



Queensland Audit Office
better public services

Integrated transport planning

Report 4: 2017–18



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Report cost

This audit report cost \$530 000 to produce.

Reference to comments

In accordance with section 64 of the *Auditor-General Act 2009*, we provided a copy of this report to the Department of Transport and Main Roads, the Department of Infrastructure, Local Government and Planning, Brisbane City Council, Sunshine Coast Regional Council, Mackay Regional Council, Isaac Regional Council and Whitsunday Regional Council. In reaching our audit conclusions, we have considered their views and represented them to the extent we deemed relevant and warranted when preparing this report.

Responses were received from the Department of Transport and Main Roads, the Department of Infrastructure, Local Government and Planning and Brisbane City Council. The responses are in Appendix A.



Your ref:
Our ref: 2017-9150P



12 December 2017

Mr Neil Laurie
The Clerk of the Parliament
Parliament House
BRISBANE QLD 4000

Dear Mr Laurie

Report to Parliament

This report is prepared under Part 3 Division 3 of the *Auditor-General Act 2009*, and is titled *Integrated transport planning* (Report 4: 2017–18).

In accordance with s.67 of the Act, would you please arrange for the report to be tabled. In accordance with s59A of the Parliament of Queensland Act and Standing Order 31, I request that this document be tabled during the period that the Legislative Assembly is dissolved.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'B. Worrall', is positioned above the printed name.

Brendan Worrall
Auditor-General

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KEY FACTS



Transport plans cover statewide, regional, local areas, corridors and transport routes.



The State Planning Policy outlines 17 state interests that local governments across Queensland must consider in their planning.



Public transport, cycling, and private vehicles are examples of modes of transport.



The state invested \$4.3 billion on its transport infrastructure program in 2016–17.



The state spent \$893 million to maintain and operate the state transport network in 2016–17.



71% of Queensland's population lives in South East Queensland. It has the highest traffic volumes and most congestion.

Audit objective and scope

The objective of the audit was to determine whether the state's approach to strategic transport planning enables effective use of transport resources and a transport system that is sustainable over the long term.

We assessed whether:

- the Department of Transport and Main Roads (DTMR) provides an effective framework for coordinating transport planning that integrates with other government plans
- the Department of Infrastructure, Local Government and Planning (DILGP), DTMR, and local councils effectively integrate land use and transport planning.

Summary

Introduction

Governments use transport plans to define their policies, goals and designs for how they intend to successfully move people and goods now and in the future. Transport plans need to integrate the components of the transport system in an effective and efficient way. This requires transport plans to integrate with other state, regional and local government plans.

Queensland's transport plans must address many challenges—from mobility issues on peak commuting routes in South East Queensland and access issues in regional areas, to rapidly changing consumer expectations and new technology (for example, self-driving vehicles). In addition, the Queensland Government forecasts a 54 per cent growth in South East Queensland population by 2041. This growth will increase pressure on the existing transport network and require additional investment in new transport infrastructure.

Four key pieces of legislation and the State Planning Policy guide transport planning in Queensland. The key planning documents the Queensland Government uses to meet the requirements of the legislation include:

- the transport coordination plan—provides a framework for coordinating planning and management of transport over the next decade
- regional plans—define desired outcomes for each region and provide the policy framework for achieving them
- regional transport plans—provide direction on how strategic transport objectives can be achieved for a regional area.

The Department of Transport and Main Roads (DTMR) is also developing a 30-year long-term transport strategy, the Queensland Transport Policy, to prepare for future transformations in transport and to improve transport system outcomes. This policy is not yet a legislative requirement. If the Queensland Government approves the Queensland Transport Policy, it will be one of the key transport planning documents to address transport challenges.

DTMR is responsible for strategic planning for Queensland's transport system. It has completed a *Transport Coordination Plan 2017–2027*, which it plans to release later in 2017. Its goals are focused on ensuring transport in Queensland is efficient and reliable, integrated, and safe and secure. Its objectives are that transport:

- meets the needs of all Queenslanders, now and into the future
- connects communities to employment and vital services
- facilitates the efficient movement of people and freight to grow Queensland's economy
- is safe and secure for customers and goods
- contributes to a cleaner, healthier, and more liveable environment and is resilient to Queensland's weather extremes.

To achieve these objectives DTMR needs to work closely with the Department of Infrastructure, Local Government and Planning (DILGP) and local councils.

DILGP is responsible for the State Infrastructure Plan and for developing regional plans. In August 2017 it published a new *South East Queensland Regional Plan (ShapingSEQ)* to sustainably manage change and growth in South East Queensland.

Local councils contribute to the state government's strategic plans and policies and use them to guide their activities in assessing development applications and planning for land use.

Audit conclusions

DILGP and DTMR are developing the foundations they need to effectively integrate land use and transport planning. Both departments are engaging well with each other and with local councils to develop plans that emphasise the need to integrate land use and transport better than they have in the past.

DTMR's framework for coordinating transport planning is well designed, but it needs more time to implement all elements within it to be fully effective in coordinating transport planning. Delays in finalising the Queensland Transport Policy and publishing the *Transport Coordination Plan 2017–2027* mean there is a lack of certainty over strategic direction. State and local governments are working together to integrate their land use and transport plans, but delays in publishing approved plans and policies could result in a disconnect with strategic priorities. We recognise that delays in finalising plans due to changes in government are not entirely within DTMR's control.

DTMR and DILGP understand the importance of measuring progress against transport outcomes, but they do not have comprehensive monitoring frameworks in place for all elements yet.

Despite incomplete planning elements, DTMR remains focused on delivering a sustainable transport system. It does this by prioritising its funding towards running and maintaining the existing transport network (which includes repair and renewal) and then investing in new infrastructure, when it can. This is important as renewal of the existing network has been, and continues to be, underfunded.

The underfunding has resulted in risks to the sustainability of the transport network. The overall condition of the transport network falls well short of DTMR's target standards. DTMR forecasts that the renewal backlog on the state-controlled road network will exceed \$9 billion over the next decade. Without alternative strategies to address the funding issues, DTMR faces a risk that it will not be able to maintain or improve service standards on the transport network to meet Queensland's future needs.

The approach to planning in *ShapingSEQ* focuses on making more effective use of existing resources. This includes:

- promoting higher density development, located where transport infrastructure exists
- making the best use of existing assets rather than providing new infrastructure
- improving the capacity of the public transport system through high-frequency services and connecting these with active transport connections (for example, walking and cycling).

However, while *ShapingSEQ*'s preferred future is for South East Queensland transport users to have better transport experiences, transport modelling for vehicle travel indicates the opposite is more likely. The modelling of the transport system performance under most of *ShapingSEQ*'s assumptions shows potential average peak travel times will increase significantly by 2041 compared with 2016 average travel times. The modelling indicates that delivering the intended transport outcomes will require infrastructure and non-infrastructure solutions, including new strategies to manage user demand and influence how people travel.

These challenges to managing growth with a transport network that is at risk of deteriorating as a result of insufficient renewal funding, demonstrate how critical it is for DTMR to complete its work on the Queensland Transport Policy. An approved and published policy is needed to clearly communicate the transport challenges Queensland faces and how best to address them.

Summary of audit findings

Please note this is a summary of the findings. The full findings are in the following chapters.

Coordinating transport planning

Strategic framework for coordinating transport planning

The strategic framework DTMR has included in its *Transport Coordination Plan 2017–2027* explains its processes for coordinating the planning and management of the transport system. But because DTMR is still developing or awaiting approval for documents within this framework (such as the transport coordination plan itself, the Queensland Transport Policy, strategies for different modes of transport, and regional transport plans), it is not yet clear how the various outputs of the strategic framework integrate.

DTMR has clear processes and practices that it can apply to program planning once the Queensland Government approves the transport projects and programs it will go ahead with.

Developing transport coordination plans

DTMR's currently-approved and published transport coordination plan covers the period 2008–2018. Since then, DTMR has developed three draft plans—in 2011, 2013, and 2016. It did not publish the 2011 and 2013 versions because of changes in government. It did, however, use the 2013 draft for internal decision-making purposes, until it drafted its most recent plan. In October 2016, DTMR released a draft of its *Transport Coordination Plan 2016–2026* for public consultation. Between June and September 2017, DTMR's *Transport Coordination Plan 2017–2027* was approved by both its ministers, but the plan has not yet been tabled in parliament or published on DTMR's website.

Because DTMR has not been able to publish any of three draft transport coordination plans it has prepared since 2008, DTMR is not being held to account publicly for its performance against all its current transport coordination plan objectives. For example, DTMR does not currently publish performance results for any of the community connectivity or environment and sustainability measures it has in its *Transport Coordination Plan 2017–2027*.

Defining transport coordination plan objectives

DTMR's *Transport Coordination Plan 2017–2027* includes specific and measurable objectives and defines the intended transport outcomes better than previous plans have. With clear, measurable objectives, DTMR can monitor progress and make informed decisions to achieve the desired results.

Prioritising transport investments

DTMR has defined spending criteria that are consistent with the *State Infrastructure Plan's* principles. These prioritise running and maintaining the existing transport system (repair and renewal) over building and expanding the system. This is because there has been insufficient investment to renew transport infrastructure. Renewal involves any work on an asset or asset component that attempts to restore the component to its original service standard. This is essential for minimising the whole-of-life costs.

Since 2011–12, the percentage of resources DTMR has devoted to running and maintaining the system has increased and this trend is set to continue. However, the amount it plans to allocate to maintain and renew (extend the useful life of) the network is not enough to stop the transport system from further deteriorating. DTMR continues to communicate current and prospective infrastructure maintenance gaps to Queensland Government agencies and Infrastructure Australia through funding submissions and its total asset management plan.

DTMR has calculated that it has a \$4 billion renewal backlog for its road network as at 30 June 2017. It estimates the renewal gap will increase to more than \$9 billion over the next 10 years. This will affect DTMR's ability to meet minimum performance targets; it will compromise service standards; and it will require DTMR to reprioritise works to address safety-related defects on its network at the expense of works to renew its assets.

Integrating strategies for modes of transport

DTMR has system strategies for Queensland's different modes of transport, like passenger transport and cycling. These are known as 'modal strategies'. However, because DTMR has not been able to publish any of the three draft transport coordination plans it has developed since 2008, the modal strategies either do not refer to, or fully integrate with, the transport coordination plan objectives.

DTMR does not:

- make publicly available information showing how its modal strategies support the objectives of the transport coordination plan
- have monitoring mechanisms to effectively track what contribution each of its modal strategies makes to the transport coordination plan objectives.

On 13 October 2017, one day after we issued this report for comment, the Deputy Premier tabled the *Transport Coordination Plan 2017–2027* in parliament. DTMR can now start to publish how its modal strategies support the transport coordination plan and the results of its performance against the plan's objectives.

Integrating regional and transport planning

DILGP's and DTMR's updated governance approach for developing regional (strategic land use) plans and the new generation of regional transport plans involves extensive stakeholder consultation.

The new approach also involves modelling and analysis with the aim of developing evidence-based strategic land use plans.

Planning engagement

DILGP engaged DTMR and local councils, and largely addressed their views, when it developed and updated the *State Infrastructure Plan*, the *State Planning Policy*, and the *South East Queensland Regional Plan (ShapingSEQ)*.

When DILGP was not able to address gaps agencies identified for the *State Infrastructure Plan* and *ShapingSEQ*, it was because agencies requested changes that:

- ran contrary to the government's position (for example, to be more precise and committed about projects in the five- to fifteen-year timeframe)
- or
- would require a public policy position to be developed first (for example, on demand management and pricing policies).

Planning analysis

DILGP and DTMR provided an adequate basis for their core strategies and directions within the *State Infrastructure* and *ShapingSEQ* plans. The need to use existing infrastructure, unsustainability of the unconstrained urban development, and addressing the underinvestment in maintenance were examples of the reasons they gave for their strategies.

DTMR has developed a suite of strategic and more locally-focused transport modelling tools to assess the impact of proposed statewide, regional, and local policies and plans and specific projects. DTMR regularly applies this capability when it develops business cases to assess specific transport projects.

It also used this capability to help DILGP to develop *ShapingSEQ*, by seconding one of its senior staff to DILGP to model the transport outcomes of the draft version of *ShapingSEQ*. However, DILGP did not engage DTMR to forecast transport outcomes for the measures in the final version of *ShapingSEQ*.

While DILGP included different measures in the final version of *ShapingSEQ*, both the draft and final plans set a preferred future for transport outcomes to improve.

We analysed the measures from DTMR's modelling to assess if the results were consistent with *ShapingSEQ*'s preferred future of improved travel time and distance. *ShapingSEQ* measures this across all modes of transport to measure people's travel experience, but DTMR's model only forecasts travel time and distance for vehicles. While this makes it difficult to compare, it shows whether *ShapingSEQ*'s preferred future correlates with DTMR's modelling data for vehicles.

The analysis DTMR did for DILGP for *ShapingSEQ* indicates a risk that the recommended directions and measures underpinning it may not be sufficient to maintain current levels of service and achieve intended transport outcomes. For example, instead of achieving a reduction in average travel times, the model forecasts an increase of about 30 per cent in average travel time for private vehicle travel.

Figure A shows how the model forecasts compare with *ShapingSEQ*'s preferred transport future, using the measures DILGP included in the draft and final versions of *ShapingSEQ*. It reveals that the potential for reduced travel time for commuters using private vehicles is unlikely to be realised. According to 2016 census data for Queensland, 84.7 per cent of people who travelled to work on census day travelled by private vehicle only.

Figure A
Comparison of the preferred transport future in *ShapingSEQ* against DTMR's transport modelling for greater Brisbane

BSTM measure (vehicles)	Transport modelling—2041* (vehicles)	Draft <i>ShapingSEQ</i> preferred future (all modes)	Final <i>ShapingSEQ</i> measure (all modes)	Final <i>ShapingSEQ</i> preferred future (all modes)
Vehicle km travelled per person per year	2.8 per cent (29.9 to 30.7 km per person per day)		—	—
Average length trip	10.7 per cent (12.7 to 14.0 km)		Average travel distance all trips	
Average trip time	29.6 per cent (15.2 to 19.6 mins)		Average travel time all trips	

Note: * DTMR developed this model to understand the impact on the transport system of any demographic and land use changes proposed by *ShapingSEQ*. The modelling results were for the wider Brisbane area only. BSTM—Brisbane Strategic Transport Model.

Source: Queensland Audit Office from draft and final versions of *ShapingSEQ* and Department of Transport and Main Roads' modelling results.

It will be critical to monitor this risk and actual trends, compared to planned trends, as part of *ShapingSEQ*'s ongoing monitoring and measuring success plans.

While we acknowledge the model does not include all *ShapingSEQ* policies, it includes substantial components and provides valuable information on the potential transport outcomes. DILGP did not complete (or require DTMR to complete) a report of the modelling exercise it conducted when it developed *ShapingSEQ*. DILGP did not document:

- the rationale for its strategic modelling approach, including the key assumptions made
- how it used the transport modelling results to inform the development of *ShapingSEQ*.

However, DILGP advised us that its senior officers discussed these matters with the senior transport modeller it seconded from DTMR.

We further examined the challenges facing the transport system by applying the DTMR transport model, with its population and employment growth assumptions, to a specific corridor. We selected Kingsford Smith Drive, a transport corridor between the Gateway Motorway and Breakfast Creek, where there are already plans to upgrade the road to accommodate expected growth.

We requested modelling of the current (2016) traffic volumes and the forecast traffic volumes for 2041 that informed the *ShapingSEQ* regional plan.

The model results show that increasing the capacity of this corridor from two to three lanes in each direction will not fully mitigate the impact of increased traffic volumes. The model forecasts that, by 2041, traffic speeds on Kingsford Smith Drive will reduce significantly by between 30 per cent and 70 per cent for over half the corridor in the morning and afternoon peaks.

Developing transport plans

Over the last decade, there has been inconsistent coverage of transport plans for Queensland regions. All regions outside of South East Queensland have outdated, draft, or no regional transport plans.

DTMR has recognised this problem and will be delivering transport plans for all regions by February 2018.

DTMR adequately engaged with DILGP and local councils to develop the first pilot regional transport plan—the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan*. DTMR can show how it has taken account of agencies' inputs in developing this plan.

The Mackay, Isaac and Whitsunday regional plan and regional transport plan contain the same overall objectives. The population growth forecasts that support the two plans have changed. The regional transport plan does not address what effect the lower population forecasts have on the integration between land use and transport planning. DTMR also needs to do more work to demonstrate how the transport-related actions align to the regional plan goals.

Regional transport planning must identify, analyse, and prioritise problems at every level of the planning process. DTMR's accelerated program of developing 12 regional transport plans by February 2018 means it will conduct a detailed assessment of the problems facing each region when it implements the actions it outlines in the regional transport plans.

The *Mackay, Isaac and Whitsunday Draft Regional Transport Plan* includes 49 actions—mostly about developing plans and strategies, and investigating the feasibility of improvement options. Implementing, monitoring and measuring the outcomes of the actions in the plan will help DTMR develop a stronger, evidence-based understanding of regional problems and potential solutions. However, while DTMR has identified officers responsible for regional transport plan actions, it has not yet timed the delivery of these actions or the resources it requires to implement the actions.

DTMR did not conduct regional-level modelling to inform problem definition and potential solutions in the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan*. This was because it considered data, previous study findings and other sources of evidence it already had, and the value of, and cost and time constraints of conducting further analysis. In developing the draft regional transport plans, it will be able to identify the areas most in need of the strategic modelling capability.

Measuring and monitoring performance

Transport coordination plan

DTMR has improved the way it measures and communicates the performance of the transport system. Together, its *Queensland Transport Snapshot*, *Service Delivery Statement*, and *State of the Asset Report* provide a good foundation for measuring the performance of the transport system against the *Transport Coordination Plan 2017–2027* objectives. These measures have the potential to provide decision-makers with valuable insights into transport trends and the effectiveness of actions to address problems.

However, DTMR has not yet documented a consolidated analysis of its performance measures to show to what extent they achieve the transport coordination plan objectives.

DTMR's performance framework for its *Transport Coordination Plan 2017–2027* addresses all the goals and objectives of the plan, but has gaps in terms of adequately reporting:

- public transport efficiency, reliability, and integration—It includes bus performance for a limited selection of 12 out of 275 daytime bus routes in South East Queensland. The framework does not cover other forms of public transport such as trains and ferries.
- safety and security related to public transport and ports—It includes information on road crashes throughout Queensland, but nothing on injury and fatality risks for other modes of transport, the number of crimes committed on public transport, or passenger perceptions of safety while using public transport.
- customer satisfaction and the impact on customers—Its measures indicate, but do not directly measure, the outcomes for customers. For example, DTMR reports the number and total duration of incidents, but not the impact they have on customers in terms of the number of hours lost.

The *Transport Coordination Plan 2017–2027* indicates that DTMR will update the performance measures as required to ensure they effectively measure performance towards the objectives.

DTMR built a powerful and useful web-based tool to track the performance of its infrastructure investments. This partly measures the objectives of the transport coordination plan. Currently, it is only accessible to DTMR staff, which means that other interested parties, such as members of parliament and the public, cannot easily see the performance information.

Regional land use and transport plans

The progress monitoring and performance measurement frameworks for *ShapingSEQ* and the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan* need to be clearer about how DILGP and DTMR will:

- monitor, report, and manage progress on actions
- measure, report on, and manage performance.

While DILGP's performance measures to monitor transport outcomes will help it understand whether *ShapingSEQ* is progressing its transport-related strategies, the measures may not be sufficient to highlight the risks to achieving the *ShapingSEQ* 'Connect' objectives. For example, *ShapingSEQ* does not include measures for peak period performance and average commute time (work and education trips) across all modes of transport.

ShapingSEQ is not clear about who will track, monitor, report and identify strategies for addressing adverse trends in performance.

DTMR needs to set baselines for performance measures in its regional transport plans so it can show over time to what extent it is achieving the intended outcomes.

