

Hermitage Road Active Transport Assessment

Schools at Meadowbank
Employment & Education
Precinct

For School Infrastructure NSW
5 October 2021

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1 Introduction

On 21 May 2020, the Meadowbank Education and Employment Precinct Schools Project SSD 9343 was granted conditioned development consent. Condition B44 states:

Pedestrian Infrastructure Improvements

B44. Within six months of the commencement of construction, the Applicant must prepare a public domain enhancement strategy in consultation with Council and submit this to the satisfaction of the Planning Secretary to encourage walking and cycling to the school. The Strategy must include details for the delivery of 2.5 metre shared User Paths along the following locations prior to commencement of operation of the schools unless otherwise agreed in writing by the Planning Secretary under condition B45:

- (a) the western side of Hermitage Road;*
- (b) the southern side of Macpherson Street, between Mellor and Bowden Streets;*
- (c) the eastern side of Bowden Street, from Victoria Road to Macpherson Street;*
- (d) the southern side of Squire Street; and*
- (e) the southern side of Rhodes Street;*

Additionally, Condition B45 states:

B45. The Planning Secretary will consider alternative proposals to the delivery of the 2.5 metre Shared User Paths required under condition B44, including reduced footpath widths, that encourage walking and cycling to the school and deliver proposed mode shifts, where evidence is submitted as part of the Strategy, having regard to the following:

- (a) Demonstration that the works are not feasible in a particular location due to the impacts on infrastructure or street trees and a reduced footpath width or alternates are proposed;*
- or*
- (b) An agreement is in place with Council for alternative upgrade works, or works are to be brought forward by Council under its S7.11 Development Contributions Plan.*

It is understood that works related to Rhodes Street, MacPherson Street, Bowden Street and Squire Streets were endorsed by City of Ryde Council on the 22 July 2021. However, construction of the proposed boardwalk on the western side of Hermitage Road would be problematic due to the presence of multiple existing services in the location of the shared path. Consequently, the work required to relocate the services as per the required zone of distance and other constraints would prohibit the construction of a compliant design.

Therefore, SINSW has requested an assessment to understand the impact of not providing the boardwalk along the western side of Hermitage Road and prioritising alternative school travel routes to Hermitage Road whilst still maintaining/providing connectivity for students.

1.1 Referenced Documents

The documents referenced in the preparation of this report are as follows:

- NSW Department of Planning, Industry and Environment, *Meadowbank Education and Employment Precinct Schools Project State Significant Development SSD 9343 Assessment Report*, May 2020 (DPIE Assessment)
- GTA *Meadowbank Education and Employment Precinct Schools Project – Transport and Accessibility Impact Assessment*, February 2020 (GTA TAIA)
- ptc. *Alternative Pedestrian Route Assessment*, June 2021

2 SSDA Assessment

In its assessment of the Meadowbank Education and Employment Precinct Schools Project State Significant Development SSD 9343 (MEEPSP), NSW Department of Planning, Industry and Environment (DPIE) found that pedestrian access to the site is principally from Rhodes Street, which is connected to the surrounding footpath network comprising of full width (approximately 1.2m) footpaths to adjoining and nearby streets (including Rhodes, See, Macpherson and Mellor Streets and Hermitage Road).

It was found that pedestrian access to the site is also possible from the TAFE Campus from a publicly accessible pedestrian route that runs through the TAFE Campus and connects the Rhodes/Mellor/Macpherson Street intersection in the north to Meadowbank Station in the south.

DPIE notes two main points in relation to Hermitage Road:

- 1) The importance of the footpaths that provide the key pedestrian connections between the proposed schools and bus stops along Victoria Road and into the surrounding catchment.
- 2) There is no western footpath along Hermitage Road and the public domain along Macpherson Street, Bowden Street and Squire Street require upgrades.

These two points are the justification for requiring the preparation of a public domain enhancement strategy to encourage walking and cycling to/from the school relating to the western side of Hermitage Road.

To qualify the DPIE requirements and subsequent related conditions specifying footpath upgrades along Hermitage Road, it is necessary to determine the volume of students who would likely use this route, which is the purpose of this report.

