5 SCHOOLS DETAILED BUSINESS CASE

BUSINESS CASE/COST BENEFIT ANALYSIS SUMMARY

Purpose of this document	This document provides an overview of the 5 Schools Project Detailed Business Case. The primary objective of this document is to outline the economic analysis undertaken and the key outcomes.
Status	This summary was prepared based on the contents of the detailed business case presented to the Building Queensland Board in Q2 2018. The information presented may be subject to change as the proposal progresses through future stages of development, delivery and operations.

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1   Summary information

Project name	5 Schools Detailed Business Case	
Location	South East Queensland	
Proposal owner	Department of Education	
Proposed delivery agency	Department of Education	
P90 cost estimates	Nominal[1]	Present value[2]
Capital cost	$408.7	$320.0
Total ongoing cost	$293.4	$91.8
Net present value		-$181.02
Benefit cost ratio		0.56[3]

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[1] Financial.
[2] Real, discounted at 7 per cent.
[3] Does not include all the identified benefits of the project as a number of identified benefits were not capable of being monetised (refer section 11).

2   Proposal overview

The 5 Schools Project is a detailed business case investigating the merits of delivering five new schools in high population growth areas in South East Queensland. The schools are to be completed and open for students for the start of Term 1 in the 2020 school year.

South East Queensland has experienced sustained levels of high population growth in recent decades. Forecasts show that over the next 25 years, South East Queensland's population will continue to grow significantly, with anticipated population growth of 75,000 per annum and an expected overall population of 5.3 million. This level of population growth requires significant investment in supporting infrastructure and services by government to ensure access to an appropriate level of essential services.

The following study areas are expected to experience significant population growth in the next 20 years:

- Ripley Valley south of Ipswich

- the Coomera and Pimpama areas of the Gold Coast

- Yarrabilba.

In addition, the areas of North Lakes and Mango Hill north of Brisbane, whilst more advanced in their development cycle, have continually experienced school aged population growth in excess of forecasts and are expected to continue to experience moderate growth levels in the short to medium term.

The anticipated level of underlying demand growth in the study areas cannot be accommodated by the existing schools in the local network. The detailed business case determined that the following five new schools are required to be delivered for the start of Term 1 of the 2020 school year:

- Ripley Valley Primary School

- Ripley Valley Secondary School

- Coomera Secondary School

- Yarrabilba Secondary School

- Mango Hill Secondary School.

3   Service need

The key driver of demand in each local network are the land use and release plans resulting in significant additional population. The relative affordability of housing in the five networks is expected to attract a high proportion of families with school aged children.

Priority development areas at Ripley Valley and Yarrabilba are fast growing greenfield land release areas in the south-west growth area of South East Queensland that will ultimately be home to 50,000 and 20,000 households respectively. These two growth areas are critical to achieving the region's population growth targets set out in ShapingSEQ.

Coomera and its adjoining suburbs have been identified as a major activity centre and major expansion area under ShapingSEQ and will have the largest portion of its housing growth originating from Pimpama. Mango Hill and its adjoining suburbs are more advanced in their development cycles than the other networks investigated. The suburb of Mango Hill is projected to experience significant student population growth until the middle of the next decade. Mango Hill is identified in ShapingSEQ as an area with potential for increased residential density due to its close proximity to employment areas.

Five networks comprising of a number of adjoining school catchment areas were defined for the purposes of an alignment analysis (demand-supply analysis) for the project. The networks include Ripley Valley primary, Ripley Valley secondary, Yarrabilba secondary, Coomera secondary and Mango Hill secondary. Each network has individual schools that either had enrolments nearing capacity in 2017 or are forecast to have enrolments exceeding current capacity by 2019.

4   Options assessment

The State Infrastructure Plan provides an options assessment framework to guide the generation of a list of potential options. In accordance with this framework, consideration was given to non-asset initiatives, as well as asset-based options.