Priority development areas

The agencies responsible for the four priority development areas (PDAs) we reviewed adequately engaged with relevant state agencies and local councils to understand and address transport issues likely to affect the success of the PDAs.

However, Economic Development Queensland (EDQ), which is responsible for planning priority development areas under the *Economic Development Act 2012*, has not demonstrated how it will monitor progress towards intended transport outcomes and respond to trends and risks that potentially undermine them. EDQ has shown it understands the need to better monitor progress and manage the risks but has not demonstrated significant progress in addressing this need.

Recommendations

Department of Transport and Main Roads

Queensland Transport Policy

We recommend that the Department of Transport and Main Roads (DTMR):

1. assesses the merits of amending the *Transport Planning and Coordination Act 1994* to require its chief executive to prepare a transport policy for the minister's approval. (Chapter 2)

Regional transport planning

We recommend that DTMR:

2. strengthens how its regional transport plans integrate with regional land use plans (Chapter 3)

When both plans are developed in a region, this means documenting how:

- regional transport plans and regional land use plans align in terms of the goals, outcomes, and input assumptions
- transport-related actions in regional plans are considered in regional transport plans.

3. sets baselines for key performance measures in all 12 regional transport plans (Chapter 4)

This should be based on the performance measures that are most appropriate for each region.

4. develops a plan to implement the actions from the regional transport plans (Chapter 4)

This should include identifying the resources it requires for each action (including transport modelling tasks), and the timeframe and priority of each action.

5. updates the regional transport plans after it has implemented the actions that will help it define the problems for each region. (Chapter 3)

This should include:

- defining problems for each region based on the evidence it collates when it implements the actions from the plans
- identifying any necessary new actions
- prioritising all actions based on the problem definition.

Modal strategies

We recommend that DTMR:

6. develops performance monitoring mechanisms for the objectives of the transport coordination plan for all of its modal strategies (Chapter 2)
7. updates its modal strategies and once approved, publishes them with the transport coordination plan as an integrated framework. (Chapter 2)

The modal strategies should show how they support the transport coordination plan objectives.

Performance reporting

We recommend that DTMR:

8. develops an integrated performance report to track progress against the transport coordination plan objectives. (Chapter 4)

DTMR should periodically publish performance results against the transport coordination plan to show the extent to which it achieves the plan's objectives.

Department of Infrastructure, Local Government and Planning

Regional land use planning

We recommend that the Department of Infrastructure, Local Government and Planning (DILGP):

9. when developing future regional plans, documents its analysis of DTMR's strategic transport modelling and how it uses the modelling to inform regional plans that have a transport focus (Chapter 3)
10. develops and implements a performance monitoring framework for regional plans. (Chapter 4)

This should detail how and who will be responsible for:

- tracking progress against objectives and actions
- monitoring and reporting progress on outcomes, including transport outcomes
- identifying whether strategies are performing as expected and adjusting where required.

Priority development areas

We recommend that DILGP:

11. clarifies how it will monitor and measure transport outcomes in its existing priority development scheme evaluations. (Chapter 4)

This should describe the key performance indicators, and the methods DILGP will use to measure progress, and assess and mitigate risks to the achievement of objectives.

Department of Infrastructure, Local Government and Planning and Department of Transport and Main Roads

Risk identification and management

We recommend that DTMR:

12. assesses and analyses the risks of not achieving the preferred transport future in *ShapingSEQ* and reports it to DILGP, where relevant, for the purpose of monitoring and reporting on the performance of the plan. (Chapter 3)

We recommend that DILGP works with DTMR to:

13. improve the completeness of evidence retained to support key decisions made in developing land use plans. (Chapter 4)

When testing planning scenarios, documentation for transport modelling should summarise the objectives, scope, assumptions, results, conclusions, any limitations, and any decisions made.

1. Context

In this chapter we provide the background to the audit and the context needed to support the audit findings and conclusions.

Integrated transport planning

Australian Transport Assessment and Planning best practice guidelines recommend that transport plans integrate across the following themes:

- transport and land use—with transport investments providing for adequate access and mobility and, for some major investments, shaping land use
- planning levels—with consistent principles and objectives, a shared appreciation of the problems being addressed, and a common understanding of agreed land uses. This should include approaches to prioritising transport investments in state, regional, and local planning
- transport modes—with the role of different transport modes (for example, public transport, rail, and cycling) aligned to intended land uses. Investments in modes (including multi-modal investments) should be driven by their ability to contribute to effective access and mobility outcomes
- the entire transport system—by best combining supply measures to maintain, renew, operate and expand; or using demand management measures to improve the efficiency of transport infrastructure.

The Department of Transport and Main Roads (DTMR) has completed a new transport coordination plan and is developing regional transport plans for all Queensland regions. The Department of Infrastructure, Local Government and Planning (DILGP) has published a new *South East Queensland Regional Plan (ShapingSEQ)*. These documents will play important roles in helping the state to integrate land use and transport planning.

DTMR's *Transport Coordination Plan 2017–2027* states that:

A well-functioning transport system provides the connectivity and accessibility—the mobility—people need in order to live and prosper. The vision for transport in Queensland is a single integrated transport network accessible to everyone.

DILGP's *ShapingSEQ* regional plan states that:

Integrated land use and infrastructure planning is fundamental to achieving community aspirations, economic growth, and efficient and affordable infrastructure delivery.

Figure 1A shows the main elements that help to integrate transport and land use planning at Queensland state and local government levels. The elements in bold type are relevant context for the audit and shaded areas indicate the scope of this audit.

Figure 1A
Elements that help to integrate land use and transport planning

	Policies	Strategies	Planning	Investment
Whole-of-Queensland Government	Objectives for the community <i>Advance Queensland State Planning Policy</i>	State Infrastructure Plan Part A: Strategy	Regional plans (land use plans) (<i>ShapingSEQ*</i>)	<i>State Infrastructure Plan Part B: Program Project Assessment Framework</i>
Transport system	Transport Coordination Plan Queensland Transport Policy	System (modal) strategies for example: <ul style="list-style-type: none"> ▪ rail ▪ ports ▪ freight ▪ passenger transport ▪ road safety 	Regional transport plans (<i>Mackay, Isaac and Whitsunday Draft Regional Transport Plan*</i>)	Transport Infrastructure Portfolio Plan and Schedule (TIPPS) Queensland Transport and Roads Investment Program (QTRIP) Queensland Road System Performance Plan (QRSPP) Transport service contracts
Department of Transport and Main Roads	DTMR strategic plan	Organisational strategies such as: <ul style="list-style-type: none"> ▪ customer experience ▪ digital ▪ data ▪ workforce 	Transport system planning projects	DTMR program and project management framework
Department of Infrastructure, Local Government and Planning	DILGP strategic plan	<i>South East Queensland Regional Plan strategies</i>	Priority development areas	<i>State Infrastructure Plan updates</i>
Local Government	Corporate and community plans	Economic strategies	Planning schemes Transport and land use plans	Infrastructure plans Investment plans

* Note: *ShapingSEQ* is an example of a regional plan and the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan* is an example of a regional transport plan. We reviewed both these documents as part of this audit.

Source: Queensland Audit Office adapted from information supplied by the Department of Transport and Main Roads.

Legislation relevant to transport planning

The legislation critical to an integrated approach to transport planning and delivery includes the:

- *Transport Planning and Coordination Act 1994*, which requires a transport coordination plan including a framework for strategic planning and management of transport resources. It provides for the delivery of regional transport plans
- *Transport Infrastructure Act 1994*, which includes the development of transport infrastructure strategies to support the transport coordination plan
- *Transport Operations (Passenger Transport) Act 1994*, which includes the development of passenger transport strategies to support the transport coordination plan
- *Planning Act 2016*, which provides for the making of planning instruments that guide all strategic planning and development across the state. There are two state planning instruments—the State Planning Policy and regional plans. Local government has planning schemes. The planning minister approves the state instruments and sets the rules for processes that local governments must undertake to make or amend their planning schemes. In July 2017, the *Planning Act 2016* replaced the *Sustainable Planning Act 2009*
- *Economic Development Act 2012*, which provides for accelerated planning and delivery of priority development areas (PDAs) (which are sites chosen for specific accelerated development).

Policies relevant to transport planning

State Planning Policy

The *State Planning Policy* is a statutory instrument of the *Planning Act 2016* and is the central state planning instrument in the Queensland planning framework. DILGP prepares it and it presents a coordinated position for planning matters and supports a balanced planning system.

The primary function of the *State Planning Policy* is to provide direction to local governments in making and amending local planning instruments. If a local government has not integrated the state interest policies in its local planning instrument, then the local government must assess development applications against the *State Planning Policy*, to the extent of any inconsistency. In these instances, the *State Planning Policy* assists developers to prepare development applications.

The *State Planning Policy* presents the state's interests in planning and development under five themes:

- liveable communities and housing
- economic growth
- environment and heritage
- safety and resilience to hazards
- infrastructure.

The infrastructure theme includes two state interests important for integrating land use and transport planning:

- infrastructure integration—the benefits of past and ongoing investment in infrastructure and facilities are maximised through integrated land use planning
- transport infrastructure—the safe and efficient movement of people and goods is enabled, and land use patterns that encourage sustainable transport are supported.

Transport Coordination Plan (used to align transport policy)

The *Transport Planning and Coordination Act 1994* (the Act) requires the chief executive, which is currently the Director-General of the Department of Transport and Main Roads, to develop a transport coordination plan. The plan provides a framework for the strategic planning and management of transport resources in Queensland.

The Act specifies that the chief executive is to develop the transport coordination plan from time to time and the minister is to approve it. The chief executive can develop a new plan even if the period of the current transport coordination plan has not ended, or at the minister's direction.

The objective of the Act is to achieve overall transport effectiveness and efficiency to improve (within the government's overall policy agenda):

- the economic, trade, and regional development performance of Queensland
- the quality of life of Queenslanders.

Section 5 of the Act requires the transport coordination plan to:

- include
 - a statement of the specific objectives sought to be achieved by the plan
 - criteria for deciding priorities for spending on transport
 - appropriate performance indicators for deciding whether, and to what extent, the objectives of the plan have been achieved
- provide
 - an adequate framework for the coordinated planning for transport
 - a way of achieving effective and efficient use of land for transport purposes.

From 2010 to 2013, DTMR used its *Transport System Management Cycle* as the framework for aligning transport policy, planning, and investment decisions to government outcomes. DTMR replaced this framework with the one it included in the transport coordination plan it drafted in 2013.

DTMR's *Transport Coordination Plan 2017–2027* provides a new framework to coordinate planning for transport. It includes a strategic framework that sets out the preferred processes DTMR has for:

- direction setting—establishing broad strategic intent or policy positions
- strategic planning—developing plans or strategies to focus on key themes or areas
- programming (including investment)—identifying, evaluating, prioritising, and programming initiatives, including addressing funding/investment requirements, competing needs, and timeframes
- delivering—providing services and infrastructure such as public transport, bridges and tunnels, maintenance, regulation, and compliance/monitoring activities.

Queensland Transport Policy

DTMR is developing the *Queensland Transport Policy* so it has a 30-year plan to prepare Queenslanders for transformations in transport and improve transport system outcomes over the short, medium and long term. To guide how it will develop the policy, DTMR has developed four discussion papers on the emerging trends, technologies, and business models likely to significantly affect transport in the future. DTMR developed the discussion papers to engage with Queenslanders on the challenges and opportunities for transport over the next 30 years.

DTMR completed the first discussion paper in November 2016 and aimed to complete the draft policy by 30 June 2017. This did not occur because the discussion papers were not publicly released. DTMR approved internal release of the four papers as 'background papers' to engage with departmental staff on the challenges facing Queensland's transport system and inform development of an internal *Transport Futures* roadmap. DTMR now expects to submit the draft *Queensland Transport Policy* for ministerial approval in early 2018.

The four background papers address:

- challenges and opportunities—this identifies emerging changes in transport and relevant global trends that provide impetus for a long-term transport policy
- transforming mobility—this addresses the main technological and business model changes that have the potential to transform Queensland's transport system over the next 30 years
- smarter infrastructure—this deals with the main transformations associated with providing and funding Queensland's transport infrastructure into the future (including sustainable funding and the role of technology/innovation). It discusses that maintenance of transport infrastructure is underfunded and explores some options for a more sustainable funding model
- improving liveability and prosperity—this explores how transformations in mobility and infrastructure could affect liveability and the prosperity of Queenslanders.

Strategies to guide transport planning

State Infrastructure Plan

The current *State Infrastructure Plan* sets out the Queensland Government's infrastructure priorities and its vision to grow the state's economy. It includes a framework to plan and prioritise infrastructure investment and delivery.

The *State Infrastructure Plan* includes:

- a four-stage approach to prioritising investment in infrastructure
- an order of investment preference—which is reform, better use, and improve existing, before constructing new infrastructure.

The order of investment preference shows the government's preference for lower cost options that either maintain or improve existing services over funding 'big ticket' infrastructure projects.

The *State Infrastructure Plan* also includes short- and medium- to long-term future opportunities that are generally not specific infrastructure projects and have no specific timing. It states that regional plans will describe future infrastructure challenges at a regional level.

The *State Infrastructure Plan* includes two parts published in two documents: Part A—strategy, and Part B—program. The actual projects will be reflected in updates to the *State Infrastructure Plan* Part B—program.

System (modal) strategies

The purpose of system (modal) strategies is to guide and direct the planning and management of specific modes of transport. DTMR has system strategies for Queensland's different modes of transport, like passenger transport and cycling. It also has strategies for managing road safety and Queensland's road, rail and freight networks.

Planning for the transport system

Regional plans

While land use planning is primarily the responsibility of local government, the state has an interest in it too. The state needs to ensure that local governments contribute to broader regional outcomes through applying the state policy in their local planning. The *State Planning Policy* outlines 17 state interests that local governments across Queensland must consider in developing planning schemes.

The purpose of regional plans is to identify regional outcomes to help achieve state interests in planning and development. State and local governments use regional plans to facilitate regional outcomes by addressing existing or emerging regional issues, such as competition between land uses. Regional plans contain specific policies to guide land use planning and development decisions to achieve regional outcomes.

DILGP develops regional plans by collaborating with local governments, industry groups, and the wider community to ensure it considers the aspirations of all regional stakeholders.

South East Queensland Regional Plan (ShapingSEQ)

In response to South East Queensland's changing population in both size and demographics, DILGP reviewed the current *South East Queensland Regional Plan 2009–2031 (SEQRP)*. DILGP published the new *South East Queensland Regional Plan (ShapingSEQ)* in August 2017. It proposes policy directions and targets to address population shifts through:

- five goals (strategic outcomes), which are: grow, prosper, connect, sustain, and live
- several elements that provide more specific outcomes to achieve the goals
- strategies that define actions to achieve the elements.

One of the functions of *ShapingSEQ* is to deliver integrated land use and transport outcomes through its connect, grow, prosper and sustain goals.

Regional transport plans

Part of the strategic planning element of DTMR's strategic framework for coordinating transport planning involves developing regional transport plans and system strategies. This is designed to help DTMR translate broad objectives into high-level strategies and plans. These guide and direct the planning and management of regional areas and of specific modal strategies such as passenger transport, freight, cycling, ports, and rail strategies.

Section 22 of the *Transport Planning and Coordination Act 1994* requires DTMR, through its chief executive, to develop and integrate regional transport plans that complement the objectives of regional and land use plans.

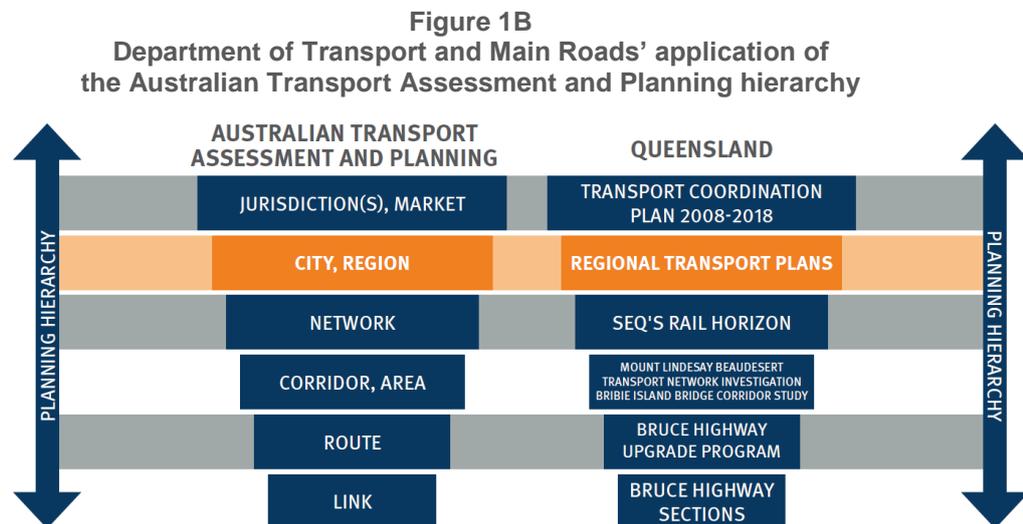
Since 2011, DTMR has only published one regional transport plan. This is largely because each change of government affects the consistency and currency of the plans. This makes it challenging for DTMR to maintain the continuity of transport plans that integrate with land use plans. While DTMR does not have statewide coverage of regional transport plans, it conducts other transport activities to guide transport planning. This includes area transport plans, corridor studies, and plans to address specific transport issues like freight, ports, cycling, and the Bruce Highway.

DTMR is now developing regional transport plans for all Queensland regions. It aims to complete drafts for consultation by February 2018. These plans will define the priorities for developing the transport system in each of the 12 DTMR districts over the next 15 years. The state-level objectives outlined in the *Australian Infrastructure Plan*, the *State Infrastructure Plan*, the *State Planning Policy*, and the regional land use plans will provide direction and guidance on the regional goals and objectives that DTMR develops in each regional transport plan.

The first pilot regional transport plan for the Mackay, Isaac and Whitsunday Region is now in an advanced draft stage. We have reviewed this draft regional transport plan as part of this audit. Consultation for all other Queensland regions is in progress.

DTMR referenced national best practice for transport planning and assessment in Australia in its new regional planning approach. The *Australian Transport Assessment and Planning Guidelines* are a transport infrastructure planning and decision-support framework. This better practice guide establishes a *Transport System Management Framework*, which provides a systematic process for achieving a jurisdiction’s high-level goals.

Figure 1B shows how DTMR applies the planning hierarchy from the *Australian Transport Assessment and Planning Guidelines* within its planning framework.



Source: Mackay, Isaac and Whitsunday Draft Regional Transport Plan (Jan 2017).

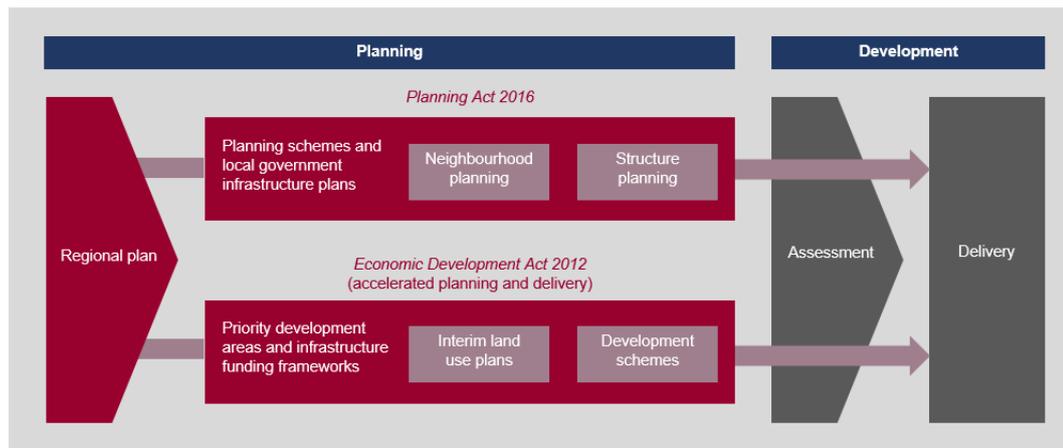
Priority development areas

Priority development areas are sites set aside by the Queensland Government for specific accelerated development, with a focus on economic growth. Economic Development Queensland, a business unit of DILGP, is responsible for planning priority development areas under the *Economic Development Act 2012*.