It should be noted that the GTA TAIA made some key generalised assumptions that would not necessarily produce an accurate forecast. Specifically:

- The existing location of student residents was assessed without consideration of potential future transition to centroid around the new site.
- An arbitrary 50/50 north/south split of trips was assumed without a sound justification based on population densities and desire lines.

3 Background

3.1 School Catchments

SINSW has advised that the new schools will maintain the existing enrolment boundaries for Meadowbank Public School and Marsden High School as shown in Figure 1.

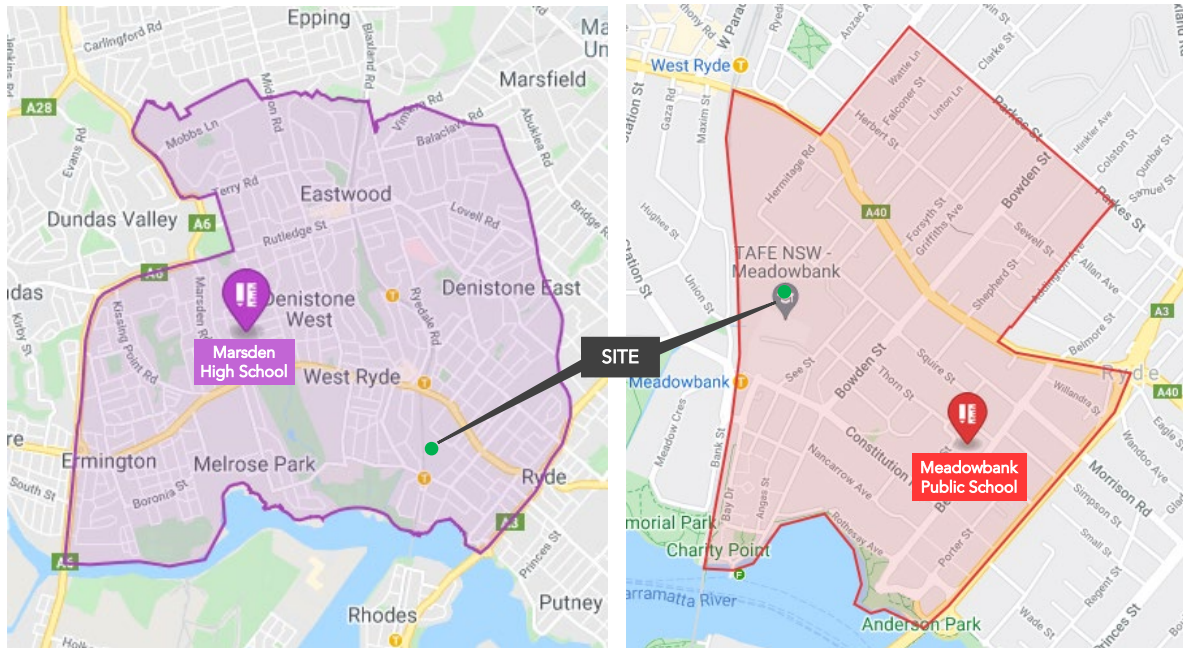


Figure 1: School Catchments (Source: NSW Department of Education)

Most of the enrolment catchments for both schools contain R2 Low Density Residential zoning, meaning the land use is primarily for single dwellings, but dual occupancies and multi dwelling houses are also permissible. Exceptions within the boundaries include the B4 Mixed Use Zoning in Meadowbank (Shepherds Bay) for the primary school boundary and also in the West Ryde and Eastwood town centres for the high school boundaries, which allow for higher density mixed use development, including high density residential. There is also R4 High Density Residential Zoning immediately west of Meadowbank Station within the high school boundary.

4 Active Transport

4.1 Walking Demand on Hermitage Road

Pedestrian access to the schools will be via Rhodes Street along the northern boundary of the site, with plans to improve north-south pedestrian connection through the TAFE campus linking Meadowbank Station and Rhodes Street. However, this work yet to be approved and is a TAFE responsibility to appropriate funding and ensure delivery.

