

Stephen Harte

From: Alex Campbell <Alex.Campbell@gw.govt.nz>
Sent: Thursday, 23 January 2014 11:09 a.m.
To: Stephen Harte
Cc: Rhona Hewitt
Subject: Johnsonville Bus Options
Attachments: WGN_DOCS-#1309043-v1-Johnsonville_Hub_Issues_and_Options_Memo_(Jan_2014).pdf

Hi Steve,

Attached is a memo outlining some initial thinking on alternative on street bus stop operations for Johnsonville. As noted at yesterday's meeting these alternatives are preliminary, do not represent a formal Council position and have not investigated impacts on traffic and parking.

Regards,

Alex

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MEMO

TO Rhona Hewitt
COPIED TO
FROM Alex Campbell
DATE 23 January 2014
FILE NUMBER TD/04/04/15 #1309043

Johnsonville Hub Bus Issues and Options

Background

Johnsonville is a key public transport hub in Greater Wellington region. Bus routes serving the northern suburbs of Wellington are currently routed to or through Johnsonville with bus stops located adjacent to Johnsonville Station facilitating bus-bus and bus-train connections for passengers.

The current bus routing depends on utilising land owned by the Johnsonville Mall which is expected to be redeveloped in the medium term as part of a consented redevelopment of the Mall. Current passenger facilities for bus users are minimal and substandard for the volume of passengers using bus stops, with shelters located between car parking spaces and passengers having to walk through a car park with minimal pedestrian provision. For buses travelling to Wellington Central the route via the Mall car park is indirect and slow operating in a low speed car park environment with delay from parking cars. Past feedback from the bus operator has indicated that routing via the Mall car park can add an estimated additional 5 minutes to peak journey times to Wellington.

Consented plans for Johnsonville Mall place buses into a decked parking structure which does not resolve current issues of minimal passenger facilities, indirect routing and delay from buses operating in a low speed car park environment.

This structure as consented does not appear suited to operation of high capacity double deck buses as planned by the current bus operator.

The planned redevelopment of the Broderick Road bridge will remove current turn restrictions for buses at the junction of Moorefield and Broderick Roads. This opens the opportunity to consider alternative bus route options through the Johnsonville triangle which do not require the use of the Johnsonville Mall car park.

This memo outlines two possible alternatives for Johnsonville bus operations which would provide the opportunity to provide an enhanced environment for passengers, an improved operating environment for buses and support the introduction of planned new high capacity buses.

This are initial options only and analysis has not yet been carried out regarding roading and parking effects.

Alternative Bus Hub Options

Following the upgrade of the Broderick Road bridge two on-street bus hub options will become feasible to consider. These are:

- Option A – On street bus facility located on Moorefield Road.
- Option B – On street bus facility located on Johnsonville Road.

Detailed route diagrams of bus routing for each option as well as the existing stops are contained in Appendix 1.



Bus Stop Functional Requirements

Bus services in Johnsonville serve two principal purposes of travel to and through Johnsonville. The two types of bus services serving Johnsonville can therefore be defined as being:

- Through Services - Bus routes that travel through Johnsonville providing direct access to Wellington Central as well as access to Johnsonville.
- Terminating Services - Bus routes terminating at Johnsonville which primarily provide access to the Johnsonville town centre. Departure times may be coordinated with timed connections to facilitate transfers between buses for onward travel. As these buses are

terminating at Johnsonville they require layover space to be provided for buses to sit between arrival and departure on their subsequent trip.

This mix of Through and Terminating services with timed connections between services leads to a set of specific functional requirements for bus stops at Johnsonville:

- **Dedicated stands for buses to and from Wellington.**
 - For passenger legibility inbound and outbound buses on a route should operate from separate bus stands.
- **Space for bus-to-bus connections.**
 - Outbound stop to be able to accommodate up to two feeder buses waiting for a third connecting bus to arrive from Wellington.
- **Space for early buses to sit and make up time.**
 - Minimum two bus lengths to allow an early running bus to occupy the bus stand and make up time without blocking a second bus from accessing the bus stand.
- **Layover space for terminating services.**
 - Layover space for up to 4 buses to park clear of through bus stops. Space should be sufficient to allow buses to exit independently from the layover space without having to wait for the first bus in the queue to depart as arrival order of buses will not necessarily match the order in which buses are required to depart.

