

PARKITEER –SECURE BICYCLE PARKING AT PUBLIC TRANSPORT NODES IN MELBOURNE

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ABSTRACT

In the past few years, public transport patronage has grown rapidly in metropolitan Melbourne. Peak-period overcrowding on Melbourne's rail network saw a search for solutions to reduce congestion. One measure involved banning bicycles on peak-period trains in early 2008. This decision was overturned after a public outcry, causing a search for other solutions to reduce the number of bicycles carried on trains. One solution was to introduce secure bicycle parking at selected railway stations across the rail network, providing alternatives to cyclists who rode to the station but took their bicycles on the train due to concerns of theft or vandalism.

During 2008, 23 bicycle cages were constructed, with innovative features such as electronic card access and solar power supply. These cages, marketed as 'Parkiteer' are managed and maintained by Bicycle Victoria (a non-profit organisation) under contract to the Department of Transport. The introduction of the 'Parkiteer' cages has seen a reduction in numbers of bikes carried on trains during peak periods and also a shift in the habits of some public transport users riding instead of driving to the station.

In the devolved public transport environment found in Victoria, Parkiteer shows how the government, as custodian of the public transport system must positively engage with and influence the various actors within the public transport system (franchisees, infrastructure owners/managers, different levels of government, contractors and lobby groups) to reach the desired outcome, which was the delivery of over 20 bicycle cages at metropolitan and regional railway stations.

Word Count = 247 words

BACKGROUND

In the past few years, public transport patronage has grown rapidly in metropolitan Melbourne. The factors behind this are many and varied and have been covered in greater depth elsewhere (Webb & Gaymer 2009). The rise in patronage has been most rapid on the suburban train network, but significant patronage growth has also occurred on V/Line regional commuter services. During the same period of growth of public transport patronage, sales of bikes in Australia have recorded strong growth in the last decade, outstripping the sales of cars for nine consecutive years from 1999-2008 (CPF 2009)

The continued strong growth of the City of Melbourne (the CBD and its surrounds) as an employment generator over the last decade has reinforced Melbourne as a ‘strong-centred’ city built around its CBD, serviced by a radial public transport network based on its heavy rail ‘spine’. This means the public transport network has experienced the greatest pressure from growing patronage on city-bound trains in the AM and PM commuter peaks.

As overcrowding and load breaches became a regular occurrence on peak-period metropolitan trains (Moynihan: 2007) and as V/Line patronage climbed dramatically during 2007, the search began for options to maximise capacity on trains at peak times and in the peak directions of travel. In January 2008, the conditions of carriage were changed on metropolitan and V/Line train services to ban bicycles from train services travelling inbound in the AM peak (0700-0900) and outbound in the PM peak (1600-1900). The ban on the carriage of bicycles on trains in the commuter peaks were consistent with practices of rail operators in many Australian (Brisbane, Perth) and overseas (Amsterdam, London, Vancouver, Zurich) cities.

The so-called ‘bikes on trains ban’ caused a strongly negative response from cycling and public transport advocacy groups. As resistance to the bike ban grew during January 2008, the Department of Transport (DOT) began to look at policy options that addressed the challenges caused by bikes on public transport, particularly trains. Among the range of policy options developed by DOT to manage the issue of bikes on trains included improved bike parking facilities at railway stations – in this case, secure bicycle cages.

In February 2008, the Minister for Public Transport announced (Victorian Government: 2008) that the ban would be lifted with immediate effect and that a package of measures would be put in place to address the issue of bikes on trains. These measures included an initial \$1 million to fund the installation of up to 20 bike cages on Victoria’s rail network and a Ministerial directive that all park-and-ride upgrades, new stations, station upgrades and modal interchanges would have bike cage included within the scope of works.

DEVELOPING A STRATEGY

The key elements to the DOT strategy for managing bikes on trains focused on diverting bikes from trains, particularly in the morning peak. A search of academic literature and current practices from Australian and overseas public transport operators were used to

point to possible directions. As a result of the Minister's decision to lift the bikes on trains ban, some funding became available for conducting an audit of bicycle facilities on the metropolitan rail system and surveying the bike parking needs and preferences of cyclists using the rail network (SKM 2008).

Not surprisingly, the literature search shows the English-speaking world far from state of the art in integrating bicycle riding and public transport, with the best examples of integration coming from the Netherlands, Japan and to a lesser extent Germany. Unlike these countries where cycling has high overall mode share and performs an important feeder role for the heavy rail network, Australian cycling levels are more analogous to the United Kingdom's national mode share of 1% of all trips (Martens 2004). In Melbourne cycling accounts for only around 1.6% of trips to metropolitan railway stations (Metlink 2006) and only 1.3% of journeys to work (Mees, et al 2007).

A useful guide for policy makers dealing with the issue of bikes on public transport comes from Brunsing (1997: 358-9), who divides bike/rail users into three segments, each with their own different characteristics and needs. They are:

1. 'Bike and ride' – where a person rides to the railway station, parks their bicycle and boards a train.
2. 'Bike and ride and bike' – where a bike is used to get to and away from each end of the rail journey.
3. 'Ride and bike' – where a person walks or drives to the railway station. At the end of the rail journey, a bike is used to reach the final destination

Martens (2006:327) sees bike and ride as the dominant method of bicycle access to heavy rail nodes and views the provision of secure bicycle parking at stations as a key driver for the high levels of integration between bicycles and heavy rail seen in the Netherlands in particular. Brunsing (1997: 358) claims there are two main advantages of integrating cycling with heavy rail journeys in a 'bike and ride' trip up to 3 kilometres in length:

1. The time-competitive nature of cycling compared to cars as a mode of travel to railway stations, mimicking the car for door-to-door travel times on local or suburban road networks, and;
2. Reduction in travel times and transfer penalties of up to 10 minutes over either walking directly or walking to a bus or tram stop for a feeder service to the railway station.