Victoria Road creates an impedance for northeast-southwest pedestrian flow through the catchment. Consequently, access to the schools from/to the northeast is constrained by signalised crossings at the Bowden Road and Hermitage Road intersections. Additionally, typography around West Ryde Station is not conducive to a comfortable walk and these issues make it unlikely that students will walk from this distance/location. Therefore, Hermitage Road would only be used by students living in the red zone shown in Figure 2 and Figure 3 and more likely to the south of Victoria Road. Using the distribution of students, it is possible to estimate the key walking routes students will use to travel to and from school and the number of students anticipated on these routes before and after school.

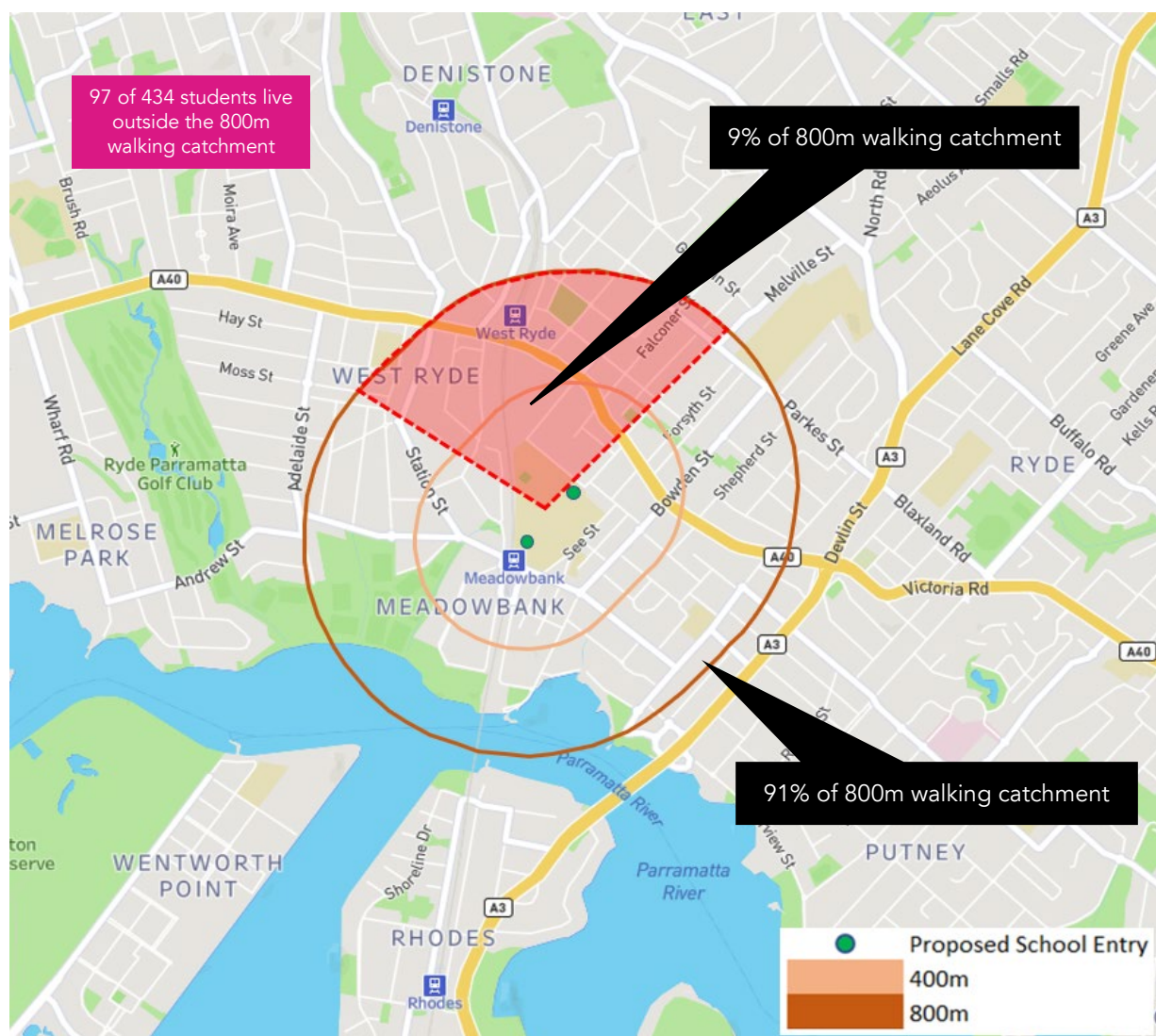


Figure 2: Walking catchment for Hermitage Road (Primary School)

