of a specialist university is not predicated on growth in student numbers alone, though it is an important determinant of it. However, by nature a specialist university typically has a relatively low number of students compared to other comprehensive universities. Success, therefore, is also predicated on other factors such as alternative sources of funding, collaboration and

innovation. These factors impact university rankings which ultimately attract postgraduate students and serve as an important gauge of quality for international students who do not have domestic market intelligence. Lincoln Hub will likely help Lincoln achieve these success factors but integration and the benefits generated by the Hub are unlikely to be immediate. Lincoln's projections not only assume that the Hub will help attract a high rate of student growth but that a high rate of growth will be achieved prior to construction of new facilities and the Hub moving beyond the initial establishment phase.

- ▶ Lincoln's cost structures remain high and are forecast to grow 3% year on year off that high base. There has been limited past effort to drive efficiency through shared services and leveraging economies of scale. Comprehensive shared services exercises in other universities have led to substantial reductions in costs (i.e. over 20%). There is a current will to re-examine costs and efficiency gains but these have not yet translated into strategy and action. However, we understand that Management has been awaiting the completion of this strategic review which it believes may prove to be the catalyst and mandate to implementing the formal change programme required.
- ▶ Lincoln's plans and strategy are based on it succeeding as a traditional land-based university providing on-campus services. While these remain important goals, there is little focus on preparing the university to succeed in the evolving tertiary education landscape (including blended learning, online learning and shared course offerings). Lincoln's size and sensitivity to small nominal numbers of students changing their decision to attend, makes it particularly vulnerable to these international trends and small shifts in the competition for students.
- ▶ There is limited capability within the University to drive the complex and comprehensive programme of change, even based on the current plans. Staff are already committed to an intensive business as usual programme that is delivering some successes in building up student numbers (though not back to pre-quake levels), as well as better market intelligence. In addition, Lincoln resource is, and will be further, committed to the construction of new facilities and integration of Lincoln Hub. The magnitude of this project and its anticipated impact on Lincoln's operating model will require substantial human resource. There are risks that change programmes, identified current and future projects and business as usual are compromised by a lack of resource and focus.

We find that there is a material value in Lincoln's offering both to the New Zealand tertiary education sector and the New Zealand economy. Lincoln's high level strategy in terms of its positioning in the economic and education landscape is sound and logical. However, the risks outlined above, mean that considerable effort is required to mitigate those risks so to protect and enhance the value to New Zealand.

1.1.2 Options and Recommendations

1.1.2.1 Strategic Options

Across the five options considered (listed in detail in Section 1.4.2), we do not recommend an option of **winding down** a Lincoln-based degree and post degree land-based offering. The contribution to the New Zealand economy, combined with the value of a land-based degree-level offering in the South Island means that any option that does not see this continue in some form would not be favourable. The partnership with the Lincoln Hub is also an important consideration, where agglomeration benefits to the non-University land-based sciences communities would be lost.

We have concerns around the option of Lincoln remaining on its **current trajectory**, or an **enhanced trajectory** that potentially involves shared services. Its current approach, while potentially delivering an acceptable surplus over the medium to long term, exposes Lincoln and the Crown to material educational and financial risks. These may push out the date of sustainability a number of years.

Lincoln is currently highly ranked internationally, in land-based disciplines (in the top 50 to 100 for agriculture), with a wider NZ university ranking of 7th out of 8 (and 373 in the world). These rankings in many respect summarise Lincoln's strengths and weaknesses, with the current trajectory representing a longer term risk of Lincoln failing to keep pace with changes in teaching and course delivery which potentially resulting in Lincoln failing to deliver an internationally competitive quality learning environment for the full range of potential students over the long term. Furthermore, the higher education sector in both developed and developing countries is facing the continuing reality of funding challenges. This suggests that modern universities have to not only be functional within the current funding constraints but also be able to withstand the shocks of any future adjustments.

The **enhanced trajectory** option de-risks the current trajectory through the provision of shared services, and networked learning, but does so at a high transitional cost for the additional benefits it generates over the long term.

Our analysis concludes that an option that involves a more fulsome integration with another University through **integration** represents the lowest risk and highest reward for Lincoln. This is because all options involve significant risk and cost.

All options (even the current trajectory) require Lincoln to deliver a capital development, educational change and a back office/services programme that is unprecedented in Lincoln's history. Given the potential for large sunk transformational costs regardless of the option chosen, Lincoln must assertively explore the option that gives it the highest chance of success.

Within this preferred option it is important to note three key aspects:

1. We note that **integration options that are under the control of Lincoln University will allow the University to fully explore aspects of integration that are important**. These may include the retention of Lincoln's strategic focus around a land-based specialist institution (in the same way UC Davis delivers this), the importance of the Lincoln Hub, as well as options around the retention of Lincoln's identity.
2. **The work programme provides the Lincoln University with options and flexibility**. The recommended work programme in the short term is, in fact, identical whether Lincoln were to adopt the enhanced trajectory or integration. If, through the process of exploring integration through robust, neutral and structured investigation, it was found the risk and reward analysis between the options changed, then Lincoln would be well positioned to move to an alternate option.
3. **The optionality in (2) above does not work in reverse**. We have tested work programmes that explore enhanced trajectory. The critical fault of these work programmes is that if they fail to deliver the right results for Lincoln within the timelines specified in the next steps below, then more work needs to be done over a longer period to fully understand what option will work. Advancing a work programme around integration allows for "off ramps" to enhanced trajectory based on performance and information from partners about opportunities and risks within the same timelines and cost.

Recommended approach: It is therefore recommended that Lincoln begin a process whereby it takes the steps necessary to prepare for integration i.e. building deep structural relationships with

another institution. The actions required to begin an integration process are in fact the same as the actions required for Option 3 the Enhanced Current Trajectory, so there are no disadvantages in starting on this track. Whereas starting on the Option 3 track, without considering integration in future, could lead to advancing relationships with partners for more short term reasons, that may then need to be unpicked if integration was needed later. The commencement of this process allows Lincoln to control discussions and ensure it can meet its strategic educational, economic and financial objectives on its terms. However, this process would still leave Lincoln able to stick with Option 3 an Enhanced Current Trajectory if the savings and benefits that result from this option were greater than anticipated, and the risks did not occur.

This full and complete process affords the Lincoln University and the TEC the confidence that the highest value option is being robustly advanced and refined, and as noted in 3 above, provides a comprehensive suite of analysis and answers around viability and sustainability, in light of their performance, of different levels of strategic integration.

1.1.2.2 Next steps – Overall timing

It is important that Lincoln is well-positioned for their next financial year. Their planning processes are already underway, and a clear indication of the feasibility of the preferred strategic option is critical to finalising budgets and Lincoln providing the Crown with confidence to invest based on its strategic direction.

As such, it is recommended that Lincoln align the development of the integration option with their budgeting process, and that the Vice Chancellor report back by August/September 2016 to Council, and then to the TEC on the:

1. Results of the formal market engagement (referred to in 1.1.2.3 below) - September
2. The set-up of the Governance and programme office (referred to in 1.1.2.5) - August, as the establishment of this function will assist the planning process
3. The full, prioritised work programme for transformation (referred to in 1.1.2.5) - September

These reports and associated actions will ensure that Lincoln is well-positioned to deliver the preferred course of action over the next 18 months and provide a basis for investment in the 2017 year and beyond.

1.1.2.3 Next steps – Formal Strategic Market Sounding

We recommend that the Lincoln Council, with the support of the TEC, begin this process with a formal, structured and transparent market sounding exercise with potential strategic partners. This is a similar process to that adopted in commercial markets. This process will allow the Council and TEC to:

1. Explore the range of potential costs, benefits and opportunities that partnerships around services, course offerings and networked universities could offer Lincoln
2. Identify the potential interest from partners in options and determine with greater certainty the relative costs and benefits of the options from an economic, financial and educational perspective. For example, it will allow the parties to determine the risks to the University's Land and Brand strategic goals from different levels of integration.

This process of identifying interest and opportunities may serve to further refine the integration option. It would also inform the next steps in the process which could potentially be nominated personnel being authorised to enter into formal talks with a given institution, or a wider, more open expressions of interest process.

The process should be focused on universities and other educational institutions. The rationale for this is that the Hub is already providing integration across a range of Lincoln's activities. While Lincoln should continue to advance the opportunities presented by the Hub, it must also look comprehensively at options around structural integration to deliver core teaching and learning business, as well as its research agenda.

The process and the specific steps are discussed in more detail in section 1.6 of this Executive Summary

1.1.2.4 Next steps – Lincoln-Telford Division

We recommend that Lincoln undertake the following:

- ▶ Disestablish the Lincoln-Telford division and consider alternative options programme delivery, staff and any assets . Continuity for existing students will be critical . We note that Lincoln Telford Division has decided not to compete for funding for Level 1 and 2 delivery, so it will no longer be able to provide programmes at this Level. A Level 3 and 4 competitive round is currently underway. This comprises the majority of the Lincoln Telford Division delivery at present. The interplay between the issues of disestablishment/transfer of this Division and the competitive round will need carefully considered.
- ▶ In light of this disestablishment, consider whether Lincoln should retain its sub degree diploma qualifications (i.e. level 5 and 6 qualifications) that existed prior to the Telford acquisition and that were delivered by Lincoln University .. In FY15 this equated to approximately 30 EFTS (approximately 5% of total EFTS at Lincoln-Telford in FY15).
- ▶ Redevelop the Whenua Strategy based on the revised approach, this might include higher level programmes plus research delivered by Lincoln, and partnerships with other providers to deliver training at levels no longer provided by Lincoln University. This should be considered as part of the disestablishment and transfer of programmes described above.

We recommend a separate process commence for Lincoln-Telford Division. While we accept that vertical integration of land-based learning provides some marginal economic benefits to New Zealand, it is not necessarily Lincoln's role to deliver this. Therefore, the retention of Lincoln-Telford Division is only important if it:

1. provides a net financial benefit that ensures Lincoln is viable at a date sooner than it otherwise would be; and
2. provides a compelling level of integration through the current delivery model (i.e. which could not be achieved by any other means) that means Lincoln's wider strategy would be compromised without it.

Based on our analysis we find that neither of these criteria are met and there are many challenges for Lincoln-Telford Division over the next 24 months which are likely to occupy significant amounts of management time and resources, when these may be better committed to address more important and productive issues. For Lincoln to succeed, it must move at speed and minimise distractions from its core strategy. Overall, Lincoln-Telford Division does not provide the contribution the Lincoln Council seeks from it, and it also takes considerable management time and effort. As such, an alternative option for ownership should be looked at for the 2017 year. In doing this, Lincoln could continue to look at how vertical integration can be achieved through partnerships with sub-degree/Industry Training Organisation providers. A partnership with a New Zealand polytechnic or PTE could potentially offer benefits of vertical integration through clearly defined articulation pathways supported by appropriate marketing strategies, while avoiding the financial risks inherent in the ownership and operation of a sub-degree facility.

We note that legislation allows the transfer of functions within polytechnics at any time in the year and as such and provisions are designed to minimise transaction costs, thus the barriers to swift action on Lincoln-Telford Division are limited. The most recent example was the transfer of Aoraki Polytechnic's Dunedin delivery (350 EFTS) to Otago Polytechnic in late 2015 (ahead of the merger of Aoraki and CPIT). This involved the transfer of students, staff, programmes, equipment and facilities and was done over 3-4 months. Continuity for students was a key factor underpinning the transfer.

1.1.2.5 Next steps - Governance, transformation project office and planning

There is some urgency in implementing the transformation process. Changes will need to be built into the 2017 university budget process, the new investment plan for 2017, and reflected in the next stage of the report-back on the build of the new science facilities (prior to decisions on the government capital support of \$100m - currently scheduled for a report back December, with decisions to follow. The government will want to ensure that the investment of \$100m in Lincoln University for the re-build of the science facilities, and as part of Stage 1 of the Lincoln Hub building programme, is protected and the financial sustainability if Lincoln University is critical to that decision). Thus we would expect that Council needs to agree the preferred strategic option, and beginning the planning and implementation phases in the near future.

It is clear from our discussions with the University that the capability to deliver the transformation required is limited. Success for Lincoln requires specialist capability that is singularly focused on delivering the required change. It will not be possible for Lincoln to achieve the change with existing staff (who have other roles and responsibilities) and business as usual resources (including filling current vacancies in the management team).

We recommend that Lincoln sets up a separate and well-resourced transformation programme office to manage these processes. It should use a robust project and programme management approach and processes.

In the first instance, the programme office will be responsible for:

1. Undertaking a detailed programme planning exercise to identify specific actions, costs and resources associated with the chosen strategic options.
2. Prioritising programme actions based on alignment with core strategy, value and ease of implementation
3. Organising and managing the strategic partner engagement process around the integration option using normal commercial processes including:
 - a. Structured market soundings and engagement
 - b. Analysis of feedback from participants
 - c. Assessment of options
 - d. Preparation of support documents (analysis of financial and education positions and potential EOI documents)
 - e. Negotiation support
4. Managing the process around Lincoln-Telford.

We recommend that this programme office is governed by a Council sub-committee in addition to the normal accountability lines. We also suggest some sort of governance oversight group to recognise the Crown interests and investment (especially with the addition of \$100m in new capital) in the change programme as well. This process is similar to that being successfully run by the

University of Canterbury for its recovery strategy – including some large building projects, some change/future proofing projects and moving the University to becoming financially sustainable. At UC the group encompasses a sub-group of the Council, an independent chair and members of the TEC, and Ministry of Education.

Day to day responsibility for the management of the office would sit with the Vice Chancellor.

The proposed governance structure is aimed at providing the VC with the mandate and the flexibility to deliver the programme for his Council, while ensuring that the major stakeholders are appropriately engaged. The approach also ensures the Vice Chancellor is responsible for ensuring the Transformation programme is fully integrated with delivering the business performance improvements/business as usual outside of the major transformation.

1.2 Scope

1.2.1 Defining viability and sustainability

TEC uses a Financial Monitoring Framework (FMF) as a tool for assessing the financial wellbeing of a tertiary institution in New Zealand. The FMF uses a basket of measures that, individually and collectively, have an ability to identify most key facets of a Tertiary Education Institution's (TEI) financial performance on a historical and forecast basis.

Based on the FMF, Lincoln is currently assessed as high risk, and has been for some time.

The implications¹ of this for Lincoln are:

- ▶ While strategy and contribution to the economy are critical parts of the Lincoln question, all New Zealand universities are expected to be financially sustainable.
- ▶ The overall goal is for Lincoln to be funded on the same basis as other universities (no SAC non-recovery and no funding for capital investment). The definitions of viability and sustainability are presented in section 4.

1.2.2 Defining strategic options

This engagement considers a set of strategic options that provides a medium to long term educational, economic and financial solution to Lincoln's ongoing situation. The engagement necessarily considers and evaluates a full suite of options from Lincoln's current trajectory through to a wind down of Lincoln. These options are discussed in more detail later in the Executive Summary.

1.3 Critical issues with the path to sustainability

1.3.1 The importance of land-based tertiary education to New Zealand

Lincoln is one of just two universities with programs aligned to our land-based industries. Lincoln provides these industries with capable people and improves our competitiveness through research and innovation.

Lincoln is the only specialised university in New Zealand, with all other universities offering a comprehensive style of education and research.

¹ The FMF framework is the trigger for the various Crown intervention steps under the Education Act. First there is s195 which is a request for information (this is already in place at LU – it came in in September 2015), the next is an Independent Advisor – which is in – but was done by agreement, rather than under the Act. The final step on the continuum of interventions is a Crown Manager

The ongoing importance of land-based industry to the New Zealand economy has a critical people and innovation aspect. There are ongoing skill shortages in the rural economy that are projected by the Ministry for Primary Industries to continue into the medium to long term.

Growth in the sector, coupled with increased sophistication and the need for higher value add products is projected to require approximately 90,000 additional jobs in the sector with formal post school qualifications by 2025, although many of these are at a sub-degree level.

The need for New Zealand to continue to be internationally competitive and productive in the primary sector is not just a training issue. New Zealand also needs to be world-class in research and innovation to maintain our current position in the world. Lincoln correctly identifies that the pace of change and improvement in land-based industrial productivity is increasing, and being at the forefront of these changes is critical.

Furthermore, there is an ongoing need for Lincoln to leverage and build on its links with industry. It is a general perception that Lincoln has had one of the strongest and most direct links with the industry it supports of all the Universities in New Zealand.

1.3.2 Universities of the Future

Lincoln's plan to reach sustainability in the medium term is largely based on growing traditional catchments using traditional teaching and delivery approaches. It also includes a strong international growth sub-component.

The future of universities is evolving rapidly. Failure to keep pace with what makes a modern university attractive will impact on EFTS growth forecasts (especially, but not exclusively in the highly competitive international student area), as well as university cost structures. Below we summarise some of the key trends that Lincoln will need to respond to:

- ▶ **Increasing Use of Digital Technologies** - Digital technologies will transform the way education is delivered and supported. This technology will not replace universities but learning will be much more tightly integrated with digital tools and approaches and personalised/blended/flipped learning will be the norm. To achieve this will require investment and potentially strategic partnerships that leverage off existing technology. The most recent Cubane Consulting data on university performance (UniForum) for 2015 shows that the funds being spent on Transformational Investment in IT in Australia (which includes investment in capacity, platforms and online courses) has topped AUD \$30m in some institutions and averages over AUD \$8m.
- ▶ **Integration with Industry** - For universities to survive and thrive, they will need to build significantly deeper relationships with industry. Scale and depth of industry based learning and internships, for example, will become increasingly critical as a source of competitive advantage for those universities who have the industry partnerships/pedagogy to do it well. Both the Swedish University of Agricultural Science and Wageningen University for example are instructive in this regard. Both are heavily focused on inter-disciplinary research and commercial partnerships/research and both generate significant funds from such endeavours.
- ▶ **Increasing Global Mobility** - Global mobility will have the following implications for universities:
 - ▶ Future graduates will require a broad intellectual perspective and global awareness.
 - ▶ Employers will be looking for applicants with meaningful connections across local, and even international, networks.

- ▶ Universities will need to provide students opportunities to participate in relevant international exchange programmes and forums with students from around the country and the world.
- ▶ Whilst there will be a greater potential pool of international students on which to draw, there will be less certainty of international student numbers as a wider range of international universities focus on these students. Recruiting international students will increasingly require a reputation for both academic quality, the quality of the student experience, internships and employability.
- ▶ Similarly, as international study becomes more accessible, there is also a greater risk of New Zealand students being drawn to overseas programmes, or NZ programmes with an international component.

Lincoln Hub will assist Lincoln in realising some of the requirements of a successful future university. It should facilitate improved inter-disciplinary research, increase integration with industry, and provide some opportunity for the expansion of the post-graduate research programme. The Hub has the ability to provide a quality and unique experience which will attract high quality academic and research staff, and post-graduate students to Lincoln. through opportunities for both undergraduate and post-graduate students to be involved in applied research in a way that cannot be delivered in a traditional university setting. There is a possibility of some shared services initiatives with other Hub partners, however, coordinating shared services is not a priority for the Hub itself. It is focussed on research. It should provide some new (but shared) research revenue sources to further bolster the strategic objectives of the Hub and Lincoln University.

To meet the demands of becoming a university of the future will require investment. Australian universities are currently investing heavily in digital tools and platforms to assist with learning. Lincoln is a long way behind these universities in terms of its digital strategy and its ability to fund digital change. Its recovery plan has a limited focus on this evolving platform and is focussed on traditional recruitment and course delivery. Lincoln needs to think carefully about the highest value investment in this digital space, given already well-established systems and student channels for accessing these offerings. It is likely partnering through existing platforms represents the highest impact lowest cost approach

1.3.3 Current Trajectory Overview

Lincoln has faced numerous internal and external challenges over the last decade. These include the earthquakes, as well as significant changes in strategic focus prior to adoption of its current land-based university strategy. These challenges have resulted in fluctuations around student and staffing numbers, revenue and costs.

In recent years Lincoln's financial performance has been challenging. Since 2007, Lincoln has reported a deficit in each financial year, with underlying deficit from operating activities increasing during the last three years.

Lincoln's problems are further aggravated by its small size. Lincoln is New Zealand's smallest University and smaller than most of the polytechnics in the country. This affects its operating model, with Lincoln not having the ability to spread its fixed costs over a larger base of revenue-generating students and other activities.

Student numbers, a critical driver of revenue, have been trending downwards over the historical period, declining by over 14% between 2007 and 2015. Part of this decline might be driven by the Christchurch earthquakes, however the trend was starting to decline before this. Year to Date (YTD)

2016 to April has seen an improvement in student numbers. Lincoln has reported a 15%² growth in EFTS for levels 7 and above relative to the same time last year. Although the EFTS growth is unlikely to generate a surplus before abnormals in 2016 it highlights the potential percentage growth that Lincoln can achieve in a given year.

Lincoln is providing almost all back office services in-house and has the highest support staff to student ratio out of all New Zealand universities. Larger institutions are able to leverage their size and spread these costs over a greater number of students. Additionally, the University has the lowest student to academic staff ratio, meaning that, while research revenue per academic staff member is the highest of any NZ University, the total net revenue generated per each academic is on average lower than in the other universities.

The small university cost problem is intensified by Lincoln's land-based university focus. The courses offered are comparatively resource-intensive from both an asset and operating perspective. In addition, the majority of teaching activity is face to face which includes high cost on the farm teaching and is not offset by lower cost delivery approaches including online learning. Government funding rates however, reflect the higher costs of delivering these courses. In addition funding for agriculture based courses has increased significantly in the past couple of years, increasing by 20% in 2015 and a further 16% in 2016 as announced in the recent Budget. The increases are determined through a benchmarking process based on the cost of running comparable courses.

This is not to say that small universities cannot be successful. There are successful niche universities across the world. These universities typically achieve high rankings through quality of research and innovation such as the Swedish University of Agricultural Science. This ranking has a snowballing effect in that it attracts alternative sources of funding, high quality academics and high quality students. Lincoln is ranked in the top 100 agricultural and forestry universities in the world.³ This is a good achievement but what it means is that globally there are numerous alternatives ranked above Lincoln, including a number in Australia. This results in high competition for international students.

Lincoln's challenges have been further exacerbated by the Canterbury earthquakes that affected both the University's physical infrastructure that now requires repair and replacement and improved attractiveness of the University to staff and prospective students. Despite this adversity the students that attend Lincoln are very positive on their experience.

The University's financial position is further affected by its merger with Telford. While the merger appeared to be a profitable proposition in 2011, with Telford enrolling approximately 1,000 EFTS, the numbers have since decreased dramatically and are now below the institution's break-even point of around 800 EFTS. Lincoln's revised projection is for 550 EFTS in 2016 - well below the 800 EFTS that are funded by the TEC. Since 2011 the TECs non-recovery of SAC funding is subsidising the deficit generated by the Lincoln Telford Division. But the TEC Board is re-considering the continuation of this subsidy at present.

Overall, it is clear that Lincoln is a university that is facing material financial challenges. These challenges impact not only on the University's bottom line, but also on staff, student and New Zealand's wider economic outcomes.

² SAC Funded EFTS, noting as well, that this was off the back of a poor 2015 result, emphasising the importance of year on year growth.

³ Ranked by Quacquarelli Symonds

1.3.4 Impacts of Current Trajectory

The recent qualification reform activities have resulted in change management costs, but have also better aligned both the course offering and the cost base with Lincoln’s strategic vision. This reform was a necessary part of Lincoln’s turnaround.

A new Vice Chancellor and Chancellor, and other management changes (including all members of the senior management team resigning) over the last 12 months have provided the institution with a stronger sense of a mandate for the bold changes required to bring the University back to sustainability.

A new Vice Chancellor who joined in March 2016 has a vision and a mandate for change and has started to propose and implement changes to Lincoln’s strategic direction and operating model.

The current trajectory is based on Lincoln’s 10-year financial projection that has the following key financials and metrics.

Table 1: Summary financials and metrics

Summary financials and metrics			
\$m	2015A	2020F	2024F
Revenue	110	9(2)(b)(ii) and 9(2)(j) of the OIA	
Operating expenses	110		
EBITDA	0		
Operating surplus	(6)		
EFTS	2935		
Headcount	716		
EBITDA margin	0.1%		
Operating surplus margin	-5.7%		
Academic staff to student ratio	10.9		

Source: Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm

9(2)(b)(ii) and 9(2)(j) of the OIA

1.3.5 Core risks to the forecasts and education outcomes

1.3.5.1 EFTS Growth

There are several risks associated with the EFTS growth assumptions:

- ▶ Forecast growth in revenue is a reversal from the last two-year trend where revenue declined by 4% and a five-year trend where revenue grew by 0.2%. The historical decline in

revenue is primarily driven by a reduction in student numbers, which can be traced back to 2007 and accelerated following the Canterbury earthquakes.

- ▶ Projected growth in student numbers is 9(2)(b)(ii) and 9(2)(j) of the OIA [REDACTED] other universities are projecting 1.5% to 2% growth and the Ministry of Education (MOE) is projecting EFTS decline across New Zealand up to 2019). 9(2)(b)(ii) and 9(2)(j) of the OIA [REDACTED] This is exacerbated by the lack of growth in international fee-paying university enrolments in New Zealand, which has remained relatively flat over the last 7 to 8 year period.⁴ Lincoln is facing a unique challenge of needing to entice international students to study in a university focused on land-based disciplines in a static market.
- ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA [REDACTED]
- ▶ Compounding growth (which is accentuated as growth rates increase) will impact financials if results differ from what were projected in one year of the forecast.
- ▶ Overall, the current trajectory strategy is interlinked with the assumption of the Lincoln Hub attracting talent to the University from both international and domestic markets. There are significant uncertainties associated with how some benefits such as growth in under graduate EFTS will be realised and the timeframe for realisation of these benefits.

Lincoln's strategies to mitigate these risks are limited. 9(2)(b)(ii) and 9(2)(j) of the OIA [REDACTED]

[REDACTED] This suggests the costs from any downside risk are particularly high. Educational outcomes and other considerations relating to this option are provided in the body of the report.

1.3.5.2 Subsidiaries and Lincoln-Telford Division

Lincoln is currently undergoing a review of its subsidiaries, and due to respective engagement timings, we have not had access to the review. This review is particularly focused on the property joint venture, farms and Lincoln Hospitality Ltd.

In 2011, Lincoln merged with Telford Rural Polytechnic to form the Lincoln-Telford Division. All subsidiaries and the Division present a risk to Lincoln if they:

1. do not deliver a financial result that maintains or accelerates Lincoln's path to sustainability; and
2. are not totally aligned with Lincoln's core strategic objectives; and
3. partnerships and other collaborative structures other than ownership offer a potentially lower risk outcome, even where subsidiary is critical to the strategy.

The Lincoln-Telford Division appears to fail to satisfy any of the criteria above. Information presented to us suggests Lincoln-Telford Division needs an EFTS number of around 800 to break even. Current numbers are well below this and show no indication of increasing to the break-even

⁴ We note that while percentage growth targets need to be contextualised with small nominal numbers of students, it is important to acknowledge this impact works both ways,

level. As such, the retention of Lincoln-Telford Division is almost certainly impacting on Lincoln's path to viability.

Moreover, while the potential strategic benefits of vertical integration both from a student stair casing and industry cohesion perspective are understood, the evidence presented in terms of benefits for Lincoln are limited. Extremely small numbers of students move from Lincoln-Telford Division to Lincoln University (for example, in 2015 only three EFTS transitioned from Lincoln-Telford Division to a Lincoln degree level course). There also seems to be no strategic benefit to Lincoln or the New Zealand economy through Lincoln's ownership of Lincoln-Telford Division, when compared to other options to achieving vertical integration.

1.3.5.3 Capability and capacity

Lincoln has made considerable gains in its non-academic functions in recent years. These include improved marketing and student attraction as well as some rationalisation in the finance and HR areas. While such gains have been positive, Lincoln ultimately operates from a small non-academic staff base where marginal improvements to, and maintenance of, business as usual is a core focus. It is highly unlikely (and acknowledged across many of those we have talked to in the University) the step changes required to deliver Lincoln's forecast results can be achieved with current resources and expertise.

In addition cultural and behavioural change is needed across the organisation. Lincoln needs to challenge its current processes and ways of thinking and needs to shift minds towards future ways of working. Robin Pollard is focused on driving change in this area.

1.3.5.4 Focus on priorities and strategy execution

Linked with the points above, success in transforming the university from its current state into a viable, high performing institution requires a clear and undistracted focus on the execution of the strategy. Expectations of staff to deliver business as usual, plus academic and process transformation, plus large physical works projects, as well as service reviews (this engagement, the Subsidiaries Review, the Lincoln-Telford Division investigation etc) are significant and present a material risk to both business as usual and transformation.

De-risking Lincoln's path to sustainability through alignment of capability with strategy, combined with a singular focus on those activities that are contributing to Lincoln's turnaround is critical.

1.3.6 Conclusions

Based on the FMF, Lincoln is assessed as high risk, and has been for some time. Moreover, while its strategic direction potentially positions it well to recover in terms of the types of teaching and courses it presently provides, it remains at high risk from an increasingly diverse set of delivery models for tertiary education. This may impact on its long term international and domestic attractiveness for students.

The current Lincoln path to sustainability, while possible, contains a variety of risks which have both a high probability of occurring, and a high impact if they occur. The effect of these risks, if they materialise, will be to delay sustainability progressively and impact on educational (and therefore economic) outcomes.

We consider that the majority of these risks can be addressed through the strategic options available to the Lincoln University Council and the TEC.

1.4 Strategic options

1.4.1 Purpose

Given the findings on the current state, the TEC and Lincoln University need to determine the strategic direction that would allow Lincoln to achieve high quality educational and economic outcomes within the constraints of the TEC funding system. The following section outlines the strategic options that are available to the University.

1.4.2 Options

Five strategic options have been identified, representing a range of potential pathways for Lincoln:

- ▶ **Option 1: Do Nothing.** Maintaining the current state represents the “do nothing” scenario, under which Lincoln does not introduce any of the planned changes contained within its strategies which will impact performance. In essence, this option is a step back from Lincoln’s current operating intentions and strategy.
- ▶ **Option 2: Current Trajectory** - This option reflects the realisation of Lincoln’s current and proposed transformational processes including the re-evaluation of the strategic direction of the University in terms of its reformation from a comprehensive institution to a niche university specialising in land-based disciplines.
- ▶ **Option 3: Enhanced Current Trajectory** - building on the Current Trajectory option and utilising similar assumptions around the investment strategy for Lincoln Hub, the University undertakes steps to de-risk its emphasis on the growth in student numbers by identifying further efficiencies within the system and making investments to achieve these.
- ▶ **Option 4: Integration** - for the purposes of this report, this option is considered on a continuum, starting from separate business unit of another institution to a full integration⁵. Under all scenarios on this continuum it is assumed that Lincoln’s current campus continues to be used to deliver land-based courses.
- ▶ **Option 5: Managed Wind Down** - a decision is made to discontinue course offerings and perform research at Lincoln. This option entails a sale and/or disposal of all Lincoln assets, however due to the high economic value of land-based education to the primary sector and the wider economy it is assumed that Lincoln’s courses would be offered by another provider, however at a new location.

1.5 Preferred approach⁶

A detailed qualitative and quantitative assessment of the options has been undertaken using a range of criteria including financial, educational and economic outcomes. Each option was evaluated against the criteria listed below based on the extent to which the option is expected to perform against each of the respective evaluation criteria (with red representing poor performance and dark green excellent performance).

The assessment can be summarised as follows:

Assessment Criteria	Option 1	Option 2	Option 3	Option 4	Option 5
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⁵ Whereby one of the institutions under consideration is incorporated into another institution, ceasing to exist as a legal entity

⁶ This approach is further detailed in Section 7.3

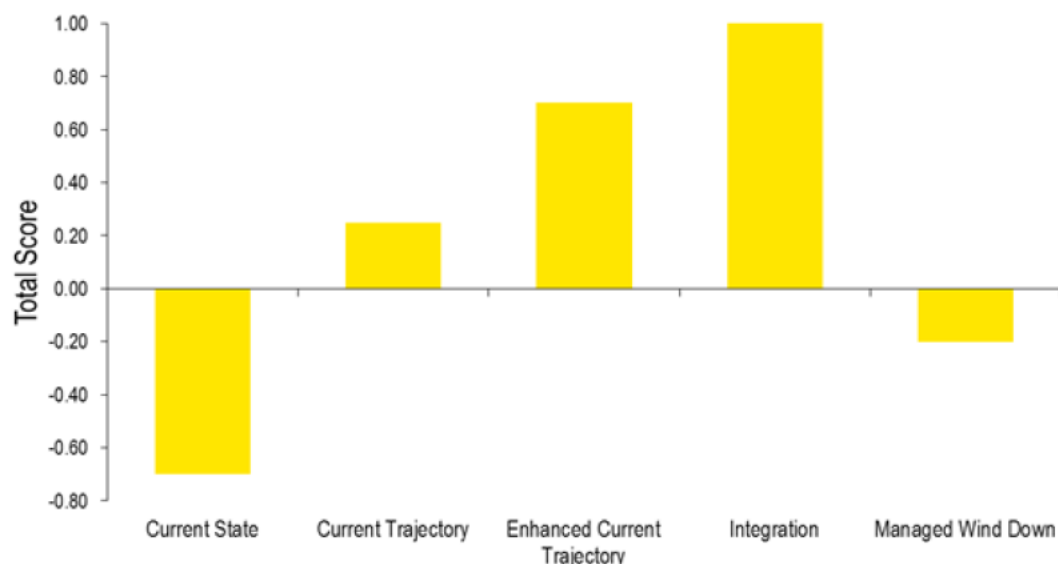
1.	Break even (year)					
2.	Surplus (\$m)					
3.	Required investment					
4.	Educational outcomes					
5.	Lincoln's identity					
6.	Ability to maintain value to the New Zealand economy through Lincoln's strategy					
7.	Ability to integrate internationally and domestically					
8.	Ability to execute wider strategy including the Hub					
9.	Level playing field between universities					
Option 1 - Current State		Option 4 - Integration				
Option 2 - Current Trajectory		Option 5 - Managed Wind Down				
Option 3 - Enhanced Current Trajectory						

This unweighted/unprioritised assessment clearly shows the current state and a university wind down are poor performers across both qualitative and quantitative measures. It also assessed that the current trajectory has materially poor financial outcomes in comparison with options 3 and 4, especially considering the high costs of change across the options. Options 3 and 4 are the highest performers with option 4 offering the highest chance of financial success, while option 3 is differentiated on identity and independent strategy grounds.

Clearly, however, not all criteria are of equal importance, so a weighted and scored multicriteria (MCA) evaluation was undertaken. The weightings are explained in detail in section 12, but were more heavily prioritised towards financial metrics, given the core goal of this engagement is to look at Strategic Options that achieve the long-term sustainability of a land-based offering at Lincoln.

The table below displays the aggregate MCA scores with the weighting scores applied to the relevant criteria. The higher the total score, the better an individual option has performed within the chosen parameters.

Aggregate MCA scores



In terms of financial impact and risks, the following table summarises the strategic options:

Strategic Option	Financial Sustainability			Risk Assessment	Scale of change
	Short term	Medium term	Long term		
Current State	No	No	No	●	Limited - in the short term. No likely to be effective in medium to long term
Current Trajectory	No	No	Yes	●	Significant - base programme still involves major infrastructure investments and improvements to services and course delivery
Enhanced Current Trajectory	No	Yes	Yes	●	Significant - Cost of implementing and required capabilities pose major challenge. Major dependencies of key assumptions remain.
Integration	No	Yes	Yes	●	Significant - Cost of implementing and required capabilities pose major challenge.
Managed Wind Down	No	No	No	●	Challenging - Significant potential economic with limited positive financial impact

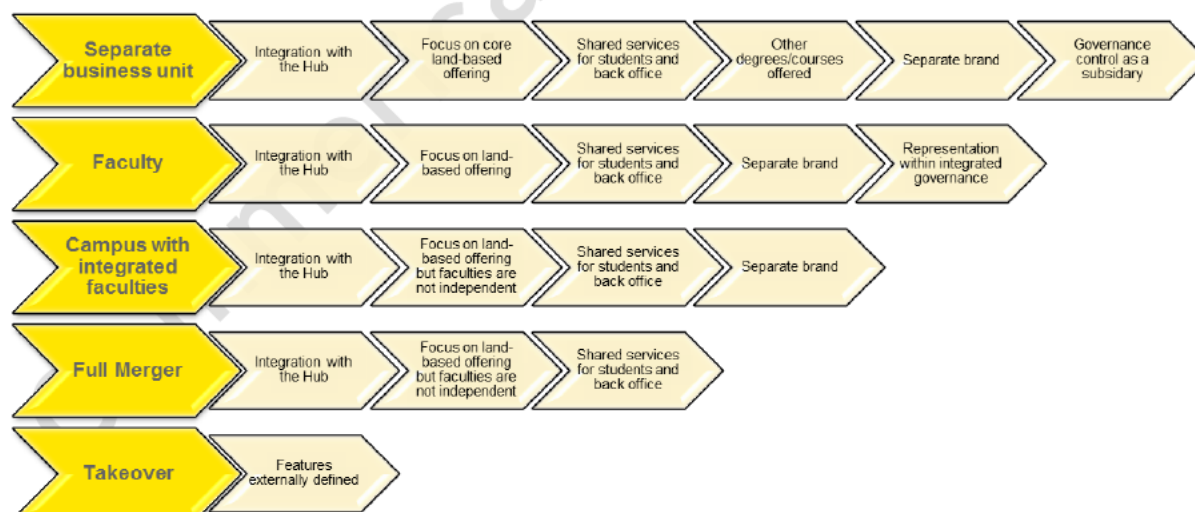
We do not recommend the option of **winding down** a Lincoln-based degree and post degree land-based offering. The contribution to the New Zealand economy, combined with the value of a land-based degree-level offering in the South Island mean that any option that does not see this continue in some form would not be favourable. The partnership with the Lincoln Hub is also an important consideration, where agglomeration benefits to the non-University land-based sciences communities would be lost.

At this stage we have concerns around the option of Lincoln remaining on its **current trajectory**, or an enhanced trajectory that potentially involves shared services. The University's current approach, while potentially delivering an acceptable surplus over the medium to long term, exposes Lincoln and the Crown to material educational and financial risks. These may push out the date of viability a number of years, and also potentially result in Lincoln failing to deliver an internationally competitive quality learning environment for the full range of potential students. Furthermore, the higher education sector in both developed and developing countries is facing the continuing reality of funding challenges. This suggests that modern universities have to not only be functional within the current funding constraints but also be able to withstand the shocks of any future adjustments.

The **enhanced trajectory** option de-risks the current trajectory through the provision of shared services, and networked learning, but does so at a high transitional cost for the additional benefits it generates over the long term.

Our analysis concludes that an option that involves a more fulsome integration with another University through **integration** represents the lowest risk and highest reward for Lincoln. This is because all options involve significant risk and cost. It is critical to note that within the Integration option there are a range of different approaches as shown in the diagram below:

Range of Integration Options



All options (even their current trajectory) require Lincoln to deliver a capital development, educational change and back office/services programme that is unprecedented in their history. Given the potential for large sunk transformational costs regardless of the option chosen, Lincoln must assertively explore the option that gives it the highest chance of success.

1.5.1 Maintaining the things that are important to Lincoln

It is critical to note, as we do in detail later in this report, that there are a range of options within the integration option. Lincoln will have significant flexibility to explore the approach that works best for it and Lincoln's strategic objectives. In particular, there is considerable latitude for Lincoln to maintain its identity and also its strategic direction specialising in land-based tertiary education.

In moving to undertake analysis of an integration now, Lincoln maintains a high degree of control over its destiny, while exploring structures that will ensure the things that are important to it over the long term can be maintained, or even enhanced.

1.5.2 The integration work programme provides Lincoln with optionality and flexibility

Our recommendation is based on an assessment of Lincoln's strategic options at this point in time. Each of these options is, however, dynamic and is not only influenced by EFTS growth, but also the value proposition that Lincoln presents to potential partners, and what those partners can offer Lincoln in return.

