

FEDERATION UNIVERSITY AUSTRALIA

Economic Contribution to Victoria

Quantifying the economic contribution of Federation University to Ballarat, Gippsland, south-east Melbourne and the broader Victorian economy



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\$51.4B	\$2.06B	\$35.7B	8,072 FTE	1,546 FTE/yr
Full Stack NPV — 25 years at 6%	Average annual economic gain NPV @ 6%	Layer 3 NPV — permanent human capital gain	Immediate jobs supported	Annual graduate pipeline contribution (excl. offshore wind)

The impact of Federation University extends far beyond its campuses, shaping the economic and social future of the regions it serves. As the only university headquartered in regional Victoria, and with a strong focus on equity, Federation plays a unique role in creating opportunity, building local capability and supporting the workforce, industries and services that regional communities depend on.

This paper analyses **the impact Federation University creates — and what it makes possible**. The gains are across three regions (Ballarat / Central Highlands, Gippsland, south-east Melbourne), three layers (immediate, compounding, permanent), and three decades. The numbers are large, reflecting the scale of Federation’s contributions to the communities it serves.

More importantly, the analysis demonstrates how regional education generates irreplaceable benefits that accumulate over time – driving long-term economic growth, social mobility and regional prosperity.

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Executive Summary

This paper quantifies the economic contribution of Federation University Australia to the Ballarat / Central Highlands, Gippsland and South-East Melbourne regions — and to the broader Victorian economy. The contribution is assessed across three interlinked layers:

Layer 1 — Operational Impact \$836M pa generated annually 8,072 FTE supported \$15.68B NPV (25yr)	Layer 2 — Annual Workforce Impact 1,546 HE and 894 TAFE FTE/yr graduate pipeline \$218M pa GVA contribution Building from Year 1 onwards	Layer 3 — Human Capital Creation (permanent) \$35.7B NPV \$7.07B pa by Year 25 Enduring and irreplaceable
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- Layer 1 — Operational impact:** \$836M per annum in economic activity is generated and 8,072 FTE positions are supported (Appendix A) across Ballarat (6,208 FTE), Gippsland (1,270 FTE), SE Melbourne/Berwick (388 FTE), and the Tech Park (1,870 FTE, partially overlapping with Ballarat) from direct wage expenditure, local university expenditures, student spending in local economies and the secondary effects of the operations. The 25-year NPV of University operations is \$15.68B.
- Layer 2 — Annual workforce pipeline:** 3,700 graduates each year. Of these approximately 1,546 FTE per year enter the regional economy through the graduate pipeline — 738 in Ballarat, 252 in Gippsland, 259 in SE Melbourne (Berwick campus), and 110 through Tech Park graduate placement — generating an annual GVA contribution of \$218M. Within ten years, more than 15,460 FTE will have been trained and placed in regional roles.
- Layer 3 — Human capital creation:** Over 25 years, successive graduate cohorts compound into an NPV of \$35.7B (\$27.0B across the two primary regional campuses of Ballarat and Gippsland). By Year 25, the annual benefit reaches \$4.2B for Ballarat, \$1.09B for Gippsland, and \$0.77B for SE Melbourne — \$7.07B per annum across all regions. This contribution cannot be replicated by any other institution in these regions.
- TAFE — vocational pipeline:** Federation University is Regional Victoria's only dual-sector university. Federation University contributes 1,277 TAFE graduates per year to the economy with 70% being retained in regional Victoria— Certificate III, IV and Diploma-level qualifications supply vital trades, aged care, early childhood and community services workforces. The 25-year NPV of the TAFE impact, is estimated \$8.9B.
- Full stack:** Taken across all three layers, the full economic contribution is estimated at \$51.4B (L1 NPV + L3 NPV). Layer 3 is where the enduring value lies — twenty-five years of graduate cohorts creating, compounding and sustaining regional economic capacity. This equates to an average annual contribution to the Victorian economy of \$2.06B.
- Gippsland offshore wind:** An additional time-limited exposure of \$417.9M per annum by 2032 peak — the window to establish a locally trained operations and maintenance workforce is closing around 2027.

Key finding: Layer 3 is where the enduring value lies, and it cannot be replicated. Operational activity (Layer 1) represents the university's direct economic footprint. Twenty-five years of compounding graduate cohorts represent the cumulative and singular contribution Federation makes to its regions.

SECTION 1

What Federation University Contributes

Regional universities are routinely assessed on what they cost to fund. This analysis asks a different question: what does Federation University contribute to these regions.

The gap between those two questions is large. When a university operates, the immediate contribution — staff wages, student spending, campus activity — is visible but rarely quantified. What is less often measured is what accumulates over the following decade and beyond: the graduate pipeline that builds, the workforce that strengthens, the knowledge ecosystem that deepens, and the investment that arrives because the skills base is there.