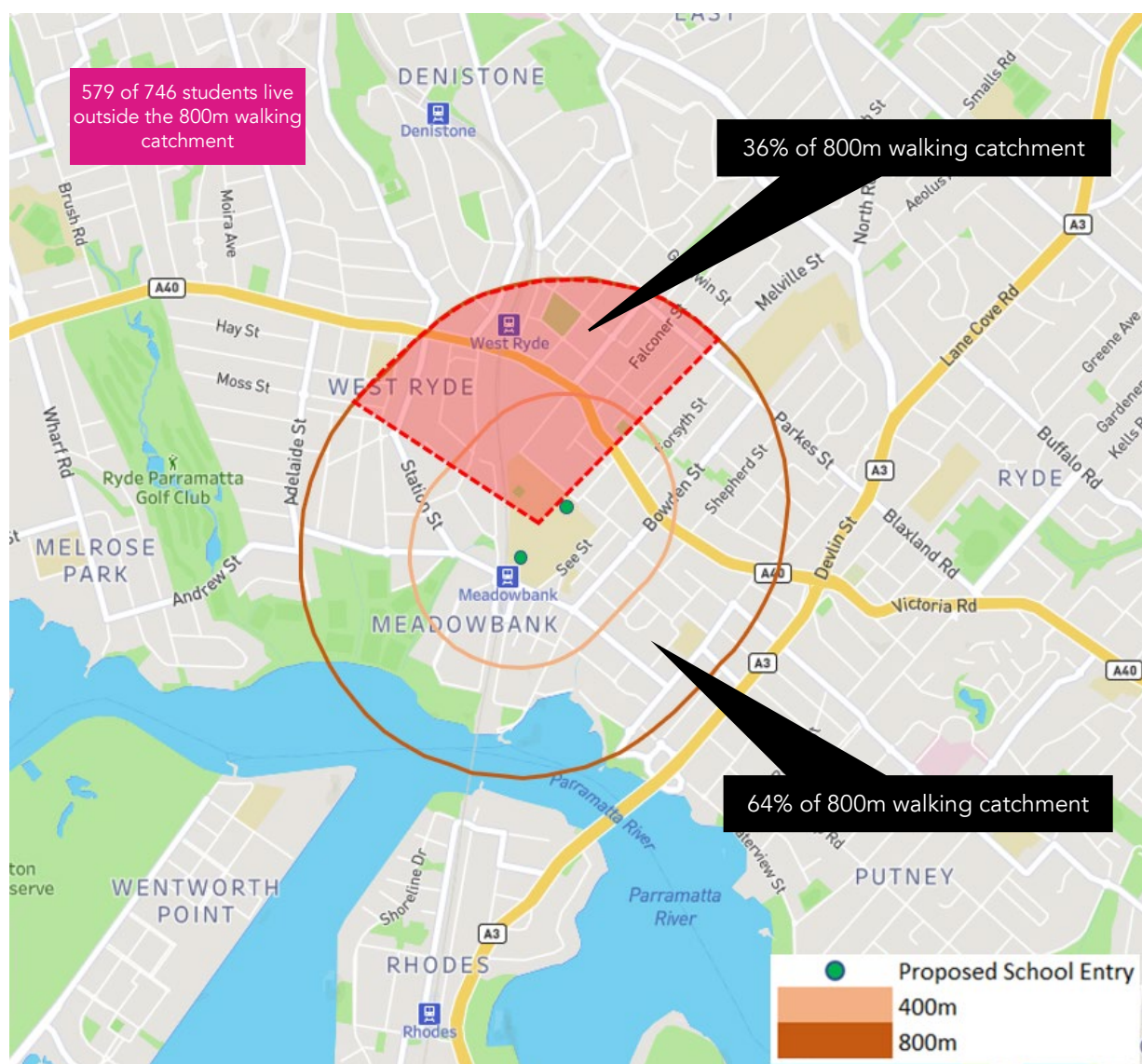


Figure 3: Walking catchment for Hermitage Road (High School)

4.2 Cycling

To reach proposed targets for cycling mode share of 10% for the primary school and 15% for the high school, delivery of additional cycling infrastructure will be required. SINSW will upgrade key streets near the school to a 2.5 m shared user path on Rhodes Street, Macpherson Street and a section of Bowden Street, which is in line with the regional and local cycle routes identified in the City of Ryde's Bicycle Strategy 2014.