The detailed options assessments concluded that new schools delivered in 2020 were the preferred options as they were cost effective and had higher net positive social impacts relative to other options.

The assessment for Ripley Valley also concluded that a new co-located primary and secondary school in Ripley Valley's Providence Development delivered in 2020 was the preferred option.

5   Base case

The base case provides a description of what will need to occur in the absence of the reference project[4] and is the benchmark against which the reference project is assessed. The modelling of the base case had regard to:

- obligations of the Department of Education to accommodate students in their local catchment school

- class size targets included in the *Department of Education and Training State School Teachers' Certified Agreement 2016 (Teachers' Agreement)*

- related community expectations for accessible local education service delivery.

The base case included a series of interventions for each local network that would be considered the minimum required in the absence of the provision of a new school to meet minimum service level requirements. Interventions modelled in the base case for each of the five local networks included some or all of the following:

- adoption of strict enrolment management plans (to minimise 'out-of-catchment' enrolments)

- adjustments to individual school catchment boundaries so as to best align available capacity of each existing school in the defined local network with in-area demand[5]

- allowing existing school enrolments to grow beyond their current capacity

- provision of additional classrooms at existing schools—space permitting

- as a last resort, transporting students to their nearest schools.

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[4] In the context of an economic analysis, a reference project represents an indicative investment proposal which addresses the identified service need. While the reference project may be subject to change during the detailed design process, it provides a reference point to assess the potential costs and benefits of the infrastructure proposal.
[5] Powers exist for the Department of Education to adjust catchment boundaries for existing schools. The process requires consultation and negotiation with affected schools.

As a comparator for each of the five schools, the base case was modelled to the point where it provided the same amount of additional enrolment capacity delivered by the proposed new schools. That is, the base case was constrained so it does not provide greater capacity than delivered by the new schools.[6]

6   Reference project

Following identification of the service need requirement and base case definition, reference projects were developed. Development of the reference projects were informed by design guidelines, policies in relation to school sizes, site conditions and the identified service need.

6.1   New Ripley Valley Primary School

The reference project includes the delivery of a new primary school in the south of the Ripley Valley Priority Development Area within a new land release at 'Ripley Providence'. The new school will be delivered in two stages, with stage one opening for students in 2020 and stage 2 in 2022. Enrolment capacity following Stage 2 is estimated to be approximately 1,100.

6.2   New Ripley Valley Secondary School

The reference project includes the delivery of a new secondary school co-located with the new Ripley Valley Primary School. The new school will be delivered in two stages, with stage one opening for students in 2020 and stage 2 in 2022. Enrolment capacity following Stage 2 is estimated to be approximately 1,200.

6.3   New Yarrabilba Secondary School

The reference project includes the delivery of a new secondary school at Yarrabilba within a new land release area in the Yarrabilba Priority Development Area located at McKinnon Drive. The new school will be delivered in two stages, with stage one opening for students in 2020 and stage 2 in 2022. Enrolment capacity following Stage 2 is estimated to be approximately 1,400.

6.4   New Coomera Secondary School

The reference project includes the delivery of a new secondary school in Coomera. The new school will be delivered in two stages, with stage one opening for students in 2020 and stage 2 in 2022. Enrolment capacity following Stage 2 is estimated to be approximately 1,400.

6.5   New Mango Hill Secondary School

The reference project includes the delivery of a new secondary school in Mango Hill. The new school will be delivered in two stages, with stage one opening for students in 2020 and stage 2 in 2022. Enrolment capacity following Stage 2 is estimated to be approximately 1,400.

7   Methodology

Monetised incremental costs and benefits that are generated in moving from the base case to project case have been estimated over a period from 2017–18 to 2038–39; which is 20 years beyond the construction of Stage 1. Future costs and benefits were discounted back to present day values.

Incremental costs and benefits that were unable to be monetised were evaluated through a social impact evaluation that identified social impacts and applied an impact risk assessment to determine the materiality of those identified non-monetised impacts.