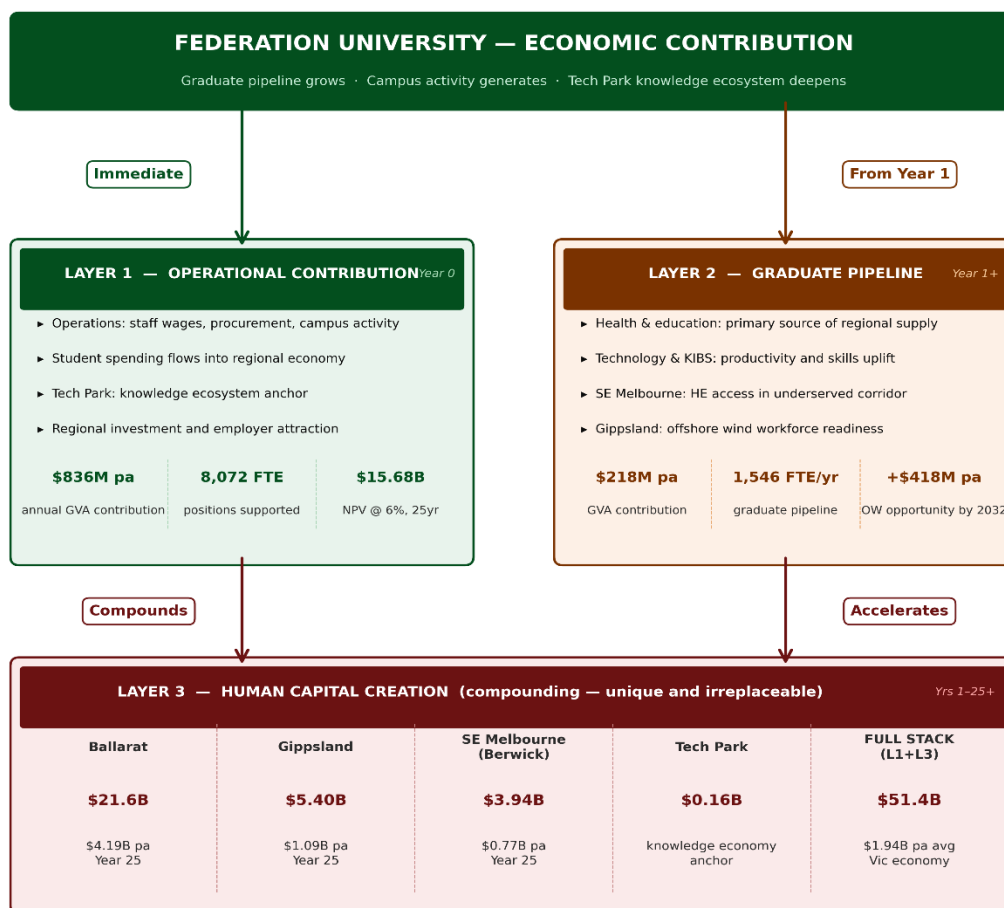
This paper quantifies that contribution across three layers. The numbers are large and demonstrate the significant contribution Federation makes to the communities it serves.

This paper does not quantify the additional contribution to communities through the complex societal intangible benefits created by a University. These intangible benefits include social and cultural benefits (arts, culture and normative), improved health benefits, indigenous community empowerment, economic and social mobility and enhanced societal interchange.

SECTION 2

How the Economic Contribution Works — The Cascade of Value

Federation University’s economic contribution does not operate through a single channel. It creates three overlapping streams of value, each with a different timing and a different character. Figure 1 illustrates the cascade of value — Layer 1 operates immediately, Layer 2 builds from Year 1, and Layer 3 compounds progressively over 25 years. Each layer has a different profile; Layer 3 is the most enduring.



Layer 1: substantial and partially replicable over time · Layer 2: builds progressively in regional labour markets · Layer 3: enduring and irreplaceable — compounding graduate cohorts cannot be substituted

Figure 1: The Cascade Model

The Cascade — Summary

Layer	Effect	Timing	Jobs Impact	Annual GVA	25-yr NPV	Nature of value
Layer 1	Operations	Immediate	8,072 FTE (incl TAFE)	\$836M pa	\$15.7B	Partially replaceable
Layer 2	Workforce pipeline	Year 1 onwards	1,546 HE and 894 TAFE FTE/yr pipeline created	\$218M pa	—	Builds progressively over long term
Layer 3	Human capital creation	Compounding to Year 25	15,460+ FTE trained and placed by Year 10	\$7.07B pa (Yr 25)	\$35.7B	Enduring and irreplaceable
Full Impact					\$51.4B	

Table 1: The Cascade Summary

By way of understanding the scale of these economic benefits generated by Federation is to consider the scale of project needed to replicate the economic value generated by L1 alone. This would require additional economic value added to be created across the economy of \$520M per annum, for 25 years. Projects have different value creation characteristics, but the investment needed to *replicate L1 economic contribution alone* through new project investment, a regional capital program of roughly \$2.5B–\$4.5B would be required, every year. The L3 effect is more than twice this level.

SECTION 3

Calibrating the Net Contribution

Not all of the contribution is unique to Federation University, as some outcomes may also be generated through alternative education and training pathways. To account for this, three factors calibrate the gross impact, and the model applies them explicitly to produce a conservative net contribution (ie these gross impacts of the analysis are discounted by these factors).

Alternative Education (15%)	Employer Substitution (20%)	Alternative Use of Funds (10%)
<i>Some students would pursue education and training through alternative pathways, including online study, metropolitan providers or vocational education providers.</i>	<i>Some workforce demand would be met through alternative recruitment channels, including graduates relocating to the region, interstate labour mobility and skilled migration.</i>	<i>Public funding not invested in a regional university would continue to generate economic activity elsewhere — estimated at a lower regional multiplier than direct campus spending.</i>
The central estimate is 15%, reflecting Federation's high first-in-family enrolment rates and the geographic distance to credible alternatives. For health and education students in Ballarat and Gippsland, there is no practical substitute; the 15% discount is conservative. For SE Melbourne (Berwick), a higher alternative education discount of 20% applies — metro students have greater access to substitute providers.	The central estimate is 20%. This is lower for health and education (where thin regional markets mean no credible back-fill source) and slightly higher for technology and KIBS (where metro candidates are sometimes willing to relocate). For SE Melbourne (Berwick), substitution is set at 25% — metro labour markets provide more ready access to replacement workers.	A 10% discount is applied to reflect this, though at a lower regional multiplier than spending in the same economy. The 10% alternative use discount applies equally to SE Melbourne; the metropolitan context does not alter the funding redirection assumption.

Table 2: Offsetting Adjustments

These three factors combine to a net contribution factor of 0.612 — meaning the analysis captures approximately 61% of the gross graduate pipeline gain as a real net economic impact. ie the net contribution captures the 61% of graduate value that is uniquely attributable to Federation University.