Based on the literature review on bike-rail integration (backed up by the SKM survey work) and consultations with the key cycling and public transport stakeholders, DOT chose as the primary target of its bike policy the significant set of 'bike and ride' cyclists who rode from home to the railway station and then took their bikes on the train due to the absence of secure parking at the railway station.

'Bike and ride' customers would be targeted to take their bicycles off trains through providing an improved form of bike parking based on a secure bike cage design. 'Bike

and ride and bike' passengers were chosen as the secondary target through changing the conditions of carriage to allow folding bikes onboard all public transport vehicles (trains, trams and buses) in Victoria. An additional benefit perceived to fit well with this strategy was the 'conversion' of 'park and ride' passengers who previously drove to the station before catching the train to 'bike and ride' passengers. An important part of evaluating the bike cage strategy would be to see the modal split of cage users between cyclists and drivers.

'Ride and bike' passengers were not targeted in this strategy. The radial, CBD-focused nature of the rail network meant that most passengers needing to travel beyond CBD railway station transferred to other public transport services or walked. Additionally, the government (Vic. Gov.: 2009) and the non-government sectors (Lahey: 2009) were developing public bike hire schemes to serve the Melbourne CBD.

As a result of a strategy chosen to target bike and ride customers, the decision was made to explore ways of improving bicycle parking at railway stations and it was decided that the best way of doing this was through deploying bike cages instead of more lockers.

WHY CHOOSE BICYCLE CAGES?

At this point it is worth taking a brief look at the history of bike facilities on Melbourne's rail network. During the 1970s, the then Victorian Railways began to install the first generation of bike parking facilities at stations. These were mostly 'rabbit's ears' bike racks, chains attached to fence posts or hoops with chains (cyclist supplying the locks) that allowed the front or rear wheels to be chained up along with more conventional rails.



Figure 1 – 'Rabbit's ears' bike parking



Figure 2 – Bike parking rails with chains



Figure 3 – Bike parking rails

These early kinds of bicycle parking were not always secure and excessive force or movement could damage the wheels of bicycles, rendering them inoperative. Surveys of cyclists on behalf of public transport authorities in 1987 and again in 2008 showed that cyclists would “rather secure their bicycle by any other practical means” than use these early-model bike parking facilities (SKM 2008: 46). This preference by cyclists to use ‘any other practical means’ has led to the rise of ‘informal’ bike parking, whereby bikes were chained up to fences, stanchions and handrails, often in places that created dangers for other public transport users and staff.



Figure 4 – Informal bike parking on station handrails

During the 1980s and 1990s, different parking devices (such as hoops) were installed across the network. Around this time, the first bike lockers were installed that required the hirer to supply their own lock to secure the locker. Ultimately almost 400 lockers were installed across the network on station platforms and at approaches to stations. During 2005 and 2006 an additional 250 lockers were installed at railway stations across the state as part of the Commonwealth Government’s \$2.4 million *Cycle Connect* grants project to provide bicycle parking at public transport nodes. The majority of the *Cycle Connect* lockers were deployed to metropolitan stations. While the various types of lockers were seen as an improvement upon the racks, users found them less than ideal to use and (at some stations poorly located), while the system of managing lockers and waiting lists for vacant lockers by the rail operators did not encourage the take-up of lockers by bicycle using commuters, even after the rental fee for lockers was removed early 2005.

Faced with these problems, the bicycle cage was chosen over other models as the preferred method of bike parking as it fulfilled a number of essential criteria:

1. Bike cages were already proven to work under Australian conditions. Western Australian rail operator TransPerth had introduced bike cages at stations on the Perth suburban rail network during 2007. With modifications to locking mechanisms and control systems to meet the particular needs of Melbourne's rail system, it was believed bike cages would work well.
2. Cyclists expressed a preference for bike cages as a form of parking at stations. A survey of cyclists using the metropolitan rail system conducted on behalf of DOT during 2008 showed that the expressed preference was for greater quantities of secure bicycle parking at stations. More than 50 per cent of cyclists surveyed would prefer using a cage over a locker as a form of parking at railway stations if one was available, citing factors such as ease of use and security through improved visibility and passive surveillance (SKM 2008: 42-3).
3. Cages minimise the problems found in other forms of bike parking such as theft, vandalism of lockers, cleanliness, shelter from the elements and the inability to store bicycles with accessories or bicycles larger than the size of the lockers
4. Bicycle cages send a strong, highly visible signal to cyclists (and other public transport users) that cycling is a legitimate travel mode that is being integrated into the heavy rail network.

Another factor favouring the development of bike cages at railway stations is the relatively small footprint of land required to accommodate a cage compared to the equivalent number of cars. Large amounts of land around railway stations in Melbourne are currently dedicated to accommodate the needs of the large minority of car-driving rail commuters. Yet on average, only one third of metropolitan rail passengers use a car to get to the station. Over 50% walk and the remainder use feeder modes such as trams, buses, taxis and bicycles (Metlink 2006). The car parks tend to be used intensively between the morning and evening peaks and lightly used at other times.

Beyond its primary aim of removing bikes from trains at peak times, bike cages can also work toward better land use outcomes around stations by intensifying parking for vehicles using only relatively small amounts of land. A rule of thumb that the Parkiteer project team has used is that the footprint of a bike cage (5 metres x 7 metres) is roughly equivalent to three car parking bays built to Australian Standard 2890.1 (2.6 metres x 5.4 metres) dimensions. Thus three ground-level car parking bays built on railway land costs on average A\$30,000 to construct, for a cost of A\$10,000 per vehicle. A Parkiteer cage costs A\$100,000 to build on the same amount of land but can accommodate a minimum of 26 bikes at an indicative cost of A\$3850 per vehicle.

The parking model at railway stations pioneered in Melbourne by Parkiteer can offer a model for intensifying land use around railway stations that could, if the sales and rates of use of bicycles continue the trends they have shown in the last decade free up increasingly valuable land around railway stations for more productive development than car parking.

WHAT IS A 'PARKITEER' BICYCLE CAGE?

