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TRAFFIC AND PARKING IMPACTS REPORT
FOR A DEVELOPMENT APPLICATION
FOR A PROPOSED RESIDENTIAL DEVELOPMENT
AT NO. 56 BEANE STREET, GOSFORD NSW 2250

Property address	56 Beane Street, Gosford NSW 2250
Client	McNally Management
Prepared by	O. Sannikov, MEngSc (Traffic Engineering), MIEAust, PEng, FAITPM
Date	04/12/2019
Job No.	19070
Report No.	19070 Rep 01

Item	Report
Site location	• Refer to **Figure 1.**
Existing land use	• Vacant lot (car park)
Proposed development	• Residential development ◦ 41 units ▪ 20 one-bedroom units ▪ 21 two-bedrooms units ◦ Lower ground level car park ▪ 19 car parking spaces, including • 7 spaces for people with disabilities ▪ 14 bicycle spaces ▪ 3 motorcycle spaces

Figure 1. Site location.

Item	Report
	Existing traffic and parking situation
Street characteristics	• Refer to **Figure 2.** • The key roads around the proposed development are described below. ◦ Beane Street ▪ Local road ▪ 2 traffic lanes and parking opportunities on both sides ◦ Gertrude Street ▪ Local road ▪ 2 traffic lanes and parking opportunities on both sides ◦ Hills Street ▪ Local collector road ▪ 2 traffic lanes and parking opportunities on both sides ◦ Watt Street ▪ Local collector road ▪ 2 traffic lanes and parking opportunities on western side ◦ Mann Street ▪ State road (MR 10) ▪ 2 traffic lanes and parking opportunities on both sides ◦ Other streets in the surrounding area are local/local collector roads. Street conditions are typical for a residential area, with low to moderate traffic volumes.
	Public Transport
Bus	• There is one (1) bus stop within short walking distance (approximately 130 metres) from the site servicing bus route 40. The other bus stop servicing all the routes described below is approximately 650 metres from the site. Refer to **Figure 3.** ◦ Bus Route 17 ◦ Gosford to The Entrance North • No services operate during the morning peak. • No services operate during the afternoon peak. ◦ The Entrance North to Gosford • No services operate during the morning peak. • No services operate during the afternoon peak. ◦ Bus Route 18 ◦ Gosford to The Entrance • No services operate during the morning peak. • No services operate during the afternoon peak. ◦ The Entrance to Gosford • 1 service operates during the morning peak. • No services operate during the afternoon peak. ◦ Bus Route 19 ◦ Gosford to Wyong • 3 services operate during the morning peak. • 2 services operate during the afternoon peak. ◦ Wyong to Gosford • 4 services operate during the morning peak. • 2 services operate during the afternoon peak.

Item	Report

- Bus Route 20
  - Gosford to Matcham via Erina Fair (Loop Service)
    - 2 services operate during the morning peak.
    - No services operate during the afternoon peak.
- Bus Route 21
  - Gosford to The Entrance North via Bateau Bay East
    - 1 service operates during the morning peak.
    - 1 service operates during the afternoon peak.
  - The Entrance North to Gosford via Bateau Bay East
    - 5 services operate during the morning peak.
    - 3 services operate during the afternoon peak.
- Bus Route 22
  - Gosford to The Entrance via Killarney Vale
    - 4 services operate during the morning peak.
    - 4 services operate during the afternoon peak.
  - The Entrance to Gosford via Killarney Vale
    - 4 services operate during the morning peak.
    - 2 services operate during the afternoon peak.
- Bus Route 23
  - Gosford to The Entrance via Bateau Bay West
    - 4 services operate during the morning peak.
    - 3 services operate during the afternoon peak.
  - The Entrance to Gosford via Bateau Bay West
    - 4 services operate during the morning peak.
    - 4 services operate during the afternoon peak.
- Bus Route 28
  - Gosford to The Entrance via Springfield
    - No services operate during the morning peak.
    - No services operate during the afternoon peak.
  - The Entrance to Gosford via Springfield
    - No services operate during the morning peak.
    - No services operate during the afternoon peak.
- Bus Route 40
  - North Gosford to Gosford (Loop Service)
    - 5 services operate during the morning peak.
    - 4 services operate during the afternoon peak.
- Bus Route 41
  - West Gosford to Gosford (Loop Service)
    - 2 services operate during the morning peak.
    - 2 services operate during the afternoon peak.
- Bus Route 42
  - Point Frederick to Gosford
    - 1 service operates during the morning peak.
    - 2 services operate during the afternoon peak.

Item	Report
	○ Bus Route 43 ○ Springfield to Gosford • No services operate during the morning peak. • No services operate during the afternoon peak. ○ Bus Route 44 ▪ Gosford to Erina Fair via Springfield • 3 services operate during the morning peak. • 7 services operate during the afternoon peak. ▪ Erina Fair to Gosford via Springfield • 3 services operate during the morning peak. • 5 services operate during the afternoon peak. • The morning peak was considered to be between 6:30 a.m. and 9:30 a.m. and the afternoon peak was considered to be between 3:30 p.m. and 6:30 p.m.
Train	• There is a train station within walking distance, approximately 550 metres from the site. Refer to **Figure 3.** ○ It services the: ▪ Central Coast Newcastle line ▪ North West NSW line

Figure 2. Street characteristics.

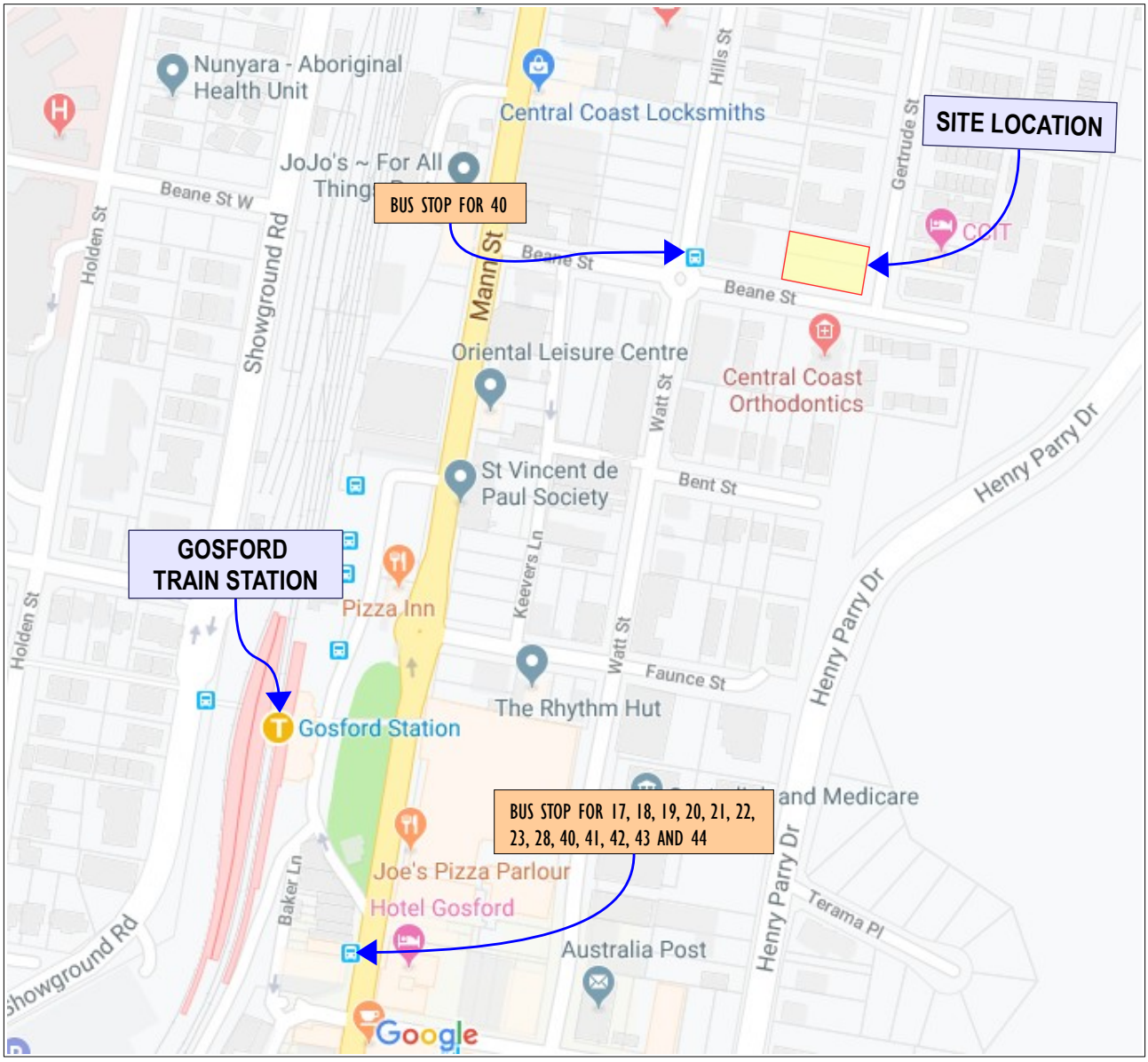


Figure 3. Public transport.

Item	Report
	Surveys and survey results
Parking survey	• A parking demand survey was conducted on Tuesday 13th of August 2019 (AM) and Thursday 8th of August 2019 (PM).
	◦ The morning survey was conducted between 6:30 a.m. and 10:00 a.m.
	◦ The afternoon survey was conducted between 3:00 p.m. and 7:00 p.m.
	• Refer to **Figure 4** for survey locations
	◦ Areas in red represent a walking distance of up to 150 metres from the site location
	◦ Areas in blue represent a walking distance of 150 – 250 metres from the site location.
Survey results	• Refer to **Table 1** for survey results
	• Areas 1a-2b (within 150 metres walking distance)
	◦ The morning peak occurred between 8:30 a.m. and 10:00 a.m.
	◦ The afternoon peak occurred between 3:00 p.m. and 3:30 p.m.
	◦ The survey results indicated that there were no spaces vacant from 8:30 a.m. to 10:00 a.m in the survey area.
	◦ The survey results indicated that there was 1 space vacant from 8:00 a.m. to 8:30 a.m in the survey area.
	◦ During all other times, there was at least 4 spaces vacant (to a maximum of 34) in the survey area.
	• Areas 3-5 (between 150 to 250 metres walking distance)
	◦ The morning peak occurred at 10:00 a.m.
	◦ The afternoon peak occurred at 4:00 p.m.
	◦ The survey results indicated that there were at least 7 spaces vacant throughout the day (to a maximum of 20) in the survey area.
	◦ There are sufficient on-street parking opportunities near the site from 3:00 p.m. to 7:00 p.m. when residents come back from work. Therefore, having no spaces vacant from 8:30 a.m. to 10:00 a.m. will not negatively affect on-street parking opportunities for residents.

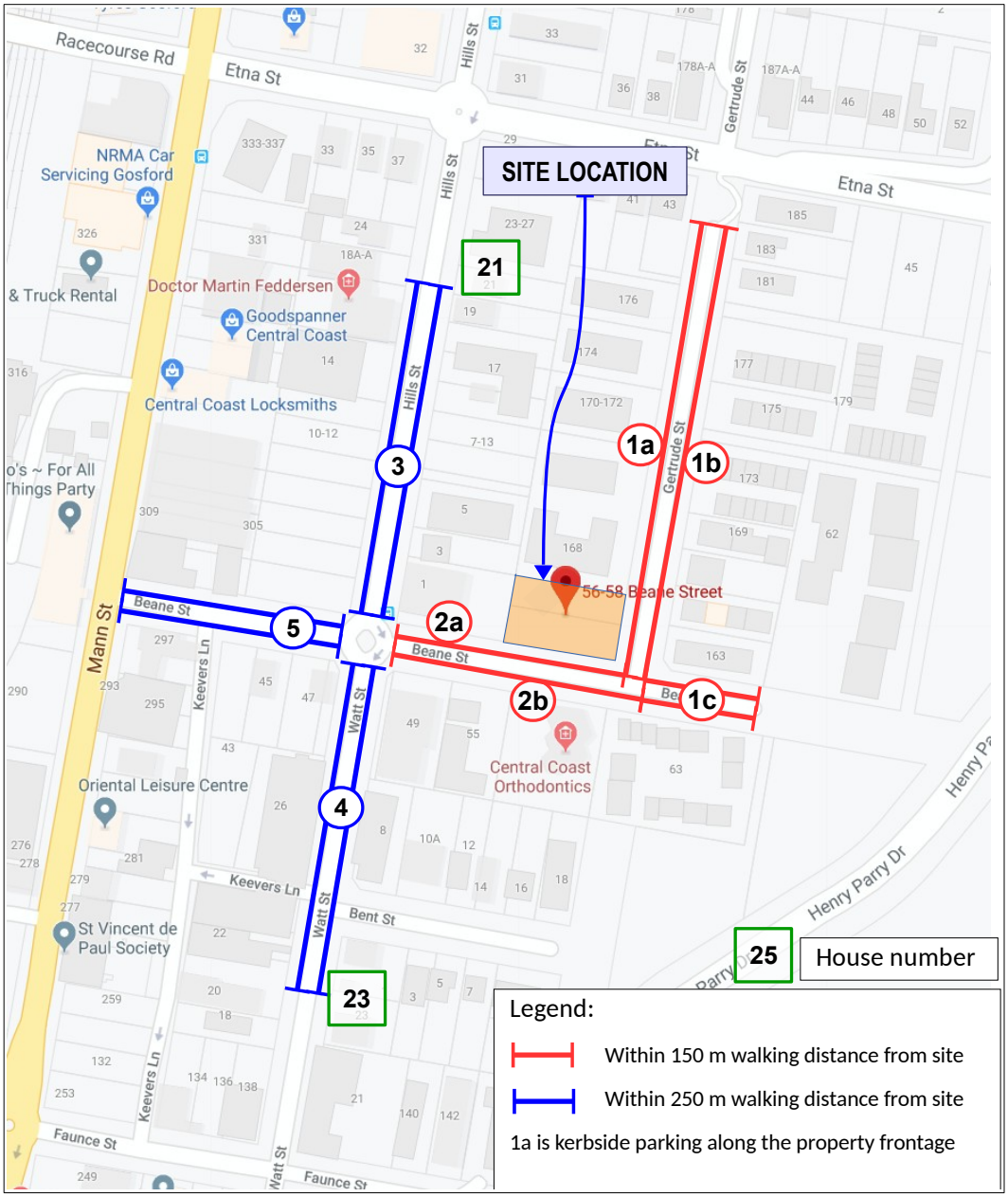


Figure 4. Parking survey locations.

Table 1. Parking survey results.

