

# WELLINGTON PUBLIC TRANSPORT SPINE STUDY

## KEY RESULTS

### The study

The Public Transport Spine Study (PTSS) is about determining what a future public transport solution for Wellington city might be – one that is high quality, modern and meets the longer term aspirations and demands of our city.

The study has been undertaken by AECOM, and was commissioned jointly by Greater Wellington Regional Council, Wellington City Council and the NZ Transport Agency. These three agencies are working in partnership to ensure this work is aligned with economic and transport developments in Wellington City and the wider region.

This PTSS is a key action from the Ngauranga to Airport Corridor Plan (2008), which seeks major improvements to public transport to provide a high quality, reliable and safe service between the Wellington Railway Station and the regional hospital. It sits alongside significant improvements to the strategic road network that are now being planned and designed as part of the Roads of National Significance (RoNS) programme and major upgrades to the rail network.

The PTSS investigates the feasibility of different options to achieve a public transport step change. It sets out the relative merits of three options. A preferred option will be decided through public consultation and a separate decision making process.

### The process

The PTSS has progressively narrowed down the number of options (long list, medium list, short list), with each stage providing a more detailed analysis of those options.

The option assessment was underpinned by findings from an international review of public transport systems around the world which informed the study of the characteristics of different transport modes, success factors, design issues, constraints, available technology and procurement processes.

Transport modelling, using a suite of regional models, and the latest land use and transport forecasts, has informed the assessment of the options, along with a planning, social and environmental assessment, cost estimates, and an economic analysis. Throughout the process key stakeholders have been consulted to test emerging directions and findings.



## The shortlisted options

**Bus Priority** - Standard buses with peak period bus lanes in congested areas and priority at traffic signals. Buses run along each side of the road, from the Wellington Rail Station to Newtown and through the Hataitai bus tunnel to Kilbirnie



**Bus Rapid Transit** - New high capacity and high quality buses running on dedicated bus lanes with priority traffic signals. Bus lanes run from the Wellington Railway Station to Courtenay Place. From Courtenay Place to Newtown they run along the median of the road. From the Basin Reserve, buses travel under the proposed Basin Bridge, through the new duplicated Mt Victoria Tunnel and run alongside State Highway 1 to Kilbirnie.



**Light Rail Transit** - Trams running along rail tracks in dedicated lanes with priority signals. Tracks run from the Wellington Railway Station to Courtenay Place. From Courtenay Place to Newtown they run along the median of the road. From the Basin Reserve, trams travel under the proposed Basin Bridge through to Adelaide Road, through a new dedicated Mt Victoria Tunnel and then run alongside State Highway 1 to Kilbirnie.