For the SE Melbourne (Berwick) campus, a differentiated net factor of **0.54** applies ie 46% of graduates are estimated to be replaced through these offsetting mechanisms., reflecting a lower alternative education discount (20%) and higher substitution (25%) appropriate to a metropolitan setting. All figures in this paper apply these adjustments.

Federation University currently graduates around 3,700 Higher Education and 1,277 TAFE graduates per annum. Applying the three adjusting factors the model captures only the unique and incremental value attributable to Federation.

The gross impact is larger - 3,700 HE and 1,277 TAFE; what is reported throughout this paper is the defensible net - 1,546 FTE/yr HE and 894 TAFE. The details of this calculation are provided in Appendix B.

The Graduate Pipeline and Its Regional Value

The 1,546 FTE/yr HE and 894 TAFE graduate pipeline that Federation University delivers across our catchments does not have a ready substitute. The evidence on regional graduate retention is clear: Federation University directly enables regional students to pursue higher education who would otherwise face structural barriers — geographic distance, first-in-family status, and the absence of credible local alternatives.

The sectoral distribution of Federation University's HE graduates amplifies the regional benefit. The majority are concentrated in health (226 FTE/yr Ballarat, 169 FTE/yr Gippsland, 79 FTE/yr Berwick) and education (114, 42, and 40 FTE/yr respectively) — the two sectors that underpin functional communities. A region that cannot produce its own nurses, allied health workers, and teachers becomes dependent on external recruitment pipelines that are already under national pressure.

For Gippsland, the contribution of a locally trained offshore wind operations and maintenance workforce represents a significant strategic opportunity for Gippsland during a decade of critical economic transition in addition to the existing skills pipeline scope.

The SE Melbourne (Berwick) catchment presents a distinct equity dimension. The region already exhibits a disproportionate attainment rate in TAFE qualifications relative to higher education — a structural legacy of historically limited HE provision to a population of approximately 950,000 residents. The Berwick campus directly extends higher education access to this population in a corridor where the pull of established metropolitan universities has historically failed to reach first-in-family and lower-attainment cohorts. The economic effect for Berwick reflects not just individual income foregone, but the cumulative effect on a regional economy that has never fully transitioned to the knowledge-intensive base its population and geography could support.

SECTION 4

Economic Contribution by Layer

Layer 1 — Operational Impacts

University operations generate \$836M per year in economic activity and 8,072 FTE positions are supported.

- Staff wages, student spending and Technology Park activity¹ (~\$700M annual economic impact) are supported through the existing knowledge ecosystem that supports these activities.
- This is the most visible contribution. It is also the component most likely to be reproduced over time through alternative investment and activity.

\$836M pa	8,072 FTE	\$15.68B	Partial
Annual GVA contribution	Positions supported	25-year NPV at 6%	Partially replicable

Layer 2 — Annual Workforce Growth

The graduate pipeline is the University's most sustained contribution. Each year, Federation University supplies qualified graduates directly into regional roles.

- Approximately 1,546 HE FTE per year enter the regional economy through the graduate pipeline — 738 across Ballarat, 252 across Gippsland, 259 across SE Melbourne (Berwick), and 110 through Tech Park graduate placement
- A further 894 TAFE graduates enter the Ballarat regional economy annually
- In health and education, Federation University is the primary source of supply in the catchments — rural and regional markets have no credible alternative pipeline.
- In technology and business services, Federation University graduates raise workforce productivity above what would otherwise be achievable — generating an annual GVA premium of \$218M that begins immediately and continues every year.
- From 2027 to 2037 more than 15,460 positions across the region will have been filled and upgraded by Federation University graduates.
- For Gippsland, the offshore wind industry adds a distinct time-limited exposure: the window to build a local O&M workforce is closing around 2027, with a peak exposure of \$417.9M per annum by 2032.

1,546 HE	894 TAFE	\$218M pa	15,460+	\$418M pa
HE Graduate pipeline annually	TAFE pipeline annually	Annual GVA contribution from Year 1	FTE trained and placed by Year 10	Gippsland offshore wind exposure (2032 peak)

Layer 3 — Human Capital Creation

This focus area is where the enduring value accumulates. Every year, a new graduate cohort is trained, employed locally, mentors the next generation, and contributes to the knowledge base that attracts further investment. These effects compound progressively over time.

- In Year 1 the annual contribution of graduating students is \$218M. By Year 25, the annual contribution from compounding cohorts reaches \$4.2B per annum for Ballarat, \$1.09B for Gippsland, and \$0.77B for SE Melbourne (Berwick) — \$7.07B per annum across all regions.
- The NPV over 25 years is \$35.7B — the single most important figure in this analysis, representing human capital created and sustained, predominately in regional Victoria.
- Unlike Layer 1, this measures the accumulative contribution through the development of local human capital. It reflects the long-term value created by successive cohorts of graduates who strengthen workforce capability, productivity and community outcomes across the regions Federation serves.

¹ Wannon Regional Institute (WRI), Ballarat Technology Park Economic Contribution Assessment, 2019/20 sites Tech Park GVA as \$700M. This figure includes students involved on placements from the University and other activities that directly involve the University. To prevent double counting of these activities the Tech Park GVA has been reduced. The modelling reconciling the \$700M GVA contained in the 2021 report to the figures used throughout this report (\$392M) is available on request. The analysis services to highlight how integrated the Tech Park and Federation are in practice and the symbiotic nature of the relationship between them.

\$35.7B	\$7.07B pa	\$27.0B	Permanent
Layer 3 NPV — 25 years at 6%	Annual GVA contribution by Year 25	Ballarat + Gippsland regional L3 NPV	Enduring value — compounding cohorts create irreplaceable regional capacity

Scale and Context

Ballarat's gross regional product (GRP) is approximately \$7.7B per annum. The total modelled impact of Federation University's contribution to the Ballarat economy — across all three layers, over 25 years — is approximately \$29.8B in NPV terms. Expressed as an annual average, this is approximately \$1.19B per annum, equivalent to around 15% of Ballarat's current GRP. Federation University is not a peripheral institution in the Ballarat economy — it contributes, on average, roughly one dollar in every six to seven generated in the region over time.

