



City of Ballarat Integrated Transport Plan Rail Discussion Paper

Feedback from the Public Transport Users Association

Introduction

The PTUA welcomes the City of Ballarat's initiative in preparing this rail background paper in the leadup to its Integrated Transport Strategy. Rail is crucial to meeting the needs of Ballarat and the greater Central Highlands region, and it is fantastic to see the City of Ballarat continuing its leadership in advocating for better rail with other levels of government, and its commitment to planning land uses around heavy rail station sites.

While specific initiatives will be dealt with below, it is important to comment on the City of Ballarat's overall strategic approach to rail. Much of this aligns closely with international best practice, and with PTUA policy - and we commend the City of Ballarat for this. The one major exception to this rule is the topic of park-and-rides.

There seems to be an unspoken assumption that the people of Ballarat will access the rail network overwhelmingly by car in the future, which would require large increases in car parking at stations.

Parking at stations is extremely expensive to provide. Adding new ground-level parking to existing stations costs in the order of \$15-20,000 per space, while spaces in multi-level parking structures can easily cost three times that much. Building an entirely new station to facilitate park-and-ride would of course cost tens of millions of dollars. A single 6-car VLocity train can hold 456 seated passengers; assuming average car occupancy rates of 1.1 would mean the 415 parking spaces required to fill that train would cost between \$6.2-18.7 million if built at an existing station. Building an entirely new station at Warrenheip, plus associated parking, would likely cost in the order of \$40 million or more (particularly if it were to have 1000+ car parks, as has been suggested by some).

By contrast, \$40 million could fund all three high-frequency SmartBus routes identified in the PTUA's Connecting Ballarat report - every 10 minutes, from 6am-10pm, seven days a week - for about four years. This figure does not include any cost recovery from fare revenue - and a truly high-quality service like this would do a lot to attract people out of their cars and increase fare revenue. It would also have huge city-wide benefits for people getting around Ballarat, whereas increased parking - particularly at a remote location like Warrenheip - would only be useful to those catching the train to Melbourne.

The parking space cost estimates above do not include the opportunity costs of using strategically valuable land surrounding central railway stations for parking, nor the increased burden of traffic on surrounding streets. Due to the phenomenon of induced traffic, money spent making it easier for people to drive and park will encourage more people to drive, creating a negative feedback loop which makes traffic worse and parking harder to find. Money spent on efficient active and public transport, by contrast, will encourage people to use those modes, creating a positive feedback loop that increases public transport patronage (and therefore fare revenue) justifying further improvements.

Although it is understandable that this paper focuses on rail and therefore does not go into detail about buses, walking or cycling, it is impossible to discuss rail policy without considering these elements - at least in broad strokes. The baked-in assumption that most people will access rail by car, and that therefore we must provide huge car parks at stations - and let the need for parking dictate the placement of our stations - cannot go unquestioned. If Ballarat is to remain a livable, vibrant city, we must shake off the car-centric planning notions of the past, and provide real alternatives to driving so that people do not need to own a car to access public transport.

Ballarat to Geelong connectivity

The PTUA thoroughly agrees with the background paper's analysis of the viability and importance of reinstating direct passenger services between Ballarat and Geelong, but will make one addition. The paper notes that the Regional Rail Revival study did not account for the road upgrade costs that would be required if the project did not proceed; we agree, but would also note that road maintenance costs should be accounted for in subsequent analyses. By increasing passenger and freight rail services on the Ballarat-Geelong line, and thereby taking trucks and cars off the road, there should be a reduction in road maintenance costs along this corridor.

Other network links

The PTUA believes that extending the rail network to Stawell alone would be something of a half-measure, given the relatively short distance and small population (6000). The network should be extended to Horsham (population 17,000) as soon as practical, with services stopping at Stawell along the way.

Similarly, extending the passenger network to Hamilton (population 10,000) as proposed in the Grampians and Barwon South West Passenger Services Cost & Feasibility Study (2017), should be considered among the higher priorities for rail network extension.

The PTUA also supports the extension of the passenger rail network to Mildura (population 51,000), with trains travelling via Ballarat. Extending the Maryborough line to St Arnaud (2600) or Donald (1500) can be seen as the first step towards this goal, but again the preferred option would be to provide the service to the largest population centre from day one.

Improving frequency and reliability

The PTUA's current policy position for intercity rail services (such as Melbourne-Ballarat) is that interpeak frequencies should be at least every 30 minutes; and for long-distance rail services (such as Melbourne-Ararat or Melbourne-Maryborough) that they should be at least every two hours. Both of these measures are seen as crucial to the usability of public transport services, and their attractiveness to people who might otherwise drive. Increased frequencies will reduce waiting times and reduce crowding, making for a much more convenient and pleasant travel choice.