In this audit, we assessed whether DILGP adequately addresses transport needs when it creates development schemes for priority development areas. We did this because of the higher risk that transport needs may not be integrated when planning is accelerated.

Figure 1C shows the relationship between regional plans, planning schemes and development.

Figure 1C
Regional planning and development



Source: Queensland Audit Office adapted from draft *ShapingSEQ*, Department of Infrastructure, Local Government and Planning.

This audit focused on planning, not development. Therefore, we did not assess how local governments integrate transport and land use when they assess development applications.

Planning schemes

Local governments achieve integrated land use outcomes through developing appropriate planning schemes and by making decisions about development applications. A planning scheme advances the purpose of the *Planning Act 2016* by integrating relevant state interests for the local government's planning scheme area.

When local governments make or amend a planning scheme, they must demonstrate that they have appropriately integrated the relevant regional plan.

Investment decisions

DTMR has established key plans and programs, which shape its priorities in transport investment decisions. These include the:

- *Transport Infrastructure Portfolio Plan and Schedule (TIPPS)*—This is an indicative plan that aims to translate Queensland Government directions and DTMR's policy, strategy, and long-term planning outputs into a 10-year transport infrastructure view. The indicative funding profile is about \$40 billion, across 15 investment programs, from 2016–17 to 2025–26, based on historical and forecast funding levels
- *Queensland Transport and Roads Investment Program (QTRIP)*—This outlines DTMR's current and planned investments in transport and road infrastructure over the next four years. The 2016–17 to 2019–20 QTRIP outlines about \$20 billion of works over four years across the local, state and national transport networks. DTMR uses TIPPS to inform the QTRIP development process. QTRIP provides the detailed four-year rolling program of works within the 10-year horizon of TIPPS
- *Queensland Road System Performance Plan (QRSP)*—This provides milestones for road system maintenance and operations investment over a four-year period for DTMR's state-controlled road network. DTMR has allocated \$3.8 billion for 2017–18 to 2020–21.

Changes and challenges for transport planning

The goals of the *Transport Coordination Plan 2017–2027* are of an efficient, reliable, and safe transport system that puts customers first and supports economic productivity and the global competitiveness of Queensland industries. Its objectives are that transport:

- meets the needs of all Queenslanders, now and into the future
- connects communities to employment and vital services
- facilitates the efficient movement of people and freight to grow Queensland's economy
- is safe and secure for customers and goods
- contributes to a cleaner, healthier, and more liveable environment and is resilient to Queensland's weather extremes.

DILGP's *ShapingSEQ* includes measures for setting preferred future trends for transport connectivity including reduced average travel time and average distance travelled and increased use and accessibility of public and active transport.

In developing and implementing various planning documents to achieve these objectives and preferred transport trends, the Queensland Government aims to address a number of challenges.

These challenges include:

- expected population growth
- rapidly changing consumer expectations
- extreme weather that affects the transport system
- rapidly changing technology (for example, self-driving vehicles)
- the need to maintain and improve transport in regional areas
- constrained funding for maintaining the transport network
- the need to integrate planning across all levels of government.

We describe these challenges further in Appendix C.

Roles and responsibilities

Figure 1D shows the state and local government roles, responsibilities and accountabilities for integrating transport and land use planning.

Figure 1D
Roles and responsibilities—integrated transport planning

Accountability*	Authority	Responsibilities
Deputy Premier, Minister for Transport and Minister for Infrastructure and Planning and Minister for Main Roads, Road Safety and Ports	<i>Transport Planning and Coordination Act 1994</i>	<ul style="list-style-type: none"> ▪ approves a transport coordination plan or requires the chief executive to amend it
Department of Transport and Main Roads (DTMR)	<i>Transport Planning and Coordination Act 1994</i>	<ul style="list-style-type: none"> ▪ under its chief executive, develops for the minister's approval a transport coordination plan ▪ coordinates the strategic planning and operation of integrated transport systems in the state ▪ manages the allocation of funds to achieve this outcome ▪ evaluates the effectiveness of proposed and existing transport systems in the state ▪ develops and implements integrated regional plans that complement the objectives of regional and land use plans in the state
Regional Roads and Transport Groups	<i>Roads and Transport Alliance Memorandum of Agreement</i>	<ul style="list-style-type: none"> ▪ endorse regional transport plans developed by DTMR ▪ make local transport infrastructure investment decisions based on regional priorities
Infrastructure Investment Committee (Department of Transport and Main Roads)	<i>DTMR Infrastructure Investment Committee Charter</i>	<ul style="list-style-type: none"> ▪ governs DTMR's transport infrastructure investment portfolio. The committee's responsibilities include approving DTMR's investment strategy, managing portfolio risks and opportunities, and managing performance through verification of outcomes and the achievement of strategic objectives
Deputy Premier, Minister for Transport and Minister for Infrastructure and Planning	<i>Planning Act 2016</i>	<ul style="list-style-type: none"> ▪ makes or amends a state planning instrument—the <i>State Planning Policy</i> and regional plans
Department of Infrastructure, Local Government and Planning	<i>Planning Act 2016</i>	<ul style="list-style-type: none"> ▪ delivers infrastructure policy, planning and prioritisation, and a planning framework. This includes the <i>State Planning Policy</i> and regional plans
Economic Development Queensland (a commercialised business unit of DILGP)	<i>Economic Development Act 2012</i>	<ul style="list-style-type: none"> ▪ facilitates development by fast-tracking land use planning and development assessment within priority development areas
Local councils	<i>Planning Act 2016</i>	<ul style="list-style-type: none"> ▪ make or amend a planning scheme ▪ assess development applications

Note: * as at October 2017.

Source: Queensland Audit Office.

2. Coordinating transport planning

In this chapter we assess whether the Department of Transport and Main Roads has developed and effectively applied a transport coordination plan to meet the requirements of the *Transport Planning and Coordination Act 1994*.

Introduction

The *Transport Planning and Coordination Act 1994* (the Act) aims to improve the effectiveness and efficiency of transport for all Queenslanders. It does this by requiring accountable entities to plan strategically and manage transport resources in a coordinated way.

Section 5 of the Act specifies that the chief executive is to develop the transport coordination plan from time to time and the minister is to approve it.

Section 22 of the Act specifies that the chief executive's coordination and strategic planning functions include:

- coordinating the strategic planning and operation of integrated transport systems in the state
- managing the allocation of funds to achieve this outcome.

Specifically, we examined whether the Department of Transport and Main Roads (DTMR):

- defines specific and measurable objectives in accordance with the Act in its transport coordination plan
- provides and applies an adequate framework for coordinating transport planning
- defines and applies spending criteria to prioritise investments to meet the transport coordination plan's objectives.

Defining transport coordination plan objectives

DTMR's currently-approved and published transport coordination plan covers the period 2008–2018. Since 2008, it has drafted three transport coordination plans:

- In 2011, it completed a transport coordination plan for the period 2011–2031, which it circulated to other agencies for consultation. Because the government changed in 2012, this plan was not finalised and published.
- In 2013, it completed a draft of a new transport coordination plan to cover the period 2013–2023. It did not have approval to release it until the outcomes of the *Queensland Plan* in 2014 were known (so it could align the plan to government objectives). Because the government changed in early 2015, DTMR could not release the 2013 plan, but it continued to use this draft for internal decision-making purposes until it drafted a new plan in 2016.
- In October 2016, DTMR released a draft of its *Transport Coordination Plan 2016–2026* for public consultation. DTMR has incorporated feedback we offered throughout this audit to improve this plan before it submitted it (as the *Transport Coordination Plan 2017–2027*) to its ministers for final approval in June 2017. By September 2017, both its ministers had approved the plan, but it has not yet been tabled in parliament or published on DTMR's website.

Specific and measurable transport objectives

DTMR has defined specific and measurable objectives in the approved 2008 version of the transport coordination plan, in the 2013 operational version, and in the *Transport Coordination Plan 2017–2027*. The objectives in the 2017 plan are clearer in terms of the outcomes government expects from the transport system.

DTMR's 2017 plan shows what it expects the transport system will provide to Queenslanders over the next 10 years. This is in line with the intent of the Act.

Because DTMR has not been able to publish any of the three transport coordination plans it has prepared since 2008, it does not publish the results of its performance against its transport coordination plan objectives. That means DTMR is not being held to account publicly for results of its performance. For example, while DTMR publicly reports some of the performance measures it has in its *Transport Coordination Plan 2017–2027*, it does not currently publish performance results for any of the community connectivity or environment and sustainability measures it has in its 2017 plan. Once the 2017 plan is tabled and published, DTMR will be able to start the process of publishing its performance against the performance indicators in it.

Objective aligned to the Act—increase use of public transport

The *Transport Planning and Coordination Act 1994* (the Act) seeks to promote increased use of public and active (cycling and walking) transport as an attractive alternative to private transport (modal shift).

DTMR's *Transport Coordination Plan 2017–2027* does not focus specifically on modal shift as a transport objective. It does, however, recognise modal shift as an important factor that contributes to the overall transport system outcomes—namely, that transport connects communities to employment and vital services, and contributes to a cleaner, healthier, and more liveable environment. DTMR updated its draft plan following feedback we provided during this audit to include performance measures showing how it will measure modal shift.

DTMR addressed modal shift in its *Transport Coordination Plan 2017–2027* as follows:

- modal shift to support a sustainable transport system
 - The *Transport Coordination Plan 2017–2027* includes environment and sustainability as a focus area, with the objective that 'transport contributes to a cleaner, healthier and more liveable environment ...'. The objective says that 'our transport choices can reduce our environmental impact. For example, shifting to public and active transport choices can reduce our environmental impact'.

Principle three for decision-making in the plan states that 'transport decision-makers need to consider ... the medium to long-term economic, social and environmental benefits and impacts of their decisions'.
- modal shift to increase use of public and active transport
 - The *Transport Coordination Plan 2017–2027*, under the community connectivity key area, recognises the importance of increasing the share of trips made by active (for example, cycling) and public transport to improve the efficiency and environmental sustainability of the transport network.

DTMR addresses how it will achieve modal shift through other plans that support the transport coordination plan. However, those plans do not reference the 2017 transport coordination plan objectives. Releasing the final plan will enable DTMR to link these plans to the transport coordination plan.

Other plans that address modal shift include the following:

- *Connecting SEQ 2031* (South East Queensland Integrated Regional Transport Plan developed in 2011) states that it ‘establishes ambitious targets to change the way the region moves during the next 20 years’ by
 - increasing the mode share of active transport from 10 per cent of all trips in the region in 2006 to 20 per cent by 2031
 - increasing the mode share of public transport from seven per cent in 2006 to 14 per cent in 2031
 - reducing the mode share of private motor cars by about one fifth. This would mean the share of trips taken by private motor vehicles would decline from 83 per cent in 2006 to 66 per cent in 2031.
- *Connecting Brisbane* (2017) has an objective to ‘build a solid foundation that enables SEQ to develop an integrated, multi-modal transport network’ and to ‘enhance and extend the customer experience so that it is competitive with other travel modes’.
- The *Queensland Cycling Strategy* (2017–2027) vision is for more cycling, more often across Queensland. Its objectives include
 - more cycling, more often
 - cycle networks that are complete, connected and integrated with other transport modes
 - positive perceptions of cycling throughout Queensland
 - cycling helping the Queensland economy to prosper
 - a strong evidence base that guides decision-making about cycling.

The draft regional transport plans show that DTMR has a clear intent to increase the use of active and public transport, and has a measure to determine to what extent this occurs. However, DTMR advised us ‘it would not be appropriate (and it is not required) for regional transport plans to include specific mode share targets when specific infrastructure funding is not known’.

Providing a framework for coordinating transport plans

From 2010 to 2013, DTMR used its *Transport System Management Cycle* as the framework for aligning transport policy, planning, and investment decisions to government outcomes. DTMR replaced this framework with the one it included in the transport coordination plan it drafted in 2013.

The strategic framework DTMR has included in its *Transport Coordination Plan 2017–2027* builds on the strategic framework in DTMR’s draft 2013 *Transport Coordination and Delivery Plan* (which it has used internally since then). The strategic framework clearly explains DTMR’s processes for delivering coordinated planning and management of the transport system.

The framework shows how the transport coordination plans fit within the broader framework for national, state, departmental, and local planning. But, because documents within this framework are still being developed or awaiting approval or publishing (such as the transport coordination plan, Queensland Transport Policy, system strategies, and regional transport plans), it is not yet clear how the various outputs of the strategic framework integrate.

DTMR has clear processes and practices that it applies to program planning. It delivers the outputs in the programming phase of the framework annually through well-established, repeatable processes. However, there has been a lack of continuity and currency with strategic planning at a whole-of-state and regional level.

Of the first two elements in DTMR's strategic framework which address planning:

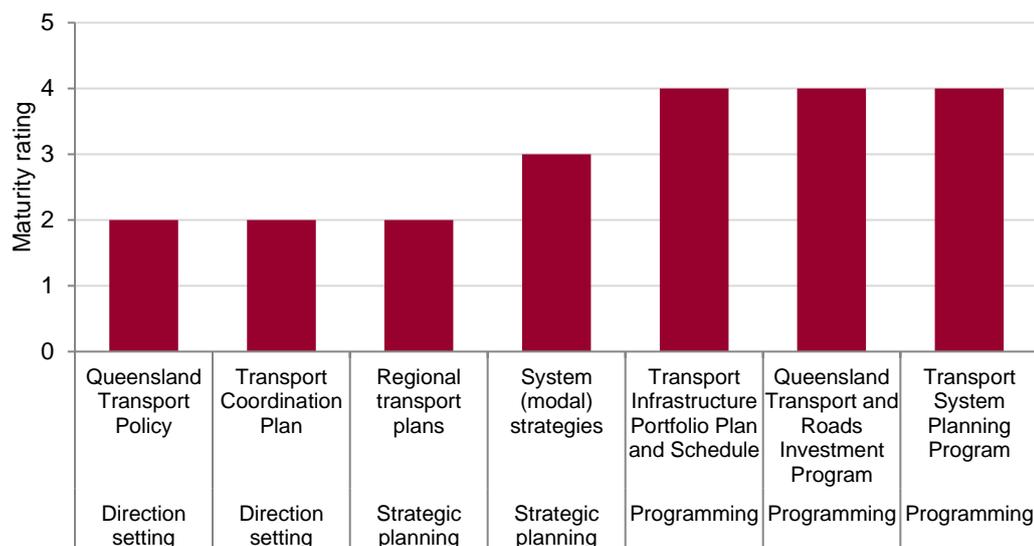
- The outputs in the direction-setting phase are either awaiting the Deputy Premier to table in parliament (the *Transport Coordination Plan 2017–2027*) or are being developed (the Queensland Transport Policy).
- Some of the outputs in the strategic planning phase are either outdated, in draft, or yet to be developed.

DTMR released a draft transport coordination plan in October 2016 and provided its ministers with a revised draft in January 2017 and also in June 2017 after it incorporated feedback we provided throughout the audit process. It has had discussion papers for the Queensland Transport Policy ready for consultation since November 2016.

Figure 2A summarises our assessment of the maturity of each of the respective outputs for the direction setting, strategic planning and programming elements of DTMR's strategic framework, using the following maturity ratings:

1. Basic—basic process exists
2. Developing—process is being developed
3. Established—process is established
4. Integrated—process is integrated with other organisational processes
5. Optimised—process focuses on continuous improvement, adoption of lessons learned, and better practice.

Figure 2A
QAO maturity assessment of DTMR's strategic framework outputs



Outputs against the elements in the strategic framework

Source: Queensland Audit Office.

The Local Government Association of Queensland (LGAQ) provided a submission to our audit which expressed the need for greater visibility on how the elements of the planning framework integrate. LGAQ stated:

... there is a need to clearly articulate the relationships between the *State Infrastructure Plan (SIP)* and Regional Plans, how these relate to regional transport plans, the *Transport Coordination Plan*, *Queensland Transport and Road Investment Program (QTRIP)* and ultimately the strategic and land use plans of local government.

The absence of a clear 'line of sight' between these documents creates a potential disconnect between strategic priorities, and may result in duplication and ineffective coordination which ultimately impacts local government and their communities.

DILGP reported to us that it has provided documents that do specifically address how the different elements of the planning and prioritisation of infrastructure projects integrate in the SIP and the recent *ShapingSEQ*.

However, these documents don't address all the transport elements referred to by LGAQ including the transport coordination plan or the *Queensland Transport and Road Investment Program*.

DTMR's *Transport Coordination Plan 2017–2027* (released for public consultation in October 2016) and draft *Mackay, Isaac and Whitsunday Regional Transport Plan* (released for public consultation in September 2017) provide clarity from DTMR's perspective on how its framework integrates with other government planning frameworks.

Integrating system (modal) strategies

System (modal) strategies are part of the strategic planning element of DTMR's strategic framework. These strategies guide and direct the planning and management of specific modes of transport. To be effective, these strategies should integrate with the transport coordination plan to show how they will contribute to the plan's objectives.

DTMR has system strategies for Queensland's different modes of transport, like passenger transport and cycling. It also has strategies for managing road safety and Queensland's road, rail and freight networks. However, these strategies either do not refer to or fully integrate with the transport coordination plan objectives.

DTMR does not make publicly available information and documents showing how all its modal strategies support the transport coordination plan objectives. This makes it difficult for stakeholders external to DTMR to see how its modal strategies integrate with DTMR's broader framework for coordinating transport planning.

DTMR also does not have monitoring mechanisms (except for its moving freight strategy) to effectively track what contribution each of its modal strategies makes to the transport coordination plan objectives.

DTMR's strategic framework includes core strategies it has designed to translate the objectives of its transport coordination plan into specific strategies and action plans for:

- moving people,
- moving freight
- modal strategies for passenger transport, rail, freight and cycling.

However, because the draft *2013 Transport Coordination and Delivery Plan* was not finalised, it affected the process for developing modal strategies. This happened for two reasons. Approval of the 2013 draft plan was postponed because the *Queensland Plan* (the government's 30-year vision for the state) was still being developed, and the government changed in 2015, which meant a new version was developed.

While DTMR routinely develops modal strategies for government approval, it faces a big challenge in developing long-term strategies because its modal strategies are associated with the government of the day's list of specific transport solutions. When there is a frequent change of government, as has occurred since 2009, the modal strategies end up lacking the longevity and effectiveness they are designed to have.

Defining and applying spending priorities for transport infrastructure

The *Transport Coordination Plan 2017–2027* defines spending criteria that are consistent with the *State Infrastructure Plan's* principles. These criteria prioritise running and maintaining the existing transport system (which includes repair and renewal) over building and expanding the system. They also incorporate the *State Infrastructure Plan's* preference to manage (maintain or improve existing services) rather than build to accommodate demand.

This prioritisation is important because over time there has been insufficient investment in renewing (extending the useful life of) transport infrastructure. Renewal involves any work on an asset or asset component that attempts to restore the component to its original service standard. This includes programmed maintenance and rehabilitation.

The overall condition of the transport network asset base falls well short of DTMR's target standards and represents a risk to the system's overall performance.

Since 2011–12, DTMR has increased the percentage of resources devoted to running and maintaining the system. This trend is set to continue over the next four years as DTMR acts to implement these priorities. However, the planned allocation of resources to maintain and renew the transport system is insufficient to stop its further, overall deterioration. This highlights the scale of the challenge DTMR faces as it plans how best to manage significant traffic growth in South East Queensland while dealing with the continuing overall deterioration of the asset base.

A more sustainable level of investment would allow DTMR to not only maintain but enhance its existing assets as demand for its services increases with population growth.