SECTION 5

Economic Contribution by Region

The analysis distributes the university's economic footprint across four geographic zones: Ballarat, Gippsland, the Technology Park, and SE Melbourne (Berwick campus). The geographic spread underlines that Federation's contribution is significant across Victoria – Federation creates a graduate pipeline from every catchment it serves.

Ballarat²

Ballarat is the dominant contribution. Health and education graduates are the two largest cohorts, supplying skills in areas of sustained workforce demand across the region. The Technology Park adds a knowledge economy dimension: IBM, Accenture and other co-tenants depend on the graduate pipeline for workforce renewal.

\$685M pa	\$21.6B	6,208 FTE	\$4.19B pa
L1 annual GVA contribution	L3 NPV — human capital	Immediate positions supported	Annual contribution by Year 25

Measure	GVA / NPV	FTE
L1 annual activity	\$0.69B pa	6,208 FTE supported
L1 NPV (25yr @ 6%)	\$8.25B	—
L2 annual graduate pipeline	\$0.10B pa	738 FTE/yr pipeline created
L2 cumulative (10yr)	—	7,380 FTE trained and placed
L3 Year 25 annual contribution	\$4.19B pa	—
L3 NPV	\$21.6B	—

Table 3: Ballarat Key Figures

Sector breakdown: Ballarat Layer 2 workforce pipeline

Sector	Annual GVA contribution	FTE/yr pipeline created
Health	\$38.0M pa	226 FTE/yr
Education	\$21.3M pa	114 FTE/yr
Technology / ICT	\$17.0M pa	162 FTE/yr
KIBS / Business Services	\$13.3M pa	150 FTE/yr
Other disciplines	\$12.4M pa	86 FTE/yr
TOTAL Ballarat	\$101.9M pa	738 FTE/yr

Table 4: Ballarat Sector Analysis

Gippsland

Gippsland's impact is smaller in scale but structurally significant. The graduate pipeline supports health and education workforces in communities that cannot source replacement workers from metropolitan markets. The offshore wind dimension creates a time-specific opportunity for the region that Federation is ideally suited to deliver. Operations and maintenance workforce patterns for the Bass Strait wind industry are being set now, and the window to establish a locally trained workforce is the next two to three years. A 2027 horizon is not a projection — it is the point at which project-phase employment decisions lock in long-term workforce geographies, and Federation University is the only institution positioned to supply that workforce.

\$86M pa	\$5.4B	1,270 FTE	\$418M pa
L1 annual GVA contribution	L3 NPV — human capital	Immediate positions supported	Offshore wind peak exposure (2032)

² Note for modelling purposes TAFE staff and operational expenditures have been included as part of the wider L1 Ballarat grouping.

Measure	GVA / NPV	FTE
L1 annual activity	\$0.086B pa	1,270 FTE supported
L1 NPV (25yr @ 6%)	\$0.95B	—
L2 annual GVA contribution (excl. offshore wind)	\$0.04B pa	252 FTE/yr pipeline created
L2 cumulative (10yr)	—	2,520 FTE trained and placed
L3 Year 25 annual contribution	\$1.09B pa	—
L3 NPV	\$5.4B	—

Table 5: Gippsland Key Figures

Sector breakdown: Gippsland Layer 2 workforce pipeline

Sector	Annual GVA contribution	FTE/yr pipeline
Health	\$28.5M pa	169 FTE/yr
Education	\$7.7M pa	42 FTE/yr
Other disciplines	\$4.5M pa	41 FTE/yr
TOTAL Gippsland (excl. Offshore Wind)	\$40.7M pa	252 FTE/yr
Offshore Wind (separate exposure)	\$417.9M pa (NPV 25 year)	360 construction + 372 operations FTE

Table 6: Gippsland Sector Analysis

Technology Park

The Tech Park is modelled conservatively: This understates the true value of Federation in one important respect — anchor tenants' workforce renewal depends on the graduate pipeline — to grow, these tenants need Federation University. This is one of the primary drivers of the co-location rationale. Federation's graduate pipeline and other benefits support location decisions which lift regional productivity. Further growth in the technology park, driven by Federation University has not been captured in the graduated productivity model — therefore this benefit is both real, but not accounted for in this analysis.

\$392M pa	\$163M	1,870 FTE	110 FTE/yr
L1 annual GVA contribution	L3 NPV — knowledge ecosystem	Pipeline-supported positions	Annual graduate placement

Measure	GVA / NPV	FTE
L1 annual activity	\$0.39B pa	1,870 FTE (qualified pipeline-dependent)
L1 NPV (25yr @ 6%)	\$5.01B	—
L2 annual GVA contribution	\$0.13B pa	110 FTE/yr growth
L2 cumulative (10yr)	—	716 FTE trained and placed
L3 Year 25 annual contribution	\$0.12B pa	—
L3 NPV	\$0.16B	—

Table 7: Technology Park Key Figures

TAFE

Federation University is regional Victoria's only dual-sector university, meaning it offers both higher education and vocational education and training (TAFE) under the same institution. In 2024, 5,984 students were enrolled in TAFE programmes across the institution — representing 32.5% of total tertiary enrolment. The University is the only accredited TAFE provider operating under dual-sector governance in the Ballarat region.