When considering the attractiveness of a transport mode, it is important to consider door-to-door travel time, not just in-vehicle travel time. Making the train journey shorter in various ways, especially when aiming to hit targets such as "under an hour", can help improve door-to-door journey time, but runs into the law of diminishing returns; as discussed below, we are talking about shaving a few minutes off the travel time, and it has proven very difficult.

By contrast, much larger improvements to door-to-door journey time can be gained in the near future, by cutting waiting times. If a person has an appointment near Southern Cross Station at 11:30am, they currently have a choice between arriving at 11:40am (ten minutes late) or 10:40am (fifty minutes early). Because arriving late is unlikely to be an option, they will need to choose to arrive fifty minutes early, and have a long wait ahead of them. Similarly, if their appointment ends at 12:30pm, they will have missed the 12:16pm train so would need to wait 46 minutes for the 1:16pm train. These lengthy waits will matter considerably more to the passenger than whether the train itself takes 64 minutes or 70 minutes.

Similarly, with current bus and train timetables, a person who works in Melbourne currently has two main peak services available - the 5:10pm and 5:50pm trains. If that person misses the 5:10 and needs to take the 5:50 (which is true of most people who don't work in the CBD itself) they are due to get back to Ballarat at 6:57pm. The majority of bus routes in Ballarat have their final service leaving Ballarat station shortly after 7pm, so if this train is more than a few minutes late, passengers will be unable to make their connection and will not be able to get the bus home. Higher frequencies during the peak would of course help, as would buses that ran later into the evenings; but reliability is nonetheless highly important for maintaining these kinds of connections between services.

Because of the importance of reliability and increased frequencies, further track duplication is one of the PTUA's highest priorities for the Ballarat line. We also wholeheartedly agree that detailed modeling should be undertaken to guide the prioritisation of further duplication works.

The paper's proposal that long-distance services should be hourly is double the PTUA's proposed frequencies, and is therefore very welcome; the higher the frequencies, the better. However we do note that services every two hours to Ararat and Maryborough are likely possible with minimal changes to existing infrastructure, whereas hourly services would require significantly more capital investment.

Improve Service Speed and Travel Time Variability

Discussions about service speed and travel times unfortunately suffer from a number of misconceptions, so it is necessary to delve into technical details. It is also very important to keep in mind which improvements will have the biggest impact on passengers, and which are more about grabbing headlines.

The paper notes that "the current timetable's best service time between Ballarat and Southern Cross is 73 minutes" however this is at best misleading. This may be true of the morning peak (travelling in the Ballarat-Southern Cross direction), but in the afternoon peak (travelling in the Southern Cross-Ballarat direction) there are four services that take less than 70 minutes - the fastest of which is the 1633 departure, which is timetabled at 65 minutes. This is not substantially different to the 64-minute train from 2006.

While detailed punctuality statistics are not available for the express "flagship" services (as V/Line's performance statistics only show the monthly average of all services) anecdotal evidence suggests that few of them managed to stick to their timetabled journey time very often. It should also be noted at this juncture that V/Line considers a train to be "on time" if it arrives within 5 minutes 59 seconds of its scheduled arrival time, so the "flagship" service could take approximately 70 minutes without even being considered late.

The issues with travel time variability are well noted in the paper. These issues are principally caused by:

- The continued use of the Bungaree loop, which is longer and has a lower track speed than the direct Millbrook loop
- Timetable padding and other timetabling difficulties caused by the substantial single-track throughout the line
- The need to share track space with old, slow locomotive-hauled trains (which have a lower top speed and also accelerate much more slowly)
- The need to run express through some suburban stations in order to balance passenger loads

While there will always be some variability in travel times as long as peak express services are provided (and they should be) it is definitely true that there should only be 2-3 distinct stopping patterns and travel times in the medium term – for example, “All stations”, “Limited express” and “Super express”.