Aligning spending with transport infrastructure priorities

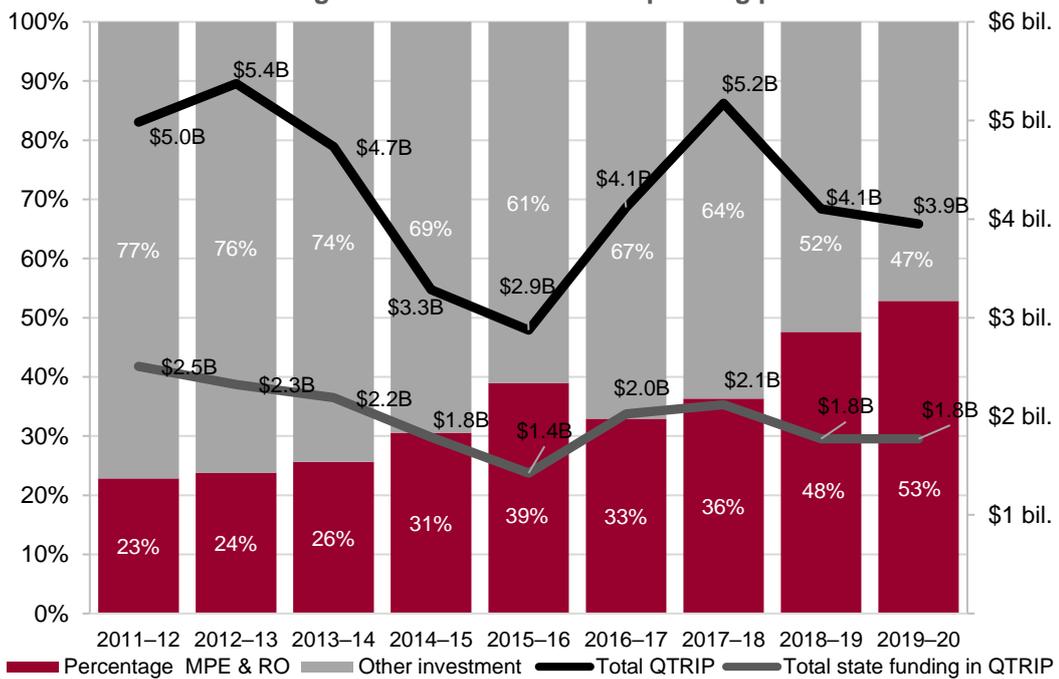
All three versions of DTMR's transport coordination plan since 2008 are consistent in setting the criteria for spending on transport in line with the current *State Infrastructure Plan*, or the preceding *Queensland Infrastructure Plan* (2011). In its *2017–2027 Transport Coordination Plan*, it defines its spending criteria in the order of run and maintain, and build and expand.

DTMR's spending criteria does not reflect the way it allocates its total transport infrastructure spending because of factors outside of its control, such as government commitments to capital projects. For example, in 2016–17, out of the Queensland Government's total expected transport infrastructure expenditure of \$4.1 billion, the Australian Government funded 49 per cent for capital projects.

On average, between 2011–12 to 2015–16, 16 per cent of the total *Queensland Transport and Roads Investment Program* (QTRIP) was directed to run and maintain (repair and renew) the transport infrastructure system. DTMR forecasts that this will increase to 26 per cent by 2019–20.

A more reliable measure of whether DTMR allocates sufficient funding to maintenance is what proportion of state funding it allocates to maintenance. In 2015–16, DTMR allocated 39 per cent of state-based funding to maintenance, and by 2019–20, DTMR forecasts this will increase to 53 per cent. DTMR allocates the balance of state funding to other transport services such as public transport, regulation and enforcement activities, and registration and licensing. Figure 2B shows how DTMR has increased its maintenance and renewal funding allocation from 2011–12 to 2019–20, consistent with its investment criteria of run, maintain, and build and expand.

Figure 2B
DTMR's alignment of infrastructure spending priorities



Note: MPE & RO—maintenance, preservation and environment & road operations.

Source: Queensland Audit Office using data provided by the Department of Transport and Main Roads.

DTMR has a network optimisation framework to deploy solutions that can improve the functioning of the existing network, without delivering new infrastructure. Examples of these solutions include: incident management systems, freight lanes, bus priority lanes, park 'n' ride facilities and variable speed limits.

Applying funds to renew the transport system

One way to measure the long-term financial sustainability of an organisation or system is to apply sustainability ratios. The asset sustainability ratio is one of these.

An asset sustainability ratio of 100 per cent indicates that funding (from both state and federal funding sources) is sufficient to cover at least the annual cost of deterioration of the asset base. DTMR's asset sustainability ratio in 2015–16 (as documented in DTMR's 2017 total asset management plan) was only 41 per cent (excluding natural disaster funding). In May 2017, DTMR estimated that its asset sustainability ratio in 2016–17 will be 64 per cent and, based on its current funding allocation, will not improve significantly over the four-year period to 2019–20.

The asset sustainability ratio is calculated by measuring capital expenditure on renewal or replacement of assets, relative to depreciation expenses. The calculation DTMR uses for depreciation in its total asset management plan is not what it publishes in its financial statements, but is based on an engineering estimate of useful life consistent with total asset management plan guidelines. From 2015–16, in its financial statements, DTMR calculates depreciation based on the rate it is able to replace assets based on likely future funding (rather than an engineer-calculated depreciation expense based on optimal useful life). This is as per Queensland Treasury's policy on depreciation and amortisation (depreciation for intangible assets) for non-current assets.

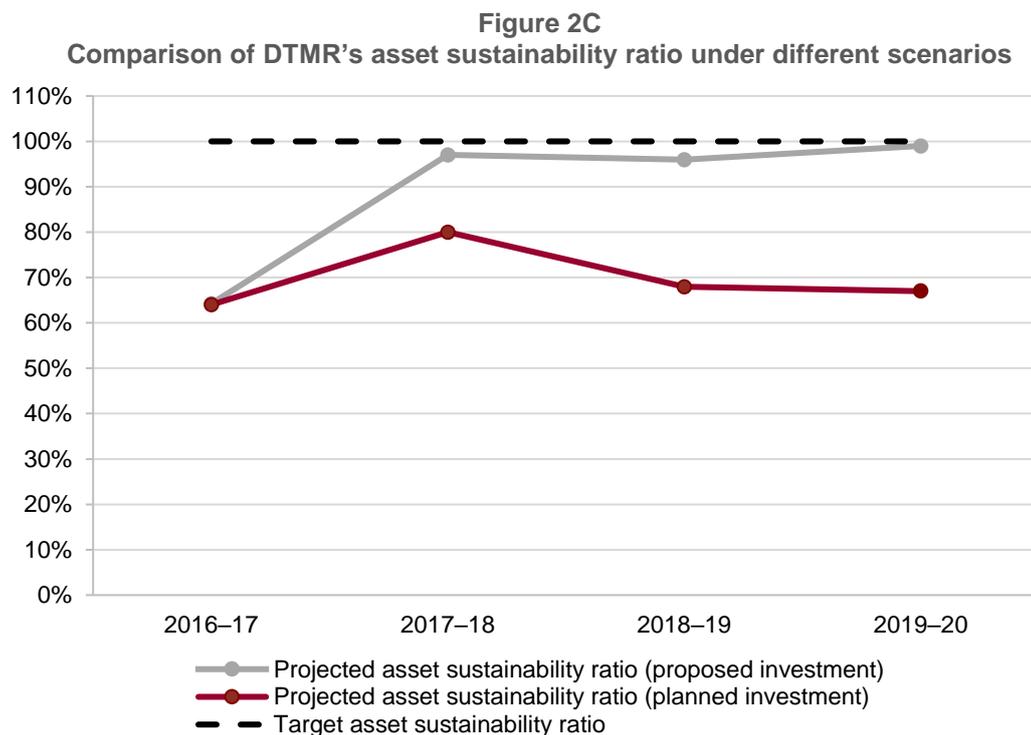
DTMR's total asset management plans for the last three state budget cycles highlight that its current funding level is unsustainable for renewing the existing transport network into the future. DTMR presented two scenarios in its 2016 and 2017 total asset management plans:

- scenario one—maintains the current level of funding asset management, which represents an unsustainable level of investment because the funding levels do not cover the annual deterioration of assets
- scenario two—presents a more sustainable level of investment, with full satisfaction of asset renewal needs and a moderate increase in capital enhancement investment to undertake critical projects.

DTMR's current and expected level of funding represents about 55 per cent of the need it identified in scenario two over a 10-year period from 2017–18 to 2026–27. DTMR advised in its 2016 and 2017 total asset management plans that maintaining the current funding levels would:

- only allow it to address the highest risk safety-related defects
- increase the state's maintenance liability
- reduce service standards (road condition/access provision) and/or require DTMR to reduce the asset base
- affect DTMR's ability to meet minimum performance targets.

Figure 2C shows how DTMR's current asset sustainability ratio, and the ratio it proposed in scenario two in its total asset management plan compares to the 100 per cent target.



Source: Queensland Audit Office from data supplied by the Department of Transport and Main Roads.

Road network renewal backlog

DTMR has calculated that it has about a \$4 billion renewal backlog for its road network as at 30 June 2017. It estimates that, because it is not funded to cover the total cost of the deterioration of its assets on an annual basis, the renewal gap will continue to increase to over \$9 billion over the next 10 years.

Figure 2D shows the funding gap to renew roads and bridges to the standard that would give DTMR an asset sustainability ratio of 99 per cent by 2019–20 and 90 per cent by 2026–27 (scenario two is in its 2017 total asset management plan).

Figure 2D
Renewal funding gap as at 30 June 2017 based on the maintenance level DTMR recommended in its total asset management plan

Element	Backlog (at 30/06/17)	New need (next 10 years)	Total need (capability gap)	Summary of DTMR comment
	\$ millions	\$ millions	\$ millions	
Programmed maintenance (renewal)	\$453	\$1 793	\$2 246	Programmed maintenance allocations are currently funding about 65 per cent of the network need. The proportion of the network that has a surface age exceeding the optimal age continues to grow.
Rehabilitation (renewal)	\$2 659	\$2 449	\$5 108	Pavement rehabilitation is funded to about 16 per cent of its need. The condition of roads is declining, causing an increased safety risk and increased routine maintenance demand.
Bridge/culvert strength (renewal)	\$1 084	\$150	\$1 234	Bridge and culvert rehabilitation funding provides for 19 per cent of the known need and is too small to respond to emerging needs. There are significant structural issues across the network which have the potential to impact on road user safety and heavy vehicle accessibility.
Intelligent transport systems (ITS) and electrical equipment (component renewal)	n/a *	\$685	\$685	The rapid installation and deployment of ITS and electrical devices across the state-controlled road network has resulted in a future liability for asset renewal/replacement which is not currently funded.
TOTAL	\$4 196	\$5 077	\$9 273	

* The existing forward program did not cover the replacement or renewal of ITS and electrical components. However, it is included in scenario two of the total asset management plan.

Source: Queensland Audit Office from DTMR's Total Asset Management Plan (2017–18 to 2026–27) and further information provided by DTMR.

DTMR uses its *Queensland Road System Performance Plan* to guide how it distributes available funding across all state-controlled road networks. It uses this plan to distribute the limited funding in order of priority of existing and estimated likely deficiencies. This enables it to set the highest investment priority for maintenance to manage or improve the condition of state-controlled roads for the safety of road users.

Through its *Road Safety Action Plan*, DTMR is also making available \$300 million over 2015–2017 for infrastructure safety measures targeting high-severity crash sites on state-controlled and local government roads.

DTMR continues to communicate current and prospective infrastructure maintenance and renewal gaps to Queensland Government agencies and Infrastructure Australia through funding submissions and its total asset management plan. This has helped DTMR to increase its funding allocation of state-based funding for maintenance and renewal. However, it forecasts that by 2019–20, the asset sustainability ratio will be 67 per cent (scenario one), which falls well short of the 99 per cent it recommended in scenario two of its total asset management plan.

Road conditions

Road network condition reflects the performance of the network in terms of its suitability for the traffic demands placed upon it. DTMR uses a variety of performance measures to monitor road conditions, because there is no single measure for a definitive description of the condition of a road.

Results from the 2015–16 *State of the Asset Report* show that some of DTMR's challenges include:

- pavement age—This is a strategic indicator of the increasing risk to DTMR, in terms of sustainability. It measures the proportion of pavements which exceed the expected design life
 - In 2015–16, 58.5 per cent of the sealed road network pavements on state-controlled roads exceeded their expected design life (generally 20 years).
 - Twenty-one per cent of pavements have an age over twice their design life.
- seal age—This measures the performance of road surfacing/seals to prevent moisture ingress and maintain the serviceability of existing aged pavements. Ageing surfaces increase the risk of pavement failure during significant rainfall events

The percentage of seals that exceed nominal age of surfacing increased from 19 per cent in 2009–10 to about 27.5 per cent in 2015–16.

- major culvert condition—Twenty-three per cent of major culverts have a condition rating of poor or very poor. Steel culverts pose a significant future risk of failure due to corrosion. There are 930 major steel culverts on the state-controlled road network, 378 of which have a condition rating of poor or very poor.

DTMR addresses these issues by prioritising how it allocates state and federal maintenance funding through its *Queensland's Road System Performance Plan*. This is DTMR's investment plan to address current and emerging deficiencies in the state-controlled road network. For 2017–18 to 2020–21, out of a total funding source of about \$3.8 billion from state and federal funding, DTMR has allocated:

- \$766 million for pavement rehabilitation, which includes applying suitable treatments to identified sections of road to improve their structural capacity to extend their life
- \$848 million for surfacing treatments, which includes full-width and partial-width resurfacing treatments for pavement structures of all types.

3. Integrating land use and transport plans

In this chapter we assess how well the Department of Infrastructure, Local Government and Planning, the Department of Transport and Main Roads and local councils collaborate to develop plans and policies that integrate land use and transport planning.

We also examine whether the regional and transport plans are based on evidence and analysis of the challenges facing the transport system.

Introduction

To effectively integrate land use and transport:

- State government departments need to work together and with local councils to define clear, integrated transport outcomes for regional areas. This needs
 - clear, integrated transport goals and objectives for regional areas
 - problems to be identified and prioritised
 - strategies or options to address the problems
 - detailed modelling and analysis of transport trends to help identify problems and strategies to address them
 - effective engagement to ensure departments consider stakeholder interests.
- There needs to be clear policy to show how state departments and local councils should make decisions that affect land use and transport.
- State government departments need to work with local councils to ensure local government actions align the with state's vision and policy framework.

Since January 2015, state government departments have developed the planning framework and are working on components within it to improve the way land use and transport planning is integrated in Queensland.

Department of Infrastructure, Local Government and Planning (DILGP)

DILGP has:

- published the *State Infrastructure Plan* (Part A: Strategy), which describes the approach to infrastructure, and the first annual update to the *State Infrastructure Plan* program (Part B: Program)
- published the *South East Queensland Regional Plan (ShapingSEQ)* in August 2017 as the government's framework for managing change and growth
- revised planning instruments
 - the *Planning Regulation 2017*, which sets out the triggers and thresholds for when development applications are referred to the state government for assessment
 - the *State Planning Policy 2017*, which outlines the state's interests in planning and development. It provides direction to local government about how the state's interests should be taken into account in local planning and development assessment
 - the *State Development Assessment Provisions 2.1*, which set out matters of interest to the state government for development assessment and provide the criteria used to assess development applications where the state has a role as assessment manager or referral agency
- updated the approach to land use planning through the new *Planning Act 2016*.

Department of Transport and Main Roads (DTMR)

DTMR:

- has completed the *Transport Coordination Plan 2017–2027* as the strategic framework for planning and managing transport over the next decade
- is developing and drafting
 - regional transport plans, which DTMR aims to draft for all of Queensland's regions by February 2018
 - a Queensland Transport Policy, which will provide the government's longer-term vision for managing the technological and other changes that are likely to transform transport over the next 30 years.

These policies and strategies recognise the critical role of transport and the significant challenges posed by rapid demographic growth and change, funding limitations, and technological changes. Meeting these challenges requires more integrated land use and transport planning. It also requires the state to make the best use of available capacity, better manage demand, and only build new assets once these measures have been applied.

We examined whether:

- DILGP effectively engages with DTMR and local councils to develop and update the State Planning Policy and evidence-based regional plans that target clearly defined and integrated outcomes
- DTMR has adequately engaged with DILGP and local councils to develop evidence-based regional transport plans and infrastructure strategies
- DILGP effectively engages with DTMR and local councils to develop priority development area schemes that take account of land use and transport coordination requirements.

Developing regional land use plans

DILGP's engagement with departments and local councils

Since 2015, DILGP has engaged with and considered the perspectives of DTMR and local councils to develop and update the:

- *State Infrastructure Plan*
- State Planning Policy
- *South East Queensland Regional Plan (ShapingSEQ)*.

DILGP completed most of the work for developing *ShapingSEQ* between April 2016 and August 2017. This happened after similar processes had stalled and the government renewed its demands for departments to create a framework they could use to manage the challenges faced by the state. DILGP released a draft plan in October 2016 and continued to engage with local councils and state agencies until it published the final plan in August 2017.

DTMR and the South East Queensland local councils we sampled in this audit (Brisbane City Council and Sunshine Coast Regional Council) are positive about DILGP's consultative approach to regional planning. All acknowledge the opportunities provided to contribute to *ShapingSEQ*. DTMR noted the much higher level of cooperation between agencies compared to past regional plans. Local councils also acknowledged DILGP's clear and consistent actions to consult and engage with them on draft plans and policies.

Taking account of agencies' feedback

DILGP largely addressed agencies' views when it developed the *State Infrastructure Plan* and *ShapingSEQ*.

Department of Transport and Main Roads

Our meetings with the DTMR group coordinating this audit have shown that DILGP:

- closely involved DTMR and other departments in the development of these plans
- requested and welcomed DTMR's regular input from a range of staff
- seconded a senior DTMR resource for three months to help it develop *ShapingSEQ*.

Local councils

Councils were mostly supportive of the directions taken in the *State Infrastructure Plan* and *ShapingSEQ*. There are clear examples of where councils' inputs have influenced regional planning outcomes.

Councils also identified gaps and omissions that DILGP was, in many cases, constrained in its ability to address. This was because some changes suggested by agencies:

- ran contrary to the government's position (for example, influencing the location of employment or requesting government to be more precise and committed about projects in the five- to fifteen-year timeframe)

or

- related to changes or additions in areas where government policy had not yet been finalised and declared (for example, a range of measures to address the unsustainability of the way infrastructure is funded and demand is managed).

Brisbane City Council, Sunshine Coast Regional Council, and many other respondents gave feedback on the *State Infrastructure Plan* and for the government to:

- provide greater clarity and certainty about five- to fifteen-year infrastructure commitments
- consider a wider range of demand management (to influence travel behaviour) and funding measures or reforms so future transport demands can be adequately managed.

In terms of the forward funding commitments, the *State Infrastructure Plan* provides certainty only up to year four. The 'Connect' background paper (prepared to support the implementation of *ShapingSEQ*) explains this is a departure from earlier plans that included lists of longer-term projects which, according to this paper, 'were seen by many as "wish lists" of unfunded projects'. For the longer-term, the government's preferred approach through the *State Infrastructure Plan* is to provide certainty through its commitment to addressing service needs rather than specific solutions.

Planning based on evidence

To inform the government's policies and directions in the *State Infrastructure Plan* and *ShapingSEQ*, DILGP and DTMR provided an adequate basis for:

- pursuing an integrated land use and transport approach
- prioritising reform, demand management, and making the best use of existing assets over the provision of new infrastructure to cope with projected demands and challenges (for example, population growth and the past underinvestment in maintaining and renewing infrastructure).

DTMR has described the challenge of a constrained funding environment in its *Transport Coordination Plan 2017–2027*, and more fully in a background paper it has prepared for the Queensland Transport Policy.

However, there is a risk that the recommended directions and strategies underpinning *ShapingSEQ* will not be sufficient to maintain current levels of service and achieve intended transport outcomes.