The significance of this extends beyond graduate numbers. TAFE graduates — predominantly Certificate III, Certificate IV and Diploma-level qualifications — fill workforce roles that are structurally distinct from those supplied by higher education. Trades, community services, aged care, early childhood, and construction are all heavily reliant on the TAFE pipeline. Ballarat produces approximately 1,277 TAFE graduates per year; at a 70% regional retention rate, this translates to approximately 894 graduates

entering the regional workforce annually³. This pipeline of graduates is vital to the local economy and cannot be replaced by the higher education sector, nor by neighbouring TAFE providers who are already operating at or near capacity in the regional Victoria context.

\$48.9M pa	\$625M	\$8.2B	1,277	894
TAFE student expenditure GVA (Layer 1, Type II)	L1 student expenditure 25-yr NPV @ 6%	L3 human capital stock 25-yr NPV @ 6%	TAFE graduates per year (Ballarat)	Regional workforce entrants (70% retention)

SE Melbourne (Berwick Campus)

The Berwick campus serves south-east Melbourne — one of the fastest-growing corridors in Victoria, encompassing the City of Casey and surrounding outer south-east suburbs. Unlike Ballarat and Gippsland, this is a metropolitan setting. These differences are explicitly modelled: a retention rate of 60% (versus 70% for Ballarat and Gippsland) and a spillover ratio of 2.0 (versus 2.5 for Ballarat and Gippsland).

The University presence in this catchment directly addresses a structural problem with higher education provision in the south-east corridor of Melbourne. Federation's Berwick campus has an addressable customer base of ~950,000 residents. The region has been historically underserved by relevant and accessible higher education provision, leading to a disproportionate attainment rate for this population in TAFE qualifications as opposed to the more typical mix between TAFE and HE.

The historical lack of dynamic higher education provision to the region can be seen as a key driver of lower than expected economic growth across this region, and a failure to progress to a more diversified and complex knowledge based economy as has occurred across other comparable regions in Australia. Despite these adjustments, the Berwick campus generates a Layer 3 NPV of \$3.94 billion — comparable in scale to Gippsland's. This is because Berwick produces approximately 799 higher education graduates per year, heavily weighted to health and education — sectors with structural workforce shortages across the south-east Melbourne growth corridor. The south-east Melbourne corridor is projected to grow to around 1.4 million residents by 2040. Federation provides an anchoring source of health and education graduates from a catchment that will require substantially more — not fewer — locally trained professionals over the coming decades.

The modelling provided here contemplates a lineal growth in Federation student numbers for the Berwick campus, although there is reasonable evidence to suggest that growth will significantly exceed the modelled data within this analysis (as outlined in Section 7). As the Federation brand establishes in the catchment it is reasonable to expect that growth will be exponential rather than lineal as market share shifts to reflect the attractiveness of the university Co-Op focussed offering combined with the market preference for accessible locations within the south-east suburbs of Melbourne.

\$65.5M pa	\$3.94B	388 FTE	\$4.67B
L1 annual GVA contribution	L3 NPV — human capital (25yr)	Immediate positions supported	Full Stack NPV (L1 + L3)

Measure	GVA / NPV	FTE
L1 annual activity	\$0.066B pa	388 FTE supported
L1 NPV (25yr @ 6%)	\$0.72B	—
L2 annual graduate pipeline	\$0.035B pa	259 FTE/yr pipeline
L2 cumulative (10yr)	—	2,590 FTE trained and placed
L3 Year 25 annual contribution	\$0.77B pa	—
L3 NPV (25yr @ 6%)	\$3.94B	—
Full Stack NPV	\$4.67B	—

Table 8: SE Melbourne (Berwick) Key Figures

Note: The Berwick campus contribution is not a regional story in the traditional sense — it is a metropolitan growth corridor story. The economic impact represents not merely existing capacity but the active building of future capacity in line with population growth.

³ Refer Appendix D for TAFE data and modelling assumptions.

Sector breakdown: SE Melbourne (Berwick) Layer 2 workforce pipeline impact

Sector	Annual GVA contribution	FTE/yr pipeline created
Health	\$13.3M pa	79 FTE/yr
Education	\$7.5M pa	40 FTE/yr
KIBS / Business Services	\$7.4M pa	91 FTE/yr
Other disciplines	\$7.4M pa	48 FTE/yr
TOTAL SE Melbourne (Berwick)	\$35.5M pa	259 FTE/yr

Table 9: SE Melbourne (Berwick) Sector Analysis

SECTION 6

Unique and singular value

Federation University's Layer 1 contribution comprises operational spending, staff employment and student expenditure. This represents the University's direct economic footprint and is the most visible and readily measured component of its impact. While substantial in its own right, Layer 1 captures only the immediate economic effects of University activity and does not encompass the longer-term benefits generated through skills development, workforce participation and productivity growth.

Layer 3 reflects a different source of economic value. It captures the long-term benefits that arise from decades of investment in education, workforce development, partnerships and community capability.

Twenty-five years of successive graduate cohorts represents a significant stock of human capital. The health professionals, educators and technical workers trained by Federation University make a singular contribution to regional workforce capability, supporting industries and services that are critical to regional communities.

The same dynamic is evident at the Technology Park, where the University's long-standing presence has helped foster connections between education, research and industry. The mentoring relationships, research collaborations, and community connections that its graduates create – and that draw the next generation into these fields – are a direct product of Federation University's ongoing role in these regions.

For Gippsland and offshore wind, this unique contribution is concentrated into a shorter and more consequential window. The moment at which operations and maintenance workforce geographies are established for a generation is arriving in the next three to four years. Federation University is positioned to shape that outcome now: if this window is seized, the regional workforce participation question is answered positively for the life of the wind assets — thirty years or more.

This is the feature that distinguishes this analysis from a standard economic impact study. Rather than focusing solely on the University's direct economic contribution, it also considers the longer-term value Federation creates and sustains in its regions.

Key finding: The \$35.7B Layer 3 NPV represents the unique value created by Federation University in these regional economies. It is not a projection of future activity — it is the quantified value of human capital that Federation University is building in Ballarat, Gippsland and south-east Melbourne.

