# The Road Home – Greater Hobart

## Consult Australia Future Leaders Project

Infrastructure Australia

30 October 2025

# Executive summary

**Purpose and Scope**
This report presents a strategic assessment of housing growth and transport infrastructure adequacy in Greater Hobart, developed as part of Infrastructure Australia's work to support the National Housing Accord. It introduces a scalable, algorithmic Proof-Of-Concept model designed to identify infrastructure gaps and prioritise investment to enable sustainable housing development.

**Context and Rationale**
Greater Hobart was selected due to acute housing affordability pressures, unique transport constraints shaped by topography and corridor redundancy, and its suitability as a testbed for scalable infrastructure planning tools for other regions. Population growth in greater Hobart is forecast to exceed 37,000 by 2040, with outer LGAs such as Brighton and Sorell experiencing the highest percentage increases. Transport demand is expected to rise significantly, particularly along radial corridors and river crossings.

**Methodology**
The model integrates demographic, transport, and amenity data to assess infrastructure adequacy. Key inputs include growth forecasts, housing density, public transport coverage, road volume-to-capacity ratios and amenity access. Thresholds are applied to identify when and where transport demand will exceed capacity. Outputs include recommended interventions such as bus priority, ferry expansion, and local centre development.

**Key Findings**

- Without upgrades, key corridors (Tasman Bridge, Brooker Highway, Southern Outlet) will exceed capacity by 2028–2032.
- Public transport coverage is insufficient to support projected growth, particularly in outer LGAs.
- Planned investments are positive but incomplete; funding and delivery risks remain. The model successfully identified priority corridors and validated known infrastructure gaps.

**Conclusion**

This project demonstrates a scalable, data-driven approach to aligning transport infrastructure with housing growth. The proof-of-concept model integrates demographic, transport, and amenity data to identify infrastructure gaps and prioritise investment. Initial findings validate known constraints and highlight emerging pressure points. Further refinement and broader application of the model, supported by improved data and integration with land use planning, will enhance its value as a national decision-support tool.

**Strategic Implications**

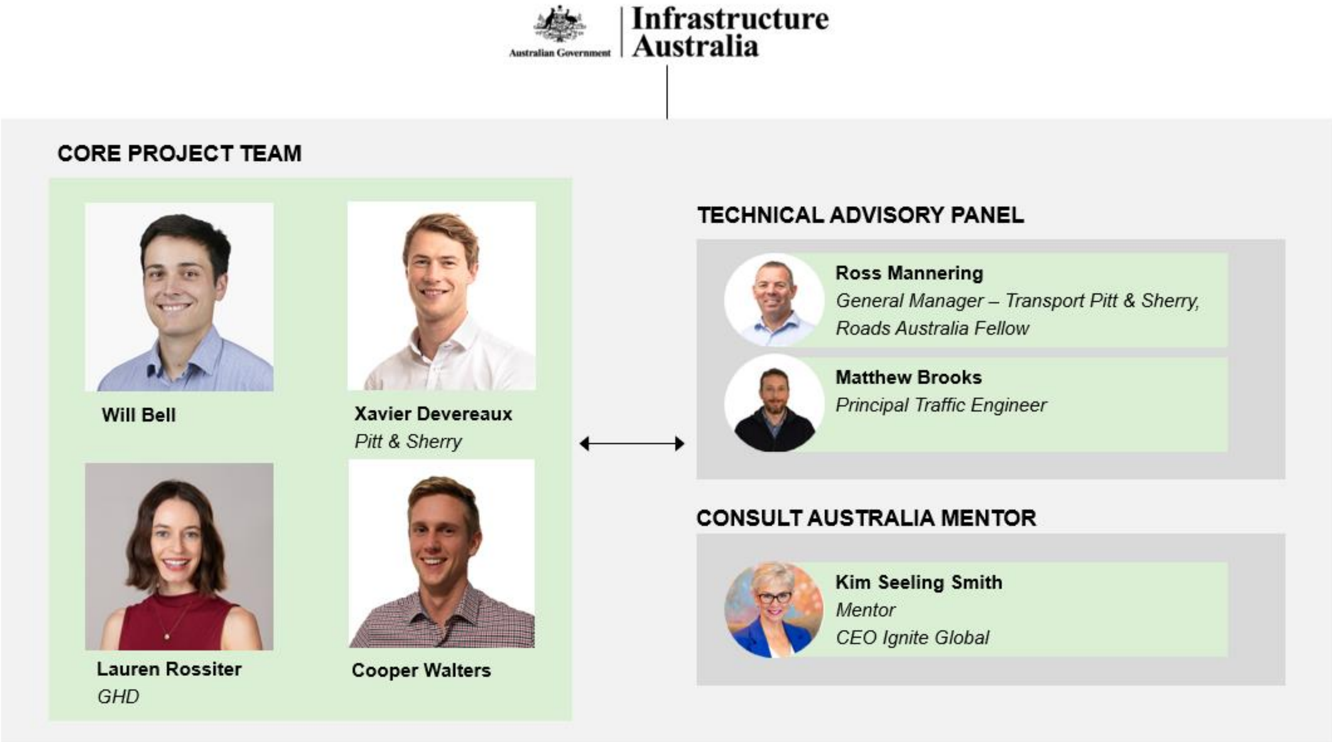
If after further testing, a scalable, algorithmic *publicly available* model to assess transport adequacy proves effective, it has several broader implications for housing growth and transport planning across Australia:

| Area | Implication | Potential result |
|---|---|---|
| **Democratised Infrastructure Planning** | Regional and local governments could apply the model and framework without needing complex modelling tools or consultants. | Faster, lower-cost assessments of infrastructure readiness to support housing growth |
| **Identifies Data Gaps** | Consistent identification of key data issues could enable focused efforts to alleviate gaps and quality concerns | Improved publicly availability and quality of enabling data to support growth and transport analysis |
| **Evidence-Based Prioritisation** | Transparent, criteria-driven outputs allow planners to justify investment decisions and sequence upgrades based on need | Better alignment of infrastructure funding with actual growth pressures. |
| **Scalability Across Jurisdiction** | The model can be adapted to other cities and regions, enabling consistent national benchmarking. | Supports Infrastructure Australia's mandate to guide enabling infrastructure across diverse geographies |

| | | |
|---|---|---|
| **Improved Policy Responsiveness** | Faster identification of emerging capacity constraints allows earlier intervention. | Reduces risk of infrastructure lagging behind housing delivery, improving liveability and economic outcomes |
| **Supports Strategic Land Use Decisions** | Identifies where transport capacity can support higher-density development | Enables more sustainable urban form and reduces car dependency |

# Author introduction

This project represents a collaboration between members of the core project team including **Will Bell**, **Xavier Devereaux** [Pitt & Sherry], **Lauren Rossiter** [GHD] and **Cooper Walters**, supported by a Technical Advisory Panel comprising Ross Mannering and Matthew Brooks and Consult Australia Mentor, Kim Seeling Smith as depicted below.



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# 1. Introduction

## 1.1 Background and context

Australia is currently facing a significant housing supply and affordability crisis, driven by factors such as insufficient supply, rising demand, and construction constraints. These challenges are particularly acute in fast - growing regions and cities, where the need for new, well - located homes is urgent. The federal, state, and territory governments have set ambitious national housing targets under the National Housing Accord, aiming to deliver 1.2 million new homes over five years from mid – 2024[1]. Achieving these targets requires not only increased housing construction but also the provision of enabling infrastructure, in particular transport, to unlock and support new housing developments and growing populations.

## 1.2 About Infrastructure Australia

Infrastructure Australia (IA) is the Australian Government's independent advisor on infrastructure investment planning and prioritisation, established under the Infrastructure Australia Act 2008. IA's role is to provide expert, independent advice on Australia's current and future infrastructure needs and priorities across transport, energy, water, telecommunications, and social infrastructure. IA's core functions include:

- Conducting audits of nationally significant infrastructure.
- Developing Infrastructure Plans and Priority Lists.
- Preparing annual statements to inform the Commonwealth budget.
- Evaluating infrastructure investment proposals.
- Reporting on nationally significant infrastructure matters.

## 1.3 Purpose of this report

The purpose of this report is to inform Infrastructure Australia's work in guiding the planning and delivery of enabling transport infrastructure to support housing growth across Australia. The report aims to:

- Identify and quantify high - growth locations for significant new housing supply.
- Apply artificial intelligence (AI)-assisted modelling to analyse housing & transport datasets to automate the identification of locations of transport infrastructure gaps.
- Develop a replicable model for identifying infrastructure gaps that can be used in other locations.
- Promote the use of AI as a core component of the analytical methodology herein to assist in decision-making through statistical automation

## 1.4 Scope and limitations

This report focuses on the Greater Hobart region, examining housing growth and transport infrastructure at a city and sub - city scale. The analysis is based on available data sources and is intended to provide strategic, data - informed insights rather than granular, asset - level technical modelling. The scope includes:

- Major roads and high - capacity public transport (heavy rail, light rail, rapid bus).
- Spatial analysis using ASGS or LGA boundaries.
- Consideration of both current and planned infrastructure.

Limitations of this report include:

- Several data gaps, which are identified in Sections 4 & 5 of the report.

[1] Treasury.gov.au (2022) National Housing Accord 2022. Available at: **https://www.treasury.gov.au**

- The use of an AI model – this represents a proof of concept, with thresholds & assumptions based on expert judgment rather than tested outcomes.

## 1.5 Assumptions

The report and analysis are subject to the following assumptions:

- The analysis assumes that available data sources are accurate and up-to-date.
- Projections of housing growth are based on current government targets and forecasts.
- The assessment of transport infrastructure focuses on passenger transport relevant to housing growth, excluding freight and other non - relevant modes.
- Planned infrastructure projects are assumed to proceed as scheduled unless otherwise indicated.
- The methodology is designed to be scalable and adaptable to other regions, but findings are specific to the Greater Hobart context.

# 2. Greater Hobart: geographic and demographic profile

## 2.1 Description of Greater Hobart

Hobart is the capital of Tasmania located in the southeastern corner of the state on the west bank of the Derwent River (refer Figure 2-1). It is the most populous urban area in the state, home to nearly half of Tasmania's residents with an estimated population of over 250,000[2].

It encompasses six Local Government Areas (LGAs): Hobart, Glenorchy, Clarence, Kingborough, Brighton and Sorell, all situated along the Derwent River. As evident in Figure 2-1, the river creates a natural geographic divide with Hobart, Glenorchy and Kingborough on the western shore and Brighton, Clarence and Sorell on the eastern side.

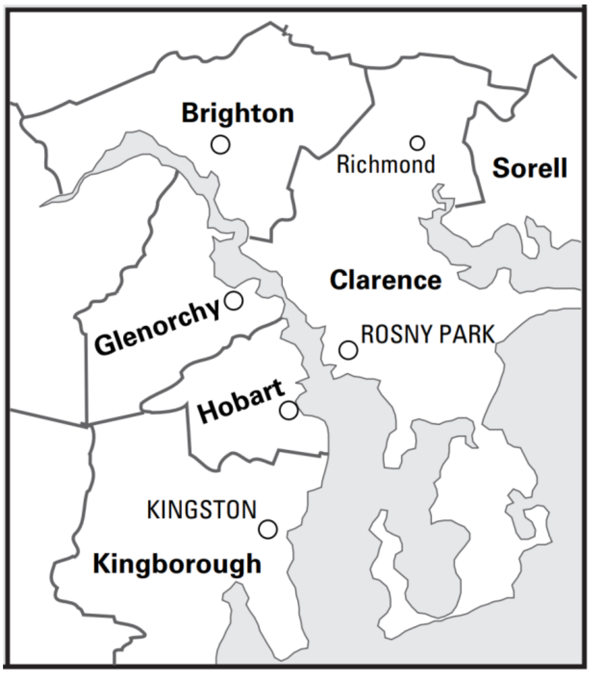


*Figure 2-1 Map of Hobart's 6 LGAs*

Greater Hobart is defined by its maritime character, notably its deepwater port and its city life centred around the waterfront, whilst its skyline is dominated by Mount Wellington lying to the west of the city.

Transport infrastructure in Greater Hobart is a critical enabler of growth. Hobart International Airport serves as the main gateway, handling over 2.8 million passengers annually[3]. However, as the population grows and housing demand intensifies, the adequacy of transport networks, particularly major roads and high - capacity public transport, will be central to supporting sustainable development.

In summary, Greater Hobart is a dynamic and evolving city - region, rich in history, culture, and natural assets. Its strategic importance in Tasmania's housing and infrastructure planning makes it a compelling focus for future investment and policy development.