We have consciously designed the next steps of this process to provide optionality for Lincoln and the TEC should the balance of risks and benefits change in the course of advancing the integration option. Critically, the actions required to begin a integration process are in fact the same as the actions required for Option 3 the Enhanced Current Trajectory, so there are no disadvantages in starting on this track. Whereas starting on the Option 3 track, without considering an integration in future, could lead to entering relationships with partners for more short term reasons, that may then need to be unpicked if a integration was needed later. The commencement of this process allows Lincoln to control discussions and ensure it can meet its strategic educational, economic and financial objectives on its terms. However, this process would still leave Lincoln able to stick with Option 3 an Enhanced Current Trajectory if the savings and benefits result from this option were greater than anticipated, and the risks did not occur.

Within the recommended option, the following three key features are critical:

▶ **Strategic planning**

It's often difficult to accomplish anything without a plan. A strategic plan helps determine where to allocate time, human resource, and money. Key components of strategic planning include:

- ▶ Identify what's important
- ▶ Define what must be achieved
- ▶ Determine who is accountable
- ▶ Review how you are performing relative to plan

▶ **Focus on achievement of strategic goals**

Once the Strategic Goals have been identified through the Strategic Planning phase, it is critical to for Lincoln to not only implement these, but also move at speed and take a decisive approach to reduce, or eliminate, focus on the parts of its business that are not central to the achievement of its strategic goals. Lincoln-Telford is the most significant example of the mismatch between focus and strategic outcomes.

▶ **Two different programmes - business as usual and transformation**

We do not consider that any option will succeed if Lincoln's transformation is not given a singular focus and dedicated resource, with the capability to drive change. At the same time, Lincoln also needs to deliver its business as usual (including incremental improvements to this) in an efficient

and competent manner. The two programmes need to be separate but integrated via a clear governance structure and dedicated programme management resource.

1.6 Recommended programme and next steps

1.6.1.1 Market sounding

We recommend that the Lincoln Council, in conjunction with the TEC, begins this process with a supported market sounding exercise with potential strategic partners (i.e. in advance of any EOI process). This sounding process will allow the Council and TEC to identify the potential interest from partners in both options and determine with greater certainty the relative costs and benefits of the options from an economic, financial and educational perspective. For example, it will allow the parties to determine the risks to the University's Land and Brand strategic goals from different levels of integration.

A structured and disciplined engagement will enable Lincoln to make progress on the Integration option quickly and with certainty. Critically, a structured process achieves a number of key objectives:

- ▶ Lincoln is able to get information around appetite and viable options
- ▶ Lincoln is able to communicate what is important to it and allows potential partners to test and adapt their own thinking
- ▶ A formal and structured process is a signal of intent and commitment to a process. Other parties are more likely to reciprocate and invest time and effort compared to informal discussions
- ▶ The exchange of ideas will inform all parties and lead to ideas and options evolving throughout the process.

A structured and appropriately resourced (e.g. the inclusion of independent support) processes can ensure neutrality and remove conflicts. The scope can be both domestic and international, and can include parties other than universities, though we note that the Hub and the integration opportunities already being pursued there, mean that universities should be the key focus as one of the key challenges for Lincoln is student management systems and modernising teaching and learning..

In the first instance Lincoln should have some initial structured market sounding discussions with a range of potential partners. The purpose of this is to gauge interest, and develop an understanding of Lincoln's needs, and the potential benefits other partners can offer. This then allows the formal EOI process to be developed as a subsequent stage.

The process would involve the following:

- ▶ Prepare a market engagement document, outlining scope of discussion, the value of Lincoln, current state, challenges and its strategic objectives of the process. This should fully discuss Lincoln's unique value proposition to potential partners.
- ▶ Prepare a market engagement plan. This should include:
 - A resource and team plan - it is particularly important that each discussion is resourced with the right people (VC, probity, confidentiality provisions, technical support e.g. legal and financial) and that there is continuity between each discussion (i.e. the same team undertake each discussion)
 - The full range of consultation targets

- Appropriate authorisations, delegations and restrictions – it is critical to a proper process that only authorised parties discuss the proposition in a structured environment and with the right support
- A complete and integrated probity plan
- The engagement script
- Appropriate introductory processes – these are critical to ensuring counterparties treat the engagement with levels of resource and commitment commensurate to what Lincoln will put in

These processes and approach apply to both the initial stage (to ensure that it is part of an effective management structure of the process) and the more formal stages that come subsequently. As the process develops beyond this initial approach, Lincoln would move progressively into more formal engagements, documentation and market information. A useful early initiative would be for Lincoln to develop market information and documentation. This initiative means Lincoln can provide a consistent and controlled release of information to all parties, instead of having multiple Vendor Due Diligence teams absorbing Lincoln resources as they seek information

1.6.1.2 Lincoln-Lincoln-Telford Division

We recommend a separate process commence for the Lincoln-Telford Division. While we accept that vertical integration of land-based learning does provide some marginal economic benefits to New Zealand, it is not necessarily Lincoln's role to deliver this. Therefore, the retention of Lincoln-Telford Division is only important if it:

1. Provides a net financial benefit that ensures Lincoln is viable at a date sooner than it otherwise would be; and
2. Provides a compelling level of integration through direct provision (i.e. could not be achieved by any other means) that means Lincoln's wider strategy would be compromised without it.

Based on our analysis to date we find that neither of these criteria are met and there are many challenges for Lincoln-Telford Division over the next 24 months which are likely to occupy significant amounts of management time and resources, when these may be better committed to address more important and productive issues. For Lincoln to succeed, it must move at speed and minimise distractions from its core strategy. Overall, Lincoln-Telford Division does not provide the contribution the Lincoln Council seeks from it and an alternative option for ownership should be looked at for the 2017 year. In doing this, Lincoln could continue to look at how vertical integration can be achieved through partnerships with sub-degree/ITO providers.

1.6.1.3 Governance, transformation project office and planning

There is some urgency in implementing the transformation process. Changes will need to be built into the 2017 university budget process, the new investment plan for 2017, and reflected in the next stage of the report-back on the build of the new science facilities (prior to decisions on the government capital support of \$100m – currently scheduled for December). Thus we would expect that Council needs to agree the preferred strategic option, and beginning the planning and implementation phases.

It is clear from our discussions with the University that the capability to deliver the transformation required is limited. Success for Lincoln requires specialist capability that is singularly focused on delivering the required change. It will not be possible for Lincoln to achieve the change with existing

staff (who have other roles and responsibilities) and business as usual resources (including filling current vacancies in the management team.

We recommend that Lincoln sets up a transformation programme office to manage these processes. It should use a robust project and programme management approach and processes.

In the first instance, the programme office will be responsible for:

1. Undertaking a detailed programme planning exercise to identify specific actions, costs and resources associated with the chosen strategic options.
2. Prioritising programme actions based on alignment with core strategy, value and ease of implementation
3. Organising and managing the strategic partner engagement process around the integration option using normal commercial processes including:
 - a. Structured market soundings and engagement
 - b. Analysis of feedback from participants
 - c. Assessment of options
 - d. Preparation of support documents (analysis of financial and education positions and potential EOI documents)
 - e. Negotiation support
 - f. Obtaining expert advice e.g. probity advice, legal and financial advice
 - g. Developing probity policies and ensuring that they are enacted
 - h. Undertaking a Due Diligence review on Lincoln to ensure that this information is available to all potential partners, to minimise the disruption of numerous due diligence processes

Managing the process around the transfer of the Lincoln-Telford We recommend that this programme office is governed by a Council sub-committee in addition to the normal accountability lines. We also suggest some sort of Governance Oversight Group to recognise the Crown interests and investment (especially with the addition of \$100m in new capital) in the change programme as well. This process is similar to that being successfully run by the University of Canterbury for its recovery strategy - including some large building projects and some change/future proofing projects. At UC the group encompasses a sub-group of the Council, an independent chair and members of the TEC, and Ministry of Education.

Day to day responsibility for the management of the office would sit with the Vice Chancellor.

The proposed governance structure is aimed at providing the VC with the mandate and the flexibility to deliver the programme for his Council, while ensuring that the major stakeholders are appropriately represented at Steering Group level. The approach also ensures the Vice Chancellor is responsible for ensuring the Transformation programme is fully integrated with delivering the business performance improvements/business as usual outside of the major transformation.

2. Introduction, Goal and Scope

EY has been commissioned to undertake a Strategic Options Assessment for Lincoln University. This Strategic Options Assessment follows on from a number of years where Lincoln has faced challenges around student numbers, physical infrastructure, strategic direction and staffing. These challenges have been both internal and external to the university (i.e. the Canterbury earthquakes).

The Analysis comes at a point in advance of a decision on significant investment in the Lincoln campus. Both the Lincoln Council and the TEC want confidence over whether Lincoln University's strategy and long term plans will deliver a financially sustainable university over the long term that meets the needs of modern students and delivers skills, expertise and intellectual property critical to the long term benefit of the New Zealand economy.

If the current strategy is assessed as failing to meet those goals, the Council and the TEC wish to understand and assess what strategic options are available to better deliver the outcomes sought.

The goal of this engagement is to furnish the TEC and Lincoln University with strategic options that maintain or enhance the educational and economic outcomes for the land-based sector within a "normal" education funding approach.

2.1 Background

Lincoln is New Zealand's specialist land-based university. For more than 135 years, Lincoln has focused on improving New Zealand's land-based knowledge, wealth and productivity.

2.1.1 Financials

In recent year's Lincoln's operating surplus has been negative. The last assessment under the TEC FMF indicated that Lincoln was at high risk. This has been the case for several years. The operating deficit at the end of 2015 was \$6m, not including the partial payment of the insurance settlement. The deficit has substantially improved from September forecasts due to a cost reduction programme and the impact of some one-off items (e.g. bad debt write-off, earthquake and Hub project costs).

At present, Lincoln is delivering fewer EFTS than provided for in its Investment Plan. As part of the support for Lincoln as it recovers from the earthquakes, the TEC Board has decided not to recover the additional funding in 2015. This subsidy is estimated to be around \$4m in the 2015 financial year. This arrangement has been in place since 2011, but it is reviewed by the TEC Board as part of the normal Investment Plan process and is planned to be discontinued by 2018.

Lincoln sought a consent to borrow \$5m from the Secretary of Education in October 2015 to assist it with managing its cashflow, which was forecast to be tight in the latter months of 2015 until student fee payments are received in early 2016. This facility was put in place, but Lincoln chose not to access this money and the facility expired.

In September 2015 the Chief Executive of the TEC used his powers under section 195B of the Education Act 1989 to gather further financial information and analysis from Lincoln in order to understand the current financial issues facing the organisation. There is an ongoing requirement on Lincoln University for detailed monthly reporting to the TEC on financials and EFTS.

Lincoln and the TEC appointed an Independent Advisor (funded by the TEC) to monitor Lincoln's financial situation and advise the TEC and the Secretary of Education on risk and performance, as well as to act as an advisor to the Management and Council of Lincoln. This arrangement is in place until August 2017. It is the first time since TEC's inception that it had to intervene into a university.

The Independent Advisor has produced a detailed report for Lincoln and the TEC dated 2 December 2015 setting out a plan of action needed to continue to manage expenditure and suggesting to

undertake further analysis in various areas of the operation of the University.

2.1.2 Reporting and Modelling

As part of the work of undertaken in partnership with the University and the Independent Advisor, financial reporting has been improved, a cost management programme put in place, and a 2016 budget agreed that significantly improves the financial position of Lincoln, based on cost reductions and an improvement in student numbers. Year to date student numbers have improved on prior year. At May 2016 student numbers have increased by 15% for graduate and post graduate levels relative to the prior year.

A 10 year financial model has also been developed that provides projections of Lincoln's financial standing into the future This is also required as part of the Treasury Better Business Case framework for the Project Business Case - as outlined above. The 10 year model indicates

[REDACTED] 9(2)(b)
[REDACTED] (ii) and
[REDACTED] 9(2)(b)
[REDACTED] the OIA
[REDACTED]
[REDACTED]

The domestic student number forecasts are significantly higher than the MOE projections for the sector. However, Lincoln is a small and specialized university so growth patterns are different from other universities. Achieving this student growth will require Lincoln to keep increasing international student numbers, and attract domestic students to choose agriculture courses (rather than other subject areas) and choose to study at Lincoln, rather than at other universities offering related programmes.

Lincoln is in the process of finalising this 10 year model and considering the risks associated with the strategy embedded in the model (in particular, sensitivity of the operating surplus/deficit to the variations in student growth assumptions and rebuild costs), lower growth scenarios have been modelled, but work the mitigation strategies yields only limited impacts. The University may have to employ more extensive measures to address the financial issues if these lower growth scenarios are realised.

This is not only an essential part of good governance to have strategies in place to manage risks, but it is also a critical part of the Project Business Case requirements for Government to formally sign-off on the capital support for redevelopment.

On February 29, 2016, a new Vice Chancellor joined Lincoln. He has a vision and a mandate for change and has started to propose and implement changes to Lincoln's strategic direction and operating model.

2.1.3 Earthquake

The University suffered significant damage as a result of the Canterbury earthquakes. In 2014, Lincoln submitted a business case for government funding for the redevelopment of its science facilities. Government agreed in principle to provide capital funding of \$100m for the redevelopment (as part of the Lincoln Hub programme), in addition to \$7.5m granted immediately to fund initial steps of the redevelopment project. A key part of the rationale for this capital investment is the important contribution that Lincoln makes to the primary sector. Confirmation, and payment, of the funding is contingent on producing a Detailed Project Business Case for the facilities, to be developed in conjunction with AgResearch. The final part of this is now scheduled to be completed and submitted to Ministers for decision in December 2016, after a period of significant delays.

2.1.4 The Hub

In conjunction with the above, the Lincoln Hub partners submitted a Programme Business Case setting out the establishment plans, governance arrangements and roles and functions for the Lincoln Hub in December 2015. This has been approved by Ministers, although not yet publicly announced.

2.2 Scope and process

As noted above, the goal of the Strategic Options Assessment is to inform the TEC and the Lincoln Council on approaches available to advance the achievement of financial, educational and industrial goals for the University. The agreed Terms of Reference is included in this report as Appendix E but includes the following key points:

- ▶ A Discovery Phase including a detailed assessment of the information currently available. This assessment informed the University and the TEC as to whether they have sufficient information to understand the extent of the University's challenges and make a clear decision on a preferred way forward.
- ▶ A Post Discovery Phase that included:
 - a comprehensive assessment of Lincoln's ability to achieve its financial, educational and industrial goals; and
 - identification and assessment of alternative strategic options.

Critical to the scope is the fact that the review encompassed financial, educational, and industry considerations. This review provided balance between what is best for the student, the wider tertiary education sector and the New Zealand economy. To assist this, the review was required to cover the **Requirements of the University of the Future with a land-based specialty**. This included identification of future state key capability requirements of universities which was based on a collaboration of existing EY research of university practices and trends globally and included agricultural specialist institutions. It also considered **Lincoln's contribution to the primary and education sector and economy in New Zealand**. This included consideration of policy objectives for the sectors, recent changes in the sectors, future skill supply and demand issues, government policy implications for the primary and education sector and Lincoln's role in relation to other providers of education and research within the sector.

2.2.1 Process

2.2.1.1 Partnering with Lincoln and the TEC

The Strategic Options Assessment was done in a partnership between Lincoln, the TEC and EY. Lincoln has provided a comprehensive suite of documents to assist with the process. The documents that formed the basis of this assessment are provided in 0. In addition, over 25 interviews were conducted with Lincoln staff including, academic staff (at all levels), and professional staff across marketing, finance, information and student support, research leads and Lincoln senior management.

A full list of those consulted is attached as Appendix B.

Throughout the process both the Lincoln University Council and a Steering Committee made up of the Council, University management, the TEC and the Independent advisor oversaw thinking and outputs. This ensured the review was kept up to date with the latest developments around the Hub

and initiatives/thinking associated with the new Chancellor, Vice Chancellor, and post enrolment analysis.

2.2.1.2 Discovery process

The strategic options analysis relied on a variety of information and analysis. To avoid duplication of work, the first step was to undertake a discovery process. This process involved the project team collating existing documentation and analysis that was available.

EY combined documentation collated during the discovery process with existing EY research and publications such as EY's 'University of the Future' study⁷.

2.2.1.3 Post Discovery Phase

Based on the assessment made at the end of the Discovery Phase as to whether additional information was required or further analysis was necessary, the project team had a mandate to undertake additional work. The Terms of Reference only included a broad outline of potential scope items for each component of work, shown in Appendix E . The full extent of scope was only determined at the end of the Discovery Phase.

⁷ For the full report go to
[http://www.ey.com/Publication/vwLUAssets/University_of_the_future/\\$FILE/University_of_the_future_2012.pdf?bcsi_scan_01d939382f6c0b14=0&bcsi_scan_filename=University_of_the_future_2012.pdf](http://www.ey.com/Publication/vwLUAssets/University_of_the_future/$FILE/University_of_the_future_2012.pdf?bcsi_scan_01d939382f6c0b14=0&bcsi_scan_filename=University_of_the_future_2012.pdf)

3. Results from the Discovery Phase

Key findings:

- ▶ The information gained via the Discovery Process was sufficient to conduct a comprehensive assessment of both Lincoln's current approach and assess the impact of alternative strategic options
- ▶ There were gaps in the information available but our assessment of the strategic options would not be materially affected by the University and the TEC spending more time and resources to close those gaps

A Discovery Phase report was presented to the Lincoln University Council on 19 April 2016. The report was discussed and accepted at the Council meeting.

The purpose of the assessment presented in this report was to determine what further analysis was required to undertake the following:

- ▶ Requirements of the University of the Future with a land-based specialty. This included identification of future state key capability requirements of universities which drew on existing EY research on university practices, global trends and other agricultural specialist institutions.
- ▶ Capability assessment and future outlook for Lincoln. This included an assessment of Lincoln's capability and capacity based on a collation of existing evidence e.g. recent internal and external reviews, combined with a self-assessment undertaken by Lincoln University, and any further assessment that was needed to address gaps in knowledge and understanding. The output could then be compared with future state capability requirements to identify potential gaps that Lincoln may need to consider.
- ▶ Strategic options analysis for Lincoln. An assessment of the range of options for Lincoln that have the potential to:
 - deliver financial sustainability
 - future proof its operating model against the changing landscape of universities
 - improve efficiency in back-office services
 - increase research revenue, and
 - improve the attractiveness of Lincoln for both domestic and international students.
- ▶ Lincoln's contribution to the primary and education sector and economy in New Zealand. This included consideration of policy objectives for the sectors, recent changes in the sectors, future skill supply and demand issues, government policy implications for the primary and education sector and Lincoln's role in relation to other providers of education and research within the sector.

The Summary of Discovery Findings is listed in Appendix D . Overall, the conclusion was that the information was sufficient to explore strategic options. The following sections of the report provide analysis and assessment of Lincoln's strategic options.

4. Defining Viability and Sustainability

Key findings:

- ▶ While the contribution to the economy is a critical part of the Lincoln question, the bottom line is the achievement of a financially sustainable university as a fundamental requirement
- ▶ The overall goal is for Lincoln to meet the sustainability requirements of the TEC's FMF

Before analysing Lincoln's financial sustainability, it is important to discuss what is financial viability and sustainability in the tertiary education sector in New Zealand. An overview of the tertiary funding model is included in Appendix C.

4.1 TEC's Financial Monitoring Framework

The TEC uses a FMF as a tool for assessing the financial wellbeing of a tertiary institution in New Zealand. The FMF uses a basket of measures that, individually and collectively, have an ability to identify most key facets of a TEI's financial performance and provides a score for each measure.

The FMF combines measures into two categories: viability and sustainability which are assessed over historical and future periods. These are discussed further below:

- ▶ Viability focuses on the shorter-term financial performance, to enable judgments to be made about the ability, or otherwise, of the institution to meet its financial obligations as they fall due. The measures include earnings, liquidity, cash flow and short-term debt servicing.
- ▶ Sustainability provides a longer-term view, to provide analysis of the financial performance and cost structures of the institution, and whether these are enduring. The measures within this dimension look at the balance sheet structure, return on assets, the longer-term picture presented by the viability measures, and a key revenue driver measure which looks at whether TEIs are achieving the Student Achievement Component (SAC) funding delivery close to levels as agreed with the TEC.

These measures are assessed on both historical (prior year audited accounts) and forecast data (current year budget and two subsequent years). The scores from this framework are used to provide a risk grading for the institution.

Institutions with a high risk grading, which Lincoln is currently graded at, are required to provide financial information more frequently and the TEC will more rigorously review this information.

4.2 Vertical versus horizontal equity

The tertiary education monitoring framework is based on a combination of both a horizontal and vertical equity principle, whereby:

- Student subsidy rates are differentiated on types of course based partly on the delivery cost of the courses (vertical equity)
- the financial performance measurements for tertiary institutions, after differential student rates are applied are set by the FMF and are the same for each institution (horizontal equity).

Cabinet has provided for a recovery exemption for SAC funding rates to recognize the decreased student numbers following the Canterbury earthquakes, and the need to maintain capacity, while

repairing the campus, and building student numbers. This has applied to Lincoln and Canterbury Universities, and to the local polytechnic. These types of exemptions are very rare and reflect the extraordinary circumstances Canterbury institutions faced after the earthquakes. Furthermore, Government has provided capital support to all these entities to assist them with re-building their facilities that were damaged in the earthquakes.

The horizontal equity principle as applied to Lincoln means that its underlying operating model has to be sustainable in the long run as exceptions for unique but financially unsustainable operating models are not eligible for additional funding.

4.3 Time to financial sustainability

Lincoln has recently generated operating deficits based on its current operating structure at current EFTS levels. We understand that Lincoln is projecting to generate an EBITDA margin in excess of 9% in 2021 and an operating surplus in excess of 3% in 2024, two of the key performance measures of sustainability in the FMF. The tolerance that stakeholders have to length of time to sustainability is important.

4.4 Risks to financial sustainability

As Lincoln's financial sustainability is built up on a number of forward-looking assumptions, there are inherent risks (both upward and downward) to the projected dates where Lincoln will become financially sustainable based on selected FMF metrics. The more time to sustainability, the higher the volatility of the original projection due to:

- ▶ a greater number of assumptions and therefore risks embedded within these assumptions
- ▶ The compounding effect of growth, which means that next year's growth is assumed to be realized on this year's growth. This has the effect of exaggerating movements when projections are under or over achieved.

5. Current State

Key findings:

- ▶ Lincoln plays a critical role in making New Zealand competitive. It is one of just two universities with programs aligned to our land-based industries - delivering qualified staff and improving our competitiveness through research and innovation
- ▶ The internal and external challenges faced by Lincoln have resulted in both fluctuating student numbers and costs which has made it difficult to quantify the 'real' Lincoln which underpins its future prospects and the risks around its recovery plan
- ▶ From a cost perspective, Lincoln's challenges are common to many small universities - it has the fixed costs of a university but not the scale to absorb such costs.
- ▶ These costs are exacerbated by Lincoln's land-based specialisation and traditional teaching approaches which are both asset intensive and fail to embrace lower cost teaching models such as online, distance delivery and industry based learning.
- ▶ There is a clear correlation between revenue and operating surplus (3% being the TEC target). Historically Lincoln's operating costs have been largely fixed and subject to inflationary pressure. This has meant Lincoln is reliant on revenue growth that is at least as high as operating costs to avoid an increasing operating deficit.
- ▶ While annual reductions in EFTS numbers (due to Earthquakes etc.) have an immediate impact on current year revenue, cumulatively they also have a major impact on the continuing load on a multi-year basis
- ▶ Decisions on Land and Brand (and associated course consolidation) has resulted in a more specialised university but also means that EFTS numbers pre-earthquake (and pre-consolidation) represent a reasonable baseline on which to assess future growth against

5.1 Contribution to economy and industry (Land and Brand)









Lincoln, as a specialist land-based university, fulfils a critical role in the New Zealand economy. It provides training, expertise, research and intellectual property in one of the most important sectors of our economy. While all universities in New Zealand provide important contributions to this sector of the economy, the capability needed at the degree, and post-degree, education levels is only comprehensively serviced by two universities in New Zealand - Lincoln and Massey.

5.2 Economic trends

As highlighted by the Ministry of Primary Industries (MPI) in the table below, primary sector exports totalled \$38 billion in 2014 and are expected to grow by a further 17% by 2019. Of the \$38 billion total, land-based exports were \$35 billion, approximately 90% of the primary sector total.⁸

⁸ Situation and Outlook for Primary Industries, Ministry for Primary Industries, 2015.

Table 2: Export Revenues by Sector (\$ Millions) by Year

YEAR TO 30 JUNE	Actual			Estimate	Forecast			
	2012	2013	2014	2015	2016	2017	2018	2019
 DAIRY	13 659	13 441	18 068	14 174	14 813	16 579	17 451	18 429
 MEAT & WOOL	7 714	7 723	8 093	8 757	8 543	8 826	8 872	8 963
 FORESTRY	4 272	4 478	5 144	4 630	4 696	4 923	5 113	5 332
 SEAFOOD	1 500	1 466	1 427	1 513	1 600	1 658	1 716	1 799
 HORTICULTURE	3 543	3 532	3 786	3 969	4 241	4 449	4 530	4 681
 OTHER	1 441	1 561	1 559	1 960	1 631	1 741	1 747	1 866
 ARABLE	171	223	228	198	200	204	215	230
 TOTAL	32 300	32 425	38 305	35 201	35 725	38 380	39 645	41 300

Source: Situation and Outlook for Primary Industries, Ministry for Primary Industries, 2015

Government considers growth in primary industry of high importance to New Zealand's overall development, both locally and globally, and is undertaking initiatives to support this. Over the coming years, Government is looking to maximise productivity of agricultural and horticultural land while reducing environmental effects. The goal is for the agri-food sector to continue to play a dominant role in New Zealand's economy and grow the value of total exports to 40% of GDP by 2025..

Trends have been identified in the primary industries which have the potential to lead to growth opportunities for New Zealand, namely:

1. growth in global agricultural demand;
2. increase in market segmentation and consumer targeting; and
3. movement towards greater trade liberalisation in agri-food products.

5.3 The importance of growing primary sector capability

Research has shown that the workforce in the agri-food primary industry has a lower level of qualifications than the general workforce⁹. 8.1% of primary industry workers hold a bachelor degree and 2.5% have postgraduate qualification, compared with 16.9% and 8.1% respectively for all other industry workers.

The MPI reported that in 2012 approximately 44% of workers in the primary sector had a post-school qualification. It is expected that this will need to increase to 62% by 2025, which, in conjunction with growth in the sector, means that an additional 55,000 qualified workers will be needed across the horticulture, red meat and wool, arable, dairy and forestry industries, as well as an additional 33,000 in support services¹⁰. The sectors that will require particular focus are horticulture, which will be required to grow from 14,500 qualified workers to 29,400; forestry, which will be required to grow from 18,700 to 33,800; and the support services, which will need an extra 33,300 qualified workers - growing from 57,400 to 90,700.

The increase in qualification requirements is driven by changing and evolving consumer demands; the need to maintain and add value; an increase in automation and the use of robotics; more

⁹ Ibid.

¹⁰ People Powered, Ministry of Primary Industries, June 2014

specialised, sophisticated and larger production units; a growing demand for support services; and the need for transferability of skills across the primary industries. There is also a growing demand for professional skills such as management and business, technical and scientific skills, as signified by the increasing requirement for skilled support services.

5.3.1.1 EFTS subsidy rates

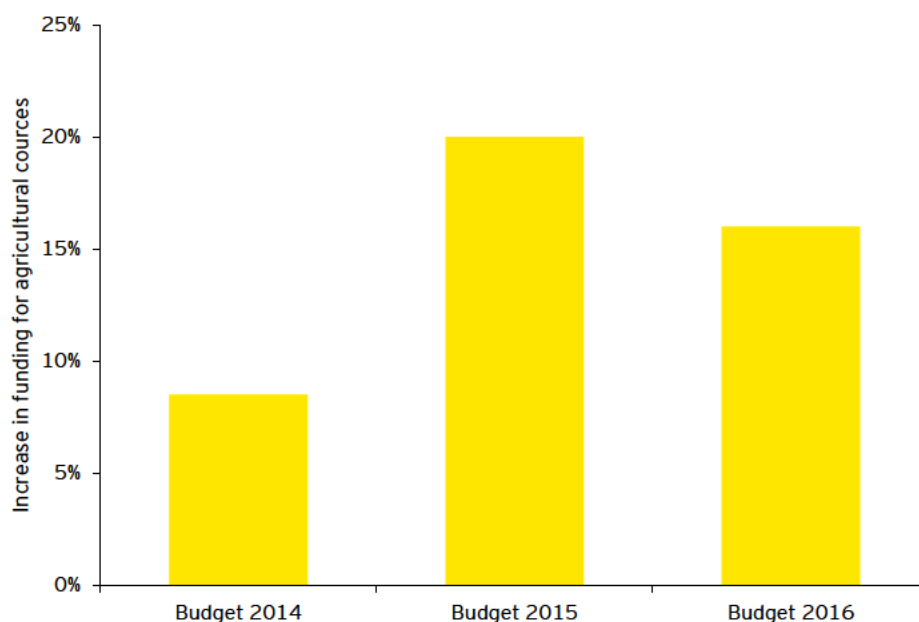
Government aims to make the SAC tuition subsidy funding system broadly neutral across fields and levels of study by aligning the SAC tuition subsidy rates with the relative costs of delivery. This minimises the risk of TEOs being incentivised to oversupply the courses where there is a mismatch between the funding rates and the relative costs of delivery, and to cross-subsidise between different areas of study.

The TEC uses New Zealand Benchmarking Tool data to identify the subject areas and levels of study that are over or under funded on an annual basis. Based on this assessment, the SAC funding rates are then adjusted through the annual Budget.

The last three years saw the funding rates for agriculture courses at degree level or above being adjusted upwards by 9%, 20%, and more recently 16%, year on year as depicted in Figure 1 below.

It is difficult to estimate the exact financial effects of the recent increase on Lincoln's overall financial position. The changes in funding rates do not apply evenly across all agricultural courses, and a 'course-by-course' evaluation is needed to determine the exact figure. At a very high level, these changes are expected to decrease Lincoln's deficit by \$2m on an annual basis.

Figure 1: Increase in funding rates for agriculture at degree level and above



5.4 The importance of growing the performance of land-based industries

Lincoln has a critical role beyond educating a land-based workforce. The growth in global agricultural production is driven primarily by investment in new technologies and increases in land productivity, both based on science and innovation.

Research and innovation improves and intensifies farming practices and technology which results in increased land productivity. For example, the innovation around irrigation has intensified land use which allows for increased agricultural production and land use, and therefore creates higher employment, wages, and returns to capital and land. Land and Brand also projects that global food

consumption will continue to grow in the future, with global consumption of beef and veal increasing by 11% by 2024, dairy consumption increasing by 30% and consumption of sheep will increase by 24%.¹¹

Research and innovation in the sector is critical to New Zealand's ongoing competitiveness as a country. The OECD estimates that our distance to export markets for our primary industries imposes a penalty of up to 10% on our GDP. Leading the world in land-based research and innovation is a critical mean by which we can overcome our distance to market penalties.

5.5 University Strategy

The Lincoln University Strategic Plan 2014-2018 is the most recent university wide strategic plan that we have received. The plan outlines three key strategic themes of Lincoln: 1) restore institutional viability, 2) grow performance of New Zealand's land-based industries, and 3) expand the global influence of New Zealand's land-based expertise.

In addition we have been provided with separate documentation that outlines more specific strategies. The documentation that was provided is outlined in appendix G.

Below we summarise some of our observations from the information provided in relation to selected strategies.

Table 3: Lincoln's strategy in relation to core strategic pillars

Core Strategic Pillars	Description
Industry and 3 rd Party Financing Strategy	Although Lincoln outlines the need to consolidate relationships with key members in the industry, we have not seen a formal strategy regarding who would be the most crucial players in the market and when and how Lincoln would approach them to build and enhance relationships. This is particularly important as one of Lincoln's key strategic themes is to grow the performance of New Zealand's land-based industries, so there needs to be open and consistent communication with the industry and the University.
Information Technology Strategy (Operations)	An IT strategy will allow Lincoln to plan for future changes in technology and how that may affect the University in terms of its day to day operations. An understanding of current state versus a likely future state, which aligns with the overall strategy of the University, will assist with future decisions and current planning in relation to core competencies and priorities, staffing, and budgets (including capital expenditure).
Broader Capital Asset Strategy	TEC Capital Asset Management framework outlines the necessity for a Capital Asset Strategy in order for a tertiary education provider to run effectively. ¹² We understand that Lincoln has a Campus Master Plan which provides the conceptual footprint for an efficient and well-planned campus and a long term capital programme, although we have not seen this document. The capital asset focus in the strategic documents we have seen is based around the Hub. We have observed limited information in relation to the business as usual strategy around the core assets and farm assets.
Back Office/ Support Services Strategy	A Back Office/Support Service strategy would help Lincoln to understand the most cost and time efficient model for Lincoln and would consider issues that might qualitatively determine a structure. For example, it could be better to

¹¹ The Land and the Brand, Agribusiness and Economic Research Unit, September 2015.

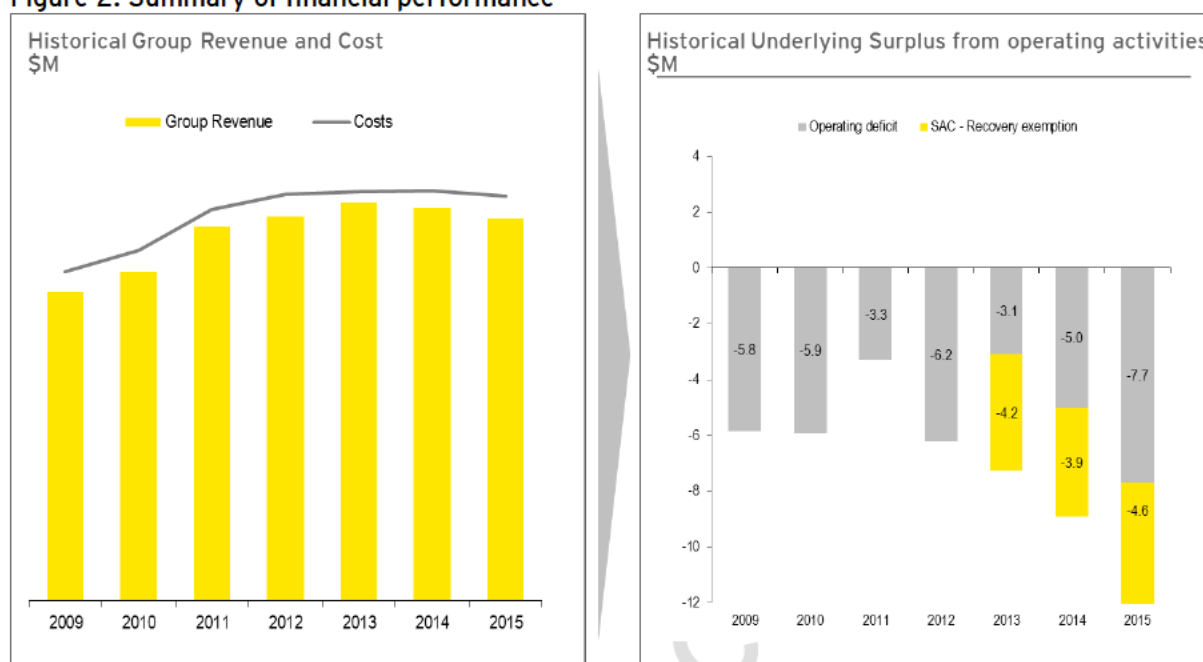
¹² TEC Capital Asset Management Standard, Tertiary Education Commission, January 2011.

	outsource a number of back office functions rather than run them in-house, or it could work better to collaborate with University of Canterbury (UC) or Polytech in an alliance.
Sub degree Courses (Lincoln-Telford Division)	It is outlined in the Lincoln Programme Business Case that there is a need to grow provision through the Lincoln-Telford Division to 800 EFTS. , However we have not observed any documentation that outlines an implementation plan for how Lincoln plans on growing student numbers and further managing the success of the Lincoln-Telford Division.
Pedagogy Strategy	A Pedagogy Strategy would ensure that Lincoln’s delivery of teaching considers options available today and also what will be required in the future based on a range of factors including student demands, industry requirements and technology.
HR/Culture and Capability Strategy	Lincoln would benefit from outlining specific strategies of how capabilities are being developed and retained. A strategy to address items such as culture and capability and consider tools that can measure performance of the strategies implemented.
Research Strategy	Although Lincoln does currently have a Research Strategy in place, we have not seen how a strategy document relating to research income generation. This is of particular importance as one of the key goals of the Research Strategy is to grow research revenue by 5% annually. While there is discussion around partnerships that can be built and managed, there is limited information outlined of how researchers should be approaching partners or any individual measurements of research funding received.
Learning Support Strategy	A Learning Support Strategy would allow Lincoln to have a comprehensive view of all aspects that assist students in their ability to learn, and staff in their ability to research and teach. For example, the use of libraries, common areas, and technology related services - especially for online-based distance learning courses. A strategy would ensure that all of these factors are created and maintained to a high level to allow maximum benefit to students and staff.

5.6 Performance - Financial Summary

In recent years Lincoln's financial performance has been challenging. The figures below show that since 2009 Lincoln has reported a deficit in each financial year.

Figure 2: Summary of financial performance



Source: 2009-2014 - Lincoln Annual Reports, 2015 - Lincoln Management

We make the following comments in relation to Lincoln's financial performance:

- ▶ Lincoln has realised an operating deficit for each of the past seven financial years.
- ▶ In the last three financial years (2013-2015) the size of the operating deficit has increased from \$3.1m in 2013 to \$6.2m in 2015.
- ▶ The TEC has provided Lincoln a SAC recovery exemption up to 2018 (although this is reviewed annually as part of the normal funding allocation process). If the benefit of the SAC recovery exemption is excluded, the size of the loss increases by approximately \$4m per year in 2013-2015 and in 2015 the loss would have amounted to \$12.3m.
- ▶ In addition in recent years there have been a number of one-off costs that have impacted Lincoln P&L including earthquake and Hub costs, redundancy and a VC payout. The above analysis does not normalise these one-offs and although in some cases these were material it does not change the overall picture.
- ▶ Lincoln was making a loss prior to the Canterbury earthquake in 2011. Losses did not immediately increase post the earthquake.
- ▶ In 2011, Lincoln acquired Telford Rural Polytechnic, and approximately 1000 EFTS. This is the driver in the increase in revenue and correspondingly operating costs in that year.

The fact that Lincoln has been consistently making losses suggests its current operating model is not sustainable. The Canterbury earthquake may have impacted Lincoln's long-term sustainability, however significant losses were being incurred prior to this event.

5.6.1 Historical Income Statement

The table below shows the historical Income Statement for Lincoln between 2009 and 2015. The information presented is at a group level. Lincoln does not produce financial information by faculty/division. This limits the analysis to the group level and prevents drivers of profitability to be understood and analysed in more detail.