The ‘Parkiteer’ bicycle cage is a secure bicycle parking system that is an ensemble of a number of interdependent components. These components include:

The cage – The cage is constructed from heavy-grade steel with fabricated side panels of heavy steel mesh and a steel roof. This provides a secure structure with overhead cover that is firmly secured on a concrete slab.



Figure 5 – Parkiteer bicycle cage

While the design of the cage itself is very similar to those used in Western Australia by TransPerth on Perth’s suburban rail network since 2007, there are a number of modifications and improvements made to the Perth design to make it suitable for Victorian conditions. These changes mainly address issues of management and maintenance found in the Victorian transport system where many stations are either unstaffed or only staffed at certain times of the day so that staff cannot lock and unlock the cage doors as is done in Perth.

The door and lock - Access into a Parkiteer cage is through a steel door locked with a standard door lock. Locking and unlocking is achieved using an electronic proximity card (similar to access control cards for parking stations and office buildings) and card reader. A manual, keyed lock is available for emergency ingress by Bicycle Victoria staff or maintenance contractors if the electronic lock fails for any reason. If a cage user is locked inside, they can manually unlock the door from within and exit safely.



Figure 6 – Parkiteer cage door lock and proximity card reader

Control system and power supply – The Parkiteer cage uses an innovative remote control cage management system that allows the central control centre (located at Bicycle Victoria’s Melbourne office) to monitor the status of the cage and particularly the function of the lock, power supply and control systems. This telemetry is relayed to the control centre through a remote, 3G mobile telephone link.

There are two options for power supply, dependent on the facilities available at the site. Where shore power is both close and available, the cage control systems can be connected directly to the power supply. Where shore power is either not available or some distance away, the use of solar panels and battery backup to power the Parkiteer cage has been successfully used at a number of locations on the metropolitan and regional rail network.

During the recent Melbourne winter, the solar power systems at some stations have performed below their best. This is due to the lower angle of the sun on the northern horizon in winter as well as unfavourable tree cover at a number of locations. This has introduced a new factor in siting Parkiteer cages, that of ensuring clear lines of insolation for the solar panel array and the need at some sites to work with the infrastructure managers to trim or clear foliage of overhanging trees which compromise collection of solar power.



Figure 7 – Parkiteer cage with solar panel array

Bicycle storage - A combination of ‘u’ rails and ‘Ned Kelly’ handing storage can be used to maximise the number of bicycles stored in a Parkiteer cage. The nominal capacity is 26 bicycles, although higher capacities have been achieved at some locations.



Figure 8 – Bicycle storage in Parkiteer cage

Monitoring and support

Behind the physical infrastructure of a Parkiteer cage is a monitoring and support network to assist users and protect the assets. This network is managed by Bicycle Victoria (BV) as part of its contract to manage the cages on behalf of the Victorian Government. Cage users reporting problems with the cage, vandalism or damage can contact BV's toll-free telephone support number during weekday office hours (9am – 5pm) and at other times, calls will be answered by Royal Eagle Security Service who are contracted by BV to monitor the power supply and control systems of the cage.

SITE SELECTION AND PLACEMENT

Once the decision to construct up to 20 bike cages was made by the Minister for Public Transport in February 2008, a multi-disciplinary project team was assembled, consisting of members from Department of Transport, Bicycle Victoria, the rail operators (Connex and V/Line) and infrastructure managers (MainCo and VicTrack). The composition of this team reflects the devolved operational and managerial environment of Victoria's public transport network. With such a disparate group of engineering, public transport and cycling professionals, problems were bound to emerge and tensions between members and organisations on the team, but strong leadership from within the Minister's office and the Department to negotiate desirable outcomes and to deliver the project prevailed to ultimately deliver 23 bike cages by the year's end.

In deciding the sites for the initial group 20 bicycle cages on the network, there was a selection process that saw data from multiple sources synthesised to develop a list of priority metropolitan and regional railway station sites. The data collected came from the metropolitan and regional rail operators (Connex and V/Line), Bicycle Victoria, the Department of Transport and the SKM audit of bicycle facilities and listed relevant factors that could influence the placement of a bicycle cage.

On-system factors included:

1. Observed levels of formal parking (hoops, rails)
2. Observed levels of informal parking (fences, stanchions, handrails)
3. Occupancy rates of bike lockers at stations
4. Waiting lists for bike lockers at stations where all lockers in use
5. Station staffing levels

Other relevant on-system factors included Closed Circuit Television (CCTV) coverage in the station precinct and the position of stations at either the end of a suburban (electrified) train line or at the boundary of a fare zone. These security, service quality and pricing factors respectively were known to have an influence on demand for car parking at railway stations and could also be expected to influence demand for bike parking.

Off-system factors included

1. Levels of expressed demand for cycling facilities at particular stations
2. Cycling catchment area around stations
3. Cycling access into station precinct

Data on off-system factors were largely provided by Bicycle Victoria and used the extensive body of research they have collected on cyclist preferences, cycling network planning and access into activity centres including railway stations.

The different factors were then scored in order of magnitude to develop list of priority sites. Using this relatively simple method, it is perhaps not surprising that the stations with high rates of locker occupancy and locker waiting lists along with high levels of formal and informal parking that were staffed from first to last train became high scoring locations for a bike cage.

The initial group of stations that were announced for construction in 2008 were as follows:

Metropolitan stations

Bayswater	Brighton Beach	Broadmeadows	Caulfield	Cheltenham
Croydon	Eltham	Frankston	Glenroy	Hoppers Crossing
Newport	Sandringham	Surrey Hills	Watergardens	Werribee

Regional stations

Ballarat	Bendigo	Castlemaine	Geelong	South Geelong
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A complicating factor with developing a list of cage locations was the Minister's decision that all station car park (park and ride) upgrades, new stations, station upgrades and interchange upgrades was to have a bicycle cage included in the scope of works. While this meant that more funding was available for bicycle cages, their placement was driven by enhancements to car parking at stations where expressed demand was either low (compared to higher priority stations) or unknown using the available measures of demand. This meant that some sites could potentially under perform compared to the sites with higher demand. Cages delivered in the initial group of cages as part of park and ride upgrades included:

Park and Ride upgrades

Bentleigh	Hallam	Roxburgh Park
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Having developed a list of locker sites and approval to proceed further, detailed site reconnaissance began. There was much robust debate between those who wanted to place the bike cages at unobtrusive places within the station precinct and those who wanted to place them at the best places for cyclists within the stations precinct. There was also some resistance by the rail operators to giving up car parking spaces close to the station entrance to accommodate bike cages.