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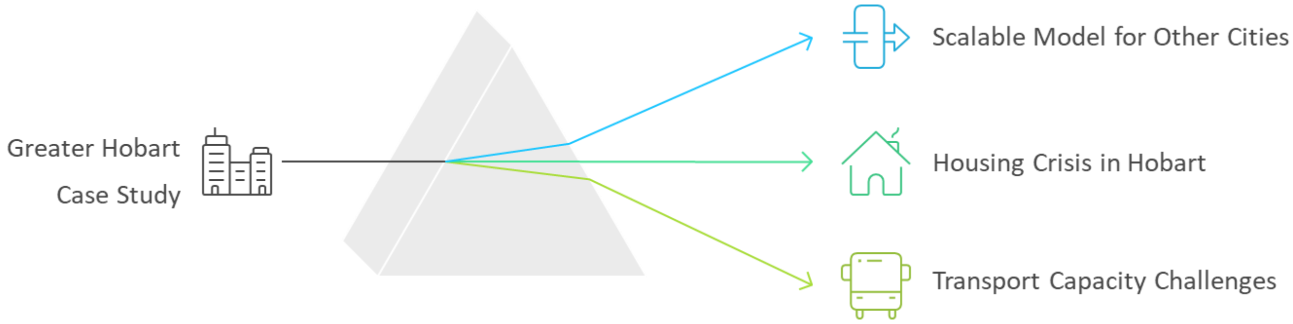
[2] Australian Bureau of Statistics (2021) Greater Hobart, Census. Available at: **https://www.abs.gov.au**

[3] Hobart Airport (n.d.) Our Story. Available at: **https://hobartairport.com.au**

## 2.2 Rationale for selection




Greater Hobart was selected as the focus of this case study for three key reasons that align with both local needs and national priorities. Together, these factors make Greater Hobart an ideal location for generating insights and recommendations that can inform both local action and broader policy development.

### 2.2.1 Scalable model for other cities

Greater Hobart was chosen as a case study because it serves as a microcosm of the housing and infrastructure challenges faced by cities across Australia. 67% of Australians live in capital cities, and as a state capital and central hub, Hobart mirrors the pressures experienced nationwide including booming demand, constrained housing supply, and infrastructure bottlenecks[4].

Its smaller scale makes it an ideal testbed for piloting both our methodology to assess transport adequacy & capacity now and in the future, but also innovative housing and transport solutions before scaling them to larger capitals. Insights gained from Hobart's experience can inform national policy and practice, supporting Infrastructure Australia's mission to guide future infrastructure needs. By linking local study to broader national objectives, the project ensures its relevance to decision - makers beyond Tasmania.

### 2.2.2 Housing crisis in Hobart

Another key reason Greater Hobart was selected as a case study is the severe housing crisis the region is currently facing, with affordability and social stability under threat. The average renter in Hobart spends more than 30% of household income on rent, placing them under rental stress (refer Figure 2-2). Moreover, there is a severe shortage of social housing, with over 5,000 households on the waiting list and priority cases waiting around 18 months to secure housing.

This crisis is compounded by rising youth homelessness, overcrowding, and a constrained construction sector that limits the supply of new dwellings.

According to the 2025 Tasmania Social Justice Stocktake, over 75% of respondents identified housing affordability and homelessness as major community issues, and more than a third reported being personally affected.[5]

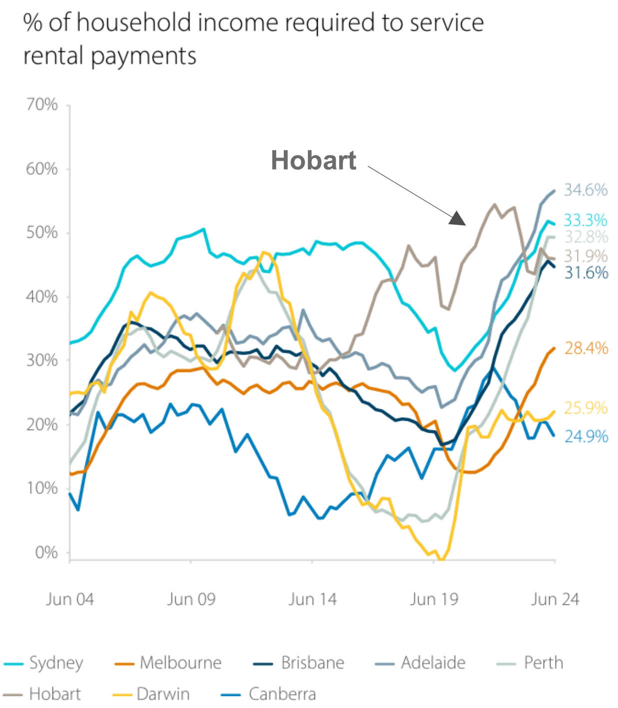



***Figure 2-2 Percentage of household income required to service rental payments. Ref: ANZ CoreLogic Housing Affordability Report November-2024***

[4] Australian Bureau of Statistics (n.d.) 50 Years of Capital City Population Change. Available at: **https://www.abs.gov.au**

[5] Salvation Army (2025) Tasmania Social Justice Stocktake 2025 – Key Findings. Available at: **https://www.salvationarmy.org.au**

The unmet need for approximately 8,100 additional dwellings highlights the urgency for innovative, low - cost solutions and the critical role of enabling infrastructure in addressing these challenges.

### 2.2.3 Transport capacity challenges

The final reason Greater Hobart was selected as the area of interest for this study is the significant capacity challenges its transport network faces. This is in part due to its unique topography and urban form. The city is bisected by the River Derwent, and steep hills and narrow valleys constrain the alignment and expansion of transport corridors.

The network is structured around a few major radial corridors that connect suburbs to the CBD and provide limited river crossings. This includes the Southern Outlet (A6) which extends south from Hobart to Kinston and the Huon Valley, Brooker Highway (A1) which activates the northern Suburbs, and Tasman Highway (A3) which extends over the Derwent river to the East. High peak loads with few parallel arterials creates limited options to bypass incidents.

Public transport is primarily bus - based, with emerging ferry services and park - and - ride facilities. However, public transport currently accounts for only about 7% of trips, compared to a national average of 15%. The limited number of river crossings and constrained corridors reduce network redundancy, concentrate demand, and amplify the impact of incidents. These factors make it difficult to add new lanes or dedicated public transport infrastructure, underscoring the need for strategic planning and investment to support future housing growth and improve transport resilience.

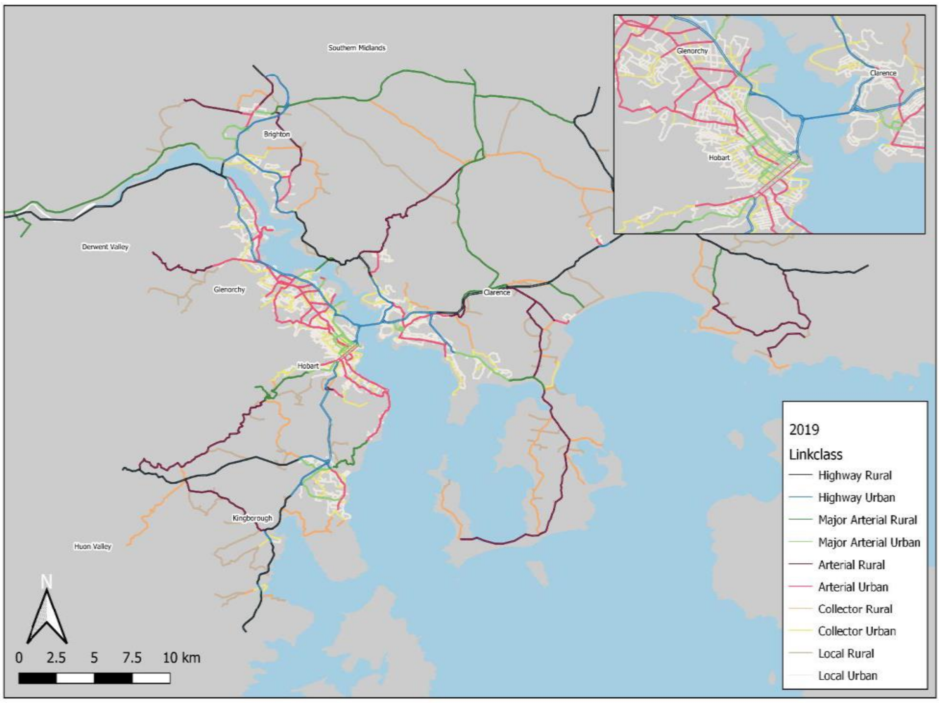



*Figure 2-3 Highway Network (2019)*

# 3. Approach and Methods

Figure 3-1 provides an overview of the structured process developed and applied in this project. The approach began with a review of available housing and transport data to establish a baseline understanding of current conditions in Greater Hobart. This included analysis of both publicly available datasets and non-public sources accessed through project partners. The initial assessment informed the development of a proof-of-concept model to forecast future infrastructure needs and identify where and when transport capacity may be exceeded. The final phase synthesised model outputs into investment priorities and system improvements to support scalable, data-informed infrastructure planning.

| | Assess the current state | Develop the POC Model | Determine next steps |
| --- | --- | --- | --- |
| Key Activities | • **Housing snapshot** - Quantify current housing supply, and recent and forecast growth by LGA/SA2<br>• **Transport snapshot** - Assess current road and public transport capacity, coverage, and performance, and planned infrastructure works<br>• **Data audit** - Evaluate data availability, quality, and limitations across housing, transport, and amenity datasets | • **Define model inputs and thresholds** - use growth, density, PT coverage, road stress, amenity access, and equity indicators<br>• **Apply thresholds to identify exceedance** - determine where and when transport demand will exceed capacity<br>• **Generate outputs** – scenario descriptions (triggers, symptoms, effects etc) and high-level recommended actions<br>• **Validate model** - compare outputs with known issues and test scalability (e.g. SEQ case study) | • **Identify transport gaps** - Highlight corridors and areas where infrastructure is insufficient, including estimated timeframe and the nature of the capacity exceedance<br>• **Recommend investment focus –** Identify priority corridors and interventions to address forecast gaps<br>• **Address data and system gaps** - Propose improvements to data collection, integration, and decision-support tools<br>• **Refine and scale methodology** - Document a repeatable approach for broader development and application |
| Focus | Understanding:<br>• Existing housing and transport infrastructure conditions and data quality<br>• Projected future growth and infrastructure needs<br>• Availability and quality of data and tools | Develop a Proof-of-Concept model that can effectively forecast transport capacity and predict with accuracy when supply will exceed demand, and describe the nature of the scenario | Translate model outputs into investment priorities and system improvements to support scalable, data-informed infrastructure planning |

*Figure 3-1 Overview of approach*

# 4. Key areas of housing growth

## 4.1 Existing housing supply

Greater Hobart is subdivided into 6 LGAs (Local Government Areas) situated along the Derwent River. Hobart, Glenorchy & Kingborough line the Western side of the river, & Brighton, Clarence & Sorell lie to the East.

The 2020 population of each LGA is shown in the Table 4-1 below. Hobart & Clarence are the most populous, followed closely by Glenorchy & Kingborough. The LGAs closest to Hobart CBD are the most densely populated.

*Table 4.1 Population, area and density of Greater Hobart's 6 LGA*[6]

| LGA | 2020 Population (WSP/AECOM DATA) | Area (km^2) | Density (persons/km) |
|---|---|---|---|
| **Hobart** | 53,971 | 78 | 693 |
| **Kingborough** | 34,962 | 720 | 49 |
| **Glenorchy** | 47,964 | 121 | 396 |
| **Brighton** | 17,566 | 171 | 103 |
| **Clarence** | 57,343 | 378 | 152 |
| **Sorell** | 14,303 | 584 | 24 |
| **Total** | **226,109** | **2,052** | **110** |

## 4.2 Projected growth in housing

Table 4.1, Table 4.2 and Figure 4-1 below detail existing and expected population growth for Greater Hobart[7]. Significant growth is expected across all 6 LGAs, with high population growth from 2020 - 2030, then tapering off slightly from 2030 - 2040. Whilst Sorell & Brighton are the highest percentage growth areas, the magnitude of growth in **Hobart** & **Clarence** is the greatest. These growth patterns directly inform transport demand, particularly along constrained radial corridors and limited river crossings.

Whilst Hobart & Clarence are predicted to experience the highest growth in housing, the analysis produced by the algorithm will also consider the inputs outlined in Section 6.1 in determining the areas most in need of transportation infrastructure improvements. The outcome of this analysis is detailed in Section 7.

This projected growth reinforces the need for proactive infrastructure planning. While Hobart and Clarence are expected to absorb the largest absolute increases in population, the highest percentage growth is forecast in outer LGAs such as Brighton and Sorell—areas that currently face limited transport capacity and service coverage. These trends highlight the importance of aligning infrastructure investment with both the scale and pace of growth, particularly in locations where existing networks may be least equipped to accommodate increased demand.