In particular, there is a risk that managing population growth through a combination of greater residential densities and improving the transport system will not meet *ShapingSEQ*'s preferred transport future or outcomes because:

- DTMR's modelling of the transport system performance under most *ShapingSEQ* assumptions shows average travel times will increase significantly. (We provide detail on this under 'Modelling *ShapingSEQ* transport outcomes'.)
- DTMR's research on infrastructure funding shows clear risks to providing and sustaining the infrastructure needed to adequately cope with population change.
- Evidence from other jurisdictions (for example, Infrastructure Victoria) shows that continuing with traditional approaches to infrastructure provision and funding is likely to be unsustainable without further demand and revenue management measures.

Modelling *ShapingSEQ* transport outcomes

The Brisbane Strategic Transport Model is a multi-modal transport model that covers the central part of South East Queensland encompassing the greater Brisbane area. DTMR developed the current Brisbane Strategic Transport Model in 2008 and continues to manage it. It makes the model available through a license agreement to local councils and to organisations who perform transport-related work on behalf of the Queensland Government.

DILGP seconded a senior transport modeller from DTMR to model the transport outcomes of the draft version of *ShapingSEQ* using the Brisbane Strategic Transport Model. The purpose of this was to understand the impact on the transport system that any demographic and land use changes proposed by *ShapingSEQ* would have (for example, to test the impact of increased population and employment, and specifically, the impact of assuming a denser pattern of settlement). DILGP did not engage DTMR to model the transport outcomes for the final version of *ShapingSEQ*, even though it included different performance measures from the draft version.

ShapingSEQ includes five transport-related performance measures in the 'measures that matter' section of the plan. All five performance measures show that the preferred future in South East Queensland is for outcomes to improve in all those areas (for example, reduced travel time and distance across all modes of transport). However, DILGP will rely on data which is released every five years (like census data) to monitor these measures. DILGP did not engage DTMR to forecast transport outcomes for the measures in the final version of *ShapingSEQ*. DTMR advised us that it does not have the capability to model the *ShapingSEQ* transport metrics which cover all modes of transport because the output from its model measures vehicle time and distance.

In the modelling DTMR did on behalf of DILGP for the draft version of *ShapingSEQ*, it did not set out to determine the exact network requirements, but rather to highlight the importance of intra-regional corridors at a regional level. It also helped DILGP to identify preferred areas for higher density development.

It is important to note that the model does not include all aspects of *ShapingSEQ* policies, but it includes substantial components that provide valuable information on the potential transport outcomes. The most significant exclusion from the model is the impact of employment redistribution which could occur in the denser pattern of settlement *ShapingSEQ* proposes. This could change people's travel behaviours (from *ShapingSEQ*'s strategies for areas of regional economic clusters).

DTMR's model assumed unchanged employment distribution because of the government's position that it is difficult to influence the location of employment. As a result, the focus was on creating denser residential areas with good public transport and access to employment.

ShapingSEQ includes a strategy to deliver high-frequency public transport services. DTMR's model assumes that between 2016 and 2041 the total kilometres serviced by public transport will increase by 53 per cent—from 262 813 in 2016 to 402 003 in 2041.

The model results show (for this part of South East Queensland) changes in key transport performance metrics between the 2016 model results and those for:

- a 2041 base incorporating expected population and employment changes and transport capacity and service improvements broadly consistent with *ShapingSEQ*
- a 2041 *ShapingSEQ* forecast similar to the 2041 base except for population, with a similar level of population redistributed to a denser pattern through greater levels of infill development (which is development occurring on land inside existing urban areas).

Comparing *ShapingSEQ* aspirations with the model

The model results highlight the risk that key transport outcomes will miss *ShapingSEQ*'s preferred future of improved travel time and distance (in the 'measures that matter' section). For example, instead of achieving a reduction in average travel times for vehicles, the model forecasts an increase in average journey times of about 30 per cent (greater Brisbane area). DILGP and DTMR have not yet modelled the impact of the *ShapingSEQ* strategy for areas of regional economic clusters to determine if this will help bridge the gap between modelled and preferred outcomes.

DTMR provided us with data for the model area showing the 2016 statistics for population, employment, road, and travel metrics against its forecasts for 2041 under two scenarios (2041 base and 2041 *ShapingSEQ* model). This shows that a 50 per cent increase in population from 2016 to 2041 will place more pressure on the existing and proposed transport infrastructure to the point where user experience on the roads will decrease, with lower speed, more kilometres travelled, and longer travel times. We have included this data in Appendix G (Figure G1).

We analysed the measures from DTMR's modelling to assess if the results were consistent with *ShapingSEQ*'s preferred future of improved travel time and distance. While the final *ShapingSEQ* measures this across all models of transport to measure people's travel experience, DTMR's model only measures travel time and distance for vehicles. While this makes it difficult to compare, it shows whether *ShapingSEQ*'s preferred future correlates with DTMR's modelling data for vehicles. According to 2016 census data for Queensland, 84.7 per cent of people who travelled to work on census day travelled by private vehicle only.

Both the base 2041 and the 2041 *ShapingSEQ* model (denser settlement pattern) forecast significant, adverse trends for the key metrics we analysed. The percentage change indicates that vehicle travel times and distance are expected to worsen. Figure 3A shows the results of the model.

Figure 3A
Comparison of *ShapingSEQ*—preferred transport future against the Brisbane Strategic Transport Model (BSTM)

BSTM measure (vehicles)	BSTM base 2041 vs. 2016	BSTM <i>ShapingSEQ</i> 2041 vs. 2016	Draft <i>ShapingSEQ</i> preferred future (all modes)	Final <i>ShapingSEQ</i> measure	Final <i>ShapingSEQ</i> preferred future (all modes)
Average trip length (kilometres)	↑ 11.4 per cent (12.7 to 14.1 km)	↑ 10.7 per cent (12.7 to 14.0 km)	↓	Average travel distance all trips	↓
Average trip time (minutes)	↑ 31.6 per cent (15.2 to 19.9 min)	↑ 29.6 per cent (15.2 to 19.6 min)	↓	Average travel time all trips	↓
Vehicle km travelled per capita per year (kilometres per person per day)	↑ 4.3 per cent (29.2 to 31.2 km per person per day)	↑ 2.8 per cent (29.9 to 30.7 km per person per day)	↓	—	—

Source: Queensland Audit Office from the draft and final versions of *ShapingSEQ* and BSTM model results summary.

We found no evidence that DILGP completed (or required DTMR to complete) a report of the modelling exercise. While DILGP advised us their senior officers discussed the results of the transport modelling with a senior transport modeller they seconded from DTMR, there is no record of how DILGP considered transport modelling results in setting preferred transport trends.

While *ShapingSEQ* refers to the performance trends as SEQ’s preferred future, it does not mention the risk of not achieving these aspirations. It will be critical to monitor this risk and the actual trends, compared to planned, as part of *ShapingSEQ*’s ongoing monitoring and measuring success plans.

We understand from our discussions with DTMR that comprehensively modelling all aspects of *ShapingSEQ* would have taken too long to fit within the required timelines and would have been very expensive. However, the modelling it did complete on behalf of DILGP contained valuable information that should have been better documented. For example, DILGP and DTMR did not adequately document the objectives, scope, assumptions, results, conclusions, and any limitations of their analysis. There is also no evidence that DILGP has fed the model results into a risk management framework to be monitored and managed as part of *ShapingSEQ*.

With this knowledge of potential adverse transport outcomes in the future, the Queensland Government needs to examine it further, and put in place actions to effectively monitor and manage it.

Modelling Kingsford Smith Drive transport outcomes

To further explore the challenges facing the transport system, we asked DTMR to model traffic volumes and speeds on a specific corridor to examine the impacts of population and employment growth.

We selected Kingsford Smith Drive between the Gateway Motorway and Breakfast Creek. Its demographic and employment trends make it a good case study of the transport challenges facing Brisbane over the next 25 years.

Kingsford Smith Drive serves significant residential areas in the north and north-east of Brisbane. The intensity of residential development in these areas is forecast to increase under *ShapingSEQ*. In terms of employment, Kingsford Smith Drive is likely to play a key role in linking its catchment population and other residential populations in northern and inner Brisbane to significant employment clusters to the east and south-east of the corridor, and to the major employment opportunities in inner and central Brisbane.

We requested modelling of the current (2016) traffic volumes and the forecast traffic volumes for 2041 that informed the *ShapingSEQ* regional plan.

Appendix G contains further detail on the model. Case study 1 shows a summary of the results of the model.

Case study 1

Kingsford Smith Drive

The model assumes that between 2016 and 2041, Kingsford Smith Drive expands from a four-lane to six-lane road.

Traffic volumes

The *Brisbane Strategic Transport Model* (the model) forecasts significant increases in traffic volumes along Kingsford Smith Drive of more than double in both directions for the morning peak and almost double in the afternoon peak.

Traffic speeds

Increasing the capacity of this corridor from two to three lanes in each direction does not fully mitigate the impact of increased traffic volumes. The model forecasts that by 2041, traffic speeds on Kingsford Smith Drive will reduce significantly by between 30 per cent and 70 per cent for over half the corridor for the most highly trafficked directions in the morning and afternoon peaks. We found there was a mostly smaller speed reduction for travellers in the lower volume directions.

Note: The modelling for this case study uses 2016 land use projections data. The data Brisbane City Council used to develop the Kingsford Smith Drive business case was based on land use and growth projections Queensland Government provided, which were current at the time Brisbane City Council prepared the business case (2013–2015).

Source: Queensland Audit Office.

The modelling above demonstrates that the government has some real challenges to manage if it is to achieve its planned transport outcomes. The *Queensland Transport Policy* is intended to develop and define policy for measures that could mitigate these challenges. However, it is a work in progress and the timelines for developing, engaging on, and finalising government policy are unclear. Without the *Queensland Transport Policy*, the basis for planning is constrained to more traditional measures used to address emerging challenges.

Developing regional transport plans

Regional planning—historical

Section 22 of the *Transport Planning and Coordination Act 1994* requires DTMR, through its chief executive, to develop and integrate regional transport plans that complement the objectives of regional and land use plans.

Over the last decade, there has been inconsistent coverage of regional transport plans for Queensland regions. All Queensland regions have either outdated, unfinalised, or no regional transport plans.

Of the 12 regions in Queensland:

- six regions, with a combined total population size of greater than one million people, have not had their regional transport plan revised since at least 2004 (with one revised in 2000)
- three regions with smaller population sizes have no regional transport plans
- one region has a draft of a current regional transport plan, which DTMR has published for comment.

These timing gaps limit the extent to which DTMR can integrate its transport plans with land use plans, mostly in regional Queensland. DTMR maintains other plans such as modal network plans, corridor, area, and route plans to mitigate these gaps, but the absence of regional transport plans limits the effectiveness of DTMR's strategic framework for coordinating transport planning. External stakeholders such as local councils and industry bodies/businesses lack an accurate reference point on DTMR's plans for the transport network in their areas and how that affects their transport needs or local transport and land use plans.

Appendix F shows the status of regional land use and transport plans for each Queensland region.

New generation of regional transport plans

DTMR has recognised this problem and has begun to implement a new approach of developing transport plans for all regions, even if the regional land use transport plans for those regions have not been updated recently. DTMR wants to rapidly put in place regional transport plans across Queensland as a foundation for methodical and structured regional, area, and corridor planning. The plans will guide further planning activities in each region over the next 15 years. In *ShapingSEQ*, DILGP recognised the important role that regional transport plans will have to address the transport challenges affecting Queensland's regional areas.

The purpose of the regional transport plans is to provide:

- an agreed vision and understanding of the challenges facing each region
- short- to medium-term actions to fully understand these challenges
- actions/priorities to address them.

DTMR aims to draft regional transport plans for all regions by February 2018. In doing so, it is engaging stakeholders, including DILGP, regarding the land use elements, and each respective local council regarding local land use and transport planning. The first pilot regional transport plan for the Mackay, Isaac and Whitsunday region is in an advanced draft stage, and consultation for the remaining regions is in progress.

Integrating regional transport plans with regional land use plans

We compared the January 2017 draft *Mackay, Isaac and Whitsunday Regional Transport Plan* with the 2012 *Mackay, Isaac and Whitsunday Regional Plan* to test how well integrated the two plans were.

The two plans are broadly consistent in terms of key transport goals and outcomes. While grouped differently, the overall goals and intended outcomes of the regional plan and regional transport plan include the same objectives. There are key components in common: integrated transport system; resilience and safety of infrastructure; and using transport to facilitate employment and liveability.

But, in terms of input assumptions, the two plans are not consistent nor integrated. The regional transport plan is not clear about:

- its consistency with the regional plan's 2012 goals, intended outcomes and input assumptions, and any actions required to integrate these plans
- how the actions mentioned in the achievements to date section match the regional plan's transport-related actions.

The 2012 *Mackay, Isaac and Whitsunday Regional Plan* recognises the need for an integrated transport network throughout the region to enable communities to become better connected and more accessible. The desired regional outcomes express a number of core transport principles, including providing:

- highly connected transport networks to facilitate strong links within and between communities and activity centres to enable high levels of accessibility, and route and mode choice
- an efficient, sustainable, and integrated transport system in the region that is safe and accessible
- for the efficient and effective movement of freight to support regional growth.

DTMR included similar transport principles in the draft 2017 *Mackay, Isaac and Whitsunday Regional Transport Plan*. However, it's unclear what progress DTMR has made on the regional plan's eight transport-related actions. While the plan includes a section on achievements to date, it is not clear how the actions mentioned in this section match the regional plan's transport-related actions. It is also unclear how the 49 actions and 24 opportunities in the draft regional transport plan specifically relate to the regional plan.

The assumptions that support the two plans, like population forecasts, have changed. The 2012 *Mackay, Isaac and Whitsunday Regional Plan* relied upon 2006 census data, while the draft 2017 *Mackay, Isaac and Whitsunday Regional Transport Plan* used 2011 census data (the 2016 census data wasn't released at the time DTMR prepared the draft plan). DTMR and DILGP need to clarify the implications of the changes in the population forecasts for these plans and set out appropriate actions to address the changes and harmonise the plans.

Figure 3B shows how the population forecasts for these two plans differ, with the regional transport plan having lower growth forecasts to 2036. The regional transport plan does not address what effect changes in population forecasts have on the integration between land use and transport planning.

Figure 3B
Population forecasts—regional plan and regional transport plan for the Mackay, Isaac and Whitsunday regions

Council area	2011— regional plan	2016— regional transport plan	2031— regional plan	2036— regional transport plan
Mackay	121 400	126 370	187 400	171 313
Isaac	23 000	24 915	37 000	31 933
Whitsunday	35 750	35 213	55 500	46 652

Source: Queensland Audit Office.

Defining transport problems for the region

The draft regional transport plan states that DTMR aligns its approach to regional transport planning with the *Australian Transport Assessment and Planning Guidelines*. These guidelines recommend that:

- problem identification, analysis, and prioritisation should happen at every level of the planning process (during statewide, regional, and local planning)
- problem identification should be based on empirical observations, such as data and information obtained from surveys, demand modelling, and interviews
- problem assessments involve developing a sound understanding of the extent, scale, cause, and effect of problems as the foundation for developing options
- problems should be prioritised on the basis of sound evidence.

Because DTMR is developing 12 regional transport plans by February 2018, it is not practical to undertake a detailed assessment of the problems facing each region before it finalises each plan. For some regions, planning activities already undertaken, such as area, corridor, or modal plans, will inform the problem identification in the regional transport plans. But this depends on what planning activities DTMR has previously conducted in a region.

Therefore, the regional transport plans have an important function in setting agreed actions that will facilitate more detailed and targeted problem analysis. DTMR will need to maintain and update the plans as it completes further planning studies.

The *Mackay, Isaac and Whitsunday Draft Regional Transport Plan* includes agreed goals, four-year *Queensland Transport and Roads Investment Program* (QTRIP) commitments, and actions to provide the information to better understand the problems and inform additional actions. The plan has 49 actions and about half this number of opportunities. The actions are mostly about developing plans or strategies; undertaking studies or planning; and investigating feasibility or opportunities. The monitoring and completion of the plan's actions and opportunities will require careful management. These actions are not currently timed, consistently allocated to a responsible party, or explicitly resourced.

This shows that DTMR still has significant work to do to define the problems for the regions. The actions in the plan will help DTMR develop a stronger empirical basis for understanding regional problems and designing appropriate actions to address these.

DTMR's new generation of regional transport plans will help it to prioritise what further planning studies it will conduct at the area, corridor, route, and link level. DTMR did not conduct regional-level modelling to inform problem definition and potential solutions in the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan*. This was because it considered data, previous study findings and other sources of evidence it already had, and the value of, cost and time constraints of conducting further analysis. The regional transport plans will be an important mechanism for guiding how DTMR will apply its strategic modelling capability to the areas of greatest need.

DTMR's engagement with departments and local councils

DTMR has adequately engaged with DILGP and local councils to develop the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan*. It has followed a clear, highly structured process. This has allowed DILGP and affected local councils to provide their perspectives on the plan's goals and content. DTMR is following a similar process for the remaining 11 regional transport plans it is developing for delivery by February 2018.

DTMR can show how it has taken account of agencies' inputs in developing the first, pilot regional transport plan. We confirmed that DTMR, through its consultants, has documented and accounted for agency comments for the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan*. Agencies broadly agree on the high-level outcomes.

DTMR showed us that it received written feedback from the federal Department of Infrastructure and Regional Development that it:

- commended DTMR for its commitment to engage with all levels of government to develop a shared strategic vision for Queensland's transport system
- is pleased the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan* aligns with and considers key federal government objectives, priorities and initiatives.

Accelerating planning and development access

The *Economic Development Act 2012* (ED Act) enables the government to declare an area of land as a priority development area (PDA). This provides for a more accelerated planning and development process than normally applies to land developed under the *Sustainable Planning Act 2009* and now the *Planning Act 2016* (the planning Acts).

There are 28 PDAs in Queensland:

- Seventeen PDAs were declared under the *Urban Land Development Act 2007* (ULD Act). Under this Act, these PDAs were formerly known as urban development areas (UDAs).
- Eleven PDAs have been declared under the ED Act. This Act replaced the ULD Act in February 2013. The Urban Land Development Authority (ULDA), a statutory authority under the UDLA Act, was replaced by Economic Development Queensland (EDQ), a commercialised business unit within DILGP. EDQ transitioned existing UDAs to PDAs under the new ED Act.

We examined the following four PDAs as case studies:

- Andergrove—declared 23 April 2010
- Fitzgibbon—declared 25 July 2008
- Caloundra South—declared October 2011
- Maroochydoore—declared July 2014 and amended April 2016.

Agencies' engagement to develop priority development areas development schemes

The agencies responsible for the four PDAs we reviewed (EDQ, Sunshine Coast Regional Council, and Mackay Regional Council) adequately engaged relevant state agencies and local councils to understand and address transport issues likely to affect the PDAs' objectives and state planning interests. EDQ recognises the need to define transport objectives as part of PDAs' approved development schemes and to appropriately monitor and respond to emerging transport outcomes as PDAs are implemented.

We found evidence that EDQ assessed the transport requirements and gave the relevant state agencies and other stakeholders the opportunity to raise issues that might affect the transport outcomes. EDQ considered these issues when it finalised the development schemes. The submission reports for each of the PDAs describe these issues and how they have been considered and addressed.

For the most recent (Maroochydore) PDA we found that EDQ had documented how it addressed the State Planning Policy requirements before finalising the development scheme. EDQ informed us that the level of record-keeping and documentation was not as complete for PDAs declared and developed before February 2013 (under the ULDA Act). Therefore, it was not able to provide specific examples of how it addressed the State Planning Policy current at the time these development schemes were finalised.

4. Measuring and monitoring performance

In this chapter we look at whether the Department of Transport and Main Roads and the Department of Infrastructure, Local Government and Planning effectively measure and monitor the performance of transport systems and regional plans.

Introduction

Measuring and monitoring progress compared to plan is important to ensure responsible departments effectively achieve planned transport system outcomes. This requires departments to have:

- appropriate data and measures to track progress against objectives
- systems to collect, record and analyse relevant data
- experienced staff to analyse and provide insights into the results of performance data
- effective governance arrangements to take corrective action on any adverse performance trends.