## HOW THE OPTIONS COMPARE

	Bus Priority	Bus Rapid Transit	Light Rail Transit
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• 3 minute travel time saving from Wellington Railway station to both Newtown and Kilbirnie (2031 morning peak)</li> <li>• A 3% increase in morning peak patronage from the south and south-east to the CBD in 2031</li> <li>• Total public transport user benefits equating to \$35m (2012 dollars)</li> </ul>	<ul style="list-style-type: none"> <li>• 11 minute travel time saving from Wellington Railway station to Kilbirnie (2031 morning peak)</li> <li>• 6 minute travel time saving from Wellington Railway station to Newtown (2031 morning peak)</li> <li>• A 8% increase in morning peak patronage from the south and south-east to the CBD in 2031</li> <li>• Total public transport user benefits equating to \$95m (2012 dollars)</li> </ul>	<ul style="list-style-type: none"> <li>• 11 minute travel time saving from Wellington Railway station to Kilbirnie (2031 morning peak)</li> <li>• 7 minute travel time saving from Wellington Railway station to Newtown (2031 morning peak)</li> <li>• No increase in morning peak patronage from the south and south-east to the CBD in 2031</li> <li>• Total public transport user benefits equating to \$56m (2012 dollars)</li> </ul>
<b>Costs</b>	<ul style="list-style-type: none"> <li>• Total estimated construction costs of \$59 million. Operating costs of \$88 million per year (similar to the current system)</li> </ul>	<ul style="list-style-type: none"> <li>• Total estimated construction costs (including vehicles) of \$207 million and operating costs of \$83 million per year</li> </ul>	<ul style="list-style-type: none"> <li>• Total estimated construction costs of \$940 million and operating costs of \$89 million per year</li> </ul>
<b>Economics</b>	<ul style="list-style-type: none"> <li>• A benefit cost ratio (BCR) of between 0.57 and 0.67</li> </ul>	<ul style="list-style-type: none"> <li>• A benefit cost ratio (BCR) of between 0.87 and 1.55</li> </ul>	<ul style="list-style-type: none"> <li>• A benefit cost ratio (BCR) of between 0.05 and 0.10</li> </ul>
<b>Potential Impacts</b>	<ul style="list-style-type: none"> <li>• Reduced number of bus stops in the CBD</li> <li>• Some removal of on-street parking during peak periods</li> <li>• Some road widening required along Constable Street</li> </ul>	<ul style="list-style-type: none"> <li>• 36% less public transport vehicles along the Golden Mile</li> <li>• Need for users to access median bus stops along parts of route</li> <li>• Reduced number of Bus Rapid Transit stops in the CBD</li> <li>• Removal of some on-street parking and restricted access to some buildings in the CBD</li> <li>• Some general traffic redirected away from the Golden Mile</li> <li>• Some localised road widening required, with more significant widening along the State Highway 1 corridor affecting the town belt</li> </ul>	<ul style="list-style-type: none"> <li>• 40% less public transport vehicles along the Golden Mile</li> <li>• Need for users to access median bus stops along parts of route</li> <li>• Reduced number of Light Rail Transit stops in the CBD</li> <li>• Removal of some on-street parking and reduced access to some buildings in the CBD</li> <li>• Some general traffic redirected away from the Golden Mile</li> <li>• Some localised road widening required, with more significant widening along the State Highway 1 corridor affecting the town belt. A new tunnel will also have impacts on properties</li> </ul>
<b>Staging</b>	<ul style="list-style-type: none"> <li>• Can be developed incrementally as resources and opportunities arise. Priority to be given to CBD sections and integration with planned road construction projects around the Basin Reserve and Adelaide Road</li> </ul>	<ul style="list-style-type: none"> <li>• Best developed comprehensively to maximise benefits and avoid integration issues with existing bus services.</li> <li>• CBD bus lanes could be constructed in advance.</li> <li>• There is demand for this step change in service around 2021.</li> <li>• Relies on prior construction of Basin Bridge project and requires integration with Mt Victoria tunnel duplication project. Both of these projects are due to be completed by 2022</li> </ul>	<ul style="list-style-type: none"> <li>• Best developed comprehensively to maximise benefits and avoid integration issues with existing bus services.</li> <li>• There is demand for this step change in service around 2021.</li> <li>• Relies on prior construction of Basin Bridge project and requires integration with Mt Victoria tunnel duplication project. Both of these projects are due to be completed by 2022</li> </ul>

## Key Findings

### The key findings from the Study are:

- There is a need for future investment in public transport through central Wellington to achieve the goal of growing public transport mode share.
- A high quality, high frequency public transport spine has an important role within the Ngauranga to Airport Corridor, alongside the Wellington RoNS, as part of a balanced long-term transport network for Wellington.
- There are opportunities to improve public transport mode share from the south and south-east of Wellington, however extensions of the options to the north would have limited benefit.
- Bus Rapid Transit provides the highest benefits, followed by Light Rail Transit and Bus Priority.
- The cost of the most expensive option (Light Rail Transit) is almost five times that of the next most expensive option (Bus Rapid Transit).
- Bus Rapid Transit has the highest overall benefit cost ratio, followed by Bus Priority then Light Rail Transit.
- The Bus Priority and Bus Rapid Transit options can be developed incrementally. The optimal staging and timing for the Bus Rapid Transit and Light Rail Transit options, however, is one stage and completion around 2021/22.
- It is technically feasible to construct all of the options. For most of the route they can be accommodated within the existing road corridor, however there are more significant impacts on property from Bus Rapid Transit and Light Rail Transit options through Mt Victoria and along Ruahine Street and Wellington Road, including the construction of a tunnel specifically for the Light Rail Transit option through Mt Victoria.
- Aligning other policies (such as parking and land use) and transport projects would be necessary to realise the full benefits of any of the options. For example, managing any future increases of commuter parking appears to be a key intervention to increase public transport patronage and mode share.

## Next Steps

Copies of the study reports are now available on the Greater Wellington Regional Council website.

Public feedback will be sought on the public transport options over the next few months and reported back to the Regional Transport Committee in December 2013, after the local government elections. The Regional Transport Committee will then confirm the long term option for the public transport spine.

Once a preferred option is agreed, further work will be necessary to design the option in more detail, and to develop a detailed business case for funding.



For further information:  
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