COVID-19: Situation Assessment

INCOLINK Final Report: 7 April 2020

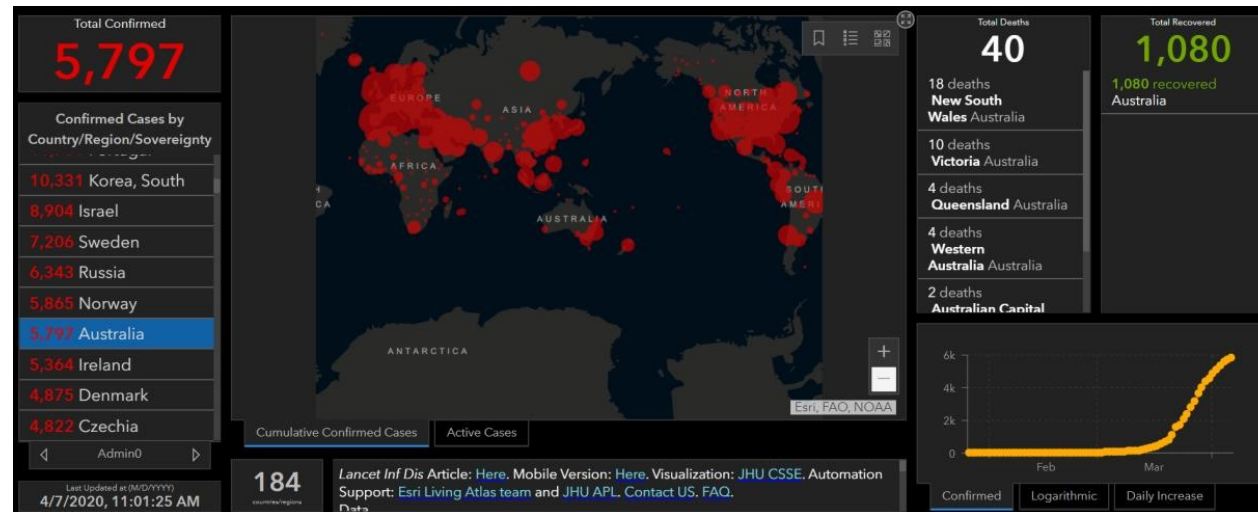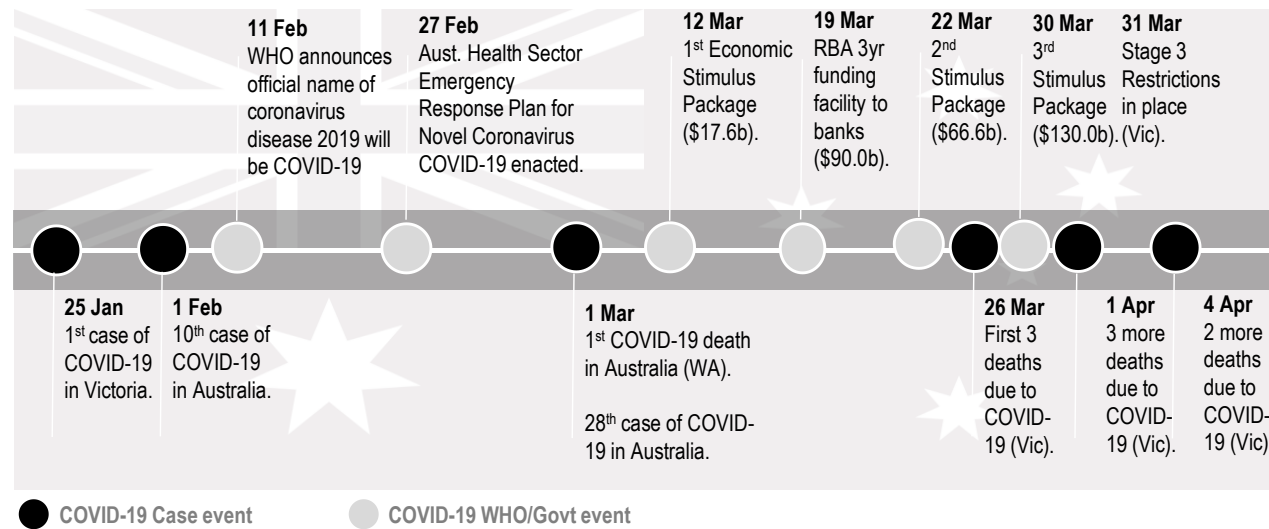# The COVID-19 pandemic is evolving rapidly and imposing a significant economic and public health cost.