We examined whether:

- the Department of Transport and Main Roads (DTMR)
 - develops and applies performance measures and frameworks for evaluating the effectiveness of existing and proposed transport systems
 - has developed a performance monitoring framework for the new generation of regional transport plans
- the Department of Infrastructure, Local Government and Planning (DILGP) has developed a monitoring and performance framework for the *South East Queensland Regional Plan (ShapingSEQ)* and for priority development areas.

Monitoring the transport coordination plan

The *Transport Planning and Coordination Act 1994* specifies that the chief executive is to evaluate the effectiveness of existing and proposed transport systems in the state as part of ensuring more effective integration of land use and transport planning.

Evaluating the effectiveness of the existing transport system

The three key documents that make up DTMR's performance measurement framework—the *Queensland Transport Snapshot*, *Service Delivery Statement*, and *State of the Asset Report* provide a solid performance-monitoring foundation. They contain useful information and have the potential to provide decision-makers with unique insights into transport trends.

The purpose of each of these documents is as follows:

- The *Queensland Transport Snapshot* report contains the performance measures for the 2013 draft *Transport Coordination and Delivery Plan* objectives.
- DTMR's service delivery statement (SDS) describes each of its service areas and their objectives. It includes efficiency and effectiveness performance measures for each area.
- The *State of the Asset Report* describes the condition and performance of the transport infrastructure network (including roads, structures, and maritime assets).

The report most relevant to integrating transport planning is the *Queensland Transport Snapshot* report.

Queensland Transport Snapshot report

After completing the draft 2013 *Transport Coordination and Delivery Plan* DTMR developed the *Queensland Transport Snapshot* report to:

- provide DTMR's senior governance body, the Infrastructure Investment Committee, with an update on infrastructure performance outcomes over a five-year period
- confirm and validate transport infrastructure portfolio metrics for DTMR to use across the entity
- identify gaps and mature DTMR's existing benefits reporting capability.

DTMR has developed and presented two *Queensland Transport Snapshot* reports to the Infrastructure Investment Committee for the periods 2010–11 to 2014–15 and 2011–12 to 2015–16.

DTMR developed a web-based application to present the *Queensland Transport Snapshot* results. This application is only accessible to DTMR staff, but could form a valuable and effective way of communicating performance information to external audiences such as parliament and the wider community.

DTMR's *Queensland Transport Snapshot* reports show that DTMR has improved the way it measures and communicates the performance of the existing transport system:

- While the former Queensland Transport and Department of Main Roads defined clear transport objectives for the 2008 transport coordination plan, it did not develop an adequate performance measurement framework.
- DTMR developed a better framework to report on the objectives in the 2013 draft transport coordination plan and reported the results for two years (2014–15 and 2015–16). The framework included a range of indicators to measure the efficiency, safety, and integration of the existing transport system.

Queensland Transport Snapshot performance measures

DTMR can improve the *Queensland Transport Snapshot* report by improving the performance measures for:

- geographical coverage
- transport system goal coverage.

The metropolitan region of Queensland, which includes the Brisbane, Ipswich, and Redland councils, is the most densely populated area of Queensland, with the highest traffic volumes and most congestion. The measures DTMR reported in the 2015–16 *Queensland Transport Snapshot* were heavily focused on the metropolitan region. Seven of the nine indicators for road-based efficiency and reliability measures applied only to the metropolitan region.

In the 2016–17 *Queensland Transport Snapshot*, during the conduct of our audit, DTMR introduced four new measures that cover areas outside of the metropolitan region.

DTMR needs to continue to expand the geographical coverage of several measures so it can adequately measure the extent to which it achieves statewide transport coordination plan objectives. In 2017–18, DTMR plans to expand its efficiency and reliability measures to other regions in South East Queensland and measure network availability (for example, relating to flooding and incidents) and reliability for freight for the regions outside of South East Queensland.

Figure 4A shows the measures DTMR used in its 2016–17 *Queensland Transport Snapshot* report and the areas of coverage.

Figure 4A
Geographical coverage for Queensland Transport Snapshot measures—2016–17

<i>Queensland Transport Snapshot measures</i>	<i>Geographical coverage</i>
Efficient and reliable	
Average travel time road (mins per 10km)	Metropolitan region (2012–13 to 2016–17)
Average travel time typical bus (12 routes)	Metropolitan region (2012–13 to 2016–17)
Average bus journey speed (12 routes)	Metropolitan region (2012–13 to 2016–17)
Percentage of road network with reliable travel times	Metropolitan region (2012–13 to 2016–17)
Variation in average bus travel time (12 routes)	Metropolitan region (2012–13 to 2016–17)
Percentage of the network with good productivity	Metropolitan region (2012–13 to 2016–17)
Frequency and duration of flood incidents (new measure)	All of Queensland (2011–2015)
Frequency and duration of unplanned incidents	All of Queensland (2011–2015)
Cost of congestion (new measure)	Metropolitan, North Coast, and South Coast districts (2015)
Growth in heavy vehicle use throughout the state-controlled network (new measure)	Queensland state roads (six regions 2011–12 to 2015–16)
Growth in active transport (new measure)	Greater Brisbane and Cairns (2015–2017)
Integrated	
Residents with good accessibility to services	10 Queensland urban areas (2013–2016)
Proportion of people within 400m of a public transport stop/station	Queensland urban areas (2012 and 2016)
Proportion of bus stops that are compliant with the <i>Disability Discrimination Act (1992)</i>	Queensland urban areas (2015–16)
Safe and secure	
Crashes/injury severity by location	All of Queensland (2012–2016)
Crashes/injury severity by speed limit	All of Queensland (2012–2016)

Source: Queensland Audit Office using data provided by the Department of Transport and Main Roads.

In addition, DTMR can improve the coverage of transport goals in its *Queensland Transport Snapshot*. It has gaps in its measures to assess:

- freight efficiency and reliability
 - The 2015–16 *Queensland Transport Snapshot* included direct freight-related measures of the tonnes carried by mode and road tonne kilometres carried by different vehicles, but these do not measure efficiency or reliability. DTMR advised us it is addressing these gaps by developing performance measures with datasets it has recently acquired for the state-controlled road network, and by developing the *Queensland Freight Model*.
- public transport efficiency, reliability, and integration
 - The 2015–16 *Queensland Transport Snapshot* includes average and variations in bus travel times and on-time running for morning, afternoon, and off-peak periods for 12 routes in the metropolitan region.
 - This does not cover other forms of public transport, such as trains and ferries, and is limited for buses in terms of the number of routes and information provided.
 - The bus measures DTMR provided in the *Queensland Transport Snapshot* are a small proportion of all bus routes (a sample of 12 out of 275 daytime bus routes in South East Queensland).
 - The *Queensland Transport Snapshot* includes no performance measures for intermodal travel. DTMR provides additional performance information in its annual service delivery statements, which include bus, rail and ferry customer satisfaction (also for taxis), patronage, passenger subsidies, and CityTrain overall service delivery and peak on-time running. It also provides a quarterly TransLink tracker performance report and monthly performance reports on the TransLink website.
- safety and security related to public transport and ports
 - The 2015–16 *Queensland Transport Snapshot* includes information on road crashes throughout Queensland but nothing on injury and fatality risks for other modes of transport, the number of crimes committed on public transport, or passenger perceptions of safety while using public transport.
 - The *Service Delivery Statement* includes marine, rail and road fatality rates and hospitalised injury rates for rail and road travel, but DTMR does not use these in *Queensland Transport Snapshot* reporting.

The *Transport Coordination Plan 2017–2027* indicates that the transport performance measures may change and evolve over time, and that DTMR will update the measures as required to ensure they continue to provide effective measurement of performance towards the objectives for the transport system. This also applies to the *Queensland Transport Snapshot*.

Performance framework for the *Transport Coordination Plan 2017–2027*

DTMR included a performance measurement framework in the January 2017 draft version of the transport coordination plan. However, during the audit, we identified gaps in the measures DTMR included in the framework. The plan had limited geographical coverage and did not include measures for two of the five transport objectives—customer experience and affordability, and the environment and sustainability.

Following feedback we provided during this audit, DTMR has now included performance measures it has outside of the *Queensland Transport Snapshot* report so it can measure all five transport coordination plan objectives. It has also expanded the geographical coverage of its performance measures.

DTMR has not documented a consolidated analysis of performance trends for all of its datasets linked to its transport coordination plan. While it presents the *Queensland Transport Snapshot* to the Infrastructure Investment Committee, this is only focused on transport infrastructure performance. DTMR now needs to integrate all of its performance reporting data sources to present a consolidated analysis that shows to what extent it achieves the transport coordination plan objectives.

Evaluating the effectiveness of proposed transport systems

DTMR has developed a suite of strategic and more locally-focused transport modelling tools to assess the impact of proposed statewide, regional, and local policies and plans and specific projects. DTMR's Transport Analysis Unit has developed a range of models and associated capabilities to analyse the functionality of networks, develop transport data and analysis products, and complete strategic modelling analysis.

DTMR regularly applies this capability when it develops business cases to assess specific transport projects. We have also seen some evidence of how DTMR strategically applies this capability. For example, it:

- estimates the impact of travel demand management measures on the wider Brisbane transport network out to 2031
- models the impact of network improvements and greater population densities for the part of the South East Queensland region covered by the *Brisbane Strategic Transport Model*.

DTMR used its strategic modelling capability to assist DILGP in developing *ShapingSEQ*. It built a model to highlight the impact on the transport system of any demographic and land use changes proposed by *ShapingSEQ*. This helped DTMR to:

- identify that at least five intra-regional transport corridors would be required to facilitate further sustainable growth within the region
- assist DILGP to identify preferred areas for increasing higher density development.

However, the documentation DILGP and DTMR provided did not adequately explain:

- the rationale for its strategic modelling approach, including the key assumptions made
- how these results informed the development of *ShapingSEQ*.

DILGP advised us that its senior officers discussed these matters with the senior transport modeller it seconded from DTMR, but they did not document these discussions.

The modelling results we reviewed for the Kingsford Smith drive were consistent with the results we reviewed for *ShapingSEQ* (Chapter 3). This demonstrates that DTMR has a consistent approach to evidence-based planning to support integrated transport and land use planning.

Monitoring *ShapingSEQ* and regional transport plans

The progress monitoring and performance measurement frameworks for *ShapingSEQ* and the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan* need to be clearer about how DILGP and DTMR will:

- monitor, report and manage progress on actions (There is insufficient information on timing, resourcing, and responsibility for actions.)
- measure, report on, and manage performance. DILGP and DTMR have listed intended performance trends or metrics in the plans, but there is insufficient detail on how they will apply these measures, report on progress, and respond to current and emerging risks that threaten to undermine these plans' objectives.

ShapingSEQ

The final version of ShapingSEQ includes a clearer and more detailed description of the governance arrangements for implementing and monitoring the plan.

ShapingSEQ includes two mechanisms for measuring performance:

- Measures that matter—key indicators of performance against each of *ShapingSEQ*'s five key themes
- SEQ Growth Monitoring Program—reporting on the relationship between land supply and development across local government areas.

In reviewing the draft plan we focused on the 'Connect theme' 'measures that matter' as most relevant to integrated transport outcomes. In finalising *ShapingSEQ*, DILGP amended the Connect measures by:

- adding a measure on the proportion of the population with good accessibility to a range of essential services using public transport
- dropping the road-based measures of average morning peak road travel time per 10 kilometres and vehicle kilometres travelled per capita per year
- retaining measures of average travel time and distance for all trips, mode share, and public transport boardings per capita.

DILGP's 'measures that matter' will help DILGP understand whether *ShapingSEQ* is progressing the 'Connect' theme elements and strategies. However, the measures may not be sufficient to highlight the risks to achieving the *ShapingSEQ* 'Connect' objectives. For example, there are no direct measures to show how efficient and reliable freight movement on key corridors has been prioritised.

In addition, excluding measures that DTMR has the capability to measure, such as peak period performance and average commute time (work and education trips) across all modes of transport, undermines DILGP's ability to monitor and manage key integrated transport risks. The delivery and measurement chapters of *ShapingSEQ* omit any reference to managing the risks that could reasonably undermine *ShapingSEQ*'s 'Connect' objectives.

ShapingSEQ is not clear about who will track, monitor, report, and identify strategies for addressing adverse trends in performance. DILGP needs to work out how to operationalise the monitoring framework it has summarised in the *ShapingSEQ* plan including the preferred transport trends.

Regional transport plans

There is limited detail in the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan* describing how DTMR will monitor and measure performance. While the performance measures refer to the transport coordination plan metric categories, the plan does not explain how DTMR will use these to measure intended outcomes (the plan priorities).

However, DTMR has revised the structure of the remaining 11 regional transport plans to provide greater clarity about how it will measure priorities and actions to achieve outcomes. DTMR plans to apply this framework to the *Mackay, Isaac and Whitsunday Draft Regional Transport Plan* following stakeholder consultation. It will need to set baselines for its measures so it can show to what extent it is achieving the objectives.

The *Mackay Isaac and Whitsunday Draft Regional Transport Plan* includes 49 actions—mostly about completing planning activities and investigating the feasibility of improvement options. DTMR has identified officers responsible for the actions but has not yet timed the delivery of these actions or the resources it requires to implement them.

Because of the high number of actions, and the absence of resource estimates and detailed timelines for their completion, they will need careful oversight to be delivered effectively (most actions are in a one- to four-year period).

Monitoring priority development areas

It is not clear how Economic Development Queensland (EDQ):

- monitors progress towards intended transport outcomes of priority development areas (PDAs)
- responds to trends and risks that potentially undermine their achievement.

EDQ understands the need to better monitor progress and manage the risks, but cannot show significant progress in addressing this need.

The development schemes we examined define transport objectives and area-wide criteria for the provision of transport infrastructure but do not adequately explain how EDQ will measure progress towards these objectives. EDQ has completed some evaluation activities, but these are insufficient to monitor and adequately manage emerging transport outcomes.

DILGP advised us that the *Economic Development Act 2012* includes a planning and development assessment process. The process requires planning to be integrated to ensure all land use matters (including transport) are considered at both the plan-making stage and as part of assessing development applications. However, this does not address measuring the intended transport outcomes the PDAs are designed to achieve—the four PDAs we reviewed did not define adequate metrics for measuring these outcomes.

We recognise that PDAs only apply to specific areas in Queensland and are only one growth management tool that can be used to ensure integration of land use and transport planning. Growth management under the *Planning Act 2016*, principally delivered by local government through planning schemes and infrastructure planning, is also critical to achieving integration.

Defining transport measures

The PDAs' transport objectives support the overall vision for each of the PDAs we examined. All the sampled PDAs share a common transport theme of providing an adequate and efficient road network and sufficient parking, and of prioritising active and public transport modes. This is provided through shared use paths, facilities, and public transport infrastructure.

The documented objectives across these PDAs include:

- encouraging active travel through new and attractive bicycle and walking networks
- delivering transit-orientated developments (focused on public transport)
- promoting public transport and active travel over private vehicle use
- making active travel a key mode of travel
- minimising the impact of traffic noise on residents
- providing adequate car parking
- ensuring the road network provides a convenient and efficient system for residents' travel.

Apart from a single transport performance measure (90 per cent of residents within 400 metres of a public transport route), EDQ has not defined what these objectives mean and how it will measure them. The absence of adequate performance measures, evidence-based targets, and a measurement plan, is a significant gap.

We did not find a clear and systematic approach to monitoring and responding to emerging PDA outcomes. EDQ has recognised the risk of not achieving PDAs' visions and specific outcomes, but there is no evidence that it has implemented specific mitigating actions about developing pilot PDA risk registers to better understand and manage this risk.

Evaluation activities

We asked EDQ to provide us with evidence to show how it monitors the implementation of PDAs to achieve integrated transport and land use outcomes. EDQ provided:

- a briefing note summarising an EDQ strategic review of PDAs examining whether current PDAs should retain their status given their level of maturity and the ongoing need for PDA status
- residential survey results completed in July 2012 for the Fitzgibbon PDA and in June 2014 for the Andergrove PDA. These surveys aimed to profile the resident populations and determine people's motivations for buying into the development.

These evaluation activities were not part of a structured and sufficient approach to monitor the achievement of intended outcomes for PDAs.

The strategic review had a narrow focus on whether PDAs had been completed and there was no analysis of whether intended outcomes were achieved. The one-page tabulated PDA analysis contained no information on the extent to which PDAs had achieved their intended objectives.

EDQ's surveys focused on residential characteristics and overall questions on key issues and improvement areas. They did not directly refer to the development scheme objectives. Nor did they include an examination of the intended transport outcomes that focused on the greater use of public and active transport and a lesser reliance on private motor vehicles to access work and other community facilities.

The surveys, through general questions on the strengths and weaknesses of these PDAs, identified important transport issues. However, it is unclear how EDQ has considered and acted on the survey information to improve transport integration and outcomes.

The surveys did not comprehensively evaluate transport impacts. Consequently, the surveys were not effective in helping EDQ determine the PDAs' effectiveness with respect to intended transport outcomes.

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Appendix A—Full responses from agencies

As mandated in section 64 of the *Auditor-General Act 2009*, the Queensland Audit Office gave a copy of this report with a request for comments to the Department of Transport and Main Roads, the Department of Infrastructure, Local Government and Planning, Brisbane City Council, Sunshine Coast Regional Council, Mackay Regional Council, Isaac Regional Council and Whitsunday Regional Council.

The heads of these agencies are responsible for the accuracy, fairness and balance of their comments.

This appendix contains their comments and responses to our audit recommendations.

Comments received from Director-General, Department of Transport and Main Roads



Office of the
Director-General
Department of
Transport and Main Roads

Our ref: DG34328

Your ref: 2017-9150P

02 NOV 2017

Mr Brendan Worrall
Auditor-General
Queensland Audit Office
PO Box 15396
CITY EAST QLD 4002

Dear Mr Worrall

Thank you for your letter of 12 October 2017 and the opportunity to comment on the proposed report to the Queensland Parliament on the Performance Audit on Integrated Transport Planning.

I am pleased that the report concluded the Department of Transport and Main Roads (TMR) has been effective in developing an integrated planning framework that will enable informed and coordinated investments, and that TMR routinely works in a cooperative and communicative manner with stakeholders. I am disappointed that the report, in my opinion, does not fully reflect the breadth and depth of TMR's activities to plan for and invest in the Queensland transport network.

TMR's coordinated and effective transport planning supports the Queensland Government in delivering a range of actions and plans to meet the transport task across the state. This includes the new *South East Queensland (SEQ) Regional Plan 2017 (ShapingSEQ)*, the *Connecting Brisbane* strategy, developed in partnership with Brisbane City Council, the 2017 *State Infrastructure Plan* update, and the *2017–18 to 2020–21 Queensland Transport and Roads Investment Program (QTRIP)*, the only published transport forward program of its kind in Australia which allows government, industry and the community to plan ahead with certainty. TMR also recognises previous plans and strategies in its planning activities, including the significant work in the development of the *Queensland Plan*. Of particular ongoing relevance to TMR are the *Queensland Plan* foundation areas of regions and infrastructure.

TMR undertakes structured planning activities across the state, and TMR's planning over the past years has helped prepare for a record QTRIP, outlining close to \$21 billion of investment over the next four years. I acknowledge the QAO support for the ongoing development of regional transport plans. Regional transport plans will outline planning activities for the entirety of Queensland and are set to become a key element of TMR's planning framework. Regional transport plans for all regions of Queensland are currently under development by the department, and are due for delivery in early 2018.

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I am pleased to confirm that the new *Transport Coordination Plan 2017–2027* (TCP) was tabled in Parliament on 13 October 2017, further clarifying and affirming TMR's integrated planning framework. However, I note that the proposed QAO report gives limited consideration to the contextual factors which TMR operates within to encourage the uptake of efficient types of transport.

TMR is strongly committed to creating a single integrated transport network accessible to everyone in a transparent and accountable manner, including open communication with our customers and stakeholders. TMR regularly undertakes comprehensive and transparent reporting through the open publication of various datasets and reports, annual reports, service delivery statements, regular *TransLink Tracker* updates and representations to parliamentary committees and the estimates process.