Tuesday	Number of parked cars										
13/08/19	Parking Location								Total		
Time	1a	1b	1c	2a	2b	3	4	5	1a-2b	3-5	All
6:30	17	12	4	3	3	6	No parking	3	39	9	48
7:00	11	9	4	6	6	7		2	36	9	45
7:30	14	11	5	9	9	9		2	47	11	58
8:00	20	17	11	11	11	11		3	69	14	83
8:30	21	17	11	11	11	11		5	70	16	86
9:00	21	17	11	11	11	10		3	70	13	83
9:30	21	17	11	11	11	12		3	70	15	85
10:00	21	17	11	11	11	14		5	70	19	89
Thursday											
08/08/19											
15:00	19	17	11	10	10	9	No parking	8	66	17	83
15:30	19	17	11	10	10	9		8	66	17	83
16:00	19	17	11	9	9	11		9	65	20	85
16:30	19	17	10	8	8	11		5	62	16	78
17:00	19	15	11	10	10	12		3	64	15	79
17:30	14	12	6	7	7	5		2	46	7	53
18:00	9	14	9	8	8	7		1	48	8	56
18:30	12	16	9	9	9	7		1	54	8	62
19:00	12	16	11	6	6	7		1	50	8	58
No of spaces	21	17	11	11	11	14	NP	13	70	27	97

Tuesday	Number of vacant spaces										
13/08/19	Parking Location								Total		
Time	1a	1b	1c	2a	2b	3	4	5	1a-2b	3-5	All
6:30	4	5	7	8	8	8	No parking	10	31	18	49
7:00	10	8	7	5	5	7		11	34	18	52
7:30	7	6	6	2	2	5		11	23	16	39
8:00	1	0	0	0	0	3		10	1	13	14
8:30	0	0	0	0	0	3		8	0	11	11
9:00	0	0	0	0	0	4		10	0	14	14
9:30	0	0	0	0	0	2		10	0	12	12
10:00	0	0	0	0	0	0		8	0	8	8
Thursday											
08/08/19											
15:00	2	0	0	1	1	5	No parking	5	4	10	14
15:30	2	0	0	1	1	5		5	4	10	14
16:00	2	0	0	2	2	3		4	5	7	12
16:30	2	0	1	3	3	3		8	8	11	19
17:00	2	2	0	1	1	2		10	6	12	18
17:30	7	5	5	4	4	9		11	24	20	44
18:00	12	3	2	3	3	7		12	22	19	41
18:30	9	1	2	2	2	7		12	16	19	35
19:00	9	1	0	5	5	7		12	20	19	39

Item	Report	
	Traffic counts	
Intersection traffic volume counts	Location / type of control	Gertude Street / Beane Street (T-intersection with Give Way control)
		Watt Street / Beane Street / Hills Street (roundabout with Give Way control)
	Date / Day of the week	Tuesday 13th of August 2019 (AM) and Thursday 8th of August 2019 (PM)
	Time period (AM)	06:00 to 11:00; peak hour occurred at 08:00–09:00
	Time period (PM)	14:45 to 18:30; peak hour occurred at 15:00-16:00
	• Refer to **Figures 5a** and **5b**.	
Intersection operation	• Observations of operation of the two intersections indicated no queuing and ample spare capacity due to low traffic volumes (operation at a good Level of Service, LoS A).	
	○ Refer to the RTA (RMS) definitions of LoS.	

Level of service criteria for intersections

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays; Roundabouts require other control mode	At capacity, requires other control mode

Source: RTA (2002) Guide to Traffic Generating Developments

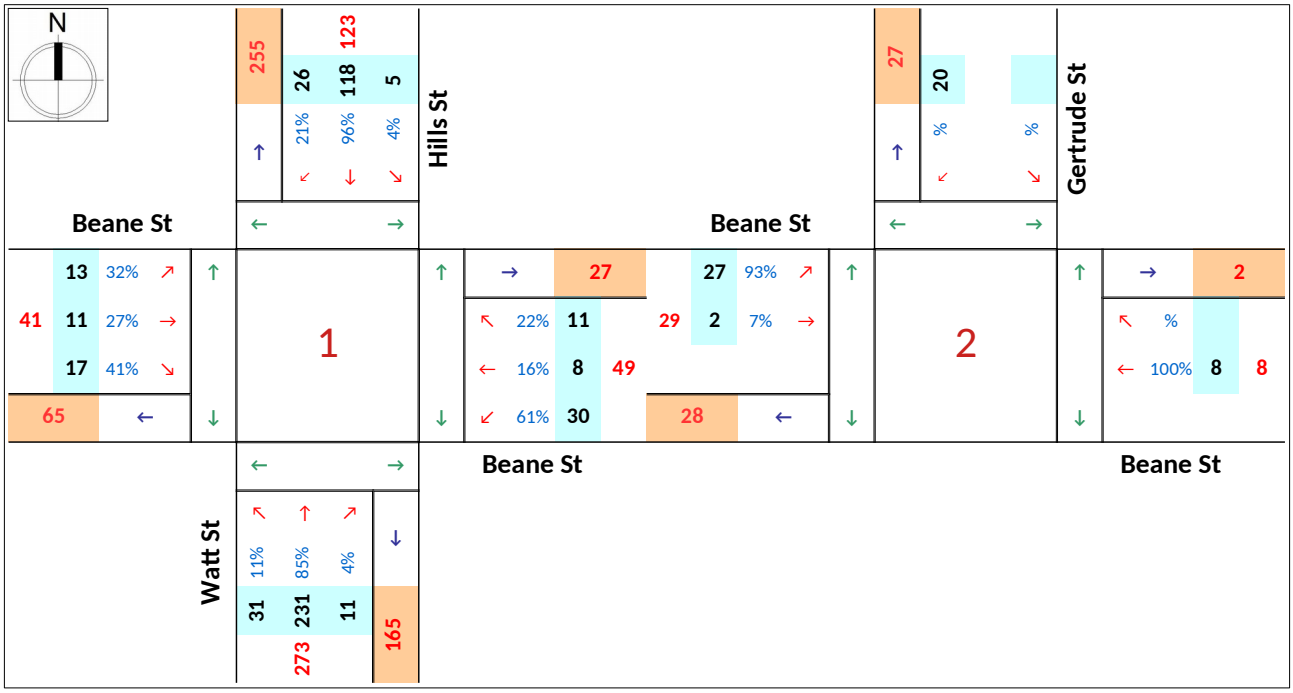


Figure 5a. Existing traffic volumes – morning peak

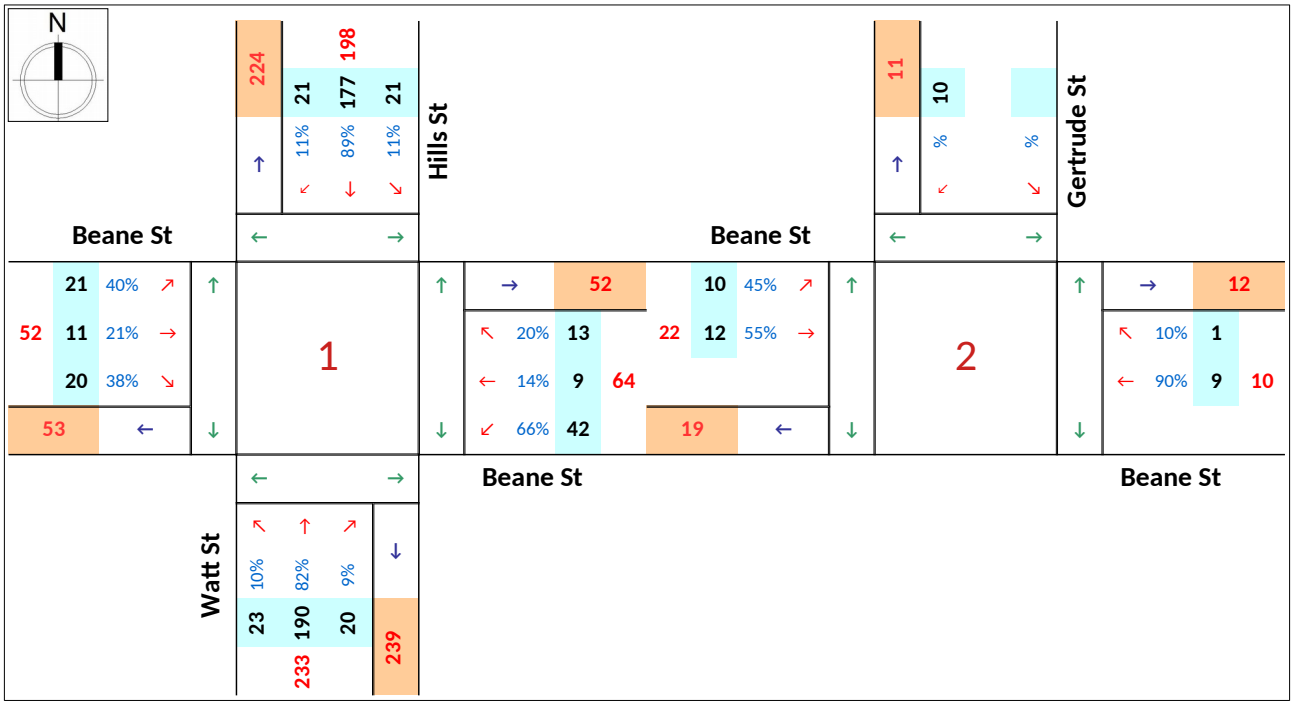
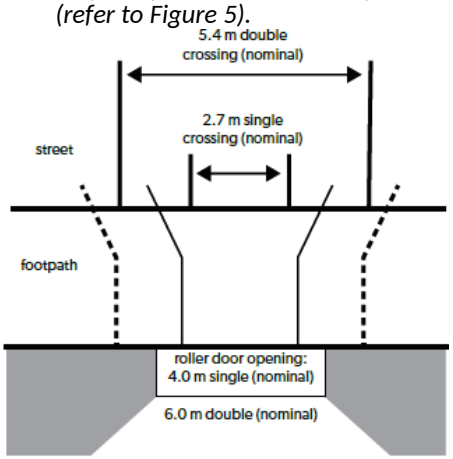


Figure 5b. Existing traffic volumes – afternoon peak

Item	Report
Planning control document 1	• State Environmental Planning Policy (Affordable Rental Housing) 2009 (SEPP ARH 2009) • Part 2, Division 1 – In-fill affordable housing

Requirement	Compliance
10 Development to which Division Applies	
(1) This Division applies to development for the purposes of dual occupancies, multi dwelling housing or residential flat buildings if: (a) the development concerned is permitted with consent under another environmental planning instrument, and (b) the development is on land that does not contain a heritage item that is identified in an environmental planning instrument, or an interim heritage order or on the State Heritage Register under the Heritage Act 1977. (2) Despite subclause (1), this Division does not apply to development on land in the Sydney region unless all or part of the development is within an accessible area. (3) Despite subclause (1), this Division does not apply to development on land that is not in the Sydney region unless all or part of the development is within 400 metres walking distance of land within Zone B2 Local Centre or Zone B4 Mixed Use, or within a land use zone that is equivalent to any of those zones.	
In this Policy: **accessible area** means land that is within: **(a) 800 metres walking distance of a public entrance to a railway station or a wharf from which a Sydney Ferries ferry service operates, or** (b) 400 metres walking distance of a public entrance to a light rail station or, in the case of a light rail station with no entrance, 400 metres walking distance of a platform of the light rail station, or (c) 400 metres walking distance of a bus stop used by a regular bus service (within the meaning of the Passenger Transport Act 1990) that has at least one bus per hour servicing the bus stop between 06.00 and 21.00 each day from Monday to Friday (both days inclusive) and between 08.00 and 18.00 on each Saturday and Sunday.	The proposed development is located within 800 metres (550 metres) of the Gosford train station. Therefore, this development is within an accessible area.
14 Standards that cannot be used to refuse consent	
(2) A consent authority must not refuse consent to development to which this Division applies on any of the following grounds: (a) **parking** if: **(i) in the case of a development application made by a social housing provider for development on land in an accessible area—at least 0.4 parking spaces are provided for each dwelling containing 1 bedroom, at least 0.5 parking spaces are provided for each dwelling containing 2 bedrooms and at least 1 parking space is provided for each dwelling containing 3 or more bedrooms, or** (ii) in any other case—at least 0.5 parking spaces are provided for each dwelling containing 1 bedroom, at least 1 parking space is provided for each dwelling containing 2 bedrooms and at least 1.5 parking spaces are provided for each dwelling containing 3 or more bedrooms,	

Item	Report	
	Requirement	**Compliance**
	Car parking required	**Car parking proposed**
	For this development, the current applicant is a social housing provider and the site is located in an accessible area.	19 car parking spaces are proposed. Complies
	There are twenty (20) one-bedroom units and twenty-one (21) two-bedroom units: • 20 x 0.4 = 8 spaces • 21 x 0.5 = 10.5 spaces Total: • 8 + 10.5 = 18.5, say **19 spaces**	There are no bicycle and motorcycle requirements for in-fill affordable housing in SEPP (ARH). However, the site provides bicycle and motorcycle spaces as a bonus.
Planning control document 2	• Central Coast Council • Gosford City Centre Development Control Plan (DCP) 2018 ▪ Chapter 7 – Access and parking	
	7 Access and Parking	
	7.2 Pedestrian access and mobility	
	1. Main building entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that improve clarity of building address and contribute to visitor and occupant amenity	Complies
	2. The design of facilities (including car parking requirements) for disabled persons must comply with the relevant Australian Standard (AS 1428 Pt 1 and 2, or as amended) and the Disability Discrimination Act 1992 (as amended).	Complies with AS/NZS 2890.6:2009 Compliance with AS 1428 shall be addressed by an accessibility specialist.
	3. Barrier free access is to be provided to not less than 20% of dwellings in each development and associated common areas.	Access from the car park is provided to all units by lifts and stairs. Complies
	4. All development must provide at least one main pedestrian entrance with convenient barrier free access to at least the ground floor level.	Complies
	5. All development must provide continuous access paths of travel from all public roads and spaces as well as unimpeded internal access.	Complies
	6. Pedestrian access ways, entry paths and lobbies must use durable materials commensurate with the standard of the adjoining public domain (street) with appropriate slip resistant materials, tactile surfaces and contrasting colours.	Capable of compliance at the Construction stage
	7.3 Vehicular driveways and manoeuvring areas	
	1. Driveways should be: a) provided from lanes and secondary streets rather than the primary street, wherever practical,	Complies
	b) located taking into account any services within the road reserve, such as power poles, drainage inlet pits and existing street trees,	Complies

Requirement	Compliance
c) located a minimum of 6 metres from the perpendicular of any intersection of any two roads, and	Complies
d) if adjacent to a residential development, setback a minimum of 1.5m from the relevant side property boundary	The driveway runs along the property boundary for the first 6.0 m from the frontage, to enable the passing of entering and exiting vehicles. Beyond that, the driveway veers away from the boundary. Complies with AS/NZS 2890.1:2004. Satisfactory.
2. Vehicle access is to be integrated into the building design so as to be visually recessive.	Complies
3. All vehicles must be able to enter and leave the site in a forward direction.	Complies
4. Design of driveway crossings must be in accordance with Council's standard Vehicle Entrance Designs, with any works within the footpath and road reserve subject to a Section 138 Roads Act approval.	Capable of compliance at the construction stage
5. Driveway widths must comply with the relevant Australian Standards. Car space dimensions must comply with the relevant Australian Standards. Driveway grades, vehicular ramp width/grades and passing bays must be in accordance with the relevant Australian Standard, (AS 2890.1).	Complies with AS/NZS 2890.1:2004. It is noted that Clause 4.5.1 *"Vehicle footpath crossings"* of *Section 4 "Public spaces"* of the DCP has the following sub-clause: *5. Wherever practicable, vehicle access is to be a single lane crossing with a maximum width of 2.7 metres over the footpath, and perpendicular to the kerb alignment. In exceptional circumstances, a double lane crossing with a maximum width of 5.4 metres may be permitted for safety reasons (refer to Figure 5).*  Figure 5. Design of Vehicle Access *Source: Central Coast Council* The proposed driveway is slightly wider (6.0 m) to match the width of the ramp which was designed to enable simultaneous movements in opposite directions and also to comply with AS/NZS 2890.1:2004. This minor increase (by 0.6 m) is satisfactory and it is not likely to affect the amenity of pedestrians.
6. Vehicular ramps less than 20m long within developments and parking stations must have a maximum grade of 1 in 8. Ramp widths must be in accordance with AS 2890.2	Complies with AS/NZS 2890.1:2004 (AS 2890.2-2002 is not applicable).