A brief update on the pandemic situation is presented below.

- The World Health Organization declared coronavirus (COVID-19) a pandemic (11 Mar 2020) and the situation is rapidly evolving.

- Last count (as at 7 Apr 2020) for Australia was 5,797 confirmed cases. There has been a slight increase of new daily cases (5 Apr – 143, 6 Apr – 107, 7 Apr - 96). Highest daily increase was 28 Mar – 460.

- Victoria's cumulative count is the second highest at 1,158 cases. There has been a slight rise in new daily cases (5 Apr – 20, 6 Apr – 23, 7 Apr - 33. Highest daily increase was 28 Mar – 111.

- Implementation of measures such as social distancing, cancellation of major events, shutting down non-essential services/businesses and education institutions is having an unprecedented impact on Australia and the global economy.

- It is clear that the virus is disrupting all major industries, especially sectors of the economy dependent on global supply chains as well as small business operations.

- In terms of the building and construction sector, the value of Victorian building approvals for the year to February 2020 was worth $39.3 billion. The trend estimate of the value of total building approved rose 2.1 % in February and has risen for three months.

- A shutdown of building sites in Victoria would have unprecedented economic impacts for the State economy.

SOURCES:

Australian Bureau of Statistics, 8731.0 - Building Approvals, Australia, Feb 2020 (Latest release 1 Apr 2020)

https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6 (Accessed 5 Apr 2020)

https://www.abc.net.au/news/2020-03-17/coronavirus-cases-data-reveals-how-covid-19-spreads-in-australia/12060704 (Accessed 5 Apr 2020)

Key COVID-19 developments in Australia

11 Feb WHO announces official name of coronavirus disease 2019 will be COVID-19

27 Feb Aust. Health Sector Emergency Response Plan for Novel Coronavirus COVID-19 enacted.

12 Mar 1st Economic Stimulus Package ($17.6b).

19 Mar RBA 3yr funding facility to banks ($90.0b).

22 Mar 2nd Stimulus Package ($66.6b).

30 Mar 3rd Stimulus Package ($130.0b).

31 Mar Stage 3 Restrictions in place (Vic).

25 Jan 1st case of COVID-19 in Victoria.

1 Feb 10th case of COVID-19 in Australia.

1 Mar 1st COVID-19 death in Australia (WA).

28th case of COVID-19 in Australia.

26 Mar First 3 deaths due to COVID-19 (Vic).

1 Apr 3 more deaths due to COVID-19 (Vic).

4 Apr 2 more deaths due to COVID-19 (Vic).

● COVID-19 Case event   ○ COVID-19 WHO/Govt event

The Virus Transmission Model simulates the potential impact the virus may have on the INCOLINK member workforce.

Overview

The purpose of the Virus Transmission Model (VTM) is to simulate the impact of the SARS-COV-2 virus (virus) and resulting COVID-19 (disease) on the INCOLINK member workforce. The model incorporates recent evidence and data pertaining to the epidemiological features of the virus to generate a time profile of possible member outcomes.

Approach

The model presents outcomes under three possible scenarios of severity:

- **High Impact** *(Complete Shutdown – Non-essential industry):* Under this scenario, it is assumed the construction industry within Victoria is deemed non-essential and forced into shutdown as a result of the virus. The entire construction workforce is made redundant immediately. Note that under this scenario, activity in the construction industry is assumed to cease immediately and all workers are made redundant and therefore no VTM simulation is required.

- **Medium Impact** *(High Transmission – Essential Industry):* Under this scenario, the construction industry is assumed to be deemed essential and the virus spreads to infect 60% of the population within Victoria over a six-month period, after which the pandemic is contained, and no new infections occur.

- **Low Impact** *(Low Transmission – Essential Industry):* Under this scenario, the construction industry is assumed to be deemed essential and the virus spreads to infect 20% of the population within Victoria over 13 weeks, after which the pandemic is contained, and no new infections occur.

