



PREPARED FOR WELLINGTON CITY COUNCIL
1 MARCH 2017
TRANSPORTATION

Bay Connections - Cobham Drive Options Study
Issues Report

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TABLE OF CONTENTS

| | | |
|------|--|----|
| 1 | INTRODUCTION | 1 |
| 1.1 | Project Extent..... | 1 |
| 1.2 | Route Description..... | 1 |
| 1.3 | Study Objectives | 2 |
| 1.4 | Level Of Service..... | 3 |
| 2 | TRAFFIC VOLUMES | 3 |
| 2.1 | Cobham Drive | 3 |
| 2.2 | Evans Bay Parade / Cobham Drive Intersection Peak Traffic..... | 3 |
| 2.3 | Evans Bay Parade 7 Day Survey..... | 4 |
| 3 | SPEED DATA | 5 |
| 4 | CYCLIST AND PEDESTRIAN SURVEYS..... | 5 |
| 4.1 | Commuter Cyclist Survey..... | 5 |
| 4.2 | Commuter Pedestrians Survey | 6 |
| 4.3 | Weekend Cyclist Survey | 6 |
| 4.4 | Weekend Pedestrian Survey..... | 6 |
| 4.5 | Roundabout Cyclist Survey..... | 7 |
| 4.6 | Evans Bay Parade/Cobham Drive Intersection Crossing Survey | 7 |
| 5 | CRASH DATA..... | 8 |
| 6 | PARKING..... | 8 |
| 7 | DISTRICT PLAN LAND ZONING | 9 |
| 7.1 | District Plan Restrictions on Access..... | 11 |
| 7.2 | Regional Plan requirements..... | 11 |
| 8 | PROXIMITY TO SEA..... | 12 |
| 9 | GROUND MATERIALS | 13 |
| 10 | UTILITY SERVICES | 13 |
| 11 | DEVELOPMENTS | 14 |
| 11.1 | Airport..... | 14 |
| 11.2 | Shelly Bay | 15 |
| 12 | LET'S GET WELLINGTON MOVING (LGWM)..... | 15 |
| 13 | LANDSCAPE, ENVIRONMENT AND URBAN DESIGN | 16 |
| 14 | COMMUNITY INTERESTS | 16 |
| 15 | SUMMARY OF ISSUES | 16 |

APPENDICES

APPENDIX A TRAFFIC DATA

1 INTRODUCTION

The Scope and Deliverables for the Bay Connections - Cobham Drive Options Study requires the preparation of:

“an issues paper outlining the current level of service for people on bikes and the adequacy and safety of provisions for people walking, biking, driving, parking and using buses along the identified routes. This will include collection and presentation of currently available usage and crash statistics. Usage data should include:

- *Review of the Council and NZTA traffic count data which should give volume, speed and classification*
- *Review of available parking and occupancy based on aerial/land use data*
- *Review of pedestrian and cycle movement data.*

The issues paper should also provide the wider transport context, details of other wider projects/studies, e.g. Let's Get Wellington Moving, Wellington Network Operating Framework, Airport Runway Extension Project and details of other cycling projects and how this study fits within these.

The issues paper and available data will then be presented to enable the Working Group to identify a possible long list of options for addressing the issues. The draft long list will include a high level evaluation of the pros/cons of each option.

1.1 PROJECT EXTENT

The study area is limited to the cycleway/walkway on the northern side of Cobham Drive, which extends from Evans Bay Parade intersection to the Miramar Avenue at the Miramar cutting, and includes the Cobham Drive / Evans Bay Parade / Wellington Road intersection. It does not include the roundabout linkages to Troy Street or Calabar Road.

A separate study has been completed (AECOM 2016 - “Eastern Suburbs Cycleways Analysis of Options: Cobham Drive Crossing – Options Analysis”.) to assess the preferred method and location of providing a crossing point over Cobham Drive. It is intended that areas of south of Cobham Drive i.e. Kilbirnie, Rongotai and south Miramar will be accessed via Evans Bay Parade and Kilbirnie. Access to north Miramar will be via Miramar Avenue at the eastern end of Cobham Drive.