Table 4: Lincoln University Income Statement

Lincoln University - Income Statement							
NZ(000s)	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Revenue							
Tertiary Education Commission grant	18,383	19,636	28,537	31,957	32,364	28,331	29,329
Tertiary Education Commission PBRF funding	9,139	8,310	8,841	8,641	8,686	9,140	9,830
Tripartite funds	499	821	-	-	-	-	-
Domestic tuition fees	7,168	7,861	8,459	8,924	8,902	8,997	8,759
International tuition fees	11,240	10,910	10,616	10,416	11,333	11,188	11,964
Commercial research contracts	22,034	24,450	26,793	27,192	28,703	28,324	24,703
Trading income	17,799	20,537	23,322	22,293	23,488	25,259	25,068
Trusts/scholarships income	2,154	759	767	761	784	1,299	-
Other	45	1,067	3,204				
Total Income	88,461	94,351	110,539	110,184	114,260	112,538	109,653
Expenditure							
Personnel expenses	51,634	55,226	58,973	59,972	61,196	65,110	63,284
Operating expenses	32,307	34,501	42,805	45,701	45,223	43,379	46,274
Trusts/scholarships expenses	968	1,053	1,110	1,033	1,009	1,066	-
Earthquake costs		807	1,727				
Total Expenditure	84,909	91,587	104,615	106,706	107,428	109,555	109,558
EBITDA	3,552	2,764	5,924	3,478	6,832	2,983	95
Depreciation	8,784	7,925	8,669	9,016	9,138	7,515	7,775
Amortisation of intangible assets	606	742	550	661	769	469	-
Operating Surplus (deficit)	-5,838	-5,903	-3,295	-6,199	-3,075	-5,001	-7,680
Net Interest Income	1,723	1,790	2,087	1,827	1,578	1,563	1,476
Operating Surplus (deficit) after interest	-4,115	-4,113	-1,208	-4,372	-1,497	-3,438	-6,203
Ratios							
Revenue growth		7%	17%	0%	4%	-2%	-3%
Total expenditure growth		8%	14%	2%	1%	2%	0%
Personnel expenses (% of revenue)	58%	59%	53%	54%	54%	58%	58%
Operating expenses (% of revenue)	37%	37%	39%	41%	40%	39%	42%
EBITDA Margin	4%	3%	5%	3%	6%	3%	0%

Source: 2009-2014 Annual reports, 2015 - Lincoln Management

Revenue

- ▶ Revenue has increased from \$88m in 2009 to \$110m in 2015. The majority of the revenue growth was from increased SAC funding (\$11m) and increased trading income (\$7m).
- ▶ Revenue increased by \$14m in 2011 largely due to the acquisition of Telford. Revenue continued to grow in 2012 and 2013 due to increases in SAC funding but in 2014 and 2015 a decline in EFTS resulted in the SAC allocation being reduced, which resulted in revenue declining.
- ▶ In 2013-2015, Lincoln retained approximately \$4m of the SAC funding through a recovery exemption which the TEC are providing up to 2018. Under ordinary circumstances, this funding would have been recovered by the TEC due to under delivery of EFTS.
- ▶ Research contract revenue declined sharply in 2015 decreasing from \$28.3m in 2014 to \$24.7m. This was the main driver of the decline in revenue in 2015.

Operating expenses and margin

- ▶ Between 2009 and 2014 Lincoln's EBITDA margin ranged between 3% and 6% at an average of 4%, well below the TEC FMF measure of 9%.
- ▶ Lincoln's operating expenses have grown in line with revenue. The increase in EFTS post the acquisition of Telford does not appear to have provided significant scale efficiencies that translated through to margin improvement.
- ▶ Personnel expenses make up 58% of revenue and are the key cost line for Lincoln.

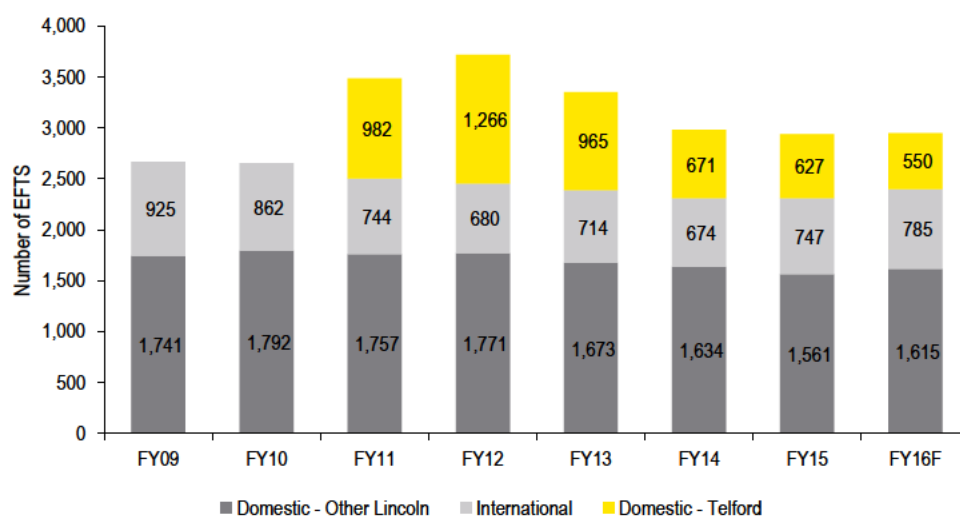
- ▶ More recently and particularly since the appointment of the independent financial monitor at Lincoln, Lincoln have realised some cost savings and the growth rate of operating expenses has reduced. Despite this work, EBITDA declined to from \$3m in 2014 to \$95k in 2015.
- ▶ Between 2013 and 2015 as Lincoln's revenue declined, the university reduced the rate of growth in expenses. Expenses grew by approximately 2% over this period which reflects the cost out work undertaken in quarter three of the 2015.

In years where Lincoln's revenue increased, operating costs increased at the same rate as revenue and in years where revenue did not grow, operating costs continued to increase eroding margins. A cost base that largely consists of personnel expenses will continue to grow with inflation which suggests in simplistic terms that to maintain margin, either revenue has to increase or the number of personnel employed has to decrease.

5.7 Performance - Student volumes/EFTS

The figure below¹³ shows Lincoln EFTS over the past 7 years and FY16 Forecast which is split between Lincoln-Telford, domestic and international EFTS.

Figure 3: Lincoln/Lincoln-Telford Equivalent Full Time Student volumes



We make the following comments in relation to Lincoln historical EFTS:

- ▶ Lincoln's EFTS reached a peak of 3,700 following the acquisition of Telford in 2011. EFTS declined to approximately 2,900 at the end of 2015 due to a decline in domestic and international EFTS, particularly Lincoln-Telford Division EFTS which declined by 600 between 2012 and 2015.
- ▶ Lincoln-Telford Division's¹⁴ numbers peaked in 2012 when the TEC funded, as part of the Canterbury recovery, an additional 300 Lincoln-Telford delivered EFTS. This support extended into 2013, with part of this funding used for earthquake recovery and lower volume of EFTS delivered that year. In the following years, the EFTS numbers dropped because Lincoln was not successful in retaining certain levels 1 and 2 students once a

¹³ 2016 EFTS numbers are estimates taken from Lincoln's 10-year model

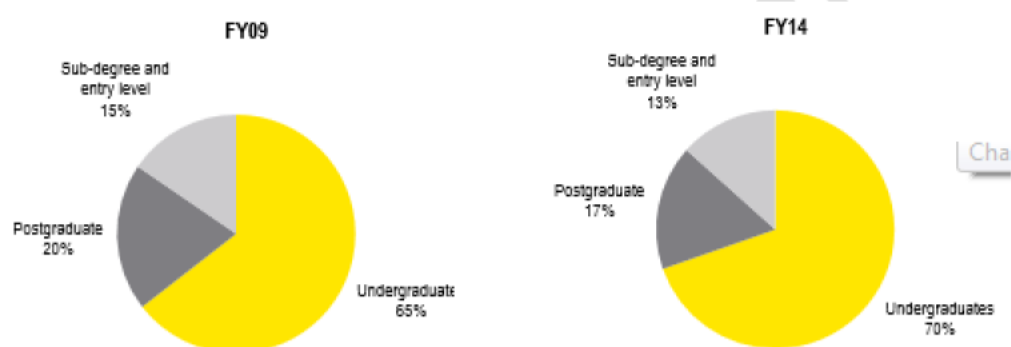
¹⁴ This is a mix of funded and unfunded EFTS

competitive tendering process for delivery of level 1 and 2 courses was introduced in 2013. An explanation of the various course levels is outlined in appendix D.

- ▶ Lincoln's domestic EFTS has been trending downwards over the historical period. Between 2009 and 2012 EFTS remained relatively flat, however since 2012 have declined from 1,771 to 1,561 in 2015, a 12% decline.
- ▶ International EFTS declined from 925 in 2009 to 680 in 2012, a reduction of nearly 30%. Since 2012 EFTS have fluctuated around 700. In 2015 domestic EFTS increased by approximately 10% from the previous year.
- ▶ As most universities have a large fixed cost base in terms of physical assets and people, a decline in EFTS often results in a decline in margins and therefore profitability as revenue generated from each incremental EFTS largely falls through to the bottom line.

Lincoln's EFTS have decreased across international, domestic and Lincoln-Telford groupings in recent years. For a university that has a largely fixed cost base, with inflationary pressures a decline in EFTS will contribute to a significant margin decline. The figure below shows the mix of EFTS by course level excluding Lincoln-Telford EFTS for 2009 and 2014.

Figure 4: Lincoln University EFTS by course level



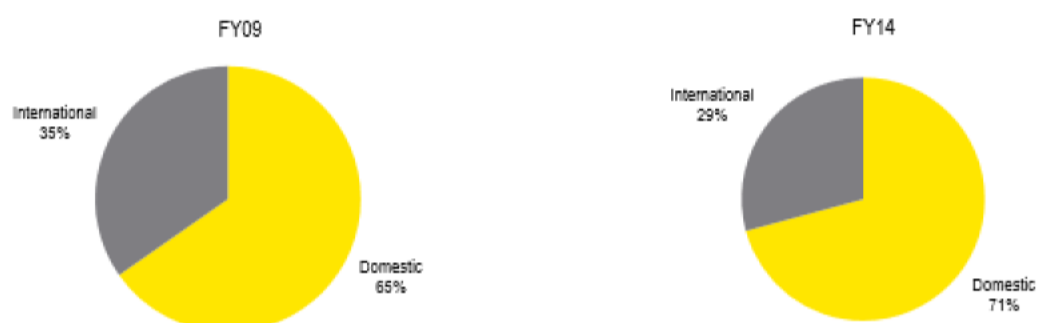
The figure shows that the mix of students remained relatively constant between 2009 and 2014, however the proportion of undergraduate students increased from 65% to 70%.

- ▶ The increased proportion of undergraduate students has been offset by a decline in the percentage of post graduate from 20% to 17%. Given the reduction in total EFTS, postgraduate EFTS dropped from 535 in 2009 to 392 in 2014 with a decline in each of the years.

The figure below compares the mix of international to domestic students between 2009 and 2014.

- ▶ The proportion of international students declined from 35% in 2009 to 29% in 2014.
- ▶ The decline in international students resulted in international tuition fees being nearly flat between 2009 and 2014.

Figure 5: Lincoln University percentage of international and domestic student numbers



5.7.1 Lincoln's size

Lincoln is New Zealand's smallest university, smaller than many of the polytechnics as highlighted in the figure below. In 2014 Lincoln had c2,300 EFTS at level 7 and above (Bachelors degree and above). This compares to the average for other universities of 17,000 EFTS with the smallest university other than Lincoln being Waikato University which has more than 9,000 EFTS. The significantly smaller size of Lincoln makes it unique relative to other universities

Analysis from Australia shows that there is a clear inverse relationship between the size of the university and the performance in key KPI measures as assessed by Cubane. In 2015 none of the universities classed as small were in the top quartile for the key measure of Operations Cost as percentage of Core Operating Revenue (COR) while all of the Universities in the bottom quartile were classed as smaller scale.

Figure 6: Number of EFTS Level 7+ (2014)

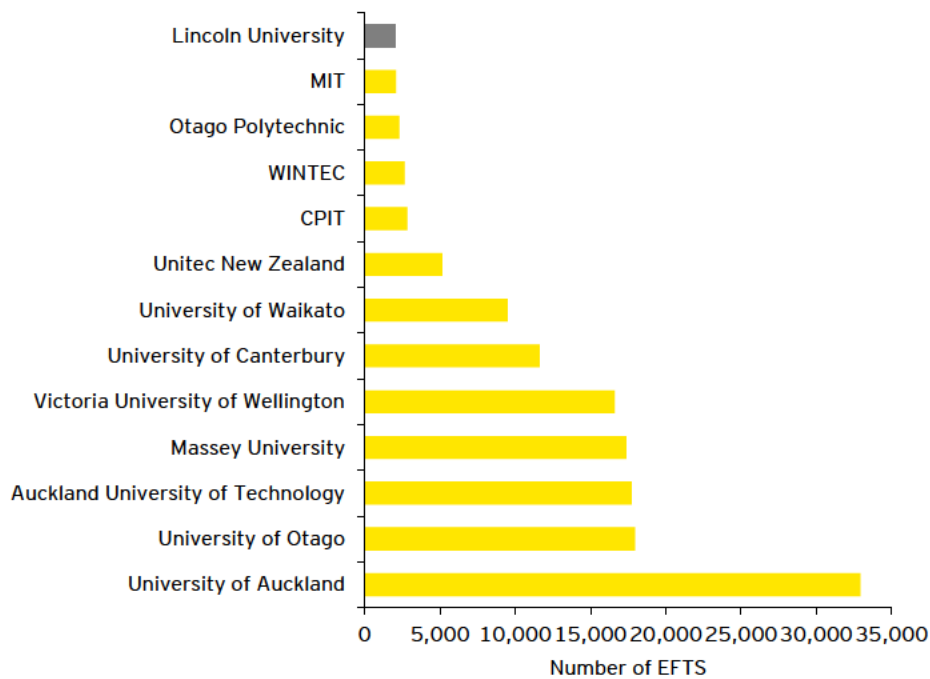
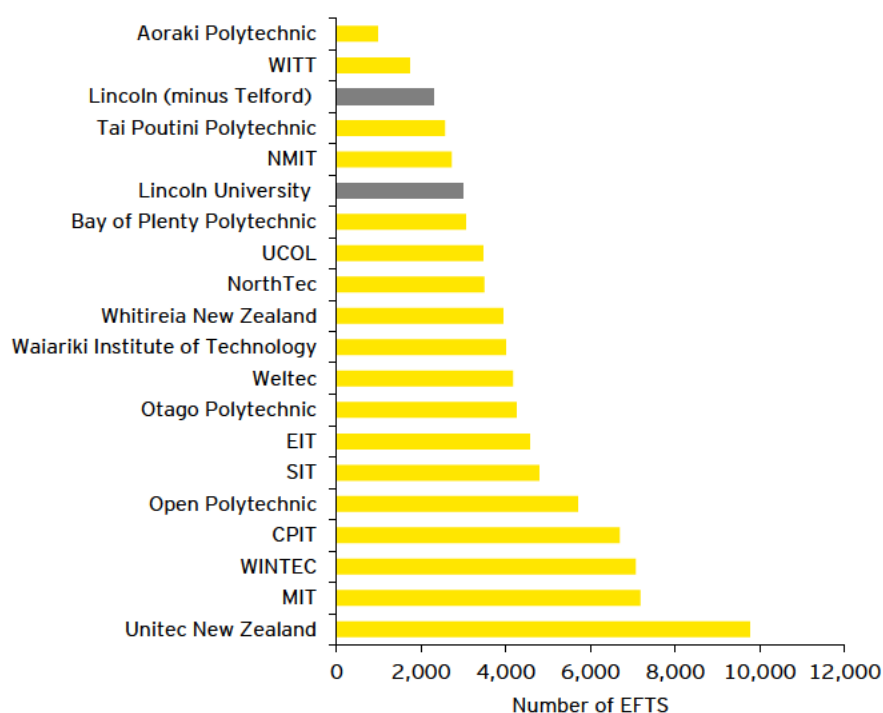


Figure 7: Overall EFTS by Institute of Technology and Polytechnics (2014)



5.8 Operating Model

Lincoln's operating model is different relative to other universities in New Zealand. Its differences include the following:

- ▶ Lincoln's mission is to help: feed the world, protect the future, and live well. Lincoln is a specialised university finding solutions for these challenges.
- ▶ The specialist nature of Lincoln means that it is significantly smaller than other universities as highlighted in the above section.
- ▶ The specialist nature also results on average in smaller class sizes relative to the other universities.
- ▶ Lincoln is often described as generating its revenue 1/3 teaching, 1/3 research and 1/3 from commercial activities. The table below outlines Lincoln's proportion of revenue relative to other Universities in New Zealand.

Table 5: Sources of income¹⁵

Sources of Income (Mix %) – 2013 financial year			
	Lincoln	Other NZ Unis (Ave)	Var
TEC income (plus non EFTS based, non-research funding)	40%	44%	-4%
Domestic student fee income	9%	19%	-10%
International student fees	10%	10%	0%
Research income (less PBRF & TEC funded, included above)	22%	14%	8%
Interest income	1%	1%	0%
Other/Commercial income	18%	12%	6%
Total income	100%	100%	0%

Source: 2013-performance-by-individual-TEIs.xls

We make the following comments:

- ▶ The table shows that Lincoln generate a significantly higher proportion of research and commercial revenue relative to other universities.
 - Commercial research income is 22% versus the national university average of 14%.
 - Commercial income from Lincoln's farms/produce etc. makes up 18% of revenue relative to the national university average of 12%.
- ▶ Offsetting this is lower income from domestic students which, at 9% of revenue, is half the national average. Lincoln receives less TEC funding as well which reflects a lower proportion of teaching revenue.
- ▶ Over time however, effective research should translate into improvements in rankings across either the entire University or specific schools and such improvements in rankings are strongly correlated with increasing student volumes, especially international student volumes.

5.8.1 Professional staff to academic staff ratio

Although Lincoln is the smallest university in New Zealand, all back office services that are required to support the organisation are provided in-house. Furthermore, there is duplication in some of the back office functions across the Group as many of Lincoln's subsidiaries have their own corporate functions and administration. While many of these services are required regardless of the organisation size, larger organisations can leverage these resources more effectively. Even so, universities in New Zealand and Australia are now examining these costs in significantly more detail with a focus on the standardisation/sharing/outsourcing of these costs.

The overwhelming majority of universities reviewed by Cubane Consulting in 2015 were either in the process of designing major Uni-wide/functional transformational programs or were at the point of embedding such programs. A key focus of these programs has been managing down the professional to academic staff ratio.

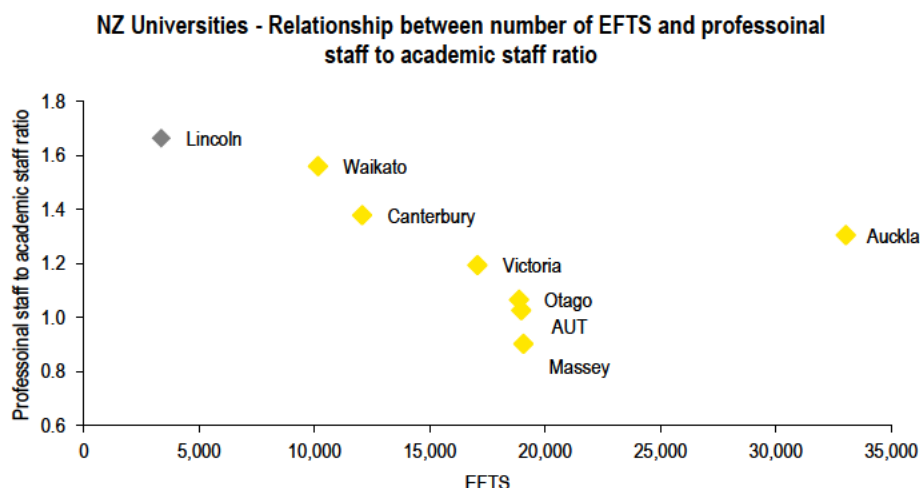
A key measure often referenced in Australia is the 'Student support costs per student FTE'. Other things being equal, higher professional staff numbers will translate directly into higher costs in this score.

The figure below shows the relationship between the number of EFTS and the professional staff to academic staff ratio ("staff ratio") for each of the eight universities in New Zealand in 2013. Academic staff is defined as teaching and research staff and professional staff are defined as non-

¹⁵ PBRF stands for Performance-based Research Fund

academic staff for the purposes of this analysis.

Figure 8: New Zealand Universities - relationship between number of EFTS and professional staff to academic staff ratio



We make the following comments in relation to the figure above:

- ▶ There is a positive relationship between the number of students and the staff ratio. As the number of EFTS increase the staff ratio declines with the exception of Auckland University which is the outlier with 33,000 EFTS.
- ▶ Lincoln shown in grey has the highest staff ratio at 1.66. This compares to the larger universities (>20,000 EFTS and above) which have a staff ratio closer to 1.1 (which aligns with top quartile Universities in Australia)
- ▶ Lincoln's ratio of 1.66 implies that it employs 50% more professional staff to academic staff relative to the larger New Zealand universities.
- ▶ Lincoln also has the lowest EFTS to professional staff ratio. Lincoln's ratio is 7:1 which is nearly half the New Zealand average of 13:1.
- ▶ In the table below we have also included the average metrics for Institutes of Technology and Polytechnics (ITPs) in New Zealand. Average EFTS numbers for ITPs are higher than Lincoln's numbers, however they are more comparable than the numbers for New Zealand universities. Despite the lower EFTS numbers, ITPs have a significantly lower staff ratio than Lincoln and an EFTS to professional staff ratio of 19:1 which exceeds any of the universities.
- ▶ The impact of Lincoln's staff ratio and EFTS to professional ratio being adverse to its peers is that Lincoln is incurring significantly more professional staff cost relative to its peers.

Lincoln's higher professional staff to academic staff ratio suggests that it carries a higher administrative cost relative to other universities. This suggests that Lincoln needs to be more efficient than its universities and ITPs peers in other areas to generate equivalent profitability. Given Lincoln's size and scale this is also likely to be more challenging.

Table 6: University EFTS and professional staff to academic ratio: University EFTS and professional staff to academic ratio

University	Auckland	Massey	AUT	Otago	VUW	Canterbury	Waikato	Lincoln	Total ITP (Ave)
EFTS (2013)	33,050	19,080	18,973	18,875	17,069	12,085	10,159	3,351	4464
Academic staff (teaching plus research)	2,131	1,575	1,058	1,818	859	802	603	274	234
Professional staff (Non academic)	2,778	1,418	1,085	1,934	1,024	1,105	940	456	232
Professional staff to academic staff ratio	1.30	0.90	1.03	1.06	1.19	1.38	1.56	1.66	0.99
EFTS to professional staff ratio	11.90	13.46	17.49	9.76	16.67	10.94	10.81	7.35	19.24

Source: 2013-performance-by-individual-TEIs.xls

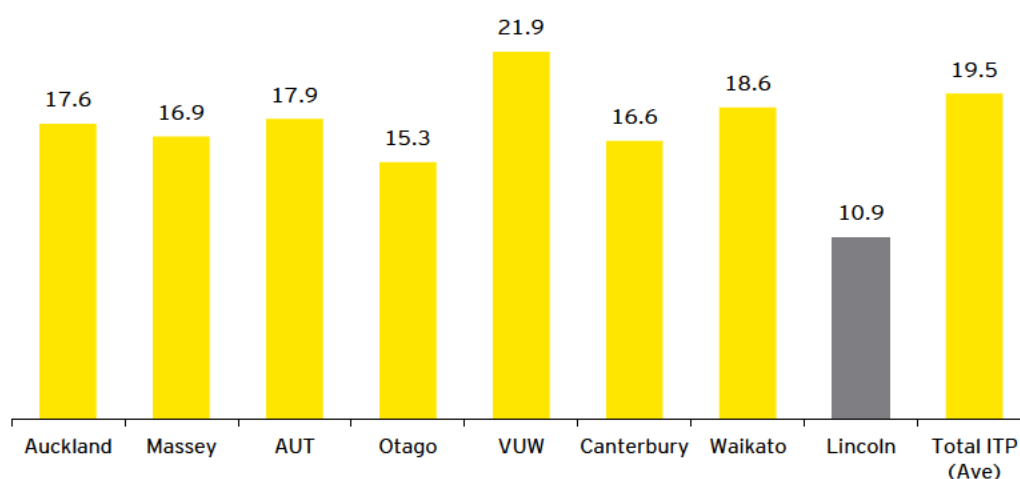
5.8.2 Student to academic staff ratio

As Lincoln offers a number of specialised courses, frequently with a practical element, these courses often have relatively low class sizes. In comparison, larger universities that offer mainstream papers, particularly to year 1 students, achieve a scale effect whereby they teach a large number of students at one time leveraging off a small amount of academic teaching resource. Our experience in the sector suggests that these mainstream courses are highly profitable for universities.

Given that staff costs make up a high proportion of total operating costs, the student to academic staff ratio is a measure of financial profitability. We have constructed the figure below using the following data:

- ▶ The student to academic staff ratio of New Zealand universities and ITPs from TEC 2013 performance by individual TEIs (it is our understanding that this is the latest available information that the TEC currently has).
- ▶ For Lincoln we have used its student to staff ratio for 2015. We have used this as the TEC number does not appear to consider that a number of Lincoln Lincoln-Telford EFTS are taught by third party providers and the 2015 reflects, Lincoln's decline in EFTS relative to 2013, particularly Lincoln-Telford.

Figure 9: Student to academic staff ratio



We make the following comments in relation to the above figure:

- ▶ Lincoln has the lowest student to academic staff ratio of any New Zealand universities at 10.9. This compares to Otago University, the next lowest, at 15.3.
- ▶ Other universities range between 16.6 and 19 with Victoria University having a ratio of 21.9.
- ▶ ITPs on average have a student to academic staff ratio of 19.5.

Comparing student to academic staff ratios in isolation does not consider the differences in funding received for different types of courses which will, amongst other things, reflect the size of the class and the cost of teaching. SAC funding for agriculture, horticulture, and science is more than double the funding rates for a commerce or arts undergraduate program reflecting the higher cost in teaching these courses.

Despite not being the perfect measure in isolation it is useful when used in conjunction with financial data. In Lincoln's case the ability to leverage this ratio may result in it being able to generate improved profitability.

5.8.3 Earthquakes

The earthquakes of 2010 and 2011 have had a material impact on Lincoln, as they have across the education spectrum in Canterbury. The earthquakes have impacted not only physical infrastructure and the associated costs of replacement or repair, but also the attractiveness of the University to staff in what is an internationally competitive market.

On an EFTS front, the earthquakes have been particularly challenging for the University. The physical location of the University, combined with its focus on a smaller range of courses compared to a comprehensive university means there are very few students for whom Lincoln is the "default option." There is no doubt that the downturn in EFTS numbers since the earthquakes is at least in part due to their impact. This is an obvious, yet important, observation in that it helps us understand and assess the future growth forecasts for the university discussed in the Future State section. These forecasts should be comprised of:

- ▶ return to Lincoln's "real" baseline student numbers - i.e. a bounce back post-earthquake recovery; plus
- ▶ demographic changes (which as we discuss are not necessary positive) to traditional EFTS growth sources; plus
- ▶ conversion of existing students in the Lincoln system from their current courses into higher levels of study they would not otherwise undertake; plus
- ▶ new growth either through students who would not otherwise undertake tertiary education or displacement from other universities.

5.8.4 The importance of Vertical Integration

The last two points in the section above around EFTS growth are underpinned by two critical Lincoln strategies: The Lincoln-Telford Division and the Lincoln Hub (the Hub). It is rare for the two to be talked about concurrently as both are very different entities, but represent an attempt by Lincoln to vertically integrate land-based training and research.

Vertical integration has a range of possible financial and economic benefits. On the financial side, a well-integrated system could potentially drive additional EFTS numbers for Lincoln through facilitation of students through progressively higher levels of training and into research (noting that those who enter through Lincoln-Telford Division are extremely unlikely to finish in the Hub). Similarly, integration of these entities may potentially give Lincoln scale outside of its core university business over which to spread its costs.

From an economic perspective, vertical integration may be strategically important in the context of

the ability to grow the land-based capability, as well as research and innovation.

5.8.5 Lincoln-Telford Division

Lincoln acquired Telford Rural Polytechnic on 1 January 2011, forming Lincoln-Telford Division. Lincoln-Telford's main campus is located just outside of Balclutha, South Otago in the South Island.

Lincoln-Telford's Balclutha Campus has over 900 hectares of farmland and specialises in agriculture (sheep, beef, and deer), dairy farming, forestry and apiculture. Lincoln-Telford offers sub-degree courses at all Levels 1 -6, but the majority are at Levels 3 and 4. Lincoln-Telford also delivers some of its level 5 diplomas that were brought into Lincoln-Telford following the merger. The majority of Lincoln's level 5 EFTS are taught through its main campus at Selwyn.

The chart below highlights EFTS taught by level in FY15

Table 7 Lincoln-Telford SAC Funded EFTS by level

Lincoln-Telford SAC Funded EFTS by level FY15	
Level	EFTS
Level 1-2	92
Level 3-4	421
Level 5	28

Source: Tertiary Education Commission¹⁶

Lincoln acquired Telford as part of a plan to achieve vertical integration in the sector between introductory lower level courses and university level courses. We understand that the rationale for the integration was perceived benefits of allowing Lincoln to transfer its research and extension knowledge into qualifications that will change practice across the primary sector.

The benefits to Lincoln of the vertical integration have not been apparent in recent years, particularly in terms of EFTS transitioning from Lincoln-Telford Division into Lincoln. In 2015 we understand that three Lincoln-Telford Division EFTS enrolled at Lincoln.

In 2015 Lincoln-Telford delivered 540 EFTS (SAC funded) and in 2016 Lincoln is projecting that full year EFTS will be 550. Despite the campus being located in Otago, students are located in multiple locations across the country both in the South Island and the North Island, with approximately half of the students taught direct by Lincoln-Telford and the remaining students taught by third party providers.

In recent years the number of EFTS at Lincoln-Telford has declined sharply as shown in Figure 3 above. In 2011 when Lincoln-Telford acquired Lincoln it had approximately 1,000 EFTS. We understand that the earthquakes have in part impacted the decline as capital held by Telford Rural Polytechnic was reallocated within Lincoln and Management's focus diverted towards earthquake related issues.

Although Lincoln does not report the financial results of Lincoln-Telford separately, we understand the break-even EFTS level is approximately 800. The approximate 600 EFTS that Lincoln-Telford Division reported in 2015 was well below the 800 EFTS it required to break even and suggests that it made a loss, although due to lack of financial information prepared for the Division the magnitude of the loss is not clear.

¹⁶ Level 5 is an estimate so may not be exact.

In addition we understand that Lincoln-Telford Division is under investigation in relation to a mismatch between the deliveries of programme requirements, i.e. whether delivery is consistent with requirements.

5.8.6 Lincoln Hub

The Lincoln Hub is an envisaged innovation cluster that integrates business, education, research and innovation capability to enable land-based sectors to grow and create value in line with the Business Growth Agenda.

This rationale for the Lincoln Hub is that capability, innovation, new products, and services and technologies can be developed more effectively by focusing on industry and private business (collectively the 'private sector'), increasing export levels and accelerating extension.

The concept involves the combination of the private sector working with AgResearch, DairyNZ, Landcare Research, Plant & Food Research and Lincoln (the 'Founding Partners' or the 'Hub Partners') and other participants over time. Developing the Lincoln Hub will be a multi-year programme to build an innovation cluster through a combination of closer geographic proximity; concentrating capability; higher-quality, modern, fit-for-purpose facilities; better networks and stronger collaborations, and improved ways of working. Recognising that the Lincoln Hub opportunity requires a staged approach, the overall programme is built around a series of operating and capital projects.

Lincoln and AgResearch are currently seeking approval of the Stage 1 Project Business Case - the rebuilding of Lincoln University and AgResearch's science facilities. This building project is projected to cost approximately \$206m, of which Lincoln is projecting to contribute \$127m, with \$100m to be provided by the Crown as outlined in Lincoln's 10 year projection (\$7.5m has already been provided and mostly expended and is not included in the \$206m figure). AgResearch is funding their proportion of the project itself.

Stage 1 consists of investment in modern, fit-for purpose facilities with the right co-location, flow and flexibility required to support the operations of Lincoln University, AgResearch and DairyNZ, in a manner consistent with the longer term operating models underpinning the Lincoln Hub, and in particular, the roll out of the integrated operating model. Stage 1 is expected to be completed in 2019.

The proposed Stage 1 facilities have the following core requirements:

- ▶ education and research space;
- ▶ compliant and efficient buildings;
- ▶ buildings designed to support co-location and integration of industry;
- ▶ flexible and cost-effective learning and research spaces that can accommodate a range of programmes; and
- ▶ teaching and research spaces that support student enrolment growth objectives.

The Hub will create a precinct of relevant private and public sector capability that will bring together education, research, development, commercialisation and outreach. Located at the existing agricultural centre in Lincoln, it will be catalysed by investment from the Founding Partners. It also takes advantage of the opportunities created by:

- ▶ Lincoln's need to rebuild its science facilities after the Canterbury earthquakes;
- ▶ AgResearch's plans to relocate large parts of its research and corporate operations to Lincoln; and

- ▶ DairyNZ's growth plans in the Canterbury area.

Although catalysed by the Founding Partners, it is envisaged that the Lincoln Hub will ultimately house a range of local, national and international businesses and research organisations. Furthermore, although the Hub is physically established at Lincoln, in practice modern science, commercialisation, education and outreach are all "networked" activities, and its activities will involve people and organisations located at the Hub and elsewhere.

5.9 Recent successes and challenges

It is important to note that Lincoln's current state is not due to a static situation that is resulting in a gradual decline. Leaving aside the impact of the earthquakes, the University is taking a range of actions that are both mitigating its current situation and positioning it for the future.

A new Vice Chancellor and Chancellor, and changes in management (including some members of the management team resigning) over the last 12 months has been disruptive and arguably cost the University in the short term, but have also presented some opportunities. It has also provided the institution with a stronger sense of a mandate for the bold changes required to bring the university back to sustainability. Anecdotal evidence points to improvements in staff and management engagement and a greater sense of shared purpose combined with an appetite for change.

The recent qualifications reform activities have resulted in change management costs, but have also better aligned both the offering and the cost base with Lincoln's strategic vision. This reform was a necessary part of Lincoln's turnaround.

Moreover, investment in core business around student recruitment and marketing appears to have had positive impacts on EFTS growth this year at the University level (although we are still waiting for final numbers). As we note above, some of this growth may be the post-earthquake return to baseline growth and as such, should be treated with caution. From a first principles perspective, however, it is clear that the student-focused parts of the professional organisation are undertaking their work in a more structured and methodical way, with a clearer sense of priorities. However, as outlined in the findings of the Discovery Phase, a strategy and detailed implementation plans are needed to ensure this growth continues into the future.

This is continuing to improve this year with 2017 courses approved with sufficient time to incorporate in the marketing materials, enabling potential students to make a more structured and informed choice to come to Lincoln.

5.10 Current State Conclusion

Overall, it is clear that Lincoln is an organisation that is facing material financial challenges. These challenges impact not only on the University's bottom line, but also on staff, students and New Zealand's wider economic outcomes.

The drivers of the distress are complex and multifaceted, but essentially come down to five key aspects:

1. Student numbers and the associated revenue have declined over the past decade and with it, revenue has declined without any significant and sustained offset in other revenue sources from industry, research or philanthropy.
2. A high cost structure relative to the size of the University. This is a relatively simple metric where Lincoln, like other smaller universities, has all the fixed costs of a university but none of the scale to spread those costs over. Undoubtedly larger universities have larger costs,

but in general, as universities grow, the marginal costs of that growth are more than offset by the revenue base driven by larger student numbers.

3. The small university cost problem is exacerbated by Lincoln's land-based university focus. The courses offered are comparatively resource-intensive from both an asset and operating perspective. In addition, the majority of teaching activity is face to face and is not offset by lower cost delivery approaches including online learning.
4. Underinvestment in recent years in improving future ways of working and meeting the challenges posed by the University of the Future.
5. A Balance Sheet that has a number of non-core assets. These assets not only consume physical capital but also a distraction to management.

Within this difficult operating environment, Lincoln has attempted to get its high level strategy right. The specialist land-based university is critical to Lincoln's ongoing sustainability. Such a focus clearly fulfils a need in the New Zealand economy from both a student perspective as well as from a research and innovation perspective.

The focus on the real core of the Lincoln offering is the correct one for a small university to take as it provides a point of difference and enables Lincoln to overcome some of its challenges. It is clear that the University Council and management have taken steps to better align the university operations and cost structures with that strategic vision, but the critical question remains as to whether these actions and this strategic focus is sufficient to deliver quality outcomes for students, staff and industry within a financially sustainable structure.

6. Future state – Key Considerations

Key findings:

- ▶ The Lincoln University strategy in terms of its contribution to the educational and economic outcomes remains valid and Lincoln has made some steps in preparing itself and its operating model to become a “Niche Dominating” University – one of the models that universities will increasingly need to adopt to remain competitive in a changing market
- ▶ The financial sustainability and implications of the execution of the strategy has been modelled and shows Lincoln will be viable in terms of the TEC’s FMF framework within 10 years
- ▶ The effect of compounding growth rates is both a positive and negative in assessing sustainability over the long term
 - Positive: it is likely that once Lincoln achieves sustainability that it will remain financially sustainable and periods in which Lincoln out-performs its EFTS forecasts will bring-forward the date at which it achieves sustainability
 - Negative: in the event of lower than forecast average growth rates, financial sustainability of Lincoln will be further pushed out
- ▶ Having conducted detailed analysis of the model/assumptions we have identified significant downside risks to the growth rates (and very few upside risks)
 - Lincoln’s financial viability and sustainability is predicated on the University substantially out-performing universities in New Zealand/Australia in terms of student numbers growth rates
 - While YTD Lincoln has increased EFTS (excluding Lincoln-Telford Division) back to 2012 levels, the challenge will be maintaining above average growth rates which will likely require funding for new market/demographic development
- ▶ While the projected growth represents small absolute numbers of students, the financial model and the sustainability of the University is highly sensitive to
 - changes to the international student number
 - even small reductions in positive growth rates
- ▶ Lincoln needs to de-risk its strategy for both the Council and the TEC to be confident that it will achieve financial sustainability within an acceptable timeframe
 - The new Vice-Chancellor is developing a clear programme of action around administrative and academic reforms and efficiencies
 - This alone is unlikely to be sufficient and a more comprehensive adoption of strategic options to both increase student growth and decrease costs is required

6.1 A perspective on the Future of 'Small' Universities

In recent years, some smaller Universities have struggled to grow/retain admissions and in the United States of America (US) in 2015 enrolment to universities with 3,000 or fewer students fell by 2.4% Year Over Year (YOY)¹⁷.

Typically land-based universities in developed countries, as opposed to universities with some land-based schools or faculties, tend to be smaller in size than universities with a wider focus.

- ▶ Swedish University of Agricultural Sciences (SUAS) 4,450
- ▶ Royal Agricultural College 1,155
- ▶ Scotland's Rural University College 1,565.

While research intensive specialist universities such as SUAS have been doing well and growing enrolments, smaller specialist land-based universities which are not part of larger broad-based universities tend to be more focused on undergraduate education and have struggled more to attract students and funding.

- ▶ 43 % of the SUAS student load is postgraduate/doctoral students and SUAS spends over 70% of their budget on research.
- ▶ Less than 20% of the Royal Agriculture College student cohort is at post-graduate level and the low research quality score in the 2014 United Kingdom's (UK) Research Excellence Framework (REF) review was part of the reason why targeted funding was cut in the May 2016 Funding Review.
- ▶ In the UK at least the rankings for Agriculture and Forestry education providers are dominated by broad-based institutions with Agricultural faculties/schools (including its namesake, Lincoln University, in the Midlands).

Scotland's Rural College (SRUC) is a land-based tertiary institution which both provides education across six campuses (masters, under graduate and sub-degree level) and commercial consulting (SAC Consulting) to over 12,000 clients.

It was established in 2012 from the integration of three land-based colleges and the Scottish Agricultural College (SAC) which was itself formed from the integration of three agricultural colleges two decades previously.

The SRUC does not as yet have university status, but have been 'working towards' it for some time. Currently their degrees are awarded by the University of Glasgow and the University of Edinburgh with whom they share close connections including in Edinburgh SRUC facilities which are on the University of Edinburgh campus.

Despite sharing (in part) a campus with the University of Edinburgh, and having its degree accredited by them, SRUC has developed and teaches its own courses and is following its own strategy in regards to Online and distance learning which is separate to that of the University of Edinburgh.

The organisation's Research Division carries out research in its six research centres in the agriculture and rural sectors, and SRUC also runs eight farms for both research and educational purposes.

Detailed below are some perspectives on current and future state of small universities with an emphasis on those which are land-based.

¹⁷ [National Student Clearinghouse](#)

6.1.1 Size is not the only prism - there is no 'typical' small University

Size is not an absolute determinant of sustainability. Not all small universities are succumbing to these trends and many of those who do not, fall into the category of Niche Dominators who have the capacity to attract students, research funding and partnerships which are out of sync with their scale.

In the US in particular it is the smaller, liberal arts based universities which are struggling most to attract sufficient student numbers and to justify the increase in fees which are required to re-invest in facilities and teaching and learning pedagogies needed to continue to attract new students.