Some simple ground rules throughout the process were followed for siting cages within a station precinct, which the project team applied as consistently as possible. These consisted of the following:

1. Cages should be located close to the entry/exit of the station. This provides quick arrival and departure by cyclists and also good passive surveillance against vandalism and theft
2. Cages should be easily accessible from both Up and Down platforms where ever possible
3. Cages should be conspicuously located within the station precinct and clearly visible to potential users, while minimising conflicts between cyclists, pedestrian and motor vehicle traffic.
4. Non-cage bicycle parking needs to be retained after the installation of the cage. This means that lockers removed to accommodate a cage must be relocated within the station precinct, while other open-air parking infrastructure (such as hoops) also needs to be retained.
5. Car parking close to the railway station entrance should not be resumed for a bike cage without providing offsets elsewhere in the station precinct.

Once locations were agreed upon, the construction of the first batch of 23 cages proceeded relatively quickly, with a three-week cycle of building (involving civil works, erection of the cage and fit-out and commissioning of power supply, door locks and control systems) for each cage, with cages being delivered and commissioned at a rate of two per week during the last quarter of 2008.

Subsequent experience with the operation of the first 23 cages (including a Melbourne winter) has also shown that more consideration be given during the site reconnaissance to the presence of tall building or overhanging foliage and the angles of the sun throughout the year. The poor performance of the solar power supply at a number of stations was directly attributable to not consciously taking these factors into account during the advanced planning for locating cages in the station precinct.

With the announcement in January 2009 (Victorian Government 2009a) that another 10 cages will be delivered as part of the bike cage program, many of the lessons learned during 2008 were put to good use in selecting sites for the current round of cages. At least five additional cages are being delivered as part of park and ride upgrades on the metropolitan network and at the new regional railway station at Wendouree (near Ballarat) during 2009.

MANAGEMENT OF PARKITEER CAGES

Another innovative aspect of the Parkiteer bike cages was the decision to contract out the operation and management of the cages to Bicycle Victoria (BV). In the devolved public transport management environment in Victoria, Parkiteer is an example of how the government as custodian of the public transport system must influence the various actors to reach a desired outcome. Into an already complicated rail environment where the needs of metropolitan and regional rail operators, infrastructure managers, the Department of Transport and different parts of government needed to be accounted for, the decision to contract the management of the Parkiteer cages out added an additional actor.

This decision was made by the Department of Transport in the light of comments of bike locker users (quoted previously in the SKM survey) that management of the existing locker system and waiting list did not encourage use of bike lockers as well as the preference stated by the metropolitan and regional rail operators not to manage the Parkiteer cages and their users. The advantage of BV operating the cages is that functions (such as access control and management of users) would now be centrally managed rather than devolved to individual stations and their staff members.

Thus a potential user of a Parkiteer cage would contact BV either on its website or by telephone to register their interest in using a cage, set up a user account and pay the A\$50 refundable deposit for an access card to a cage. Each cage is overseen by a Cage Captain, appointed by BV who is responsible for managing the members of the cage and ensuring that it is clean, tidy and in good order. Cage Captains and BV staff can also more intensively market the bike cage to other bike (and car) users at the railway station through ‘tagging’ bikes parked near the cage or at the station.

Some of the 23 original cages rapidly reached their nominal capacity of 26 live card holders and with the appearance of waiting lists at popular cage sites, BV has asked DOT for permission to conduct a trial of oversubscribing the bike cage to test the true carrying capacity of the cages. By allowing up to 40 live card holders to be registered from a variety of usage profiles (5 days a week, 2-4 day a week, casual or weekend users), the aim is to try and find an optimal point of utilisation for the cages. Figure 1 shows the relation between the number of Parkiteer cage registrants and activated cards during 2009.