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[6] While the Department of Education has an obligation to cater for the continuous growth in enrolment demand within each school network after the completion of these proposed new schools, it was outside the scope of this business case to address the enrolment growth beyond what will be met by the proposed new schools.

Table 1　　　Key cost benefit analysis parameters

PARAMETER	VALUE
Economic discount rate	7% (real)
Price year	1 January 2018
Evaluation period	2017–18 to 2038–39 (20 years of operations post-delivery of stage 1)

Parameters, assumptions and monetisation techniques for each cost and benefit category are outlined in section 8 below.

8　　　Demand forecasts

Five local networks were defined with each network comprising several existing schools in adjoining school catchment areas. The five networks are identified in Figures 1 through 5.

Demand forecasts in each network were generated from projections of Resident Student Numbers (RSNs). RSNs projections are prepared by the Queensland Government Statistical Office (QGSO) for the Department of Education. The RSN for a school catchment area (or other specified statistical area) is a measure of the number of school aged students choosing public schools residing within the area. RSN projections are derived directly from official 2017 Queensland Government Population Projections (adjusted for an assumed public-sector education share). Figures 1 through 5 below include a heat map indicating the strength of 'in area' demand growth in each local network drawing from QGSO RSN projections.

The key driver of demand in each local network are the land use and release plans resulting in significant additional population (and therefore school aged population). The relative affordability of housing in the five networks is expected to attract a high proportion of families with school aged children.