Future proofing requirements

Future Peak Bus Volumes

Currently a peak flow of 14 buses per hour depart the city bound bus stop at Johnsonville Station (a bus every 4.2 minutes). It is anticipated that future growth in bus use will be accommodated through introduction of higher capacity buses rather than increasing bus numbers. Moving from the current largest 55 seat buses to higher capacity buses (80+ seats) would cater to significant patronage growth of at least 45% more passengers without requiring additional peak bus departures. This is consistent with the recognised capacity limits of the Golden Mile which require a move to higher capacity buses for Golden Mile services.

Future bus fleet

Mana Coach Service plan to introduce double decker buses onto Johnsonville bus routes in the near future. Any future bus stop arrangement should be accessible to high capacity buses. Turning circles and height clearances should be capable of accommodating the requirements for double deck or articulated buses which are the available options for high capacity buses.

Rail Double Tracking and Park and Ride

An identified preferred option for a dual platform train station at Johnsonville has been identified and needs to be considered as part of future bus stop location design. The design by Duffil Watts and Tse (June 2008) provides for a 6 bus length bus stand on Moorefield Road adjacent to the train station with initial plans indicating all park and ride spaces on Moorefield Road would be lost to station and road upgrades. As around 25% of train passengers make use of park and ride Greater Wellington Public Transport Group wish to minimise the loss of park and ride bays and explore alternative options for bus stands which reduce impact on park and ride provision. Both bus

alternatives presented in this memo look to retain convenient commuter parking at Johnsonville Station.

Integration of Bus and Train services

Johnsonville is notable for how little actual transfer occurs between buses and trains, likely due to the faster travel time to Wellington by bus (15 vs 21 minutes by train) and the separate catchments served by each mode. Survey data by Traffic Design Group in 2007 found that only 1% of train passengers at Johnsonville transfer from buses in the am peak. Transfers between buses in the am peak were three times that of rail. In the off peak when some bus routes terminate at Johnsonville 17% of bus passengers transfer from other bus services.

While connectivity between bus and train is important when looking at local bus network design it needs to be considered against other issues of access to town centre destinations and directness of routing through the town centre for through services.

Integration with the Town Centre

The Johnsonville Town Centre Plan adopted by Wellington City Council in November 2008 outlines a framework to guide the future development of Johnsonville over the next 20 years. The Plan provides an important context for both the mall redevelopment and public transport improvements. A key aspect of the Johnsonville Town Centre Plan is to intensify mixed use development of commercial and residential activities with the highest intensity of development focused around the Johnsonville Road main street.

It is understood that WCC intend to prioritise Moorefield Road for general traffic while Johnsonville Road is to be a low speed main street with more emphasis on the pedestrian environment.

In terms of public transport accessibility it is desirable to have bus services which deliver customers to the “front door” of a town centre making public transport a visible and integral part of the town and contributing to pedestrian activity and street vibrancy.

Passenger Facilities

As Johnsonville functions as a passenger interchange an enhanced level of passenger facility is required. Transferring passengers may have an extended wait between arriving and departing buses. Perceptions of waiting time are influenced by the quality of the waiting environment. To reduce the perception of waiting time the passenger shelters should aim to include protection from wind and rain and provide a high level of lighting. Facilities should however also be open with good visibility to the street to maximise perceptions of safety and security. Being located adjacent to shops which are open extended hours assists in providing ‘eyes on the street’ to discourage passenger facilities being used for anti-social activity.

In terms of scale sufficient shelter should be provided to comfortably accommodate around 20 passengers at the city bound bus stop. Optimally at least 10m² of shelter would be provided to ensure a comfortable environment for passengers in the busy morning peak.