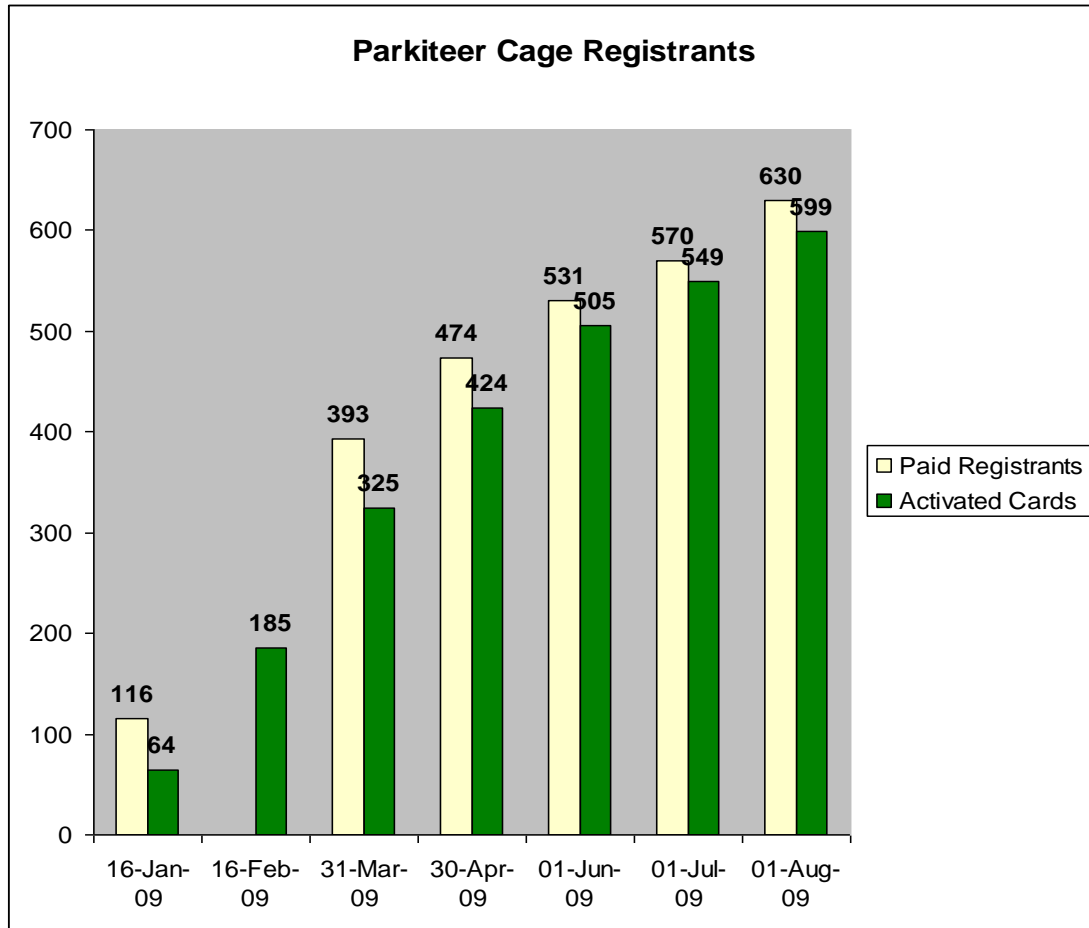


Figure 1 – Parkiteer paid registrants/activated cards: January – August 2009

EVALUATION OF PARKITEER

Evaluating the effectiveness of Parkiteer since its introduction in late 2008 has been difficult. While DOT load surveys (which measure passenger loading on metropolitan trains) have since 2008 captured numbers of bikes being carried on trains, it relies on the survey teams being able to record bikes as they pass the cordon stations on the edge of the Melbourne CBD. This means that significant numbers of bikes on trains heading outbound or to non-CBD destinations may not be captured in the surveys. Also, the lack of an adequate time series of data before the ‘bikes on trains ban’ in January 2008 makes it difficult to construct a baseline level of data.

The best source of data for bikes on trains available is the Metlink Origin-Destination (OD) survey that captures the behaviour of public transport users across Melbourne. However, it was last conducted in 2006 and is undertaken every four years. To try and extrapolate the OD data from 2006 in light of subsequent patronage increases would be problematic.

Hence, it was decided to evaluate Parkiteer on factors that could be directly measured: daily cage usage levels over time, growth in cage registrants, changes in travel behaviour

of cage users (how they got to the station) and impacts on demand for all methods of bike parking at railway stations. These performance measures are built into the management agreement between BV and DOT and are required to be reported upon on a regular basis. Some of this evaluation data is given below, while others are presented as case studies from three high-performing Parkiteer cage sites.

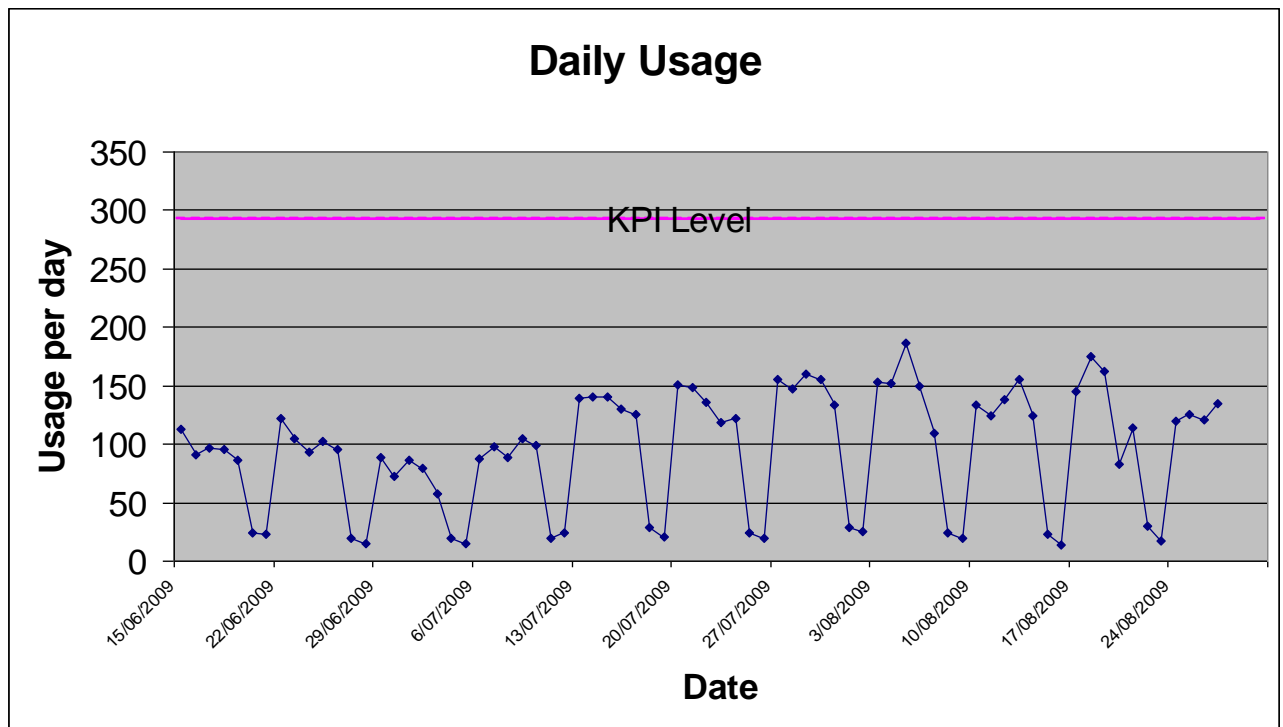


Figure 2 – Daily Parkiteer usage rates: June – August 2009

Figure 2 shows the daily usage rates based on cardholder activity (entries and exits) at Parkiteer cages shows the levels of activity for the 23 original cages over 11 weeks at both metropolitan and regional stations. It is worth noting the generally upward trend, even through a Melbourne winter and also that regular peaks and troughs occur in usage rates. Mondays are consistently the most popular day to use the cage, whereas weekends are the low points of the cycle. This suggests that the targeting of Parkiteer at regular ‘park and ride’ commuters worked, but also that BV could attempt to promote Parkiteer membership to potential users on weekends to maximise cage usage at off-peak times.