Figure 2 Ripley Valley secondary network—resident student number growth heat map
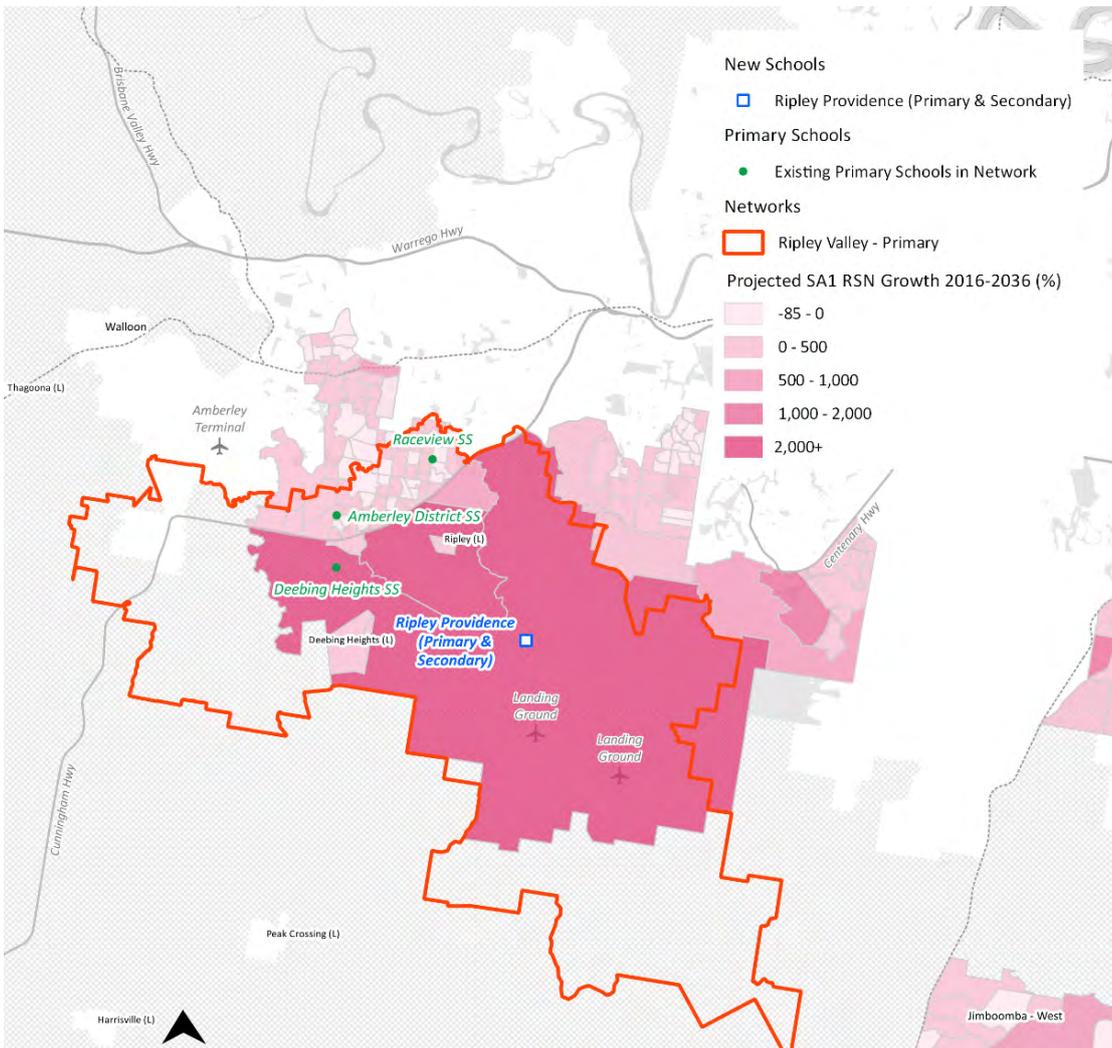
Figure 3   Yarrabilba secondary