*Table 4.2 Projected growth in housing for Greater Hobart's 6 LGAs for 2030 and 2040*

| LGA | 2020 | 2030 | | | 2040 | | |
|---|---|---|---|---|---|---|---|
| | Population | Population | Growth | Growth % | Population | Growth from 2020 | Growth from 2020 % |
| **Hobart** | 53,971 | 58,522 | 4,551 | 8% | 62,520 | 8,549 | 16% |
| **Kingborough** | 34,962 | 38,339 | 3,377 | 10% | 40,589 | 5,627 | 16% |

[6] Australian Bureau of Statistics (2024) Regional Population 2023-24 Financial Year. Available at: **https://www.abs.gov.au**

[7] Ibid.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Glenorchy** | 47,964 | 51,545 | 3,581 | 7% | 54,948 | 6,984 | 15% |
| **Brighton** | 17,566 | 20,246 | 2,680 | 15% | 22,316 | 4,750 | 27% |
| **Clarence** | 57,343 | 62,229 | 4,886 | 9% | 65,669 | 8,326 | 15% |
| **Sorell** | 14,303 | 16,521 | 2,218 | 16% | 18,015 | 3,712 | 26% |
| **Total** | 226,109 | 247,402 | 21,293 | 9% | 264,057 | 37,948 | 17% |

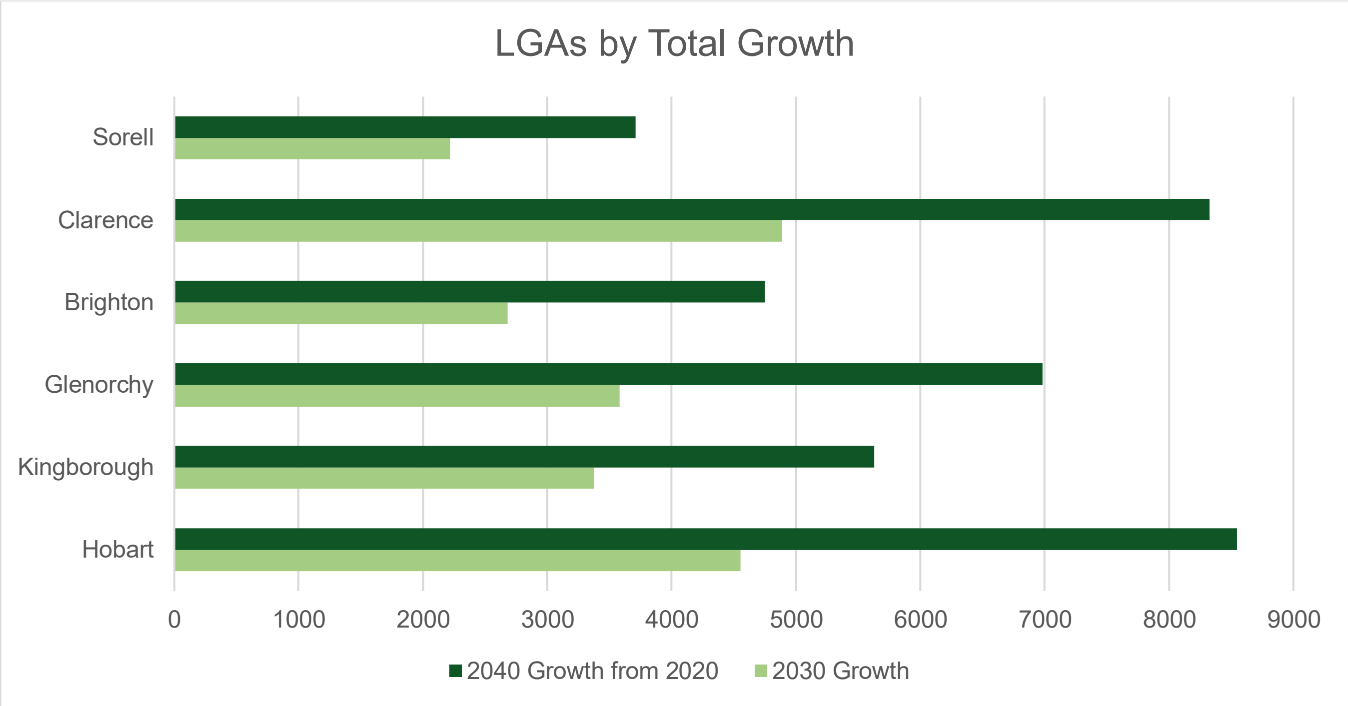



*Figure 4-1 Total population growth for Greater Hobart's 6 LGA*

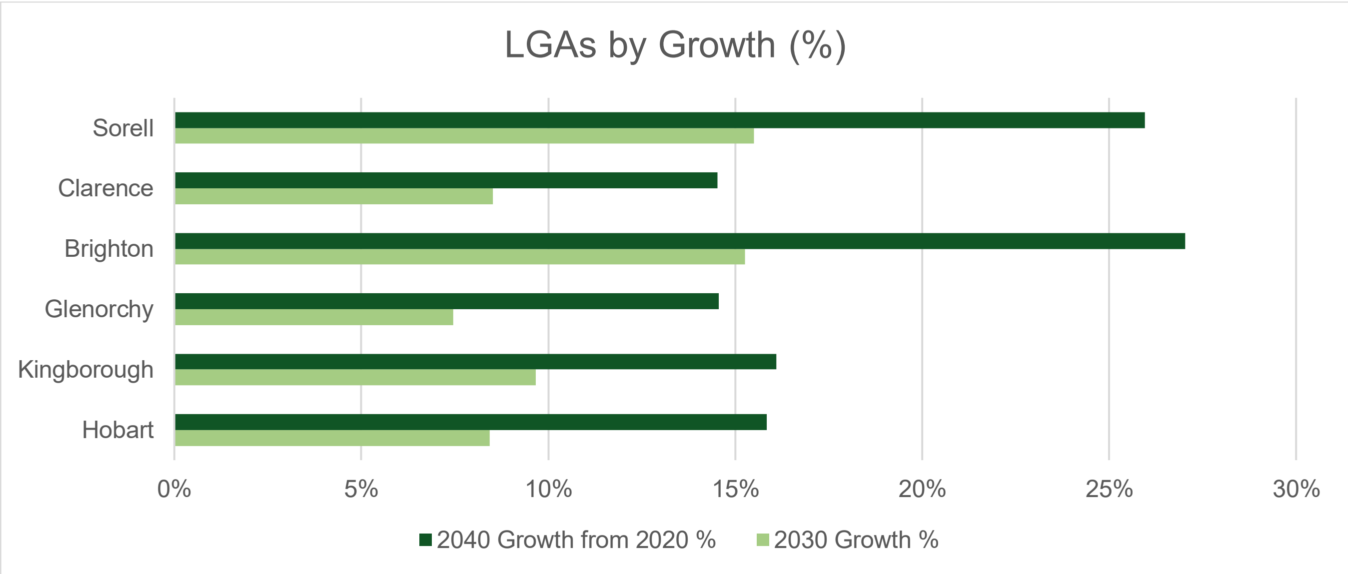



*Figure 4-2 Percentage population growth for Greater Hobart's 6 LGA*

# 5. Current and future adequacy and capacity of transport infrastructure

## 5.1 Current transport infrastructure

Greater Hobart's transport infrastructure plays a critical role in supporting the region's housing growth, economic activity, and liveability. The current network is shaped by the city's unique geography, with the River Derwent acting as a natural divide and steep terrain limiting corridor expansion. The transport system comprises major road corridors, a bus - dominated public transport network, and emerging ferry services.

### 5.1.1 Roads

The road network in Greater Hobart is structured around a limited number of radial corridors that connect suburban areas to the CBD. Key arterial roads include:

- **Brooker Highway (A1)**: Serves the northern suburbs and is a major freight and commuter route.
- **Southern Outlet (A6):** Connects Hobart to Kingston and the Huon Valley.
- **Tasman Highway (A3):** Provides access to the eastern shore via the Tasman Bridge, a critical link with limited redundancy.

These corridors experience high peak loads and have limited alternative routes, resulting in congestion and vulnerability to incidents. The Greater Hobart Urban Travel Demand Model (GHUTDM) indicates that traffic volumes are concentrated along these corridors, with limited capacity for expansion due to geographic constraints[8]

Recent investments have targeted safety and efficiency improvements, including:

- $204 million for upgrades to the Arthur Highway and Sorell Rivulet Bridge, enhancing connectivity between Hobart and the south - east
- Planning for Brooker Highway upgrades, focusing on safety, capacity, and active transport integration[9]

Despite these efforts, the road network remains heavily reliant on private vehicles, with over 90% of trips made by car.[7]

### 5.1.2 Public Transport

Public transport in Greater Hobart is primarily bus - based, operated by Metro Tasmania, Tassielink Transit, and Derwent Valley Link. The GHUTDM coded 279 bus routes in 2019, with services concentrated along major corridors. However, public transport accounts for only 6.9% of trips, significantly below the national urban average of 15%.

Key challenges include:

- Limited frequency and reliability, particularly outside peak periods.
- Low coverage, with only 40% of households within a 10 - minute walk of frequent services
- Lack of dedicated infrastructure, such as bus lanes or transit corridors.

Emerging initiatives aim to address these gaps:

- **Hobart Rapid Bus Network:** Planning is underway for a high - frequency bus system along key corridors
- **Northern Suburbs Transit Corridor:** A long - awaited project to improve public transport access in growth areas like Glenorchy and Brighton
- **River Derwent Ferry Network:** Expansion of ferry terminals and services is planned to improve cross - river connectivity

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[8] Department of State Growth (2020), Greater Hobart Urban Travel Demand Model Update.

The GHUTDM model shows that public transport demand is highest in Hobart and Clarence LGAs, with ferry and park - and - ride options gaining traction.

# 5.2 Future transport infrastructure needs

## 5.2.1 Strategic context

Greater Hobart is experiencing sustained population growth, with projections indicating over 40,000 new residents by 2050[9]. This growth is placing increasing pressure on the region's transport infrastructure, which is already constrained by geography, limited redundancy, and high reliance on private vehicles. The Australian Government's National Housing Accord aims to deliver 1.2 million new homes over five years, with enabling infrastructure—particularly transport—identified as a critical factor in unlocking housing supply[10].

Infrastructure Australia (IA) has emphasised the importance of aligning transport investment with housing growth to support liveability, productivity, and sustainability outcomes[11]. Greater Hobart's transport system must evolve to meet future demand, reduce congestion, and improve access to employment and services.

## 5.2.2 Planned investments

Several major transport infrastructure projects are planned or underway across Greater Hobart, aimed at improving connectivity, capacity, and sustainability:

- **Hobart Rapid Bus Network**: A $54.5 million planning initiative funded by the Australian Government will support upgrades to Hobart's public, active, and marine transport networks, including rapid bus corridors, bus stations, and ferry terminals[12].
- **Northern Suburbs Transit Corridor**: A proposed rapid bus service along the disused rail corridor from Glenorchy to Hobart is central to the region's growth strategy. The project aims to catalyse medium - density housing and mixed - use development, with planning supported by the Hobart City Deal and a strategic business case underway[13],[14].
- **Tasman Bridge Upgrade**: A $130 million investment will strengthen the bridge, improve traffic flow, and enhance safety. While plans to widen pedestrian and cycling paths were scrapped due to cost, upgrades will include higher safety barriers, passing bays, and improved pathway connections[15,16].
- **South Arm Highway Upgrade**: This project will expand the highway from two to four lanes between Rokeby and Lauderdale, improving travel time reliability and safety for eastern shore communities[17].
- **Tasman Highway Causeway Expansion**: Upgrades between Hobart Airport and Sorell will include dual carriageways and a second bridge at McGees Bridge, addressing congestion and climate resilience[18].
- **Active Transport Network**: A $6 million proposal from Greater Hobart councils seeks to link key destinations via pedestrian and cycling pathways, supported by additional investment in accessible bus stop infrastructure[19].