Comparison of Bus Stop Options

The following table provides an initial comparison of the bus options with regard to a number of relevant factors with no specific weighting applied.

Issues	Existing Location - Mall Carpark	Option A – Moorefield Road	Option B – Johnsonville Road
Integration with Train Station* (*note only around 1% of passenger transfer between bus and train at Johnsonville)	+2) Adjacent to Train Station	+2) Adjacent to Train Station	-2) Terminating buses adjacent to train station. 200m walk between Through buses on Johnsonville Road and train station.
Bus to bus connections	-1) Connection in car park environment with poor pedestrian provision between stops.	+1) Same side of road connections for travel to Wellington. Connecting passengers from Wellington would need to cross Moorefield Road.	+2) Same side of road connections for all bus connections to and from Wellington.
Integration with Johnsonville Town Centre	-2) Bus stops located at rear of Mall in car park environment with poor pedestrian provision.	+1) Located at rear of Mall adjacent to Library and Johnsonville Community Centre.	+2) Located on main street of Johnsonville Town Centre adjacent to front door of Mall.
Opportunity to provide high quality passenger facilities	-2) Very limited space for passenger shelter facilities.	+1) Space on Broderick Road to provide high quality awning style bus shelter facilities.	+2) Space on Johnsonville road to provide high quality awning style bus shelter facilities. Wider footpaths than Moorefield Road provide opportunity for more passenger space.
Directness of bus route to Wellington	-2) Indirect route through Mall car park (bus makes 5 turns Moorefield to Broderick)	+1) More direct route (bus makes one turn Moorefield to Broderick)	+2) Most direct route (bus makes no turns between Moorefield and Broderick)
Future High Capacity Buses	-2) Mall plan for car park would preclude operation of high capacity buses.	+2) High capacity buses feasible.	+2) High capacity buses feasible.
Opportunity for am peak bus priority to Wellington	-1) Limited due to lack of road space on Broderick Road for dedicated bus lane to Wellington.	-1) Limited due to lack of road space on Broderick Road for dedicated bus lane to Wellington.	+1) Opportunity on Johnsonville Road southbound for bus lane on approach to Broderick Road to bypass traffic queue.

Issues	Existing Location - Mall Carpark	Option A – Moorefield Road	Option B – Johnsonville Road
Pedestrian access	-1) Poor pedestrian provision in car park environment.	+1) Moorefield Road well located for walking access to rear of Johnsonville Mall, Johnsonville Library and Community centre. Moorefield Road likely to be prioritised as a main vehicle route which may affect quality of pedestrian environment.	+2) Johnsonville Road well located for access to front door of Johnsonville Mall and businesses on eastern side of Johnsonville Road. Johnsonville Road likely to be prioritised for pedestrians as part of town centre plans.
Cycle Access and Loading (future bike rack equipped buses)	-2) Little opportunity to make provision for bike parking or loading within existing constrained car park space.	0) Moorefield Road has limited space for provision of dedicated cycle lanes. Footpath widths may preclude opportunity for significant bike parking at stops.	+1) Johnsonville Road if prioritised for slow modes may provide better environment for cyclists to access bus stops. Wider footpaths may provide more opportunity for bike parking at stops.
Score	-11	+8	+12

This very preliminary evaluation of the options shows either option is acceptable and both offer significant advantages over current Johnsonville Mall bus stop arrangements.

Locating the main bus stops on Johnsonville Road appears to offer some overall benefit compared with Moorefield Road although this would result a very small number of passengers that transfer between through buses and trains having to walk around 190m.

The separation of bus and train components would require robust signage and way-finding to assist passengers wishing to transfer between modes as the bus stops and trains station would not be located within sight of each other. However it should be noted that for buses terminating at Johnsonville (as opposed to travelling through) these would continue to terminate adjacent to Johnsonville Station after proceeding through stops on Johnsonville Road thus minimising the number that would need to walk between the station and Johnsonville Road (see Appendix 1).