The study includes the development of integrated transport improvements to the routes to increase the cycling level of service as part of the long term vision as well as any other justifiable improvements to the routes.

This project is one of four in the immediate vicinity with the other three being:

- Kilbirnie Area – route treatment schemes;
- Evans Bay/Oriental Parade – route treatment schemes;
- Miramar Town Centre Planning – route treatment schemes.

The study area will form part of the Great Harbour Way / Te Aranui o Pōneke.

1.2 ROUTE DESCRIPTION

Cobham Drive (SH1) forms a main arterial route connecting the Airport, Miramar and surrounding areas with the CBD and routes to the north. SH1 has been designed for the efficient passage of motor vehicles along the state highway network with only minimal provision for pedestrians and cyclists. The four lane dual carriageway route is posted at 70 kph and includes two large diameter roundabouts. The two lane section from Calabar Road to Miramar Avenue has a flush median and a posted speed limit of 50 kph.

The route has an asphalt footpath on both sides. The northern side footpath has been converted to a combined pedestrian and cycle path. There is also an unformed track along the foreshore used by cyclists and pedestrians. There are no formal or informal crossing facilities for cyclists or pedestrians across Cobham Drive except at the signalised intersection with Evans Bay Parade and refuge islands and pedestrian ramps on the eastern two lane section between Calabar Road and Miramar Avenue.

The four lane dual carriageway has no vehicle crossings or access points with the exception of an unformed area used as an informal carpark adjacent to the northern side of the Troy St roundabout.

The airport runway forms a barrier to traffic movement in the area. Vehicle traffic travelling between Miramar / Strathmore / Seatoun suburbs and Kilbirnie has to use either SH1 at the northern end of the airport runway or Moa Point Road at the southern end of the runway. For pedestrians and cyclists there is an alternative route via a long, low height subway under the airport runway between Coutts and Miro Streets.



Current cycle and pedestrian facilities within the project site include a shared asphalt footpath 2.1 to 2.45 m wide, an unformed pathway 1.2 to 1.6 m wide, and a road shoulder 1.2 to 1.6 m wide.

The ideal width for a shared cycle / footpath is 3m. The current shared path is too narrow.

1.3 STUDY OBJECTIVES

The primary objective is to define proposals for transport improvements to the route as part of the refreshed cycleway programme which maximises benefits for all users and in particular addresses the poor level of service for people who travel by bicycle.

It is expected that any proposed improvements to:

- Improve the level of service for people on bikes along identified routes;
- Improve or maintain the level of service for people using buses along identified routes;
- Maintain or improve the level of service for pedestrians;
- Maintain an acceptable level of service for general traffic movements;
- Minimise impacts to parking.

Key matters to be addressed include:

- Appropriate provisions for people on bikes both mid-block and at intersections;
- Current safety issues;
- Vehicle operating speeds and volumes;
- Appropriate provisions for pedestrians;
- Appropriate provisions for meeting current necessary parking demand.

1.4 LEVEL OF SERVICE

There are a number of different systems for assigning Levels of Service for cycle routes and facilities. The WCC use the Danish Cycling Level of Service methodology.

The current route segments vary in level of service from B to A giving the overall route a level of service B. The desired level of service for the entire route is A.

There is minimal infrastructure on the route to aid cyclists leading to opportunities for improvements.

Issue: Maintain acceptable level of service for general traffic.

2 TRAFFIC VOLUMES

2.1 COBHAM DRIVE

The table below shows the highest hourly traffic volumes on Cobham Drive. An unconstrained two lane dual carriageway has a potential capacity approaching 3,600 vehicles per hour. Cobham Drive with its roundabouts and signalised intersections will be lower than this.

| Direction | Time | Peak Flow |
|-----------------------------|----------------|-----------|
| Eastwards (towards Miramar) | 4:45 to 5:45pm | 2,356 vph |
| Westwards (towards the CBD) | 7:45 to 8:45am | 2,055 vph |

Source: AECOM 2016

Details of the traffic flows at the two roundabouts are shown in Appendix A.