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[9] Infrastructure.gov.au (n.d.) Greater Hobart Strategic Partnership Submission – Draft National Urban Policy. Available at: **https://www.infrastructure.gov.au**

[10] Treasury.gov.au (2022) National Housing Accord 2022. Available at: **https://www.treasury.gov.au**

[11] Infrastructure Australia (n.d.) Transport Infrastructure to Enable Housing Supply Project Brief. Available at: **https://www.infrastructureaustralia.gov.au**

[12] Infrastructure Investment Program (n.d.) Hobart Public Transport Infrastructure Planning. Available at: **https://investment.infrastructure.gov.au**

[13] Build Australia (n.d.) Northern Suburbs Transit Corridor Growth Strategy. Available at: **https://www.buildaustralia.com.au**

[14] ABC News (n.d.) Rapid Bus Funding Pitch. Available at: **https://www.abc.net.au/news**

[15] Infrastructure Investment Program (n.d.) Tasman Bridge Upgrade. Available at: **https://investment.infrastructure.gov.au**

[16] Transport Tasmania (n.d.) Tasman Bridge Pathways Upgrade. Available at: **https://www.transport.tas.gov.au**

[17] Transport Tasmania (n.d.) South Arm Highway Upgrade. Available at: **https://www.transport.tas.gov.au**

[18] Big Rigs (n.d.) Hobart–Sorell Road Upgrade. Available at: **https://www.bigrigs.com.au**

[19] Tasmanian Times (n.d.) Greater Hobart Active Transport Budget Priorities. Available at: **https://tasmaniantimes.com**

### 5.2.3 Infrastructure gaps and priorities

Despite these investments, several gaps remain in the available literature that could constrain housing growth and liveability:

- **Limited Public Transport Coverage**: Only 40% of households are within a 10 - minute walk of frequent public transport, well below national urban averages[20].
- **Congestion and Redundancy Risks**: Key corridors such as the Tasman Bridge and Brooker Highway lack alternative routes, making them vulnerable to incidents and peak - hour congestion[21].
- **Inadequate Infrastructure for Growth Areas**: Northern suburbs like Glenorchy and Brighton are experiencing rapid growth but remain underserved by high - capacity public transport[22].
- **Active Transport Infrastructure Deficits**: Narrow and unsafe cycling paths, particularly on the Tasman Bridge, discourage mode shift and contribute to car dependency[23].
- **Funding and Delivery Uncertainty**: Several projects, including the rapid bus network, remain in planning stages with funding not yet secured, risking delays in infrastructure delivery[24].

Addressing these gaps will require coordinated investment, prioritisation of high - growth areas, and integration of transport and land use planning. IA's framework for identifying infrastructure gaps—based on capacity, accessibility, and service performance—provides a robust methodology for guiding future decisions [25].

## 5.3 Data quality assessment

### 5.3.1 Data availability

In addition to publicly available population statistics, the current state assessment identified a shortage of analysis-ready data to inform forward forecasts. To alleviate this shortage in this instance, a report was obtained with permission from Department of State Growth, entitled 'Greater Hobart Urban Travel Demand Model' which provides a small portion of data that was identified as a gap from publicly available information. Whilst enabling this investigation to take place, the absence of readily available transport data presents a significant challenge in enabling consistent and accurate forecasts.

### 5.3.2 Data quality

Validation of the population data used as part of this assessment is required to ensure the veracity of the outcomes from the model. Whilst there is corroborating data available for the Hobart LGA available from Informed Decision's Population Forecast portal, there is no publicly available population growth forecasts for the 5 other LGAs considered in this report. To confirm the GHUTDM growth estimate, additional data would be required

Table 5.1 below shows the population growth estimate from the GHUTDM report and the ID portal – the growth rates are similar between the two sources.

[20] Infrastructure Australia (n.d.) Transport Infrastructure to Enable Housing Supply Project Brief. Available at: **https://www.infrastructureaustralia.gov.au**

[21] Infrastructure Australia (n.d.) Hobart Transport Network Improvements. Available at: **https://www.infrastructureaustralia.gov.au**

[22] Build Australia (n.d.) Northern Suburbs Transit Corridor Growth Strategy. Available at: **https://www.buildaustralia.com.au**

[23] Transport Tasmania (n.d.) Tasman Bridge Pathways Upgrade. Available at: **https://www.transport.tas.gov.au**

[24] ABC News (n.d.) Rapid Bus Funding Pitch. Available at: **https://www.abc.net.au/news**

[25] Infrastructure Australia (n.d.) Transport Infrastructure to Enable Housing Supply Project Brief. Available at: **https://www.infrastructureaustralia.gov.au**

*Table 5.1 Data validation for Hobart LGA*

| Area | 2020 | 2030 | | | 2040 | | |
|---|---|---|---|---|---|---|---|
| | Population | Population | Growth | Growth % | Population | Growth from 2020 | Growth from 2020 % |
| **Hobart** | 53971 | 58522 | 4551 | 8% | 62520 | 8549 | 16% |
| **Hobart (id)** | 56330 | 60413 | 4083 | 7% | 63523 | 7193 | 13% |

# 6. Model Development

## 6.1 Data sources and collection methods

The approach adopted in this study to quantify key areas of housing growth, develop an understanding of current and critical infrastructure and ultimately identify and quantify infrastructure gaps and priority areas draws on a combination of demographic, housing, and transport datasets. Our approach including the model development was undertaken in consultation with the expert panel.

The key data sources utilised for this study on Greater Hobart are outlined in Table 6.1:

***Table 6.1 Data sources used to inform study***

| Data point | Data source |
|---|---|
| **Population and housing forecasts** | Australian Bureau of Statistics (ABS) Census data, forecast.id, and state government planning resources. |
| **Transport network performance** | Greater Hobart Urban Travel Demand Model (GHUTDM), Department of State Growth datasets, and Infrastructure Australia reports. |
| **Geographic boundaries** | Local Government Areas (LGAs) and Statistical Area Level 2 (SA2) boundaries for spatial analysis. |
| **Social infrastructure and amenity data** | Locations of schools, supermarkets, childcare, and medical centres to assess local accessibility. |

Population forecasts were converted into dwelling demand using average household size and occupancy rates. Growth was assessed at 10-year (2030) and 20-year (2040) horizons.

## 6.2 Building and training

Following a decision to utilise an algorithm to evaluate whether transport networks can support forecast housing growth, an AI built algorithm was developed as a rule-based decision framework rather than a predictive simulation. Its purpose is to rapidly test whether forecast housing growth can be supported by existing and planned transport infrastructure. Coded in Python (see A*ppendix A*) the model was built in CoPilot and tested and debugged using Chat GPT-5.

### 6.2.1 Development of the assessment framework

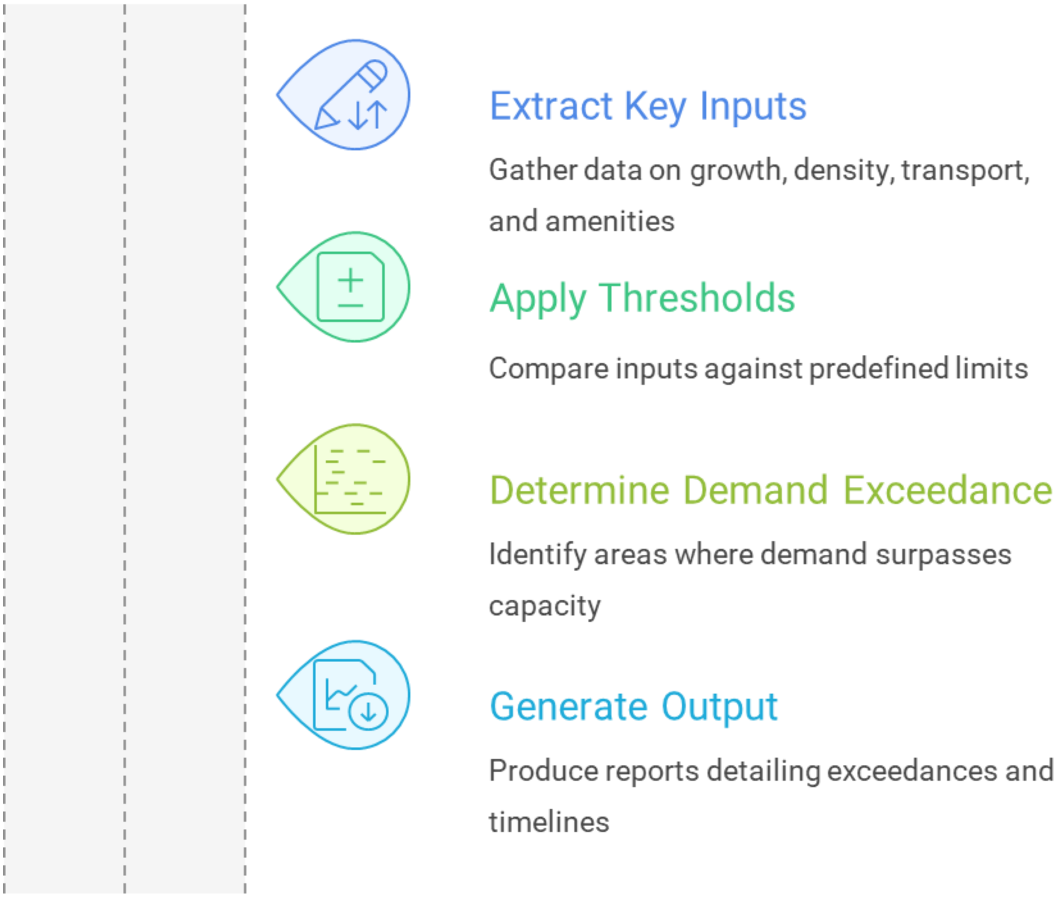


*Figure 6-1 Assessment Framework Process*

Figure 6-1 outlines the assessment framework process, which extrapolates on growth and transport data to forecast exceedance events.

The assessment framework leveraged key inputs extracted from the sources in Table 6.1, including:

- Growth forecasts
- Housing density
- Transport network performance (road v/c ratios, PT coverage, redundancy)
- Amenity access (schools, supermarkets, medical, childcare)
- Equity considerations

These datapoints drove model calculations and forecasting and provided the trends that were then assessed via thresholds.

The thresholds were developed as a trigger for when supply was exceeded, and include fixed limits on:

- Growth (%)
- Public Transport (PT) coverage (%)
- Road Volume / Capacity ration (V/C)
- Density of dwellings without frequent PT (dwellings per hectare)
- Amenity access for households

The algorithm applies thresholds and weightings to determine when and where transport demand will exceed capacity. When demand exceeds capacity based on these settings, an output is delivered describing the nature of the exceedance, the estimated timeline, and key drivers. Figure 6-2 below describes the way information is interpreted and generated by the model, while Table 6.2 describes the inputs, thresholds, and outputs in greater detail.