More elements of the Bicycle Strategy 2014 are required to connect residential areas within the school's cycling catchment with key points of interest such as Meadowbank Station and West Ryde town centre. Additionally, the lack of cycling infrastructure and safe connectivity such as no existing cycleways connecting to Hermitage Road from Victoria Road would further reduce the demand for cyclists accessing the school via this route.

A cycle route has been proposed by the Greater Sydney Commission in their Precinct Master Plan that will be delivered sometime in the future (see Figure 4). Therefore, from a safety perspective, the proposed route via the rail corridor and Rhodes Street will be preferred as it will eliminate issues associated with using

Hermitage Road. It will also provide a more direct and faster route from residential areas and West Ryde Station. Therefore, Victoria Road should not be encouraged as a cycling route.



Figure 4: Proposed Cycling Routes/Infrastructure from City of Ryde's Bicycle Strategy 2014

It is noted that the proposed routes from City of Ryde's Bicycle Strategy 2014 shown in Figure 4 are based around the use of Bowden Street, not Hermitage Road. There is also a lack of infrastructure, both existing and proposed, on the north side of Hermitage Road, for all these reasons it is unlikely that a shared user path on Hermitage would be beneficial.

5 Public Transport

5.1 Train

Meadowbank Station is located approximately 700 metres south of the site and West Ryde Station is located and 850 metres north of the site. Both stations are on the T9 Northern Line, with services running from Epping to Central every 15 minutes.

As both stations are within walking distance of the school and train services have some capacity to accommodate increased patronage, there is potential to encourage greater train mode share for the relocated schools.

Regarding walking to the schools from these stations, Meadowbank is more likely to be used due to the closer proximity and walk time. Should students wish to alight from West Ryde Station, there are multiple morning and afternoon buses that will travel between West Ryde Station and the two schools, directly to the school bus zones on Macpherson Street and Rhodes Street. Therefore, Hermitage Road is unlikely to be used for students disembarking at West Ryde Station.

5.2 Public and School Bus

The proposal includes a 20 metre bus zone along the southern side of Rhodes Street as well as a 60 metre bus zone along the southern side of Macpherson Street (Figure 5). These bus zones would be able to accommodate a total of up to six buses, with both bus zones located on the south side of Rhodes and Macpherson Streets, facilitating safe drop-off and pick-up.



Figure 5: Proposed school bus zones (source: GTA TAIA)

There are four morning and five afternoon proposed services for direct access to the schools. There are three public buses with a modified schedule, 501, 513, 523, and two dedicated school buses, the 800w and

802w. All will terminate directly outside the School on Rhodes Street or Macpherson Street. Students accessing the school via these bus routes will have no requirement to disembark on Victoria Road.

A number of other public bus routes from the west terminate at West Ryde Station. Students using these bus routes will be able to transfer directly to the school via the buses that travel between West Ryde Station and the two schools.

As shown in Figure 6, there is only one bus stop that could potentially require the use of Hermitage Road to access it. This is located on the northern side of Victoria Road and can only be used for drop-off trips in the AM. There is no bus stop opposite, so PM trips would require the use of the bus stop east of the site.