In reality the sustainability of smaller colleges relates more directly to how they are funded, their ranking, and brand and research quality than it does to their absolute size. In the US some small colleges are sustained by very significant endowments which allow them to transcend the limits of their size. Harvard Business has 2,000 students but \$54 billion in endowments and CalTech which has 2,000 students, has just over \$2 billion in endowments.

In other countries small specialist universities are funded in a differential manner. In the UK in the most recent May 2016 funding allocations from the Higher Education Funding Council, differentiated funding was provided to a number of specialist universities and colleges, though funding to land-based colleges such as the Royal Agricultural College was cut.

Lincoln does not have an endowment fund and is not funded on a differentiated basis by the TEC.

6.1.2 Ranking of Small Universities

The Times Higher ranking breaks out separate rankings for smaller universities (those with a student load of less than 5,000). The notion of needing a specific 'critical mass' of students to contribute or to be of value has long been challenged by these universities but the notion of a critical mass of funding is more relevant and in the case of many small universities the principal source of funding is student volume.

Top of this list of small universities is the California Institute of Technology which has just over 1,000 under graduate students and just over 2,000 students. Despite this, in part due to their focus on cross-collaboration in research and the funds to support this research, they are ranked first in the Small University rankings and also first in the 2016 Overall University rankings by Times Higher. The top 10 Universities on this 'small universities' ranking also make it into the top 250 Universities of all sizes.

Despite this, other things being equal, smaller Universities who do not have a strong ranking, a targeted focus and well established brand will struggle to fund the investments required to satisfy growing student expectations and to attract industry partnerships and research collaborations with other universities.

6.1.3 Success Factors for smaller Universities

Looking at the experience of smaller universities in developed nations there are a number of criteria which have allowed some smaller universities survive and prosper.

Alternative Sources of Funding: small universities or colleges which can generate significant additional funds, whether through differentiated fee structures, endowments, differentiated state funding or out of scale commercial and research participations can free themselves from the structures of small student cohorts funding limitations.

Niche Dominators: establishing and maintaining a limited but complementary group of disciplines which facilitate interdisciplinary research and interactions and supports complex collaborations between academics and researchers is part of the reason why small intuitions can be competitive

and attract additional funding.

Broad Collaboration: while small in size and competing with much bigger universities focused on similar sectors, CalTech attributes a significant part of its performance to the nature and prevalence of interdisciplinary collaboration which is both facilitated and required by the small size of the university and the academic staff.

Innovation: the old adage about universities suggests that they are 'good at addition but poor at subtraction'. This applies both to student services and programs of education on offer. Successful small universities need to be both focused on innovating in course delivery and rigorous in the evaluation and refreshing of courses and programs which are no longer relevant or attractive.

6.1.4 Land-Based Universities (Medium to Small)

There are a number of land focused universities in the Times Higher list of top performing 'small' universities and equally a number of others which are slightly larger but still worthy of examination.

Table 8 Properties of leading land-based universities

	UC Davis	WURC	SUAS
Students	36,104	9,426	4,450
UG	78%	40%	57%
PG	22%	60%	43%
Ranking (Times)	44	47	201-250
Land-based Research Inst's	✓	✓	✓
Industry Income/Acad. (US\$)		\$242.5k	\$144.2k
Endowment	\$1.1Bn	NA	NA

WURC: Wageningen University and Research Center
 SUAS: Swedish University of Agricultural Science
 UC Davis: University of California Davis

University of California Davis:

- ▶ UC Davis while originally small in size, has developed from a land-based university (University Farm) into a large and diversified university with over 35,000 students and programs in law, engineering, medicine, business etc.
- ▶ UC Davis is ranked at 44 overall by the Times Higher ranking and at number 2 in the Quacquarelli Symonds (QS) rankings of the top Universities for Agriculture and Forestry.
- ▶ The College of Agriculture and Environmental Science remains one of the four colleges that form the University California Davis and is organised around three divisions focusing on Agricultural, Human and Environmental Science.
- ▶ Across the College of Agriculture there are just over 6,800 students with 85% being under graduate and 15% being post graduate and 24 endowed chairs designed to attract, retain and fund the research of the brightest academics.
- ▶ The College of Agriculture is keenly focused on both pure research and partnerships with governments, industry and Business and maintains eight land-based research centres and institutes along with Agricultural Experiment Station which is focused on translational research.
- ▶ In addition to its student income, research income and income form partnerships, UC Davis also benefits for the existence of an endowment of over \$1.1 billion.

Wageningen University and Research Center

- ▶ Wageningen has a clear focus on agricultural and environmental science along with associated life sciences and is one of the top 50 universities in the world (top 20 for Life Sciences and ranked number 1 in the world for Agriculture by QS in their 2015 rankings).

- ▶ The 'Wageningen Approach' that is emphasised by the university is really a form of interdisciplinary collaboration which combines work in associated fields of natural and social science with the capabilities of one of the 11 land-based research institutes to ensure that scientific advances are quickly put into practice.
- ▶ In size terms it is just about three times the size of Lincoln but of the 10,000 students nearly 60% are doing post graduate or doctoral studies with classes now in English to facilitate entry of International students (over 20%).
- ▶ In 2014 between the university €335m and the Research Centres €330m, their Income was over €635m or NZD \$1.1 billion with the University having one of the highest incomes per academic from Industrial partnerships of any university at \$0.2425m per academic.

Swedish University of Agricultural Science

- ▶ Formed from a integration of three universities in the areas of veterinary, agriculture and forestry in the late 1970's, the Swedish University of Agricultural Science is the most comparable in size to Lincoln with 4,450 students and was ranked 6th in the overall list of 'small universities' by Times Higher.
- ▶ In 2015 the total income of the university was SEK 3.3 billion which is equivalent to NZD \$554m, as against the NZD \$109m earned by Lincoln in the same period.
- ▶ Of this spend just 16% was at the under graduate and masters level while over 71% was spent on Research and doctoral education with a focus on ecology, environmental science, plant science and forest science.
- ▶ On a per academic basis, the Swedish University of Agricultural Science has one of the top 20 highest incomes per academic from Industrial partnerships of any university at \$0.1442m.

6.1.5 Relevance to Lincoln

The research above suggests a land-based university can succeed as a faculty of a larger university (UC Davis, Reading University) or as a specialised land-based university (WURC, SUAS).

The success factors that have allowed land-based universities to succeed has been their ability to generate significant levels of alternative funding, as well as being successful in achieving innovation and collaboration. This has then translated into high university rankings which are a key driver of attracting high quality academics and students.

Below we examine how Lincoln is placed in relation to these critical success factors:

- ▶ Alternative sources of funding - Lincoln achieves reasonable levels of research income (c30% of total income) and a 30% more research income per research FTE than other New Zealand universities, however other forms of funding are limited.
- ▶ Niche Dominators - Lincoln is a specialised land-based university but competes with Massey for domestic students within New Zealand. For 2015/16 Lincoln's world university ranking was 373, released by QS and in the field of agriculture and forestry Lincoln ranks in the top 100 globally. Although these rankings are high for a New Zealand university, Lincoln is competing with a large number of agricultural universities ranked higher than it globally. Many of the higher ranked universities are located in the US and Europe which may mean that geographically they are less attractive to Asia, however there are a number of Australian universities with agricultural faculties ranked higher than Lincoln.
- ▶ Broad Collaborators - Lincoln collaborate with industry through research and teaching and the construction Lincoln Hub will promote more concentrated collaboration, but this will take time.
- ▶ Innovation - Lincoln recently restructured its course offerings, terminating a number of courses as it increased its focus on being a land-based specialist. Future innovation of

Lincoln's operating model is based around the construction of the Hub. Innovation of teaching and delivery methods is limited in detail in Lincoln's strategic documents.

The critical factor for a standalone university is the top tier research ranking and the critical mass of research activity and students to support it. Part of any strategy should detail how Lincoln will improve this ranking.

In the remainder of the section we discuss the future state of Lincoln including its high level strategy and financial projections. We note that Lincoln's strategy is underpinned by growing student numbers which through scale results in Lincoln becoming financially viable. Although there are numerous advantages from larger rolls, even with growth Lincoln will remain a small university. We note, however, that student number growth was not a key characteristic of successful Niche Dominator universities.

6.2 The ongoing importance of the Lincoln strategy

As noted in the Current State section, we consider the Lincoln strategy at its core to be the right option to take for a small university. It provides a demonstrable point of difference to most other universities in terms of course offering and student experience/outcomes that potentially result in the best EFTS outcome for Lincoln's size and resources available to it. This strategy has several important Future State dimensions.

6.2.1 New Zealand Economy

The ongoing importance of land-based industry to the New Zealand economy has a critical people and innovation aspect. There are ongoing skill shortages in the rural economy that are projected by MPI to continue into the medium to long term.

The need for New Zealand to continue being internationally competitive and productive in the primary sector is not just a training issue. New Zealand also needs to be world-class in research and innovation to maintain its current position in the world. Megatrends (i.e. large-scale pervasive changes in global society) present a set of unique challenges for land-based economies which are arguably late evolvers in adapting to modern challenges - relative to other industries. The discussion below outlines the most important megatrends for a land-based economy.

Urbanisation. The growth of cities across the globe is pervasive and is a fundamental challenge to agricultural production and land use. It is a dynamic trend and fast moving with the rapid movement of people across the globe from land-based existence to urban existence. What this means from a production perspective is a smaller proportion of people globally engaged in the production of food, and proportionately more people consuming food they were not involved in producing themselves.

To contextualise this trend, India is presently the world's 7th largest economy. Within 30 years' time, it will be equal second with the US, behind only China. Like China, this will be achieved not through population growth but through increasing wealth and middle classes - largely associated with the movement of people in the countryside engaged in the primary economy to urban environments. To contextualise further, high performing African counties (e.g. Ethiopia) are at a similar stage of development to India in the 1990s.

In developed nations, urbanisation presents other critical challenges. Europe, for example, now has more trees than it did in 1900. Rapid land use change is actually increasing the amount of pastoral land available for production in Europe.

Lincoln understands these strategic drivers through its "Feed the world, protect the future" approach to developing its capability. Through this, it becomes a critical part of New Zealand's long term competitive approach to meeting the global urbanisation challenge.

A connected future. Many industries have faced large-scale disruption to their models and ways of doing things. In the last 30 years a number of industries have fundamentally changed. Professions

have disappeared, and new ones have taken their place. Products have been rationalised (e.g. the smartphone is now the alarm clock, camera, diary) but we consume more goods than ever and new products have been invented or made available for mass consumption.

Agriculture has arguably been a downstream beneficiary of disruption in other industries (e.g. rapid increases in fuel efficiency, or the application of drone technology) but does not seem to have been impacted in the fundamental same way at this stage. Lincoln correctly identifies that the pace of change and improvement in land-based industrial productivity is increasing, and being at the forefront of these changes is critical.

6.2.2 Industry

There is an ongoing need for Lincoln to leverage and build on its links with industry. Lincoln has one of the strongest and most direct links with the industry it supports of all the universities in New Zealand (e.g. by their very nature, universities with a more generalist offering will have a more mixed relationship with industries that take their graduates).

There is an ongoing trend across the business sector to have greater links with TEIs. The relationship between Lincoln and industry must, necessarily continue to build to maintain and enhance the University's relevance and its contribution to a competitive and productive sector.

Such a relationship may also increase revenue to the University. As noted in the discovery report, Lincoln's private sector and commercial relationships strategy is limited when compared other universities in New Zealand (e.g. Victoria University's strategy of industry-funded professorial chairs areas such as e-commerce and public finance), although we understand some announcements may be forthcoming.

It should be noted that the opportunities in NZ for this type of funding are at the margins, but they play a potentially important role in containing expense growth. For example, Lincoln has absorbed all the increases in student costs for the 3rd year North Island field trip in the last few years. Given that this trip is an important part of students understanding the parts of the industry they want to get into (i.e. the ability of dairy, horticulture etc to attract talent), there seems to be clear opportunities for industry support to offset costs.

6.2.3 Fit with network of TEIs/Universities

Lincoln does not exist in isolation of the wider tertiary education sector in New Zealand (and indeed globally). Lincoln's strategy of specialisation and differentiation (as evidenced by the qualifications reform has contributed to its distinctiveness and helped carve out its niche in this environment. This is a critical part of its strategy, especially given its size and physical location.

More broadly though, its integration with the wider university network is both a requirement and an opportunity. As discussed in the sustainability section, a critical marker of Lincoln's success is for it to meet the same financial benchmarks as all other universities in New Zealand. University funding from the TEC is formula-based and in the long term, Lincoln is not sufficiently differentiated (nor will it ever be) as a tertiary institution to warrant a different funding arrangement to other tertiary institutions. As we note later, this means that Lincoln must increase its revenue in accordance with the formula (or through research), and/or decrease its costs.

The network of universities presents a critical strategic opportunity for cost reduction as well as opportunities to increase student numbers. Discussion of shared services, course offerings under streamlined/shared delivery models and other efficiencies are discussed in detail in the Strategic Options section, but fundamentally rely on leveraging Lincoln's place in the network of TEI's/universities.

6.2.4 Canterbury region

As noted previously, there are only two universities in New Zealand that offer a land-based focus. Lincoln's location, while presenting some challenges, is also important as the South Island University. The broader links with South Island industry and iwi (especially its current good links with Ngai Tahu) are also critical to its long term strategy.

6.2.5 Does Lincoln need to be standalone for these benefits to be achieved?

While the Lincoln strategic direction has a sound analytical basis when considering the Future State, the fundamental question remains as to whether the issues identified in the Current State can be overcome alone? If they cannot, the next strategic question is whether there is anything inherently critical to this strategic direction that requires a standalone Lincoln University. These issues are explored in subsequent sections.

6.3 Projected Financial Performance

Lincoln has produced a 10 year forecast. The version used in the analysis is titled "Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm" which we understand aligns with what Lincoln is proposing to use in the latest version of the Lincoln Hub Project Business Case. The Income Statement is summarised in the table below.

6.3.1 Income statement

Table 9: Forecast Income Statement¹⁸

Lincoln - Forecast Income Statement										
NZ(000s)	FY15A	FY16F	FY17F	FY18F	FY19F	FY20F	FY21F	FY22F	FY23F	FY24F
EFTS										
Total EFTS	2,935	9(2)(b)(ii) and 9(2)(j) of the OIA								
Revenue										
Tertiary Education Commission grant	29,329	9(2)(b)(ii) and 9(2)(j) of the OIA								
Tertiary Education Commission PBRF funding	9,830	9(2)(b)(ii) and 9(2)(j) of the OIA								
Domestic tuition	8,759	9(2)(b)(ii) and 9(2)(j) of the OIA								
International tuition	11,964	9(2)(b)(ii) and 9(2)(j) of the OIA								
Commercial research contracts	24,703	9(2)(b)(ii) and 9(2)(j) of the OIA								
Farm produce	3,582	9(2)(b)(ii) and 9(2)(j) of the OIA								
Other revenue	21,486	9(2)(b)(ii) and 9(2)(j) of the OIA								
Total Revenue	109,653	9(2)(b)(ii) and 9(2)(j) of the OIA								
Expenditure										
Personnel Costs	63,284	9(2)(b)(ii) and 9(2)(j) of the OIA								
Operating expenses	46,274	9(2)(b)(ii) and 9(2)(j) of the OIA								
Total Expenditure	109,558	9(2)(b)(ii) and 9(2)(j) of the OIA								
EBITDA										
	95	9(2)(b)(ii) and 9(2)(j) of the OIA								
Depreciation and Amortisation Charge	7,775	9(2)(b)(ii) and 9(2)(j) of the OIA								
Depreciation on Hub Asset Co	-	9(2)(b)(ii) and 9(2)(j) of the OIA								
EBIT										
	(7,680)	9(2)(b)(ii) and 9(2)(j) of the OIA								
Net Interest Income	1,476	9(2)(b)(ii) and 9(2)(j) of the OIA								
Surplus/(Deficit) before One-Offs and Hub Cost										
	(6,203)	9(2)(b)(ii) and 9(2)(j) of the OIA								
Ratios										
Revenue growth		9(2)(b)(ii) and 9(2)(j) of the OIA								
EFTS growth		9(2)(b)(ii) and 9(2)(j) of the OIA								
Total expenditure growth		9(2)(b)(ii) and 9(2)(j) of the OIA								
Personnel expenses (% of revenue)	58%	9(2)(b)(ii) and 9(2)(j) of the OIA								
Operating expenses (% of revenue)	42%	9(2)(b)(ii) and 9(2)(j) of the OIA								
EBITDA Margin	0.1%	9(2)(b)(ii) and 9(2)(j) of the OIA								
Operating surplus margin %	-5.7%	9(2)(b)(ii) and 9(2)(j) of the OIA								

Source: Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June .xlsm

9(2)(b)(ii) and 9(2)(j) of the OIA

¹⁸ "A" refers to Actual and "F" refers to Forecast

▶ 9(2)(b)(ii) and 9(2)(j) of the OIA
[Redacted]

■ [Redacted] We discuss each of the key lines in the Income Statement in more detail below.

▶ We note the projections do not reflect the government subsidy increases announced in the recent 2016 budget which consisted on an increase of 16% for agriculture subjects and 5% for science subjects. Lincoln advised that it has not yet incorporated this into its projection due to uncertainties around specific application of these increases to individual course offerings. Lincoln advised that they expect the increases to make a discernible difference to its financial standing only after 2018 due to Lincoln’s SAC recovery exemption. At a high level, it is estimated that the increases in the funding rates for agriculture and science will amount to approximately \$2m per year in additional revenue from 2019 onwards.

9(2)(b)(ii) and 9(2)(j) of the OIA
[Redacted]

6.3.2 Balance sheet

Below is a summary of Lincoln’s balance sheet.

Table 10: Lincoln Balance Sheet

Lincoln - Balance Sheet						
NZ(000s)	2015A	2016F	2017F	2018F	2019F	2020F
Total Current Assets	64,804	9(2)(b)(ii) and 9(2)(j) of the OIA				
Fixed Assets	170,227	[Redacted]				
Inventory Held For Sale (JV)	14,411	[Redacted]				
Hub Investment	-	[Redacted]				
Other	10,414	[Redacted]				
Total Non-Current Assets	195,052	[Redacted]				
Total Assets	259,856	[Redacted]				
Total Current Liabilities	32,703	[Redacted]				
Total Non-Current Liabilities	13,213	[Redacted]				
Total Liabilities	45,916	[Redacted]				
Net Assets	213,940	[Redacted]				
Equity		[Redacted]				
Retained Earnings	110,185	[Redacted]				
Share capital/Crown Contribution	-	[Redacted]				
Revaluation reserves	82,723	[Redacted]				
Other	21,032	[Redacted]				
Total Equity	213,940	[Redacted]				

Source: Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm

Lincoln has an asset intensive balance sheet. The majority of the balance sheet consists of land and buildings which is not unlike other universities in New Zealand. Lincoln currently has total assets of \$250m. Larger New Zealand Universities such as the University of Otago and the University of Auckland each have nearly \$2bn of assets (although a significantly higher student base).

The projected completion of the Lincoln Hub Stage 1 in 2018/2019 will increase the size of Lincoln’s balance sheet to approximately \$350m. 9(2)(b)(ii) and 9(2)(j) of the OIA

9(2)(b)(ii) and 9(2)(j) of the OIA
 [Redacted]
 [Redacted]

It's not Lincoln core role to generate an economic returns on assets but this does highlight the potential for Lincoln to generate efficiencies in its balance sheet in the future. One of the first steps will be to understand what assets are core to Lincoln. We understand that Lincoln is currently undergoing a review of its subsidiaries, we have not had access to the review due to prospective engagement timings but it would help inform potential assets that Lincoln could dispose. [Redacted]

9(2)(b)(ii) and 9(2)(j) of the OIA
 [Redacted]
 [Redacted]

It is also likely there are quantitative and qualitative efficiency gains available within some of Lincoln's other non-direct education business activities, such as hospitality and accommodation. It is important therefore that this review is accelerated and takes a diverse approach to determining the options available to Lincoln, such as divestment and outsourcing which may result in releasing capital or generating cost savings which can be reinvested into any change programme for Lincoln aimed at growing its core educational business and the integration of the Hub in accordance with its 10 year financial model.

6.3.3 Revenue

The table below summarises the projected revenue growth as outlined in the 10 year projection:

Table 11: Revenue projection

Lincoln revenue projection					
NZ(000s)	2015A	2024F	Growth	CAGR 2015-2024	CAGR 2011-2015
Revenue					
Tertiary Education Commission grant	29,329	9(2)(b)(ii) and 9(2)(j) of the OIA			
Domestic tuition	8,759	[Redacted]			
International tuition	11,964	[Redacted]			
Direct EFTS related revenue	50,052	[Redacted]			
Tertiary Education Commission PBRF funding	9,830	[Redacted]			
Commercial research contracts	24,703	[Redacted]			
Research related revenue	34,533	[Redacted]			
Farm produce	3,582	[Redacted]			
Other revenue	21,486	[Redacted]			
Other revenue	25,068	[Redacted]			
Total Revenue	109,653	[Redacted]			

Source: Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm

We make the following comments in relation to Lincoln's revenue projection:

- ▶ Revenue is projected to increase by 9(2)(b)(ii) and 9(2)(j) of the OIA over the next 10 years, which translates into Cumulative Annual Growth Rate (CAGR) of 9(2)(b)(ii) and 9(2)(j) of the OIA per year.
- ▶ We note that the projected revenue growth rate assumes:
 - a reversal of historical trends in growth rates post 2011; and
 - Projected EFTS growth rates that are significantly above industry forecasts (see EFTS section below).
- ▶ In relation to the historical growth rates we note the following:

- o the Christchurch earthquake in 2011 has impacted the financial performance of Lincoln in the last 5 years; and
- o Lincoln is a small university in a specialist sector. Lincoln needs relatively small increases in nominal EFTS to achieve the projected growth levels.

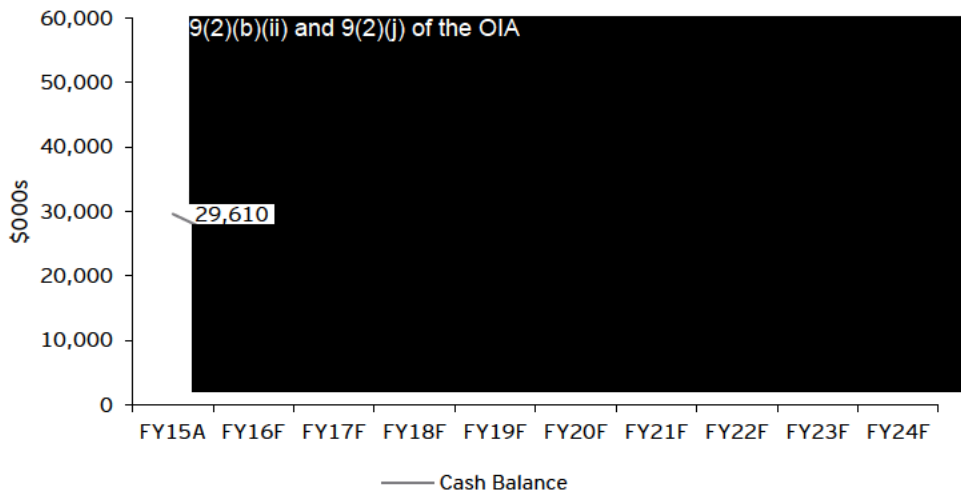
- ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- ▶ The remainder of the growth is projected to be generated from:
 - o 9(2)(b)(ii) and 9(2)(j) of the OIA [Redacted]
 - [Redacted]

9(2)(b)(ii) and 9(2)(j) of the OIA [Redacted]

6.3.4 Lincoln Projected Cash Balance

The figure below outlines Lincoln's projected cash balance per the 10 year plan.

Figure 10: Lincoln's projected cash balance



We make the following comments in relation to Lincoln's cash balance:

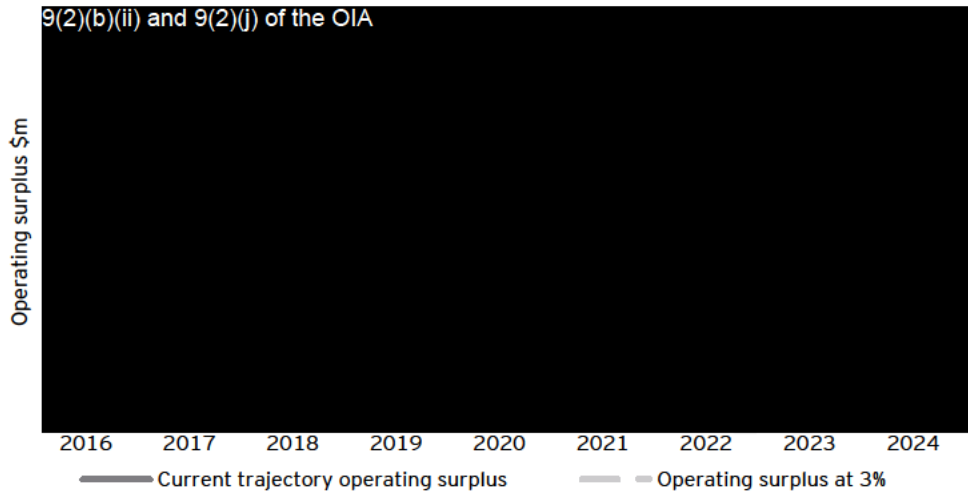
- ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA [Redacted]
- [Redacted]
- [Redacted]

▶ 9(2)(b)(ii) and 9(2)(j) of the OIA

6.3.5 Financial sustainability - Lincoln Current Trajectory

The figure below shows Lincoln's operating surplus by year based on its 10 year forecast. The 10 year forecast is considered as the current trajectory in the strategic option assessment sections of the report.

Figure 11: Lincoln projection - Current Trajectory



9(2)(b)(ii) and 9(2)(j) of the OIA

6.3.6 The importance of compounding growth

In a 10 year projection, compounding growth can have a significant impact on the output of the projection. The percentage growth rate applied in year 10 will result in a nominal growth amount which is dependent on the growth rates applied in the earlier 9 years of the projection.

What this means is that if projected growth is not achieved in the earlier years of the forecast, a higher rate of growth than originally projected is required in the outer years to achieve the original forecast.

The higher the projected average growth rate, the larger the cumulative effect of compounding growth as growth next year also includes growth generated from the current year forecast. This means that if growth rates are not achieved in a given year or years this could have a significant impact on the results of the projection, even if growth rates in all other years are achieved.

Lincoln's current projection is based on a cumulative year on year EFTS growth which translates into a cumulative year on year revenue growth:

▶ 9(2)(b)(ii) and 9(2)(j) of the OIA

Below is an example of the importance of compounding growth in relation to Lincoln's projected growth in international EFTS revenue:

Table 12: Compounding growth analysis

Compounding growth analysis - International student revenue									
\$m	FY16	FY17	FY18	FY19	FYFY	FY21	FY22	FY23	FY24 Average
10 Year Plan - Current Trajectory									
International revenue growth	9(2)(b)(ii) and 9(2)(j) of the OIA								
International revenue (\$m)	[Redacted]								
Example 1: 10 Year Plan - 10% annual growth									
International revenue growth	9(2)(b)(ii) and 9(2)(j) of the OIA								
International revenue (\$m)	[Redacted]								
Variance to base case (\$m)	[Redacted]								
Example 2: 10 Year Plan - 8% annual growth									
International revenue growth	9(2)(b)(ii) and 9(2)(j) of the OIA								
International revenue (\$m)	[Redacted]								
Variance to base case (\$m)	[Redacted]								

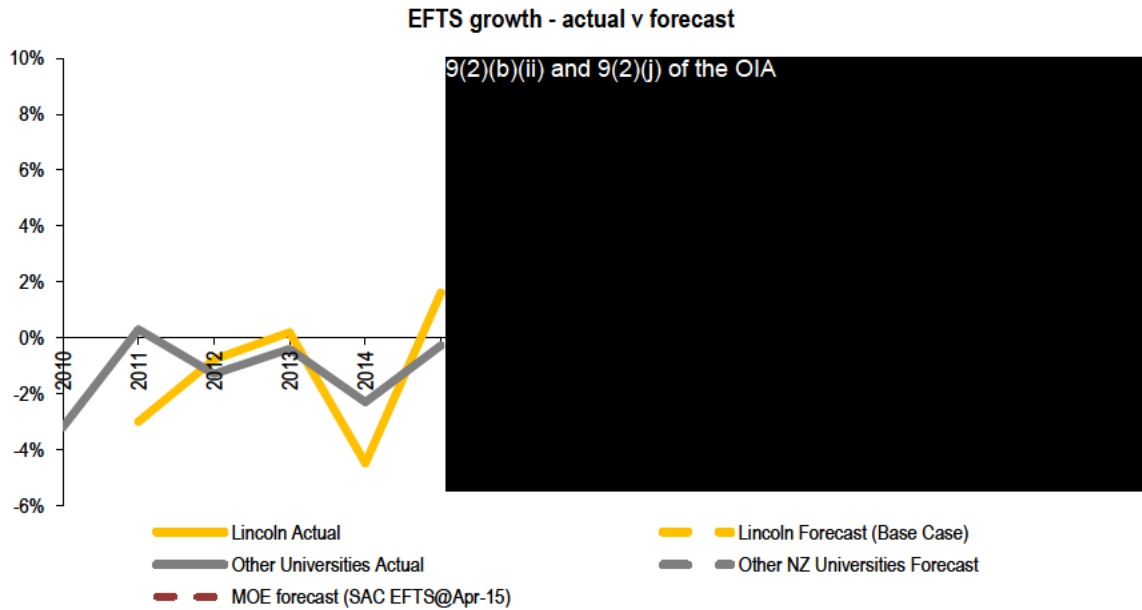
Source: LU-10 year model - base case IS pdf

- ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA
[Redacted]
- ▶ We show two examples, one with a 10% average growth and the other with 8% average growth, both relatively high rates 9(2)(b)(ii) and 9(2)(j) of the OIA
[Redacted]
- ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA
[Redacted]
- ▶ This example only considers international revenue growth, Lincoln is assuming growth rates across all revenue lines that are significantly higher than what has been achieved historically.

6.4 EFTS

Lincoln's projection of the annual growth in EFTS is outlined in the figure below.

Figure 12: EFTS growth - actual versus forecast



We make the following observations:

- ▶ **9(2)(b)(ii) and 9(2)(j) of the OIA** This is a reversal of the historical trend where student numbers have been declining at Lincoln.
- ▶ The decline in student numbers over the past 5 years is not isolated to Lincoln. As a sector, New Zealand universities have realised declining EFTS numbers since 2011.
- ▶ The MOE is projecting that EFTS will decline in the near term, decreasing by 2% in both 2016 and 2017 before flattening out. This translates into a cumulative decline in EFTS up to 2019 of approximately 5%.
- ▶ The average university forecast is more aggressive than the MOE projection. New Zealand universities are projecting EFTS growth of between 1.5% and 2% for the next 10 years.

MOE's projection is consistent with growth rates currently being experienced by Australian universities. The majority of Australian universities are struggling to achieve growth in domestic EFTS. For some of the larger universities, international EFTS is driving a small increase in revenue but in general EFTS and revenue growth has been challenging.

The table below shows Lincoln’s EFTS projection at a lower level of detail:

Table 13: Lincoln EFTS projection

Lincoln EFTS projection					
EFTS	2015A	2024F	Growth	CAGR 2015-2024	CAGR 2011-2015
Total Domestic	2,188	9(2)(b)(ii) and 9(2)(j) of the OIA			
Total International	747	9(2)(b)(ii) and 9(2)(j) of the OIA			
Total EFTS	2,935	9(2)(b)(ii) and 9(2)(j) of the OIA			
Lincoln-Telford Division	627	9(2)(b)(ii) and 9(2)(j) of the OIA			
Undergraduate	1,849	9(2)(b)(ii) and 9(2)(j) of the OIA			
Postgraduate	459	9(2)(b)(ii) and 9(2)(j) of the OIA			

Source: Lincoln 10 year projection

- ▶ Lincoln is projecting growth in students in all facets, including international and domestics and across all levels of study. The growth rates suggest significant reversal in historical trends.
- ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA
 - [Redacted]
 - [Redacted] This compares to a historical growth rate of 0.1% between 2011 and 2015.
 - 9(2)(b)(ii) and 9(2)(j) of the OIA
 - [Redacted]
 - [Redacted]

6.4.1 Drivers of EFTS and revenue growth

As Lincoln is projecting growth that significantly exceeds industry projections and historical growth rates below we discuss our understanding of the drivers of EFTS growth.

We understand that Lincoln’s strategy for achieving the projected EFTS growth is mainly based on:

- ▶ EFTS at 9(2)(b)(ii) and 9(2)(j) of the OIA [Redacted]; and
- ▶ the establishment of the Lincoln Hub, including the construction of a world class facility that will attract talent to the University from both international and domestic markets.

We make the following comments in relation to the Hub driving student growth:

- ▶ significant levels of EFTS growth are projected before the new facilities are expected to be constructed, and the Hub still in its establishment phase;
- ▶ empirical evidence suggests it can take a significant amount of time before the full benefits from a Hub are realised; and
- ▶ Lincoln needs to have appropriate marketing capability and strategy to attract the growth in both domestic and international EFTS.

We understand that Lincoln’s marketing team are currently at capacity and may not be large enough to fully cater all markets that it is trying to target. To increase EFTS at the rates projected will require investment in marketing 9(2)(b)(ii) and 9(2)(j) of the OIA [Redacted]

We note that year to date Lincoln has achieved increased levels of growth of 15% for graduate and post graduate courses (levels 4-9) which represents growth of nearly 250 EFTS. This is a positive for Lincoln and is a sign of a potential reversal of recent EFTS trends. As this is the first year of a change in trend it is difficult to conclude how sustainable this growth will be in future years.

In terms of Lincoln-Telford Division, Lincoln has advised that as at July it is projecting 550 EFTS for 2016. We note this is significantly below the 876 EFTS projected and the 800 funded by the TEC.

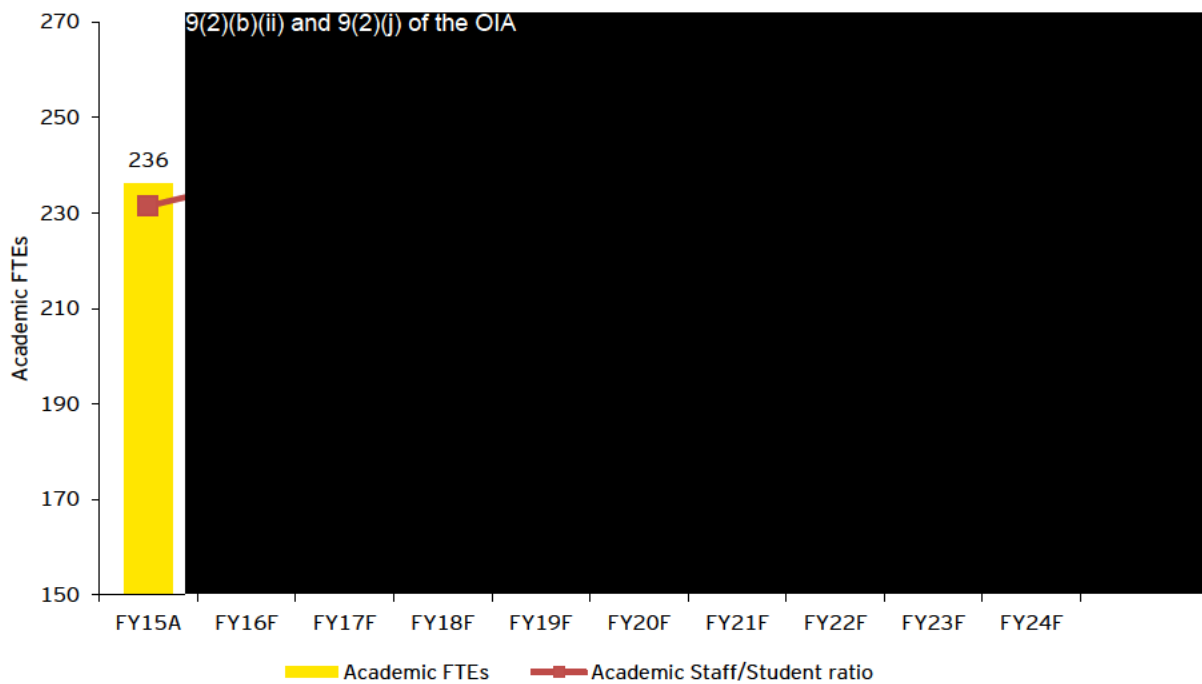
To summarise the discussion above, EFTS growth is the key driver of Lincoln's projected revenue growth. In the current 2016, Lincoln has achieved a significant increase in EFTS excluding Lincoln-Telford Division, which represents a recovery to 2012 levels. Lincoln's challenge going forward will be how it maintains growth rates that are significantly above industry averages and increases EFTS levels above record high historical levels. This is likely going to mean that new markets and demographics will need to be targeted which will require resource.

6.5 Personnel costs and FTE projections

Lincoln's personnel costs are currently more than \$60m per annum, representing Lincoln's major cost item measured at 58% of its revenue.



Figure 13: Personnel costs and academic FTEs projection



9(2)(b)(ii) and 9(2)(j) of the OIA

This assumption implies that Lincoln has significant capacity in a large number of Lincoln courses. We have not seen Lincoln's strategy to achieve this growth, but this may mean amendments to course structures and offerings, as well as teaching methods, will be required in the future.

We also note that if Lincoln achieves a student to academic staff ratio of 15, it will still be lower than the average ratio across New Zealand universities of 17, but would significantly bridge the gap. This is noteworthy given the scale of some of the courses offered by the large NZ universities relative to Lincoln.

9(2)(b)(ii) and 9(2)(j) of the OIA [redacted] We note that these rates are above inflation. In the tertiary sector above inflation pay rises can often occur due to employees moving into higher pay bands.

9(2)(b)(ii) and 9(2)(j) of the OIA [redacted]
[redacted]
[redacted]
[redacted]

Table 14: Personnel Costs

Personnel Costs			
NZ(000s)	2015A	2024F	Var
Personnel Costs	63,284	9(2)(b)(ii) and 9(2)(j) of the OIA	
Personnel costs % of revenue	58%		
EBITDA Margin	0.1%		

Source: Lincoln 10 year plan

We considered benchmarking Lincoln's personnel cost as a percentage of revenue relative to its university peers. As Lincoln's revenue has a significant commercial component this comparison was not deemed appropriate.

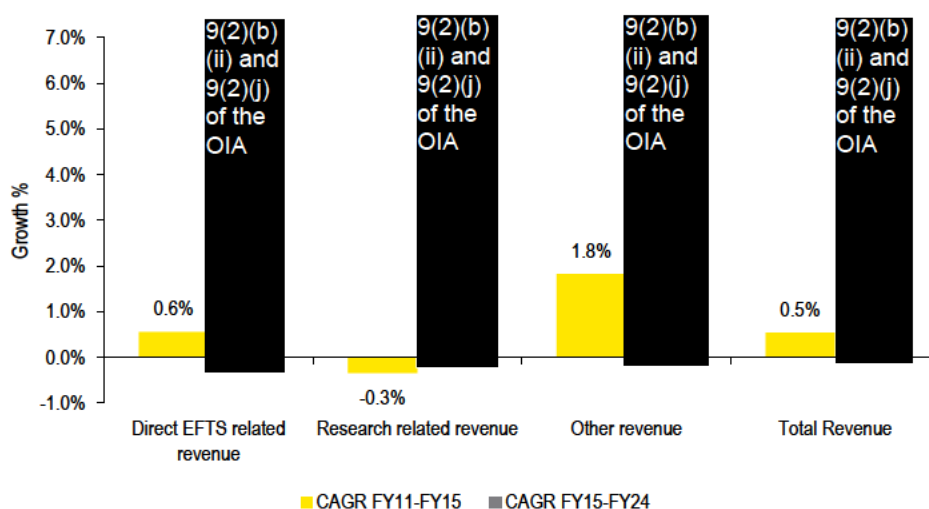
6.6 Risks

9(2)(b)(ii) and 9(2)(j) of the OIA [redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]

9(2)(b)(ii) and 9(2)(j) of the OIA [redacted], a measure of financial sustainability used in the TEC's FMF. A comparison to Lincoln's forecast revenue growth rates relative to historical growth between 2011 and 2015 is shown in the figure below:

Figure 14: Comparison between historical growth and forecast growth



In the section below we undertake sensitivity analysis of the key drivers to show the impact of downside risk to Lincoln's forecast. We appreciate there is also the possibility of upside risk to the forecast, which would bring financial sustainability forward, however prudent risk management needs to consider the downside risk and how this risk will be mitigated.