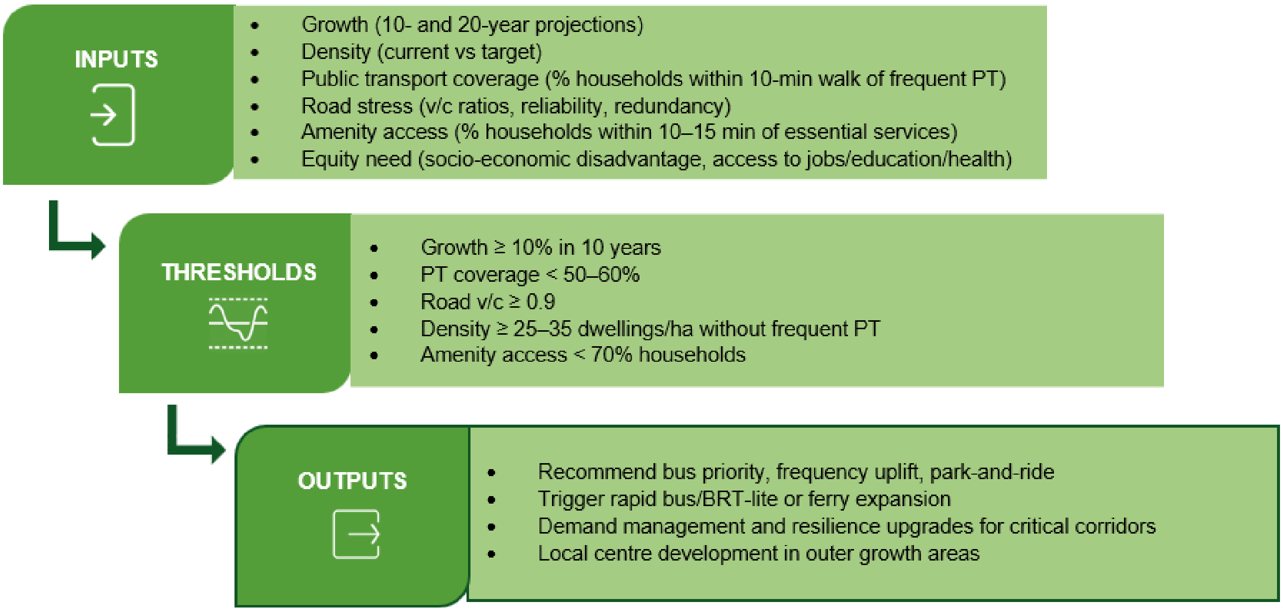


***Figure 6-2 Model process overview including threshold exceedances***

***Table 6.2 Inputs, Thresholds, and Outputs details***

| Element | Description |
|---|---|
| **Inputs** | – **Growth (10 and 20 year projections)**: Population and household growth are the primary drivers of transport demand. Using both 10-year and 20-year horizons allows the framework to capture short-term pressures (e.g. 2030) and longer-term structural shifts (e.g. 2040). This dual horizon ensures that infrastructure planning is both responsive and forward-looking.<br>– **Density (current vs target)**: Net dwelling density is a strong predictor of travel behaviour. Higher densities support viable public transport and active modes, while low densities tend to lock in car dependency. Comparing current density to target density highlights whether growth is occurring in a way that aligns with sustainable transport provision.<br>– **Public transport coverage (% households within 10-min walk of frequent PT):** Accessibility to frequent public transport is a critical determinant of mode choice. The 10-minute walk threshold is widely used in Australian and international planning as a benchmark for “transit-ready” communities. Coverage gaps indicate where households are effectively excluded from viable PT options.<br>– **Road stress (v/c ratios, reliability, redundancy):** The volume-to-capacity (v/c) ratio is a standard measure of congestion. When combined with reliability (travel time variability) and redundancy (availability of alternative routes), it provides a holistic picture of road network resilience. This is particularly important in constrained geographies like Hobart, where single corridors or bridges carry disproportionate loads.<br>– **Amenity access (% households within 10–15 min of essential services):** Proximity to supermarkets, schools, childcare, and medical centres reduces the need for long cross-city trips. Localising essential services is a demand-management strategy in itself, lowering pressure on radial corridors and enabling shorter, more sustainable trips. |
| **Thresholds** | – **Growth ≥ 10% in 10 years:** A 10% increase in population within a decade is a clear signal of accelerated demand. This threshold identifies areas where growth is rapid enough to outpace existing infrastructure capacity.<br>– **PT coverage < 50–60%:** If fewer than half of households are within a 10-minute walk of frequent PT, the area is at risk of entrenched car dependency. The 50–60% benchmark reflects national urban averages and provides a realistic target for coverage.<br>– **Road v/c ≥ 0.9:** A v/c ratio of 0.9 indicates that a road is operating at or near practical capacity. Beyond this point, small increases in demand cause disproportionate increases in congestion and unreliability. |

| | |
|---|---|
| | – **Density ≥ 25–35 dwellings/ha without frequent PT:** This density range is typically considered the minimum to support viable frequent bus services. If areas reach this density without corresponding PT investment, the risk of congestion and car lock-in is high.<br>– **Amenity access < 70% households:** If fewer than 70% of households can reach essential services within 10–15 minutes, the community is forced into longer trips. This threshold highlights where local centre development is needed to reduce transport demand |
| **Outputs** | – **Recommended bus priority, frequency uplift, park-and-ride:** These are relatively low-cost, high-impact measures that can be implemented quickly. They improve the attractiveness and reliability of bus services, particularly in corridors already experiencing growth.<br>– **Trigger rapid bus/BRT-lite or ferry expansion:** Where growth and density thresholds are exceeded, higher-capacity modes are required. Rapid bus or BRT-lite corridors provide scalable solutions, while ferries offer redundancy in river-constrained geographies like Hobart.<br>– **Demand management and resilience upgrades for critical corridors:** In corridors with v/c ≥ 0.9 and limited redundancy, demand management (e.g. incident management, ramp metering, pricing) and resilience upgrades (e.g. strengthening bridges, adding priority lanes) are essential to maintain reliability.<br>– **Local centre development in outer growth areas:** Building supermarkets, schools, childcare, and medical centres in outer LGAs reduces the need for long cross-city trips. This not only lowers transport demand but also improves equity and liveability for residents in growth areas |

Additional information on the underlying code inputs is available in Appendix A.

### 6.2.2 Model limitations

While the proof-of-concept model provides a structured and scalable approach to identifying infrastructure gaps, several limitations were identified during its development and application. These limitations reflect both the constraints of available data and the simplifying assumptions required to operationalise the model. Understanding these limitations is critical to interpreting the outputs appropriately and identifying areas for future refinement and enhancement.

Given the current approach is limited to a proof-of-concept, the model has several limitations, which are described in Table 6.3 below:

***Table 6.3 Summary of model limitations and implications***

| Limitation | Description | Implication |
|---|---|---|
| **Amenity Access Data Gaps** | Incomplete or inconsistent data on proximity to essential services (e.g. supermarkets, schools, medical centres). | Amenity access excluded from algorithm scoring; discussed qualitatively only. |
| **Public Transport Uptake Uncertainty** | Current PT mode share is low (~7%) and behavioural change is not modelled. | Limits ability to forecast mode shift; risks underestimating future PT demand. |
| **Use of rule-based logic as opposed to predictive simulation** | Predictive simulations deliver more accurate assessments as opposed to a rule based logic which | Predictive simulations require highly detailed, asset-level data (e.g. turning counts, signal timings, micro-behavioural travel patterns) that is not consistently available across Greater Hobart or other regions. |
| **Algorithm Calibration** | Thresholds and weightings are based on expert judgement, not empirical calibration or sensitivity testing. | May affect reliability of outputs; requires expert panel validation and refinement. |
| **Infrastructure Delivery Assumptions** | Assumes committed projects proceed as scheduled and deliver intended capacity uplift. | Risk of overstating future network capacity if projects are delayed or revised. |
| **Equity Index Limitations** | Socio-economic disadvantage is included, but access to jobs, education, and health services is not comprehensively modelled. | May understate transport disadvantages in vulnerable communities. |

| | | |
|---|---|---|
| **Static Demand Modelling** | Algorithm does not account for dynamic changes in travel behaviour (e.g. peak spreading, induced demand, remote work). | Reduces accuracy of long-term capacity forecasts and resilience planning. |
| **Geographic Constraints Not Fully Quantified** | Topographic and corridor constraints are acknowledged but not explicitly modelled. | May under-represent physical limitations on infrastructure expansion. |

# 6.3 Expert Panel Analysis

As part of development, the model in a 2 stage process outputs were reviewed by a panel of transport planning SMEs (CVs attached in Appendix B). The panel were asked the following.

**Panel Members:**

**Ross Mannering:**

Ross has over 22 years' of experience in the transport infrastructure design, project management, road safety, traffic engineering and stakeholder engagement, acquired through his involvement in a wide variety of transport infrastructure projects. He has played lead roles in the delivery of recent projects including Perth Link Roads, the South East Traffic Solution (SETS) and the Greater Hobart Park and Rides. In his role as General Manager Transport Tasmania at pitt&sherry Ross leads the delivery of a large portfolio of road, bridge, rail and port infrastructure projects.

**Matthew Brooks:**

Mathew is a Chartered Professional Engineer and Fellow with Engineers Australia and has over 20 years of experience in a range of road, transport engineering, transport modelling projects. Mathew holds a Bachelor of Engineering (Civil) with Honours at the University of Tasmania, a Master of Engineering at Deakin University and a Master of Transport at Monash University

## 6.3.1 Panel Interview 1 (informal)

In interview 1, General conversations were undertaken around the project, initial thoughts and suggestions for the project. This identified data sources and the initial idea for inputs into an algorithm.

## 6.3.2 Panel Interview 2 (formal)

In interview 2, the following questions were prepared to validate our approach and ensure applications can be utilised in an innovative manor.

*Table 6.4 Panel Interview 2 – Questions and responses*

| Question | Response | Implication |
|---|---|---|
| **Are the inputs and thresholds valid for this task** | Yes, however the term 'road upgrade' should be expanded to include an inclusion of PT upgrades (bus lane inclusion), etc<br>Equity should likely be removed as an input due to the lack of available data<br>Look at peak spreading effects | Change of terminology<br>Removal of equity form model inputs |

| | | |
|---|---|---|
| **What are the gaps and limitations** | In a Hobart context, the Tasman Bridge is not currently able to be upgraded due to the extensive capital cost. Due to this, other methodologies should be undertaken (ferry service expansion, etc). A strengthening program is currently proposed but this will not increase capacity | Note |
| **What are Broader Applications** | Other infrastructure Upgrades, works scheduling for construction companies | Note |
| **Other Comments** | PT uptake is a lot less than other cities.<br>The ferry service directly reduces stress on the road network, unlike other road based PT services (park and ride, etc)<br>PT frequency needs to be explored further<br>Will WFH impact road stress (referencing WESTPACS recent ruling). | Note and ensure included in findings |

# 7. Key Findings and Insights

Once established, the model was deployed on several 'progressions' - scenarios to test its ability to forecast growth, identify instances of capacity exceedance, identify locations and key drivers of capacity shortage, and recommend reasonable action areas for rectification. The progressions are outlined below, with the results discussed in Section 8.2.

- **Progression 1** - a 'do-nothing' scenario based in Hobart. The aim was to outline when the transport network in Hobart will reach capacity if no upgrades are undertaken, and determine which roads will exceed capacity first
- **Progression 2 –** following the findings of Progression 1**,** to develop a priority list of roads needing upgrade to alleviate capacity issues
- **Progression 3** – external test case based on publicly available data for South-East Queensland

## 7.1 Progression test outcomes

### 7.1.1 Progression 1

Table 7.1 summarises the model outputs when tested against Progression 1.

***Table 7.1 Progression 1 - Model Findings***

| Element | Detail |
|---|---|
| **Aim** | Outline when the transport network in Hobart will reach capacity if no upgrades are undertaken, and determine which roads will exceed capacity first |
| **Summary Outline** | • 2025–2027: Recurrent peak-period saturation on key corridors; reliability declines as incident sensitivity grows.<br>• ~2028–2030: Network reaches functional capacity in the peaks; small demand increases cause disproportionate delays.<br>• 2030–2040: Sustained over-capacity; peak v/c consistently exceeds 1.0 on multiple corridors with widespread queuing and spillback. |
| **Assumptions and indicators** | • Growth: Total population +9% by 2030 and +17% by 2040; outer LGAs (Brighton, Sorell) grow fastest.<br>• Mode share: Car remains dominant without intervention; bus network constrained by limited priority and frequency.<br>• Thresholds: Roads at or beyond practical capacity when peak v/c ≥ 0.9 and travel-time reliability variance > 20%.<br>• Redundancy: Single critical river crossing for east–west demand concentrates risk and delays. |

| | |
|---|---|
| **Corridor-by-corridor capacity tipping points** | **Tasman Bridge and Tasman Highway (east–west flows)**<br>• Earliest breach: First to hit practical capacity in the AM/PM peaks due to concentrated cross-river demand and no parallel crossings.<br>• Timing: Persistent peak v/c ~0.9–1.0 now; functional capacity exceeded by ~2028–2030.<br>• Drivers: Growth in Clarence and Sorell, airport/industrial trips, limited PT priority and ferry capacity.<br>**Brooker Highway (A1) and Northern approaches**<br>• Second to breach: Heavy commuter and freight flows with limited parallel arterials and constrained intersections.<br>• Timing: Near practical capacity now; breach by ~2028–2030 as Brighton/Glenorchy growth adds load.<br>• Drivers: Northern suburban expansion, industrial movements, bus services slowed by mixed traffic.<br>**Southern Outlet (A6) and Kingston approaches**<br>• Third to breach: High directional peaks with incident sensitivity on grades and merges.<br>• Timing: Approaches practical capacity through late 2020s; breach by ~2030–2032 absent priority treatments.<br>• Drivers: Kingborough growth, limited shoulder running/priority, bottlenecks at ramps and CBD interfaces.<br>**Urban CBD interfaces and key nodes**<br>• Constraint amplification: Intersections feeding the corridors (e.g., CBD river approach nodes) start failing before corridors fully breach, accelerating queue spillback.<br>• Timing: 2027–2030, aligned to rising peak demands and minor incident impacts. |
| **What 'capacity exceedance' looks like in practice** | • Peak v/c ≥ 0.9: Queues form earlier, clear later; modest demand increments cause large delays.<br>• Reliability drops: Day-to-day travel-time variance rises; incidents gridlock east–west flows.<br>• Mode shift suppressed: Without bus lanes/frequency, PT cannot absorb growth; car dependency persists.<br>• Network-wide effects: Queue spillbacks from bridge and highway approaches degrade adjacent local networks. |
| **Practical implications** | • Earliest pinch point: Tasman Bridge/Tasman Highway.<br>• Next: Brooker Highway and northern approaches.<br>• Then: Southern Outlet and Kingston approaches.<br>• Compound risk: Any significant incident on the bridge or Brooker during peaks will cause citywide disruption once over-capacity is reached. |

*Table 7.2 Progression 1 - Summary of Findings*

| Corridor / Node | Current v/c | Capacity Breach Year | Key Drivers | Risk Level |
|---|---|---|---|---|
| **Tasman Bridge / Tasman Hwy** | ~0.9 – 1.0 | ~2028-2030 | Cross-river demand, Sorell/Clarence growth, airport trips | Very High |
| **Brooker Highway (A1)** | ~0.85-0.9 | ~2028-2030 | Brighton / Glenorchy growth, freight + commuter mix | High |
| **Southern Outlet (A6)** | ~0.8-0.85 | ~2030-2023 | Kingborough growth, directional peaks, CBD bottlenecks | Medium - High |
| **CBD Interfaces / Key Nodes** | Variable | ~2027-2030 | Intersection failure, queue spillback from bridge / highway | Medium - High |

### 7.1.2 Progression 2: Prioritisation of upgrades

Table 7.3 summarises the model outputs when tested against Progression 2.