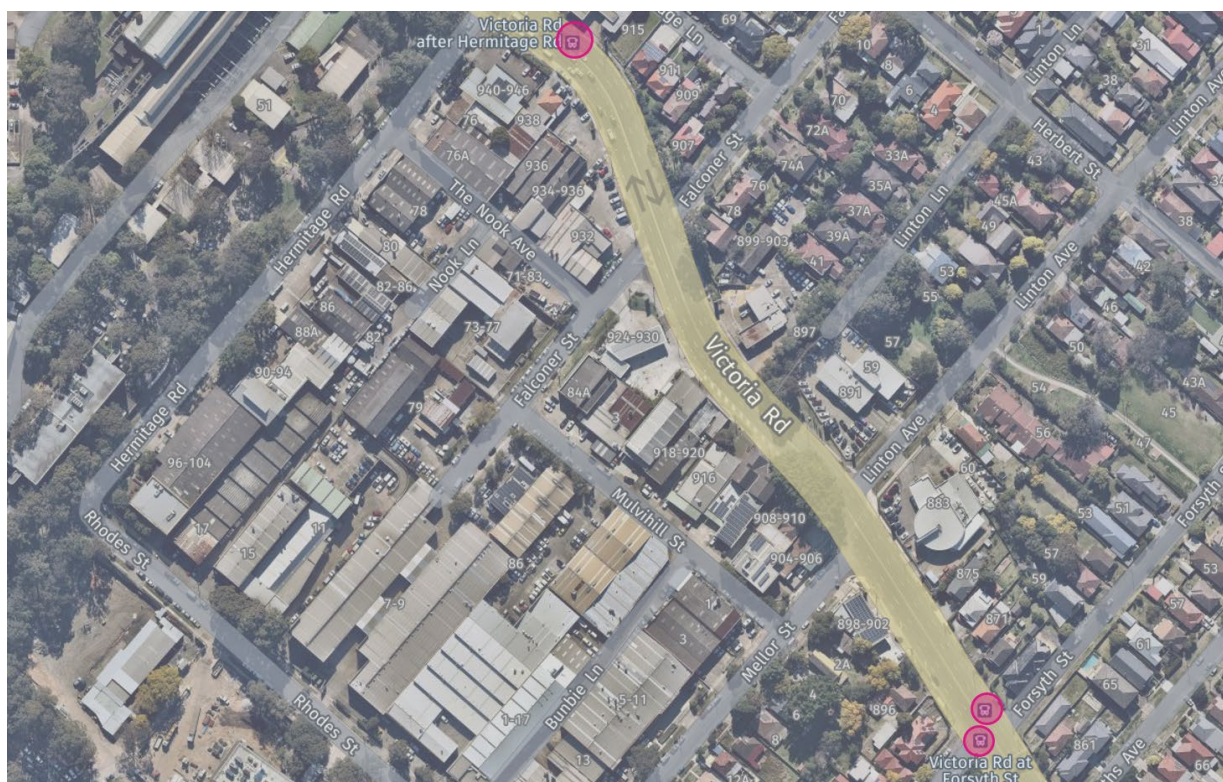


Figure 6: Public Bus Stops (Source: Nearmap)

Further, Figure 7 and Figure 8 demonstrate that the walking distance from the bus stop on Victoria Road east of Bowden Street (Stop 1) is 130m less than the bus stop on Victoria Road east of Hermitage Road (Stop 2).

Assuming a typical walking speed of 1.4 m/s, the travel time from the Stop 2 will take approximately 7 minutes and 45 seconds and the travel time from Stop 1 will take approximately 6 minutes and 11 seconds. In a situation where travel time is critical for students getting to school, Stop 1 will be more desirable.