Item	Report	
	Requirement	**Compliance**
	7. Access ways to underground parking should be sited to minimise noise impacts on adjacent habitable rooms, particularly bedrooms.	Complies
	8. For residential development in the General Residential zone, use semi-pervious materials for all uncovered parts of driveways and parking areas to assist with storm water infiltration.	Capable of compliance at the construction stage
	9. Building entries, building services including fire services and parking and servicing locations should all be treated with high quality materials. Materials used to treat the external facade should 'turn in' and continue at least 3m into vehicular entry locations.	Capable of compliance at the construction stage
	7.4 On-site parking	
	1. On-site vehicle and bicycle parking is to be provided in accordance with Table 2 of this chapter.	Refer to the previous section **'Planning control document 1'** State Environmental Planning Policy (Affordable Rental Housing) 2009 (SEPP ARH 2009) overrides DCP requirements for parking rates and calculations.
	2. Car parking and associated internal manoeuvring areas provided over and beyond that required by this chapter is to be calculated towards gross floor area.	As above.
	3. Car parking above ground level is to have a minimum floor to ceiling height of 3.1m so it can be adapted to another use in the future.	Not applicable
	4. On-site parking must meet the relevant Australian Standard (AS 2890.1 2004 – Parking facilities, or as amended).	Complies with AS/NZS 2890.1:2004
	5. To accommodate people with disabilities, provide a minimum of 4% of the required parking spaces, or minimum of 2 spaces per development, (whichever is the greater) as an appropriately designated and signed disabled parking space.	Seven (7) spaces for people with disabilities are proposed. Complies and exceeds
	6. A Transport Management Plan is required to accompany development applications to justify any proposed variation to parking rates.	Not applicable
	7. Uncovered on-site parking areas, including the top of front building setbacks, are prohibited.	Complies
	8. Bicycle parking is to be in secure and accessible locations, with weather protection.	Complies with AS 2890.3:2015
	9. The impact of any on-grade car parking must be minimised by: a) locating parking on the side or rear of the lot away from the street frontage, b) provision of fencing or landscape to screen the view of cars from adjacent streets and buildings, c) allowing for safe and direct access to building entry points, or	Not applicable

Item	Report	
	Requirement	**Compliance**
	d) incorporating car parking into landscape design of the site (such as plantings between parking bays to improve views, selection of paving material and screening from communal and open space areas).	
	10. Reference should be made to relevant guidance in Austroads Guides, Australian Standards, NSW Government Planning Guidelines for Walking and Cycling and NSW Roads and Maritime Services technical directions.	Complies
	Change of use	Not applicable
	Bicycle lockers and shower facilities	
	1. For commercial and retail development providing employment for 20 persons or more, provide adequate change and shower facilities for cyclists. Facilities should be conveniently located close to bike storage areas.	Not applicable
	7.5 Site facilities and services	
	Mailboxes	To be addressed by others
	Communication structures, air conditioners and service vents	To be addressed by others
	Waste (garbage) storage and collection – General (all development)	
	1. All development is to accommodate waste handling and storage on-site.	Site dimensions prohibit waste collection on site. Waste bins will be collected on Beane Street. Traffic volumes are very low on Beane Street in front of the site, well below the environmental road capacity (with a total of approximately 60 veh/h and 40 veh/h in the morning and afternoon peak hours respectively). Such traffic flow levels allow for safe and efficient kerbside waste collection without any effect on existing traffic. Existing developments on Beane Street currently rely on kerbside waste collection. These developments include • 63 Beane Street, • 53-55 Beane Street, • 49-51 Beane Street and • 45 Beane Street An additional waste collection point on Beane Street will not result in any negative traffic and safety impacts. Satisfactory
	2. Access for waste collection and storage is preferred from rear lanes, side streets or rights of ways.	Complies
	3. Waste storage areas are to be designed to:	
	a) ensure adequate driveway access and manoeuvrability for any required service vehicles,	Site dimensions prohibit waste collection on site.
	b) be located so as not to create any adverse noise impacts on the existing	Complies

Requirement	Compliance
developments or sensitive noise receptors such as habitable rooms of residential developments, and	
c) be screened from the public way and adjacent development that may overlook the area.	Complies
4. The storage facility must be well lit, easily accessible and on level grade for movement of bins, free of obstructions that may restrict movement and servicing of bins or containers and designed to minimise noise impacts.	Complies
Location requirements for waste storage areas and access:	
1. Where waste volumes require a common collection, storage and handling area, this is to be located:	
a) for residential flat buildings, enclosed within a basement or enclosed car park,	The waste storage area is located near Beane Street. This will provide the most convenience in terms of kerbside collection. Satisfactory
b) for multi-unit housing, at ground behind the main building setback and façade, or within a basement or enclosed car park, and	Complies
c) for commercial, retail and other development, on-site in basements or at ground level within discrete service areas not visible from main street frontages.	Not applicable
2. Where above ground garbage collection is prohibitive or impractical due to limited street frontage, or would create an unsafe environment, an on-site basement storage area must be provided.	Not applicable
3. Where a waste vehicle is required to enter the site, access and circulation areas shall be designed to accommodate a vehicle with the following specification: Vehicle length: 10.5m Vehicle height: 4.0m Ramp width: 4m Turning circle: AUSROADS template for HRV, R=12.5m, speed 5kph Minimum truck loading: 23 tonne	Site dimensions prohibit waste collection on site.
Any access route for waste collection vehicles and operators is subject a Section 88B Instrument under the Conveyancing Act for right of access being provided prior to an occupational certificate being issued.	Noted
Service docks and loading/unloading areas	
1. Provide adequate space within any new development for the loading and unloading of service/delivery vehicles.	No service bays are provided as the proposed development is a residential development which is not expected to generate any service vehicle demand.

Item	Report	
	Requirement	**Compliance**
	2. Preferably locate service access off rear lanes, side streets or rights of way	As above.
	3. Screen all service doors and loading docks from street frontages and from active overlooking from existing developments.	Not applicable
	4. Design circulation and access in accordance with AS 2890.1.	Complies with AS/NZS 2890.1:2004
	Fire service and emergency vehicles	
	1. For developments where a fire brigade vehicle is required to enter the site, vehicular access, egress and manoeuvring must be provided to, from and on the site in accordance with the NSW Fire Brigades Code of Practice – Building Construction – NSWFB Vehicle Requirements.	Not applicable
	2. Generally provision must be made for NSW Fire Brigade vehicles to enter and leave the site in a forward direction where:	
	a) NSW Fire Brigade cannot park their vehicles within the road reserve due to the distance of hydrants from the building or restricted vehicular access to hydrants, or	The NSW Fire Brigade can park their vehicles within the road reserve as there is a hydrant near the site.
	b) otherwise required by the NSW Fire Brigades Code of Practice – Building Construction NSWFB Vehicle Requirements.	Not applicable

Item	Report
	Traffic impacts
Traffic generation	• **Base traffic generation rates** ◦ From RMS (2002) Guide to Traffic Generating Developments ▪ Updated data from TDT 2013/04a • High density residential developments – building containing 20 or more units ◦ Morning peak – 0.19 trips per unit ▪ 26% in and 74% out ◦ Afternoon peak – 0.15 trips per unit ▪ 66% in and 34% out
	• **Existing traffic generation** ◦ Vacant lot
	• **Traffic generated by proposed development** ◦ 41 units (high density residential – Sydney average) • Morning peak hour vehicle trips = 0.19 per unit • 41 x 0.19 = 7.8, say **8 trips** during the peak hour. ◦ 7.8 * 0.26 = 2.02, say **2 trips in** ◦ 7.8 * 0.74 = 5.8, say **6 trips out** • Afternoon peak hour vehicle trips = 0.15 per unit • 41 x 0.15 = 6.2, say **6 trips** during the peak hour. ◦ 6.2 * 0.66 = 4.1, say **4 trips in** ◦ 6.2 * 0.34 = 2.1, say **2 trips out**
Traffic distribution	• Trip generation and attraction is assumed to be equal in all directions, with trip distribution taking into account the surrounding street network, connections and turn restrictions. ◦ Refer to **Figures 6a** and **6b.**
Conclusion	• Additional traffic generation is minor and will have no negative impact on the existing road network operation and to safety risks.
Safety	• **Accident statistics** ◦ Accident statistics from RMS NSW indicate only one (1) crash in 5 years (parking collision). This is a very minor level, similar to or lower than at other intersections in the vicinity of the site. Safety risks are very low and do not preclude a residential development at the proposed location. ▪ Refer to **Figure 7.** ◦ It is also important to note that the proposed access to the site is not on the main road.