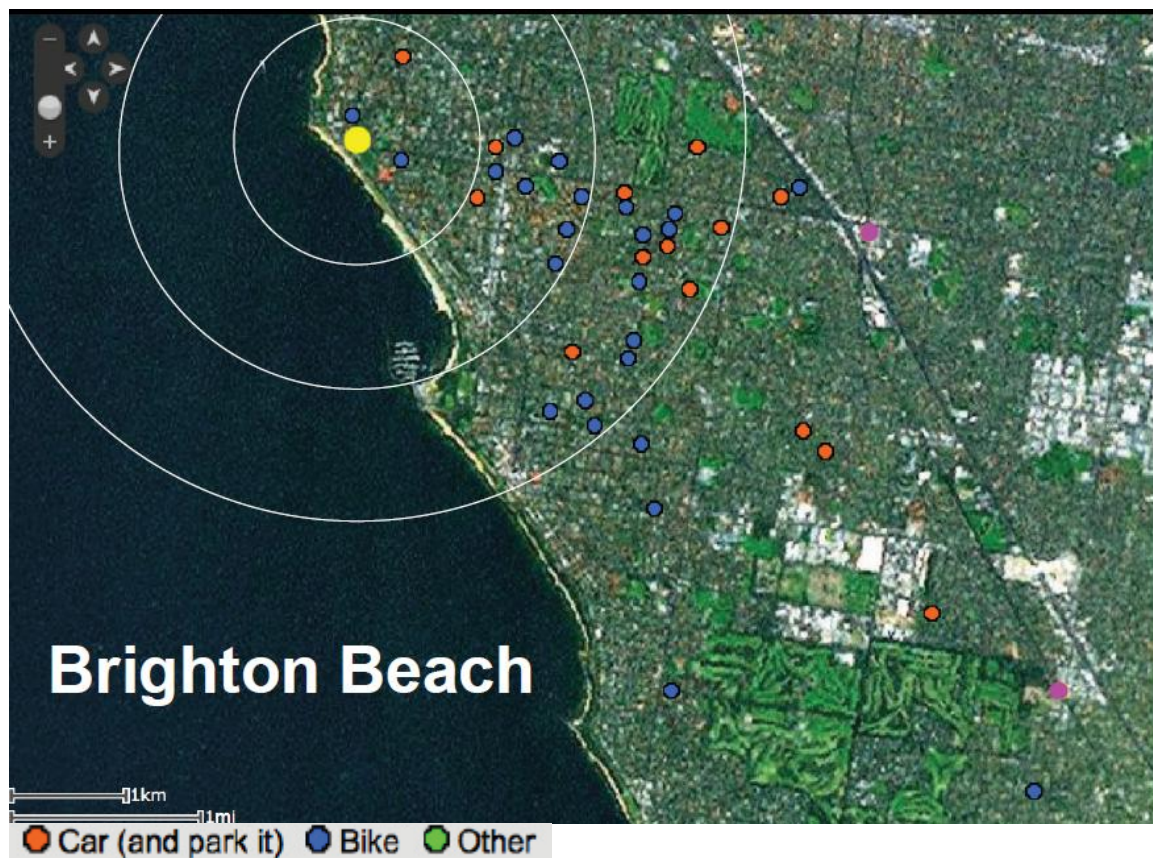
THREE PARKITEER CASE STUDIES

Part of BV’s contract with the Government to manage the Parkiteer cages involves evaluation of the program to gauge its effectiveness. This section presents three case studies of successful Parkiteer cages from railway stations on the metropolitan electrified railway network: Brighton Beach, Hoppers Crossing and Werribee and explores the factors that made them high-performing components of the Parkiteer cage project.

Brighton Beach

Brighton Beach railway station is some 16 kilometres from Melbourne on the Sandringham line. It sits at the end of the overlap between fare Zones 1 and 2, which has traditionally made it an attractive station for passengers at the upper reaches of the line and from the nearby Frankston line to drive to for a cheaper fare to the City. The 187 car spaces at the station fill before 8am on weekday mornings and the 22 bike lockers were 100% occupied with 45 additional people on the waiting list. The area is popular with cyclists due to an off-road cycling path that runs along Port Phillip Bay and a relatively good network of on-road cycling infrastructure in the area around the station.

The Parkiteer cage was delivered in late 2008 and filled rapidly. Through Connex, BV was able to contact people already in the lockers and on the waiting list to give them first priority for the bike cage. By February 2009, the cage had already reached its notional limit of 26 'live' card holders. BV then sought permission to increase the number of live card holders to 40. By May 2009, BV had 39 live card holders and 12 people on the waiting list for a card, while Connex reported that while all 22 lockers were still occupied, the waiting list had fallen by over two-thirds from 45 to 14.



As part of its contractual requirements, BV surveyed the 39 live card holders to find out how they arrived at the station before taking a card in the Parkiteer cage. The results showed that while 62 % (24) of card holders had previously cycled to the station before

joining Parkiteer, the remaining 38% (15 card holders) formerly drove to the station. Further surveying of the addresses of the card holders to determine the trip distance from home to Brighton Beach station for Parkiteer users as displayed in Table 1 showed that the almost half rode 2-3km, while almost 70% rode more than 2km to the station.