NZTA data shows the AADT (2015) just east of Evans Bay Parade is 18,125 eastbound and 17,111 westbound. Heavy vehicles account for 6% of the traffic.

The traffic on Troy Street into and out of Kilbirnie has a peak hour flow of 1,000 vehicles per hour in each direction (AECOM 2016).

Appendix A in the “Mt Victoria to Cobham Drive Scoping Study – Technical Report – Traffic and Transport Assessment and Evaluation”, NZTA, 2011 presents data for the five years between 2005-2009 from the traffic counting site south of Evans Bay Parade to predict growth. This showed traffic flow on Cobham Drive variable but constant with 0.2% growth whilst Ruahine Street experiences a 1.3% growth. Traffic peaks are associated with morning (8:00 to 9:00 am) and afternoon (5:00 to 6:00 pm) commuting with the afternoon peak being higher.

The weekend peak occurring 12 noon to 2:00 pm is similar in volume to the week day peak. While Ruahine Street has a higher weekend peak.

The congestion experienced along this section of SH1 results from restrictions as the road narrows to a single carriageway at Wellington Road and the traffic signals at Evans Bay Parade.

2.2 EVANS BAY PARADE / COBHAM DRIVE INTERSECTION PEAK TRAFFIC

Directional traffic flows at the Cobham Drive / Wellington Road / Evans Bay Parade intersection were counted on Saturday 19 November 2016 from 12 noon to 2:00pm and Tuesday 22 November 2016 from 7:00am to 9:00pm. The table below summarises the peak hour from within the 2 hour surveys. There are relatively few cyclists making right hand turns.

| Traffic Direction | | 7:15-8:15 Weekday | | 17:00-18:00 Weekday | | 12:15-13:15 Saturday | |
|-----------------------------|----------|-------------------|------------|---------------------|------------|----------------------|-----------|
| | | Vehicles | Bicycles | Vehicles | Bicycles | Vehicles | Bicycles |
| Evans Bay Parade Southbound | Left | 407 | 13 | 629 | 43 | 373 | 14 |
| | Straight | 119 | 6 | 186 | 42 | 180 | 3 |
| | Right | 25 | 1 | 48 | 3 | 50 | 0 |
| Cobham Drive Westbound | Left | 20 | 0 | 16 | 1 | 18 | 0 |
| | Straight | 883 | 0 | 860 | 0 | 872 | 0 |
| | Right | 445 | 1 | 287 | 0 | 207 | 0 |
| Evans Bay Parade Northbound | Left | 47 | 3 | 58 | 3 | 131 | 0 |
| | Straight | 160 | 55 | 181 | 5 | 145 | 5 |
| | Right | 13 | 1 | 27 | 2 | 22 | 0 |
| Wellington Road Eastbound | Left | 35 | 6 | 42 | 3 | 41 | 2 |
| | Straight | 1084 | 13 | 951 | 45 | 895 | 1 |
| | Right | 104 | 1 | 116 | 3 | 141 | 0 |
| TOTAL | | 3342 | 100 | 3401 | 150 | 3075 | 25 |

Source: TDG 2016 Cycling Traffic and Parking Survey

2.3 EVANS BAY PARADE 7 DAY SURVEY

Traffic flows on Evans Bay Parade 50 m north of Kemp Street were recorded in August 2013 and shown in the table below.