network—resident student number growth heat map
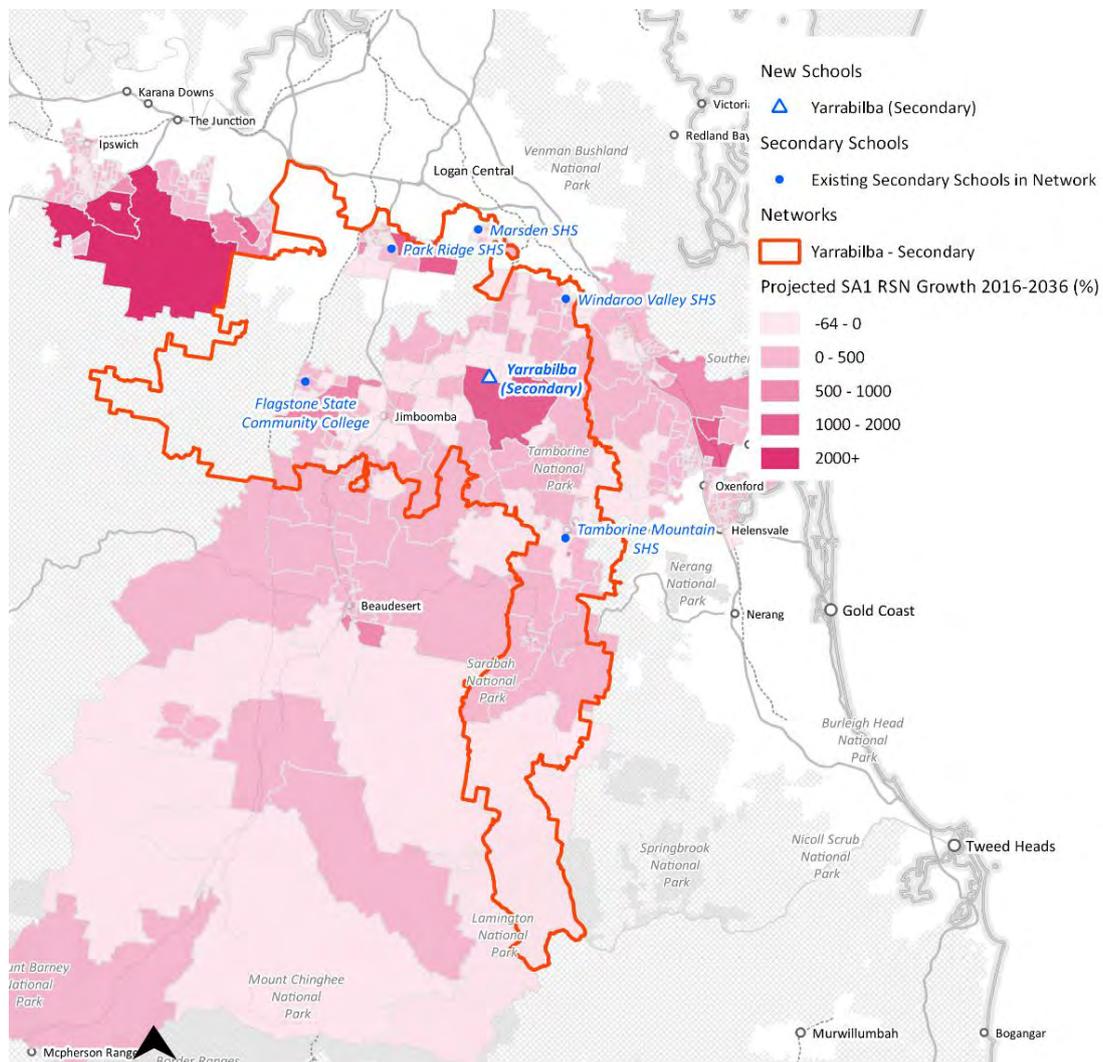
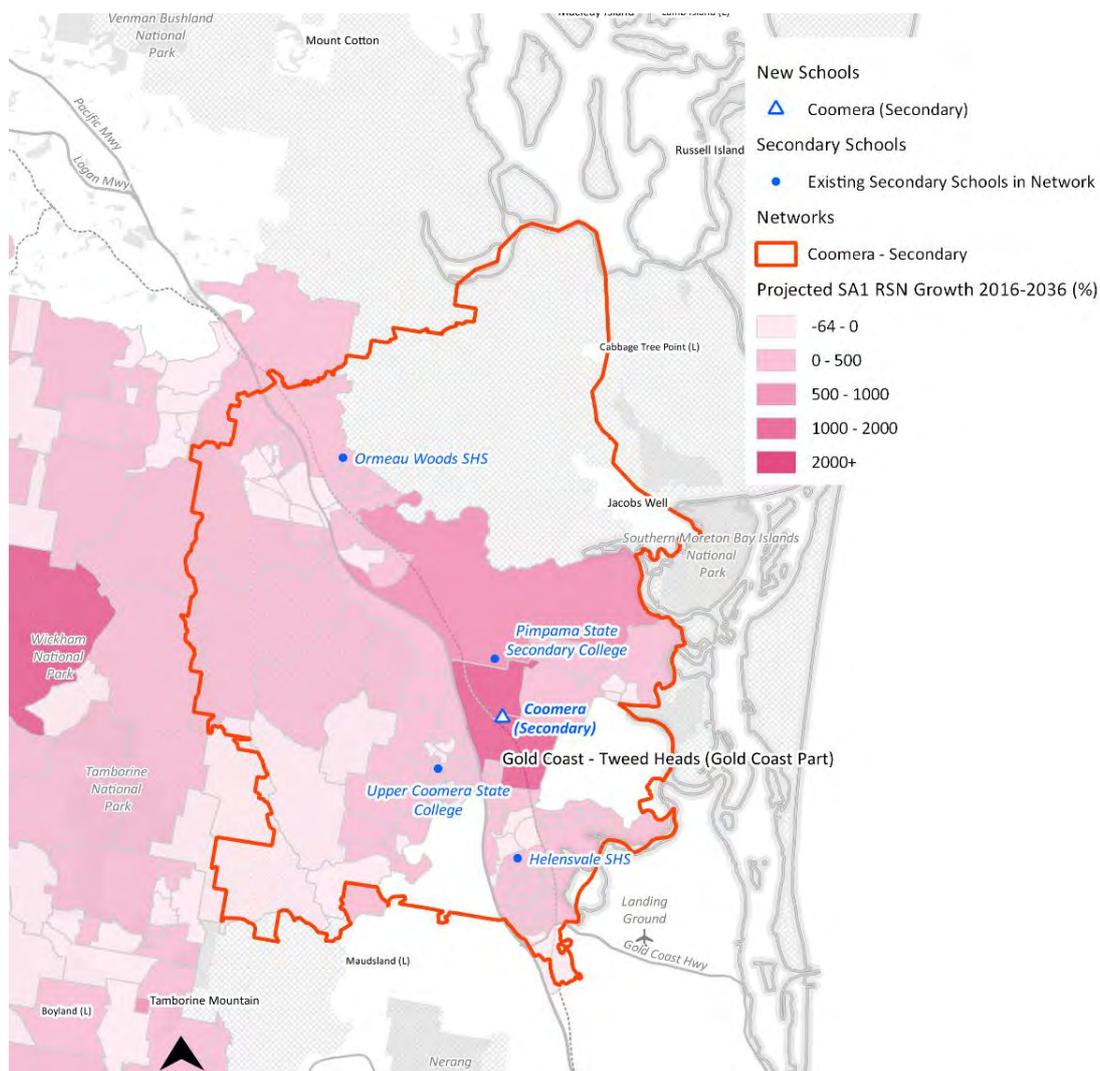Figure 4   Coomera secondary network—resident