SECTION 7

Scenarios

Discount Rate Sensitivity

The central estimates in this paper use a 6% real discount rate. The table below shows the effect of moving that rate to 5% or 7%. All other model parameters are held constant. L1 annual GVA figures are rate-independent; only the capitalised NPV values change.

Measure	5% rate	6% rate (central)	7% rate
L1 NPV — 25-year capitalised (\$B)	\$17.3B	\$15.7B	\$14.3B
L3 NPV — 25-year human capital (\$B)	\$39.4B	\$35.7B	\$32.6B
Full Stack NPV — L1 + L3 (\$B)	\$58.4B	\$51.4B	\$46.9B

Table 10: Discount Rate Sensitivity — Headline NPV Figures. Central estimate is 6%.

A few observations on this range:

- The L3 (human capital) estimate is most sensitive to the discount rate because the annual contribution compounds to Year 25 — later cohort effects are more heavily penalised at higher rates. Moving from 5% to 7% reduces the L3 NPV by \$6.8B (17%). This reinforces the argument for a lower rate when modelling long-run human capital benefits that are genuinely irreversible.
- The L1 (operational) NPV is less sensitive — the annuity factor moves from 11.7 to 14.1 across the range, a 21% difference. The annual flow (\$836M pa across the three primary campuses) is the same regardless of rate.
- Even at the highest rate tested (7%), the Full Stack NPV of \$46.9B remains very large. The rate assumption does not change the policy conclusion.

Growth Scenario – Population Driven Contribution

The economic contribution figures presented throughout this report are based on Federation University's current student population — 3,700 HE graduates per year and 1,277 TAFE graduates per year across all campuses. This is a conservative baseline. The three regions served by Federation University are all projected to grow materially over the next 15 years, and the demand for locally trained graduates — particularly in health, education and technology — will grow with them.

If Federation University's student enrolments grow in line with projected regional population growth⁴, a conservative estimate, over the 25-year modelling horizon, the estimated full-stack economic contribution rises from \$51.4 billion to approximately \$58.4 billion — an additional \$7.0 billion in NPV terms. The Layer 3 (human capital) contribution grows from \$35.7B to \$40.6B, and the annual economic contribution at Year 25 reaches \$8.0B per annum across the three regions.

The graduate pipeline itself expands from approximately 3,700 HE graduates per year to around 4,203 per year — an additional 503 graduates annually entering regional labour markets in health, education, technology and other critical sectors. The TAFE pipeline grows from 1,277 to approximately 1,451 graduates per year.

These figures should be read as indicative. They assume that enrolment capacity grows proportionally with population. They do not account for Commonwealth or state policy changes affecting university funding, nor for changes in the regional economy's sectoral mix. They are presented as a plausible scenario to illustrate the direction and approximate scale of growth in Federation University's economic contribution over time. Detailed methodology and population projections are set out in Appendix F.

In addition to the above, modelled growth does not provide for any positive shift in market share, which is more than likely given the increasing alignment between the Federation co-operative model and consumer behaviours of higher education students.

Scenario finding: Based on current enrolments, Federation University's 25-year economic contribution is estimated at \$51.4B (Full Stack NPV). If enrolments grow in line with regional population projections — a 13.6% weighted average increase by 2041 — the contribution rises to approximately \$58.4B. The additional value attributable to population-driven growth alone is approximately \$7.0B in NPV terms, with the annual economic contribution at Year 25 increasing by approximately \$970M per annum.

⁴ This is an indicative scenario only. It applies a uniform population growth inflator (13.6%) to base figures. No changes to model parameters, sector mix or retention assumptions are made. See Appendix F for full methodology.

Appendix A — Key Assumptions

Parameter	Value / Approach
Discount rate	6% real (central estimate; consistent with Australian applied practice for regional public investment)
Modelling horizon	25 years
Price base	2026 AUD
GVA multiplier type	Type II (direct, indirect, and induced effects)
Workforce contribution methodology	Hybrid GVA model — see Appendix E
Layer 3 growth assumption	Graduate cohort creation compounding annually from Year 1
Tech Park modelling	Productivity uplift model; binary anchor tenant upside excluded from central estimate (conservative)
Offshore wind	Modelled as a separate exposure; 2032 peak assumes full operational phase of Bass Strait projects
Geographic split	Layer 1: Ballarat 65%, Gippsland 20%, Tech Park 15%. SE Melbourne (Berwick) modelled directly from 799 HE graduates/yr (retention 60%, Moretti 2.0, GVA baseline \$95k). Residual Other via imputation (0.3481 ratio).
Berwick net factor	0.54 (alt. education 20%, substitution 25%, alt. use 10%) vs 0.612 for Ballarat/Gippsland
Double-count correction	Applied at Tech Park where graduate pipeline and operational activity overlap

Appendix B — Graduate Pipeline Calculations

This appendix sets out the step-by-step calculation of the annual Net Structural Vacancy (NSV) figure — the workforce contribution measure used in Layer 2 of the economic model. The pipeline translates gross annual higher education graduate completions into a net FTE figure representing positions filled in each regional labour market through Federation University’s graduate pipeline.

B.1 Calibration and Adjustment Steps

Three sequential adjustments reduce gross completions to a net counterfactual figure. The net factor is the product of all three adjustments.

Adjustment	Ballarat / Gippsland	Berwick	Rationale
Step 1: Regional retention	70%	60%	Share of graduates remaining in the region after completion. Berwick lower due to outer-metro employment pull.
Step 2: Alternative education discount	15%	20%	Share of students who would have pursued education and training through another alternative pathway. Ballarat/Gippsland lower — geographic isolation and first-in-family cohort.
Step 3: Substitution discount	20%	25%	Share of roles employers that could be met from outside the region. Berwick higher — broader metro labour pool available.
Step 4: Alternative use of funds discount	10%	10%	Public funding invested elsewhere in the tertiary education system generates a lower regional multiplier.
Net counterfactual retention factor	61.2%	54.0%	Bal/Gip: $(1-15\%)\times(1-20\%)\times(1-10\%) = 61.2\%$. Berwick: $(1-20\%)\times(1-25\%)\times(1-10\%) = 54.0\%$.