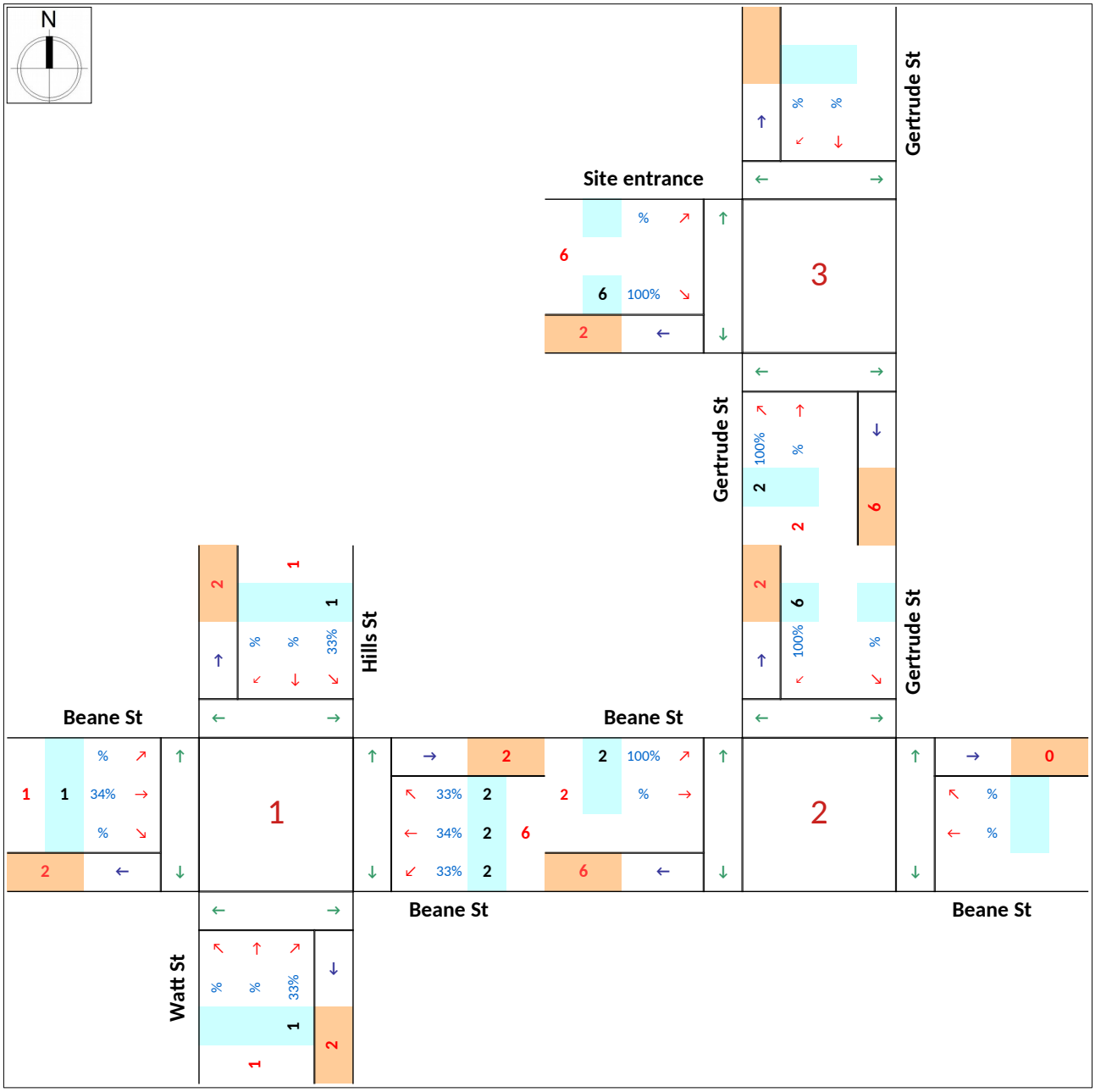


Figure 6a. Distribution of additional traffic volumes – morning peak

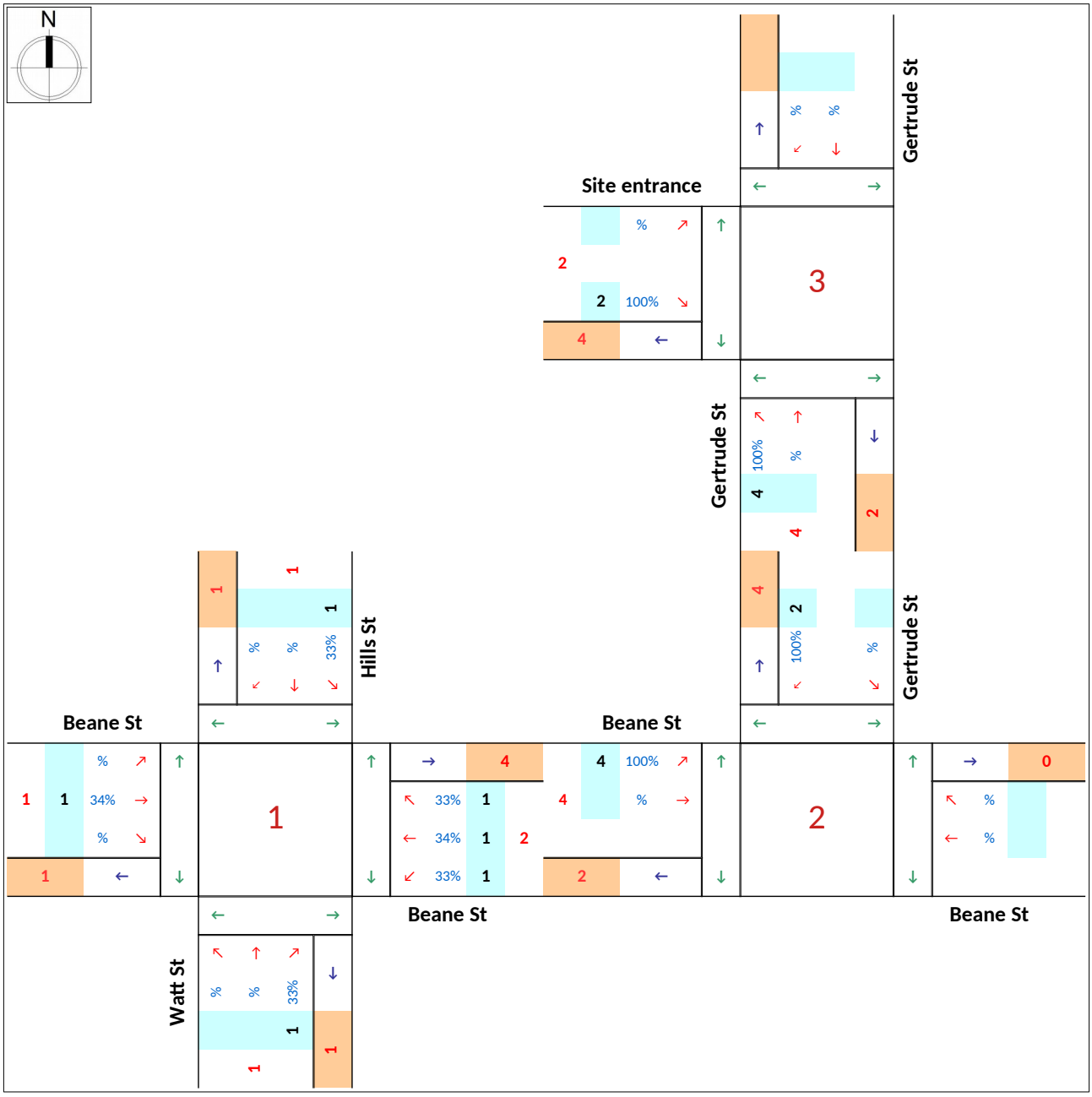
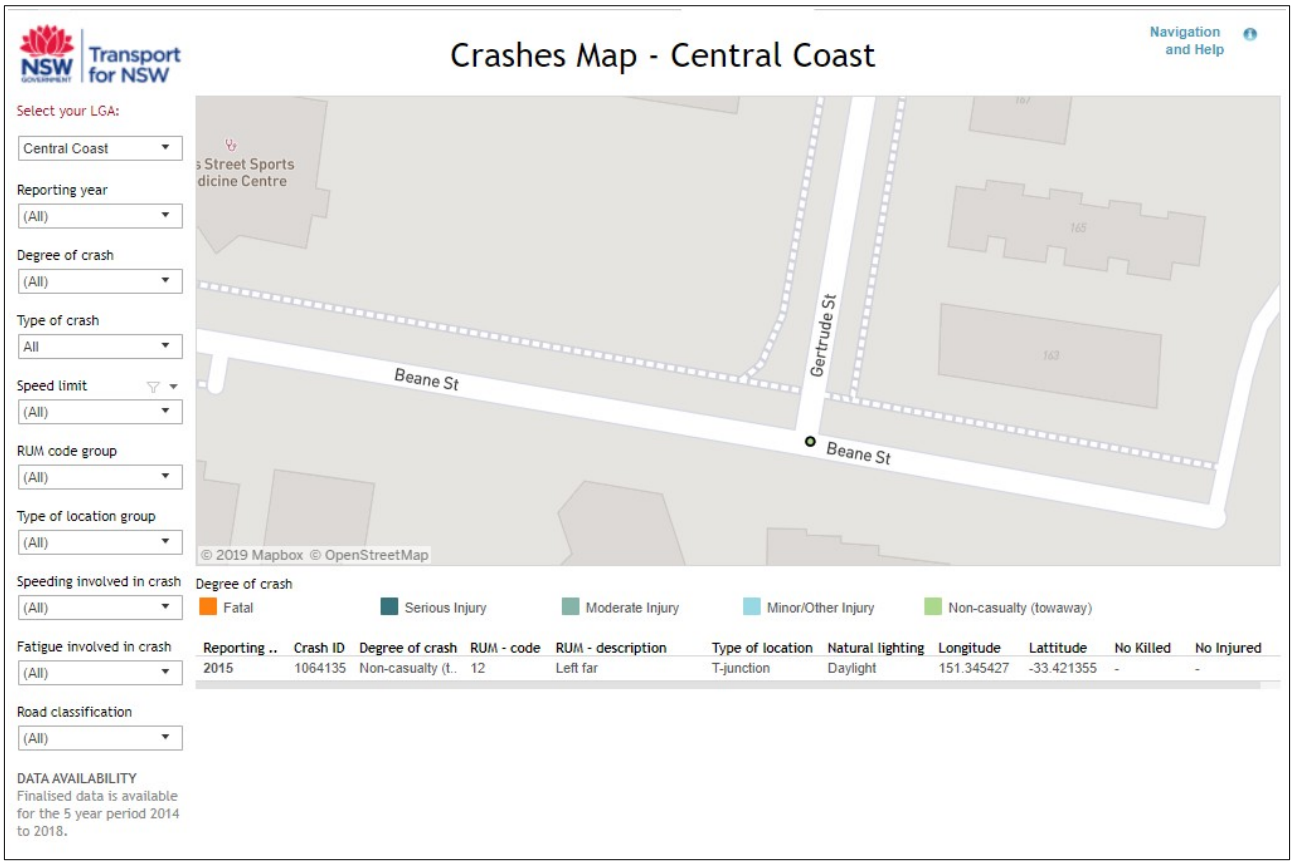


Figure 6b. Distribution of additional traffic volumes – afternoon peak



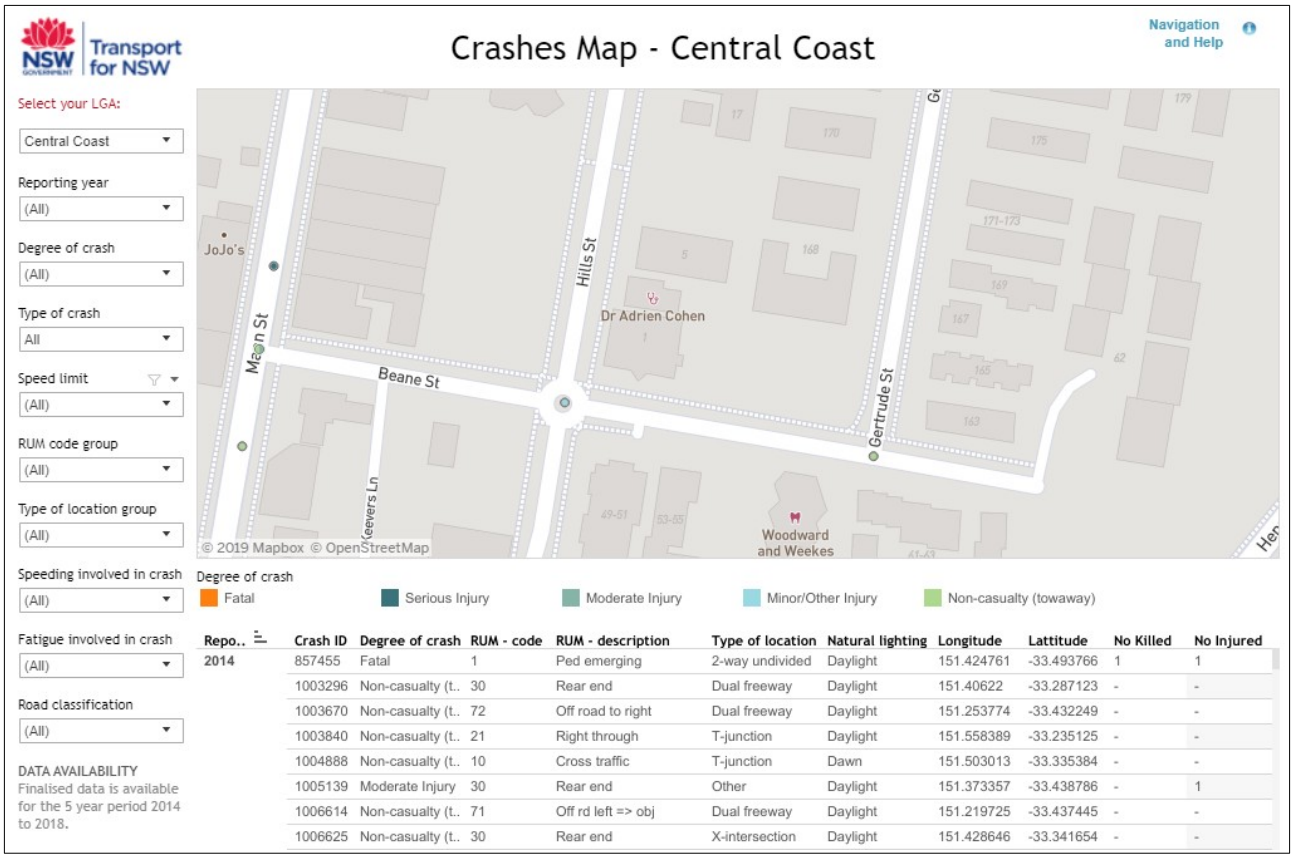
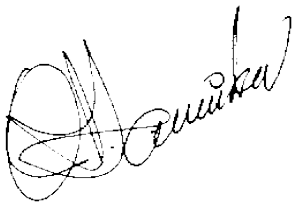


Figure 7. Crashes map – near the site and in the area.

Conclusions	Proposed parking provision • Complies with the requirements of SEPP (ARH) 2009 in terms of car parking. Exceeds the requirements of SEPP (ARH) 2009 in terms of bicycle and motorcycle parking.
	Traffic impacts • The additional traffic from the proposed development will be minimal and will have no negative impacts on street network operation.
	Design of access, car parking and servicing facilities • Complies with the relevant Standards.
	The proposed development is supportable on traffic and parking grounds.



Oleg I. Sannikov
Director
MEngSc (Traffic Engineering)
MIEAust, PEng
FAITPM

References:

State Environmental Planning Policy (Affordable Rental Housing) 2009

Gosford City Centre Development Control Plan (DCP) 2018

RMS (2002) Guide to Traffic Generating Developments

AS/NZS 2890.1:2004: Parking Facilities – Off-street car parking

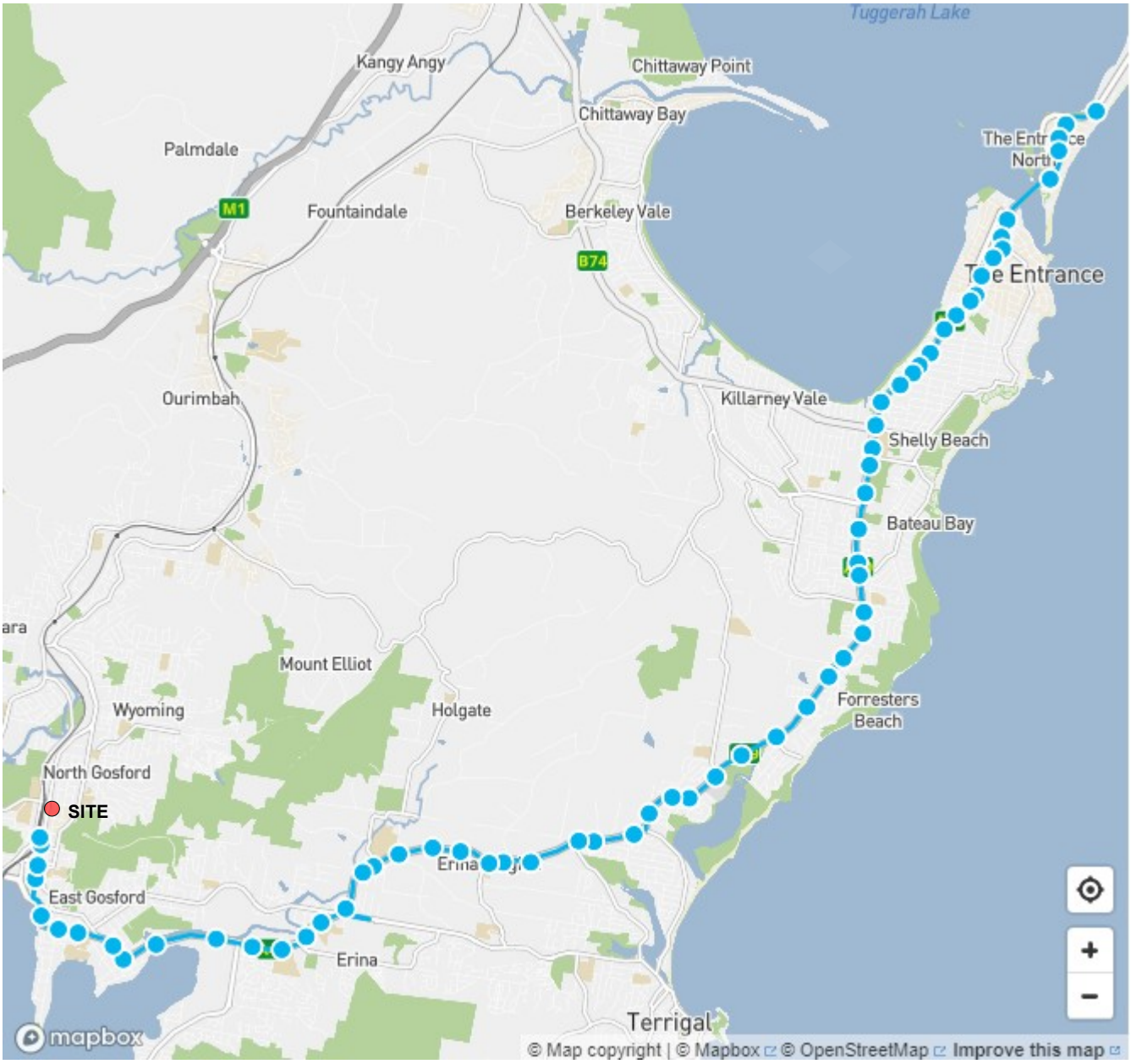
AS 2890.3:2015: Parking Facilities – Bicycle parking

AS/NZS 2890.6:2009: Parking Facilities – Off-street parking for people with disabilities