In Lincoln's case the risk of achieving the projected numbers has a significant degree of uncertainty based on:

- ▶ The significant improvement in performance and reversal of trends relative to historical performance.
- ▶ EFTS growth is significantly above projected industry rates and EFTS growth is projected to commence in 2016, well in advance of the projected Hub completion date.

We are not aware of Lincoln's mitigation strategies if the projection is not achieved, apart from some high level discussion in the Lincoln Hub Project Business Case. We note that there are two key levers that the University has to increase earnings:

- ▶ Increase revenue - Lincoln has projected increases in revenue across all parts of the organisation. It would not be prudent to assume additional revenue growth.
- ▶ Decrease operating costs - personnel costs make up nearly 60% of revenue. Although Lincoln is projecting that EFTS will remain relatively constant over the 10 year projection period, the high ratio of professional to academic staff offers potential scope for some cost reduction.

Lincoln can also reduce capital spend or sell assets. This will not assist with mitigating Lincoln's financial sustainability but it may provide additional liquidity to support the cash position of the business given 9(2)(b)(ii) and 9(2)(j) of the OIA. We will discuss this in more detail later in the options analysis section of the report.

We note that in Australia for a large number of universities revenue is remaining flat and, despite the lack of revenue growth, operating costs continue to grow. This is the case for large universities including Queensland University of Technology and Flinders. As universities are finding it difficult to increase revenue, they are forced to focus on cost reductions to maintain profitability. The cost reduction initiatives are mainly directed at back office cost reductions. This involves gaining an understanding of what the actual back office costs are across the various support services and how the operating model can be changed to reduce these costs. In the later part of the report we

examine a scenario titled Enhanced Current Trajectory which examines potential upside to Lincoln's financial performance from cost reduction strategies.

We note that downside risk to Lincoln's projection will impact when Lincoln is projected to be financially sustainable.

6.7 University of the Future - key forces at play and their impact

Lincoln's plan to reach sustainability is largely based on growing traditional catchments in traditional ways, based on a teaching and delivery approach that involves incremental changes (e.g. the information strategy). An important part of testing the sustainability of the Future State forecasts is to understand how this approach may be impacted by best practice in the sector, the current and future trends in the university sector internationally and the specific steps that other universities are taking to strengthen their positioning.

The target is not fixed but moving and failure to keep pace with what makes a modern university attractive will impact on the EFTS growth forecasts (especially, but not exclusively in the highly competitive international student area), as well as the university cost structures.

The need to adopt a modern approach to the delivery of university services is fundamentally supported by the analysis and trends around the importance of land-based teaching, research and innovation to the New Zealand economy. Primary industries are growing and there is an increasing need for an escalation in the numbers of tertiary educated workers in order to ensure long term sustainability in the agricultural sector.

Key themes that emerged from EY's research are:

- ▶ democratisation of knowledge and access;
- ▶ digital technologies;
- ▶ integration with industry;
- ▶ global mobility; and
- ▶ contestability of markets and funding.

6.7.1 Key theme 1 - Democratisation of knowledge and access

Traditionally, universities held the key to knowledge, in both a physical and philosophical sense. University libraries, faculty domains and research institutes were where knowledge was created, stored and shared and universities held a privileged status as originators and keepers of knowledge.

Access to universities has traditionally been dominated by a modest proportion of society in developed markets (20-30% students) and a very narrow proportion of society in emerging markets, typically the elite. Increasingly knowledge is open to anyone globally with a device and connectivity – not just facts and figures, but also analysis, interpretation, and curation of knowledge.

Today, access is expanding both in developed markets, such as those in Oceania but even more fundamentally in emerging markets – in China participation trebled from 8.0% to 25.9% in the first decade of this century, and is likely to double again in the next 10-15 years.

This expansion of access will drive a global 'education revolution' of and societies by creating opportunities for millions of people and their families to increase their standards of living.

For universities, this will drive new approaches to teaching and learning, create opportunities for entry to new markets and new global partnerships, stimulate new distribution approaches – such as low-cost distribution in rural areas – and also create new sources of competition.

Implications for Lincoln

- ▶ The importance of equity of access, both as a foundation stone of social mobility and a means for realising higher education skills targets is universally recognised but democratisation of access to knowledge means that the link between equity of access to universities and equity of access to knowledge will begin to erode over time.
- ▶ There will be more potential international students but also more competition for both international and domestic students.
- ▶ The challenge for the university sector is to maintain and grow their student numbers in this environment and to do so sustainably.
- ▶ This democratisation of knowledge and access, especially as it ripples through the developing world will create significant opportunities for those universities who are globally competitive.
- ▶ The challenge for Lincoln will be to compellingly address the opportunity that this creates in an environment which is currently heavily fiscally constrained and where student numbers are already falling.

6.7.2 Key theme 2 - Increasing Use of Digital Technologies

Digital technologies will transform the way education is delivered and supported - education will be available anywhere, anytime and will be supported by enhanced feedback, learning analytics, seamless student support systems, - both in the developed and developing world.

Digital innovation has disrupted many established industry sectors and while 'online education' has been here since the 1990s, in the last 2-3 years the pace of change has accelerated - the role of the academic will be increasingly disaggregated as curriculum development, presentation, online design and analysis of learning analytics become specialisations.

Efficiency gains delivered through the digitisation of the support functions of Finance, HR, IT, central procurement, student services and research support are yet to be realised in many institutions - but they are an increasing focus across all larger universities.

Universities will not in any way disappear as places of teaching and learning, research, community engagement, and of varied student experience - but they will be much more tightly integrated digital tools and approaches and personalised/blended/flipped learning will be the norm

Digital technologies will transform the way value is created within the higher education sector - public and private providers will specialise in parts of the 'value chain' - content generation/aggregation and new models of collaboration with media companies will evolve - some of these models will decline and fail, others will create very substantial economic value.

In the US some small universities have successfully experimented with using online programs to diversify their student base and to grow new revenue streams. But for every success, such as St Leo University in Florida which grew their online programs from zero to US \$85m in 8 years, there are more who have not been able to articulate a compelling online strategy, who have not been able to bring practical courses online or who have been unable to build their own platform and who have resorted to all costs/no revenue participation with MOOC's.

Implications for Lincoln:

- ▶ Frictionless online delivery will increase the importance of rankings and the expectations of students but programs which have a practical element or a requirement for significant capital assets to provide the education will be partially protected from the full effects of this.

- ▶ As digital technologies & innovative approaches to teaching, learning and collaboration on research extend their reach into Universities there will be a near-transformation of both the on-campus and off-campus student experience.
- ▶ While improving local teaching and learning delivery to on-campus students is a worthwhile and necessary goal, the real challenge for smaller universities such as Lincoln will be to
 - leverage new technologies to grow their remote and international student base; and
 - to position themselves as an attractive partner with industry and to develop sustainable (read profitable) models of collaboration with industry.
- ▶ Digital technologies, the growth of the importance of rankings and increasing participation rates in developing countries will intensify the competition for and expectations of internationally mobile students - to achieve your targeted growth in student numbers, Lincoln will need to ensure that it can provide the types of online support that competitor organisations are offering.
- ▶ There will be more focus on efficiency as much as effectiveness of digital tools (teaching & administration) and a greater focus from other Universities on developing fee-based online services.
- ▶ In recent years many of the universities in Australia and New Zealand have been spending significantly to support capacity development and online course development to address these changing expectations.
- ▶ The most recent Cubane/UniForum analysis of spend for 2015 shows that the funds being spent on Transformational Investment in IT (which includes investment in capacity, platforms and online courses) has topped AUD \$30m in some institutions and averages over AUD \$8m.

For an institution like Lincoln, these types of digital delivery are likely to be best delivered with the support of universities that already have highly developed systems and cultures around this type of delivery.. In addition the expensive systems and processes around these are most likely to offer value for money for Lincoln where they are delivered at the type of long-run marginal cost that can be gained through partnership as opposed to the development in house.

6.7.3 Key theme 3 - Integration with Industry

The relationship between the higher education sector and industry will deepen - industry will be a key partner, and also a competitor in specialist professional programs. This change is already in train with Industry now playing multiple roles: as customer and partner of higher education institutions and, increasingly, as a competitor.

For universities to survive and thrive, they will need to build significantly deeper relationships with industry in the coming decade. Scale and depth of industry based learning and internships, for example, will become increasingly critical as a source of competitive advantage for those universities who have the industry partnerships/pedagogy to do it well.

Research degree programs /applied research will increasingly be run in partnership with industry. In Australia the Australian Technology Network of Universities' now deliver a new industry-based PhD program, and the mining industry establish tight research partnerships with the University of Queensland and the University of Western Australia.

Research commercialisation will go from being a fringe activity to being a core source of funding for many universities' research programs and increasingly industry will compete with universities in a number of specialist professional programs.

Professional organisations (engineering, pharmacy etc.) may follow the lead of the accounting bodies and provide a range of specialised post-graduate programs with a particular emphasis on their role as certifiers and deliverers of content.

Universities will need to build significantly deeper relationships with industry in the decade ahead – to differentiate teaching and learning programs, support the funding and application of research, and reinforce the role of universities as drivers of innovation and growth.

The example of both the Swedish University of Agricultural Science and Wageningen University are instructive in this regard. Both are heavily focused on inter-disciplinary research and commercial partnerships/research and both generate significant funds from such endeavours.

As importantly the Swedish University of Agricultural Science allocates over 70% of its annuals budget to Research and doctoral education in the areas of ecology, environmental science, plant science and forest science with the result that on a per academic basis, they have one of the top 20 highest incomes per academic from Industrial partnerships of any University at \$0.1442m.

Implications for Lincoln:

- ▶ The focus for universities will have to be very much more market facing, both in terms in of their explicit focus on meeting identifiable human capital requirements and in terms of enhancing cooperation with industry and commercialisation activity.
 - Clearly Lincoln is already very market orientated both in terms of human capital development for specific industries and in terms of industry partnerships.
- ▶ The broader implications of changes in this area are outlined below.
 - The nature of the engagement between universities and industry will need to deepen, broaden and become more strategic to both parties - though this will not apply equally across all institutions.
 - The emphasis and focus on the value of commercialisation activity will grow significantly and with it the need for capacity in 'Technology Transfer'.
 - Closer involvement of industry in the 'business of education' will see industry participants emerge as both joint-venture partners and competitors to universities in multiple domains.
- ▶ Lincoln will achieve increased integration with industry through Lincoln Hub and generate value through a combination of the following:
 - Industry led, commercially focused "umbrella" project management linking the right expertise to develop solution-based projects.
 - An effective interface between the client and science to ensure the right scope to provide the best solution; aligning expectations with outcomes throughout the project lifecycle.
 - A gateway to the best science team. One portal to access the right team across an established network of potential project partners.
 - Not only does NZ offer the project management, science, research and educational skills, it offers the necessary physical and regulatory testing environments with a direct relationship to the farm gate.

6.7.4 Key theme 4 – Increasing Global Mobility

Global mobility will continue to grow for students, academic talent, and increasingly for university brands. In the face of government cut-backs, international students have been the lifeblood of many higher education sectors over the last 15 years.

Just as students will be increasingly mobile, so too there will be increased global mobility of academic 'brands'. New hybrid MOOC models are developing and the distribution of content by the likes of Harvard University, Massachusetts Institute of Technology and others is creating a global brand impact and increasingly a revenue stream through short-course, for-credit courses etc., if not revenue at this stage.

While the international student market is growing rapidly, it will fundamentally change in structure in the coming decade as traditional source markets – China, Malaysia, South Korea and others – increasingly become global-scale destinations for international students.

The likely outcome over the next 10-15 years is the emergence of a small number of elite, truly global university 'brands' including some of the 'usual suspects' Ivy League, Oxbridge etc. along with institutions – as well as a number of elite institutions from amongst China's C9' institutions.

Implications for Lincoln:

- ▶ Longer-term dependence on increasing international student numbers should be questioned unless they are based on recognised international rankings or unique service offerings.
- ▶ While there will be a greater potential pool of international students on which to draw, there will be less certainty of international student numbers as a wider range of international universities focusing on these students.
- ▶ Recruiting international students will increasingly require a reputation for both academic quality and the quality of the student experience – fiscal constraints have the potential to very quickly impact on standard rankings in both these areas and thus global mobility may favour recruitment for those elite universities and those with the capability to grow and extend the reach of their the brands.
- ▶ Previous donor/source markets will become net recipients of international students and will begin to challenge Lincoln for students.
- ▶ Increasingly universities will have to compete aggressively for their talent as academic mobility becomes the norm.

6.7.5 Key theme 5 – Contestability of markets and funding

Since the global financial crisis, most developed economies have experienced a decline in State funding per student, some more rapidly and deeper than others. In the UK experienced one the most dramatic increases in the proportion of total expenditure on tertiary education which was sourced from private rather than public sources.

In the UK this grew from 30-70% between 2000 and 2011 and in the US and Australia there were also increases through from a much higher base.

In Australia since the introduction of the demand-driven and uncapped funding model in 2012 - numbers increased and distribution has shifted significantly between universities with a number of universities finding themselves confronted by losses of 5-10% as some of the more highly ranked universities and those in niche areas increased their intakes to take advantage of marginal gains.

While efforts may be made to limit the fiscal implications of growth in enrolments, the deepening of market contestability is unlikely to be reversed, either in Australia or internationally. The broad trend is that every dollar of government funding is contestable and securing funds from non-

government sources – students, industry, philanthropists, and global collaborations – is fiercely competitive.

Implications for Lincoln:

- ▶ There does not appear to be quite the same level of competition for domestic or International students in New Zealand as seen in other markets – but as the Australian example has shown, domestic demand is not static and aggressive pursuit of international students with the use of agents is the norm in Australia.
- ▶ The requirement for institutions to evidence and sustain the viability will grow and there will be more competition for every dollar of funding, a greater focus on non-governmental funding and less certainty of funding sources and volumes.
- ▶ The need for Lincoln to have a clearly articulated and targeted marketing strategy specifically in international markets given its international growth forecasts.

6.8 University of the Future – contextualising Lincoln

Lincoln has taken some critical steps towards positioning its academic focus towards a best practice approach for smaller universities. Its course restructure, focus on land and brand and being an agricultural university give it more relevance and distinctiveness as a smaller university, especially compared to the counterfactual or a small university with a generalist rather than specialist strategy.

However, it still retains a range of critical risk factors against this ideal operating model, namely back office costs and structures. It also is also is subject to material external threat from similar universities who are transforming around diversified course delivery (e.g. online and co-offered). This is both a global and domestic threat to Lincoln.

Similarly, while the integration with industry is improving, based on the Hub strategy and information about future announcements, there is considerably more scope for Lincoln to monetise and leverage its industry links in order to increase its relevance and direct financial benefit to industry.

6.9 Conclusion

The Lincoln financial model and Future State Strategy demonstrate that there is a path to sustainability for the University over the medium term. Compounding growth is critical to the success of failure of Lincoln to reach sustainability over an acceptable timeframe.

Additionally “good years”, particularly on EFTS prior to the break even date, will bring forward the date at which Lincoln is viable.

There is, however, substantial downside compounding risk around the EFTS numbers. Years in which Lincoln underperforms against EFTS forecasts will push out the date at which Lincoln is viable. We consider that the growth in EFTS numbers forecast is underpinned by a set of assumptions that are optimistic when compared against both New Zealand and Australian forecasts both at the MOE and individual university level.

Lincoln’s forecasts are based on it outperforming its peers by substantial margins. In considering these risks, we have looked at how the large percentage growth figures reconcile to what are effectively small increases in nominal student growth. We have also qualitatively assessed how the growth forecasts are supported by Lincoln’s marketing and recruitment efforts.

Based on this analysis we are not prepared to directly challenge the growth assumptions. We are, however, firmly of the view that there is considerable downside risk to the Future State position and very limited upside risk. This downside risk is not just a matter of small numbers of students. Our

analysis shows that some areas of the financial model are highly sensitive to even small reductions in the growth forecasts. These small reductions translate into large costs and effectively push back the date at which Lincoln will be viable aggressively.

Further, our research and experience suggests the success of a specialist university is not predicated on growth in student numbers. By nature a specialist university typically has a low number of students. Success is predicated on factors such as alternative sources of funding, dominating a niche, collaboration and innovation. These factors impact University rankings which ultimately attracts students.

The Lincoln Hub strategy has a good fit with how universities are evolving and developing to meet modern challenges. The Hub will facilitate and accelerate integration with research and industry and drive innovation some of the critical success factors of niche universities. The current Lincoln strategy is, however, vulnerable to the length of time it will take to realise these benefits, to competitors who go further in the way they respond to future challenges, particularly around digital offerings and integration with industry beyond what is already being done.

Lincoln's strategy to modernise teaching and delivery methods is currently very limited. The use of digital technology and alternative delivery methods will be a necessity to complement the Hub and keep up with what other universities are doing globally. For the Hub to be truly successful it will have to have global reach. With increasing global mobility of students the importance of Lincoln's ranking and its ability to offer a unique experience will be hugely important if it is to compete with other universities and attract international students.

As such, our primary finding around the Future State is that the risks to the University and the TEC around the achievement of financial sustainability are material and that strategic options that de-risk financial, educational and economic outcomes are critical to Lincoln's ongoing operations. A broad-based approach to de-risking the Strategy is critical - namely the Council and the TEC need to consider strategic options that both reduce costs, and increase student numbers/revenue over which to spread those costs.

7. Strategic Options

Key findings:

- ▶ Four strategic options (along with a 'Do Nothing' Option) have been developed and assessed
 - The **Current Trajectory** option is effectively the actions Lincoln and the TEC are currently taking to achieve financial sustainability
 - The **Enhanced Current Trajectory** option looks at approaches to reduce costs through efficiencies, including shared services, but not grow student numbers beyond current forecasts
 - The **Integration/Integration** option moves beyond existing activities with the Hub and targeted efficiencies, towards a more structured long term arrangement with one or more strategic partners
 - The final option involves a **Managed Wind Down** of the University activities in the event that the Lincoln University operation (as opposed the assets) is not viable over the long term
- ▶ None of the options are stand-alone and mutually exclusive. The core actions that underpin each option are common and build progressively on one another. The reverse is also true in that a focus on integration options ensures that much of the work needed to advance the other options is also completed
- ▶ Consideration needs to be given to the vertically integrated parts of Lincoln's operation that are not part of the University offering - namely Lincoln-Telford Division. While both are part of the strategic goal of improving educational and economic outcomes, each needs to clearly show both a financial and agglomeration benefit to be considered integral to the Strategic Option, as opposed to an item that should be closely investigated in terms of rationalising costs or improving delivery outcomes
 - Our assessment is that only the Hub meets the criteria. The proposal appears significantly more physically and operationally integrated with Lincoln than Lincoln-Telford Division, and appears to offer a basis on which further efficiencies can be leveraged
 - Lincoln-Telford Division does not appear to offer similar operational efficiencies and future potential. This does not preclude its retention by Lincoln (which is discussed in the recommendations section), in this section we have simply assessed Lincoln-Telford Division as not being an integral part of the Strategic Option (though noting certain aspects such as the Whenua Strategy have important wider implications that need to be worked though, although this could be part of any "deal" to transfer Telford to another provider.)
- ▶ We have developed a framework on which to evaluate the strategic options. The framework reflects the key issues discussed in this report around financial viability and sustainability, education outcomes, contribution to the economy and combines both qualitative and quantitative assessment and is based on international best practice (including New Zealand Treasury guidance)
 - Based on the analysis, both the Enhanced Current Trajectory and a deeper long term partnership (potentially integration) are likely to deliver better results net of their respective transition costs
 - While both Enhanced Current Trajectory and integration options improve the chances of a viable, land-based offering, both also entail significant financial cost to both the University and the TEC
- ▶ Effectively, every option involves a financial trade-off between the investment required to implement change and the ongoing financial support the University requires

7.1 Overview

As discussed in the previous sections of the report, Lincoln is facing a number of challenges in relation to its financial performance. For a number of years Lincoln has generated operating deficits spanning back before the Canterbury earthquakes. The operating deficits reported have resulted in the TEC considering Lincoln high risk based on the FMF. In addition the Crown has preliminary approved approximately \$100m of funding to Lincoln to assist it construct Lincoln Hub.

The strategic options assessment below outlines options that consider Lincoln's viability in the medium term and ultimately sustainability in the long term as well as associated risks and the magnitude of these risks under each option.

7.2 Strategic options

Five strategic options have been identified, representing a range of potential pathways for Lincoln. These options were developed in consultation with the Steering Group. The list of options is not exhaustive, as consideration has been given to the options that represent a broader continuum of possible directions. Figure 15 provides a graphical representation of the options, with a detailed outline presented in the following section.

Figure 15: Lincoln's Strategic Options



Below we summarise each of the options outlined in the figure above:

Do Nothing - under this scenario Lincoln does not introduce any changes to its strategies and performance. As it contains factual data and not forecasts, it represents the baseline scenario from which all subsequent projections and forecasts are made. In essence, this option is a step back from Lincoln's current operating intentions and strategy.

Current Trajectory - represents Lincoln's current projected trajectory from its proposed transformational process that includes re-evaluation of the strategic and operating direction of the University in terms of its reformation from a comprehensive institution to a niche university specialising in land-based disciplines. This option has a strong focus on creation of the Lincoln Hub and the positive flow on effects in terms of growth in student numbers, improved perception of the

University brand, and increased domestic and international research rankings. The “Current Trajectory” is defined as Lincoln’s base case 10 year plan as outlined in the “Future State” section.

Enhanced Current Trajectory - building on the Current Trajectory option and utilising similar assumptions around the investment strategy for Lincoln Hub, the University undertakes steps to de-risk its emphasis on the growth in student numbers by identifying further efficiencies within the system and making investments to achieve these.

Integration - for the purposes of this report, this option is considered on a continuum, starting from alliance-type integration to a full merger¹⁹. Under this option it is assumed that Lincoln current campus continues to be used to deliver land-based courses.

Managed Wind Down - under this option, a decision is made to discontinue offering courses and performing research at Lincoln. This option entails a sale and/or disposal of all Lincoln assets and assumes that, due to the high economic value of land-based education to the primary sector and the wider economy, Lincoln’s courses would be offered by another provider, however at a new location.

7.3 Primary Evaluation Framework

7.3.1.1 Primary approach

The process of creating, evaluation, and implementing strategic options for Lincoln University involves high level of uncertainty, long term consequences, and the need to ensure key stakeholders actively participate in the strategic decision under consideration. The decision to proceed with a particular option is based on the risk assessment of the option under consideration in terms of the overall impact and likelihood, the projected return to long term sustainability, and ease of implementation.

The analysis undertaken for each option attempts to answer the following key questions:

- ▶ Will this strategic direction return Lincoln to financial sustainability?
- ▶ What is the overall risk status of the option in terms of the probability of this direction being unsuccessful and its likely impact?
- ▶ How easy it is to implement this option?

Financial sustainability has been measured in terms of Lincoln being able to generate a 3% operating surplus in short, medium, and long terms.

Risk assessment was based on the following criteria:

- ▶ Assigning a high level probability rating to the risk of strategy being unsuccessful. The probability rating is considered in terms of the degree of uncertainty and variability in the main assumptions, implementation costs, and capabilities needed to execute a strategic option.
- ▶ Assigning an impact rating on TEC’s financial assistance.
- ▶ Combining the two to derive the overall risk assessment for the option.

¹⁹ Whereby one of the institutions under consideration is incorporated into another institution, ceasing to exist as a legal entity

The following table displays the impact and probability ratings that were used in the assessment.

	Probability Rating	Impact Rating
1	Unlikely	None
2	Moderate	Minor
3	Likely	Neutral
4	Almost Certain	Serious

The overall risk rating is displayed using a traffic light system, with red signifying high risk, orange medium risk, and green low risk.






In addition, we considered the ease of implementation in terms of timescale, process, capabilities, and implementation costs. This element was identified as:

- ▶ High - can be implemented within the normal timescale, fairly straightforward process, low level of capabilities and implementation costs.
- ▶ Medium - there are some impediments to the implementation schedule and process; implementation relies on investment into costs and capabilities.
- ▶ Low - there are considerable barriers to implementation in terms of timescale, schedule, process, capabilities, and costs.

We have used the following framework which contains a mix of quantitative and qualitative analysis that to assess each of the options:

1. **Overview of each option** - a detailed overview of the option.
2. **Education and economic outcomes** - how the option impacts economic outcomes for the primary sector and wider economy in New Zealand as well as education outcomes for students in New Zealand.
3. **Financial Implications** - consideration of the financial implications of each option using a mix of financial information received from Lincoln and a range of benchmarks where Lincoln data is not available. Using this information, Lincoln's operating surplus is projected forward and compared against a key sustainability measure in the FMF defined as Lincoln achieving a 3% operating margin.
4. **Cost of Implementing** - a discussion of the potential costs likely to be incurred to implement each option and the financial trade-off between the investment required to implement change and the ongoing financial support to the University.
5. **Other considerations** - any other considerations relative to the option that are not captured in the sections above.
6. **Risk Assessment** - considers the material risks associated with each option, the probability of each risk occurring and the consequence to the Crown as funder if the risk is realised.

7.4 Results of Primary Evaluation

Strategic Option	Financial Sustainability			Risk Assessment	Scale of change
	Short term	Medium term	Long term		
Current State	No	No	No		Limited - in the short term. No likely to be effective in medium to long term
Current Trajectory	No	No	Yes		Significant - base programme still involves major infrastructure investments and improvements to services and course delivery
Enhanced Current Trajectory	No	Yes	Yes		Significant - Cost of implementing and required capabilities pose major challenge. Major dependencies of key assumptions remain.
Integration	No	Yes	Yes		Significant - Cost of implementing and required capabilities pose major challenge.
Managed Wind Down	No	No	No		Challenging - Significant potential economic with limited positive financial impact

The Enhanced Current Trajectory and Integration options provide the best opportunity to return Lincoln to financial sustainability in the medium term. Through proposed collaborative initiatives, they offer the most effective ways of achieving economies of scale, diversifying Lincoln's current strategy and enhancing future prospects of growth. They offer opportunities for elimination of duplicate costs and activities in areas such as management information services, corporate services, and other costs. The basis for this conclusion is discussed in more detail during the remainder of the report where each option is explored in detail.

7.5 Interdependency of the options

To define the full spectrum of possibilities, 'continuum thinking' should be applied during the options selection process. This thinking allows us to recognise that there is a level of interdependency among the options and that the optimal strategy for Lincoln might include execution of selected phases from various options at the same time. This introduces an element of flexibility that is beneficial when strategic options are impacted by a high degree of uncertainty. Flexibility provides an opportunity to only exercise an option when it seems sensible to the University.

To provide an example, when considering merging with another institution, it is still recommended

to undertake the steps outlined in the 'Current Trajectory' and 'Enhanced Current Trajectory' scenarios as these steps would enhance the value proposition of the University and make it more marketable for alliance-type collaborative initiatives.

Simultaneously, it is advisable to undertake the market sounding exercise outlined under the 'Integration' option under all scenarios to firstly determine the feasibility of this path and secondly inform the possible strategic opportunities that are available to Lincoln. For example, market sounding process might uncover opportunities for rationalising some of Lincoln's operating functions (i.e. course development and marketing) through a collaborative initiative with another institution. Additionally, determining the feasibility of an 'Integration' option through market sounding will allow to narrow down the range of options that are available to the University. Namely, if the market has no interest in merging Lincoln's operations with another institution, the remaining options for the University are achieving success through one of the 'Trajectory' options or winding down its operations.

8. Option 1 - Do Nothing

8.1 Overview of option

The current state option represents the 'Do Nothing' scenario, under which Lincoln does not introduce any further changes to its strategies and performance. As it contains factual data and not forecasts, it represents the baseline scenario from which all subsequent projections and forecasts are made.

Current state Lincoln has the following characteristics:

- ▶ A specialist land-based university situated in rural Canterbury. In recent years, strategic changes around Land and Brand, and associated course consolidation have resulted in a more specialised and focused University.
- ▶ Lincoln is New Zealand's smallest university with approximately 3,000 EFTS. This compares to Waikato, the next smallest university, which has approximately 10,000 EFTS.
- ▶ Of Lincoln's 3,000 EFTS, approximately 700 EFTS study at Lincoln Lincoln-Telford that offer a range of sub-degree courses.
- ▶ Lincoln was impacted by the Canterbury Earthquakes that damaged a number of buildings. Lincoln is still awaiting earthquake proceeds for some of these buildings. EFTS have declined year on year following the earthquakes between 2011 and 2015 across international, domestic and Lincoln-Telford Division.
- ▶ Lincoln has reported an operating deficit in recent years which dates back pre earthquake.

8.2 Education and Economic outcomes

Lincoln plays a critical role in making New Zealand competitive. It is one of two universities offering a comprehensive approach to our land-based industries. Lincoln provides those industries with capable people, and improves our competitiveness through research and innovation which aligns with the Government's goal of growing New Zealand's primary sector (currently \$38 billion of exports) to 40% of GDP by 2025.

The importance of growing primary sector capability has been identified. Research has shown that the workforce in the agri-food primary industry has a lower level of qualifications than the general workforce. It has also been identified that nearly 100,000 workers will be required in the sector with post-school qualifications by 2025. The increase in qualification requirements includes the following key drivers:

- ▶ changing and evolving consumer demands;
- ▶ the need to maintain and add value;
- ▶ an increase in automation and the use of robotics;
- ▶ more specialised, sophisticated and larger production units;
- ▶ a growing demand for support services; and
- ▶ the need for transferability of skills across the primary industries.

There is also a growing demand for professional skills such as management and business, technical and scientific skills, as signified by the increasing requirement for skilled support services.

8.3 Financial Implications

Lincoln has generated operating deficits dating back to at least 2009 and before the 2011 Canterbury earthquakes. The last assessment under the TEC FMF indicated that Lincoln was at high risk. The operating surplus at the end of 2015 was a deficit of around \$6m which included a \$4m SAC recovery exemption (\$10m deficit without this exemption). The full year 2015 result was substantially improved from September 2015 forecasts due to a cost reduction programme that realised savings in the later portion of the year.

The drivers of the deficits are complex and multifaceted, but essentially come down to three key aspects:

1. Student numbers and associated revenue have declined over the past decade and with it, revenue has declined without any significant and sustained offset in other revenue sources from industry, research or philanthropy.
2. A high cost structure relative to the size of the University. This is a relatively simple metric where Lincoln, like other smaller universities, has all the fixed costs of a university but none of the scale to spread those costs over. Undoubtedly, larger universities have larger costs, but in general, as universities grow, the marginal costs of that growth are more than offset by the revenue base driven by larger student numbers.
3. The small university cost problem is exacerbated by Lincoln's land-based university focus. The courses offered are comparatively resource-intensive from both an asset and operating perspective. In addition, the majority of teaching activity is face to face and is not offset by lower cost delivery approaches including online learning.

8.4 Cost of Implementing

If Lincoln reports an on-going operating deficit this cannot be funded from internally generated operating cash flow. To fund its operating deficits Lincoln would need:

- ▶ to sell excess assets currently on the Balance Sheet; and
- ▶ rely on excess funding from the Crown.

Neither of these options are sustainable in the medium to long term and do not address the underlying issues driving the operating deficits.

- ▶ Excess assets are finite and will only fund the University in the short term.
- ▶ The New Zealand tertiary education system is based on a horizontal equity principle whereby expectations of all universities financial performance are treated and measured equally. If Lincoln is treated favourably for an extended period of time this may create incentives for other universities to push sustainability metrics by taking excessive risks, overspending or under delivering.

The horizontal equity principle as applied to Lincoln means that its underlying operating model has to be sustainable in the long run as exceptions for unique but unsustainable operating models are not eligible for additional funding.

8.5 Option Assessment

The analysis of the 'Do Nothing' option shows that, without any change in strategy, Lincoln is unlikely to return to financial sustainability in the short, medium, or long terms.


In assigning a risk rating to this option, it was assumed that growth in the EFTS numbers continues at historical rates, accompanied by a commensurate increase in costs, with all other variables held

constant. Considering that the historical average growth in student numbers is insufficient to return the University to financial sustainability, and assuming no cost reduction initiatives are undertaken, there is an almost certain level of probability that the current strategy will be unsuccessful in returning Lincoln to financial sustainability.

The impact on the TEC has been rated as serious as it is unlikely that Lincoln will be able to sustain its operations without future support from the TEC.

The overall risk of this option has been rated as high.

Ease of implementation has been rated as high in the short term.

Financial Sustainability			Risk Assessment	Scale of change
Short term	Medium term	Long term		Limited - in the short term. No likely to be effective in medium to long term
No	No	No		

9. Option 2: Current Trajectory

9.1 Overview of option

Since 2012, Lincoln has been on a transformational journey, re-evaluating its strategic direction, purpose, and detailed implementation strategies. As part of this process, Lincoln has rebranded itself from a comprehensive institution to a niche university providing land-based education to students and primary sector research. The transformational process included revision of qualifications the University was offering in order to place a stronger emphasis on a land-based part of teaching and introduction of a new research strategy. In conjunction with changes to the academic offer, the Lincoln Hub Partners submitted a Programme Business Case setting out the establishment plans, governance arrangements and roles and functions for the Lincoln Hub in December 2015.

The Current Trajectory option is based on Lincoln's base case 10 year plan as outlined in the Future State section and is based on the development and completion of Phase 1 of the Hub in 2019.

The Current Trajectory option is highly dependent on the assumption of strong growth in EFTS that is significantly above the industry projections (9(2)(b)(ii)). While the percentage growth figures in question represent small numbers of actual students (and therefore could be seen as achievable), the 10 year projection is highly sensitive in some areas (e.g. international student numbers) to even small reductions in (still positive) growth rates. Small reductions in growth rates aggressively impact on financial sustainability and have the effect of pushing out the date at which the University becomes viable.

In addition, academic staff numbers are projected to 9(2)(b)(ii) and 9(2)(j) of the OIA

Despite the above, industry EFTS growth rates, and efficiency generated in student to staff ratios, 9(2)(b)(ii) and 9(2)(j) of the OIA

. Any downside to these projections will push out these dates further.

We have seen limited commentary from Lincoln how risks to the strategy will be mitigated in the event that projections are not achieved.

9.2 Education and Economic outcomes

In addition to the economic and education outcomes discussed under the Current State option, the establishment of the Lincoln Hub and the construction of new science buildings will bring additional research and innovation capability to further enhance the growth of land-based sectors in New Zealand.

This idea that Lincoln Hub will focus on industry good and private business (collectively the 'private sector'), capability, innovation, new products, services and technologies can be developed more effectively, increasing export levels and accelerating extension.

9.3 Financial Implications

9(2)(b)(ii) and 9(2)(j) of the OIA

(See Future State section for more information).

The year in which Lincoln generates an operating surplus is dependent on the revenue and cost growth rates, deviations from the projection for either revenue or operating costs growth rates will

impact the year Lincoln is projected to generate an operating surplus.

To better understand the financial implications of some of the key assumptions impacting the Current Trajectory option we undertake sensitivity analysis on Lincoln's operating surplus and cash balance.

9.3.1 EFTS growth rates

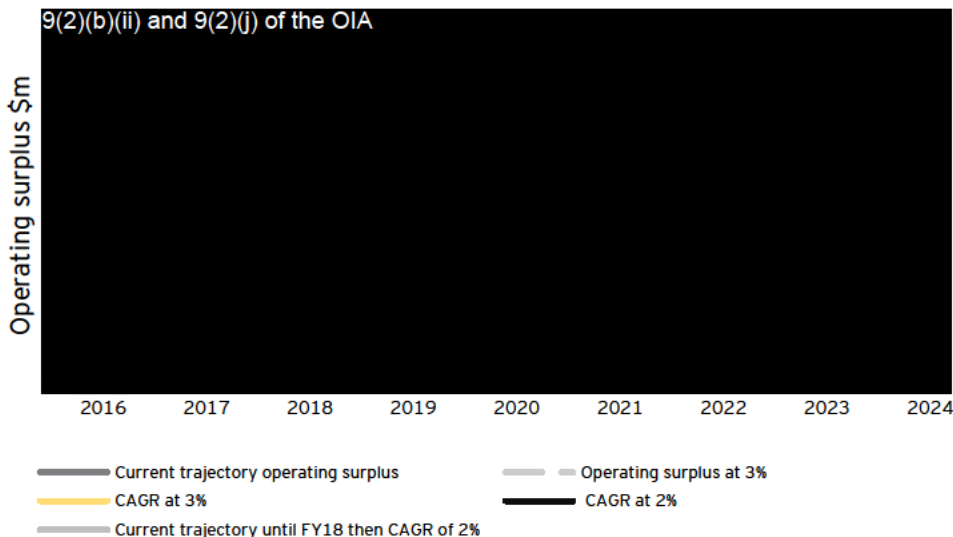
In the figure below we examine the impact on EFTS growth being lower than the **9(2)(b)(ii) and 9(2)(j)** as projected in Lincoln's 10 year plan. We show the impact on Lincoln's operating surplus and cash balance based on the following sensitivities that have been run through Lincoln's 10 year model:

- ▶ **9(2)(b)(ii) and 9(2)(j) of the OIA**
- [Redacted]
- [Redacted]

The sensitivities assume that there is a pro-rata decline in the mix of EFTS growth across international, domestic, post graduate, under graduate. An increased weighting of the decline towards international students (**9(2)(b)(ii) and 9(2)(j)** projected) would have a larger impact on the output presented.

Figure 16 highlights the impact of EFTS growth on Lincoln's financial sustainability as measured by the Lincoln achieving a 3% operating surplus. We believe that using operating surplus is more appropriate than EBITDA as operating surplus considers depreciation which is a high level proxy of the cost of capital assets.

Figure 16: EFTS growth - operating surplus sensitivity



Source: Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm

The figure above shows a sensitivity of EFTS growth only, it assumes all other revenue growth and operating cost growth assumptions projected in the Current Trajectory case are achieved. This includes projected fee increases (**9(2)(b)(ii) and 9(2)(j)**), and the projected growth in research and other revenue (**9(2)(b)(ii) and 9(2)(j)**). We note the following in relation to the figure:

- ▶ the EFTS sensitivities run have lower growth rates than assumed in Lincoln's Current Trajectory, however these remain higher than growth rates projected the sector in all cases;
- ▶ each of the EFTS growth sensitivities run delay the year that Lincoln is projected to break even and also suggest that Lincoln 9(2)(b)(ii) and 9(2)(j) of the OIA

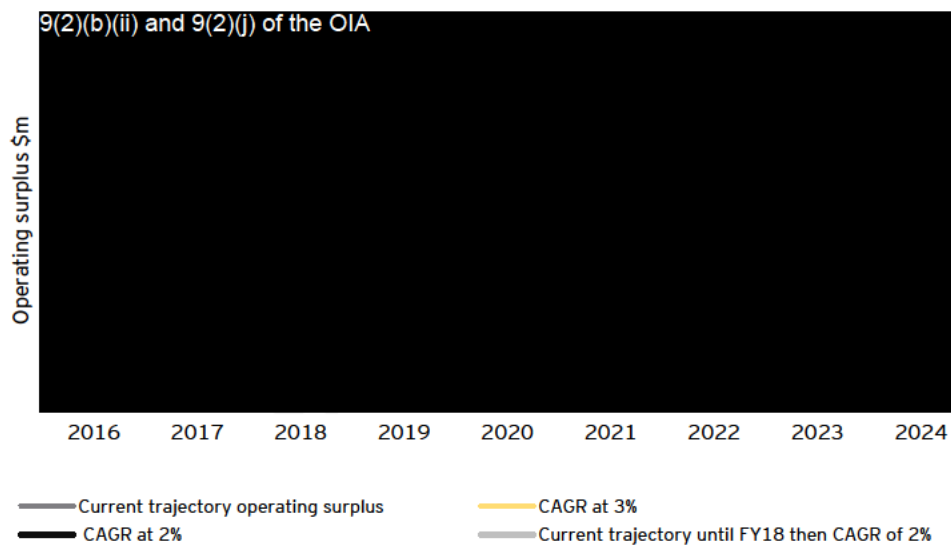
- ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA

9(2)(b)(ii) and 9(2)(j) of the OIA

and that small changes in EFTS growth can have a large impact on profitability, even if all other parts of the projection are achieved.