| Traffic Volume | Northbound toward Cobham Drive | Southbound toward Kilbirnie | Both Directions |
|--|--------------------------------|-----------------------------|-----------------|
| 5 day Average Daily Traffic Volumes | 3,130 | 3,620 | 6,750 |
| 7 day Average Daily Traffic Volumes | 3,170 | 3,725 | 6,895 |
| Total Weekly Volume | 22,190 | 26,076 | 48,266 |
| AM- Average one hour 7.00-9.00am (5 Day) | 266 | 235 | 501 |
| IM- Average one hour 10:00am-2:00pm | 190 | 228 | 418 |
| PM- Average one hour 4:00-6:00pm | 274 | 339 | 613 |
| Average one hour 10:00am-2:00pm (Saturday) | 376 | 437 | 812 |
| Average one hour 10:00am-2:00pm (Sunday) | 232 | 318 | 550 |

Source: WCC 7-day tube count site 509 August 2013

Traffic flows on the eastern end of Cobham Drive (between Miramar Ave and Calabar Road) were recorded in August 2015 and are shown in the table below.

| Traffic Volume | Northbound towards Shelly Bay Road | Southbound towards Calabar Roundabout |
|--|------------------------------------|---------------------------------------|
| 5 day Average Daily Traffic Volumes | 10,757 | 10,481 |
| 7 day Average Daily Traffic Volumes | 10,610 | 10,226 |
| Total Weekly Volume | 74,271 | 71,581 |
| AM- Average one hour 7.00-9.00am (5 Day) | 611 | 906 |
| IM- Average one hour 10:00am-2:00pm | 678 | 659 |
| PM- Average one hour 4:00-6:00pm | 989 | 699 |

| Traffic Volume | Northbound towards Shelly Bay Road | Southbound towards Calabar Roundabout |
|--|------------------------------------|---------------------------------------|
| Average one hour 10:00am-2:00pm (Saturday) | 946 | 931 |
| Average one hour 10:00am-2:00pm (Sunday) | 851 | 805 |

Source: WCC 7-day tube count site 351 August 2015

Roadway capacity in the study area does not appear to be an issue at present.

3 SPEED DATA

Speed data from the November 2007 traffic counts on Cobham Drive between Troy Street and Evans Bay Parade showed the daily median speed was consistently between 64.6 and 67.7 kph (posted speed limit 70 kph). The 85%ile is between 72 and 75 kph. (Source: WCC 7 day tube sites W5207 / W 5673 November 2007)

Speed data in the table below for the eastern end of Cobham Drive shows a speed difference between directions (posted speed limit 50 kph).

| Speeds (Kph) | Westbound towards Shelly Bay Road | Eastbound towards Calabar Roundabout |
|---|-----------------------------------|--------------------------------------|
| 5 day 85th Percentile Speed | 53 | 58 |
| 7 day 85th Percentile Speed | 53 | 58 |
| 5 day Mean Speed | 48 | 52 |
| 7 day Mean Speed | 48 | 52 |
| 5 day 3:00 – 4:00pm 85th Percentile Speed | 52 | 57 |

Source: WCC 7-day tube count site 351, August 2015

Speed data indicates traffic travels at speeds consistent with the posted speed limits.

4 CYCLIST AND PEDESTRIAN SURVEYS

4.1 COMMUTER CYCLIST SURVEY

Over 1,600 cyclists were observed passing through the Wellington Road/Cobham Drive/Evans Bay Parade intersection in March 2016. The survey covered the commuter morning peak period over the weekday period (5 days). The highest peak hour total was recorded as 293 cyclists, observed on Wednesday 2 March, while the average peak hour was 203 cyclists per hour (Wellington City Council, Transport Monitoring Surveys March 2016 Survey Results, TDG).