Appendix

Bus routes
Car park design checks and vehicle turning diagrams

Bus Route 17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Chittaway Point
Chittaway Bay
Palmdale
M1
Fountaindale
Berkeley Vale
B74
The Entrance
Ourimbah
Killarney Vale
Shelly Beach
Bateau Bay
Mount Elliot
Wyoming
Holgate
Forresters Beach
North Gosford
SITE
East Gosford
Erina
Terrigal
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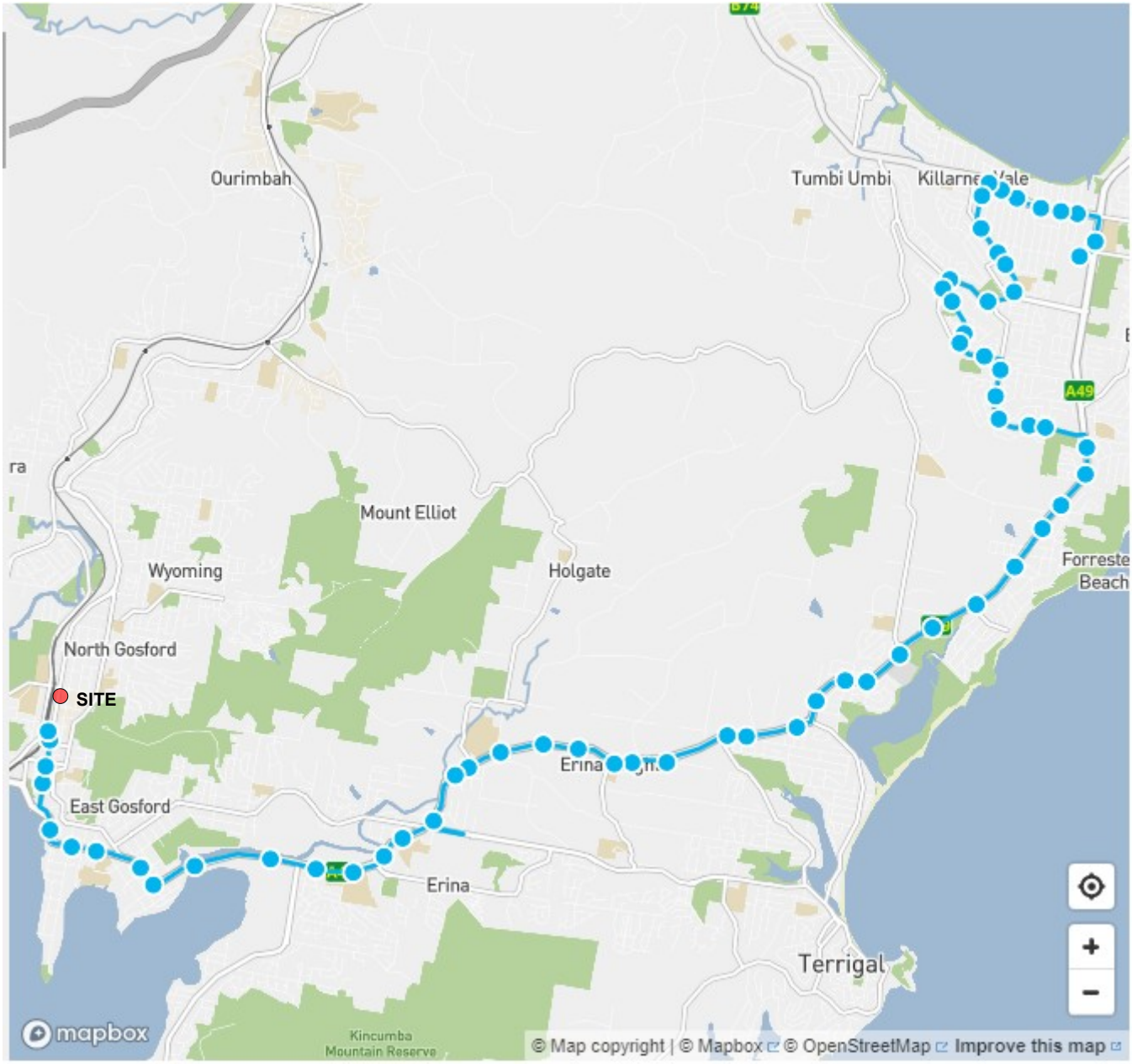
Bus Route 18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Holgate
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Terrigal
Kincumba Mountain Reserve
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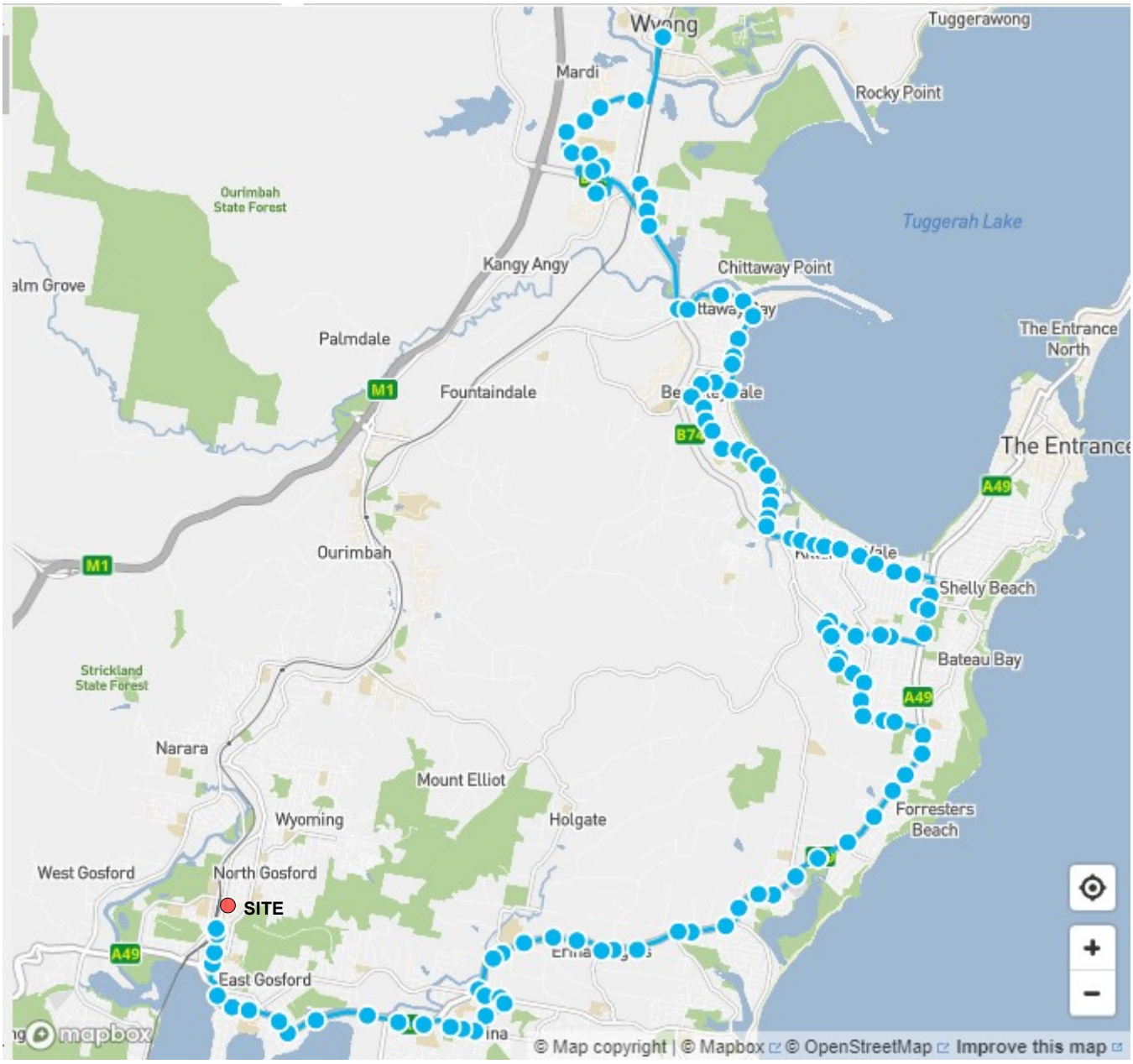
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Tuggerawong
Mardi
Rocky Point
Ourimbah State Forest
Tuggerah Lake
Kangy Angy
Chittaway Point
Palmdale
The Entrance North
M1
Fountaindale
B74
The Entrance
A49
Ourimbah
Shelly Beach
Bateau Bay
Strickland State Forest
Narara
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Wyoming
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North Gosford
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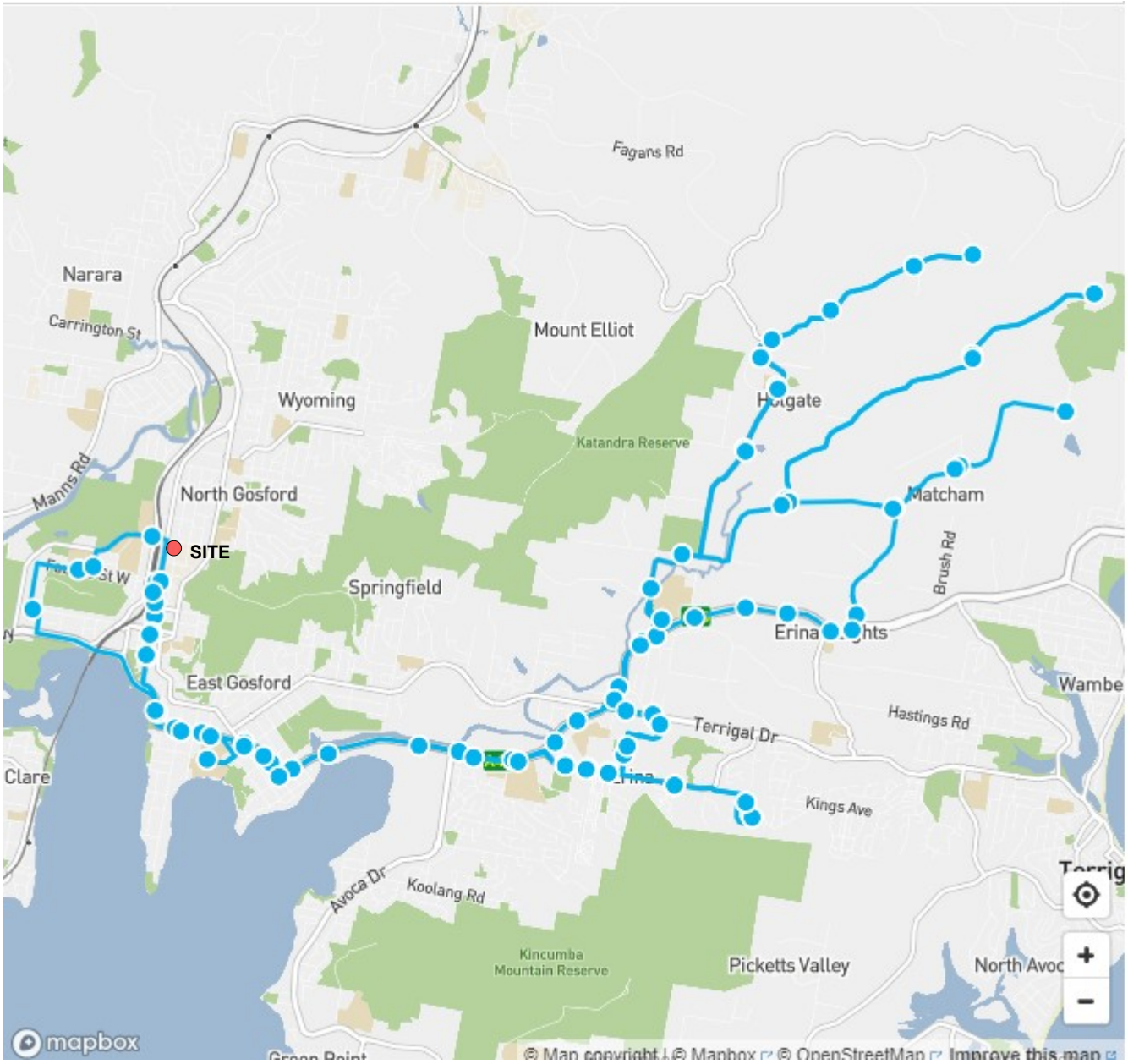
Bus Route 20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Wyoming
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Manns Rd
North Gosford
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Springfield
Matcham
Brush Rd
East Gosford
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Hastings Rd
Clare
Kings Ave
Avoca Dr
Koolang Rd
Kincumba
Mountain Reserve
Picketts Valley
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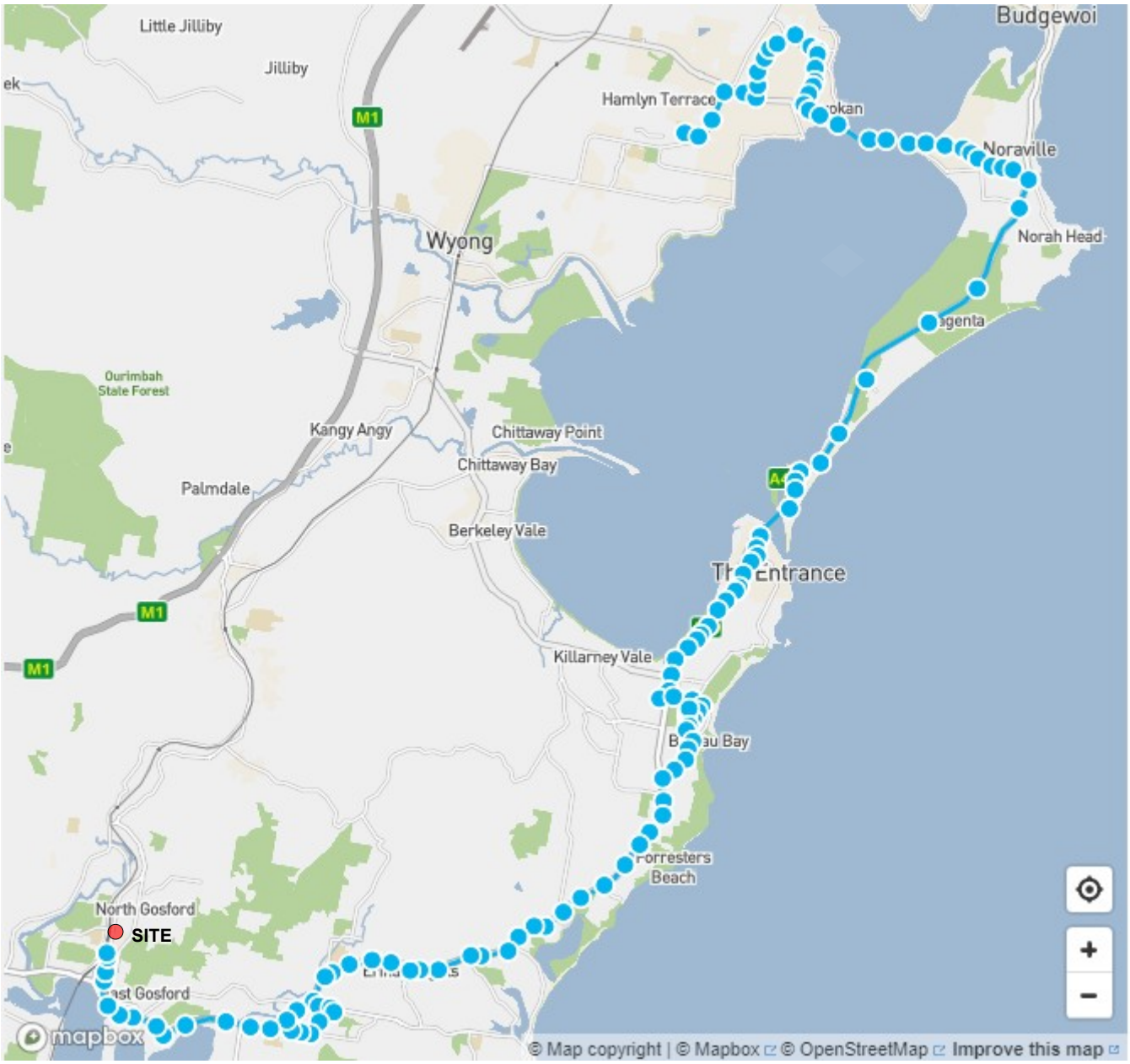
Bus Route 21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Chittaway Point
Chittaway Bay
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The Entrance
Killarney Vale
M1
North Gosford
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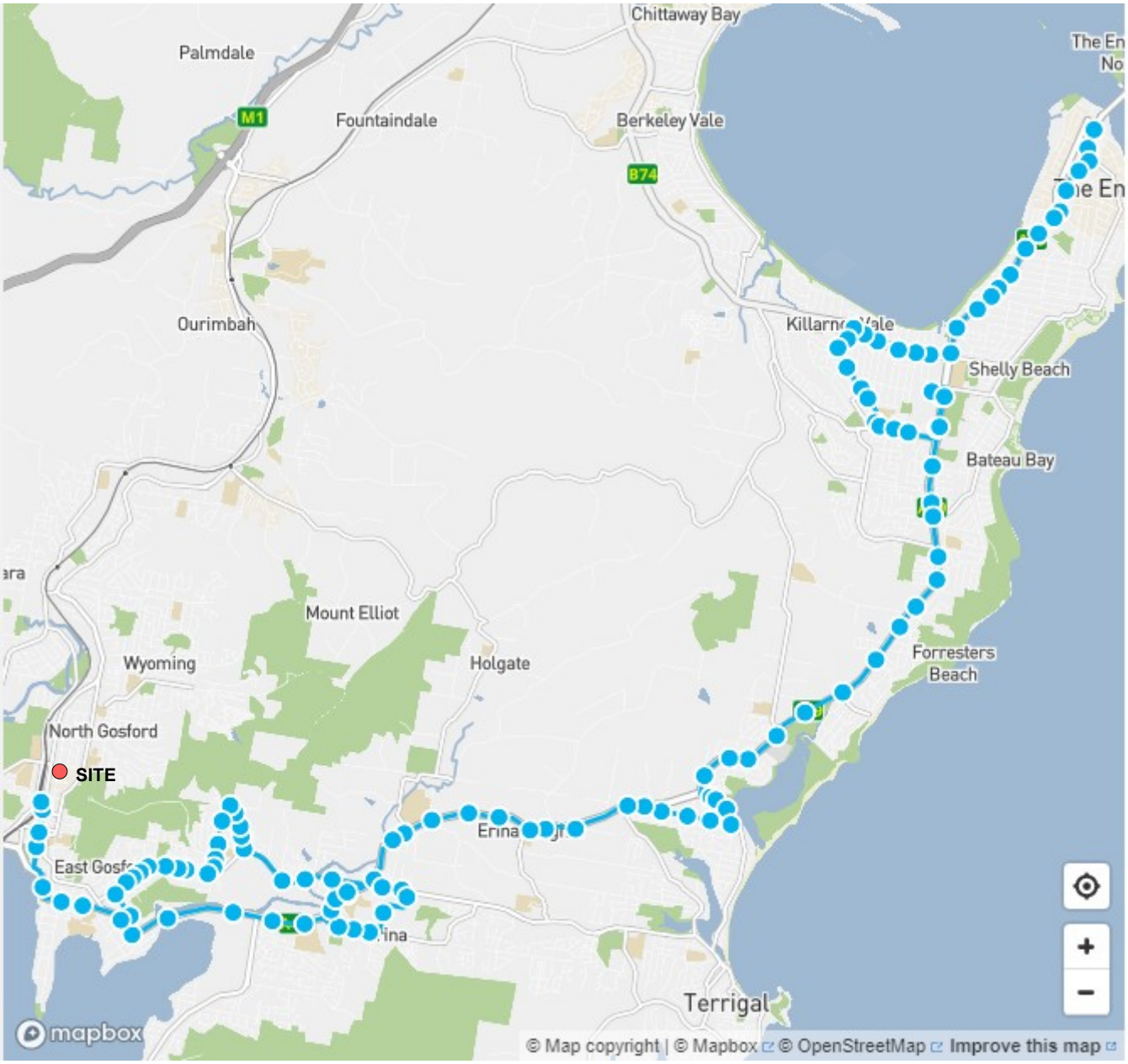
Bus Route 22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B74
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Killarney Vale