student number growth heat map
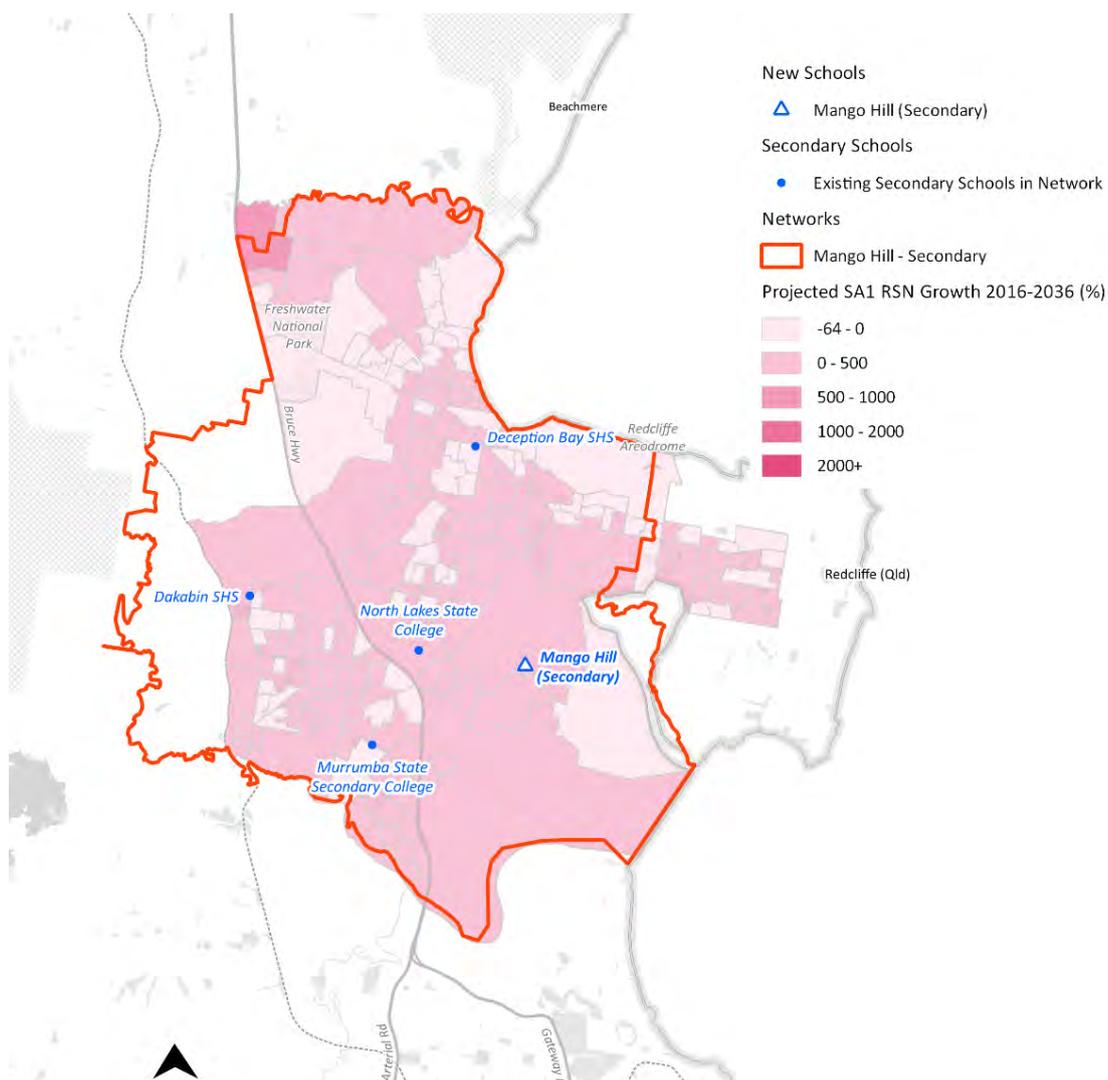
Figure 5   Mango Hill secondary network—resident student number growth heat map