The table below sets out the results from the March surveys in 2014, 2015 and 2016.

| | Year | Monday | Tuesday | Wednesday | Thursday | Friday | Weekday total | Weekday Average |
|--------------------------|------|--------|---------|-----------|----------|--------|---------------|-----------------|
| Two Hourly Total Volumes | 2014 | 409 | 442 | 401 | 394 | 328 | 1,974 | 395 |
| | 2015 | 384 | 417 | 412 | 391 | 323 | 1,927 | 385 |
| | 2016 | 381 | 427 | 398 | 375 | 322 | 1,903 | 381 |
| Peak Hourly Volumes | 2014 | 253 | 272 | 248 | 248 | 210 | 1,231 | 246 |
| | 2015 | 258 | 263 | 269 | 239 | 199 | 1,228 | 246 |
| | 2016 | 240 | 282 | 249 | 247 | 206 | 1,224 | 245 |
| | 2014 | 205 | 221 | 201 | 197 | 164 | 987 | 197 |

| | Year | Monday | Tuesday | Wednesday | Thursday | Friday | Weekday total | Weekday Average |
|------------------------|------|--------|---------|-----------|----------|--------|---------------|-----------------|
| Average Hourly Volumes | 2015 | 192 | 209 | 206 | 196 | 162 | 964 | 193 |
| | 2016 | 191 | 214 | 199 | 188 | 161 | 953 | 190 |

Source: TDG 2016 WCC Transport Monitoring Surveys

4.2 COMMUTER PEDESTRIANS SURVEY

The table below shows the result of the pedestrian surveys at the Wellington Road/Cobham Drive/Evans Bay Parade intersection site for a week in November 2015.

| | Monday | Tuesday | Wednesday | Thursday | Friday | Weekday total | Weekday Average |
|--------------------------|--------|---------|-----------|----------|--------|---------------|-----------------|
| Two Hourly Total Volumes | 47 | 59 | 63 | 19 | 55 | 243 | 49 |
| Peak Hourly Volumes | 28 | 36 | 38 | 12 | 38 | 152 | 30 |
| Average Hourly Volumes | 24 | 30 | 32 | 10 | 28 | 124 | 24 |

Source: WCC Commuter Surveys Pedestrian Volumes November 2015

4.3 WEEKEND CYCLIST SURVEY

The counts obtained at the intersection of Wellington Road, Cobham Drive and Evans Bay Parade revealed that over the weekend days between 9:00am and 1:00pm 548 cyclists passed through the intersection.

| | Year | Saturday | Sunday | Weekend total | Weekend Average |
|------------------------|------|----------|--------|---------------|-----------------|
| Hourly Total Volumes | 2014 | 320 | 193 | 513 | 257 |
| | 2015 | 74 | 446 | 520 | 257 |
| | 2016 | 304 | 244 | 548 | 274 |
| Peak Hourly Volumes | 2014 | 119 | 84 | 203 | 102 |
| | 2015 | 30 | 127 | 157 | 79 |
| | 2016 | 96 | 77 | 173 | 87 |
| Average Hourly Volumes | 2014 | 80 | 48 | 128 | 64 |
| | 2015 | 19 | 112 | 130 | 65 |
| | 2016 | 76 | 61 | 137 | 69 |

Source: TDG 2016 WCC Transport Monitoring Surveys

4.4 WEEKEND PEDESTRIAN SURVEY

The counts obtained at the intersection of Wellington Road, Cobham Drive and Evans Bay Parade in November 2015 are summarised below.

| | Saturday | Sunday | Weekend total | Weekend Average |
|---------------------------|----------|--------|---------------|-----------------|
| Four Hourly Total Volumes | 100 | 147 | 247 | 124 |
| Peak Hourly Volumes | 37 | 73 | 110 | 55 |
| Average Hourly Volumes | 25 | 37 | 62 | 31 |

Source: WCC Recreational Cyclist Surveys Pedestrian Volumes November 2015

4.5 ROUNDABOUT CYCLIST SURVEY

One-day traffic counts were done at both of the roundabouts in March 2016 using enumerators. The table below shows the number of cyclists recorded:

| | Period | Totals |
|--------------------------------------|-----------------------------------|--------|
| Cobham Drive/Calabar Road Roundabout | Morning Peak Hour 7:45am-8:45am | 63 |
| | Evening Peak Hour 4:45pm-5:45pm | 67 |
| | Saturday Peak Hour 12:00-1:00pm | 17 |
| Cobham Drive/Troy Street Roundabout | Wed 2 March 2016, 8:00am-9:00am | 11 |
| | Wed 2 March 2016, 5:30pm-6:30pm | 52 |
| | Sat 5 March 2016, 11:45am-12:45pm | 17 |