Some programs already underway will help address the issues identified above:

- The Bungaree loop will be decommissioned once a second track is added on the Millbrook route as part of the BLU project
- The amount of duplicated track on the Ballarat line overall will roughly double as part of the BLU project
- Locomotive-hauled trains are slowly being phased out and replaced by VLocity units

However there is still a lot that will need to be done to address these issues:

- Around half of the Ballarat line will still be single track after completion of the BLU project
- Passenger loads in suburban sections will continue to rise exponentially, and V/Line services will not be able to cope with this demand
- The number of VLocity units being delivered is struggling to keep pace with increases in passenger numbers as it is, so it is a delicate balancing act between phasing out old locomotive-hauled trains and increasing the size of the fleet in absolute terms

A key project that will reap many benefits is the electrification of the line to Melton, so that this suburban section can be brought onto the Metro network. This project should include electrifying the existing line, and adding an extra pair of express tracks in the style of the Regional Rail Link, so that all Ballarat trains can run express between Melton and Sunshine without getting stuck behind Metro trains. With an all-VLocity fleet, this would mean:

- All Ballarat trains (not just a few peak express trains) would take approx 10-11 minutes to travel this section, as opposed to 17-24 minutes today
- Travel times would be much more consistent for Ballarat services
- Reliability and punctuality would improve markedly
- Overcrowding in suburban sections would cease to be an issue

It should also be noted that a VLocity train could travel between Ballarat and Melbourne in approximately 50-55 minutes on the existing tracks, if given a completely clear run. The reason none are timetabled to do so is an issue of track capacity, rather than top speed. Given this fact, and the importance of issues like punctuality and reliability which are also based on capacity, the City of Ballarat should above all else be advocating for projects that increase capacity in this corridor.

Ballarat Metro Rail Service

For more than a small minority of people to use trains as a means of getting around Ballarat would mean overcoming some severe hurdles. As noted, few people currently use Ballarat and Wendouree stations for this purpose; the trains are less convenient than the bus network in almost all circumstances, with late evenings (when buses have stopped running) being a notable exception.

While people may be willing to drive to Wendouree or Ballarat stations if travelling to Melbourne, they are unlikely to do so if they are travelling within Ballarat; they will usually be able to take a more direct path, and have less waiting time, if they drive directly to their destination. A similar pattern is likely for cyclists. The people who would access a Ballarat Metro service can therefore be divided into two groups:

- Those who live within walking distance of either station

- Those who can substitute a train trip for a longer (or a connecting) bus ride (eg those along Route 31 Miners Rest)

Both of these groups are quite small, and are currently better off using the existing bus network for most trips, because it is more frequent. If trains ran more frequently, as will become necessary anyway, the train would become more of a viable option for these people; but equally, as the bus network improves, with higher frequencies and longer running hours, it will remain more convenient for the majority of trips.

Two main factors will impact the usability of rail for intra-Ballarat travel; the frequency of trains and the number of stations. An increase in the number of stations within the existing urban area of Ballarat will mean that more of the people who live near the rail line will have access to it for intra-Ballarat travel. Also, if Ballarat continues to sprawl west and an additional station is built on a greenfields site (such as the Dowling Road crossing) the train may be more competitive with the bus due to the longer distances involved.

The need for increased frequencies has already been discussed, so its potential to provide for intra-Ballarat travel is another reason to add to the list. Similarly, extra stations are needed for other reasons, which will be discussed below - their usefulness for intra-Ballarat travel is another positive byproduct.

However, we do want to stress that the bus network is and will continue to be the principal method of getting around Ballarat by public transport, and that it needs considerably more attention and funding than it gets at the moment.

Planning for Level Crossing Removals

When discussing the removal of level crossings, it is important both to refer to the ALCAM ranking of level crossings and understand the context in which that ranking took place. ALCAM rankings factor in the number of trains using the crossing, the number of vehicles using the crossing, as well as other aspects that affect the inherent safety of the crossing (such as the design, the angle the road intersects with the rails, etc).

The latest publicly available ALCAM list is from 2008, and ranked the level crossings in Ballarat as follows:

- Humffray Street North: 120
- Lydiard Street: 309
- Doveton Street: 361
- Macarthur Street: 348
- Creswick Road: 241
- Burnbank Street: 392
- Forest Street: 285
- Gillies Street North: 311

However, it is very important to note that these rankings are based on very old data, and a lot has changed since 2008:

- Wendouree Station did not open till 2009, so the crossings west of Ballarat Station have gone from 6 trains per day (to/from Ararat) to 41 trains per day in 2019
- Trains between Ballarat Station and Melbourne have already increased slightly since 2008, and will increase sharply after the BLU project is finished at the end of 2019

- Ballarat's population has grown nearly 20% since the 2006 census, representing an increase in vehicle traffic at these crossings
- There was a fatality at the Forest Street crossing in 2018
- Since 2008, 86 level crossings have either been removed or are pledged to be removed (50 + 25 under the Andrews governments, plus 11 beforehand)

This means that by early 2020, all the level crossings in Ballarat will have massively increased in train and vehicle traffic and become more dangerous in absolute terms, and will also have risen in the rankings due to the removal (or pledged removal) of other crossings. While no updated data is currently available to the public, it is likely that Humffray Street North would be in the top 50 remaining crossings, Creswick Road and Forest Street in the top 150, and the remainder in the top 300.