We also show the impact of EFTS growth on Lincoln's cash balance.

Figure 17: EFTS growth - cash balance sensitivity



Source: Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm

- ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA

9.3.2 Student to academic staff ratio

The student to academic staff ratio measures the number of students per academic FTE. A lower ratio generally signifies greater availability of lecturer’s services to students and lower lecturer’s workload.

This ratio is affected by various elements such the number of classes or students for which the lecturer is responsible, the amount of instruction time as compared to the length of teachers’ working days, etc. For example, increasing the number of students in a class taught by a lecturer or committing more of lecturers’ time to teaching while keeping the class sizes constant would result in an increase in the student to academic staff ratio.

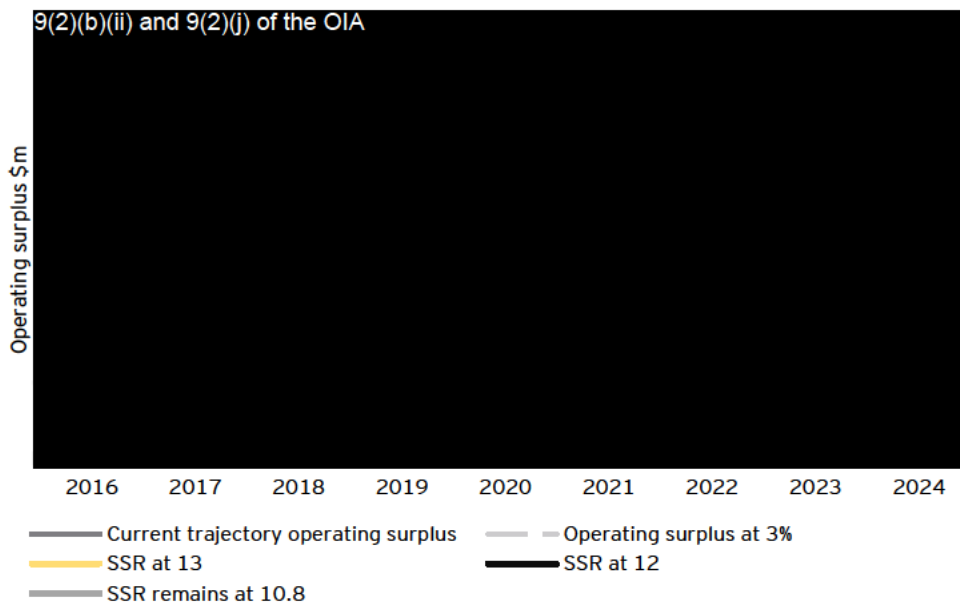
9(2)(b)(ii) and 9(2)(j) of the OIA
[Redacted]
[Redacted]

We understand that Lincoln’s believe its classes are currently under capacity and existing teaching staff can be leveraged across more students. Furthermore, as discussed in section 5.8.2, Lincoln’s current student to academic staff ratio is lower than most New Zealand universities, which suggests that Lincoln has capacity for increases in this area. Achieving a ratio of 15 will bring it closer to the national average and deliver efficiencies within its operating system.

We have not seen Lincoln’s strategy to achieve this growth but this may mean amendments to course structures and offerings as well as teaching methods. Below we run a sensitivity of the student to academic staff ratio based on the following changes, holding all else equal:

- ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA [Redacted]
- [Redacted]
- [Redacted]

Figure 18: Staff/student ratio - operating surplus sensitivity



Source: Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm

- ▶ The above figure shows that the operating surplus is less sensitive to the student to academic staff ratio than it is to EFTS growth.

- ▶ Lower student to academic staff ratios, delays the year that Lincoln becomes break even, by approximately one year for each student one student decline in the student to academic staff ratio. I.e. a decline in the ratio from 15 to 13 pushes out the breakeven year by approximately 2 years.
- ▶ If the student to academic staff ratio remains constant at 2015 levels, 9(2)(b)(ii) and 9(2)(j) of the OIA

9.3.3 Operating costs

9(2)(b)(ii) and 9(2)(j) of the OIA

- [Redacted]
- [Redacted]

For the Current Trajectory option we do not run any sensitivities on operating costs. Any operating model efficiencies will be discussed under the next option, called Enhanced Current Trajectory.

9.3.4 Mitigating actions

Lincoln has identified a number of potential mitigating actions if EFTS growth is lower than projected. These largely relate to cost reduction initiatives and include:

- ▶ Decreasing salary growth rates
- ▶ Increasing student to academic staff ratios to 15 by reducing academic staff
- ▶ Reducing the projected increase in support staff
- ▶ Reducing investment in new teaching models and pedagogy (although this could have other negative impacts on operating costs, and the ability to attract students).

The impact of these mitigating actions are not explicitly modelled in the sensitivity analysis in option 2 but are encapsulated in the savings modelled in the enhanced current trajectory, option 3.

9.4 Cost of Implementing

9.4.1 Student accommodation

9(2)(b)(ii) and 9(2)(j) of the OIA. Most of this growth is projected at the Lincoln campus. In response to the projected increase in student numbers, Lincoln has included in its capital plan an additional \$3.0m for investment in new student accommodation during 2016-2017, aligned to the forecast growth in student volumes. Further growth in student accommodation is assumed to involve a combination of leased accommodation and additional capital expenditure. 9(2)(b)(ii) and 9(2)(j) of the OIA. Given Lincoln's remote location, having adequate accommodation will be a key requirement to attract EFTS growth, particularly international students.

9.4.2 Marketing and Marketing spend

9(2)(b)(ii) and 9(2)(j) of the OIA

[Redacted]. We understand that Lincoln's marketing team is currently at capacity, and given that 9(2)(b)(ii) and 9(2)(j) of the OIA [Redacted] it would appear that Lincoln would need to increase

its marketing resource allocation and spend to drive an increase in EFTS.

To generate the projected growth, Lincoln may also be required to adopt new marketing strategies which may include teaming with other universities to promote Lincoln abroad. It may also require Lincoln to target new markets. We've not been provided with Lincoln's marketing plan in this regard.

9.4.3 University of the Future

As outlined in Section 6.7, Lincoln's vision of it operating a "Transformer" type model will likely incur transition costs. The construction and integration of the Hub into the University will help the University transition culturally, however new teaching and delivery methods and integration with industry partners will take time and incur cost.

We understand that Lincoln's current projection does not include costs relating to identifying and delivering changes to the support/professional services across the University and the outside support required to deliver this. In our experience with universities in Australia these projects typically span multiple years and incur upfront costs in the millions, even if they have short pay-back periods.

9.5 Other considerations

The Discovery Phase of the investigation process identified a number of areas where the current strategy was lacking sufficient rigor or where detailed implementation plans were missing. Some of the items identified will likely limit Lincoln's ability to deliver on its Current Trajectory projection, however it also offers opportunity if Lincoln can address some of these. For the detailed findings of the Discovery Report please refer to Appendix D.

9.6 Option Assessment


Under the Current Trajectory option, Lincoln returns to financial sustainability in the medium to long term.

In assigning a probability rating to this option, due consideration was given to the reasonableness of the assumptions underpinning the financial forecasts and their variability. The analysis has indicated that the projected surplus is highly susceptible to fluctuations in the student growth rate assumption. This consideration, coupled with a lack of other de-risking strategies, has led to the conclusion that there is a likely level of probability that the current strategy will be unsuccessful in returning Lincoln to financial sustainability.

The impact on the TEC has been rated as serious as it is unlikely that Lincoln will be able to sustain its operations without future support from the TEC.

The overall risk of this option has been rated as high.

Ease of implementation has been rated as low due to the potentially long timescale associated with implementation of the Lincoln Hub strategy, complicated process, high level of capabilities required to implement the strategy, and high implementation costs associated with this option.

Financial Sustainability			Risk Assessment	Scale of change
Short term	Medium term	Long term		
No	No	Yes		Significant - base programme still involves major infrastructure investments and improvements to services and course delivery

10. Option 3: Enhanced Current Trajectory

10.1 Overview of option

This option recognises the high risk profile of the 'Current Trajectory' option, with its inherent dependability on EFTS growth as the primary driver, and introduces potential mitigation strategies that Lincoln can utilise to lower the risk.

Table 15 provides a high level overview of the initiatives that Lincoln could consider pursuing on an incremental basis in order to meet the University of the Future Challenges discussed in Section 6.8 of the report. Additionally, this section provides quantitative assessment of some of these initiatives to determine the quantum of impact of these initiatives on Lincoln's financial sustainability.

Table 15: Potential actions to meet the University of the Future challenges

Area	Change Initiative
Business Model	<ul style="list-style-type: none"> ➤ Clearly outline Lincoln's business model and its role within the education system
Teaching and Learning	<ul style="list-style-type: none"> ➤ Improve university's responsiveness to the needs of employers and learners by undertaking a detailed demand analysis, introducing data analysis, and creating and implementing detailed plans around target student segments ➤ Detailed approach and analysis is especially pertinent to attracting international students as a key driver of growth in Lincoln's Operational Model ➤ Introduce a consolidated approach to reporting on student data and financial analysis, at a divisional/faculty level ➤ Align pedagogy strategy to the requirements of the Universities of the Future in the following areas: <ul style="list-style-type: none"> ▪ Improving university's digital capabilities (improved use of digital technologies within Lincoln, introduction of blended learning) ▪ Understanding and meeting higher expectations for 'engagement' in the learning process ▪ Improving job market positioning ▪ Increasing socially-rewarding experiences ➤ Introduce an outcome focused framework with detailed key performance indicators and assignment of clear ownership and accountability
Research	<ul style="list-style-type: none"> ➤ Clearly determine the efficiency and effectiveness of Lincoln research functions, measured in terms of increase in university's ranking and/or profitability as well as connection of the research strategy to industry requirements ➤ Implement an outcome focused framework with faculty level initiatives, incentives and measures that increase Lincoln's engagement with industry and research revenue for the university ➤ Introduce government and corporate partnering as a platform for future funding and community relevance (Lincoln Hub)

	<ul style="list-style-type: none"> ➤ Discontinue research functions that are not increasing university's viability ➤ Consider investment into intellectual capabilities of Lincoln University ➤ Introduce an outcome focused framework with detailed key performance indicators and assignment of clear ownership and accountability
<p>Asset and Financial Strategy</p>	<ul style="list-style-type: none"> ➤ Reconsider Lincoln's current and planned expenditure on capital reconstruction of buildings (i.e. farm redevelopment plan). Considering the current constrained operating environment, Lincoln's capital investment strategy should be optimised to focus on improving its financial viability and future sustainability of the university ➤ Furthermore, it is advisable to consider optimisation of Lincoln's portfolio of assets. This strategy may include divestment, restructuring, de-establishment of non-productive partnerships (i.e. property Joint Ventures and/or investments in subsidiaries). The proceeds of this optimisation process can then be channelled into investing in Lincoln's core capabilities ➤ Revitalise procurement functions by enhancing demand and supply management via stringent governance models, contract consolidation and consideration of different supply models (e.g. insourced versus outsourced) ➤ Introduce an outcome focused framework with detailed key performance indicators and assignment of clear ownership and accountability
<p>Operating Model Effectiveness</p>	<ul style="list-style-type: none"> ➤ Identify key high-level cost and resource implications and target areas that allow a reduction of long term operating costs ➤ Prioritise IT enhancements based on cost- benefits analysis. Consolidate IT services, including increasing shared services and aggregation of procurement spend (pursue shared services model with the University of Canterbury for student management system as a priority, and consolidation of HR and IT functions with Lincoln Hub as a longer term objective) ➤ Determine efficient Professional Staff to Academic Staff Ratio and Academic Staff to Student Ratio ➤ Optimise the effectiveness of functional operating models through centralisation of university faculties that promote collaborative culture (versus bureaucratic culture of decentralised models) ➤ Introduce fit for purpose and efficient functional operating models that enable academic staff to focus on research and teaching, and not admin work. This can be achieved through standardisation and alignment of IT systems across functions, and automation and simplification of time consuming processes ➤ Enhance working capital processes by configuring payment run schedules to be longer and collection schedules earlier, giving consideration to early payment discounts and interest or penalties for overdue debts ➤ Introduce an outcome focused framework with detailed key performance indicators and assignment of clear ownership and accountability
<p>Divisions</p>	<ul style="list-style-type: none"> ➤ Determine profitability of the Lincoln/Lincoln-Telford division. There is a clear indication that the division is operating at a loss. ➤ Should the outcomes of the analysis confirm a lack of profitability, consider creation of a marketing package to sell the division to market, or to introduce radical changes to the delivery model

	➤ Consider pursuing vertical integration with other ITPs
Capabilities	➤ Consider the adequacy of Lincoln's current capabilities in carrying out successful implementation of the strategies and plans

10.2 Financial Implications

Lincoln's downside risk to its operating surplus from EFTS growth being less than projected was highlighted in the Current Trajectory section. In this section we consider the potential upside from opportunities that Lincoln have to identified will have on the financial sustainability of Lincoln as indicated by the 3% operating surplus.

10.2.1 Back office operating model - cost reduction

Lincoln has the highest professional staff to academic staff ratio amongst universities in New Zealand which appears to be largely driven by its size. Despite this ratio, Lincoln employs less than 500 professional staff which is less than half of any other university in New Zealand.

All of Lincoln's back office functions are currently completed in house and we understand that run the same back office operating model for a number of years.

Universities worldwide are engaged in review and transformation of back office operating models.

Driving principles for change include:

- the need to respond to shifting economic conditions;
- improving responsiveness to technology innovation;
- reduction of service duplication and operating inefficiencies; and
- the establishment of service excellence and continuous improvement culture.

General sector trends highlight a move away from decentralised support structures to rationalised Hub and service node models. Fully Centralised and Shared Services hybrids are largely under implementation in more mature institutes.

Given the relatively small size of Lincoln in terms of EFTS and FTEs employed, a shared service type model maybe a more preferable option. This is consistent with what has been signalled by Lincoln's Vice Chancellor.

Based on our experience of working with universities to enhance and change to back office models, our observation is that savings in the region of 10% to 25% can be achieved largely through a reduction in professional staff headcount.

9(2)(b)(ii) and 9(2)(j) of the OIA

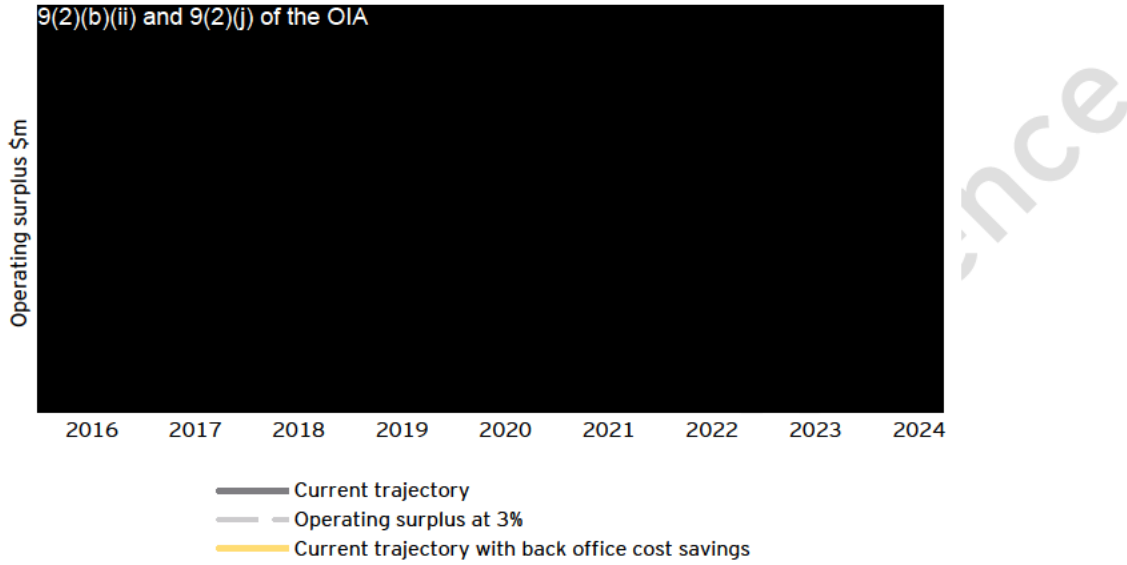
It is likely that a change programme would have to be run to identify where possible savings could be made and based on these finding conclusions drawn and implementation plans documented and then the actual implementation of the change.

Benchmarking data is often helpful for identifying the potential scope and need of change. Tribal data may potentially be useful for this in Lincoln's context however we have not been able to access this from Lincoln as part of this exercise.

9(2)(b)(ii) and 9(2)(j) of the OIA
[Redacted]

The impact of this saving on the financial sustainability of Lincoln relative to the base case 10 year projection is shown in the figure below.

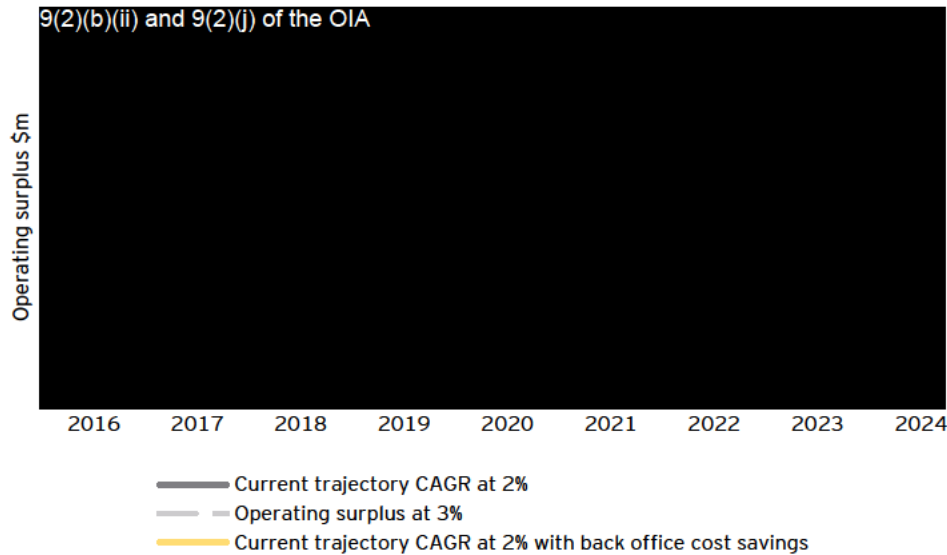
Figure 19: Back office cost savings - current trajectory



Source: Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm

9(2)(b)(ii) and 9(2)(j) of the OIA
[Redacted]

Figure 20: Back office cost savings - 2% EFTS CAGR



Source: Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm

9(2)(b)(ii) and 9(2)(j) of the OIA

In section 10.5 below we discuss some initiatives Lincoln has been considering that could provide some of these gains.

10.2.2 Revenue initiatives

The Discovery Report outlined initiatives aimed to improve Lincoln's revenue projections. Some of the initiatives are outlined below.

- ▶ Increased research revenue and improved ability to generate an adequate rate of return on research. Lincoln's research revenue has been flat to declining over the past five years. We understand that a large part of research revenue is disproportionality weighted across staff members. Although typically there is not much margin generated from research, there is potential to generate margin if certain staff members are currently underdelivering. Additional funding can also be attracted from the quality of research. Interdisciplinary research and interactions that supports complex collaboration between academics and researchers is a big driver of success of the high performing niche universities globally. Quality research also impacts university rankings which have flow on effects into the quality and quantity of students.
- ▶ Other initiatives including industry sponsorship of activities or teaching positions, provided that the returns for securing such 3rd party funding clearly justify the effort of staff involved in securing the funding.

These initiatives amongst others may help Lincoln to generate improvements in its operating surplus. We have not explicitly modelled any uplift to operating margin from revenue improvements due to the level of revenue growth assumed in the base case. 9(2)(b)(ii) and 9(2)(j) of the OIA

10.3 Cost of Implementing

10.3.1 Change Management Costs

It is often overlooked but, for a change management program to be successful, its important pre-condition is an easily understood and communicated vision for why the change is required, a clear picture of what the change will be and a reasoned view on what the results/benefits of the changes will be and when they will accrue.

In the university environment a change management process typically involves freeing up capital for investment in specific areas of research and the improvement of services which are directly student facing. In most cases the planning and delivery of this take the form of a clear medium-term vision or goal for the university, which is backed by a well thought out strategy which is itself further detailed in in-depth implementation plans.

Undertaking change management processes is not free. It takes time, energy and resources, which result in costs incurred by the organisation. The primary cost components of change management typically include:

- ▶ change management resource costs - salary and compensation for change management practitioners;
- ▶ training costs - design, development, delivery and materials; and
- ▶ communications costs - design, development, delivery and materials.

In addition to these primary cost components, there are several secondary cost elements which typically include:

- ▶ consultant costs;
- ▶ general expenses;
- ▶ event costs (workshops, group meetings, "lunch and learn" events, road shows and town hall meetings);
- ▶ change management materials;
- ▶ exit costs - for termination payments around personnel, leases, and contracts;
- ▶ reinforcement and recognition costs.

The vast majority of universities involved in the 2016 UniForum/Cubane analysis commented that they were either investing in cross-functional or function specific transformational change or were in the process of embedding change at the end of such change projects.

Over the last four years investment in supporting 'change program management' has significantly accelerated and in a numbers of universities the costs of such changes programs have been reported as costing over \$20m in 2015.

More typically the annuals costs of both specialist IT investments (Develop and Transform) and change program management come to about AUD \$18m with the outliers at both ends being AUD \$7.3m and AUD \$60.7m.

In terms of New Zealand, the cost of the successful transformation of Te Wananga was in the range of 12m-\$16m over a three year period.

In part, this reflects the reality that most universities (and indeed most organisations of any nature) do not have the internal resources to undertake a significant change program on their own and thus require the assistance of external resources with this process. This can take the form either of a

standalone external team coming into the University to plan and deliver change or more typically in the case of universities, a joint team made up of both internal resources and consultants being appointed to deliver the change.

While joint teams tend to take longer to get up and running and to find their cadence, they tend to be more successful at gaining buy-in and embedding the change into the universities. Unless appropriately back-filled, however, such an approach can give rise to issues with delivery of business-as-usual activities, especially if the internal resources are required for an extended period of time, which has proven to be the case in many cases.

In our experience estimated advisory fees for change programs can range from \$2-3m for design of new services to up to \$20m, including implementation support. A summary is shown in the table below.

Table 16: Estimate of advisory fees

Advisory fees incurred as part of change programme - Australia		
Organisation	Scope	Estimated Advisory Fees (market knowledge)
Go8 University	Detailed design of new services, impacting 300+ jobs . (Not implementation)	\$2-3m
Go8 University	Detailed design and initial implementation to reduce 500+ administrative jobs to seek \$70m in savings	\$6-8m
Australian TAFE	Investment in a new Student Management System, operating model and process redesign for 9 large VET providers	\$15-20m

Source: EY Analysis

We note that estimated costs outlined in the table relate solely to advisory fees based on market knowledge. The fee will be dependent on key factors, some of which are outlined below.

- ▶ The level of internal capability and capacity at Lincoln for personnel to be involved in the change process internally. The use of internal resource would need to consider minimising the day to day impact at the university and the impact this has on the speed of change. From our observations it would appear that Lincoln does not have significant internal capacity at current to drive of a change process.
- ▶ The scope of change required. The larger the scope the more cost that will be incurred.

In addition to advisory fees a number of other costs will be incurred as listed above including training costs, communication costs etc. These costs can be substantial and could potential double the costs incurred in external advisory fees.

The above suggests that change costs for Lincoln could be in the vicinity of \$20m. This is a very high level estimate. Detailed strategic analysis and workplans would help assess the true cost of Lincoln's change programme.

10.3.1 Funding Change Management Costs

9(2)(b)(ii) and 9(2)(j) of the OIA

This suggests that Lincoln would need to generate capital to fund the costs associated with change management. Potential options for generating capital to fund potential change are outlined below.

- ▶ Review the capital asset strategy.

- ▶ Review the need and priority of projected capital expenditure and how changing pedagogy requirements, such as online learning, will impact demand for capital assets at the University.
- ▶ Defer spending on buildings into later periods where the University has more funds.
- ▶ Divest excess assets.
 - ▶ Sell assets that are not core to the University such as land assets that are currently being developed and sold in blocks. This could be used to accelerate the receipt of cash.
 - ▶ Consider selling assets that are excess to education requirements such as excess farms not needed for education purposes.
- ▶ Utilise any further earthquake proceeds received from insurance companies.

9(2)(b)(ii) and 9(2)(j) of the OIA

10.4 Other considerations

In recent months, since Lincoln's appointment of its new Chancellor and Vice Chancellor, Lincoln has discussed a number of potential strategic improvements including:

- ▶ Development of Income Statements that apportion revenue at a faculty/divisional level. This information will allow Lincoln to:
 - ▶ obtain an understanding of bottom-up drivers of the organisation's performance;
 - ▶ utilise detailed financial information to inform decision making;
 - ▶ obtain a measurement tool of performance at lower levels of the business which facilitates an internal economy and creates accountability;
 - ▶ produce information that validates and supports strategy; and
 - ▶ achieve informed and adequate governance within the organisation.
- ▶ A shared services arrangement with Lincoln's Hub Partners that will result in all Hub Partners sharing common platforms where possible. For services that cannot be shared with the Hub Partners, Lincoln has mentioned the potential to work with the University of Canterbury.
- ▶ Staff sharing arrangements with the Hub Partners may potentially provide possibilities of sharing Hub's personnel amongst the institutional functions of each organisation, undertaking different roles based on the demand of each Hub Partner for certain skillsets. For example, researchers from the CRIs may give lectures at Lincoln in their areas of expertise. This will provide a range of benefits, broadening the skillset of the academics, ensuring utilisation is maximised, and maximising innovation and development outcomes for the sector as a whole.

10.5 Option Assessment

Under the Enhanced Current Trajectory option, Lincoln returns to financial sustainability in the medium to long term.


In assigning a probability rating to this option, due consideration was given to the reasonableness of the assumptions underpinning the financial forecasts and their variability. The analysis has indicated that the projected surplus is highly susceptible to fluctuations in the student growth rate assumption. However, presence of de-risking strategies aimed to reduce Lincoln's operating costs provides a mitigation strategy that decreases the overall variability of the projected cashflows.

Taking this into account, there is a moderate level of probability that the current strategy will be unsuccessful in returning Lincoln to financial sustainability.

The impact on the TEC has been rated as serious as, in the event that the strategy proves unsuccessful, it is unlikely that Lincoln will be able to sustain its operations without future support from the TEC.

The overall risk of this option has been rated as moderate.

Ease of implementation has been rated as low due to the potentially long timescale associated with implementation of the Lincoln Hub strategy and de-risking strategies, such as shared services, complicated process, high level of capabilities required to implement the strategy, and high implementation costs associated with this option.

Financial Sustainability			Risk Assessment	Scale of change
Short term	Medium term	Long term		Challenging – at the present time. Cost of implementing and required capabilities pose major challenge
No	Yes	Yes		

11. Option 4 Integration

11.1 Overview of option

The integration option recognises that, despite the best efforts being put forward, the challenge of achieving financial sustainability, resolving earthquake related issues, and transforming strategy to meet the demands of the University of the Future might require a formation of an a structural/legal partnership between Lincoln and another institution. These types of partnerships have a potential to increase efficiency and deliver improved outcome for students. It is generally considered that significant cost reductions and revenue generation can be achieved by creating economies of scale and rationalising the use of resources.

This option covers the full suite of structural integration initiatives, from a separate business unity to a full merger, and potentially a takeover.

11.2 Education and Economic outcomes

11.2.1 Education and Industry outcomes

Enhancement of academic outcomes should be the primary objective of an integration, followed by considerations of economic gain. There are various ways in which integration can contribute to improved academic outcomes, for example through consolidation of the universities' academic offer, through synergies in their research activities, by improving their visibility in international and domestic markets, and synchronising their links with industry participants.

In particular, the following benefits can potentially be achieved from an integration with a larger institution:

- ▶ a larger institution would potentially be more visible for learners, employers, and communities;
- ▶ staff across the universities would have better avenues for career development, potentially leading to increased retention;
- ▶ an integration where there is a good deal of complementarity would enable Lincoln to develop a broader curriculum base, at the same time preserving its current academic offer; and
- ▶ synergies could potentially be achieved in preparing Lincoln for the University of the Future requirements, especially if another institution offers strong capabilities in the areas that require a high level of investment, i.e. digital platforms to support blended learning and modern pedagogy.

Analysis of education synergies between various universities at the option evaluation phase is necessarily at a high level. Its intention is to provide an overview of areas that could be explored in greater depth at a further stage.

11.2.2 Economic outcomes

Integration between universities and other institutions seek to achieve efficiencies by gaining mass and achieving economies of scale and a cost-effective way of using resources.

Under the strategic assessment framework, a number of potential candidates for integration have been identified.

11.2.2.1 Rationale for integration or alliance with other institutions

National Rectors' Conferences²⁰ outline four reasons for institutions to form integration and alliances.

- ▶ **Increased quality.** Integration offer potential improvements in the advancement of strategic academic objectives and improvement in academic quality. These improvements might arise from synergies achieved from pooling of academic talent and/or infrastructure, greater access to resources, and opportunities in interdisciplinary research. Rationalisation of courses to remove low quality programmes usually delivers better quality outcomes for students.
- ▶ **The realisation of economic gains.** Integration traditionally result in an increase in staff and student numbers, bring opportunities to economise financial and human resources and streamline the delivery of professional services, and bring opportunities to generate more research revenue.
- ▶ **Consolidation of the systems.** This driver generally results in a collaborative initiative among institutions aimed at achieving critical mass, avoiding duplication of programmes, creating synergies through integration of certain university functions, etc.
- ▶ **Strengthening the institutional position.** An example of this is an integration that is aimed at increasing regional or international competitiveness or a stronger position in relation to funders. Internationalisation is a common driver nowadays with universities seeking opportunities to improve their profiles on the international stage.

The prospect of economic gain should not form the sole rationale for an integration. Firstly, integration is often accompanied by the high transition and implementation costs that have to be weighed against the potential economic benefits.

Secondly, integration are generally long term projects where financial gains are not realised until several years into the future, bringing an element of ambiguity and uncertainty into the forecast benefits. For example, the positive financial benefits in Aalto University, Finland were realised only four years after the integration. In some cases, financial benefits were only realised 15 years after the formal completion of the process.

Lastly, achieving support from staff of merging institutions is paramount for achieving a smooth transition. It is more difficult to secure staff buy-in if the integration is primarily driven by the potential financial gain and not improvements to academic offer and student outcomes.

11.3 Financial Implications

11.3.1 Benchmarking analysis

Benchmarking analysis has been performed to provide an estimate of financial savings that Lincoln could potentially achieve from merging with another institution. These estimates are high level and based on averages. Detailed analysis would be required to better inform potential savings after a market sounding exercise or a potential integration partner has been identified.

Also any savings may take some time to be realised depending on the speed of integration. This can take years to be fully realised.

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Back office savings

The back office cost savings identified in the Enhanced Current Trajectory scenario are also relevant to the integration option. From a back office perspective a integration would be similar to a full shared services arrangement. Our benchmarking analysis in the Enhanced Current Trajectory suggests this saving would be in the range of \$5m

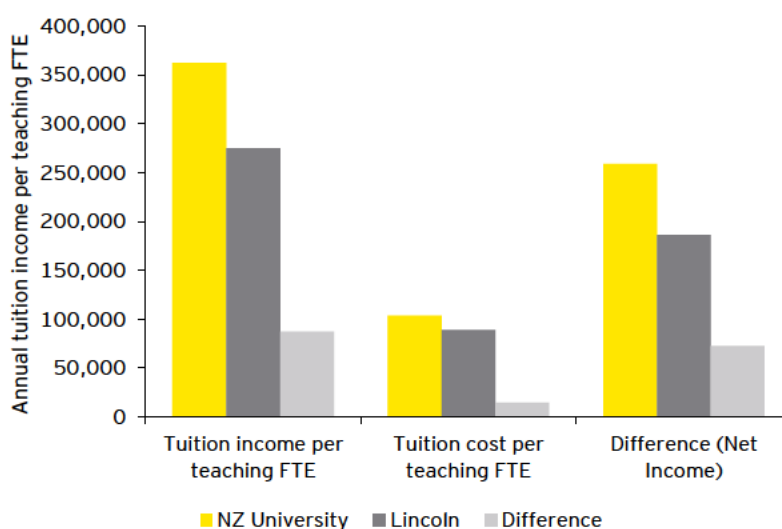
In addition further savings could be achieved through synergies in marketing, course development course, general administration, and management costs. For example, Lincoln incurred marketing costs of c\$4m in 2015. If a 25% synergy in marketing could be achieved this would result in a saving of \$1m.

Net tuition income per teaching FTE

Although Lincoln is a specialist land-based university it offers certain courses that will have a degree of overlap with other New Zealand Universities including Bachelor of Commerce and Bachelor of Science courses.

TEC's benchmarking suggests that on average Lincoln generates \$72,762 less of net annual tuition income per teaching FTE than the average university in New Zealand. This difference is most likely attributed to the smaller size of Lincoln University compared to other higher education institutions in New Zealand, its specialised academic offer, and a higher proportion of fixed costs. This suggests that a integration may generate efficiencies through optimisation of Lincoln's course offering and bring the net annual tuition income per teaching FTE closer to the national average. Lincoln currently employs 230 academic FTEs, suggesting that there is a potential to generate substantial savings in this area. No level of anticipated savings has been identified at this stage as it is highly dependent on the integration partners' curriculum plans and strategic organisation.

Figure 21: Net Income per academic FTE



Savings could be achieved from the rationalisation of some of the courses from merging overlapping courses but also through online delivery, blended learning or within the framework of regional clusters.

The Vice Chancellor's office

Potential efficiencies on duplicate provision can also be achieved around senior personnel within the teaching departments and Vice Chancellor's office. Potential savings on Vice Chancellor's office ranges from \$1 to 3m. No level of potential savings has been identified for senior personnel

within the teaching departments as it would require detailed analysis and would be dependent on the merging partner.

11.4 Cost of Implementing

11.4.1 Transition costs associated with integration

Integration attracts relatively high transition and implementation costs. These costs typically include:

- ▶ the development of a Business Case;
- ▶ the costs associated with enhanced IT connectivity under the new arrangements;
- ▶ the integration of systems to support the new organisational arrangements including HR, finance, student management system, and learning systems;
- ▶ project and change management of the transition;
- ▶ brand alignment to the new operating arrangements; and
- ▶ provisions to allow for business cessation costs associated with the closure, e.g. legal and compliance costs.

Evidence from some recent New Zealand TEI integration (Bay of Plenty Polytechnic and Waiariki Institute of Technology and Christchurch Polytechnic Institute of Technology and Aoraki Polytechnic) suggests that transition costs are in the proximity of \$6 to \$10m. These figures included some funding for investment in new programme development, and investment in technology to support modernizing facilities and modern pedagogy - so are not purely integration costs.

It should also be noted that these integration relate to ITPs and not universities. In Lincoln's case it is possible the transition cost of integration may be higher than \$10m, but as there is no experience of a NZ university integration of this nature, these numbers are untested.

- ▶ Given Lincoln's current financial situation any integration would likely result in the Crown writing a cheque to any potential acquirer as compensation for acquiring a University that is making losses and is projected to continue to make losses in the medium term.
- ▶ In addition, the process improvements required at Lincoln would likely prolong integration resulting in the acquirer incurring additional costs.

11.5 Other considerations

11.5.1 Market sounding process

Consideration should be given to carrying out a formal market sounding process to inform strategic consideration of a integration proposition and to determine feasibility of a integration/alliance with another New Zealand based or overseas institution. The main objective of this engagement is to gauge the level of interest of the education sector participants in amalgamation with another institution.

Integration traditionally involve large expenditures on transitional and establishment costs. The market sounding process is a relatively inexpensive exercise, both time- and expenditure-wise, and it will ensure that Lincoln obtains an understanding of its likely integration partners.

Additionally, undertaking this exercise will inform other potential strategic alliancing options available to Lincoln. One potential example is an opportunity to rationalise some of Lincoln's course offerings through collaboration with Massey University in the online space, whereby Lincoln utilises

Massey's digital platforms to deliver courses to its students. Another potential example is forming a strategic partnership in the course development space, whereby two or more institutions unite and share costs and ideas that they are then able to utilise in their institutions.

11.5.2 Types of integration

A number of considerations need to be made before considering the potential benefits of a integration. The discussion below outlines the key points that need to be traversed before committing to a integration with another institution.

Relative size of the institutions

Horizontal integration	Vertical integration
'Horizontal' integration refer to amalgamations between institutions of comparable scale. These types of alliances typically evoke questions around the preservation of the universities' brands, names and resources.	'Vertical' integration denote an alliance between a smaller institution and a larger counterpart. This is especially prevalent in the cases where a larger university integration with an institution that specialises in a particular field. Traditionally, the brand and the name of a smaller institution are discontinued and the institution is virtually integrated into its larger counterpart.

Institutional profiles

The second consideration needs to be awarded to a comparison of institutional profiles in order to determine the amount of duplication in the courses the institutions are offering and research they are performing. It is vital to obtain clarity around this as it has a significant impact on the integration process. For example, if the services the institutions are offering are complementary, the impact of a integration on the personnel of those institutions will be lower than in the situation where there is a lot of duplication between the institutions.

Depth of the integration process

Under the comprehensive integration scenario, the institutions retain their individual legal status but decide to integrate some of their functions, out of strategic or efficiency considerations such as sharing of resources through the implementation of shared services. This is generally feasible in the institutions that share the same geographical location. An unusual example of this type of collaboration is the alliance between the University of Warwick in the UK and Monash University in Australia. Both institutions collaborate further through joint investments, jointly appointed staff, research projects, academic collaboration and student activities. The management of the alliance is overseen by a joint academic vice-president.

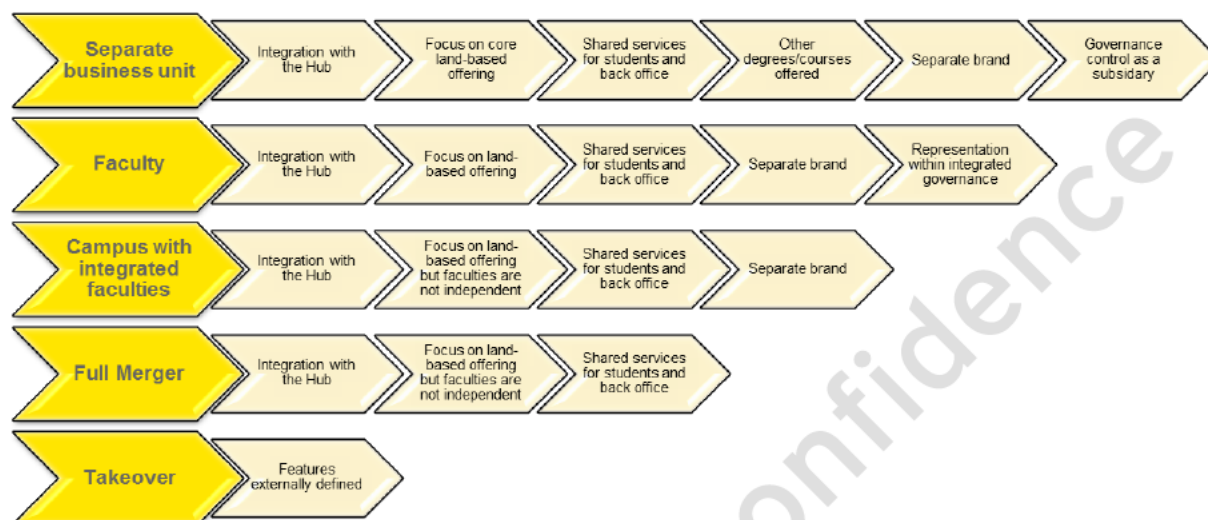
In contrast, under full integration the institutions completely consolidate their resources and one of the institutions generally ceases to exist as a legal entity.