Recommendation

As both alternative locations for bus stops offer advantages for bus operations Greater Wellington should look to further develop the options including detailed analysis of passenger impacts. Consultation with users and the local community would need to be carried out to confirm a preferred option. Until a preferred option has been arrived at Greater Wellington should work with WCC and NZTA to preserve the opportunity for stops to be located on either Johnsonville Road or Moorefield Road.

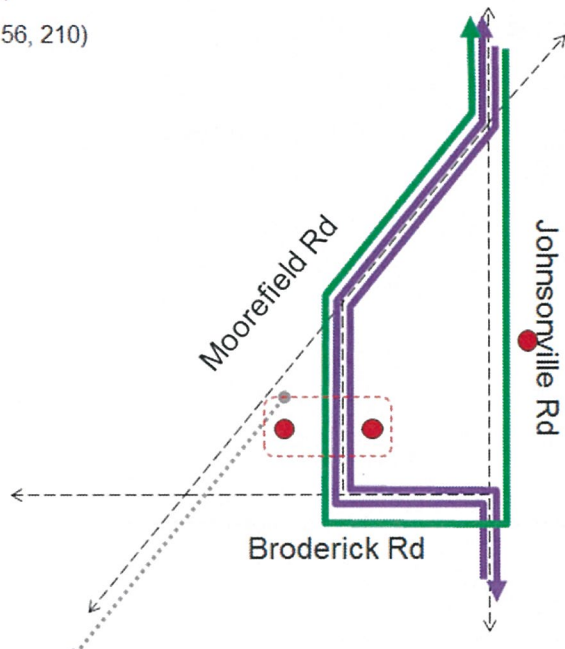
Appendix 1

Johnsonville Existing Bus Operations

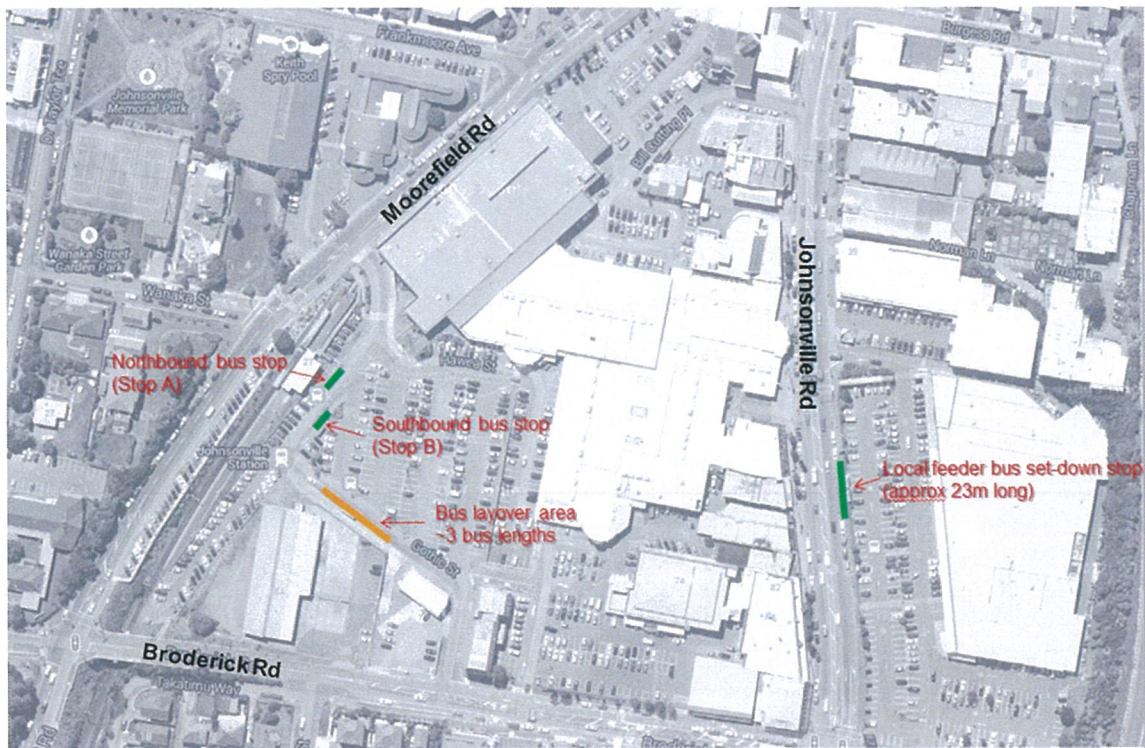
- Through routes (54, 55, 211)
- Terminating routes (52, 53, 56, 210)
- Bus Stops
- - - - - Train Line
- Bus connection point