In addition to the way increases in trains and vehicles impact the safety ratings, the LXRA's methodology means that train & vehicle movements also impact another criterion - the amount of traffic impacted by boom gate closures, under the Movement section. It is therefore noteworthy that Lydiard Street may rank more highly than other crossings with the same number of trains; the heritage gates are closed for substantially longer per train movement than more modern boom gates.

Given that several of these crossings are in relatively close proximity to each other and may be packaged together, they may be up for removal in the relatively near future. The City of Ballarat, and the Ballarat community, therefore need to think about how they want these crossings handled as a priority.

Even assuming that none of these level crossings will be removed in the next decade, it will be important for us to think about how we would like them to be removed - that is, rail-under, rail-over, road-under, or road-over. There are a number of level crossings in Melbourne where these choices are constrained by what has been built nearby, and the cost (or impossibility) of compulsorily acquiring and demolishing those structures; and in some cases, the need to maintain access to properties.

In Ballarat, both the Humffray Street North and Lydiard Street crossings are close to heritage structures which will constrain the design options for level crossing removals, but the others are not. We cannot change the locations of those heritage structures, but we can plan where future structures are built; the choices we make today about what gets built near the other crossings, and how the surrounding streetscapes are shaped, have the potential to constrain the choices of grade separation method in future. It is therefore extremely important that we make these decisions now, so that we're not stuck with an unfavourable method later. The Wendouree Station Precinct Master Plan will be particularly important in this discussion, as what gets built around the station may constrain options for the grade separation of Gillies Street in years to come.

Access and Stations

The PTUA agrees with the paper's assessment of the importance of enhancing access to railway stations, and particularly the importance of interchanging with buses, increasing pedestrian and cyclist access.

We too would like to stress the importance of ensuring Ballarat station is DDA compliant as soon as humanly possible.

Warrenheip Station

The need for a station at Warrenheip is not yet clear, and it is the PTUA's view that detailed work needs to be done into the feasibility of building a station at Warrenheip, and other potential sites for new stations, before the City of Ballarat conducts any further advocacy for this project.

The rationale for the Warrenheip site is that it can act as a large park-and-ride facility, with ample space for parking and easy access to the Western Freeway. However, what is being sold as a positive is in fact a negative; it could effectively only be accessed by car. There is minimal housing around the Warrenheip site, and local soil and hydrological conditions make it a poor choice for intensive development in future; the Woookarung Regional Park also means that Ballarat East will not encroach much further in Warrenheip's direction. This means that few people could access the station by walking, cycling or bus.

As detailed in the introduction, car parking is extraordinarily costly and space-inefficient, and experience from Victoria and around the world has shown that park-and-rides can never keep up with demand. Furthermore, providing a station that can only be accessed by car will increase road traffic - something City of Ballarat is actively trying to avoid in other ways. As it stands, there are no direct road connections between Ballarat's southwest and Warrenheip, so it would increase traffic on already congested roads in central Ballarat like Skipton Street and Eureka Street. We cannot continue to labour under the delusion that we can provide access to the rail network predominantly by car; we must start to increase the proportion of people who arrive at stations by walking, cycling and above all, bus. It is imperative that the Integrated Transport Plan recognises this and plans accordingly.

The target market for Warrenheip Station is not entirely clear, which makes it challenging to propose specific alternatives; however, the paper mentions Miners Rest and Delacombe, and previous advocacy on this issue has mentioned people driving from Ararat/Beaufort, Creswick/Maryborough and similar places. For Miners Rest and Delacombe, and indeed everywhere else within Ballarat itself, the best approach would be to improve the quality of bus services that can link them to the existing stations. Details can be provided in the Bus round of consultation, but suffice to say a service that ran more frequently, more quickly and to a longer span of hours would deliver more people to the rail network more effectively and efficiently than a large park-and-ride on the opposite side of the city.

Anecdotal evidence suggests that a number of people do indeed drive from Ararat/Beaufort and Creswick/Maryborough to Wendouree or Ballarat stations in order to travel to Melbourne, despite each of these towns already having a rail connection, simply because their existing rail services are so infrequent that they do not offer the flexibility these people require. The best way to remove these people from the carparks at Wendouree and Ballarat is therefore to improve the rail services to their own towns, as has been advocated for elsewhere in the background paper.

A small number of people from towns and settlements beyond the reach of the rail or bus networks will always need to drive; again rigorous data is hard to come by, but it seems that these are not the people who fill the majority of car spaces at Ballarat and Wendouree stations. The majority of people currently parking at these stations do live within range of the bus network, but do not use it because the levels of service are so poor. Improving the level of bus service will therefore do a lot more to alleviate parking pressure than providing a large outlying park-and-ride station at Warrenheip.