Other considerations

In addition to the factors discussed above, consideration should be given to any other relevant elements that can ensure or obstruct the success of a integration. For example, it is important to give due consideration to the strategic and cultural fit of the institutions, their geographical proximity, capabilities and resources.

These considerations can be summarised in the following diagram, which shows the range of integration options available to Lincoln:

Integration options and impacts for Lincoln



11.5.3 Key criteria for integration

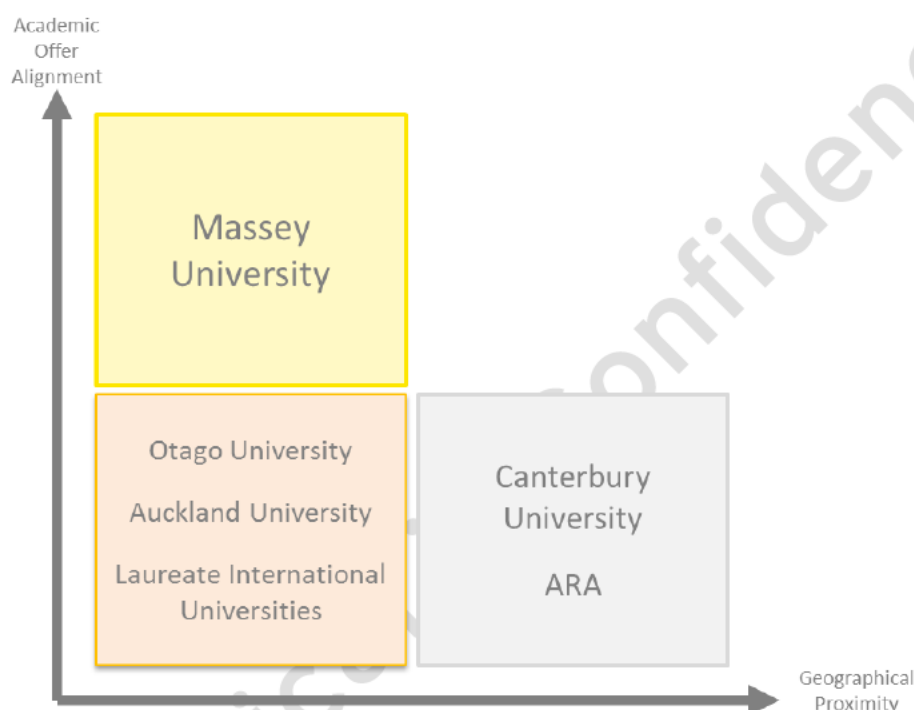
Below we outline some of the key enablers of a successful integration.

- ▶ The more strategically aligned the two integrating entities are, the greater the synergies are likely to be. Strategic alignment is likely to result in similarity in course offerings that may facilitate course rationalisation.
- ▶ The cultural fit of the two merging organisations is a driver of the time it takes to realise benefits. To help assist alignment of culture of two organisations there are a number of initiatives that can be implemented but typically starts with how management develop values for the merged entity and how this is communicated.
- ▶ Back office and process alignment will assist with a more efficient transition and will help with how quickly savings are realised. Lincoln may want to seek to identify potential integration partners before undertaking any change management programme to ensure in the case of an integration any process improvements is aligned with its preferred integration partner.
- ▶ That educational outcomes are achieved in terms of the breadth, quality and accessibility of course offerings.
- ▶ Proximity of the integration parties can assist with integration in terms of systems, values and culture.

11.5.4 Potential candidates for integration

Market sounding will assist to identify the potential appetite of entities to merge with Lincoln. Commencing this process with local universities appears the best place to start but international options should also be explored particularly with increased globalization and continuously improving technology.

Below we outline some potential university candidates for Lincoln. The graphic considers the trade-off with strategic alignment and geographical proximity. As noted, the integration with the Hub is already underway and is considered a base component of all the structural integration options



11.6 Option Assessment

Under the Integration option, it appears probable that Lincoln will return to financial sustainability in the medium to long term.

There are a number of potential synergies that could be realised as part of the integration. The level of synergies realised will be dependent on the entity Lincoln merge with. Synergies may include a reduction in back office costs, rationalization of courses and a reduction in Management costs.

The success of the integration is not only dependent on the level of synergies achieved but how quickly the synergies are achieved as well as the costs incurred with integrating the merged entity. This will be dependent on the strategic fit, cultural fit and also on the quality of processes of the merged entities.

Given this we suggest that Lincoln undertake market sounding to gauge appetite of potential integration partners beneficial before commencing any change management programme. The benefit of this approach is that it would ensure that any change programme aligns with the most probable integration partner. This means that if Lincoln merged in the future the investment in

process improvement would assist with the speed and amount of any synergies realised.

For the reasons above the risk assessment for this option is medium. The risks to an integration could be mitigated with thorough planning and investment in a specialist team to work on the transition.

Financial Sustainability			Risk Assessment	Scale of change
Short term	Medium term	Long term	●	Significant - Cost of implementing and required capabilities pose major challenge.
No	Yes	Yes		

12. Option 5 Managed Wind Down

12.1 Overview of option

The Managed Wind Down is the option of the last resort. Under this option, Lincoln's on campus operations are discontinued and its assets are disposed.

Due to the high economic value of land-based education to the primary sector and the wider economy it is assumed that under the wind down option that Lincoln's courses would be offered by another provider, however at a new location.

This option recognises that continuing to run a university that is failing to achieve minimum sustainability thresholds does not provide value for money outcomes for the New Zealand Economy as whole including students, university staff, and New Zealand taxpayers.

12.2 Education and Economic outcomes

12.2.1 Education outcomes

Below we discuss some of the education outcomes from a wind down of Lincoln.

- ▶ Course offerings – certain courses that Lincoln have offered may not be able to be replicated in another location due to a variety of reasons including:
 - the choice of an alternative provider not to provide a certain course;
 - climatic conditions or current infrastructure that is specialised at Lincoln; and
 - niche courses offered by academic staff who are not willing to transfer to a new location
- ▶ The wind down procedures will need to include the provision of alternative options to students affected by the closure partway through their studies. This is likely to cause disruption to students but also result in significant financial cost being incurred.
- ▶ Geographic effects – as Lincoln is the only South Island land-based university and the only other alternative nationwide is Massey University, closing Lincoln and shifting all land-based offerings to the North Island will create the risk that South Island domiciled EFTS (a large portion of domestic EFTS) will choose an alternative career option outside of land-based offerings. The outcome of this is a reduction in labour supply in New Zealand's biggest sector, a sector where large growth in skilled labour is projected.

12.2.2 Economic outcomes

Below we consider selected drivers that, amongst others, would impact the economic contribution from a wind-down of Lincoln (closing Lincoln campus).

The marginal benefit/cost of infrastructure

A sale of Lincoln's assets would realise a one-off capital receipt to the Crown. This receipt would likely be at a significant discount to Lincoln's current net asset value as the alternative uses of many of Lincoln's assets are limited due to their specialised nature and given its rural geographic location. For example, Lincoln's student accommodation has virtually no use without being located on or next to a university, therefore the potential sale value of this asset is limited. Lincoln's current net assets total approximately \$250m but, given the factors discussed above, it is possible that the size of the discount in an asset sale could be as large as 50%.

Further offsetting the proceeds received from any asset sale are the wind down costs. As Lincoln

has approximately 700 FTEs, redundancy cost would be material. If for example redundancy costs were \$30k per FTE, this would translate into c\$20m total cost. Additional wind-down costs would be incurred in relation to any service contracts, building or equipment arrangements and broker advisory fees.

Replicating Lincoln's infrastructure at another location may not involve 1:1 reconstruction of Lincoln's current asset portfolio, however any new infrastructure would have a significant marginal cost to build relative to the proceeds realised from the equivalent building sale at Lincoln. As discussed above, sales proceeds of Lincoln student accommodation would be minimal, however the cost to build the equivalent amount of beds at a new location would be substantial.

Network effects

A number of Lincoln's partners are located or are in the process of being located at or near Lincoln (AgResearch and Plant & Food). A wind down of Lincoln would have a significant adverse agglomeration effect. Although we have not directly measured the agglomeration benefit of CRIs being located close to Lincoln, their recent co-location suggests this would be substantial.

Regional economic impact

If Lincoln was wound down it would have a significant impact on wider Canterbury and South Island communities affecting:

- ▶ approximately 700 FTEs that would be out of employment;
- ▶ current and future Lincoln students that would be impacted by the reduction in their educational options in the primary sector;
- ▶ industries connected to the primary sector that benefit from Lincoln's research and qualified recruits that graduate from the University; and
- ▶ a number of auxiliary services at Lincoln, such as accommodation, food and beverage, medical etc., that would likely have a significant impact of the future sustainability of the town.

12.3 Option Assessment


The benefit to the Crown in terms of a one-off receipt from the sale of Lincoln is likely to be minimal particularly after a discount is applied to Lincoln's net asset value and wind down costs are considered.

Although we have not quantitatively measured the marginal costs of winding down Lincoln, the economic costs of replicating Lincoln by building new infrastructure, the adverse network effects and the adverse regional economic impact would most likely substantially exceed any benefit from Lincoln being closed.

In addition there would be a number of adverse education outcomes that would also result lead to adverse economic outcomes including the ability of an alternative provider to offer the same breadth of courses and the appetite of South Island domiciled EFTS to attend an alternative location.

Given the above, the risk assessment of this option has been rated as high.

Ease of implementation has been rated as low due to the a number of reasons including the cost associated with the wind down option, time to implement an alternative offering and the political and social impact associated with a wind down.

Financial Sustainability			Risk Assessment	Scale of change
Short term	Medium term	Long term		Significant - Significant potential economic with limited positive financial impact
No	No	No		

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12.4 Cross-check - Multi Criteria Analysis

Multi-Criteria Analysis has been undertaken in the final step of the assessment process to evaluate the potential options against a set of consistent criteria in order to determine optimal outcomes. This will be used as a cross-check to the primary approach discussed above.

The assessment criteria: Criteria were developed to cover both quantitative and qualitative factors. The reasoning behind the inclusion of qualitative factors in the overall analysis is derived from the primacy of universities' academic missions - universities are established and supported by Governments for their contribution to "the development of an informed, responsible citizenry and the preparation of every boy and girl for a personally satisfying and socially useful career."²¹

The options were evaluated against the criteria outlined below.

- ▶ **Educational outcomes** - the ability of the University to achieve positive educational outcomes for its students.
- ▶ **Lincoln's identity** - the ability to maintain important elements of Lincoln's identity such as excellence in teaching and research, sustainability, connectivity, biculturalism, and flexibility.
- ▶ **Ability to maintain value to the New Zealand economy through Lincoln's strategy** - Lincoln's "Feed the world, protect the future" approach addresses the strategic drivers and trends such as urbanisation and the connected futures, described in further detail in Section 6.2.1.
- ▶ **Ability to integrate internationally and domestically** - this criteria is defined as the ability of the University to face the increasingly demanding and complex settings such as globalisation, internationalisation, the requirements posed by the University of the Future, etc.
- ▶ **Ability to execute wider strategy including the Hub** - this criterion is defined in terms of Lincoln's capabilities, resources, and knowledge required to institute the Hub as a functioning and delivering entity.
- ▶ **Break-even year** - defined in terms of the year in which Lincoln's revenue matches its expenses.
- ▶ **Surplus (\$m)** - defined as Lincoln's operating surplus for a given year.
- ▶ **Required investment (\$m)** - defined in terms of the level of investment required to execute an option, including Lincoln Hub, implementation cost, transitional costs, etc.






The five options were ranked according to their individual scores. The rankings of these determined the options that required further analysis and a more detailed assessment and options that were clearly providing sub-optimal outcomes.

Assessment process and rating: The potential options were ranked according to their individual scores. The rankings of these determined the options that required further analysis and a more detailed assessment and the options that were clearly providing sub-optimal outcomes.

Criteria that assess **qualitative** parameters were scored against the 5-point scoring system outlined in Table 17.






²¹ *The Goals of Higher Education*, Hayward Keniston Proceedings of the American Philosophical Society, Vol. 104, No. 6 (Dec. 15, 1960), pp. 565 - 569

Table 17: Qualitative Assessment Criteria

Qualitative assessment criteria	Score	Colour Palette
<i>Outstanding outcomes</i>	2	
<i>Satisfactory outcomes</i>	1	
<i>Average outcomes</i>	0	
<i>Unsatisfactory outcomes</i>	-1	
<i>Mediocre outcomes</i>	-2	

Criteria that assess **quantitative** parameters were scored against preference bounds for each criterion.

Table 18: Quantitative Assessment Criteria

Quantitative assessment criteria					
Colour palette					
Break-even year	2018	2020	2022	2024	2030
Surplus/Deficit (\$m)	\$10	\$5	\$0	-\$2	-\$5
Required investment	\$0	\$50	\$100	\$150	\$200

12.5 Results of MCA Evaluation

This section is divided in two parts:

- ▶ the first part covers the results of the MCA analysis;
- ▶ the second part introduces the risk assessment framework and analysis of the options under consideration.

Un-Weighted results: The following table presents the un-weighted results of the MCA. Presentation of information in this format allows the direct comparison of the options under each criterion.

Assessment Criteria		Option 1	Option 2	Option 3	Option 4	Option 5
1.	Break even (year)	Red	Yellow	Light Green	Green	
2.	Surplus (\$m)	Red	Green	Green	Dark Green	Light Green
3.	Required investment	Green	Yellow	Yellow	Yellow	Green
4.	Educational outcomes	Yellow	Light Green	Green	Green	Red
5.	Lincoln's identity	Green	Green	Green	Light Green	Red
6.	Ability to maintain value to the New Zealand economy through Lincoln's strategy	Light Green	Green	Green	Light Green	Red
7.	Ability to integrate internationally and domestically	Red	Light Green	Green	Green	Red
8.	Ability to execute wider strategy including the Hub	Yellow	Light Green	Green	Green	Red
9.	Level playing field between universities	Red	Light Green	Light Green	Green	Green
Option 1 - Current State		Option 4 - Integration				
Option 2 - Current Trajectory		Option 5 - Managed Wind Down				
Option 3 - Enhanced Current Trajectory						

To extend the analysis, aggregate scores for each option are provided in table X. It is assumed that all criteria are allocated the same weight, without giving consideration to the relative importance of the factors in the decision-making process.

	Option 1	Option 2	Option 3	Option 4	Option 5
Aggregate MCA scores, un-weighted	Red	Light Green	Green	Green	Red

Weighted Results: It is feasible to assume that some criteria play a greater role in the assessment of options than the other. Introduction of weighted scores in the assessment framework allows to account for this the variance. Considering the importance of quantitative factors in this assessment, the quantitative criteria have been given a greater weight than the qualitative criteria.

Our weighting of the criteria is subjective and different weightings could be applied. Our weighting is based on the rationale for this Strategic Options Report, namely that an approach that delivers a sustainable institutional model is paramount. As such, the evaluation is more heavily weighted towards financial metrics.

Figure 22 presents the distribution of the relative weights across various criteria.

Figure 22: Relative weighting of criteria

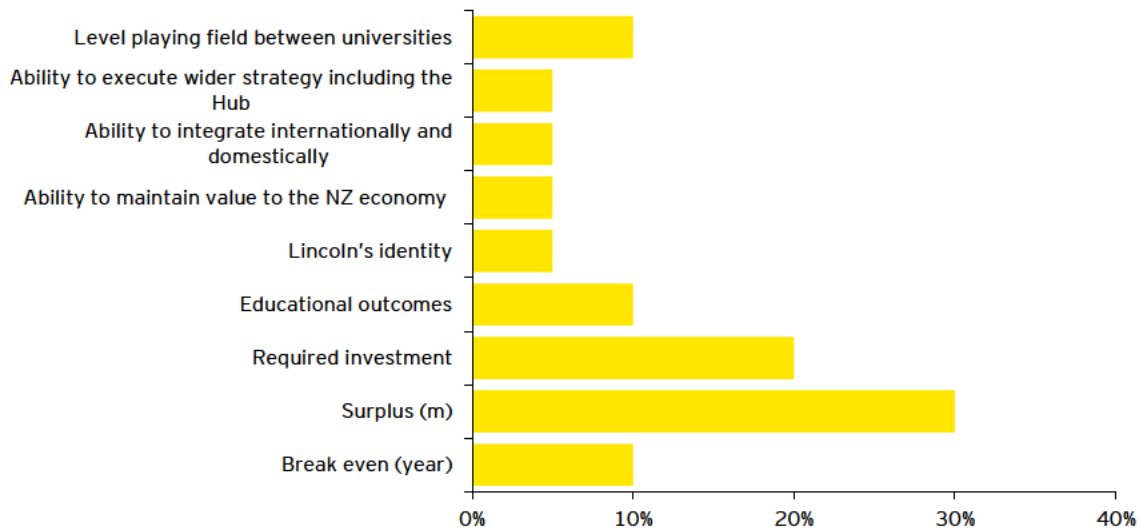
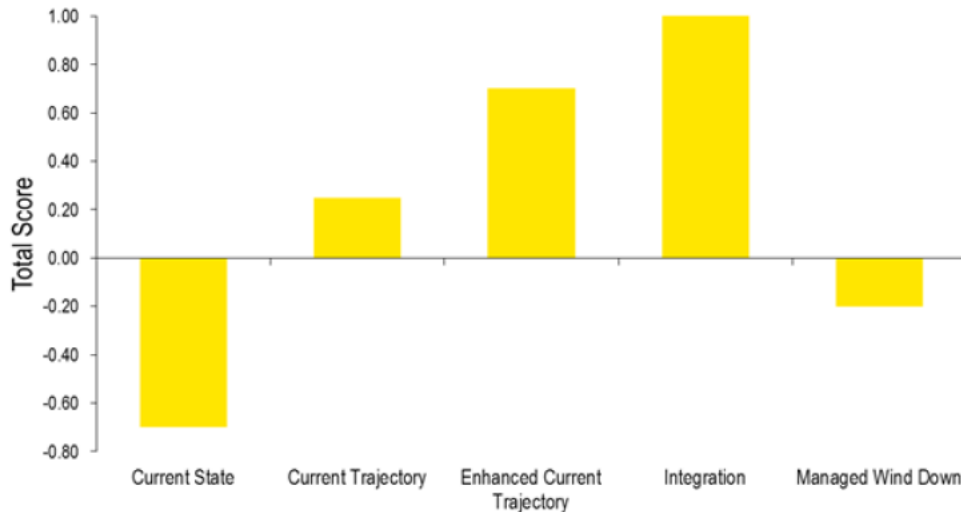


Figure 23 displays the aggregate MCA scores with the weighting scores applied to the relevant criteria. The higher the total score, the better an individual option has performed within the chosen parameters.

Figure 23: Aggregate MCA scores



MCA was used to cross-check the results of the earlier assessment, indicating that, out of the five options under consideration, three options warrant further exploration.

- ▶ The results of the MCA analysis suggest that the Enhanced Current Trajectory and Integration options offer more advantages than the other options, with Current State and Managed Wind Down being least favourable.
- ▶ In particular, the Enhanced Current Trajectory and Integration options appear to offer Lincoln more opportunities to meaningfully contribute to New Zealand economy and achieve better educational outcomes. These options, however, scored lower on the level of investment required to achieve these benefits.

- ▶ The outcomes of the MCA provide further support to the conclusions reached through the quantitative and qualitative assessment presented in the earlier sections of the report, narrowing down the range of strategic directions that should be explored further.






We would note that the unweighted criteria still clearly show Integration and Enhanced Current Trajectory as the favoured options. The only weighted scenario where a materially different outcome around the options analysis is delivered, is one where financial criteria were materially de-weighted in favour of Lincoln's Identity. The reason for this being that we have assumed that quality of educational outcomes, and the ability to integrate with the Hub are key features of all outcomes. As such, the only material differentiators in a weighted analysis is financial and identity.

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13. Recommendations and Next Steps

13.1 Summary of the evaluation of each option

The following table provides a list of the identified options and the results of the evaluation process.

Strategic Option	Financial Sustainability			Risk Assessment	Scale of change
	Short term	Medium term	Long term		
Current State	No	No	No		Limited - in the short term. No likely to be effective in medium to long term
Current Trajectory	No	No	Yes		Significant - base programme still involves major infrastructure investments and improvements to services and course delivery
Enhanced Current Trajectory	No	Yes	Yes		Significant - Cost of implementing and required capabilities pose major challenge. Major dependencies of key assumptions remain.
Integration	No	Yes	Yes		Significant - Cost of implementing and required capabilities pose major challenge.
Managed Wind Down	No	No	No		Significant - Significant potential economic with limited positive financial impact

The case for change for the current state is strong. The University has been under financial pressure from a number of years, with TEC recovery exemption projected to end in 2018. To secure longevity of the University, and to provide the best outcomes for its students and staff, Lincoln needs to ensure it is on a solid path to financial sustainability by the time TEC funding is exhausted.

Out of the five strategic options identified during this assessment, Current State and Managed Wind Down are not favourable to the University's long term sustainability. For this reason, it is recommended to focus on other strategic options; the Current Trajectory option is projected to achieve sustainability in the long run but has a high degree of risk associated with it given the reliance on key assumptions. Furthermore, this option does not integrate any de-risking strategies aimed at diversifying its cost reduction and revenue generating strategies.

The Enhanced Current Trajectory and Integration options provide the best opportunity to return Lincoln to financial sustainability in the medium term. Through proposed collaborative initiatives, they offer the most effective ways of achieving economies of scale, diversifying Lincoln's current

strategy and enhancing future prospects of growth. They offer opportunities for elimination of duplicate costs and activities in areas such as management information services, corporate services, and other costs.

Additionally, these options offer a strong case for achieving improved academic outcomes for students through synergies and greater financial capacity to invest and develop learning programmes and facilities.

The main risks associated with these initiatives are based on the ability of the University to undertake the required steps to implement these options. Any change management exercise relies heavily on capability and capital, both of which Lincoln have limited access to.

Our recommendation is that Lincoln University begins to implement process improvements by implementing actions and initiatives identified under the Integration option, but in a way that is consistent with both the mandate and actions currently being undertaken by the Vice Chancellor.

The rationale for advancing the integration option is as follows:

- ▶ All options involve change at Lincoln at unprecedented levels and require resources, capability and focus. The scale of costs (which encompass capability) associated implementing any of the options that will result in Lincoln returning to sustainability are largely uniform.
- ▶ With costs largely uniform, the option that offers the lowest risk and greatest reward (from an educational as well as financial perspective) should be the option that Lincoln explore
- ▶ The integration option has the potential to achieve the critical changes in a supported environment with a strong strategic partner. All other options still leave Lincoln taking the lion's share of the downside risk.
- ▶ With the right approach to an integration, it is possible that Lincoln can maintain the non-financial dimensions such as identity and strategic focus that are important to it.

13.2 Market sounding around Integration

We recommend that the Lincoln Council, in conjunction with the TEC, begins this process with a formal supported market sounding exercise with potential strategic partners. This sounding process will allow the Council and TEC to identify the potential interest from partners in both options and determine with greater certainty the relative costs and benefits of the options from an economic, financial and educational perspective. For example, it will allow the parties to determine the risks to the University's Land and Brand strategic goals from different levels of integration.

A Structured, formal and disciplined engagement will enable Lincoln to make progress on the Integration option quickly and with certainty. Critically, a structured process achieves a number of key objectives:

- ▶ Lincoln is able to get information around appetite and viable options
- ▶ Lincoln is able to communicate what is important to it and allows potential partners to test and adapt their own thinking
- ▶ A formal and structured process is a signal of intent and commitment to a process. Other parties are more likely to reciprocate and invest time and effort compared to informal discussions
- ▶ The exchange of ideas will inform all parties and lead to ideas and options evolving throughout the process.

A structured and appropriately resourced (e.g. the inclusion of independent support) processes can ensure neutrality and remove conflicts. The scope can be both domestic and international, and can

include parties other than universities, though we note that the Hub and the integration opportunities already being pursued there mean that universities should be the key focus..

The immediate next steps are for Lincoln to:

- ▶ Prepare a market engagement document, outlining scope of discussion, the value of Lincoln, current state, challenges and its strategic objectives of the process. This should fully discuss Lincoln's unique value proposition to potential partners.
- ▶ Prepare a market engagement plan. This should include:
 - A resource and team plan - it is particularly important that each discussion is resourced with the right people (VC, probity, technical support) and that there is continuity between each discussion (i.e. the same team undertake each discussion)
 - The full range of consultation targets
 - Appropriate authorisations, delegations and restrictions - it is critical to a proper process that only authorised parties discuss the proposition in a structured environment and with the right support
 - A complete and integrated probity plan
 - The engagement script
 - Appropriate introductory processes - these are critical to ensuring counterparties treat the engagement with levels of resource and commitment commensurate to what Lincoln will put in

13.3 Next steps - Governance, transformation project office and planning

There is some urgency in implementing the transformation process. Changes will need to be built into the 2017 university budget process, the new investment plan for 2017, and reflected in the next stage of the report-back on the build of the new science facilities (prior to decisions on the government capital support of \$100m - currently scheduled for December). Thus we would expect that Council needs to agree the preferred strategic option, and beginning the planning and implementation phases.

It is clear from our discussions with the University that the capability to deliver the transformation required is limited. Success for Lincoln requires specialist capability that is singularly focused on delivering the required change. It will not be possible for Lincoln to achieve the change with existing staff (who have other roles and responsibilities) and business as usual resources (including filling current vacancies in the management team).

We recommend that Lincoln sets up a transformation programme office to manage these processes. It should use a robust project and programme management approach and processes.

In the first instance, the programme office will be responsible for:

1. Undertaking a detailed programme planning exercise to identify specific actions, costs and resources associated with the chosen strategic options.
2. Prioritising programme actions based on alignment with core strategy, value and ease of implementation

3. Organising and managing the strategic partner engagement process around the integration option using normal commercial processes including:
 - a. Structured market soundings and engagement
 - b. Analysis of feedback from participants
 - c. Assessment of options
 - d. Preparation of support documents (analysis of financial and education positions and potential EOI documents)
 - e. Negotiation support
4. Managing the process around Lincoln-Telford

We recommend that this programme office is governed by a Council sub-committee in addition to the normal accountability lines. We also suggest some sort of Governance Oversight Group to recognise the Crown interests and investment (especially with the addition of \$100m in new capital) in the change programme as well. This process is similar to that being successfully run by the University of Canterbury for its recovery strategy - including some large building projects and some change/future proofing projects. At UC the group encompasses a sub-group of the Council, an independent chair and members of the TEC, and Ministry of Education.

Day to day responsibility for the management of the office would sit with the Vice Chancellor.

The proposed governance structure is aimed at providing the VC with the mandate and the flexibility to deliver the programme for his Council, while ensuring that the major stakeholders are appropriately engaged at a governance level. The approach also ensures the Vice Chancellor is responsible for ensuring the Transformation programme is fully integrated with delivering the business performance improvements/business as usual outside of the major transformation.

14. Lincoln-Telford Division Recommendation

We view any recommendation in relation to Lincoln-Lincoln-Telford Division as independent to any of the strategic options identified in the above sections. While the approach of Lincoln-Lincoln-Telford is to vertically integrate with the University, there is no evidence that the vertical integration achieved to date has made the Division an integral part of any of the strategic options.

The sub-degree agriculture education sector is important to the New Zealand economy as it provides skills to the primary sector, New Zealand's largest sector. The anticipated growth in demand for skilled labour in the sector means that sub-degree training is pivotal to help drive value gains.

The way Lincoln-Lincoln-Telford collaboration is currently structured, the benefits of Lincoln ownership are unclear. The retention of Lincoln-Telford is only important if it:

1. provides a net financial benefit that ensures Lincoln is viable at a date sooner than it otherwise would be; and
2. provides a compelling level of integration through the current delivery model (i.e. which could not be achieved by any other means) that means Lincoln's wider strategy would be compromised without it.

Based on our analysis to date we find that neither of these criteria are met and there are many challenges for Lincoln-Telford over the next 24 months which are likely to occupy significant amounts of management time and resources, when these may be better committed to address more important and productive issues.

Lincoln-Telford's strategic fit

It is not clear how Lincoln-Telford fits within the wider Lincoln strategy. We have not been provided with any evidence that demonstrates the strategic benefits to Lincoln from owning Lincoln-Telford. Below we outline some of the differences between the two organisations:

- ▶ culturally and behaviourally the two organisations are quite different in terms of both staff and students capabilities (with the exception of the small number of diploma level programmes provided at the Selwyn campus and previously part of Lincoln University;
- ▶ the operating models and target student markets of the two organisations are dissimilar which requires a range of different skills and market knowledge; and
- ▶ there is a degree of misalignment of systems and processes between Lincoln and the Lincoln Telford Division

Vertical integration

Lincoln's Management have reasoned that Lincoln benefits through vertical integration. We discuss this further below.

The New Zealand Qualifications Framework ("NZQF") is divided into 10 levels, covering a range of qualifications from certificates to doctoral degrees. The levels are based on the complexity of the learning, with level 1 and 2 certificates representing foundation studies that are not as complex in nature as more specialised learning offered in higher levels. We note the following in relation to the levels that Lincoln and Lincoln-Telford are currently offering:

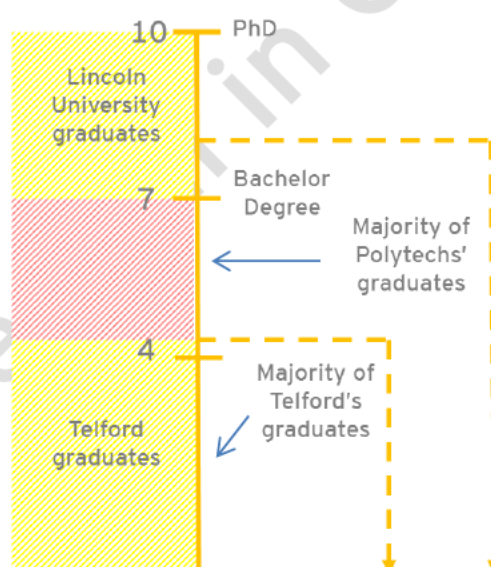
- ▶ Lincoln's core degree courses (bachelor degree and above) range from level 7 to level 10;

- ▶ Lincoln-Telford Division's courses are mostly offered at level 4 and below, with only two programmes being offered at 5.

At secondary school, students work towards National Certificate of Educational Achievement , which covers levels 1 to 3. Lincoln-Telford Division offers courses at a similar level to secondary school which in many cases act as a substitute to school. In contrast bachelor degree courses have entry requirements based on secondary school grades which typically result in the students who performed best at school studying bachelor courses at university.

There is a large gap between the courses offered at Lincoln-Telford Division and Lincoln as outlined in the graphic below. A typical student who attends Lincoln-Telford has not demonstrated the capability or desire to attend university at school. It is not clear how attending Lincoln-Telford Division increases both the capability and desire of these students to attend university. This is supported by the fact that in 2015 only three EFTS transitioned from Lincoln-Telford to a Lincoln degree level course. The next step for a student that has graduated from Lincoln-Telford is likely to be the workforce or polytechnic courses.

In summary, the types of students that choose to attend Lincoln-Telford instead of going to university from school are very different in terms of their academic capability and desire to pursue higher education. The evidence in terms of students transitioning from Lincoln-Telford to Lincoln shows that vertical integration is not being achieved as students enter the workforce post this graduating Lincoln-Telford.



In addition to the above, it is not clear why ownership is necessary for Lincoln to achieve vertical integration. A partnership or an alliance is likely to provide the same outcomes as ownership and, depending on the selection of partner and type of partnership, could provide better outcomes for Lincoln, at the same time reducing financial risk and freeing up capacity.

EFTS

Since Lincoln acquired Telford Rural Polytechnic in 2011, EFTS have declined from approximately 1,000 at acquisition to just over 600 in 2015. In 2016, Lincoln was projecting an increase in EFTS back to 800 but in July 2016 this was revised down to 550.

Lincoln-Telford is currently funded by TEC for 800 EFTS. Delivery of 550 EFTS results in Lincoln-Telford being overfunded and is likely to result in a decrease in funding going forward.

We were of the understanding that Lincoln was undertaking a review of its subsidiaries that would be completed in parallel to this assessment. We are not aware of the current status of this review and have not been provided with any findings or conclusions.

Lincoln-Telford's financial performance

Although we have not been provided with financial information for Lincoln-Telford, a paper titled "Future funding of Lincoln University's Lincoln-Telford Division" suggests that Lincoln-Telford needs 800 EFTS to break even.

At the current level of 550 EFTS, Lincoln-Telford is significantly below this level. The size of the deficit is being partially offset by the fact that Lincoln subcontracts a large portion of the teaching at Lincoln-Telford to 3rd parties. The underdelivery of 250 EFTS means that Lincoln-Telford is being overfunded by approximately \$2.5m.

The TEC has made a recent announcement that, as part of the 2016 investment round, it will be piloting a new competitive process to allocate up to \$35m of SAC funding at levels 3 and 4 of the NZQF. This competitive pilot programme will have a primary sector focus, targeting agriculture, horticulture and viticulture education provision. This will have a direct and most likely negative impact on Lincoln-Telford. When competitive process was introduced for lower level courses in 2012, Lincoln-Telford was not successful in the competitive tendering rounds for level 1 and 2 delivery.

Management's Time

Our observation is that Lincoln-Telford consumes a disproportionate amount of Management's time. Lincoln's Management team (largely temporary employees) have a number of initiatives that they are working on, including the Hub, a very large project in its own right; reorganising the operations of the University to make it more agile and cost efficient; and implementing change initiatives that have been suggested by the new Vice Chancellor.

Lincoln-Telford appears to distract from other parts of the organisation and, taking its current financial situation into account, appears to require a large amount of effort while offering minimum reward. Even if Lincoln-Telford was profitable, which would require it to enrol a minimum of 800 EFTS on an annual basis, the likely reward from owning the Division would need to be balanced against the consideration of the opportunity cost of employing capabilities that could potentially be more efficiently utilised elsewhere.

Conclusion and recommendation

Lincoln-Telford is underperforming and Lincoln needs to consider whether continuing to own the Division is a reasonable strategy for the University. Some of the considerations against owning Lincoln-Telford are outlined below.

- ▶ It is questionable whether Lincoln-Telford offers a good strategic fit within Lincoln.
- ▶ There is a possibility that owning Lincoln-Telford does not offer the benefits of the vertical integration that were envisaged at the time of the integration.
- ▶ It is not clear that ownership is necessary to achieve vertical integration. Similar or better outcomes could possibly be achieved through a partnership or alliance.
- ▶ Lincoln-Telford is not currently profitable. To make a profit requires significant growth in EFTS that Lincoln-Telford has been under delivering on for a number of years. If profitability

was achieved, it would likely be immaterial to Lincoln's overall financial performance. At the same time, Lincoln-Telford consumes a lot of Management time that could potentially be better deployed elsewhere.

Our recommendation is that Lincoln considers disestablishing Lincoln-Telford. The following steps outline the actions that Lincoln could undertake to carry out this recommendation.

- ▶ It is advisable for Lincoln to undertake market sounding as soon as possible with other primary sector sub-degree operators to understand their interest in Lincoln-Telford (e.g. Southern Institute of Technology (SIT) and/or ARA, among others).
- ▶ It would be prudent for Lincoln to consider transferring Lincoln-Telford by the end of the year in order to align the sale with the start of the new teaching year, minimise the level of distraction, and minimise any further financial loss.
- ▶ Lincoln assesses how diploma-level courses that predate the Telford acquisition might continue to be delivered.
- ▶ Lincoln assess how the Whenua Strategy might best be revised and delivered in light of the above actions - this could become a joint strategy with the future provider of Lincoln-Telford programmes.

We note that legislation provides no barrier to any transfer of students, programmes, staff, facilities and equipment to another ITP.

Lincoln should consider engaging with the providers to discuss potential partnerships/alliances and initiatives that could better achieve vertical integration and strategic outcomes for Lincoln.

Appendix A Documents Reviewed

- ▶ 2016 EFTS Data - Review with TEC, Lincoln University, 9 March 2016
- ▶ A Comparison of Delivery Costs and Tertiary Education Funding by Field of Study, Ministry of Education, 2015
- ▶ Annual Report 2014, Lincoln University, 2014
- ▶ Copy of Forecast model APRIL 2016 from PWC 24 May 16 with HG updates 7 June.xlsm
- ▶ Canterbury Tertiary Alliance - Report to Ministers April 2012
- ▶ Choose Lincoln Strategy 2016-2018, Lincoln University, September 2015
- ▶ EFTS for Lincoln University versus ITPs, Lincoln University, 2014
- ▶ EFTS for Lincoln University versus Other Universities, Lincoln University, 2014
- ▶ The Land and the Brand, Agribusiness and Economics Research Unit, September 2015
- ▶ Lincoln Hub Programme Business Case, Lincoln University, 11 December 2015
- ▶ Lincoln Hub Stage 1 Project Business Case, Lincoln University, October 2015
- ▶ Lincoln KPIs, Lincoln University, 2014
- ▶ Lincoln University Programme Business Case, Lincoln University, 26 September 2012
- ▶ Lincoln University Research Strategy, Lincoln University, 2014
- ▶ Lincoln University Strategic Plan 2014-2018, Lincoln University, 2014
- ▶ Lincoln University's Science Facilities Redevelopment Project Business Case, Lincoln University, 15 May 2014
- ▶ MBIE Business Growth Agenda Report 2015 - Building Export Markets, Ministry of Business, Innovation and Employment, September 2015
- ▶ MBIE Business Growth Agenda Report 2015 - Building Investment, Ministry of Business, Innovation and Employment, September 2015
- ▶ MBIE Business Growth Agenda Report 2015 - Innovation, Ministry of Business, Innovation and Employment, September 2015
- ▶ MBIE Business Growth Agenda Report 2015 - Introduction, Ministry of Business, Innovation and Employment, September 2015
- ▶ MBIE Business Growth Agenda Report 2015 - Natural Resources, Ministry of Business, Innovation and Employment, September 2015
- ▶ MoE Tertiary Education Demand Forecast, Ministry of Education, 15 May 2007
- ▶ New Models of Tertiary Education, New Zealand Productivity Commission, February 2016
- ▶ Outcomes from the 3rd Learning and Teaching Strategic Directions 2012-2015, Lincoln University, January 2016
- ▶ People Powered, Ministry for Primary Industries, June 2014
- ▶ Review into Agricultural Education and Training in New South Wales, NSW Government, October 2012
- ▶ Situation and Outlook for Primary Industries 2015, Ministry for Primary Industries, June 2015
- ▶ Semester 1 Enrolments and Registrations 2016, Lincoln University, 26 February 2016
- ▶ Semester 1 Enrolments As At 26 Feb 2016, Lincoln University, 26 February 2016
- ▶ Semester 1 New Student Registrations 2010-2016, Lincoln University, 26 February 2016
- ▶ TEC Capital Asset Management Standard, Tertiary Education Commission, January 2011
- ▶ University of the Future, EY, 2012
- ▶ View of Primary Industry Tertiary Education, Lincoln University, February 2016

- ▶ Whenua Strategy, Lincoln University, 2013

Appendix B Stakeholder Meetings

Lincoln

- ▶ Robin Pollard, Vice Chancellor
- ▶ Martin Eadie - Director, Lincoln-Telford Division
- ▶ Bruce McKenzie - Dean, Faculty of Agriculture & Life Sciences
- ▶ Charlotte Severne - Deputy Vice-Chancellor, Maori & Communities
- ▶ Damian Lodge - Director, Library, Teaching & Learning
- ▶ Dee Coleman - Director, International & Student Engagement
- ▶ Greg Ryan - Dean, Faculty of Environment, Student & Design
- ▶ Howard Gant - Director, Finance
- ▶ Hugh Bigsby - Dean, Faculty of Agribusiness & Commerce
- ▶ Lorraine Petelo - Director, University Studies & English Language
- ▶ Murray Dickson - Deputy Vice-Chancellor; Group Manager, Corporate Services
- ▶ Rachele Allan - Director, Student Administration
- ▶ Tafflyn Bradford-James - Director, Communications
- ▶ Travis Glare - Director, Bio-Protection Research Centre
- ▶ Stephanie Rixecker - Deputy Vice Chancellor, Scholarship and Research

Other

- ▶ Roger Smyth - Ministry of Education - Group Manager, Tertiary Education
- ▶ Jeremy Morley - Independent financial monitor
- ▶ Cathy Scott - Tertiary Education Commission - Special Advisor, CEOs office

Appendix C Tertiary Sector Funding Model

Government supports tertiary sector through subsidies towards direct costs of teaching, learning and other costs. This contribution is called Student Achievement Component (SAC) funding.