Key Issues






- Slow and indirect route through shopping centre car-park.
- Conflict between car park circulation and bus movements.
- Limited ability to provide quality passenger facilities – land owned by Johnsonville Mall.
- Consented Mall plans place buses within a decked parking structure which would not accommodate planned high capacity double deck buses.



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Option A – Moorefield Road Bus Hub

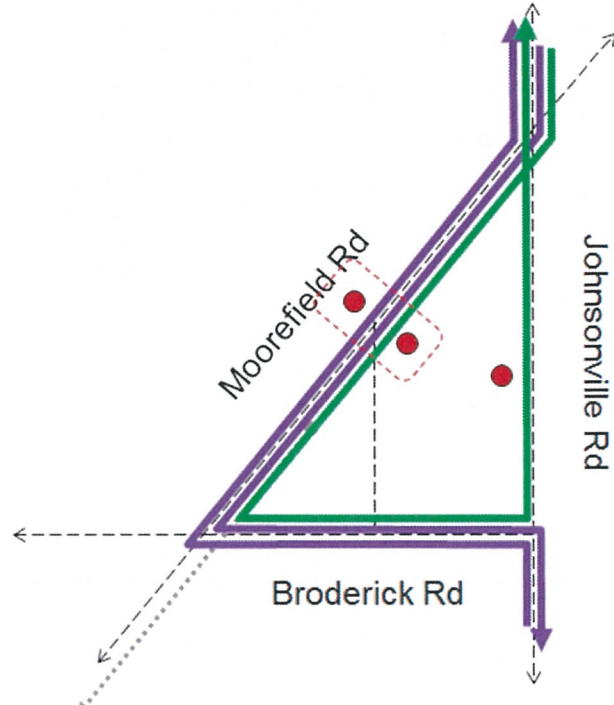
-  Through routes
-  Terminating routes
-  Bus Stops
-  Train Line
-  Bus connection point