Table 1: Key VTM assumptions

Key Term	Medium Impact	Low Impact
Penetration / Infection rate: The proportion of the population within Victoria that contract the virus.	60 per cent[1]	20 per cent[1]
Transmission duration: The duration over which virus transmission will continue within the community.	26 weeks (6 months)[2]	13 weeks[3]
Doubling Rate: The duration it takes for the number of cases within the community to double.	10.9 days[4]	6.3 days[4]
Exposure rate: The number of members forced into isolation following a confirmed member infection.	3 members[5]	
Incidence by age group: Rate at which the virus infects population age groups.	See Appendix A	
Virus prevalence within the INCOLINK member group: Number of INCOLINK members that are infected.	See Appendix A	

Member outcomes: Members are assumed to face four type of outcomes:

1. **Severity 1**: Mild infection (14 days to recover).
2. **Severity 2**: Hospitalised (14 days to recover).
3. **Severity 3**: Hospitalised and ICU (60 days to recover).
4. **Severity 4**: Hospitalised and died.

SOURCE:
1. Deputy Chief Medical Officer's press conference about COVID-19 on 16 March. Available from: https://www.health.gov.au/news/deputy-chief-medical-officers-press-conference-about-covid-19-on-16-march
2. Prime Minister Scott Morrison press conference about COVID 19 on 16 March. Available from: <https://7news.com.au/lifestyle/health-wellbeing/scott-morrison-warns-australia-to-prepare-for-six-month-coronavirus-battle-c-746412>
3. Hellewell, J; Abbott, S; et. al. (2020) Feasibility of controlling COVID-19 outbreaks by isolation of cases and contacts Lancet Glob Health 2020; 8: e488–96
4. This assumption was a variable in the model, determined by assumptions 1,2 and 3.
5. There are many factors that influence this assumption – recent anecdotal evidence suggests that a building site in Victoria will undergo a deep clean if visited by a worker infected by COVID-19. Therefore the prevailing assumption in this analysis is that only those that were working closely with the infected worker are required to self-isolate.

The virus will force a significant number of infected and exposed ICOLINK members out of the workforce.

Medium Impact Scenario (*High Transmission – Essential Industry*):

Under this scenario, the following transmission features are realised:

- Total Quarantined: 24,342
- Total Infected (Short-term): 32,675
- Total Infected (Long-term): 328
- Peak Inactivity (Date): 28 August 2020
- Peak Inactivity (% workforce): 79 per cent

Low Impact Scenario (*Low Transmission – Essential Industry*):

Under this scenario, the following transmission features are realised:

- Total Quarantined: 21,538
- Total Infected - Short-term: 10,887
- Total Infected - Long-term: 108
- Peak Inactivity (Date): 4 June 2020
- Peak Inactivity (% workforce): 65 per cent