*Table 7.3 Progression 2 – Model Findings*

| Element | Detail |
|---|---|
| **Aim** | Develop a priority list of roads and corridors needing upgrade to alleviate capacity issues identified in Progression 1 |
| **Summary Outline** | • Tasman Bridge/Tasman Highway: Immediate priority due to cross-river dependency.<br>• Brooker Highway: Secondary priority, critical for northern growth and freight.<br>• Southern Outlet: Tertiary priority, with upgrades needed by early 2030s.<br>• CBD interfaces: Require intersection upgrades and bus priority to prevent spillback. |
| **Assumptions and indicators** | • Growth: Total population +9% by 2030 and +17% by 2040; outer LGAs (Brighton, Sorell) grow fastest.<br>• Mode share: Car remains dominant without intervention; bus network constrained by limited priority and frequency.<br>• Thresholds: Roads at or beyond practical capacity when peak v/c ≥ 0.9 and travel-time reliability variance > 20%.<br>• Redundancy: Single critical river crossing for east–west demand concentrates risk and delays. |
| **Priority Ranking** | **Tasman Bridge and Tasman Highway (east–west flows)**<br>• Priority: 1 (Immediate)<br>• Suggested Actions: Ferry expansion, bus lanes on approaches, demand management<br>• Timing: Immediate<br>**Brooker Highway (A1) and Northern approaches**<br>• Priority: 2 (High)<br>• Suggested Actions: Bus priority lanes, intersection upgrades, freight management<br>• Timing: 2029 commencement of works<br>**Southern Outlet (A6) and Kingston approaches**<br>• Priority: 3 (Medium)<br>• Suggested Actions: Ramp metering, shoulder running, PT priority<br>• Timing: 2030 commencement of works<br>**Urban CBD interfaces and key nodes**<br>• Priority: 4 (Supporting)<br>• Suggested Actions: Intersection upgrades, signal optimisation, bus priority<br>• Timing: commence immediately with staggered work |
| **Practical implications** | • Earliest pinch point: Tasman Bridge/Tasman Highway.<br>• Next: Brooker Highway and northern approaches.<br>• Then: Southern Outlet and Kingston approaches.<br>• Compound risk: Any significant incident on the bridge or Brooker during peaks will cause citywide disruption once over-capacity is reached. |

### 7.1.3 Progression 3 - External Test Case: South-East Queensland (SEQ)

To demonstrate transferability, the algorithm was applied to SEQ. SEQ provides a robust stress test as it has rapid population growth, diverse geography, and complex transport challenges at a much larger scale than Hobart.

*Table 7.4 Progression 3 External Test Case - Model Findings*

| Element | Detail |
|---|---|
| **Aim** | To test the scalability of the Hobart algorithm by applying it to a larger, more complex metropolitan region with rapid growth and significant infrastructure pressures. |

| | |
|---|---|
| **Summary** | **Growth pressures**: SEQ is forecast to add over 1.2 million people by 2046, with Logan, Ipswich, and Moreton Bay among the fastest-growing LGAs.<br>**Transport stress**: The Bruce Highway, M1 Pacific Motorway, and Ipswich Motorway are already operating near or above capacity in peak periods.<br>**Public transport gaps**: While Brisbane's rail and busway networks provide strong coverage in the inner city, outer growth areas (Logan, Ipswich fringe, Moreton Bay north) have limited high-frequency services. |
| **Algorithm Outputs** | **Immediate priorities**: 1. M1 Pacific Motorway (Brisbane–Gold Coast), 2. Bruce Highway (north of Brisbane), 3. Ipswich Motorway. |
| **Implications** | This progression confirms the algorithm's ability to identify known bottlenecks and align with Infrastructure Australia's Priority List. Demonstrates scalability but highlights the need for calibration to larger, multi-modal networks. |

The below table identifies key data used in the model:

***Table 7.5 Data sources used to develop model***

| Element | Data | Source |
|---|---|---|
| **Population Growth** | Increase in 1.2m residents by 2046 (from 3.8m to ~5m) | ABS, ShapingSEQ 2023 |
| **Growth LGA's** | Logan (+50% by 2046), Ipswich (+70%), Moreton Bay (+40%) | Queensland Government, ShapingSEQ |
| **Growth Network Stress** | M1 Pacific Motorway v/c > 0.95 in peaks; Bruce Highway recurrent congestion; Ipswich Motorway bottlenecks | TMR QLD, IA Priority List |
| **PT Coverage** | Inner Brisbane >70% households within 10-min walk of frequent PT; Logan/Ipswich <40% | TransLink, IA |

**Scalability and Transferability Are Viable but Require Calibration**

Finding: The Hobart algorithm was successfully tested in SEQ, but thresholds are not empirically calibrated.

Implication: Broader application is feasible, but expert review and refinement are needed before national rollout.

### 7.1.4 Broader Applications

The algorithm can be adapted to assess:

- Services infrastructure: Schools, childcare, medical centres, supermarkets.
- Utilities: Water, energy, digital infrastructure.
- Social infrastructure: Community centres, aged care, recreation facilities.

## 7.2 Implications for housing growth and transport planning

If after further testing, a scalable, algorithmic *publicly available* model to assess transport adequacy proves effective, it has several broader implications for housing growth and transport planning across Australia:

*Table 7.6 Strategic Implications of a More Accessible Forecasting Approach*

| Area | Implication | Potential result |
|---|---|---|
| **Democratised Infrastructure Planning** | Regional and local governments could apply the framework without needing complex modelling tools or consultants. | Faster, lower-cost assessments of infrastructure readiness to support housing growth |
| **Evidence-Based Prioritisation** | Transparent, criteria-driven outputs allow planners to justify investment decisions and sequence upgrades based on need | Better alignment of infrastructure funding with actual growth pressures. |
| **Scalability Across Jurisdiction** | The model can be adapted to other cities and regions, enabling consistent national benchmarking. | Supports Infrastructure Australia's mandate to guide enabling infrastructure across diverse geographies |
| **Improved Policy Responsiveness** | Faster identification of emerging capacity constraints allows earlier intervention. | Reduces risk of infrastructure lagging behind housing delivery, improving liveability and economic outcomes |
| **Supports Strategic Land Use Decisions** | Identifies where transport capacity can support higher-density development | Enables more sustainable urban form and reduces car dependency |

# 8. Recommendations

The following recommendations outline practical next steps to enhance the model's utility, improve data quality, and support broader application. They are intended to guide Infrastructure Australia and other stakeholders in refining the proof-of-concept, scaling its use across jurisdictions, and embedding it within strategic infrastructure and land use planning processes.

*Table 8.1 Next steps for model improvement and further research*

| Action | Purpose | Outcome |
|---|---|---|
| **Additional expert Panel Review and Calibration** | Validate model code, input categories, thresholds, and weightings; identify calibration needs. | Improve reliability and credibility of model outputs for decision-making. |
| **Data Enhancement and Integration** | Secure access to granular socio-economic, amenities, and transport performance datasets. | Enable more accurate and inclusive assessments. |
| **Scenario Testing and Sensitivity Analysis** | Run the model under alternative growth, mode-share, and infrastructure delivery scenarios. | Support risk-based planning and prioritisation. |
| **Regional Application and Transferability Testing** | Apply the model to a second region (e.g. SEQ or Geelong). | Demonstrate national relevance and inform broader infrastructure strategy. |
| **Integration with Land Use and Investment Planning** | Align model outputs with zoning, precinct planning, and infrastructure sequencing. | Support coordinated growth and reduced infrastructure lag. |
| **Digital Tool Development** | Develop a user-facing dashboard or tool to visualise model outputs by LGA or SA2. | Enable faster, data-informed decisions at local and state levels. |
| **Documentation and Governance** | Formalise model documentation, version control, and governance protocols. | Ensure transparency, repeatability, and responsible use. |

# 9. Conclusion

This study demonstrates a Proof-Of-Concept model that is capable of integrating demographic, transport, and amenity data into a scalable, threshold-based algorithm, providing a replicable framework for identifying infrastructure gaps and prioritising investment. The initial findings validate known constraints, highlight emerging pressure points, and offer a structured approach to aligning infrastructure delivery with housing growth. To maximise impact, further refinement, calibration, and application of the model across jurisdictions is recommended, alongside improvements to data quality and integration with land use planning systems.

The potential strategic implications of this work are described in Table 9.1 below:

***Table 9.1 Strategic implications of this study***

| Area | Implication | Potential result |
|---|---|---|
| **Democratised Infrastructure Planning** | Regional and local governments could apply the model and framework without needing complex modelling tools or consultants. | Faster, lower-cost assessments of infrastructure readiness to support housing growth |
| **Identifies Data Gaps** | Consistent identification of key data issues could enable focused efforts to alleviate gaps and quality concerns | Improved publicly availability and quality of enabling data to support growth and transport analysis |
| **Evidence-Based Prioritisation** | Transparent, criteria-driven outputs allow planners to justify investment decisions and sequence upgrades based on need | Better alignment of infrastructure funding with actual growth pressures. |
| **Scalability Across Jurisdiction** | The model can be adapted to other cities and regions, enabling consistent national benchmarking. | Supports Infrastructure Australia's mandate to guide enabling infrastructure across diverse geographies |
| **Improved Policy Responsiveness** | Faster identification of emerging capacity constraints allows earlier intervention. | Reduces risk of infrastructure lagging behind housing delivery, improving liveability and economic outcomes |
| **Supports Strategic Land Use Decisions** | Identifies where transport capacity can support higher-density development | Enables more sustainable urban form and reduces car dependency |

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# Appendices

# Appendix A

## Model code

# Appendix A Model Code

MODEL CODE:

```
For each Area (SA2/LGA):
Compute Growth_10yr, Growth_20yr
Compute Density_Gap = Target_Density - Current_Density
Compute PT_Coverage_10min
Compute Road_Stress_Index = f(v/c, reliability, incident exposure, redundancy)
Compute PT_Capacity_Gap = Peak_Demand - (Seats_per_hr * Headways)
Compute Equity_Need = f(socio-economic index, PT access to jobs/education/health)
If Growth_10yr ≥ threshold AND PT_Coverage_10min < target:
   Recommend: frequency uplift, bus priority, park-and-ride
If Density_Gap ≥ threshold AND PT_Capacity_Gap > 0:
   Recommend: rapid bus/BRT-lite, station upgrades, TOD zoning alignment
If Road_Stress_Index ≥ threshold AND Redundancy low:
   Recommend: demand management, incident management, ferry expansion
If Equity_Need high:
   Prioritise funding and sequencing for these areas
Adjust for Committed Projects:
   Recompute gaps with capacity uplift and delivery timing
```

# Appendix B

## Expert Panel CVs

# Ross Mannering

pitt&sherry

## General Manager – Transport Tasmania

### Hobart Tasmania

### Contact

Email: rmannering@pittsh.com.au

Phone: (03) 6210 1406

Mobile: 0409 009 486

### Qualifications & professional affiliations

- Master of Traffic Engineering, Monash University
- Bachelor of Engineering (Hons), University of Tasmania
- Australian Applied Management Colloquium
- CPEng NPER, Institution of Engineers, Australia
- Member, Australian Institute of Transport Planning and Management

### Certifications

- CPCCOHS1001A - Work safely in the construction industry (White card) [WST-60142-S-06725]
- Senior Road Safety Auditor

Ross has over 21 years' experience in transport infrastructure design, project management, road safety, traffic engineering and stakeholder engagement which has been acquired through his involvement in a wide variety of transport infrastructure and traffic engineering projects. This experience combined with his extensive technical knowledge enables Ross to optimise the design of traffic and transport infrastructure projects and to undertake comprehensive assessments of development proposals.

Ross is a highly capable project director and manager, regularly leading multi-disciplinary teams to deliver complex traffic and transport infrastructure projects. Ross' services are also frequently sought to provide expert witness advice on traffic engineering matters associated with planning appeals. He holds Senior Road Safety Auditor accreditation.