9   Cost benefit analysis results

The results of the economic cost benefit analysis of the 5 Schools Project are summarised in Table 2.

Table 2   Project results

COST BENEFIT ANALYSIS RESULTS	PRESENT VALUE ($M, 2018) @7% REAL DISCOUNT RATE
Capital costs	$320
Operating and maintenance costs	$92
TOTAL COSTS	**$412**
TOTAL BENEFITS	**$230**
ECONOMIC NPV	**-$182**
BENEFIT COST RATIO	**0.56**

10   Sensitivity analysis

The results presented above rely on several assumptions. To test the sensitivity of the results to changes in underlying assumptions, a range of sensitivity tests were applied in the detailed business case. The benefit cost ratio result was found to be most sensitive to changes in the discount rate as a significant proportion of benefits accrue later in the evaluation period (particularly benefits manifesting in increased lifetime earnings). In addition, the benefit cost ratio was particularly sensitive to changes in capital costs and assumptions regarding the relationship between improved functionality and maintenance of classrooms and lifetime earnings (the largest identified monetised benefit category). Under all sensitivities, the BCR remains below 1.

11   Social impacts

The reported benefit cost ratio does not include all the identified benefits of the project as a number of identified benefits were not capable of being monetised. The social impact evaluation undertaken in the detailed business case found that the project delivers several medium and high impact non-monetised benefits. These included the positive impacts of the new schools on teacher engagement, productivity and retention; improved community cohesion and amenity; and further education outcome improvements linked with reduced school sizes. Schools play a key role in activating communities and for providing community meeting places and spaces, contributing to social cohesion and community development.

Positive social impacts are particularly high in Ripley Valley and Yarrabilba as existing schools are a significant distance away from these emerging new communities, leading to higher impacts related to travel savings, active travel and improved community cohesion, amenity and liveability. In addition, Ripley Valley Primary School delivers high social impacts due to the significant avoidance of more classrooms in existing schools that would occur in the base case potentially leading to the loss of play space.

The proposed Mango Hill Secondary School received a high rating for its impact on teacher engagement, productivity and retention by virtue of the fact that some schools in the network are already very large.

12   Project implementation

The Department of Education has taken the lead in the implementation planning for the 5 Schools Project. Infrastructure Designation is required under the *Planning Act 2016* to be sought for several sites. Once an infrastructure designation is in place for these sites, no further approvals will be required under the *Planning Act 2016*. The Infrastructure Designation process must be completed before construction commences.