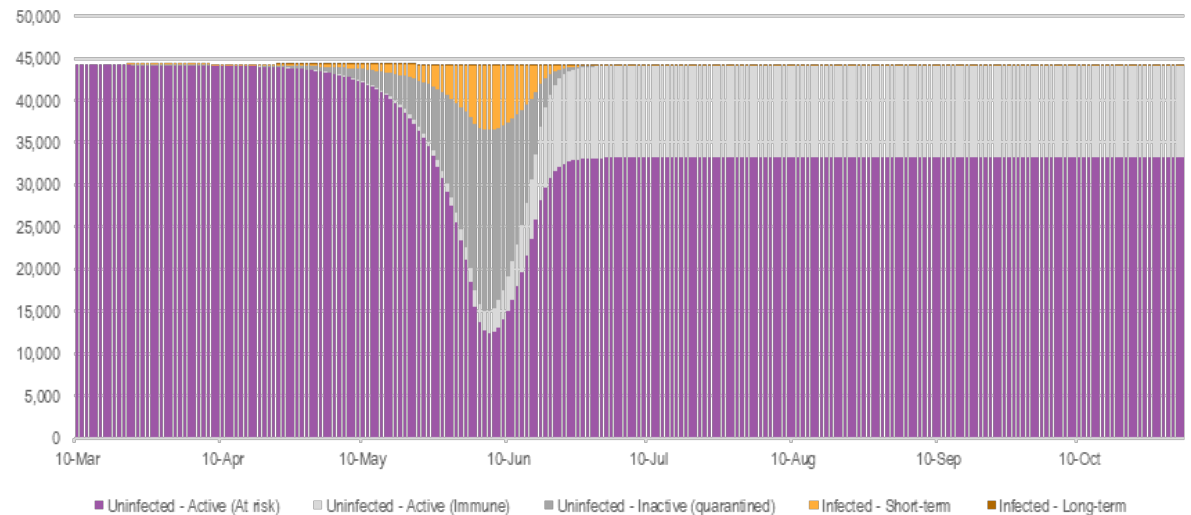**Figure 1: Virus Transmission: Medium Impact Scenario**
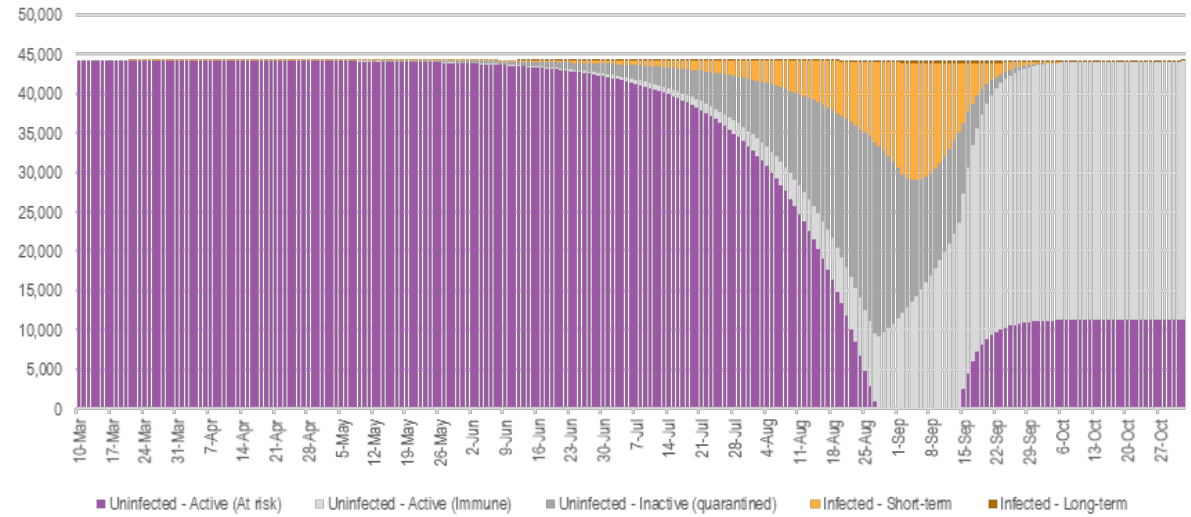
Figure 2: Virus Transmission: Low Impact Scenario

Note: Short-term cases includes those with a mild infection and a brief hospital admission. Long-term cases include those admitted to an Intensive Care Unit and those that succumb to the virus.

The Construction industry is a significant driver of the Victorian economy – both in terms of its direct contribution to Gross State Product* (GSP) and the number of people employed in the sector, but also to the extent that it facilitates the growth and development of other sectors of the economy and society more generally.

The Construction Industry's importance to the Victorian economy has also increased over time, as highlighted in **Figures 5 and 6** to the right.

In Gross Value Added* (GVA) terms, the Construction Industry generated $34.8 billion to the Victorian economy in 2018-19 – more than doubling in size over the past 20 years. As a result, the Construction Industry has increased in importance to the Victorian economy over this period – rising from 5.1 per cent of Victoria's GSP in 1998-99 to a high of 7.8 per cent of GSP in 2018-19.

The Construction Industry today is Victoria's third largest industry, behind Finance and Insurance (10.7 per cent) and Health Care and Social Assistance (8 per cent), but ahead of traditionally important industries such as Manufacturing (6.9 per cent), Education (5.2 per cent) and Retail (4.8 per cent) in 2018-19.

In employment terms, the Construction Industry employed 307,100 persons in 2018-19, more than double the number of people employed by the sector 20 years ago.

The growth in the sector has in turn seen it become an increasingly important employer in Victoria, with its share rising from 6.7 per cent of total Victorian employment in 1998-99 to 9.1 per cent in 2018-19. As a result, the Construction Industry has risen to become the State's fourth biggest employer, behind Health Care and Social Assistance (13 per cent), Retail (10.4 per cent) and Professional Services (9.4 per cent), but ahead of important industries such as Manufacturing (8.3 per cent), Education (8.3 per cent) and Accommodation (6.3 per cent) in 2018-19.