The funding rates are set on the basis of the level of study and qualification type. For example, higher level qualifications are allocated higher funding rates than lower levels. The funding rates also depend on the course delivery costs. For example, Commerce courses that are relatively more inexpensive to deliver than agricultural courses attract lower funding rates. Government determines the total amount of SAC funding through its yearly Budget process.

The NZQF is divided into 10 levels, covering a range of qualifications from certificates to doctoral degrees. The levels are based on the complexity of the learning, with level 1 and 2 certificates representing foundation studies up to level 10 with is a doctoral degree. The table below outlines the qualification types at each of the levels.

Table 19: NZ levels of qualification

LEVEL	QUALIFICATION TYPES
10	Doctoral Degree
9	Master's Degree
8	Postgraduate Diplomas and Certificates, Bachelor Honours Degree
7	Bachelor's Degree, Graduate Diplomas and Certificates
6	Diplomas
5	
4	
3	Certificates
2	
1	

Source: The New Zealand Qualification Framework

TEOs are distributed SAC funding using a funding mechanism, taking into account the number of valid domestic enrolments and the qualifications in which students are enrolled. 5% of the total SAC funding is allocated on the educational performance basis. The overall SAC funding pool is distributed among New Zealand TEOs in line with the predetermined funding minimums (c. \$1,05b for universities).

The SAC funding is divided into levels 1 & 2 (foundation studies) and levels 3 and above within the NZQF.

Funding for provision at levels 1 and 2 is allocated either through the Investment Plan process, or through a competitive allocation process. SAC funding for provision at level 3 and above is currently allocated through the Investment Plan process, with the exception of a pilot programme for competitive allocation of funds at levels 3 and 4 introduced in 2016 for agricultural sector programmes.

Levels 1 and 2

Levels one and two qualifications provide students with the core foundation capabilities that enable them to progress to higher level study and to skilled employment.

A competitive funding process at levels one and two was introduced in 2012, with a staged increase

in the proportion of the total funding subject to competitive processes over the next several years. In 2016, the TEC announced that up to 100% of the SAC levels one and two is to be allocated through a competitive process.

The process uses an evidence-based Assessment Framework to inform funding decisions, which means that the process favours TEOs with a history of high achievement for foundation learners. In measuring high achievement, the TEC considers the narrative provided in each application and uses the TEC-held performance data on the following four quality dimensions:

- Experience targeting and supporting foundation learners
- Capability in delivering foundation education
- Literacy and Numeracy capability
- Achieving successful learner outcomes

Levels 3 and above

For levels 3 and above, the TEC agrees the amount of each TEO's SAC funding through the Investment Plan process, calculated as EFTS units. SAC funding reflects the volume and mix of provision agreed in a TEO's Investment Plan.

In 2016, the TEC announced an introduction of a pilot programme for allocation of up to \$35m of SAC levels 3 and 4 funding through a competitive process, with specific focus on the primary sector.

The rest of the funding is allocated through the Investment Plan process. When calculating the amount of funding the TEO is eligible to receive, the TEC uses the following elements:

- EFTS value;
- course classification;
- funding category;
- funding rates for 2016; and
- student enrolments.

TEOs applying for SAC funding need to meet a range of funding conditions set under the Education Act 1989 and the funding mechanism.

Performance-based research fund (PBRF)

The primary goal of the PBRF is to encourage and reward research excellence in the tertiary education sector within New Zealand²².

The PBRF is accessed by universities, institutes of technology and polytechnics, wānanga, and private training establishments. The size of the fund is determined through the annual Budget, with payments to relevant TEOs made through the Investment Plan. In 2016, the PBRF is estimated at approximately \$300m. After the SAC funding, which accounts for the majority of Investment Plan funding, the PBRF is the second biggest fund available.

The RBRF comprises of three funding components:

- Quality Evaluation (55% of the fund from 2016) - periodic quality assessment of TEOs staff members' Evidence Portfolios (EV) by expert peer review panels. EVs are assessed on quality of Research Output and Research Contribution.

²² <http://www.tec.govt.nz/Documents/Reports%20and%20other%20documents/pbrf-strategic-review-of-assessment-process-2008-review.pdf>

- Research Degree Completion (25% of the fund from 2016) - a yearly measurement of the number of PBRF-eligible postgraduate research-based degrees completed at participating TEOs.
- External Research Income (20% of the fund from 2016) - a yearly measurement of the amount and type of income received by participating TEOs from external sources for research purposes.

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Appendix D Summary of Discovery Findings

Lincoln's contribution to the primary and education sector and economy in New Zealand	
Theme	Observations
Growth in the sector	<ul style="list-style-type: none"> ▶ The primary sector in New Zealand is large (exports totalled \$38bn in 2014, approximately 15% of New Zealand's GDP) with land-based sources generating the majority of this total. ▶ Exports in this sector are anticipated to grow by approximately 20% between 2014 and 2019. ▶ Growth in the sector, coupled with increased sophistication and the need for higher value add products is projected to require approximately 90,000 additional jobs in the sector with formal post school qualifications, although many of these are at a sub-degree level.
<p>Sufficiency of information</p> <p>Given the size of the primary sector, the projected growth and anticipated skills shortage it is relatively obvious that Lincoln contributes to the primary and education sector in New Zealand. To ensure Lincoln is most appropriately targeting its courses to meet this demand further detail is required to understand what skill shortages are anticipated across the primary sector value chain and whether these are sector specific or industry generic skillsets.</p> <p>Moreover, Lincoln's approach to servicing the skill needs in the primary sector at degree level and post graduate appears, on the information to date, to be based on "first principles" (i.e. traditional academic qualifications) with limited response to industry demand. There appears to be material opportunity to grow in this area, particularly in the post graduate and post experience sector.</p>	
Strategic options analysis for Lincoln	
Theme	Observations
Overall strategic direction	<ul style="list-style-type: none"> ▶ Lincoln's strategic direction, as outlined in the papers received, is relatively broad. We have not observed implementation plans for the following strategic pillars that we typically consider to be core to an organisation: <ul style="list-style-type: none"> ▶ Industry and 3rd party funding strategy (referring to the point above on industry-responsive programmes) ▶ Information Technology strategy (operations and teaching) ▶ Broader capital asset strategy as opposed to Lincoln Hub ▶ Back office and support services strategy ▶ HR and culture strategy ▶ Pedagogy strategy ▶ Research strategy ▶ Sub-degree course offering strategy ▶ 9(2)(b)(ii) and 9(2)(j) of the OIA <div style="background-color: black; height: 1em; width: 100%;"></div> <div style="background-color: black; height: 1em; width: 100%;"></div>
Lincoln-Lincoln-Telford Division	<ul style="list-style-type: none"> ▶ The concept of the Lincoln-Lincoln-Telford Division in the landscape of land-based post-secondary education appears, like other training initiatives in the sector, to be targeted at an area where training is clearly needed. The challenge with the Lincoln-Lincoln-Telford Division is to: <ul style="list-style-type: none"> ▶ Demonstrate its financial viability (is it making money) ▶ Clearly demonstrate its strategic alignment with Lincoln's overall strategy ▶ Demonstrate that its performance is adding to Lincoln's viability from a direct

	<p>financial, EFTS flow on, or industry/stakeholder engagement perspective.</p> <ul style="list-style-type: none"> ▶ The Lincoln-Lincoln-Telford Division does not provide a significant source of new degree level students to Lincoln. We understand that in 2015, Lincoln-Lincoln-Telford provided 3 EFTS on a degree level course out of 120 EFTS. ▶ We understand there are no separate financials produced for the Lincoln-Lincoln-Telford Division. <ul style="list-style-type: none"> ▶ We understand a piece of work was undertaken by Deloitte for the TEC in Nov-15 which showed Lincoln-Lincoln-Telford made a loss. We have not seen this document. ▶ The Lincoln-Lincoln-Telford division missed student enrolment target by 250 students in 2015.
<p>Student numbers</p>	<ul style="list-style-type: none"> ▶ EFTS have grown solidly at start of 2016 which is positive. <ul style="list-style-type: none"> ▶ As Lincoln-Lincoln-Telford operates a rolling cohort model and it contributes a sizeable portion of total Lincoln EFTS there is a level of uncertainty around full year EFTS numbers at Lincoln throughout the year. ▶ Given this uncertainty, Lincoln's strategy to achieve the 2016 EFTS target and transparent reporting of EFTS relative to budget will be important. ▶ Our ongoing challenge around EFTS is to identify Lincoln's "true base" of students on which to assess the accuracy of year on year growth forecasts. Changes in strategic direction over the last 15 years, combined with the impact of the earthquakes, makes the identification and disaggregation of the composition of student growth a challenging exercise. ▶ There appears to be scope for further growth in student numbers and we note the achievements of staff in the last 12-18 months around activities that give us some confidence around the short term numbers. <ul style="list-style-type: none"> ▶ An analysis of EFTS which explains the drivers of growth (sources of new students etc.) may demonstrate the sustainability of the uplift and highlight the performance of Lincoln's marketing strategy.
<p>Sufficiency of information</p> <p>The strategic information provided by Lincoln is relatively generic, is generally not supported by financial information and where implementation plans are provided are often relatively high level. Lincoln should consider its strategy in terms of options with the highest potential value add and ease of implementation and prioritise on that basis. The highest priority strategies could then be mapped out using a framework that considers:</p> <ul style="list-style-type: none"> ▶ Documentation of current state ▶ Identification of potential future state options ▶ Recommendation of preferred future state option based on analysis of a range of defined measurements ▶ An outline of an implementation plan to execute from current state to future state. 	
<p>Capability assessment and future outlook for Lincoln.</p>	
<p>Theme</p>	<p>Observations</p>
<p>Quality and understanding of financial information</p>	<ul style="list-style-type: none"> ▶ Lincoln does not apportion revenue at a faculty/divisional level which means that profitability can only be determined at a consolidated level. Without more detailed financial information it is difficult for Lincoln to have: <ul style="list-style-type: none"> ▶ An understanding of bottom-up drivers of the organisation's performance ▶ Financial information that informs decision making ▶ A measurement tool of performance at lower levels of the business which facilitates an internal economy and creates accountability ▶ Information that validates and supports strategy

	<ul style="list-style-type: none"> ▶ Adequate governance within the organisation ▶ A blended mix of educational and agricultural sector expertise is important to ensure appropriate financial information is produced and equally if not more importantly how this information is applied and interpreted to support decision making. ▶ Financial and EFTS information are produced by separate teams which are often reported independently. ▶ Financial information provided to us has been at a relatively high level. Lincoln has recently advised that it will arrange a meeting between PWC and us to work through the 10 year planning model and the drivers/key assumptions that support this projection.
Finance strategy and financial management	<ul style="list-style-type: none"> ▶ There appears to be opportunities to source additional finance, however it appears that the lack of incentives, processes and culture have limited Lincoln's ability to realise these opportunities. ▶ We have not seen a finance strategy document or financial management plan that identifies potential new sources of financing and contains a strategy that outlines how these sources will be targeted. We have also not seen a strategy or financial management plan that outlines how this will be managed, monitored and reported.
<p>Sufficiency of information It appears that Lincoln has areas where it could improve its capability in relatively core areas. Much of the documentation requested in relation to capability was not provided as Lincoln advised it did not exist. The information requested included:</p> <ul style="list-style-type: none"> ▶ How support function performance is currently measured ▶ Current levels of service delivery ▶ The current cost to serve ▶ Key pain points for employees ▶ How IT is currently used to drive process efficiencies within functions <p>Given the above, information relating to Lincoln's capability has largely been collected through a number of interviews with key personnel. In addition to a capability 'self-assessment' workshop some of the documents requested and listed above are likely to be beneficial to Lincoln.</p>	
Requirements of a university in the future with a land-based speciality	
Theme	Observations
Changing environment	<p>The sector is experiencing a number of developments that may impact how universities operate including:</p> <ul style="list-style-type: none"> ▶ The availability of 'knowledge' online and the ease of access for the general population ▶ Digital technologies are creating alternative mediums to deliver information which are breaking down geographic and cost related barriers to entry ▶ Increased global mobility and a wider range of choice is resulting in increased competition for students and academics alike ▶ The need for deeper relations with industry to better facilitate the universities understanding of industry's skillset requirements and future skillset requirements to reinforce the role of universities as drivers of innovation and growth
Operating model	<p>The operating model of most universities is relatively traditional. To meet the demands on the new operating environments faced by universities, this is likely going to have to evolve into a more efficient, more targeted and more collaborative model.</p>
<p>Sufficiency of information EY has a number of case studies which highlight that certain universities are evolving parts of the business model in response to the changing market environment. Additional information and research is required which relates to how leading land-based universities globally are responding to these challenges.</p>	

Appendix E Terms of Reference

Lincoln University and the Tertiary Education Commission

Lincoln University Strategic Options Analysis

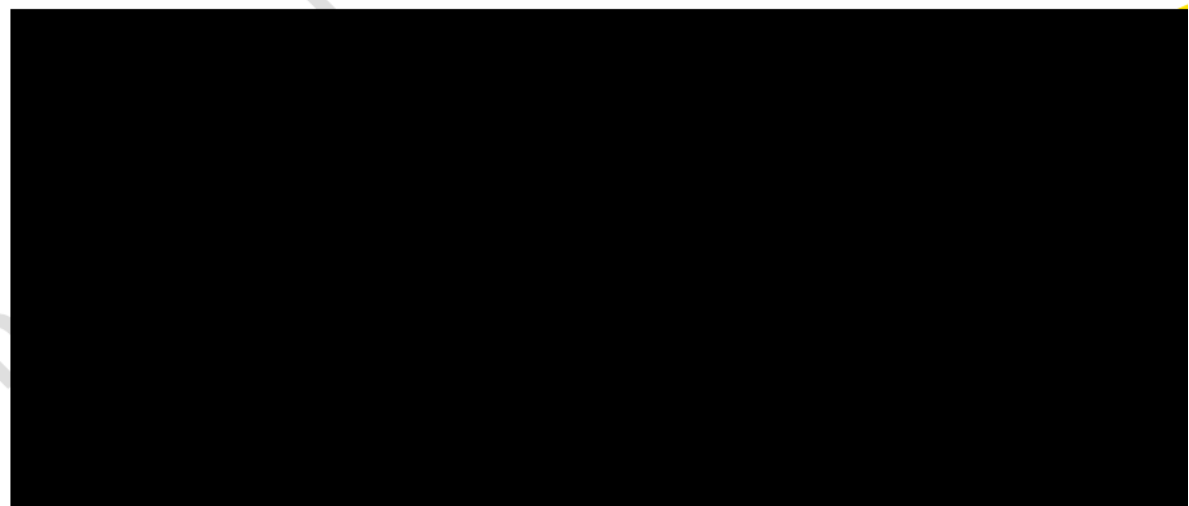
Terms of Reference

10 February 2016

Updated DRAFT - following comments from Lincoln University

DRAFT FOR DISCUSSION

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Lincoln University (Lincoln) is New Zealand's specialist land-based university and for more than 135 years, Lincoln has focused on improving New Zealand's land-based knowledge, wealth and productivity.

In recent year's Lincoln's financial performance has been poor. The last assessment under the Tertiary Education Commission's (TEC) Financial Management Framework indicated that Lincoln was at high risk. This has been the case for several years. The expected financial position at the end of 2015 is a deficit of around \$5m not including the partial payment of the insurance settlement (this has substantially improved from September forecasts due to a cost reduction programme) and the impact of some one-off items (e.g. bad debt write-off, earthquake and Hub project costs).

At present, Lincoln is delivering fewer EFTS than provided for in their Investment Plan. As part of the support for Lincoln as it recovers from the earthquakes, the TEC Board has decided not to recover the additional funding in 2015. This subsidy is estimated to be around \$4m in the 2015 financial year. This arrangement has been in place since 2011, but it is reviewed by the TEC Board as part of the normal Investment Plan process. Lincoln sought a consent to borrow \$5m from the Secretary of Education in October 2015 to assist it to manage its cashflow, which was forecast to be tight in the latter months of 2015 and until student fee payments are received in early 2016. This facility is in place, but Lincoln has not accessed this money at this stage.

In September 2015 the Chief Executive of the TEC used his powers under section 195B of the Education Act 1989 to gather further financial information and analysis from Lincoln in order to understand the current financial issues facing the organisation. There is an ongoing requirement on Lincoln University for detailed monthly reporting to the TEC on financials and EFTS.

Lincoln and the TEC appointed an Independent Advisor (funded by the TEC) to monitor the Lincoln financial situation and advise the TEC and the Secretary of Education on risk and performance, as well as to act as a 'critical friend' to the Management and Council of Lincoln. This arrangement is in place until August 2017.

The Independent Advisor has produced a detailed report for Lincoln dated 2 December 2015 and the TEC setting out a plan of action needed to continue to manage expenditure, and undertake further analysis needed in various areas of the operation of the University. This also included the draft of a 10 year financial model which is continuing to be developed.

The University suffered significant damage as a result of the Canterbury earthquakes. In 2014, Lincoln submitted a business case for government funding for the rebuilding of its science facilities. Government agreed in principle to provide capital funding of \$107.5m for the redevelopment. A key part of the rationale for this capital investment is the important contribution that Lincoln makes to the primary sector. Confirmation, and payment, of the funding is contingent on producing a further more detailed Project Business Case for the facilities, to be developed in conjunction with the Lincoln Hub Partners (most particularly AgResearch). This was due in June 2015, but is still to be completed.

In conjunction with the above, the Lincoln Hub Partners submitted a Programme Business Case setting out the establishment plans, governance arrangements and roles and functions for the Lincoln Hub in December 2015. This is being considered by Ministers.

As part of the work of the Independent Advisor, financial reporting has been improved, a cost management programme put in place, and a 2016 budget agreed that significantly improves the financial position of Lincoln, based on cost reductions and an improvement in EFTS. A 10 year financial model has also been developed. This is also required as part of the Treasury Better Business Case requirements for the Project Business Case - as outlined above.

The 10 year model indicates year on year growth in student numbers over the 10 year period of

approximately ^{9(2)(b)(i), 9(2)(b)(ii) and 9(2)(j) of the OIA} per annum. ^{9(2)(b)(ii) and 9(2)(j) of the OIA}

However, Lincoln is a small and specialized University so growth patterns are different from other Universities. Achieving this student growth will require Lincoln to keep increasing international student numbers, and attract domestic students to choose agriculture courses (rather than other subject areas) and choose to study at Lincoln, rather than at other Universities offering related programmes. Lincoln is in the process of finalising this 10 year model, and considering the risks associated with this strategy (in particular less student growth, or increased rebuild costs, or delays in both). Lower growth scenarios have been modelled, but work has not yet been done on the mitigation strategies the University may have to employ to address the financial issues if these lower growth scenarios are realised. This is not only an essential part of good governance to have strategies in place to manage risk; but a critical part of the requirements of the Project Business Case required by Government to formally sign-off on the capital support for redevelopment.

Lincoln has recently decided to undertake a review of the strategic options for its subsidiaries. This is expected to be completed in June 2016. The other part of this equation is to look at the strategic options for Lincoln's core business.

EY have been engaged by Lincoln and the TEC to support Lincoln to undertake Lincoln's strategic options analysis.

2.1 Scope and approach of the Assessment

2.1.1 Overview

The scope of the strategic options analysis is set out below. The scope is based on the 'next steps' section of the letter from Tim Fowler to the Lincoln Chancellor, Tom Lambie dated 16 December 2015.

The core component of scope is the strategic options analysis for Lincoln which is outlined below:

- ▶ **Strategic options analysis for Lincoln.** This will include an assessment of a full range of options for Lincoln and would be supplemented from work completed in the three components of scope described below. The financial implications of the 2-3 most preferred options will be assessed using the 10 year financial model recently developed by Lincoln University and the Independent Advisor recently appointed to the Lincoln University Council.

To assist with the strategic options analysis, work will be undertaken on the following two scope items:

- ▶ **Requirements of a university in the future with a land-based speciality.** This will include identification of future state key capability requirements of universities which will be based on a collaboration of existing EY research of university practices and trends globally and include agricultural specialist institutions, in particular the EY work on the University of the Future and the Pratley Review into Agricultural Education and Training in New South Wales.
- ▶ **Capability assessment and future outlook for Lincoln.** This will include an assessment of Lincoln's capability and capacity based on a collation of existing evidence e.g. recent internal and external reviews, combined with a self-assessment undertaken by Lincoln University, and any further assessment that is needed to address gaps in knowledge and understanding. The output can then be compared with future state capability requirements which may identify potential gaps that Lincoln may need to consider.

In addition the scope will also address the following in relation to Lincoln's contribution to the primary and education sector and economy in New Zealand:

- ▶ **Lincoln's contribution to the primary and education sector and economy in New Zealand.** This will include consideration of policy objectives for the sectors, recent changes in the sectors, future skill supply and demand issues, Government policy implications for the primary and education sector and Lincoln's role in relation to other providers of education and research within the sector.

2.1.2 Partnering with Lincoln

The outputs developed throughout this strategic options analysis will be critical in supporting Lincoln in its decision making. The delivery and governance of the engagement will require a mix of Lincoln, TEC and EY personnel.

- ▶ EY will provide the analytical team to bring together the analysis and facilitate key workshops. EY have deep experience from various projects in the sector where we have used a joint project team. This includes projects with the University of Western Australia and Queensland University of Technology. EY can also provide experience and learnings from other like projects which will help Lincoln avoid making the same mistakes made by others.

- ▶ Lincoln will provide a dedicated individual/individuals who allocate half their time to the roles as a minimum to ensure the project has adequate oversight and engagement and does not become a consultant lead program.
- ▶ The selection of the Lincoln team members is very important. The individuals put forward need to be innovative and well respected by colleagues. We suggest that Lincoln's team members include an individual with a project/change management skillset (this could be someone from HR or Management) and a senior academic, preferably a Dean.
- ▶ TEC will act as advisor to the project, where it will provide access to data and comparative information and liaise with other Government departments to arrange meetings and collect data, as appropriate.

There will be an initial workshop at the commencement of the work to develop the ways of working between Lincoln, TEC and EY; the goal will be to agree the approach, responsibilities, lines of communication, ground rules and key stakeholders to be engaged. EY will facilitate a stakeholder engagement workshop to determine with Lincoln and TEC the stakeholder engagement approach. This will be facilitated by the EY partners Stephanie Fahey and Victoria McLaughlin, who specialise in organisational change. It would be beneficial if the new VC attended this meeting if that was possible.

A small project steering group will be established that will oversee the project and provide/receive feedback with the joint project team. The steering group would likely consist of the Vice Chancellor (acting Vice Chancellor in the interim), one Lincoln Council member, a Senior Advisor from TEC, and Stephanie Fahey from EY.

Risks to past projects have been the lack of availability of senior university staff and also the desire of universities to put reports through a number of committees that do not meet frequently. The impact of these risks is that projects fall behind schedule. One of the steering group's roles will be to ensure this does not occur.

It is currently envisaged that the engagement team (Lincoln and EY) will collectively (this will be confirmed at the initial workshop):

- ▶ Collate, review and synthesise existing reports and material including the results of recent analysis by the Independent Advisor, work developed as part of the business cases in 2014, 2015 and 2016, and other internal reviews.
- ▶ Undertake workshops and interviews jointly where appropriate.
- ▶ Provide regular written reports during the review process to the steering group, the incoming Vice-Chancellor once in position, and the Independent Advisor.
- ▶ Undertake regular meetings with the Vice Chancellor and the Independent Advisor (and other key Council members as required).
- ▶ Attend scheduled monthly Lincoln Council meetings.
- ▶ Develop an understanding of concurrent processes (e.g. the appointment of the new Vice Chancellor; the subsidiaries review; Lincoln's financial results for 2015; its enrolment and financial trends for 2016; and any contractual obligations it might have in respect of the Lincoln Hub project) so that the work fully incorporates the most up to date understanding of progress that Lincoln is making.

2.1.3 Discovery process

The strategic options analysis will rely on a variety of information and analysis, some of which has

already been completed. To avoid duplication of work, the first step is to undertake a discovery process. This process will involve the project team collating existing documentation and analysis that is available and relevant to each of the four components of scope outlined in the overview section above.

EY envisage that likely sources of information in the Discovery Phase will include:

- ▶ The reports produced by the Independent Advisor - including the plan of action.
- ▶ Regular financial reports
- ▶ The 10 year financial model, which is being finalized by Lincoln University - this is a key input to the ongoing governance and management of the University, the Lincoln Hub Project Business Case, but will also be used to assess the financial implications of the wider strategic options.
- ▶ Other relevant financial information such as profitability by course/faculty, if available
- ▶ Work completed and underway as part of the development of the Programme and Project Business Cases.
- ▶ The 2014 Lincoln Project Business Case for the redevelopment of the science facilities.
- ▶ Lincoln's Agribusiness and Economics Unit research titled "Our Land, Our Brand" which focusses on Lincoln's contribution to the primary sector in New Zealand.
- ▶ Other relevant internal reviews recently completed or underway at Lincoln e.g. the staff satisfaction review, review of HR processes, the current strategic plan, marketing and recruitment plans, IT strategic plans, other strategic Council papers.
- ▶ Tribal benchmarking results, and other relevant information that compares metrics between universities. EY has a strong relationship with Tribal globally.
- ▶ Competitor analysis from other Universities in the region
- ▶ Forecasts of International student growth numbers for learning areas in New Zealand and Abroad including Australia.
- ▶ Relevant work completed and underway by the Lincoln Hub and the other partners in the Lincoln Hub
- ▶ Other university operating models (both domestic and international) - in particular universities with world leading operating models in both the delivery of agricultural university education combined with global best practice in the wider university community. e.g. UC Davis (US), Wageningen (NLD), University of Tasmania (Aus) and Scottish Royal University College (Sco).
- ▶ Sector reviews such as the Pratley Review into Agricultural Education and Training in New South Wales, as well as any best practice reviews that relate to increasing the number of people entering land-based industries.
- ▶ Government agencies
 - in particular the TEC and the MOE (benchmarking work and other related strategic work such as the Tertiary Education Strategy)
 - MPI publications titled "Future capability needs for the primary industries in New Zealand" and "People Powered, Building capabilities to keep New Zealand's primary industries internationally competitive" - which amongst other things notes that over the next decade there will be a need to increase the skill level across the primary industries. This means that even roles that have traditionally not required formal qualifications will increasingly need greater skills and an increased demand for on-the-job and professional training. In addition, there will be an increase in the need for support

services, especially as primary production and processing becomes more sophisticated and greater value is added across the value chain.

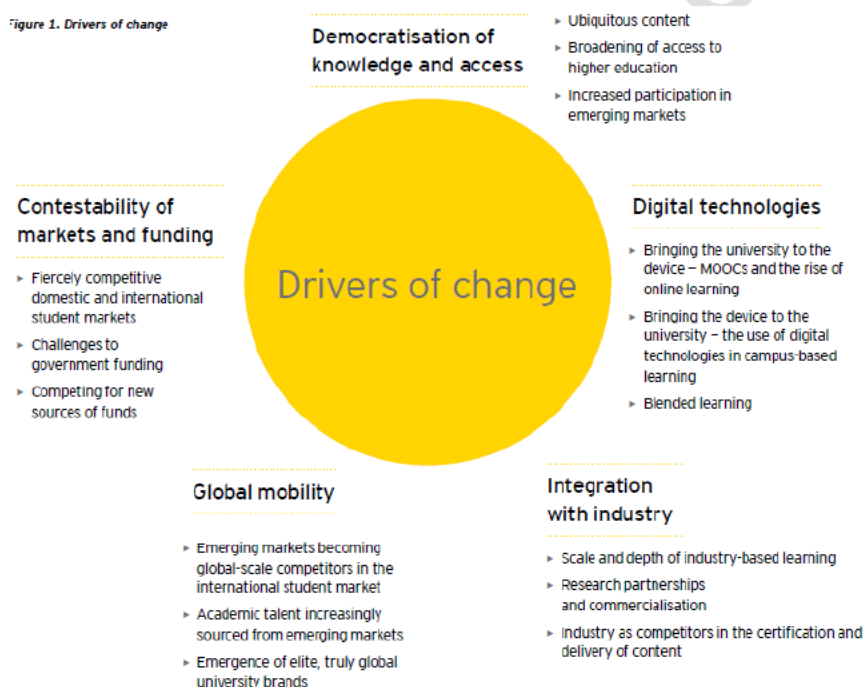
- MBIE (advancing New Zealand's primary research and getting value for money from research expenditure, and also the wider labour market planning study)
- Productivity Commission
- Treasury
- ▶ Industry and corporate bodies e.g. Federated Farmers, DairyNZ, Fonterra, Beef and Lamb New Zealand, ANZCO, Horticulture New Zealand.

EY will combine documentation collated during the discovery process with existing EY research and publications such as EY's 'University of the future' study²³. This study conducted in Australia explored sector challenges and compared practices across Australian universities, and identified areas where tertiary organisations need to improve performance to remain competitive.

The primary hypothesis of the study is that the dominant university model – a broad-based teaching and research institution, supported by a large asset base and a large, predominantly in-house back office – will prove unviable in all but a few cases over the next 10-15 years. At a minimum, incumbent universities will need to significantly streamline their operations and asset base, at the same time as incorporating new teaching and learning delivery mechanisms, a diffusion of channels to market, and stakeholder expectations for increased impact.

The drivers of change of this can be summarized into five key trends:

Figure 1. Drivers of change



- ▶ Democratisation of knowledge and access – The massive increase in the availability of 'knowledge' online and the mass expansion of access to university education in developed and

²³ For the full report go to [http://www.ey.com/Publication/vwLUAssets/University_of_the_future/\\$FILE/University_of_the_future_2012.pdf?bcsi_scan_01d939382f6c0b14=0&bcsi_scan_filename=University_of_the_future_2012.pdf](http://www.ey.com/Publication/vwLUAssets/University_of_the_future/$FILE/University_of_the_future_2012.pdf?bcsi_scan_01d939382f6c0b14=0&bcsi_scan_filename=University_of_the_future_2012.pdf)

developing markets means a fundamental change in the role of universities as originators and keepers of knowledge.

- ▶ Contestability of markets and funding – Competition for students, in Australia and abroad, is reaching new levels of intensity, at the same time as governments globally face tight budgetary environments. Universities will need to compete for students and government funds as never before.
- ▶ Digital technologies – Digital technologies have transformed media, retail, entertainment and many other industries – higher education is next. Campuses will remain, but digital technologies will transform the way education is delivered and accessed, and the way 'value' is created by higher education providers, public and private alike.
- ▶ Global mobility – Global mobility will grow for students, academics, and university brands. This will not only intensify competition, but also create opportunities for much deeper global partnerships and broader access to student and academic talent.
- ▶ Integration with industry – Universities will need to build significantly deeper relationships with industry in the decade ahead – to differentiate teaching and learning programs, support the funding and application of research, and reinforce the role of universities as drivers of innovation and growth.

These changes will force universities to adapt in a number of ways:

- ▶ Breadth of programs – Universities will need to consider whether they can continue to maintain a competitive position – domestically and internationally – across a broad range of programs, or whether to concentrate resources on a smaller range of programs.
 - Digital technologies will transform the way education is delivered and supported - education will be available anywhere, anytime and will be supported by enhanced feedback, learning analytics, seamless student support systems - not just in the developed world.
 - At a minimum, universities will need to streamline their operations and asset base, and at the same time add new teaching/learning delivery mechanisms as explicit stakeholder expectations for increased impact will increase.
- ▶ Target customers – Universities will need to have a clear strategy and execution around target student segments and their specific needs and preferences. Today, most universities' segmentation is broad at best (for example – school leavers, mature age, and international). Universities that do not become more focused on segments will be exposed to an increasing number of competitors with targeted student propositions.
 - Private institutions will look to exploit profitable market niches, while others will create new markets and sources of value; for example, by specialising in select parts of the education value chain.
- ▶ Channels to market – Universities will need to rethink the role of digital channels and third party partnerships in recruiting students and delivering teaching and research programs.
 - Universities will not in any way disappear as places of teaching and learning, research, community engagement, and of varied student experience - but they will be much more tightly integrated digital tools and approaches and personalised/blended/flipped learning will be the norm
- ▶ Back office – The asset base and university administration will need to be significantly leaner than it is today which may involve outsourcing some back office functions to realise lower

operating costs or adopting a shared services type approach. Most universities at present have more professional staff than academic staff – this ratio will have to change.

- o Efficiency gains delivered through the digitisation of the support functions of Finance, HR, IT, central procurement, student services and research support are yet to be realised in many institutions and shared services is in its infancy relative to other industries.

The purpose of the discovery process is to identify what is already known and to provide an assessment of where further analysis would be of value. This will:

- ▶ Allow previous work to be leveraged where it makes sense
- ▶ Provide a richer understanding of what is occurring internationally and domestically
- ▶ Identify risks/opportunities of available information
- ▶ Ensure that the engagement is not larger than it needs to be

At the end of the Discovery Phase EY will provide a report which outlines the depth of information available and a plan for the next phases of work required to address the terms of reference. The discovery draft report would be compiled and discussed with the project steering group. Feedback would then be incorporated into a final report presented to the Council and the TEC.

2.1.4 Post Discovery Phase

Based on the assessment made at the end of the Discovery Phase as to whether additional information is required or further analysis is necessary, the project team will undertake additional work. Although the extent of scope will not be known until the end of the Discovery Phase, a broad outline of potential scope items for each component of work is shown in appendix 1. The work undertaken in this phase will continue to include significant engagement with Lincoln through interviews and workshops.

2.2 Timeline

Set out below is a draft timeline for this assignment. It is difficult to provide detail of the worksteps beyond the Discovery Phase, however EY will aim to commence phase 2 in late March which coincides with the anticipated start date of the new Vice Chancellor. This will allow the new Vice Chancellor to be heavily involved throughout stage 2. We'll aim to complete a draft report in early June that can be presented at the June council meeting.

Activity	Date	Key assumptions and interdependencies
Phase 1: Discovery process		Assumes that parties can provide all requested information by 4 March
EY Commence work:	15-02-16	
Final information requests provided:	04-03-16	
Presentation of draft discovery report to project steering group:	11-03-16	
Amendments to draft discovery report :	16-03-16	
Discovery report presentation to Council and the TEC:	22-03-16	
Phase 2: Post Discovery Phase		
EY Commence work:	29-03-16	
Presentation of draft report to project steering group:	20-05-16	
Amendments to draft report :	03-06-16	
Report presentation to Council and the TEC:	21-06-16	

The timelines outlined above have been set on the basis that:

- ▶ The project team is provided with information within agreed timeframes

- ▶ Workshops and interviews are made a priority and conducted within reasonable timeframes
- ▶ The project team receives feedback on relevant material within agreed timeframes

It is absolutely critical that all parties take ownership responsibility to ensure this is achieved.

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Below is a broad outline of potential scope items for each component of work.

Component	Scope Items	Suggested approach
Strategic options analysis for Lincoln	<ul style="list-style-type: none"> ▶ Work closely with the Lincoln finance team and IFM to: <ul style="list-style-type: none"> ○ Understand Lincoln’s historical and forecast financial performance and position ○ Understand key risks and opportunities of the forecast ○ As required, utilise existing models to model the various future options that are determined. ▶ Define options for assessment which will be a standalone task that will occur after the capability and capacity assessment and financial analysis has been completed. ▶ Analysis will consider what Lincoln should do more of, do less of, stop doing and/or start doing. 	<ul style="list-style-type: none"> ▶ EY will combine our existing experience alongside a search of alternative operating models to maximise financial viability and sustainability. ▶ EY propose to analyse all options identified against a common set of criteria to ensure we are comparing all options consistently. These criteria will be supported by a checklist of more specific question/metrics that enable us to build the necessary evidence base. The criteria will be based around the key areas outlined below: <ul style="list-style-type: none"> ○ Education ○ Research ○ Commercial ○ Support services ○ Industry collaboration ▶ The output of this process will ultimately be a ranked long-list of potential options for Lincoln to consider. This long list will then be segmented into three tiers using a traffic light approach. EY suggest that the most preferable 2-3 options should be worked through in detail, with a view to a preferred option emerging. This is a process similar to the Better Business Case process.
Requirements of a university in the future with a land-based specialty	<ul style="list-style-type: none"> ▶ Identify and document key future state capability requirements of universities ▶ Research relevant international comparators with a land-based agricultural focus. Group future state capability requirements into requirements to be a successful ‘mid-tier’ university and a ‘top end’ university 	<ul style="list-style-type: none"> ▶ Utilise EY’s education capabilities and experience on both a local and global basis ▶ Utilise “University of the Future” work done by EY Australia ▶ Other relevant research such as the Pratley Review into Agricultural Education and Training in New South Wales.

Component	Scope Items	Suggested approach
<p>Capability and capacity assessment and future outlook for Lincoln</p>	<ul style="list-style-type: none"> ▶ Presenting evidence of Lincoln's current capability and capacity collected in Discovery Phase ▶ Lincoln self-assessment of its current state capability, capacity and characteristics. This will focus on: <ul style="list-style-type: none"> ○ Finance ○ Resources ○ Governance ○ Technology ○ Supporting policies, systems and processes ▶ Moderation of output from the self-assessment exercise. ▶ Comparison of current state capability and capacity with the future state capability and capacity requirements identified in component 2 (Gap analysis). ▶ Analysis of what is required to deliver any gaps identified from both a capability and capacity viewpoint. ▶ Undertake risk assessment and steps required to bridge any potential gap identified. 	<ul style="list-style-type: none"> ▶ Self-assessment completed through workshops
<p>Lincoln's contribution to the primary and education sector and economy in New Zealand</p>	<ul style="list-style-type: none"> ▶ Solely Lincoln focussed with benchmark comparisons and review of benchmark trends 	<ul style="list-style-type: none"> ▶ Interviews with key personnel ▶ Desktop review of current literature

Appendix F Lincoln Strategic documents

We have been provided with separate documentation that outlines more specific strategies. The table below summarises Lincoln's more detailed strategies listed in the Strategic Plan 2014-2018. The table also highlights evidence where the strategy has been outlined in further detail in a separate or additional document.

Strategic Theme	Strategy	Evidence where strategy is outlined
1. Restore institutional viability (2014-2015)	Grow student numbers	Choose Lincoln Strategy
	Secure increase in Student Achievement Component (SAC) investment	N/A
	Diversify student population	N/A
	Start creating the Lincoln Hub	Lincoln Hub Programme Business Case and Lincoln Hub Project Business Case
	Commence rebuild of the Te Waihora campus	Lincoln University Programme Business Case
	Apply the research, branding, capability, LincolnFirst and LincolnPlus plans	N/A
	Restore profitability	N/A
2. Grow the performance of New Zealand's land-based industries (2015-2016)	Maori plan implemented	Whenua Strategy
	Pasifika plan implemented	N/A
	Commence Te Ika-a-Maui campus(es)	N/A
	Consolidate key industry relationships	N/A
	Consolidate key entity relationships	N/A
	Consolidate key international relationships	N/A
	Strengthen capacity for scientific, business and design innovation to add value to New Zealand's land-based value chains	Lincoln Hub Programme Business Case
3. Expand the global influence of New Zealand's land-based expertise (2016-2018)	Complete 50% of Te Waihora campus rebuild	Lincoln University Programme Business Case
	Complete Lincoln Hub	Lincoln Hub Programme Business Case and Lincoln Hub Project Business Case
	Complete Te Ika-a-Maui campus(es)	N/A
	Commence first overseas presence	N/A
	Expand key entity and industry relationships	N/A
	Improve academic rewards and performance	Third Learning and Teaching Strategic Directions
	Grow research revenue and research rankings	Lincoln University Research Strategy
	Teach sub-tropical and tropical agriculture and horticulture qualifications	N/A

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