	0-1km	1-2km	2-3km	>3km	TOTAL
Number	3	9	18	9	39
Percentage	8%	23%	46%	23%	100%

Table 1 – trip distances from home to Brighton Beach station

Interestingly the installation of a Parkiteer cage at Brighton Beach had some unusual impacts on informal (not chained to ‘u’ rails or hoops) bike parking at the station. At the time of the SKM survey in mid-2008, the three informally parked bikes were clustered on the approach to the City-bound platform, Bicycle Victoria’s surveying in mid-2009 showed that informal parking had more than doubled (to seven bikes) and was now clustered around the Parkiteer cage to take advantage of the higher perceived levels of safety (through CCTV and visual surveillance) engendered by the presence of a Parkiteer cage. This observed ‘clustering’ phenomenon may point to the need for providing additional ‘u’ rails and hoops near the Parkiteer cages in future to manage bike parking for casual users or overflow from the cages and deconflicting cyclists and pedestrians on the approach to the station. Figure 9 displays the clustering effect around the Parkiteer cage.

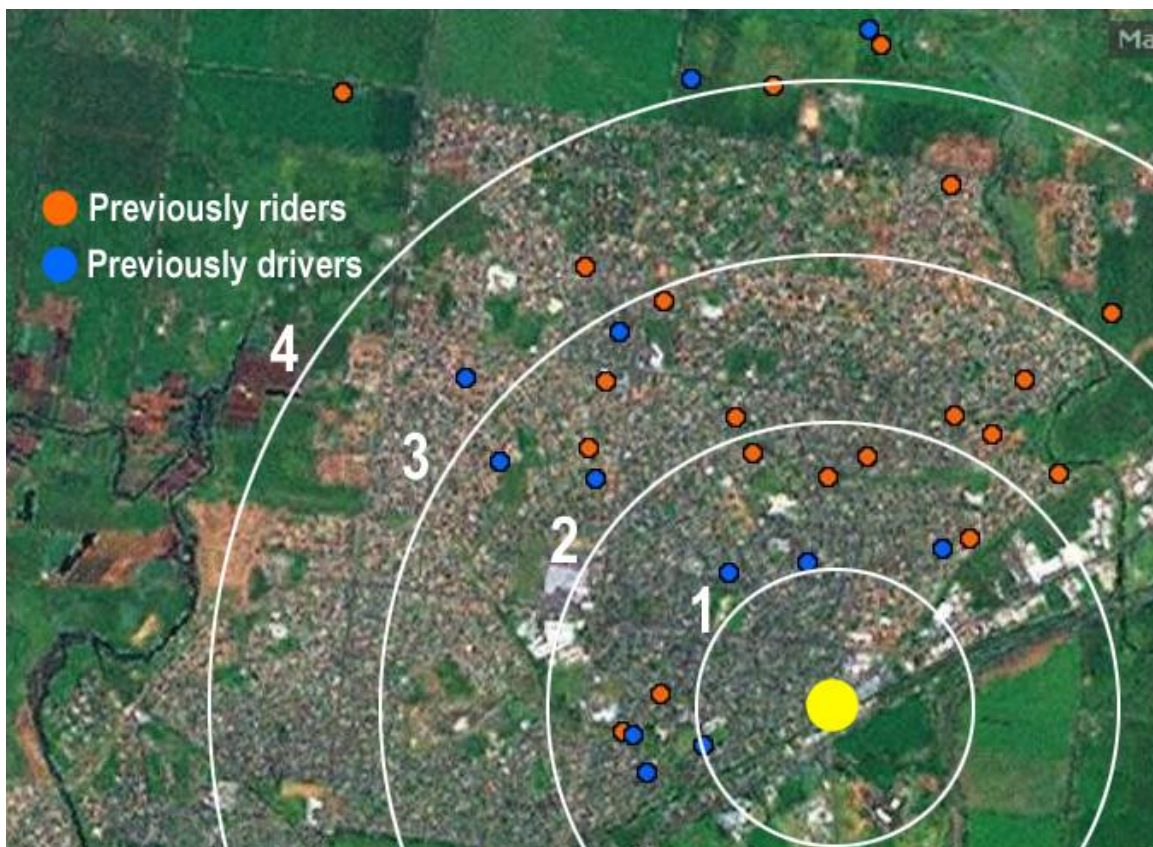


Figure 9 – Informal bike parking clustered around Parkiteer bike cage at Brighton Beach station

Hoppers Crossing

Hoppers Crossing railway station is some 27 kilometres from Melbourne on the Werribee line. It sits wholly within fare Zone 2 and serves extensive residential development to the north of the station. The 312 car spaces at the station usually fill before 7.30am on weekdays and the 16 bike lockers were 100% occupied with 21 additional people on the waiting list. Cycling access to the station is mainly through suburban streets and arterial roads from the growing low-density residential settlements to the north of the station, while access to the station precinct is through a heavily used arterial road system.