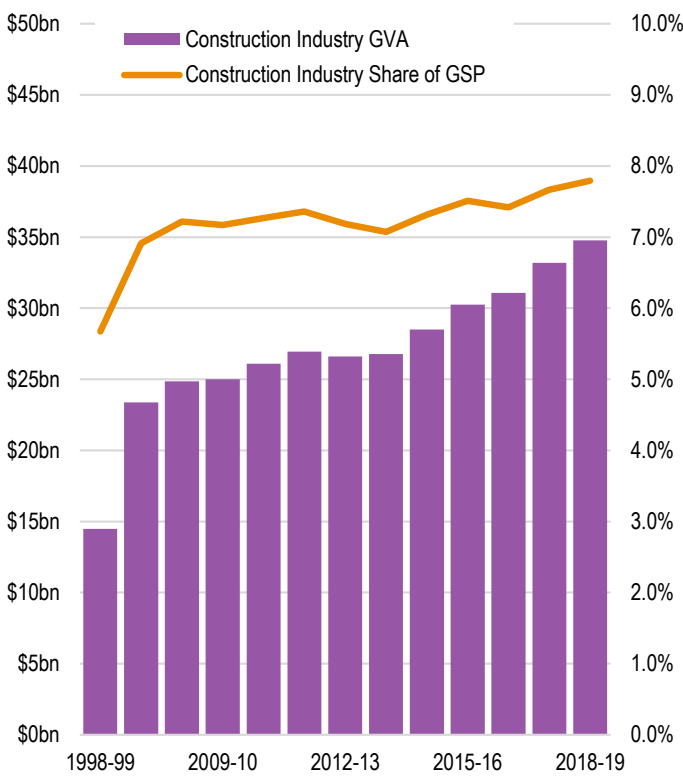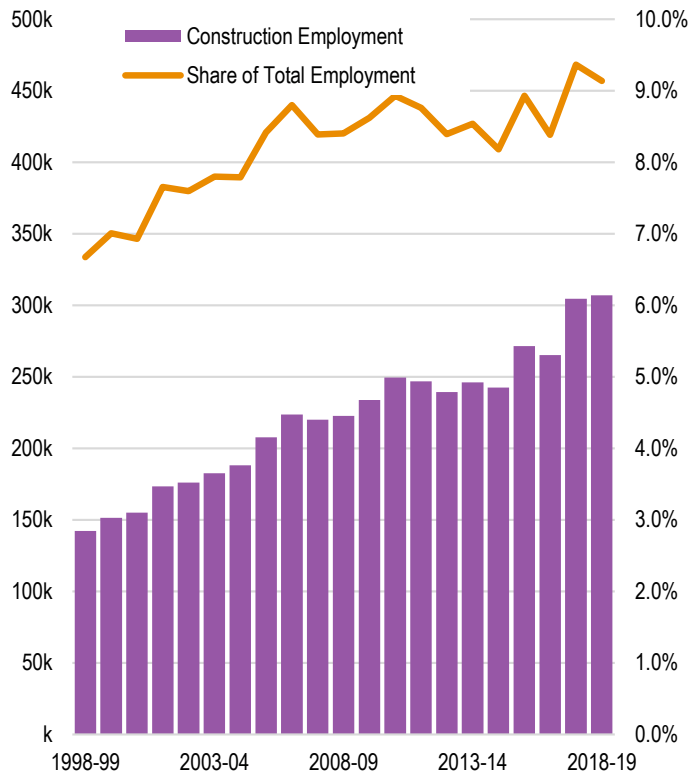**Figure 5: Construction Industry Gross Value Added ($bn) and Share of Gross State Product**

Figure 6: Construction Industry Employment (000s) and Share of Total Employment

#3 The Construction Industry is Victoria's third largest industry, generating $34.8 billion to the economy in 2018-19.

7.8% The Construction Industry accounted for 7.8 per cent of GSP in 2018-19 – generating more value to the Victorian economy than Manufacturing, Education and Retail sectors.

307,11 The Construction Industry employed 307,100 people in 2018-19 – more than double the number of people it employed 20 years prior.

9.1% The Construction Industry accounted for 9.1 per cent of total people employed in Victoria in 2018-19 – making it a larger employer than Manufacturing, Education and Accommodation sectors.

Note: GSP is the broadest measure of economic activity in Victoria, measuring the total value of all goods and services produced over a specific time period. GVA is the gross value added to the economy and includes compensation of employees, gross operating surplus and taxes minus subsidies, but does not include the cost of producing intermediate goods and services. GVA is used to estimate the contribution of an industry to an economy, and is a subset of GSP.