### Focus

Transport infrastructure design

Ross' road design experience covers the full project lifecycle and includes the following technical aspects:

- Site investigation
- Project planning
- Concept, preliminary and detailed design
- Geometric design
- Operating speed analysis
- Extended Design Domain assessment
- Stormwater design
- Service relocation
- Public utility relocation
- Stakeholder communication and landowner negotiations
- Tender document and specification preparation
- Quantity and cost estimation.

## Project Management

Ross is able to deliver complex and challenging multi-disciplinary projects applying the following project management skills:

- Project scoping and work breakdown structure development
- Program development and management
- Risk assessment and management
- Quality and communication management
- Safety in design
- Multi-criteria assessment.

## Traffic Engineering

Ross is highly proficient in the following aspects of traffic engineering:

- Traffic impact assessments
- Road safety audits
- Crash analysis
- Traffic data collection and analysis
- Parking demand assessment
- Car parking design
- Intersection analysis
- Traffic management scheme design including signage and line marking
- Public transport facility design
- Cycling and pedestrian infrastructure design

## Relevant experience

- Ross is pitt&sherry's General Manager - Transport Tasmania where he is responsible for business and technical development as well as monitoring of the delivery of transport portfolio projects. He is responsible for coordinating with other technical disciplines to ensure that integrated project solutions are delivered and to ensure that a common approach to project delivery is achieved.
- Ross fulfils the role of the responsible director on individual projects. This role involves providing oversight on all technical and commercial aspects of the consultancy contract and providing oversight and strategic direction to the project manager.
- Ross has a comprehensive understanding of the design workflow processes to efficiently deliver project documentation and can proactively manage the competing interests that often exist between project stakeholders.
- Ross adopts an analytical approach to traffic engineering projects which enables him to develop optimal solutions for key issues.

## Project experience

**Midway Point and Sorell Causeway Duplication Environmental Approvals, Midway Point, Tasmania (2020-2024) (Department of State Growth) – Project Director**

- Lead the undertaking of environmental investigations and preparation of approval application documentation associated with duplication of the Midway Point and Sorell Causeways including preparation of supporting documentation for an EPBC referral and the conducting of translocation trials for an endangered sea star.
- Currently leading the delivery of the preliminary and detailed design for the Midway Point Causeway Duplication including duplication of McGees Bridge, a 460m long trough girder over water structure.

**Tarraleah Power Station Upgrade Traffic Impact Assessment. Tarraleah, Tasmania (2024) (Hydro Tasmania) – Project Director**

- Carried out technical review and project oversight for preparation of a Traffic Impact Assessment associated with replacement of the existing Tarraleah Power Station
- Assessed the impact of traffic generated during construction and operation on the surrounding road network and developed proposed mitigation strategies primarily to accommodate significant increased heavy vehicle and oversize/ over mass vehicle traffic movements during the construction phase.

**Midway Point Park and Ride, Midway Point, Tasmania (2022-2023) (Department of State Growth) - Project Director and Senior Principal Road Engineer**

- Coordinated the design of a Park and Ride Facility including the provision of a bicycle storage facility
- Consulted with adjacent landowners to agree accommodation works
- Liaised with public utility owners regarding the relocation of electricity, communications, water and sewer.
- Managed preparation and submission of a Development Application
- Developed design documentation suitable for construction.

**Northern Roads Package Batman Highway, Sidmouth, Tasmania (2019-2021) (Department of State Growth) - Project Director and Senior Principal Road Engineer**

- Provided project delivery oversight and road design technical input for the widening and rehabilitation of 10km of the Batman.

- Consulted with project stakeholders to agree on accommodation works. Coordinated development of the design and integration of multi-disciplinary inputs.

- Liaised with public utility owners to arrange relocation of public utility assets where required including overhead and underground electricity, water and telecommunications.

- Prepared Project Proposal Reports enabling the Department to access funding for the project.

- Developed the technical specification and tender documents for construction.

**Midland Highway Perth Link Roads, Perth, Tasmania (2017 - 2019) (VEC Shaw Joint Venture) - Design Project Manager and Principal Roads Engineer**

- As Design Project Manager coordinated the development of the detailed design through a design and construct contract for the Perth Link Roads project which involved the following:

    - Construction works in the order of $80M.
    - A new dual carriageway road approximately 4.7km in length.
    - System Interchange at Illawarra Road providing high-speed connections.
    - Grade separated interchange with roundabouts to manage ramp connections on the northern outskirts of Perth.
    - Four road bridge structures and two rail overpasses.
    - Two stock underpasses.
    - Complex drainage regime to reduce flooding in the Perth Township.
    - Relocation of public utilities and installation of street lighting.

- Coordinated all design inputs with primary accountability to the VEC Shaw Joint Venture throughout the delivery of the design.

**Midland Highway Safety Upgrade Mangalore to Bagdad Stage 1, Bagdad, Tasmania (2015 - 2016) (Department of State Growth) - Design Project Manager and Principal Roads Engineer**

- Coordinated the upgrade design for approximately 3km of the Midland Highway through the Bagdad Township.

- Consulted with project stakeholders to agree on accommodation works. Coordinated development of the design and integration of multi-disciplinary inputs.

- Liaised with public utility owners to arrange relocation of public utility assets where required.

- Prepared Project Proposal Reports enabling the Department to access funding for the project.

- Developed the technical specification and tender documents for construction.

**Midland Highway Safety Upgrade Mangalore to Bagdad Stage 2, Bagdad, Tasmania (2016 - 2018) (Department of State Growth) - Design Project Manager and Principal Roads Engineer**

- Coordinated the upgrade design for approximately 7km of the Midland Highway through the Bagdad Township.

- Consulted with project stakeholders to agree on accommodation works.

- Coordinated development of the design and integration of multi-disciplinary inputs.

- Liaised with public utility owners to arrange relocation of public utility assets where required.

- Prepared Project Proposal Reports enabling the Department to access funding for the project.

- Developed the technical specification and tender documents for construction.

**Flood Recovery Response, Tasmania (2016 - 2017) (Department of State Growth) - Project Manager**

- Significant rainfall in June 2016 caused damage to road and bridge infrastructure at over 50 sites across the Tasmanian State Road Network. Ross coordinated a rapid inspection response of the damage, working closely with the Department of State Growth staff to prioritise inspection works across the State. For each site inspected a written summary of the damage was prepared along with details of the proposed remediation works. For sites where the quantum of the damage was significant, Ross managed and provided technical input into the preparation of construction contract documents. The contracts and details of the nature of the works are as follows:

    - Olivers Tourist Road - Repair of approximately ten sites predominantly involving embankment stabilisation including the construction of retaining walls and rock fill, scaling of cut batters, drainage improvement and pavement repair works.
    - Murchison Highway at Hellyer Gorge - Repair of approximately ten sites predominantly involving embankment stabilisation including the construction of retaining walls and rock fill, scaling of cut batters, drainage improvement and pavement repair works.
    - Railton Main Road and Mersey Main Road - Pavement repairs, repair an extension of an erosion protection wall associated with the Mersey River and installation of floodway protection near Ballahoo Creek Culvert.

- For each of the above construction contracts, Ross also managed the provision of contract administration services.

**Macquarie Heads Development Road, Strahan, Tasmania (2014-2015) (Department of State Growth) - Design Project Manager and Principal Roads Engineer**

- Developed the design and construction tender documentation for the upgrading of 5km of local road west of Strahan to improve heavy vehicle access to an aquaculture facility. The project involved:
  - Pavement rehabilitation informed by deflectograph testing, test pitting and laboratory testing.
  - Widening of the road to provide 3.0m lanes (and curve widening) and 1m sealed shoulders.
  - Reprioritisation of the Macquarie Heads Road/Ocean Beach Road junction.
  - Public utility relocation works for Telstra and TasNetworks.
  - Installation of 500m of new footpath; and
  - Upgrading of on-street parking at Mill Bay

**Williams Landing Station, Melbourne, Laverton, Melbourne (2008 - 2010) (Abigroup) - Design Project Manager and Senior Roads Engineer**

- As Design Project Manager coordinated the development of the design for a new premium railway station on the Werribee Line including the following components:
  - 160m island platform between the up and down tracks.
  - Concourse and station building over the broad and standard gauge tracks.
  - 70m pedestrian bridge over the Princes Freeway.
  - 500 space at-grade car park and bus interchange.
  - Upgrading of an existing arterial road including widening of an existing freeway overpass and construction of a new rail overpass.
- Coordinated the inputs for the rail, architectural, electrical and communications aspects of the project which were provided by multiple consultants.

**Kingston Bypass, Kingston, Tasmania (2007 - 2009) (Department of Infrastructure, Energy and Resources) - Design Project Manager and Roads Engineer**

- The project involved the design development from concept design stage through to the detailed design of a 3.2km bypass of the existing Channel Highway as a result of rapid and sustained development in the township of Kingston. Features of the project included:
  - 3.2km of new road with compatibility for future duplication.
  - A grade-separated interchange.
  - New roundabout with multiple circulating lanes and five approach legs.
  - Provision of cycling and pedestrian facilities, two twin-span bridges and two pedestrian underpasses.
  - Upgrading of public utilities, and water sensitive urban design treatments.
- As Design Project Manager and Lead Road Design Engineer Ross was responsible for the following aspects of the project:
  - Extensive geotechnical investigations.
  - Environmental investigations including flora and fauna, Aboriginal heritage and historic heritage.
  - The geometric design of the bypass, a grade-separated interchange and a five-legged roundabout.
  - Preparation of a Development Application to Kingborough Council.
  - Modelling of expected noise levels and design of sound attenuation barriers.
  - Stormwater design including the adoption of water sensitive urban design treatments.
  - Design of on- and off-road cyclist facilities.
  - Design of two twin-span overpasses and two pedestrian overpasses.
  - Coordination of service relocations.
  - Landscape and batter rehabilitation design.
  - Community consultation including the development of a 3D design visualisation.
  - Tender document preparation.
  - Cost estimation.

**Clarence Municipality Parking Surveys, Hobart, Tasmania (2019) (Clarence City Council) - Project Manager and Principal Traffic Engineer**

- Coordinated parking occupancy surveys at Rosny, Bellerive, Richmond and Lindisfarne to inform updating of Council’s Parking Strategy.
- Analysed the parking survey data and documented the results.

**UTAS Newnham Campus Relocation to Inveresk, Launceston, Tasmania (2015 - 2016) (University of Tasmania) - Project Manager and Principal Traffic Engineer**

- Coordinated review of the Master Plan for the relocation of the University of Tasmania Campus at Newnham to a new campus at Inveresk.
- Assessed the potential impacts on traffic movements on the surrounding road network and the need for upgrading of existing intersections.
- Assessed the parking demand against the proposed supply.

**Main Road Claremont On –Road Cycle Lanes, Claremont, Tasmania (2016) (Glenorchy City Council) - Design Project Manager and Principal Roads and Traffic Engineer**

- Coordinated the design of on-road cycle lanes to be installed on a local collector road.
- Assessed the existing road width to inform the allocation of road space between traffic lanes, on-street parking, bus stops and cycle lanes.
- Developed concept and detailed design drawings of the proposed signage and line marking scheme.
- Prepared a technical specification and request for tender documents to facilitate the installation of the cycle lanes.

**Mount Wellington Cable Car Traffic and Parking Planning Assessment, Hobart, Tasmania (2020-2021) (Emma Riley & Associates) - Senior Principal Traffic Engineer**

- Reviewed the traffic and parking impacts of a proposed cable car against the provisions of the Hobart Interim Planning Scheme
- Prepared a report documenting the findings for consideration by Hobart City Council Alderman
- Provided technical advice on an as needed basis.

**Road Safety Audits:**

- Tamar Street/ Bolland Street and Invermay Road/ Lindsay Street – Detailed design audit, Launceston, Tasmania (2024) (Launceston City Council – Senior Road Safety Auditor
- Salamanca Place - Existing conditions audit, Hobart, Tasmania (2022) (Hobart City Council) - Senior Road Safety Auditor
- Sheffield Main Road Upgrade - Concept design audit, Sheffield, Tasmania (2022) (Department of State Growth) - Senior Road Safety Auditor
- Tasman Highway Upgrade - Concept design audit, Sheffield, Tasmania (2022) (Department of State Growth) - Senior Road Safety Auditor
- Begonia Street Upgrade - Concept design audit, Lindisfarne, Tasmania (2022) (Clarence City Council) - Senior Road Safety Auditor
- Midland Highway Upgrade - Jericho to Oatlands - Traffic management audit, Oatlands, Tasmania (2022) (Department of State Growth) - Senior Road Safety Auditor
- Midway Point Intersection Upgrade - Traffic management audit, Midway Point, Tasmania (2021) (Fulton Hogan) - Senior Road Safety Auditor
- Elizabeth Street, Midtown - Existing conditions audit, Hobart, Tasmania (2021) (Hobart City Council) - Senior Road Safety Auditor
- Trevallyn - Existing conditions audit, Launceston, Tasmania (2021) (Launceston City Council) - Senior Road Safety Auditor
- Mowbray Intersection Upgrade - Traffic management audit, Mowbray, Tasmania (2020) (Shaw Contracting) - Senior Road Safety Auditor

# Mathew Brooks

## Principal Traffic Engineer

### Hobart Tasmania

### Contact

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Phone: (03) 6210 1403

### Qualifications & professional affiliations

- Master of Transport and Traffic, Monash University
- Master of Engineering, Deakin University
- Bachelor of Engineering with Honours (Civil), University of Tasmania
- Fellow, Engineers Australia
- Member, Australian Institute of Transport Planning and Management
- Chartered Professional Engineer (Civil Engineering, Leadership and Management)
- Registered Professional Engineer Queensland (RPEQ Civil)
- Registered Professional Engineer Victoria (RPEng Civil)
- Accredited VicRoads Road Safety Auditor

Mathew has over twenty years' of professional experience in civil and traffic engineering. Mathew's primary focus is on network operations, corridor studies, infrastructure assessments and transport modelling.