Shelly Beach
Bateau Bay
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Forresters Beach
North Gosford
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Terrigal
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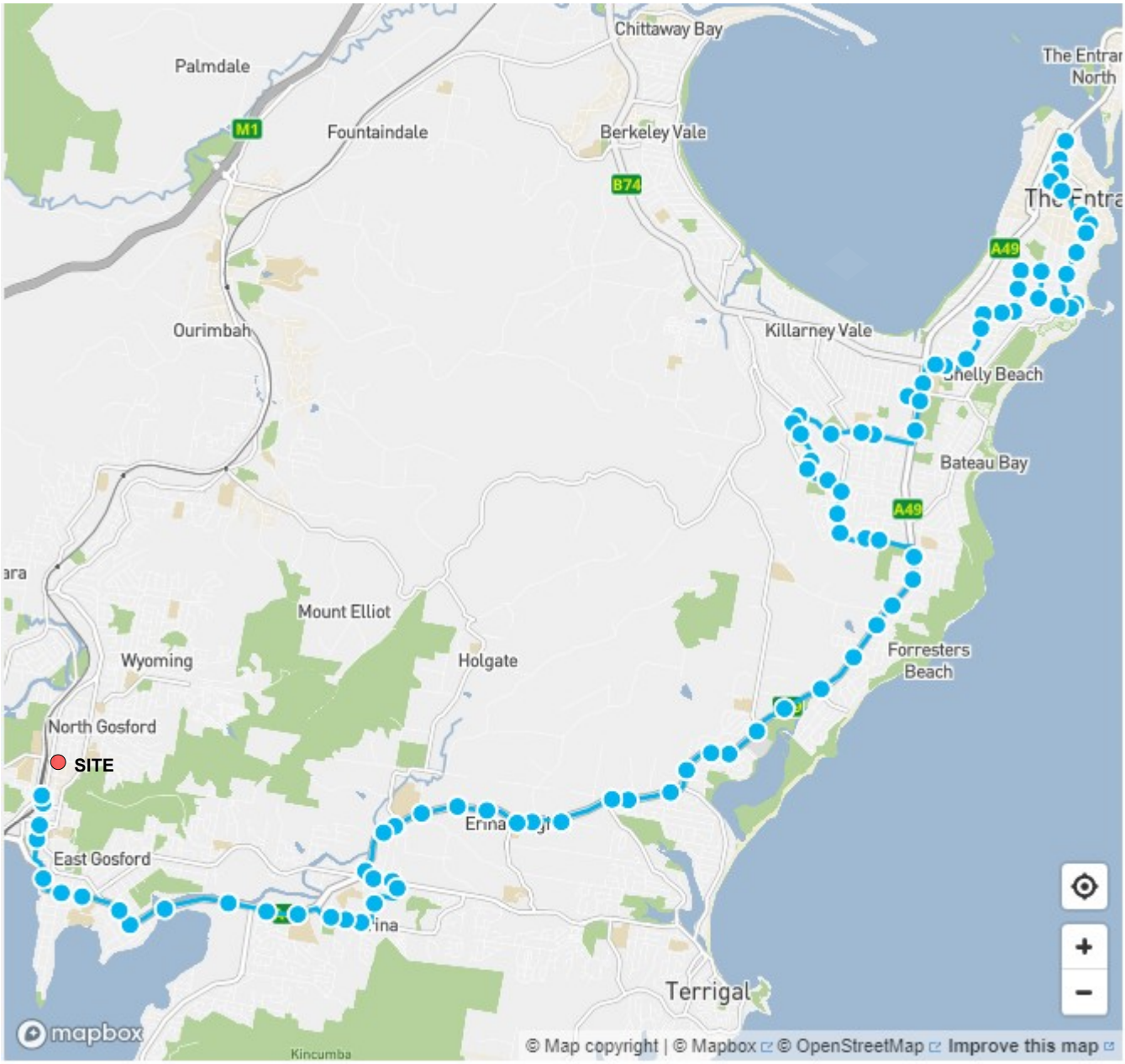
Bus Route 23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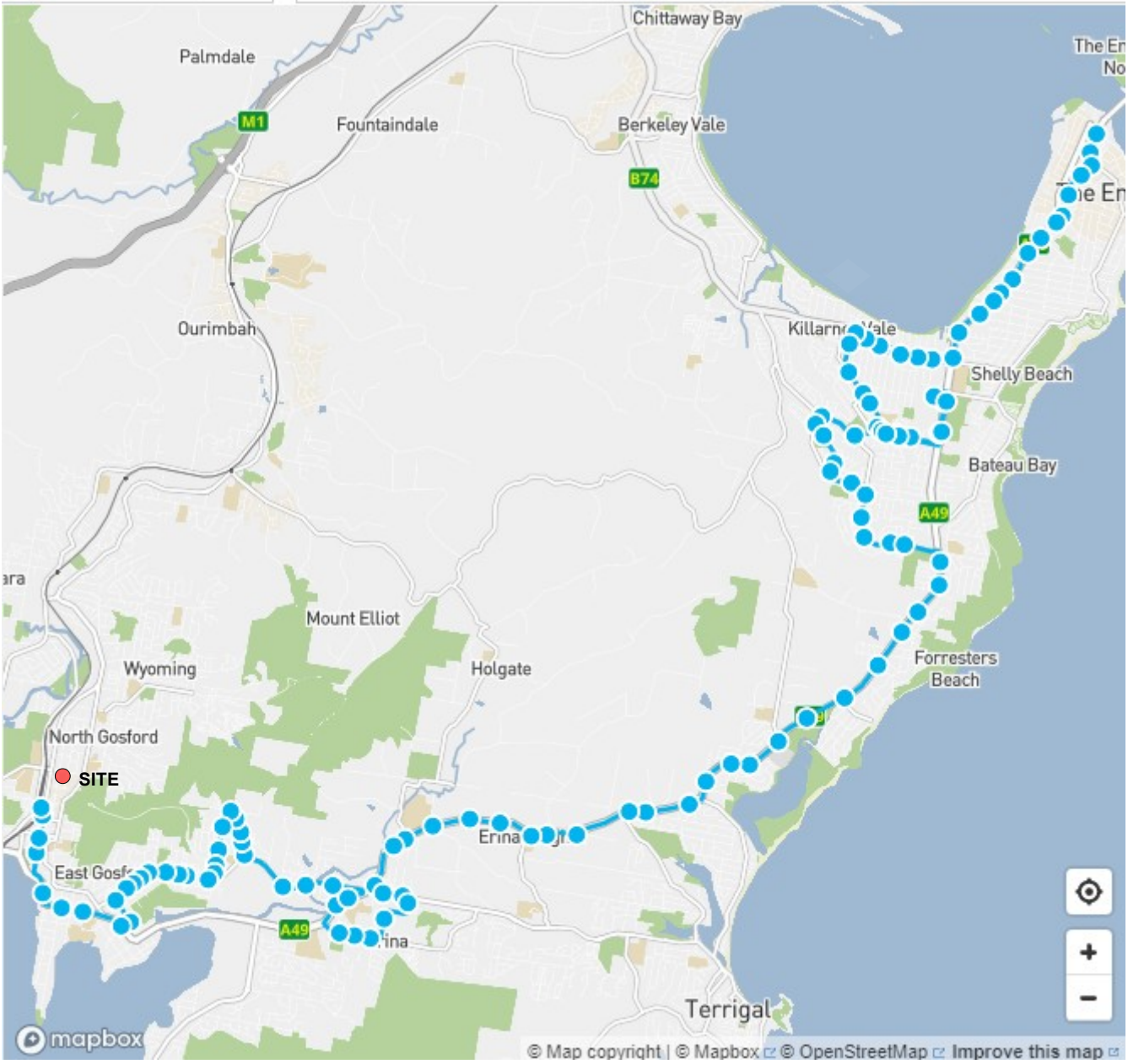
Bus Route 28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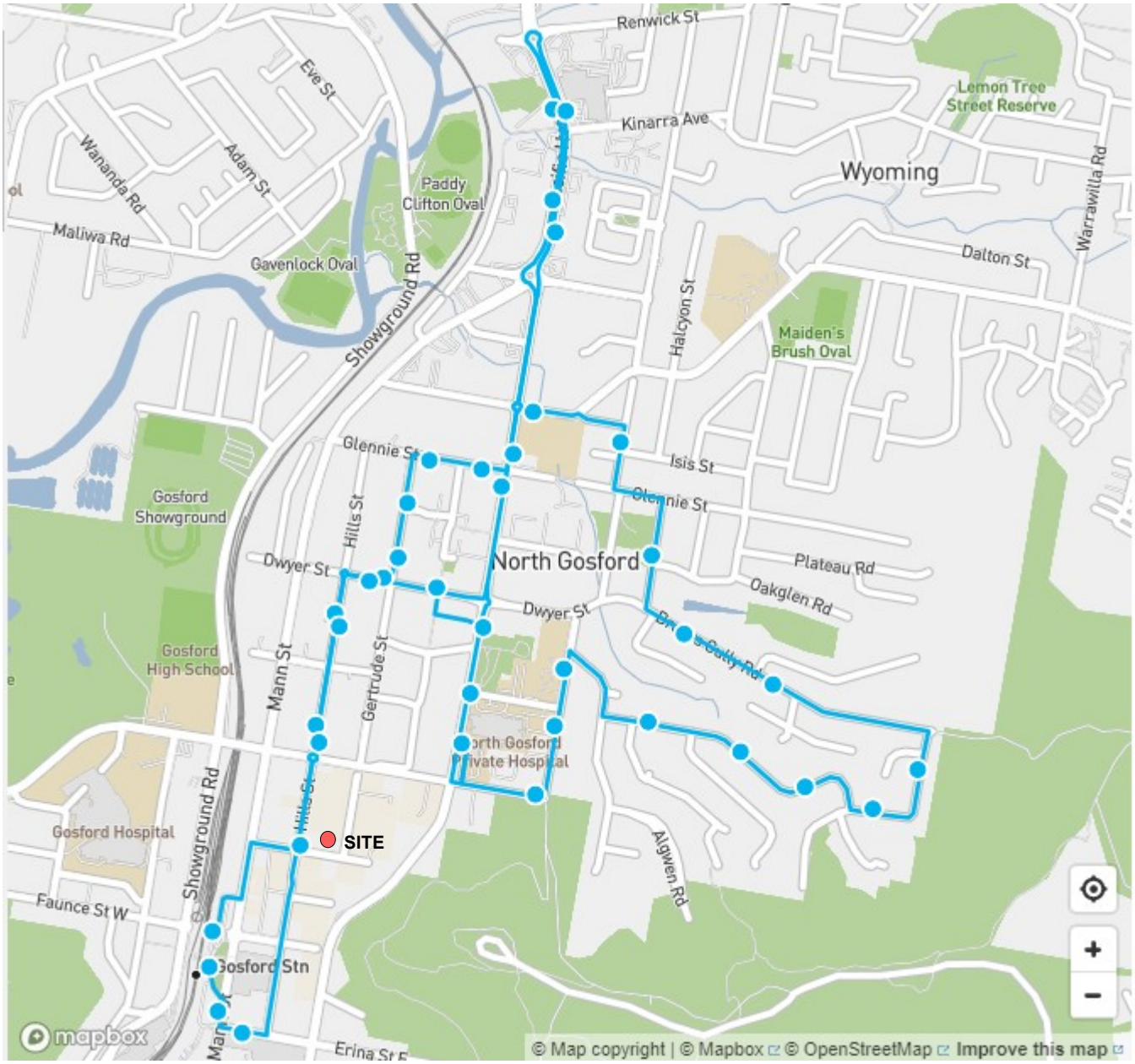
Bus Route 40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Adam St
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Gavenlock Oval
Showground Rd
Halcyon St
Maiden's Brush Oval
Glennie St
Isis St
Gosford Showground
Hills St
Dwyer St
North Gosford
Plateau Rd
Oakglen Rd
Gosford High School
Mann St
Gertrude St
Showground Rd
Gosford Hospital
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Algwen Rd
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Gosford Stn
Erina St E
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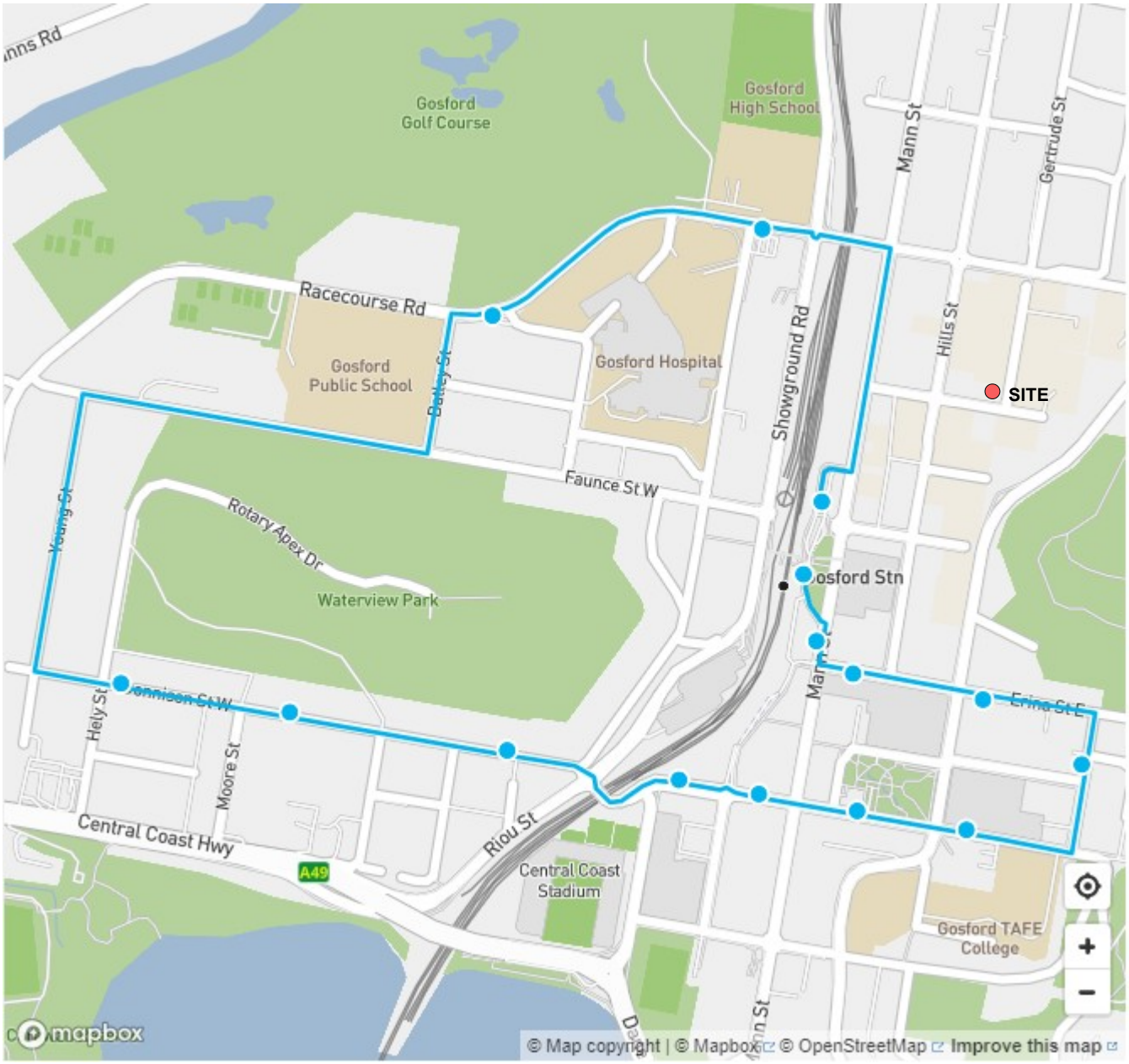
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Gosford Hospital
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Young St
Rotary Apex Dr
Waterview Park
osford Stn
Hely St
Johnson St W
Moore St
Erina St E
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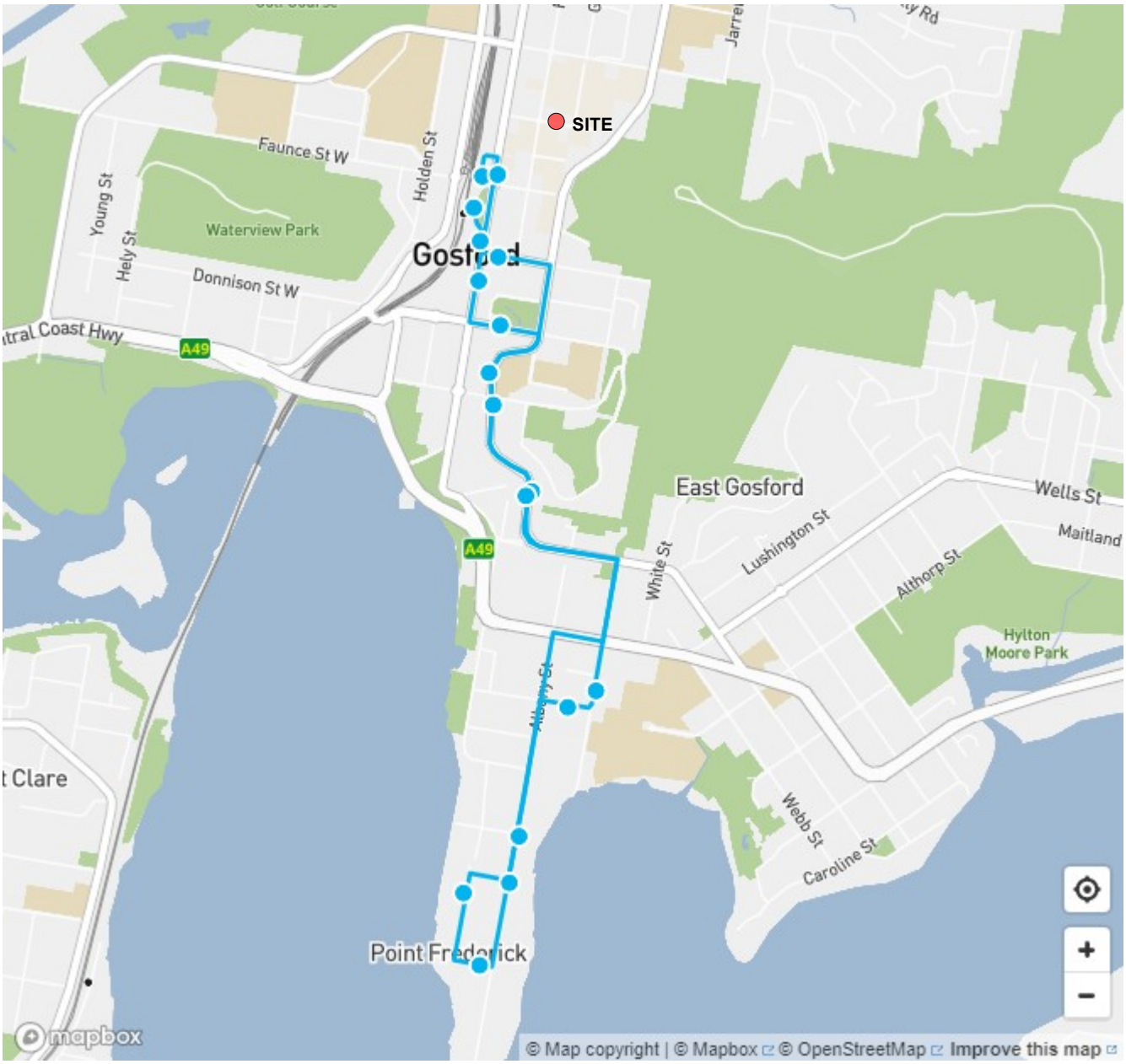
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Moore Park
Webb St
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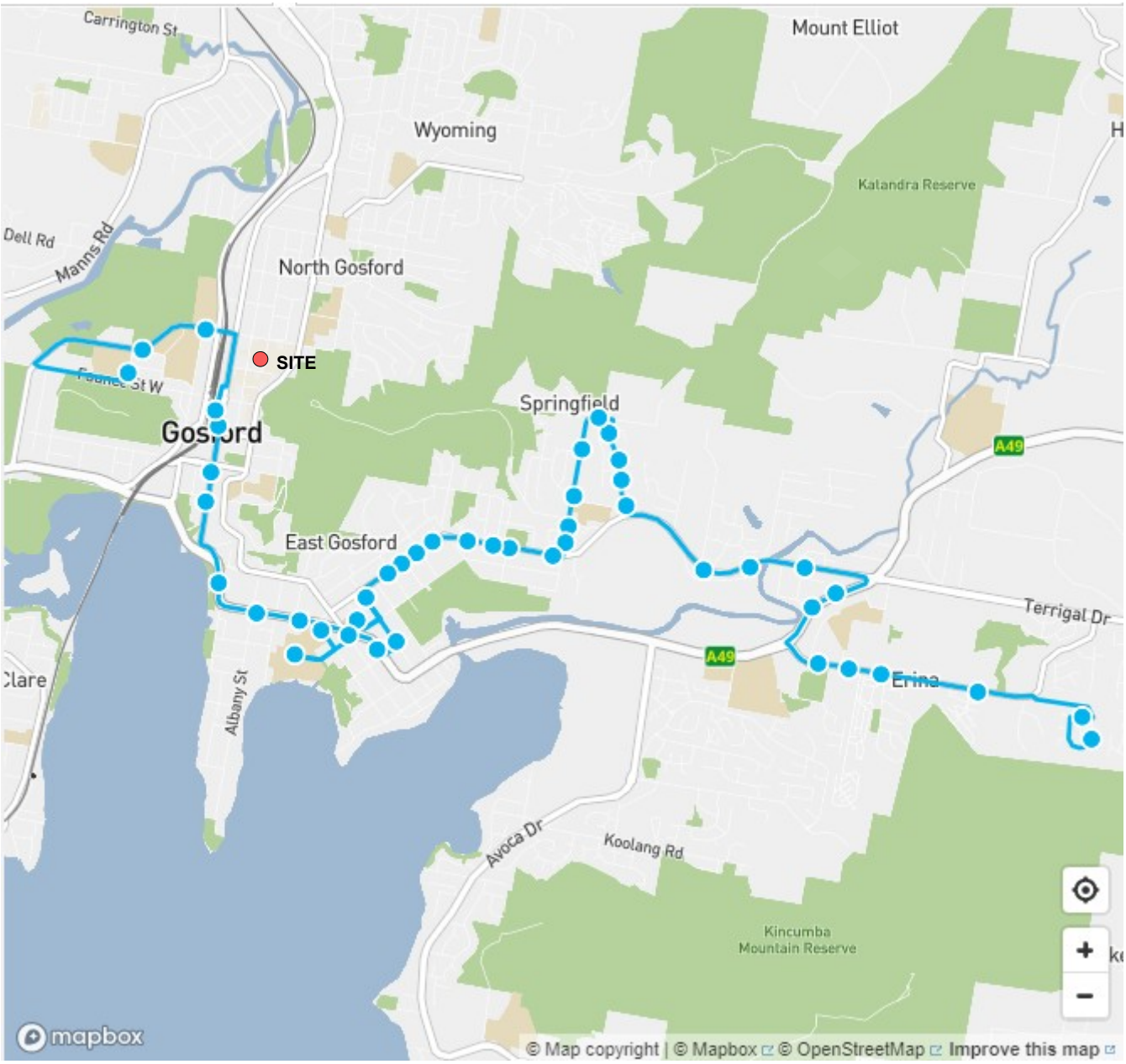
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Mountain Reserve
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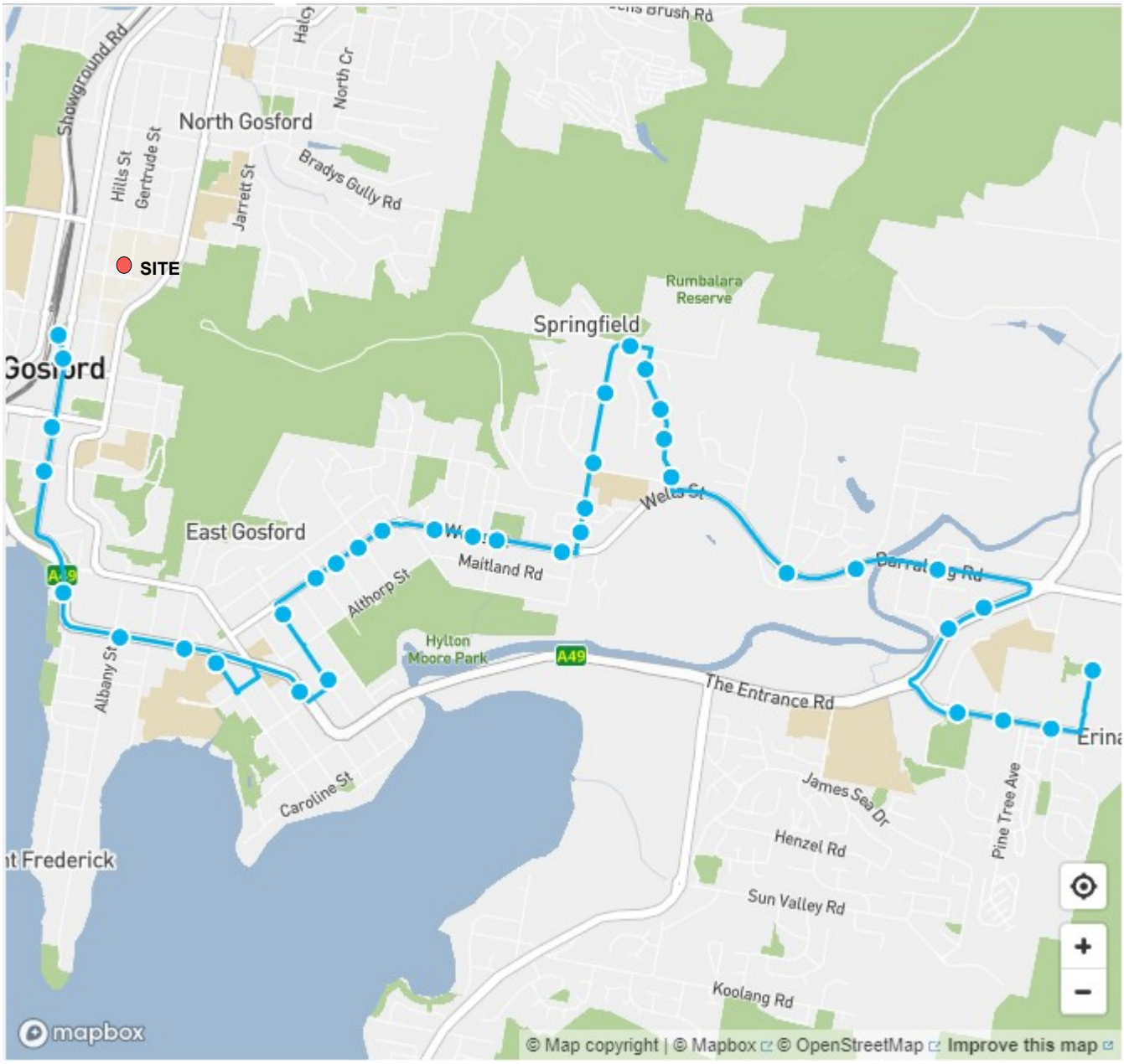
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Wells St
Maitland Rd
Barralong Rd
Althorp St
A49
Hylton Moore Park
The Entrance Rd
Albany St
Caroline St
James Sea Dr
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Koolang Rd
Frederick
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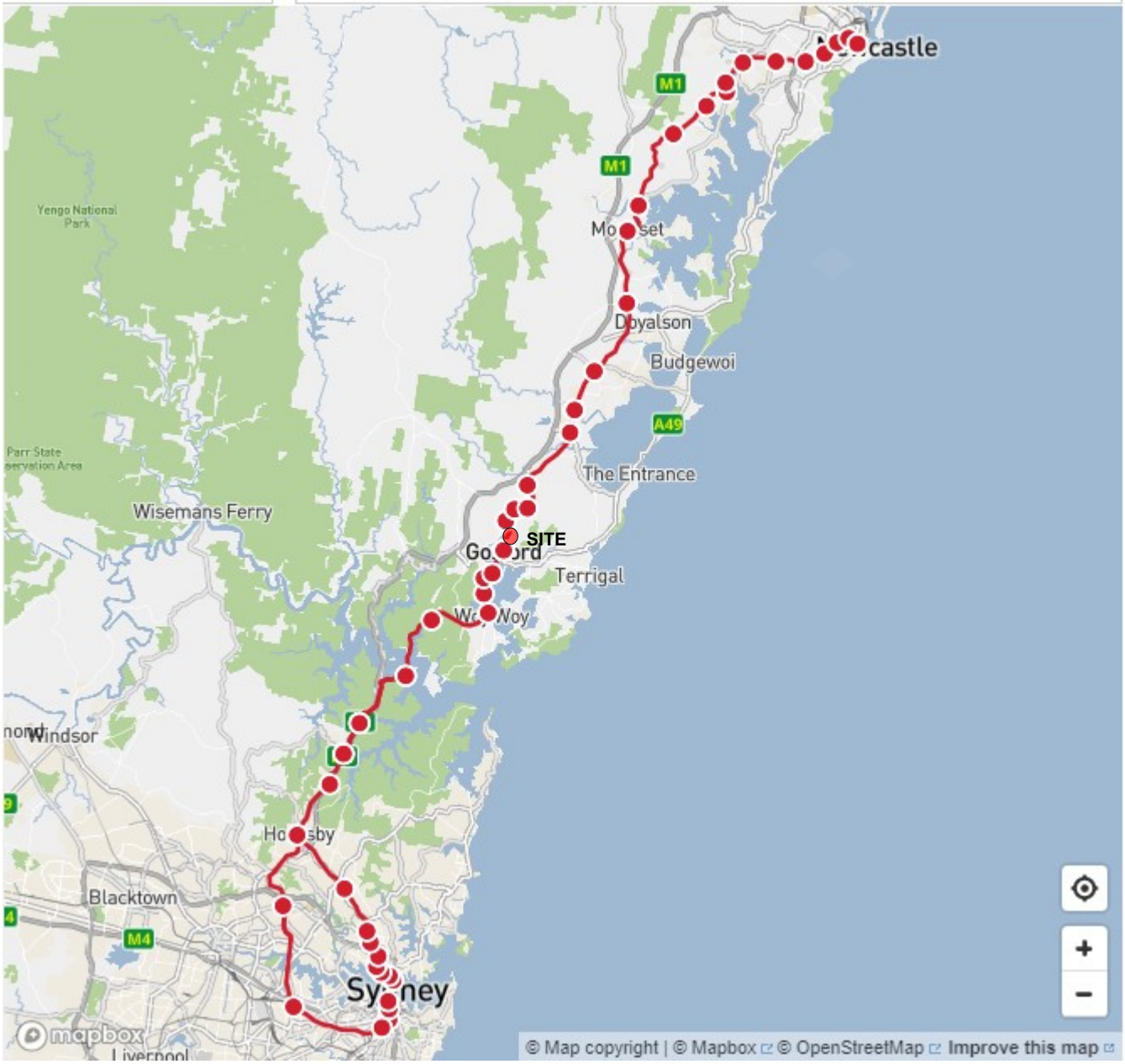
Train Route CCN