Input Output Modelling

In order to estimate the economic impact of COVID-19 Scenarios developed for this study, ACIL Allen has used its Input Output (IO) model of the Victorian economy.

Input-Output (I-O) modelling frameworks capture the direct and indirect effects of expenditure by capturing, for each industry, the industries it purchases inputs from and also the industries it sells its outputs to. For example, the IO table of the Victorian economy captures purchases from and sales to industries located in Victoria, as well as imports from outside of Victoria.

For the purpose of this study, ACIL Allen's IO model of the Victorian economy will produce results under each COVID-19 Scenario in terms of the direct impact of any reduction in construction activity on the Construction Industry and the flow-on or indirect contribution to other sectors of the Victorian economy as measured by:

- **Economic Output** – as measured by Gross State Product (GSP) at an economy-wide level and Gross Value Added (GVA) at an industry/sector level.

- **Incomes** – as measured by wages and salaries earned by employees.

- **Employment** – as measured in Full Time Equivalent (FTE) terms.

Construction Project Data Sources

The economic modelling is based on construction data from BCI Australia. This dataset includes a detailed listing of the projects projected to be delivered over a 12 month period from 7 April 2020, including their start date, end date and value. By including all projects slated for development in Victoria over the next 12 months, the analysis provides a view of the economic impact in the situation where the entire construction industry undergoes a proportionate experience to INCOLINK under each scenario.

Direct Impacts

Figure 7 details the estimated weekly expenditure associated with current projects under construction in Victoria as at 7 April 2020. Overall, it is estimated that there will be $22.4 billion in construction projects underway in Victoria during the next 12 months, equating to an average of $430 million of work expected to be undertaken each week between now and the end of the financial year.

Based on this data, and incorporating the workforce impacts of the VTM, it is estimated that the direct impacts on the Construction Industry from lost activity (as highlighted in Figure 8) would amount to:

- **Almost $1 billion under the Low Case Scenario**

- **Over $2 billion under the Medium Case Scenario**

- **Over $22 billion under the High Case or "Shutdown" Scenario**

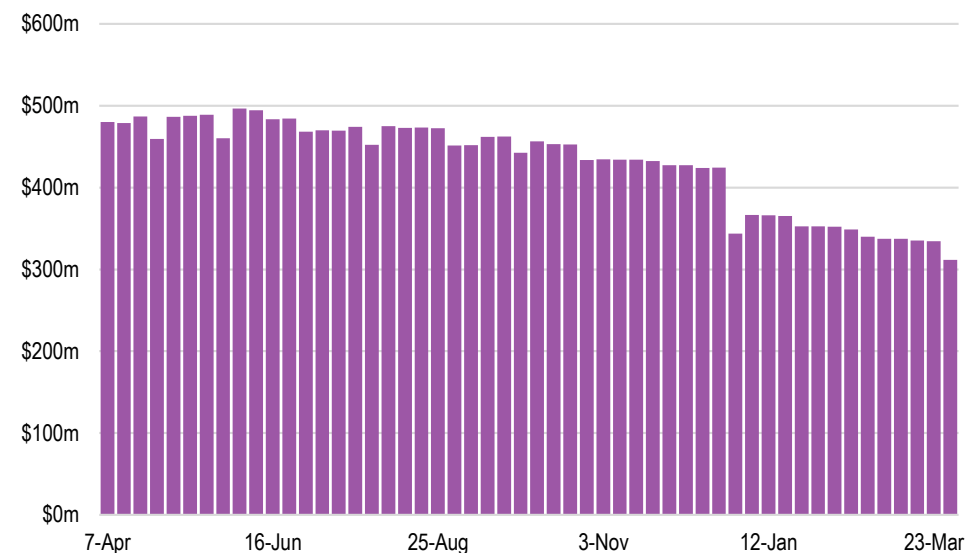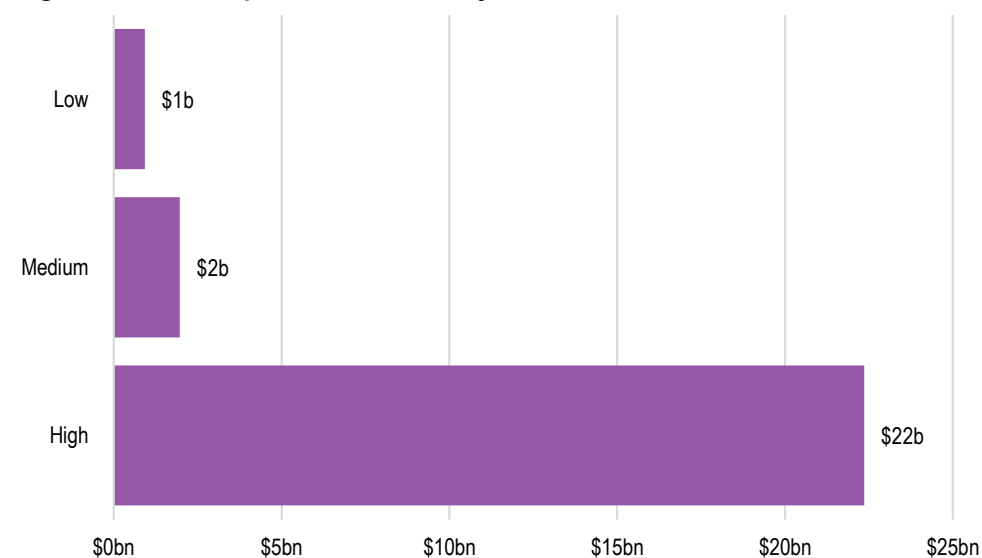**Figure 7: Projects Under Construction, March 2019**