B.2 Net Structural Vacancies by Campus and Sector

Applying the net factor to gross completions produces the Net Structural Vacancy (NSV) rate. NSV is then allocated across labour market sectors using campus-specific graduate field-of-study data. The Tech Park figure is modelled separately, not part of the graduate pipeline.

Sector	Ballarat (FTE/yr)	Gippsland (FTE/yr)	Berwick (FTE/yr)	Tech Park (FTE/yr)
Health	225.5	169.0	79.2	—
Education	114.3	41.6	40.1	—
Business Services / KIBS	150.1	—	91.5	—
Technology / ICT	162.0	—	—	—
Other disciplines	85.6	30.9	48.1	—
Workforce quality degradation	—	—	—	110.0
Total NSV (FTE/yr)	737.5	251.5	258.9	110.0

B.3 Grand Total Reconciliation

Adding Other (online/distance) graduates at a composite net factor of approximately 38.8% ($484 \text{ graduates} \times 38.8\% = 188 \text{ FTE}$) produces a grand total that reconciles to the reported 1,546 FTE pipeline figure.

Campus / Component	Annual NSV (FTE/yr)	10-yr Cumulative (FTE)
Ballarat	737.5	7,375
Gippsland	251.5	2,515
Berwick / SE Melbourne	258.9	2,589
Tech Park (workforce degradation)	110.0	1,100
Other (online / distance, $484 \text{ grads} \times 38.8\%$)	187.8	1,878
Grand total	1,546	15,457 $\approx$ 15,460

Note: 10-year cumulative figures apply simple annual accumulation ($\text{NSV} \times 10$) uniformly across all campuses, consistent with the FTE Summary sheet of the integration model. The 15,457 total rounds to the reported 15,460 FTE. All figures are 2026.

Appendix C — Full Results Table (\$B)

Region	L1 Annual GVA	L1 FTE	L1 NPV	L2 FTE/yr	L2 GVA contribution pa	L3 NPV	L3 Yr25 annual
Ballarat	\$0.69B pa	6,208	\$8.25B	738 FTE/yr	\$0.10B pa	\$21.6B	\$4.19B pa
Gippsland	\$0.09B pa	1,270	\$0.95B	252 FTE/yr	\$0.04B pa (+OW \$0.42B)	\$5.4B	\$1.09B pa
Tech Park	\$0.39B pa		\$5.01B	110 FTE/yr	\$0.01B pa	\$0.16B	\$0.18B pa
SE Melbourne (Berwick)	\$0.04B pa	388	\$0.72B	259 FTE/yr	\$0.04B pa	\$3.94B	\$0.77B pa
Other (remaining)	\$0.02B pa	207	\$0.74B	188 FTE/yr	\$0.03B pa	\$4.65B	\$0.91B pa
Grand Total	\$0.90B pa	8,072	\$15.68B	1,546 FTE/yr	\$0.18B pa	\$35.7B	\$7.07B pa

Offshore wind (Gippsland): \$417.93M pa at 2032 peak — shown separately, not included in L2 annual total above.

Full stack of \$51.4B applies double-count corrections at Tech Park. Grand Total L1 NPV includes all campuses.

Layer one results

Component	FTE
Direct staff	1,305
University operations indirect & induced	3,420
Student expenditure Type II	2,632
Total (excl. Tech Park)	8,072
Campus	FTE
Ballarat	6,208
Gippsland	1,270
SE Melbourne (Berwick)	388
Other	207
Total excl. Tech Park	8,072

Appendix D — TAFE data and modelling assumptions

Measure	Value
TAFE students enrolled (2024)	5,984
TAFE share of total tertiary enrolment	32.5%
Campuses offering TAFE	Ballarat only
TAFE graduates per year	1,277
Regional retention rate	70%
Graduates entering regional workforce (annual)	~894
Student expenditure — Type II GVA (Layer 1)	\$48.9M pa
Student expenditure — 25yr NPV (@ 6%)	\$625M
Direct workforce income contribution	\$62.6M pa
Direct GVA — Ballarat (LQ-adjusted)	\$90.0M pa
Layer 3 net cohort embedded (Ballarat)	250 grads/yr
Layer 3 TAFE wage basis	\$66,600 pa
Layer 3 TAFE direct GVA (Year 25 steady state)	\$478.9M pa
Layer 3 TAFE + Moretti GVA (Year 25 steady state)	\$1,541M pa
Layer 3 TAFE attributable NPV (25yr @ 6%)	~\$8,250M
Full Stack TAFE (L1 + L3 NPV)	~\$8,875M

Appendix E — Hybrid GVA Methodology

Health and Education Sectors

Graduate contribution is modelled on the full productive value of each role filled by a Federation University graduate. This approach is used where rural and regional markets have no credible alternative pipeline.

Technology and Knowledge-Intensive Business Services

Graduate contribution is modelled as a productivity uplift — positions are filled but by more-qualified workers. GVA benefit reflects the output differential between Federation University graduates and the available replacement workforce, estimated from sector wage and productivity data.

Layer 3 Compounding

Each annual graduate cohort builds permanently on the regional human capital stock. The cumulative effect compounds from Year 1 at the sector-specific productivity differential. The 25-year NPV is the discounted sum of all annual benefit values across the modelling horizon, at 6% real. Full Stack = L1 NPV + L3 NPV. L2 is shown as an annual rate reference only — adding it separately would double-count the mechanism already embedded in L3.