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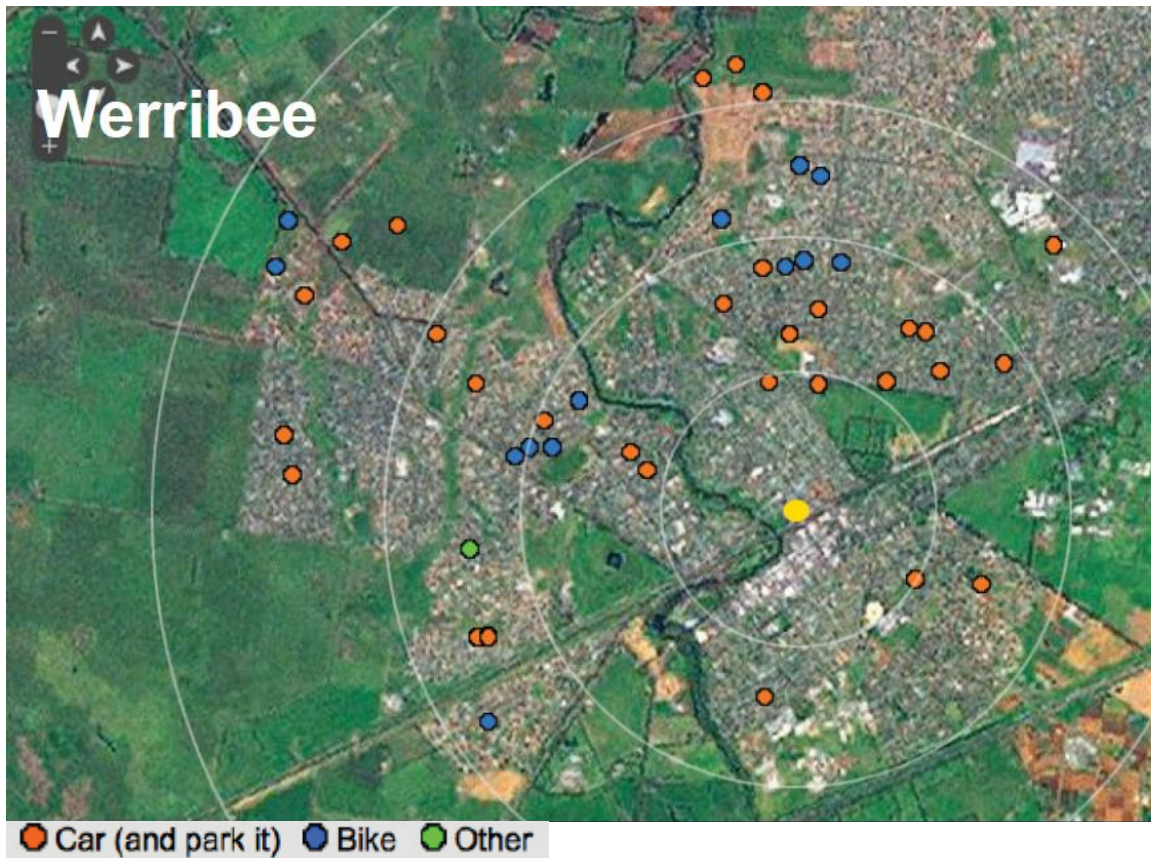
As part of its contractual requirements, BV surveyed the 32 live card holders to find out how they arrived at the station before taking a card in the Parkiteer cage. The results showed that while 63 % (20) of card holders had previously cycled to the station before joining Parkiteer, the remaining 37% (12 card holders) formerly drove to the station.

Further surveying of the addresses of the card holders to determine the trip distance from home to Hoppers Crossing station for Parkiteer users as displayed in Table 2 showed that the over two-thirds (68%) rode 1-3km, while 63% rode more than 2km to the station. Interestingly, half (6) of the ex-drivers lived within 2 km of the station.

	0-1km	1-2km	2-3km	>3km	TOTAL
Number	1	11	11	9	32
Percentage	3%	34%	34%	29%	100%

Table 2 – trip distances from home to Hoppers Crossing station

Werribee



Werribee railway station is some 31 kilometres west of Melbourne on the Werribee line. It sits at the end of the electrified rail service on the main line between Melbourne and Geelong. Its status as the end of the electrified line with a higher quality of rail service, particularly in the AM and PM peaks has made it an attractive station for passengers living beyond walking distance of Werribee station in the fast growing new housing estates of the Wyndham growth corridor. The 220 car spaces at the station usually fill before 7.30am on weekday mornings and the 30 bike lockers were 100% occupied with 50 additional people on the waiting list. The area has moderately good supporting on- and off-road bike paths feeding into the railway station precinct.

The Parkiteer cage was delivered in late 2008 and filled rapidly. Through Connex, BV was able to contact people already in the lockers and on the waiting list to give them first priority for the bike cage. By February 2009, the cage had already reached its notional limit of 26 'live' card holders. BV then sought permission to increase the number of live card holders to 40. By May 2009, BV had 45 live card holders and 26 people on the waiting list for a card, while Connex reported that the waiting list for lockers had dropped to zero and that only 20 out of 30 lockers were occupied.

As part of its contractual requirements, BV surveyed the 45 live card holders to find out how they arrived at the station before taking a card in the Parkiteer cage. The results showed that while 55 % (25) of card holders had previously cycled to the station before joining Parkiteer, the remaining 45% (20 card holders) formerly drove to the station. Further surveying of the addresses of the card holders to determine the trip distance from home to Werribee station for Parkiteer users displayed in Table 3 showed that half of cage users rode up to 2km, while the other half rode more than 2km to the station.

	0-1km	1-2km	2-3km	>3km	TOTAL
Number	3	20	12	10	45
Percentage	6%	44%	27%	23%	100%

Table 3 – trip distances from home to Werribee station

CONCLUSION

The Parkiteer project is still a work in progress. There are still 10 more cages to deliver during the rest of 2009 as part of a Victorian Government commitment, along with at least 5 more as part of a ministerial directive to incorporate cages into the scope of works for park and ride upgrades, station upgrades, modal interchange upgrades and new stations. In the search for new sources of funding to continue the Parkiteer program, the Department of Transport has sought Federal Government funding for an additional 15 bike cages as part of the Jobs Fund initiative. The Parkiteer project team remains working on proving up new sites and ironing out problems with existing cages as well as refining the design and processes of cage construction to lower the unit cost for delivering a cage.

Bicycle Victoria is continuing to develop its management structure for the Parkiteer cages and to monitor the growth and usage of the Parkiteer program. Alongside its operational role, it continues to evaluate the program and develop ways to promote more intensive usage at underperforming stations and to better manage demand at high performing stations. This must be done carefully as winter becomes spring and then summer, when cycling traditionally becomes a more popular past-time and method of commuting. There is also a need to better evaluate the impacts of Parkiteer on the carriage of bikes on trains; bike parking at stations and travel to stations in general to convince Government and policy makers that Parkiteer is worth funding.

New challenges are arising due to the change in metropolitan rail franchisee announced in July 2009. With the operator handover on the metropolitan rail network from Connex

to Metro due to take place on 30 November 2009, the Department of Transport and Bicycle Victoria must maintain continuity of the management process of Parkiteer beyond the end of the initial one-year contract and negotiate a long-term management and funding agreement that satisfies the needs of DOT, BV, Metro and Parkiteer users.

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