Figure 8: Direct Impact of Current Projects Under Construction, Each Scenario

As an essential service, the construction sector will continue to make a significant annual contribution to the economy in Victoria.

Economic Impact Results

	ECONOMIC OUTPUT	INCOME	JOBS
HIGH IMPACT	$25.4 Billion	$11.9 Billion	166,600
MEDIUM IMPACT	$2.2 Billion	$1.0 Billion	14,753
LOW IMPACT	$1.0 Billion	$0.5 Billion	6,963

A complete shut-down scenario is estimated to cost Victoria **$25.4 billion** in economic output over the next 12 months.

Relative to this high case scenario, an essential service designation for the industry under the medium and low case infection scenarios will generate an estimated **$23.2 - $24.4 billion** in additional economic output.

The outputs of the economic impact assessment are discussed below.

High Case Scenario Impacts

Under the High Case Scenario, it is assumed the industry is deemed non-essential and all construction project activity ceases for 12 months. ACIL Allen estimates that this could directly see a reduction in construction activity over the study period of over $22 billion across residential, non-residential and engineering construction projects. This is estimated to result in the following impacts:

- **Economic Output:** Loss of **$25.4 billion**, including $6.1bn as a result of the direct impact and $19.3bn from the indirect impact.
- **Income:** Loss of **$11.9 billion**, including $2.4bn as a result of the direct impact and 9.5bn from the indirect impact.
- **Jobs:** Loss of **166,600 jobs**, including 39,263 as a result of the direct impact and 127,337 from the indirect impact.

Medium Case Scenario Impacts

Under the Medium Case Scenario, it is estimated that the virus spread is continues for six months and reaches 60 per cent of the population. ACIL Allen estimates that this could directly see a reduction in construction activity over the study period of over $2 billion across residential, non-residential and engineering construction projects. This is estimated to result in the following impacts:

- **Economic Output:** Loss of **$2.2 billion**, including $0.5bn as a result of the direct impact and $1.7bn from the indirect impact.
- **Income:** Loss of **$1.0 billion**, including $0.2bn as a result of the direct impact and $0.8bn from the indirect impact.
- **Jobs:** Loss of **14,753 jobs**, including 3,514 jobs as a result of the direct impact and 11,239 jobs from the indirect impact.

Low Case Scenario Impacts

Under the Low Case Scenario, it is estimated that the virus spread is contained quickly and only reaches 20 per cent of the population. ACIL Allen estimates that this could directly see a reduction in construction activity over the study period of almost $1 billion across residential, non-residential and engineering construction projects. This is estimated to result in the following impacts:

- **Economic Output:** Loss of **$1.0 billion**, including $0.2bn as a result of the direct impact and $0.8bn from the indirect impact.
- **Income:** Loss of **$0.5 billion**, including $0.1bn as a result of the direct impact and $0.4bn from the indirect impact.
- **Jobs:** Loss of **6,963 jobs**, including 1,677 jobs as result of the direct impact and 5,286 jobs from the indirect impact.