TMR is the steward of the state transport network. With a gross replacement value of \$73 billion as at June 2017, it represents the state's largest built asset and requires ongoing maintenance and renewal operations. As the report recognises, TMR has successfully managed over the past five years to increase funding of its Maintenance, Preservation and Operations Program, in both absolute terms and as a proportion of total investment spend, to ensure the state-controlled asset is maintained in a safe and serviceable condition.

However, the proposed QAO report gives little consideration to the considerable efforts TMR undertakes in monitoring the ongoing condition of such a significant asset portfolio. Further, the report gives limited attention to the severe weather events, such as tropical storms and cyclones, which regularly disrupt the transport network across Queensland. In addition to their impact on our customers, these events require TMR to deliver significant and urgent repair and reconstruction projects within available funding.

Safety is TMR's highest priority. To ensure the transport system is safe and secure, TMR's planning and investment has a strong focus on safety. Using a safe systems approach, TMR makes effective use of government funding to target safety activities across planning, infrastructure upgrades, regulation, licencing and registration, education and enforcement.

I appreciate the opportunity to comment on the proposed report. Please find enclosed a response to the recommendations relevant to TMR. TMR has been actively enhancing planning activities and beginning implementation of the recommendations, with many already underway. My department has also been in contact with the Department of Infrastructure, Local Government and Planning to ensure both departments continue to deliver planning activities and QAO recommendations in an integrated manner.

I commend my staff for their work on this complex and resource intensive audit.

I trust this information is of assistance.

Yours sincerely



Neil Scales
Director-General
Department of Transport and Main Roads

Enc (1)

Responses to recommendations



Department of Transport and Main Roads, Integrated transport planning

Response to recommendations provided by Mr Neil Scales, Director-General, Department of Transport and Main Roads on 2 November 2017.

Recommendation	Agree / Disagree	Timeframe for implementation (Quarter and year)	Additional comments
We recommend that the Department of Transport and Main Roads:			
Queensland Transport Policy			
1. assesses the merits of amending the <i>Transport Planning and Coordination Act 1994</i> to require its chief executive to prepare a transport policy for the minister's approval (Chapter 2)	Agree	Quarter 1 2018 - 19 (July – September 2018)	TMR will undertake an assessment of the merits of amending the <i>Transport Planning and Coordination Act 1994</i> (the Act) in accordance with Recommendation 1. The assessment will make recommendations regarding amendment of the Act.
Regional transport planning			
2. strengthens how its regional transport plans integrate with regional land use plans (Chapter 3) When both plans are developed in a region, this means documenting how: <ul style="list-style-type: none"> regional transport plans and regional land use plans align in terms of the goals, outcomes, and input assumptions transport-related actions in regional plans are considered in regional transport plans. 	Agree	Quarter 3 2017 - 18 (January – March 2018), and then ongoing for future reviews and regional plan/regional transport plan development	The Regional Transport Plans (RTPs), including the Mackay Isaac Whitsunday plan, are being updated to reflect transport related-regional land use plan actions and clarify the strategic alignment of goals, objectives and outcomes between regional land use plans and RTPs.
3. sets baselines for key performance measures in all 12 regional transport plans (Chapter 4) This should be based on the performance measures that are most appropriate for each region.	Agree	Identification of measures of success – Quarter 3 2017- 18 (January – March 2018) Setting of baseline data – Quarter 2 2018 - 19 (October – December 2018)	RTPs will include a specific "Measures of Success" component linked to the transport objectives for each plan. The measures will be sourced from existing TMR indicators or other publicly reported information (for example, Transport Coordination Plan, Performance Statements). Not all of TMR's current data collection and reporting metrics are reported at the district level. The establishment of baselines will require further work to disaggregate current information to confirm district level baselines.

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Recommendation	Agree / Disagree	Timeframe for implementation (Quarter and year)	Additional comments
<p>4. develops a plan to implement the actions from the regional transport plans (Chapter 4)</p> <p>This should include identifying the resources it requires for each action (including transport modelling tasks), and the timeframe and priority of each action.</p>	Agree	Quarter 1 2018-19 (July – September 2018)	All RTPs will be supported by a departmental Implementation Schedule which will detail the responsibility, indicative timing and priority for the delivery of actions.
<p>5. updates the regional transport plans after it has implemented the actions that will help it define the problems for each region (Chapter 3)</p> <p>This should include:</p> <ul style="list-style-type: none"> ▪ defining problems for each region based on the evidence it collates when it implements the actions from the plans ▪ identifying any necessary new actions ▪ prioritising all actions based on the problem definition. 	Agree	Ongoing	<p>TMR has planned for RTPs to be updated regularly through the Transport System Planning Program.</p> <p>Reviews will capture changes to land use, the region's economy, environmental considerations, demography, technological innovations, the progress of significant infrastructure projects and other factors which may influence the plan.</p>
Modal strategies			
<p>6. develops performance monitoring mechanisms for the objectives of the transport coordination plan for all of its modal strategies (Chapter 2)</p>	Agree	Ongoing	TMR will ensure alignment of future modal strategies to the objectives of the TCP, and where relevant, the high-level transport KPIs, through the inclusion of suitable reporting mechanisms.
<p>7. updates its modal strategies and once approved, publishes them with the transport coordination plan as an integrated framework (Chapter 2)</p> <p>The modal strategies should show how they support the transport coordination plan objectives.</p>	Agree	Ongoing	<p>TMR will publish modal strategies, once approved, with the TCP. TMR will also update the TMR website page for the TCP to provide appropriate linkages to the relevant published modal strategies.</p> <p>In approved modal strategies, TMR will include detail on how the strategy aligns with the objectives of the TCP.</p>

Performance reporting



Recommendation	Agree / Disagree	Timeframe for implementation (Quarter and year)	Additional comments
<p>8. develops an integrated performance report to track progress against the transport coordination plan objectives (Chapter 4)</p> <p>DTMR should periodically publish performance results against the transport coordination plan to show the extent to which it achieves the plan's objectives.</p>	Agree	Quarter 2 2018-19 (October – December 2018), and then biennially	Performance against the TCP's KPIs will be reported every two years and made available on the TMR website.

Risk identification and management

<p>12. assesses and analyses the risks of not achieving the preferred transport future in <i>ShapingSEQ</i> and report it to DILGP, where relevant, for the purpose of monitoring and reporting on the performance of the plan (Chapter 3)</p>	Agree	<p>Identification of actions through the SEQ RTP – Quarter 3 2017-18 (January – March 2018)</p> <p>Provision of analytical and transport planning support – Quarter 2 2018-19 (October – December 2018)</p>	<p>TMR will identify and incorporate potential actions to manage the risks to achieving the preferred transport future into the development of RTPs and other TMR programs as appropriate.</p> <p>TMR will undertake an analytical review of the SEQ land use plan to inform and assist DILGP in the management of risks associated with achieving the preferred transport future of the plan.</p>
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We recommend that the Department of Infrastructure, Local Government and Planning works with the Department of Transport and Main Roads to:

<p>13. improve the completeness of evidence retained to support key decisions made in developing land use plans (Chapter 4)</p> <p>When testing planning scenarios, documentation for transport modelling should summarise the objectives, scope, assumptions, results, conclusions, any limitations, and any decisions made.</p>	Agree	Ongoing	TMR's future transport and land use modelling, including investigations of the transport network's sensitivity to land use scenarios, will be summarised in a transport modelling report to capture the objectives, scope, assumptions, results, conclusions, any limitations, and any decisions made.
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Comments received from Director-General, Department of Infrastructure, Local Government and Planning



Department of Infrastructure,
Local Government and Planning

Our ref: DGC17/1209

Your ref: 2017-9150P

2 NOV 2017

Mr Brendan Worrall
Auditor-General
Queensland Audit Office
PO Box 15396
BRISBANE QLD 4001

Dear Mr Worrall

Thank you for your letter of 12 October 2017 enclosing a copy of the proposed report to parliament on the performance audit on integrated transport planning (the report) for comment. A response to the recommendations is enclosed.

The Department of Infrastructure, Local Government and Planning's (the department) vision is to create better places and communities for Queenslanders through future-focused planning, smart development, strategic infrastructure, and strong local government. In delivering this vision, there is a strong focus on the delivery of integrated land use planning and development assessment to help drive economic development and respond to community needs.

I am pleased that the Queensland Audit Office's proposed report acknowledges the measures included in the South East Queensland Regional Plan (*ShapingSEQ*) and will enable the department to monitor progress on the 'Connect' theme elements and strategies. The department, through *ShapingSEQ*, has already implemented a growth monitoring program to ensure future land supply objectives of *ShapingSEQ* are on track and provide the necessary information for transport monitoring and modelling. As the focus and priorities for regional plans are determined by the specific requirements of each region, future plans will also incorporate an appropriate performance monitoring framework subject to the availability of data.

I note that the proposed report currently comments on transport modelling for vehicle travel forecasting an increase to travel time, contrary to the 'SEQ preferred future' of a reduction in travel time.

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I would like to bring to your attention that while *ShapingSEQ* identifies a 'SEQ preferred future' of a reduction in average travel time, *ShapingSEQ* further recognises that 'a business as usual approach to transport will not get us to this future. Our improved approach will prioritise transport infrastructure and associated land use changes that will significantly increase the share of trips made by walking, cycling and public transport'. This improved approach sees a shift in transport modes to public and active transport, which aims to achieve the SEQ preferred future of reducing the average travel time.

With regard to consultation, I am pleased that the audit recognises the effective and extensive engagement undertaken by the department with the public, local councils and other agencies in striving to achieve integrated land use and transport planning.

Lastly, in relation to Priority Development Areas (PDAs), Economic Development Queensland is committed to robust evaluations of development schemes for these areas to ensure desired transport outcomes are achieved. However, it should be noted that monitoring transport outcomes in PDAs is a dynamic process that is routinely embedded into development assessment and infrastructure planning and funding, including infrastructure agreements and is not limited to formal evaluations of PDA development schemes.

Should you require further information, I encourage you to contact Ms Kathy Parton, Deputy Director-General, Strategy, Governance and Engagement on _____ or by email at _____

Yours sincerely



Frankie Carroll
Director-General

Enc

Responses to recommendations



Department of Infrastructure, Local Government and Planning, Integrated transport planning

Response to recommendations provided by Mr Frankie Carroll, Director-General, Department of Infrastructure Local Government and Planning on 2 November 2017.

Recommendation	Agree / Disagree	Timeframe for implementation (Quarter and year)	Additional comments
We recommend that the Department of Infrastructure, Local Government and Planning:			
Regional land use planning			
9. when developing future regional plans, documents its analysis of DTMR's strategic transport modelling and how it uses the modelling to inform regional plans that have a transport focus (Chapter 3)	Agree	As future regional plans are developed	The Department of Infrastructure, Local Government and Planning will document the analysis undertaken of the Department of Transport and Main Road's strategic transport modelling as part of the preparation of future regional plans.
10. develops and implements a performance monitoring framework for regional plans. (Chapter 4) This should detail how and who will be responsible for: <ul style="list-style-type: none"> tracking progress against objectives and actions monitoring and reporting progress on outcomes, including transport outcomes identifying whether strategies are performing as expected and adjusting where required. 	Agree	Implemented (Ongoing)	The Department of Infrastructure, Local Government and Planning, as part of <i>ShapingSEQ</i> , has already implemented a growth monitoring program. This program meets best practice for regional planning projects and provides necessary input to transport monitoring and modelling. Future plans will also incorporate an appropriate performance monitoring framework subject to the availability of data.
Priority development areas			
11. clarifies how it will monitor and measure transport outcomes in its existing priority development scheme evaluations (Chapter 4) This should describe the key performance indicators, and the methods DILGP will use to measure progress, and assess and mitigate risks to the achievement of objectives.	Agree	As each scheme's evaluation is finalised	The Economic Development Act 2012 does not prescribe when development schemes must be reviewed. Economic Development Queensland (EDQ) periodically evaluates the currency of development schemes to determine their effectiveness against benchmarks such as transport outcomes and whether they should be replaced with a new development scheme, amended or revoked. The current evaluation program involves the development of two new development schemes to replace existing ones, a possible amendment to one development

1



Recommendation	Agree / Disagree	Timeframe for implementation (Quarter and year)	Additional comments
			scheme and the potential revocation of seven priority development areas. EDQ will ensure transport outcomes continue to be included as part of these evaluations.



Recommendation	Agree / Disagree	Timeframe for implementation (Quarter and year)	Additional comments
We recommend that the Department of Infrastructure, Local Government and Planning works with the Department of Transport and Main Roads to:			
13. improve the completeness of evidence retained to support key decisions made in developing land use plans (Chapter 4) When testing planning scenarios, documentation for transport modelling should summarise the objectives, scope, assumptions, results, conclusions, any limitations, and any decisions made.	Agree	As future regional plans are developed	The Department of Infrastructure, Local Government and Planning will work with the Department of Transport and Main Roads to provide this on future regional plans to the extent relevant for the regional plan being prepared. The focus and priorities for each regional plan is determined by the specific requirements of the region.

Comments received from Chief Executive Officer, Brisbane City Council



Dedicated to a better Brisbane

Your ref: 2017-9150P

31 October 2017

Mr Brendan Worrall
Auditor-General
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Dear Mr Worrall *Brendan*

Thank you for your letter of 12 October 2017 about the performance audit on integrated transport planning.

I appreciate you providing Council with the opportunity to review this report throughout its preparation to give feedback. I can confirm that Council's Transport Planning and Strategy has reviewed the proposed report you supplied and has no further comments to provide.

Council awaits the outcome of the report's review by the Queensland Parliament.

If you have any further enquiries regarding this matter, please contact Ms Marie Gales, Manager of Council's Transport Planning and Strategy and Congestion Reduction Unit, on

Thank you for contacting me.

Yours sincerely

Colin Jensen
CHIEF EXECUTIVE OFFICER

Ref: CO23209-2017

Appendix B—Audit objectives and methods

Audit objective

The objective of the audit was to determine whether the state's approach to strategic transport planning enables effective use of transport resources and a long-term sustainable transport system.

We assessed whether:

- the Department of Transport and Main Roads (DTMR) provides an effective framework for coordinating transport planning that integrates with other government plans
- the Department of Infrastructure, Local Government and Planning (DILGP), DTMR and local councils effectively integrate land use and transport planning.

Reason for the audit

We conducted the audit for the following reasons:

- Past population and economic growth have created access and mobility challenges across the state and particularly on peak commuting routes in South East Queensland. The *State Infrastructure Plan* expects significant population and travel growth over the next 20 years to intensify these challenges. This represents a significant risk to the state's economic prosperity and liveability.
- The 2015 Infrastructure Australia audit confirmed that Australia needs integrated infrastructure and land use planning across all levels of government to realise significant efficiency and service delivery benefits.
- During our audit planning, those we included in this audit
 - acknowledged weaknesses in the level of integration for past regional planning
 - noted that the *South East Queensland Regional Plan (SEQRP)* was underway and that it will propose policy directions and targets to address a rapidly changing regional population
 - identified the development of the 12 revised regional transport plans—with the Mackay, Isaac and Whitsunday Region being the first pilot regional transport plan—as a significant improvement in terms of applying a collaborative, integrated, and evidence-based approach focused on achieving clearly defined outcomes
 - saw the potential value of the audit in assessing the new approach to regional planning and providing recommendations that could be a catalyst for improvement.

Performance audit approach

The audit was conducted between October 2016 and August 2017.

The audit included:

- interviews with staff from the Department of Transport and Main Roads, the Department of Infrastructure, Local Government and Planning, Brisbane City Council, Isaac Regional Council, Whitsunday Regional Council, and Mackay Regional Council
- analysis of documents provided by those we audited
- analysis of performance data and transport modelling data.

Our team included a transport economist with extensive experience in examining the effectiveness of transport infrastructure and service delivery.

Appendix C—Changes and challenges for transport planning

Population change and growth

Rapid population growth and urbanisation is expected in parts of the state. South East Queensland, for example, is expected to have 54 per cent population growth by 2041. This will increase pressure on existing transport infrastructure and require additional investment in new transport infrastructure.

Based on the expected population growth, *ShapingSEQ* seeks to locate more people in locations with existing services and development. Its policies include:

- supporting greater numbers of people living in closer proximity to public transport
- supporting the growth of high-value local jobs through areas of regional economic significance (which are those areas that demonstrate a synergy across economic and employment areas important to the region because they contain a concentration of significant economic (and employment) activity)
- planning for the delivery of high-frequency public transport to support land use investment.

Consumer expectations

The rapidly changing and complex expectations of citizens puts strain on traditional methods of service delivery. People's increasing use of social media and online connections has changed what they expect from the transport system and how they expect to be engaged in decisions that affect them.

To develop *ShapingSEQ*, DILGP engaged with the community, specific groups of young people, and Indigenous stakeholders to identify consumer expectations. DTMR intends to seek feedback from Queenslanders on the proposed strategic directions and policies raised in the Queensland Transport Policy (pending ministerial approval to release the document).

Extreme weather and disaster resilience

Queensland is prone to tropical storms and cyclones. These extreme weather events affect community safety and degrade public assets. They result in additional maintenance and repair demands and increase disruption to the transport system.

Damage to its infrastructure from extreme weather events has had a significant impact on DTMR's budget. DTMR has had to expend considerable sums over the last five years as part of the National Disaster Recovery and Relief Arrangements (as it has reported in its annual reports) to reinstate roads, bridges, and transport infrastructure.

To address this challenge and reduce the significant cost of recovering from these extreme weather events, DTMR is aiming to make its transport infrastructure more resilient. (For example, it is using foamed bitumen, which can be more resilient to flooding.) In its *Mackay, Isaac and Whitsunday Draft Regional Transport Plan*, DTMR has included actions to further investigate options for improving the flood immunity of important transport corridors.

Global impacts on Queensland's regional economies

One of the big challenges for transport is adequately connecting Queensland's important agriculture, resources, construction, manufacturing and tourism sectors. In addition, as Queensland's focus diversifies from resources to knowledge and service-based jobs, the transport system needs to support the transition.

ShapingSEQ includes elements and associated strategies to address these challenges. They include:

- developing areas of regional economic significance
- identifying knowledge and technology precincts—these are areas that contain a core high-level health, education, research, or similar facility that provides opportunities for complementary and supporting activities, and for development of these activities to intensify over time
- providing an efficient movement system for people and freight to maximise community and economic benefits. This supports DTMR's transport coordination plan objective to facilitate the efficient movement of people and freight to grow Queensland's economy.

Managing and harnessing rapidly changing technology and data

Advances in technology, like driverless (autonomous) vehicles that communicate with each other and the surrounding infrastructure, will transform and disrupt existing transport systems.

In addition, the growing amount of data that government agencies and other stakeholders have about how people use the transport network offers opportunities to benefit the public in terms of transport planning, service delivery and evaluation. Understanding and realising the value of this 'big data' is a major challenge and opportunity.

DTMR's *Queensland Transport Policy* background paper on transforming mobility addresses the challenge and opportunity of making the most of data. It states this will improve how transport service providers (government and third parties) make decisions about future service provision, and will provide users with better information to make more informed travel decisions.

The 'Connect' background paper for *ShapingSEQ* acknowledges the effect that emerging technologies will have on the transport system and the potential impact on the shape and function of urban areas in the long term. *ShapingSEQ* includes actions to help DILGP use big data to measure and monitor the implementation of *ShapingSEQ*.

Regional liveability

Regional Queenslanders continue to need quality services for regions to remain strong, vibrant, and self-contained. Maintaining and improving the transport system in regional areas of Queensland will be important in attracting investment in high-value industries and continuing to provide an ageing population with improved access to employment, services and recreational opportunities. DTMR's work to develop a new generation of regional transport plans that integrate with regional plans will be important in addressing this challenge.

Constrained and changing funding environment

Both the Queensland Government and the Australian Government provide funding to run, maintain, and build the transport network in line with the *National Partnership Agreement on Land Transport Infrastructure Projects*.