Figure 7: Walking distance from public bus stop west of the site

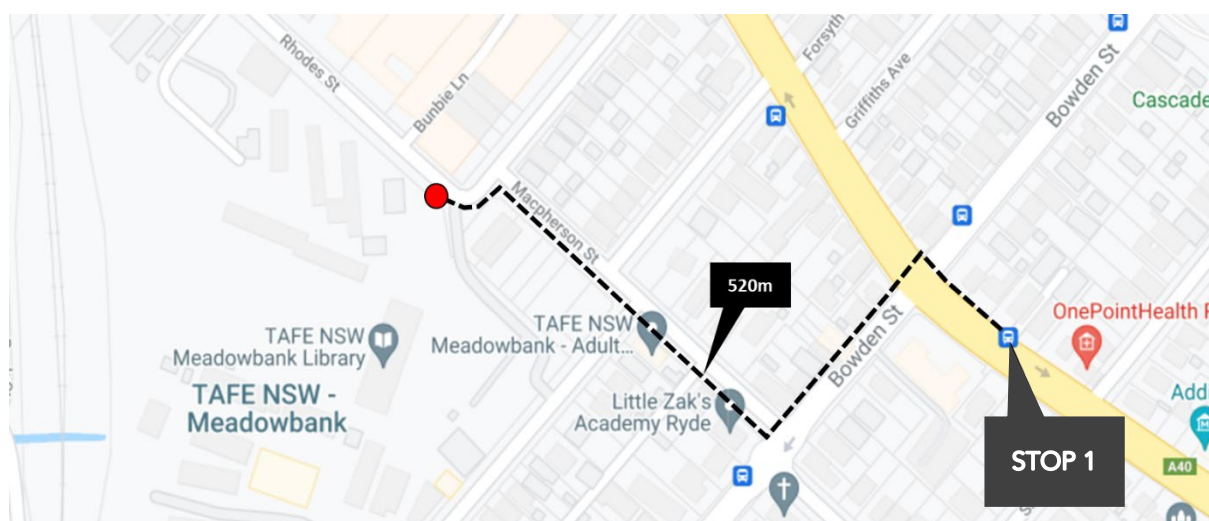


Figure 8: Walking distance from public bus stop east of the site

As per the current proposed bus timetable in the AM school travel period, only the 500n and 524 buses travelling eastbound on Victoria Road could potentially utilise the bus stop 2 at Victoria Rd / Hermitage Rd however it is more likely students will continue to Bowden St bus stop to disembark given the benefits as detailed above.

Based on these options, it has been estimated that only 16 students are likely to use Hermitage Road to access the two schools, further reducing demand for Hermitage Road works. The estimate of 16 students was derived from the timing of the two eastbound buses and the forecast mode share, based on student catchment areas.

6 Volumes on Hermitage Road

With consideration of the assessment from Sections 3 to 5, the following summarises the key factors when determining the forecast use of Hermitage Road for active transport:

- The combination of school catchments with existing and potential residential density, limits the use of Hermitage Road for walk only trips to a sector in the northeast of the site. An alternative walking route to the schools also exists on Victoria Road and Mellor Street.
- There is currently a lack of cycling infrastructure to the north of Hermitage Road with no future plans to add any. Hermitage Road is not likely to be used for cycling trips based on the safety of desired routes aligning with City of Ryde's Bicycle Strategy 2014, existing and potential residential density, and the cyclable student catchments.
- Hermitage Road is not likely to be used for train trips as students would access the site from the Meadowbank Station to the south due to its shorter, easier walking route to the schools. Students that disembark at West Ryde train station will most likely use the connecting buses from the station direct to the school zones.
- Only the bus stop on the northern side of Hermitage Road / Victoria Road could be used for eastbound public buses and only in the morning. However, it is a shorter walk for students to use the Bowden Street bus stop in the morning or the alternative walking route to the schools via Victoria Road and Mellor Street.
- Students using the school buses would not use Hermitage Road as they are dropped off and picked up at the school gate on Rhodes Street.

Accordingly, Table 1 to Table 4 shows the forecast pedestrian and cyclist volumes on Hermitage Road—a maximum of 48 in the morning and 32 in the afternoon.

Table 1: Primary School AM

| Mode | Forecast Mode Share | Students potentially using Hermitage Road from north | Estimated trips on Hermitage Road |
|------------|---------------------|--|-----------------------------------|
| Public Bus | 0 students | 50% | 0 |
| Walking | 200 students | 9% | 18 |
| Cycling | 96 Students | 0% | 0 |
| Total | | | 18 |

Table 2: Primary School PM

| Mode | Mode Share | Students potentially using Hermitage Road from north | Estimated trips on Hermitage Road |
|------------|--------------|--|-----------------------------------|
| Public Bus | 0 students | 50% | 0 |
| Walking | 200 students | 9% | 18 |
| Cycling | 96 Students | 0% | 0 |
| Total | | | 18 |

Table 3: High School AM

| Mode | Mode Share | Students potentially using Hermitage Road from north | Estimated trips on Hermitage Road |
|------------|--------------|--|-----------------------------------|
| Public Bus | 32 students) | 50% | 16 |
| Walking | 39 students | 36% | 14 |
| Cycling | 197 students | 0% | 0 |
| Total | | | 30 |