Modelling approach – L3 multiplier

Layer 3 (knowledge economy) effects are modelled using the Moretti multiplier (Moretti, 2003, 2004, 2013) — the empirically derived ratio by which each additional degree-qualified graduate retained in a regional economy raises the productive capacity and wage levels of surrounding workers, attracts more complex firms, and deepens the knowledge intensity of the local economy. That multiplier is calibrated to higher education graduates, drawing on Moretti's foundational research in the American Economic Review and its Australian application to regional universities by the Regional Universities Network (RUN). (Nous Group & CoPS, 2020). Importantly, TAFE graduates are **not** excluded from the Layer 3 model. The Ballarat cohort model incorporates 250 net TAFE graduates per year, modelled through the same Moretti approach but at a discounted wage basis of \$66,600 per annum, compared with \$83,800 for the higher education graduate cohort. This wage differential reflects the lower regional wage pull of certificate-level qualifications and means that no additional knowledge economy uplift above the direct wage effect is applied to TAFE graduates — an approach consistent with the absence in the peer-reviewed literature of a dedicated sub-degree Moretti multiplier. The TAFE Layer 3 contribution is therefore modelled conservatively: it captures the direct wage-and-spillover effect of TAFE graduates on the regional economy but does not apply a sectoral productivity premium of the kind used for KIBS or health and education cohorts in the higher education model.

There is also a credible complementarity argument that is not modelled here: trades, aged care, early childhood and community services workers are enabling infrastructure for the knowledge economy. Knowledge economy workers cannot function at full productive capacity without access to sufficient local trades, health and care workers. In that sense, the TAFE pipeline indirectly supports the productivity of the higher education graduate cohort modelled in Layer 3. This complementarity effect, if modelled, would increase the Layer 3 figures presented above.

Appendix F — Population Growth Scenario: Methodology

The economic contribution figures presented in this report are based on Federation University’s current student population. This appendix sets out the methodology and data used to develop an indicative population growth scenario.

Regional Population Projections 2026–2041

Population projections are drawn from the Victoria in Future (VIF) for Ballarat and Gippsland SA4 regions, and from City of Casey data for the SE Melbourne catchment. The 2026–2041 horizon aligns with the report’s 25-year modelling period and the Victorian Infrastructure Framework (VIF) planning horizon.

Region	2026 Population	2041 Population	Growth / L3 NPV Weight
Ballarat SA4	344,459	381,095	+10.6% / 67.9%
Gippsland SA4	321,654	375,685	+16.8% / 17.9%
SE Melbourne (Casey)	444,500	549,000	+23.5% / 14.2%
Weighted average growth			+13.6% / 100.0%

Table F1: Regional population projections and NPV-based weighting⁵.

Weighted Average Growth Rate

The weighted average population growth rate of 13.6% reflects the combined catchment growth of the three campuses, weighted by economic significance (L3 NPV share). Ballarat’s weight of 67.9% moderates the overall figure — it is the slowest-growing catchment. Gippsland and SE Melbourne both grow at above 15%, and the Berwick catchment (City of Casey) at 23.5% is one of the fastest-growing corridors in Victoria.

The 13.6% inflator is applied uniformly to all base economic figures. This is an indicative approach only — it does not model changes in sector mix, retention rates, or Moretti multiplier effects that would accompany a larger graduate cohort. To that extent it is conservative: a larger graduate cohort in a growing knowledge economy would likely produce a somewhat higher multiplied effect than a simple pro-rata uplift implies.

Scenario Results

Measure	Base (current)	Population growth scenario	Uplift
Full Stack NPV — L1 + L3 (25yr @ 6%)	\$51.4B	\$58.4B	+\$7.0B
L1 NPV — operational contribution (25yr)	\$15.7B	\$17.8B	+\$2.1B
L3 NPV — human capital stock (25yr)	\$35.7B	\$40.6B	+\$4.9B
L1 annual economic contribution	\$836M pa	\$950M pa	+\$114M pa
L3 annual contribution by Year 25	\$7.07B pa	\$8.04B pa	+\$0.97B pa
Graduate pipeline (HE, annual)	3,700/yr	4,203/yr	+503/yr
Graduate pipeline (TAFE, annual)	1,277/yr	1,451/yr	+174/yr

Table F2: Population growth scenario — indicative economic contribution uplift. 13.6% inflator applied uniformly to all base figures. All \$ 2026 prices.

⁵ Sources: VIF 2025 (Ballarat, Gippsland); Forecast.id / City of Casey (SE Melbourne).

Appendix G — Key Sources

- ABS, Australian National Accounts: National Income, Expenditure and Product (Cat. 5204.0), 2024
- ABS, Employee Earnings and Hours (Cat. 6306.0), 2024
- AEMO, Integrated System Plan, 2024
- Department of Education (DESE), Higher Education Statistics: Student Data, 2024
- Federation University Australia, Annual Report, 2024
- Grampians Health, Strategic Plan 2025–2029
- Moretti, E. (2003). Human Capital Externalities in Cities. NBER Working Paper 9641
- Moretti, E. (2004). “Workers’ Education, Spillovers, and Productivity.” *American Economic Review*, 94(3), 656–690
- Moretti, E. (2013). *The New Geography of Jobs*. Houghton Mifflin Harcourt
- Nous Group & Centre of Policy Studies (2020). *The Economic Effects on Regional Australia of RUN-member Universities*. Prepared for the Regional Universities Network
- Productivity Commission (2022). 5-Year Productivity Inquiry: From Learning to Growth (Interim Report 3). Canberra: Commonwealth of Australia
- Rural Workforce Agency Victoria (RWAV), Rural Health Workforce Census, 2024
- Victorian Auditor-General's Office, Access to Higher Education in Regional Victoria, 2025
- Victorian Government, Offshore Wind Action Plan, 2024
- Wannon Regional Institute (WRI), Ballarat Technology Park Economic Contribution Assessment, 2019/20

This is a working paper prepared for internal use by Federation University Australia.