Major Events Precinct Station

A station near Eureka stadium would be beneficial for people travelling from outside Ballarat for football matches or other events. However, these kinds of events currently happen only a few times a year; the key to making such a station viable will be to ensure that the station is useful every day. This means that it must be useful for Ballaratians to get to Melbourne, and the placement of the station is crucial for this. There are two main factors that must be considered - which site works best operationally, and which site has the best catchment.

From an operational perspective, the “branching” phenomenon (explained well by Jarrett Walker here: <http://humantransit.org/2011/02/basics-branching-or-how-transit-is-like-a-river.html>) is of crucial importance. If the Eureka station were placed on the Maryborough branch, as proposed in the Ballarat Major Events Precinct Master Plan, this would mean splitting the frequencies of trains beyond Ballarat; the most likely solution would be for half of trains to go to Wendouree and half to go to Eureka, making both stations half as useful for passengers as Ballarat station. This would dramatically lessen the effect of taking pressure off Ballarat station - most people who live closer to Wendouree or Eureka stations will drive to Ballarat station in order to access the higher frequencies. Whereas if the station were located on the Ararat line, all Ballarat trains could stop at both stations easily, one after the other - ensuring a frequent service whichever station you go to.

The second factor is the catchment. The site proposed in the MEPMP is close to the stadium, but very little else of note - it is surrounded by industrial land, a quarry and a golf course. The standard planning rule of thumb is that people will generally only walk up to 1km to a station, and there are only a small number of houses within 1km walking distance. This means that this station too would be largely car-dependent, which would cause considerable congestion on surrounding roads.

The site for Eureka station should be shifted south onto the Ararat line, adjacent to the pedestrian crossing at Lexton Street. This site would have no issues with the branching problem described above, and it would have a much larger catchment of housing within 1km walk - including an increasing amount of medium-density housing. It would also be within range of the eastern end of the Howitt Street shopping precinct, which increases the site's utility for intra-Ballararat travel.

The Lexton Street site would still be sufficiently close to the stadium to be attractive to patrons - it would be approximately 600m walk via the southern entrance on Howitt Street, or 700m via the existing entrance on Creswick Road, which is comparable to the distance between Richmond Station and the MCG (450m-850m depending on which gate you enter by)

When it comes to bus-train connectivity, both sites are the same; they are both within a short walk of the same routes.

Other potential rail connections

The PTUA agrees that new greenfield sites for stations should be considered, and that the potential for a rail connection and transit-oriented development should be one of the key factors council considers when deciding which growth areas are preferred to be developed first. A “West of West” option seems to be the most favourable candidate on this metric, with the potential for development west of BWEZ and a new station to be built near the Dowling Road crossing.

Although a lot of work would need to be done to properly investigate the merits of such a proposal, the City of Ballarat should consider whether reopening a short section of the Skipton line and adding a new station at Lucas would be viable. In the interim, City of Ballarat should ensure that the former

Skipton rail corridor in its entirety is left undeveloped, to ensure that no developments preclude it from being reopened decades from now.

In the longer term, developing the Mount Rowan area and building a new station there should also be considered. However, due to the branching problem described above, this would be difficult to serve with frequent rail services for the near future.

City of Ballarat should also consider “infill” station sites, particularly where these can provide access to existing housing and new infill medium-density developments. The proposed Eureka station site discussed above is a good example of this.

Another potential infill station could be a new Ballarat East station; the original Ballarat East station site is too close to Ballarat station to be viable, but if a new station were built immediately to the west of the Water Street bridge, it would be ideally placed. A station here could provide access to much existing housing (notably including higher-density retiree communities) and potential sites for infill development like the former orphanage site. Notably, this site is also right near Woodmans Hill Secondary College, and it could therefore be used by students who live near Ballarat station (on the western edge of the school’s catchment zone) or by teachers who either live within Ballarat or commute from places like Ballan or Beaufort.

A decent amount of parking can be provided at both the Eureka station and Ballarat East station sites, but the aim with these infill stations should be to provide the best possible access by walking, cycling and bus connections.

Freight

The PTUA is supportive of measures to increase rail’s share of the freight task, and is therefore supportive of all freight measures noted in the background paper.

Innovation and industry

Rail jobs are sustainable, green jobs with a long-term future. The PTUA is extremely supportive of efforts to support Ballarat’s rail industry, particularly in the context of the need to transition to a low-carbon economy and provide more sustainable jobs like this.