Table 4: High School PM

| Mode | Mode Share | Students potentially using Hermitage Road from north | Estimated trips on Hermitage Road |
|------------|--|--|-----------------------------------|
| Public Bus | Students taking bus in PM will use bus stop at Forsyth Street. | | |
| Walking | 39 students | 36% | 14 |
| Cycling | 197 students | 0% | 0 |
| Total | | | 14 |

7 Adequacy of existing footpath

The adequacy of the footpath on the Hermitage Road has been assessed by determining the Level of Service (LOS) to understand the performance of pedestrian space. The levels of service are categorised between LOS A (free flow conditions) and F (a complete breakdown in flow). The LOS criteria are summarised in Table 5.

Table 5: Level of Service Criteria

| Level of Service | Flow Rate (pedestrians/minute/metre) | Density (pedestrians/m ²) |
|------------------|---|--|
| A | ≤ 7 | ≤ 0.08 |
| B | 7 – 23 | 0.08 – 0.27 |
| C | 23 – 33 | 0.27 – 0.45 |
| D | 33 – 49 | 0.45 – 0.69 |
| E | 49 – 82 | 0.69 – 1.66 |
| F | ≥ 82 | ≥ 1.66 |

From the volumes in Section 6 and assuming that all trips will be distributed over a 30 minute period before and after school, the following Level of Service is forecast for Hermitage Road:

- AM volume: 48 1.6 pedestrians/minute/metre LOS A
- PM volume: 32 1.1 pedestrians/minute/metre LOS A

This result demonstrates a low demand and that the existing footpath on Hermitage Road does not need to be upgraded based on the forecast pedestrian use. Also, given the location of generators and attractors with consideration of desire lines connecting infrastructure, upgrading Hermitage Road would not encourage its use for pedestrians.

8 Findings and Recommendations

In its assessment of the MEEPSP SSDA, DPIE noted the importance of the footpaths that provide the key pedestrian connections between the proposed schools and bus stops along Victoria Road and into the surrounding catchment; and that there is no western footpath along Hermitage Road and the public domain along Macpherson Street, Bowden Street and Squire Street require upgrades. Accordingly, the footpath upgrade was conditioned as part of the public domain works.

In addition to the findings and recommendations of the ptc. *Alternative Pedestrian Route Assessment*, June 2021, the following are reasons to consider alternative proposals to the delivery of the 2.5 metre Shared User Paths required under condition B44 and not provide the footpath in Hermitage Road:

- The analysis shows the following forecast volumes on Hermitage road based on the Primary School population of 1,000 and the Secondary School population of 1,620:

| Mode | Estimated Student Volumes on Hermitage Road | | |
|------------|---|----|-------|
| | AM | PM | Total |
| Public Bus | 16 | 0 | 16 |
| Walking | 32 | 32 | 64 |
| Cycling | 0 | 0 | 0 |
| Total | 48 | 32 | 80 |

- City of Ryde's Bicycle Strategy 2014 is based around the use of Bowden Street, not Hermitage Road. The lack of infrastructure, both existing and proposed, leading to Hermitage Road also makes it unlikely that a shared user path on Hermitage would be used now or in the future.
- A forecast LOS A for Hermitage Road demonstrates that the existing footpath does not need to be upgraded based on the forecast pedestrian use.

AM volume: 48 1.6 pedestrians/minute/metre LOS A

PM volume: 32 1.1 pedestrians/minute/metre LOS A

- During the investigation and design process for the Public Domain works, it has been found that the proposed boardwalk on the western side of Hermitage Road will require the relocation and/or protection of several major services, making the construction of the boardwalk unviable due to the required zone of distance per service and other constraints prohibiting the construction of a compliant design.

In summary, the relatively few students who are forecast to potentially utilise Hermitage Road doesn't justify the cost and impact to construct the shared user path.

Therefore, it is recommended that public domain focus is placed on ensuring the safety and amenity of students is maintained by accessing the schools via the alternate paths instead of via Hermitage Road.