Source: AECOM 2016

The traffic counts included pedestrian flows however these were very low, typically being one or two pedestrians an hour. The highest figure was just 3 pedestrians using the Cobham Drive – Troy Street intersection at midday on the Wednesday. As with the cyclists there are numerous factors which could affect the pedestrian patronage on a daily basis.

AECOM 2016 notes that 'it is suspected and acknowledged, although unquantified, that there is a significant suppressed demand that could be realised should dedicated cycling facilities be provided between suburbs and into the city. WCC had previously determined that with high quality facilities the number of cycle journeys per day could increase up to 1,400 in the longer term. A reasonable proportional split for those crossing Cobham Drive is in the region of 500 per day based on the current traffic split at the Troy St roundabout'.

4.6 EVANS BAY PARADE/COBHAM DRIVE INTERSECTION CROSSING SURVEY

Crossing surveys were completed at the Cobham Drive / Wellington Road / Evans Bay Parade intersection on Saturday 19 November 2016 from 12 noon to 2:00pm and Tuesday 22 November 2016 from 7:00am to 9:00pm. The table below summarise the peak hour from within the 2 hour surveys.

| Traffic Direction | | 7:30-8:30 Weekday | | 16:45-17:45 Weekday | | 12:00-13:00 Saturday | |
|-----------------------------|-------|-------------------|-----------|---------------------|-----------|----------------------|-----------|
| | | Pedestrians | Bicycles | Pedestrians | Bicycles | Pedestrians | Bicycles |
| Evans Bay Parade Southbound | Left | 9 | 3 | 5 | 7 | 2 | 6 |
| | Right | 6 | 10 | 5 | 8 | 9 | 7 |
| Cobham Drive Westbound | Left | 22 | 6 | 12 | 17 | 5 | 16 |
| | Right | 9 | 3 | 18 | 4 | 5 | 26 |
| Evans Bay Parade Northbound | Left | 2 | 1 | 3 | 2 | 1 | 1 |
| | Right | 4 | 2 | 6 | 3 | 3 | 3 |
| TOTAL | | 52 | 25 | 49 | 41 | 25 | 59 |

Source: TDG 2016 Cycling Traffic and Parking Surveys

Issue: Crossing capacity requirements in the short term and future need to be incorporated in to the upgrades to Wellington Road.

5 CRASH DATA

Vehicle crash statistics for Cobham Drive are not unusually high for this type of road environment. However, there were four accidents involving cyclists (2011-2015), all at the Troy Street roundabout.

| Location | All Vehicle Crashes | Cyclist Crashes | Pedestrians |
|--|---------------------|-----------------|-------------|
| Cobham Drive / Evans Bay Parade to Troy Street | 29 | 1 | 1 |
| Cobham Drive / Troy Street | 37 | 5 | 0 |
| Cobham Drive between RAB | 2 | 0 | 0 |
| Cobham Drive / Calabar Road | 34 | 0 | 0 |
| Cobham Drive - Calabar RAB to Miramar Ave | 4 | 1 | 0 |

The crashes involving cyclists included

- Eastbound cyclist hit by car turning out of drive way - minor injury
- Westbound car failed to give way entering the roundabout hitting a turning cyclist - minor injury
- Westbound cyclist sideswiped by left turning car - cyclist failed to indicate intention and car crowded cyclist - minor injury
- Eastbound cyclist at give way hit by car - no injury
- Car failed to give way and hit southbound cyclist - severe injury

There was also a crash on Cobham Drive in the vicinity of Shelly Bay Road where a northbound cyclist was hit by a car emerging from a driveway resulting in minor injury.