There are significant pressures on funding transport infrastructure because:

- of a limited and decreasing revenue base, especially traditional transport funding sources (such as fuel excise and registration fees)
- over a long period of time, the amounts available to spend on maintenance have not kept pace with the growth in transport infrastructure
- a substantial portfolio of transport assets have already exceeded their original design life, and many of these assets will be used for years to come before funds are available for asset renewal, rehabilitation, or replacement
- there is increasing competition for available government funds as Queensland's population grows and ages.

In 2009, DTMR began to implement the investment principles on running, maintaining and building the system. This enabled it to increase what it spends on running and maintaining the network in absolute terms and as a proportion of total transport spend.

DTMR has prepared a background paper on sustainable funding to inform the content of the *Queensland Transport Policy*.

Integrated planning

The 2015 Infrastructure Australia audit identified the need for improved integrated land use and transport planning across all levels of government and found progress had been slow in securing the benefits of good, strategic decision-making. *ShapingSEQ* includes strategies for integrating infrastructure and land use planning.

Changes to government policy

Having two changes in government since 2012 has made it challenging for DTMR to develop and receive approval from government to release planning and policy documents.

DTMR has satisfied the requirement of the *Transport Planning and Coordination Act* for its chief executive to develop, from time to time, a transport coordination plan for the minister's approval. However, changes in the policy agenda of different governments have affected DTMR's ability to get approval to publish a new transport coordination plan. DTMR published its currently-approved transport coordination plan in 2008 but, with two changes in government since then, it has not been able to obtain the necessary ministerial approval to publish three different versions of a transport coordination plan it has developed in this time.

Appendix D—Transport strategic framework outputs

Figure D1 shows DTMR's outputs for the direction setting, strategic planning and programming elements of its strategic framework. It also summarises our assessment of the maturity of each of the respective outputs, using the following maturity levels:

- **Basic**—basic process exists
- **Developing**—process is being developed
- **Established**—process is established
- **Integrated**—process is integrated with other organisational processes
- **Optimised**—process focuses on continuous improvement, adoption of lessons learned, and better practice.

Figure D1
Coordinating transport planning—DTMR strategic framework outputs

Output	Status	Capability maturity
Direction setting —establish broad, high-level strategic intent or policy positions		
Queensland Transport Policy Is a 30-year plan to prepare Queensland for transformations in transport and improve transport system outcomes over the short, medium and long term	Background papers (not approved for public release)	Developing Inaugural long-term policy being developed
Transport Coordination Plan (TCP) Provides a framework for coordinated planning and management of transport over the next decade	Draft published for community consultation in October 2016 <i>Transport Coordination Plan 2017–2027</i> completed and waiting to be tabled in parliament	Developing Approved 2008 plan exists; 2017 plan needs to be approved for tabling and publication
Strategic planning —develop plans or strategies to focus on main themes		
Regional transport plans Outlines a shared direction for the development of the transport system for a regional area	Mackay, Isaac & Whitsunday region—draft Plans for other regions will be drafted from 2017	Developing Established in SEQ; statewide rollout in progress
System strategies Includes modal system strategies to translate TCP objectives into specific strategies	<i>Roads Connecting Queensland (2002); Moving People Strategy (2007); Rail Network Strategy (2009); Queensland Cycle Strategy 2017–2027 (2017); Moving Freight Strategy (2013); Queensland's Road Safety Strategy and Action Plan (2015); Queensland Road System Performance Plan (current)</i>	Established System strategies in place, but they do not fully integrate with TCP or related strategies

Output	Status	Capability maturity
Programming—identify, evaluate, prioritise, and program initiatives		
<p>Transport Infrastructure Portfolio Plan and Schedule (TIPPS)</p> <p>Is an indicative plan that aims to translate the Queensland Government's directions and DTMR's policy, strategy, and long-term planning outputs into a 10-year transport infrastructure view</p>	<p>TIPPS 2017–2027 approved.</p> <p>The indicative funding profile is about \$42 billion from 2017–18 to 2026–27 based on historical and likely funding levels</p>	<p>Integrated</p> <p>On-going 10-year and multi-modal forward program integrated within DTMR's annual business activities. Primary funding negotiation tool with affordable funding level assumptions</p>
<p>Queensland Transport and Roads Investment Program (QTRIP)</p> <p>Outlines DTMR's current and planned investments in transport and road infrastructure over the next four years</p>	<p>QTRIP 2017–18 to 2020–21 published</p> <p>\$21 billion of works planned over four years</p>	<p>Integrated</p> <p>Multi-modal/statewide delivery plan delivered annually; four-year rolling program for committed/approved projects; covers national, state-controlled, and local government-controlled roads</p>
<p>Transport System Planning Program</p> <p>Is a program of 'one integrated transport system' planning activities that collectively plan for future transport system outcomes</p>	<p>\$75 million expenditure in 2016–17 and \$78 million funded in 2017–18 to conduct planning activities</p>	<p>Integrated</p> <p>Has multi-modal, statewide, and land use planning perspectives; governance is integrated across all regions and multi-tiered</p>

Source: Queensland Audit Office from documents supplied by the Department of Transport and Main Roads.

Appendix E—Modal and system strategies

Figure E1 summarises our observations of the current modal and system strategies and their limitations.

Figure E1
Modal strategies—key issues

Output	Year	Integration limitations
Passenger transport		
<i>Moving People Passenger Transport Strategy</i>	2007	<ul style="list-style-type: none"> The strategy is dated and has limited relevance to the changing environment. The outcomes are not specific and performance is not monitored.
<i>Connecting Brisbane</i>	2017	<ul style="list-style-type: none"> There is no reference to transport coordination plan (TCP) objectives or DTMR's strategic framework. There is no matching plan for regional Queensland.
Road network		
<i>Roads Connecting Queenslanders</i>	2002	<ul style="list-style-type: none"> The strategy is dated. It has not been updated to align with transport coordination plans.
<i>Safer Roads, Safer Queensland—Queensland's Road Safety Action Plan and Strategy</i>	2015 (2015–2021)	<ul style="list-style-type: none"> There is no reference to TCP objectives or DTMR's strategic framework. The targets—to reduce fatalities by at least 34 per cent and hospitalised casualties by at least 30 per cent—are optimistic. Current trends show a slower rate of reduction.
<i>Queensland Road System Performance Plan</i>	2016–17 to 2019–20	<ul style="list-style-type: none"> There is limited reference to TCP objectives. The current limited maintenance, preservation and operations funding is a risk to TCP success. Asset sustainability risk is not clearly reflected in TCP. There is limited reference to the impact of asset performance (condition) and network performance (TCP key performance indicators (KPIs)).
Freight network		
<i>Rail Network Strategy</i>	2009	<ul style="list-style-type: none"> It refers to the 2008 TCP and other superseded plans.
<i>Moving Freight* (multi-modal)</i>	2013	<ul style="list-style-type: none"> It references the 2013 draft transport and coordination plan.
<i>Heavy Vehicle Safety Action Plan (2016–18)</i>	2016	<ul style="list-style-type: none"> There is no reference to TCP objectives or DTMR's strategic framework. The plan's metrics for heavy vehicle crash fatalities or casualties are not reflected in TCP/Queensland Transport Snapshot reporting.

Output	Year	Integration limitations
Active transport		
Queensland Cycle Strategy (2017–2027)	2017	<ul style="list-style-type: none"> ▪ There is no reference to DTMR's TCP or its strategic framework. ▪ There is limited data collection capability to track cycling trips.

Notes: *DTMR has drafted a new *Queensland Freight Strategy* (May 2017) to replace *Moving Freight* once it is approved as government policy.

Source: *Queensland Audit Office* from documents supplied by the *Department of Transport and Main Roads*.

Appendix F—Regional land use and transport plans

Figure F1 shows the status of regional land use and transport plans for each Queensland region.

Figure F1
Most recent coverage of regional plans (land use) and regional transport plans

Region	Population	Regional plan (land use)	Regional transport plan
South East Queensland	3 198 594	2017	2011
Far North Queensland	279 772	2009	2011 (draft)*
Wide Bay Burnett	279 750	2011	2002
Darling Downs	259 338	2013	2003
North Queensland	252 222	Nil (DILGP drafting plan)	2000
Central Queensland	241 177	2013	2004
Mackay, Isaac and Whitsunday	167 641	2012	2002* (DTMR has drafted a new plan)
Central West	36 640**	2009	Nil
North West		2010	Nil
South West**	27 543	2009	2003
Cape York	16 977***	2014	Nil
Gulf (non-statutory)	7 000****	2000	2000

Notes: * Connecting Mackay, Isaac and Whitsunday 2031, and Connecting Far North Queensland 2031 were drafted in 2011 but not finalised.

** Central West and North West were previously one region.

*** June 2011 estimate in Cape York Regional Plan (2014).

**** 1996 census estimate in Gulf Regional Development Plan (2000).

Source: Queensland Plan 2014 (population estimates), published regional land use plans, and transport plans.

Appendix G—Transport modelling

Brisbane Strategic Transport Model results

The Department of Transport and Main Roads (DTMR) completed the analysis of Kingsford Smith Drive running the Brisbane Strategic Transport Model (BSTM) for:

- a 2016 base reflecting current road and public transport capacities and services and current population and employment
- a 2041 base incorporating transport capacity and service changes together with the state's population and employment forecasts prior to *ShapingSEQ* amendments
- a 2041 *ShapingSEQ forecast* version incorporating similar overall population growth, transport capacities and services and the same employment forecasts as the 2041 base model, but with a denser pattern of settlement.

Figure G1 shows the BSTM model results.

Figure G1
BSTM model results

Measure	2016	2041 base	2041 base increase %	2041 <i>ShapingSEQ</i> forecast	2041 <i>ShapingSEQ</i> increase %
Forecast input assumptions					
Population	2 294 725	3 436 834	49.8	3 460 707	50.8
Workers at home	1 127 695	1 736 176	54.0	1 752 945	55.4
Employment	1 234 865	1 823 927	47.7	1 823 927	47.7
Link km (motorway/expressway)	876	1 090	24.4	1 090	24.4
Lane km (motorway/expressway)	1 847	2 329	26.1	2 329	26.1
Link km (all roads)	10 336	11 006	6.5	11 006	6.5
Lane km (all roads)	12 820	14 625	14.1	14 625	14.1
Forecast road travel outputs					
Average speed (kph)	50.1	42.4	(15.4)	42.8	(14.6)
Average length (km)	12.7	14.1	11.4	14.0	10.7
Average time (mins)	15.2	19.9	31.6	19.6	29.6
Vehicle kilometres travelled	68 575 720	107 153 235	56.3	106 272 389	55.0
Vehicle hours travelled	1 367 581	2 524 842	84.6	2 482 388	81.5

Note: Forecast road travel outputs for 2016 and 2041 base are rounded. Therefore, percentage increases may differ.

Source: Queensland Audit Office from data provided by the Department of Transport and Main Roads.

Kingsford Smith Drive case study

Information provided by the DTMR

DTMR provided these outputs for Kingsford Smith Drive and the surrounding road network:

- plots showing by direction
 - the number of lanes on links
 - morning (am) and afternoon (pm) peak link average speeds
 - am and pm peak total vehicle volumes
 - am and pm peak volume over capacity ratios
 - daily total volumes
- difference plots between 2041 *ShapingSEQ* forecast and 2041 base (24 hours, all vehicles) represented in absolute volumes and percentages
- select link analysis of Kingsford Smith Drive (link between Racecourse Road and Inner City Bypass (ICB)) for 2041 *ShapingSEQ* forecast scenario, for am peak travel by direction. The results show the percentage of Kingsford Smith Drive traffic on surrounding network.

Transport network assumptions

The 2041 model runs assume that Kingsford Smith Drive has been upgraded from its 2016 configuration of four lanes (two lanes in each direction) to six lanes (three in each direction).

In terms of wider network assumptions, we understand that DTMR:

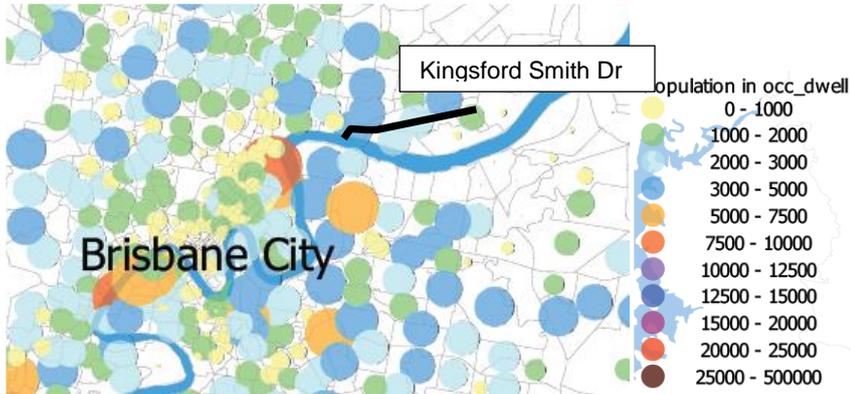
- started with a current version of the 2016 transport network and based the 2041 network on the network improvement assumptions available at the time (from state and local councils)
- included upgrades based on the latest *Queensland Transport and Roads Investment Program* (QTRIP) to 2020 including projects started within the current QTRIP but delivered beyond 2020
- noted the assumptions beyond 2020 were mainly unchanged from the existing BSTM future year models and were in line with previous future network assumptions based on past transport plans. There were some exceptions where updated details were available (such as second rail river crossing moved post 2021)
- made no changes to public transport route structure beyond 2031. However, based on the population and employment figures and catchment areas of the different public transport services, it amended the service frequencies where needed for later years. We also understand that it made further assumptions for road capacity upgrades (of existing roads) on the same basis
- confirmed that the 2041 models did not incorporate the potential impacts of expected innovations such as the use of automated vehicles.

We understand that DTMR designed the 2041 model runs to forecast the transport impacts of increased population and employment in 2041, taking account of the type of transport capacity and service improvements flagged in the *ShapingSEQ* 'Connect' background paper.

Demographic assumptions

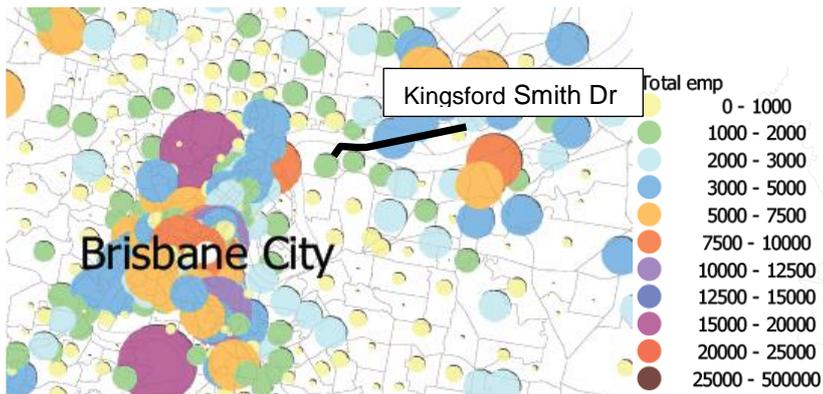
Figures G2 to G4 show forecast 2041 population (G2), employment (G3) and the change in population (G4) under the more densely populated compact *ShapingSEQ forecast*, compared to the 2041 base scenario. On each of these figures we have marked the location of Kingsford Smith Drive.

Figure G2
2041 population—base scenario



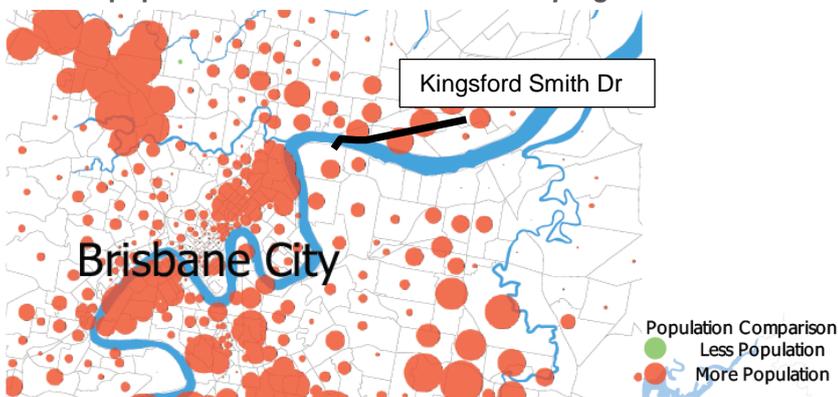
Source: Queensland Audit Office, annotation from plots provided by Department of Transport and Main Roads.

Figure G3
2041 employment—base and *ShapingSEQ forecast* scenarios



Source: Queensland Audit Office, annotation from plots provided by the Department of Transport and Main Roads.

Figure G4
2041 population difference between *ShapingSEQ forecast* and base scenarios



Source: Queensland Audit Office, annotation from plots provided by the Department of Transport and Main Roads.

Traffic volumes

The *ShapingSEQ* forecast 2041 run assumes a denser development pattern compared to the 2041 base.

Our analysis of DTMR's data shows that 24-hour traffic volumes are forecast to increase from 2016 to 2041 on average by:

- 94 per cent (2041 base) and by 98 per cent (2041 *ShapingSEQ* forecast) for east to west travel
- 75 per cent (2041 base) and by 81 per cent (2041 *ShapingSEQ* forecast) for west to east travel.

The model shows for two-hour traffic flows by direction for the am peak:

- east to west travel increasing from 2016 on average by between 103 per cent (2041 base) and 118 per cent (2041 *ShapingSEQ* forecast), with average two-hour link (between two roads) traffic volumes increasing from 2 180 to 4 420 (2041 base) and to 4 760 (2041 *ShapingSEQ* forecast)
- west to east travel increasing from 2016 on average by between 105 per cent (2041 base) and 106 per cent (2041 *ShapingSEQ* forecast), with average two-hour link volumes increasing from 3 270 to 6 700 (2041 base) and to 6 750 (2041 *ShapingSEQ* forecast).

The model shows for two-hour traffic flows by direction for the pm:

- east to west travel increasing from 2016 on average by 112 per cent (for both 2041 base and 2041 *ShapingSEQ* forecast), with average two-hour link volumes increasing from 3 340 to 7 090 (2041 base) and to 7 100 (2041 *ShapingSEQ* forecast)
- west to east travel increasing from 2016 on average by between 85 per cent (2041 base) and 95 per cent (2041 *ShapingSEQ* forecast), with average two-hour link volumes increasing from 2 890 to 5 340 (2041 base) and to 5 620 (2041 *ShapingSEQ* forecast).

Traffic speeds

Our analysis shows:

- average link speeds are forecast to fall in the am peak for west-east travel by
 - between 30 per cent and 54 per cent (2041 base) and 33 per cent to 57 per cent (2041 *ShapingSEQ* forecast) for the eastern half of the corridor between Harbour Road and Breakfast Creek
 - between 27 per cent and 40 per cent (2041 base) and by 33 per cent (2041 *ShapingSEQ* forecast) for some sections of the western end of the corridor
- average speeds are forecast to fall in the pm peak for east-west travel by
 - between 33 per cent and 55 per cent (2041 base) and 35 per cent to 57 per cent (2041 *ShapingSEQ* forecast) for eastern half of the corridor between Breakfast Creek and Harbour Road
 - between 27 per cent and 70 per cent (2041 base) and 25 per cent and 70 per cent (2041 *ShapingSEQ* forecast) for some sections of the western end of the corridor.

We found there was a mostly smaller speed reduction for travellers in the lower volume directions.

Auditor-General reports to parliament

Reports tabled in 2017–18

Number	Title	Date tabled in Legislative Assembly
1.	Follow-up of Report 15: 2013–14 Environmental regulation of the resources and waste industries	September 2017
2.	Managing the mental health of Queensland Police employees	October 2017
3.	Rail and ports: 2016–17 results of financial audits	December 2017
4.	Integrated transport planning	December 2017

Contact the Queensland Audit Office