Positives

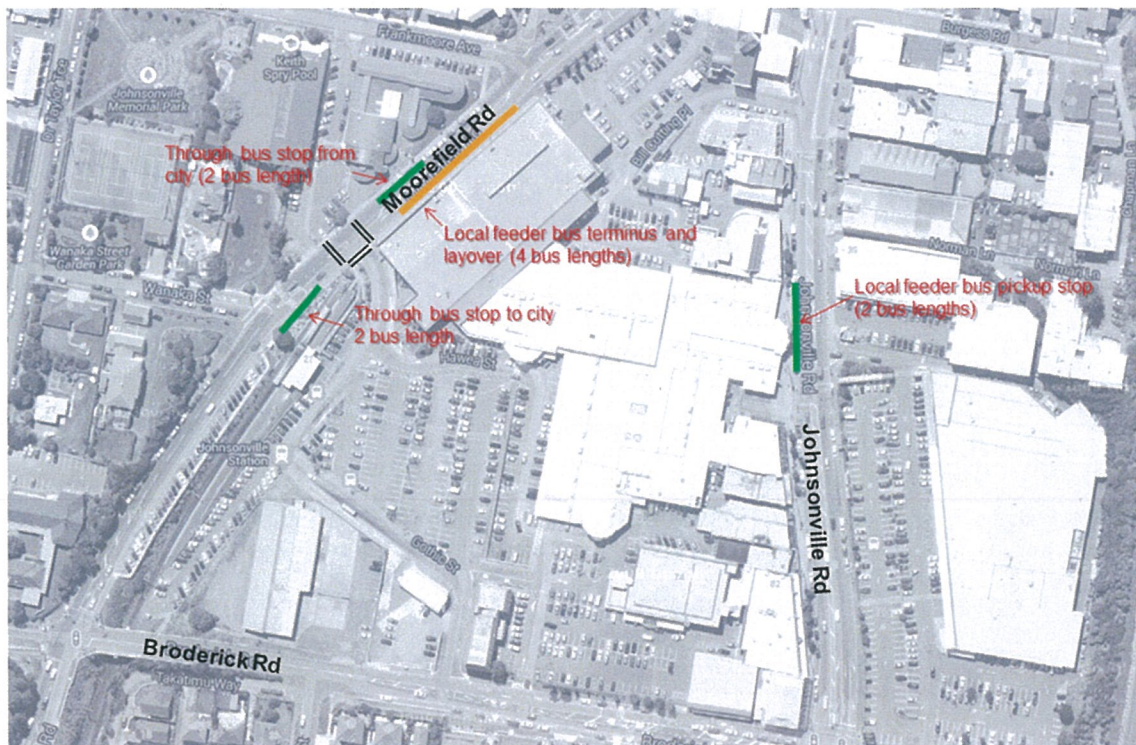
- Buses and trains depart from same location.
- Bus hub located adjacent to Johnsonville Community Centre

Negatives







- Indirect route for through-buses to and from Wellington.
- Bus hub at edge of town centre (distant from The Warehouse and Woolworths).
- Passengers need to cross Moorefield Road when transferring off buses from city.
- Likely to be difficult to implement bus priority for city bound buses (Insufficient road space on Broderick Road for dedicated bus lane onto Johnsonville Road).



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Option B – Johnsonville Road Bus Hub

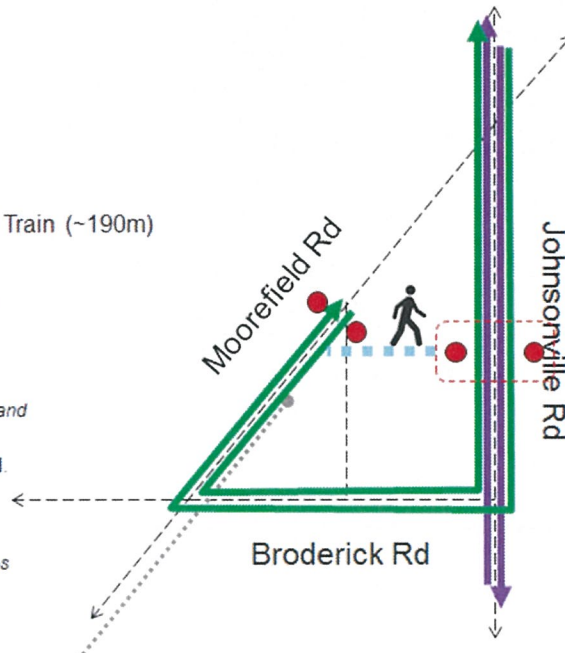
-  Through routes
-  Terminating routes
-  Bus Stops
-  Train Line
-  Bus connection point
-  Walk link between Bus and Train (~190m)

Positives

- Direct route to/from Wellington with possible opportunity for am peak bus priority to be implemented.
- Bus hub central to town centre (at "front door" of Johnsonville Mall, The Warehouse and Woolworths).
- Bus to bus connections all same side of road.

Negatives

- Main bus hub separated from train station (approx 190m walk, similar to distance between buses and train at Wellington Station).
- Only terminating bus routes stop outside Johnsonville Service Centre.



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