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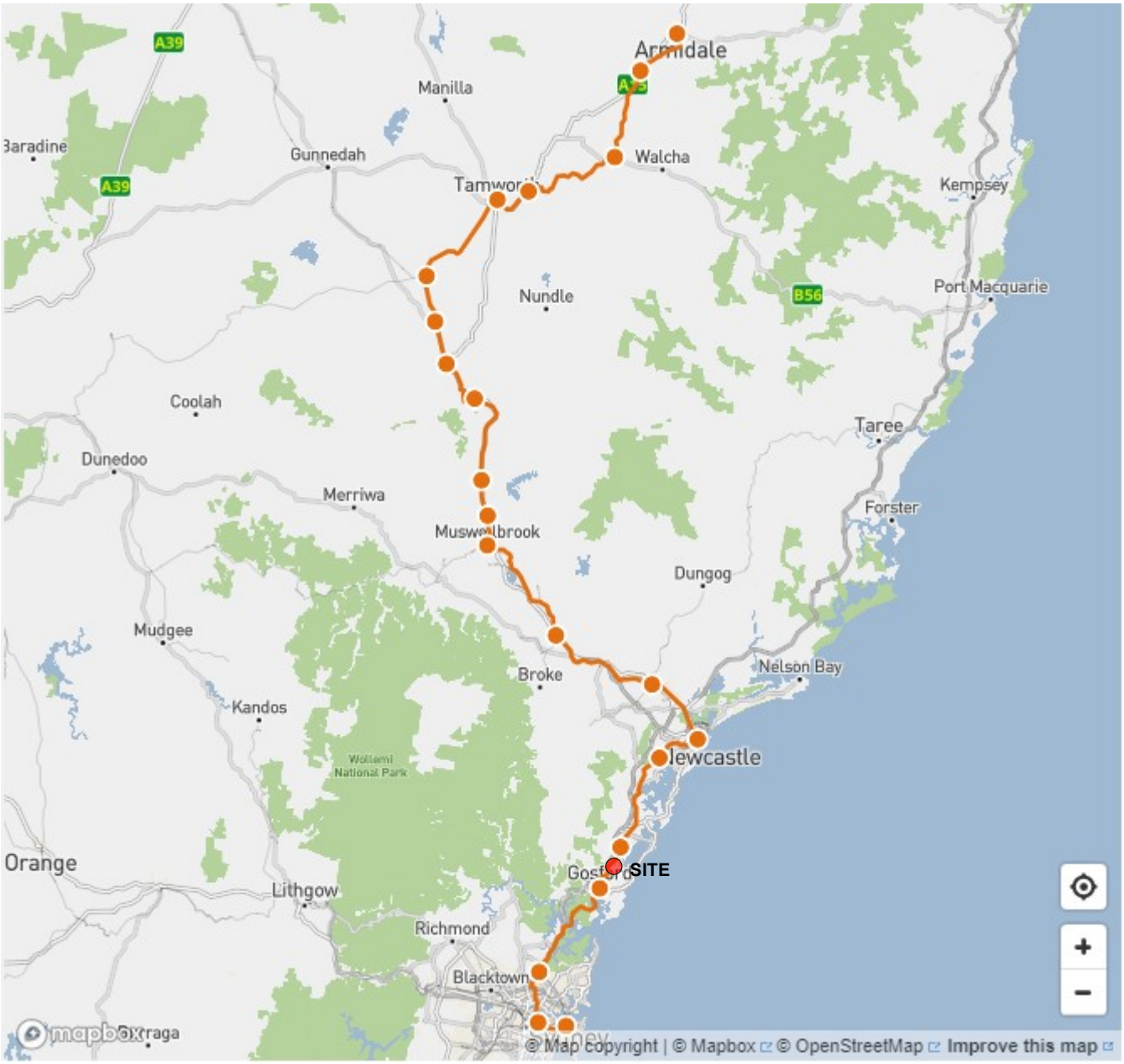