Having worked as a technical lead and project manager on numerous transport and civil infrastructure projects, across Australia, for the public and private sectors, Mathew has a strong reputation and track record relating to his technical understanding, problem identification and project delivery; delivering many multi-disciplinary projects of state significance across areas of transport, civil infrastructure, and Intelligent Transport Systems.

Mathew's strong communication and technical skills has meant that he is often requested to present on the outcomes of projects to Ministers and Alderman, as well as key stakeholders.

## Focus

- Traffic Engineering;
- Transport and Network Planning;
- Road Safety Audits;
- Traffic Management Plans (Construction and Events);
- Operational Traffic Modelling (mesoscopic / microsimulation);
- SIDRA Intersection Traffic Modelling;
- Traffic Studies;
- GIS Assessment;
- Active Travel and Public Transport Assessments;
- Intelligent Transport Systems; and
- Future Mobility.

## Relevant Experience

### Major Projects

**Monaro Highway-Lanyon Drive Upgrade Package 1C – Traffic Engineering Package Lead**

- Developed a new microsimulation model of the proposed upgrades to the Monaro Highway ACT; and
- Utilised the model to inform the performance of the road network and assist in design changes.

**New Bridgewater Bridge – Traffic Engineering Package Lead**

- Developed a new microsimulation model of the existing road network and proposed new bridge design; and
- Utilised the model to inform the performance of the road network and assist in design changes.

**Newcastle Light Rail -City Centre Traffic Modelling Services (Transport for New South Wales) – Traffic Engineer**

- Update an existing traffic model of Newcastle.
- Use model to test 18 proposed alignments for the implementation of the new light rail network.
- Provide commentary on the operation of the proposed light rail network and recommendations to improve performance before implementation.

**Kingston Bypass Duplication Detailed Design – Traffic Engineering Package Lead**

- Developed a new microsimulation model of the existing road network and proposed road upgrade design; and
- Utilised the model to inform the performance of the road network and assist in design changes.

**Western Bypass Feasibility Study (Department of State Growth) – Traffic Engineering Lead**

- Undertake a feasibility assessment of a Western Bypass to provide an alternative traffic route through Hobart
- utilised a desktop assessment of existing reports and contemporary traffic surveys to develop a baseline of traffic distribution through the Hobart CBD; and
- Utilised the Greater Hobart Urban Travel Demand Model, to determine forecast traffic volumes for each of the bypass options, and the resulting network performance in the Greater Hobart road network.

## Transport Planning/ Traffic Studies

**Port Macquarie Hastings Local Government Area Traffic Study – Traffic Engineering/Modelling Lead**

- Develop a mesoscopic model for the Port Macquarie Hastings Municipality
- Identifying existing and future constraints and issues with the transport network
- Prioritise a range of infrastructure improvements to accommodate any current or forecast issues
- Developing a road and traffic management strategy for the Port Macquarie-Hastings Road network for the next 20 years

**Options Analysis - Kingston Bypass Algona Rd Roundabout – Traffic Engineering Lead**

- Assess the performance of the Kingston Road Network
- Develop and test options for the duplication of the Kingston Bypass and the upgrade of the Algona Road Roundabout;
- Identify a preferred solution; and
- Ensure the integrate of active transport and public transport into the design

**Mornington Traffic Solution Study (Department of State Growth) – Project Manager and Traffic Engineering Lead**

- Developed a new hybrid microscopic/mesoscopic model of the existing road network;
- Assess the performance of the Clarence Road Network
- Develop and test options for the upgrade of the Mornington Roundabout; and
- Assess provisions for grade separated pedestrian crossings

**Cooee to Wynyard Corridor Planning Study (Department of State Growth) – Project Manager and Traffic Engineering Lead**

- Developed an operational traffic model of the Bass Highway to test options to improve the corridor
- Undertook an assessment of Cam River Bridge to determine options for strengthening and/or replacement; and
- Developed a suite of corridor improvements that could be delivered in the short, medium and long term to deliver improved performance, reliability and safety.

**West Tamar Highway Corridor Planning Study and Tamar River Crossing Feasibility (Department of State Growth) – Project Manager and Traffic Engineering Lead**

- Expand the Launceston Traffic Model to cover the study area and calibrate and validate the model to current traffic conditions
- Set out the strategic context of the West Tamar Highway corridor with respect to local and state level planning and policy frameworks, and to document the existing and future performance with regard to land use patterns, vehicular traffic, public transport, active transport, and road safety.; and
- Undertake an initial feasibility assessment of a new Tamar River crossing, identifying proposed alignments and the resulting impacts on the road network.

**Central Kingston Traffic Plan – Project Director**

- Develop an operational traffic model of the central Kinston area
- Review the central Kingston roads, intersections and street scape
- Provide recommendations and options for upgrading the road network to accommodate future traffic and pedestrian demands and expectations.

**Central Kingston Parking Plan – Project Director**

- Review the public car parking arrangements within central Kingston area.
- Prepare a Parking Plan detailing the required future parking infrastructure

## Road Safety Audits/ Assessments

**Midland Highway Upgrade, TAS (2021-2022) (Various) – Road Safety Auditor**

- Completed Road Safety Audits for detailed design, pre-opening, and construction stages for various worksites for the Midland Highway upgrade project.

## Traffic Modelling

**Rutherford VISSIM Modelling, NSW (Roads and Maritime Services) – Traffic Modelling lead**

- Develop a microsimulation traffic model of the New England Highway at Rutherford, NSW.
- Assess the traffic related impacts of the proposed upgrades of the New England Highway through Rutherford
- Inform the Business Case Assessment and development of an environmental impact statement for the project

**Hobart Traffic Model, TAS (2021-2022) (Department of State Growth) – Project Director and Lead Transport Modeller**

- Coded, calibrated and validated a hybrid microsimulation / mesoscopic model of the greater Hobart area.
- Undertook a data analysis task to develop Tasmanian specific parameters for the inclusion in the Tasmanian Traffic Modelling Template, a template to be used on all Department of State Growth operational transport models.

**GHUTDM review, TAS (2022-2023) (Department of State Growth) – Project Director**

- Review the zone structure, land use inputs, and public transport coding to understand the model's limitations and recommend enhancements .
- Develop a GHUTDM Usage Note to guide users of the model on what applications the model is appropriate for use.

**Mesoscopic and Hybrid Modelling Guidelines, NSW (Roads and Maritime Services) – Project Manager and Lead Author**

- Synthesize current literature to inform the technical elements of the document.
- Stakeholder engagement with key stakeholders to identify strengths and deficiencies in guideline documentation and their adoption and application in other jurisdictions; and
- Write a guideline document covering the development of Mesoscopic and Hybrid traffic models

**Driver Behaviour Parameter Study, NSW (Roads and Maritime Services) – Project Manager**

- Collect and Synthesize traffic survey data.
- Engage with software vendors on the application of parameter settings within their software
- Write a guideline document covering the application of traffic parameters in Aimsun, VISUM SBA and SIDRA

## Traffic Model Audits/Independent Verifier

**Warringah Freeway Upgrade**

- Verification and auditing the model of the proposed design solution by Transport Modelling Alliance in support of their joint venture tender submission as part of the Warringah Freeway Upgrade project.

**Launceston Multi-modal model – Independent Verified**

- Undertook an independent verification of the development of the first strategic model of the City of Launceston as part of the Launceston Smart Mobility Project being developed by VLC.

**Pacific Highway Upgrade (Lisarow) – Operational Model Auditor**

- Undertook an independent audit of the microsimulation traffic model used to support the upgrades to the Pacific Highway at The Ridgeway and Parsons Road, Lisarow

## Traffic/Construction Management Plans

**Wyong Road Construction Traffic Modelling, NSW (Roads and Maritime Services) – Traffic Modelling lead**

- Develop a microsimulation traffic model to support the upgrade of MR335 Wyong Road at the intersection with Enterprise Drive/Chittaway Road and between Tumbi Road and Mingara Drive/Tumbi Creek Road.
- Assess the proposed staging for the construction.
- Utilise the outcomes of the model to assist in managing road user delay, through the development of a road user delay management plan

**Muswellbrook Coal Mine Construction Traffic Impact Assessment, NSW (MACH Energy) – Traffic Engineer / Project Manager**

- Developed a Construction Traffic Impact Assessment for the opening of a new coal min in Muswellbrook, NSW

**Robins Island Wind Farm Construction Traffic Impact Assessment, TAS – Lead Traffic Engineer**

- Lead traffic engineer overseeing the development of construction traffic management plans for Robins Island Wind Farm Construction, including the assessment of haulage routes.

**Hobart Christmas Pageant, TAS (2017-2020) (Hobart City Council) – Traffic Engineer**

- Provided traffic engineering advice on the implementation of signage plans for the annual Christmas Pageant; and
- Audit signage plans to ensure they met the appropriate standards.

**Taste of Tasmania, TAS (Hobart City Council) – Traffic Engineer**

- Provided traffic engineering advice on the implementation of signage plans for the annual Taste of Tasmania Festival; and
- Audit signage plans to ensure they met the appropriate standards.

**Dark MOFO, TAS (DarkLab) – Traffic Engineer**

- Developed the initial Traffic Management Plan for the Dark MOFO festival, including signage plans.

**Cadbury Marathon, TAS (2017-2021) (Athletics Tasmania) – Traffic Engineer**

- Developed the initial Traffic Management Plan, including signage plans, for the Cadbury Marathon, an annual race held at the Cadbury Estate.

**IAAF Race Walking, TAS (2017-2021) (Athletics Tasmania) – Traffic Engineer**

- Developed the Traffic Management Plan, including signage plans, for the IAAF Race Walking Challenge, an international race walking event attended by athletes from around the world

**Point to Pinnacle , TAS (2017-2021) – Traffic Engineer**

- Developed the initial Traffic Management Plan, including signage plans, for the Point to Pinnacle, an annual race held between Wrest Point Casino and the Pinnacle of Mount Wellington

## Walking and Cycling

**Margate and Snug pedestrian and cycling crossings (Department of State Growth) – Project Director**

- Investigated opportunities to provide additional pedestrian and cycling crossings on the Channel Highway within central Margate and Snug

## Public Transport

**Northern Suburbs Mesoscopic Modelling (Department of State Growth) – Project Manager and Traffic Engineering Lead**

- Extend the Hobart Traffic Model to include the municipality of Glenorchy and Calibrate and Validate the model to current conditions;
- Utilise the traffic model to test 3 proposed bus rapid transit routes. The assessment included developing concepts for new signalised intersections operating with bus priority phasing; and
- Provide commentary on the operation of the proposed rapid bus network and recommendations to improve performance before implementation.

## Intelligent Transport Systems

**On-Road Traveller Information System and Tasman Bridge Lane Use Management System Tender (Department of State Growth) – Project Manager**

- Undertook background data assessment task to support the specifications for the tender package of the proposed design and construct contract, this included the development of the following reports:
  - Traffic Assessment
  - ITS Concept of Operations
  - Gantry Structural Capacity
- Developed a Stage Design and Construct Framework to inform the basis of the specification for the Project Request for Tender Package.

**Bluetooth Sensor Expansion (Department of State Growth) – Project Director**

- Detailed design and tender documentation to expand the Bluetooth sensor network to include an additional 40 sites across the state.

**North West Closed-Circuit Television (CCTV) Upgrade (Department of State Growth) – Project Director**

- Detailed design and tender documentation to expand the optic fibre communications network, communications infrastructure and CCTV cameras at 19 locations in the Greater Burnie area.

**Olinda Grove Roundabout Signalisation (Department of State Growth – Project Director**

- Detailed design and tender documentation to signalise the Olinda Grove Roundabout to provide traffic flow metering during peak times.