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SECTION 4

LOT 1
DP 706156

LOT 1
DP 1011599

(L914508)

30
DP 1250970
AREA: 1284m²

46.86 BOUNDARY

330.20 m²

NEW DRIVEWAY

NEW DRIVEWAY

2000 (-12.5%)

8360 (-24%)

2000 (-10.0%)

2519 (-10.0%)

2500 (2%)

4735 (-3.7%)

5% CROSS FALL (MAX)

RETAINING WALL UPTO DRIVEWAY SURFACE LEVEL IF REQUIRED

2000mm (NO OBSTRUCTION)

NEW FOOTPATH

EXISTING FOOTPATH

RAISED RETAINING WALL TO DIRECT OVERLAND FLOW

OVERLAND FLOW RUNOFF

U/S 1 RL 21.90

U/S 1 CL 24.93

PROPOSED
LOWER GROUND
CAR PARK
FFL 21.90

SHARED AREA 2400

M/B

Existing stormwater to be relocated within the existing easement by others

REMOVE REDUNDANT VEHICULAR CROSSING AND REPLACE WITH NEW KERB AND GUTTER. MAKE GOOD TO COUNCIL SPECIFICATION AND REQUIREMENTS.

BENCHMARK
NAIL IN KERB
RL 24.24 AHD

BEANE STREET

GERTRUDE STREET

CENTERLINE

LONGSECTION

LONGSECTION LABEL

DRIVEWAY PLAN
1:100

LEGEND:

Car clearance (5.2 m)

WHEEL TRACK
VEHICLE BODY
300 MM CLEARANCE
600 MM CLEARANCE

TEF CONSULTING

Dwg No 19070/01 | Rev. A | 09/12/2019

Client:
McNally Management

56 Beane Street, Gosford NSW 2250

SCALE 1:200@A3

Proposed car park layout
Design checks as per AS/NZS 2890 series

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LOT 3
DP 1591
SECTION 4

LOT 1
DP 706156

LOT 1
DP 1011599

DISCHARGE TO EASEMENT PIPE

(L914508)

46.86 BOUNDARY

330.20 m²

NEW DRIVEWAY

NEW DRIVEWAY

RETAINING WALL UPTO DRIVEWAY SURFACE LEVEL IF REQUIRED

2000mm
(NO OBSTRUCTION)

2000 (-12.5%)
8360 (-24%)
2000 (-20%)
2000 (-7.5%)
2519 (-10.0%)
2500 (2%)
4735 (-3.7%)

5% CROSS FALL (MAX)

L/S 1
RL 21.90

PROPOSED
LOWER GROUND
CAR PARK
FFL 21.90

RAISED RETAINING WALL TO DIRECT OVERLAND FLOW

OVERLAND FLOW RUNOFF

EXISTING FOOTPATH

30
DP 1250970
AREA: 1284m²

Existing stormwater to be relocated within the existing easement by others

REMOVE REDUNDANT VEHICULAR CROSSING AND REPLACE WITH NEW KERB AND GUTTER. MAKE GOOD TO COUNCIL SPECIFICATION AND REQUIREMENTS

BENCHMARK
NAIL IN KERB
RL 24.24 AHD

BEANE STREET

GERTRUDE STREET

DRIVEWAY PLAN
1:100

CENTERLINE
LONGSECTION
LONGSECTION LABEL

LEGEND:

Conventional 5.2 m

WHEEL TRACK
VEHICLE BODY
300 MM CLEARANCE
600 MM CLEARANCE

CONSULTING

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Client:
McNally Management

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SCALE 1:200@A3

Proposed car park layout
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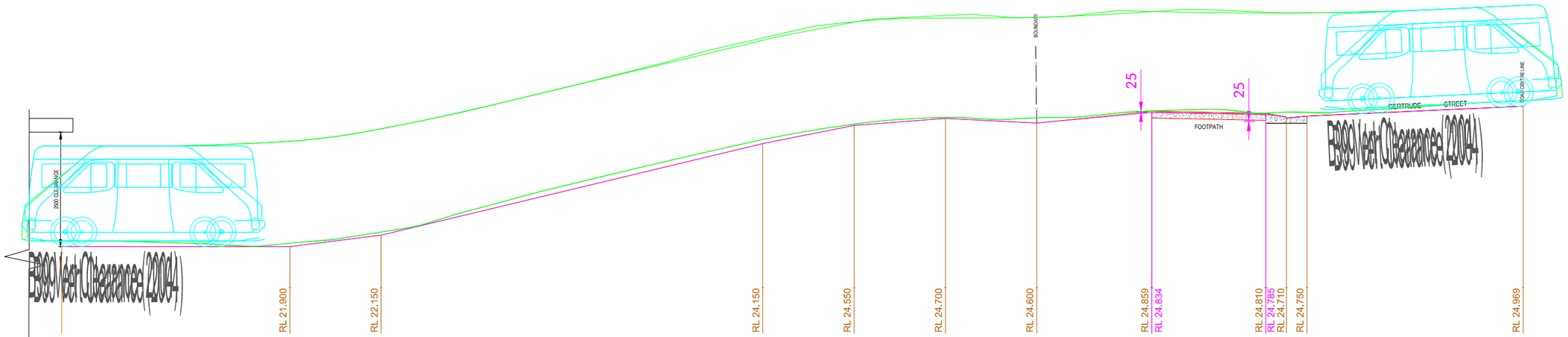

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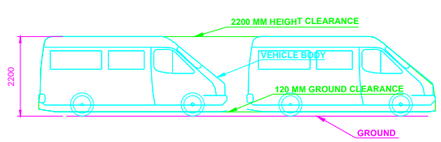

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Client:
McNally Management

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SCALE 1:100@A3

Proposed car park layout
Design checks as per AS/NZS 2890 series

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