It should also be noted that in March 2016 a pedestrian was killed whilst crossing Cobham Drive between the two roundabouts.

Crash statistics for the Cobham Drive/ Wellington Road/ Evans Bay Parade Intersection from 2011-2015 show that there has only been one minor accident involving a cyclist when the southbound cyclist lost control on a curve and hit another cyclist head on. There has also been only one serious pedestrian accident at this location when a northbound car turning from Evans Bay Parade Road hit a pedestrian crossing Cobham Drive.

Of the 29 accidents at this intersection over the period four involved mopeds/motorbikes being hit by cars or SUVs.

The connection to Troy Street would appear to be unsafe for cyclists from the crash statistics. There does not appear to be an issue at the other links though it is suspected that cyclists and pedestrians already seek safer routes given the form of Cobham Drive.

Links to Troy Street and Calabar Road are not included in this study area. A separate preliminary study has been completed on the provision of crossings. NZTA and LGWM will be reviewing and progressing as appropriate.

There are a proportion of road cyclists who use the shoulder of Cobham Drive and the Miramar Peninsula for leisure rides and training. The provision of improved shared path facilities will probably not remove all these cyclists from the road.

Issue: Cycle turning crashes are an issue at the Troy Street roundabout. Specifically on the route there does not appear to be any issue.

6 PARKING

The parking in the study area included an unsealed off road 'carpark' near the Troy Street roundabout and on road parking at the eastern end of Cobham Drive.

At the Troy roundabout there is an area of approximately 850 sqm of which around 425 sqm is used for informal car parking. It does not appear to be a formalised parking area with users taking advantage of an access to a 'maintenance' area adjacent to the sea.

The TDG December 2016 parking survey (one weekday and a Saturday) showed that during the weekday the maximum number of vehicles parked was 3 (between 5:00 and 6:00pm). For 10 hours out of the 13 hours surveyed there was either zero or one vehicle. A total of 11 different vehicles parked during the day.

On the Saturday there were only 7 different vehicles with a maximum of two vehicles between 3:00pm to 4:00pm. It could be concluded that the area has minimal use as a public car park.

The parking study identified 48 parking spaces in the area between the Calabar Roundabout and Miramar cutting. The on-road parking at the eastern end has a possible 26 parking places as follows

- North of roundabout - no signage - 5
- No signage - 5
- P180 - 12
- No signage - 4

There are also a number of parks on the sealed road reserve at the entrance to the Miramar Wharf outside of the carriageway that may be affected by the project. These include:

- Wharf Gate - 6
- Against the sea wall - 7
- Shelly Bay road - 3
- Miramar Ave Corner - 6

On the Saturday, 23 of the spaces were occupied by vehicles that were there for most if not all of the 13 hours surveyed. 15 of the spaces identified were not occupied at all, 7 were occupied for 1 hour and the others had between 2 and 6 vehicles over the 13 hours surveyed.

On the weekday many of the same vehicles were present all day with 19 vehicles there for most of the day. 25 of the spaces had no vehicles all day and the remainder between 1 and 6.

Observation would suggest the vehicles parked there are mainly vehicles for sale, people fishing on the wharf (closed), a food truck and walkers going along Shelly Bay Road. In summer and fine weekends, the on road and off road carparks can be fully occupied. Vehicles for sale is not considered to be good utilisation of public parking.

Issues include:

- **Some non-commuter parking demand.**
- **Poor quality of Troy Street roundabout 'carpark'.**
- **Off street parking at Troy Street roundabout visually isolated.**

7 DISTRICT PLAN LAND ZONING

Wellington City Council's District Plan Maps identify activity areas and overlays within the Wellington City Boundaries.

The potential Cobham Drive route options are in Land Zoned as open space B in the District Plan or road reserve. All legal roads are uncoloured and the centre of the road is considered the separation between zones. Refer to Figure 7-1.

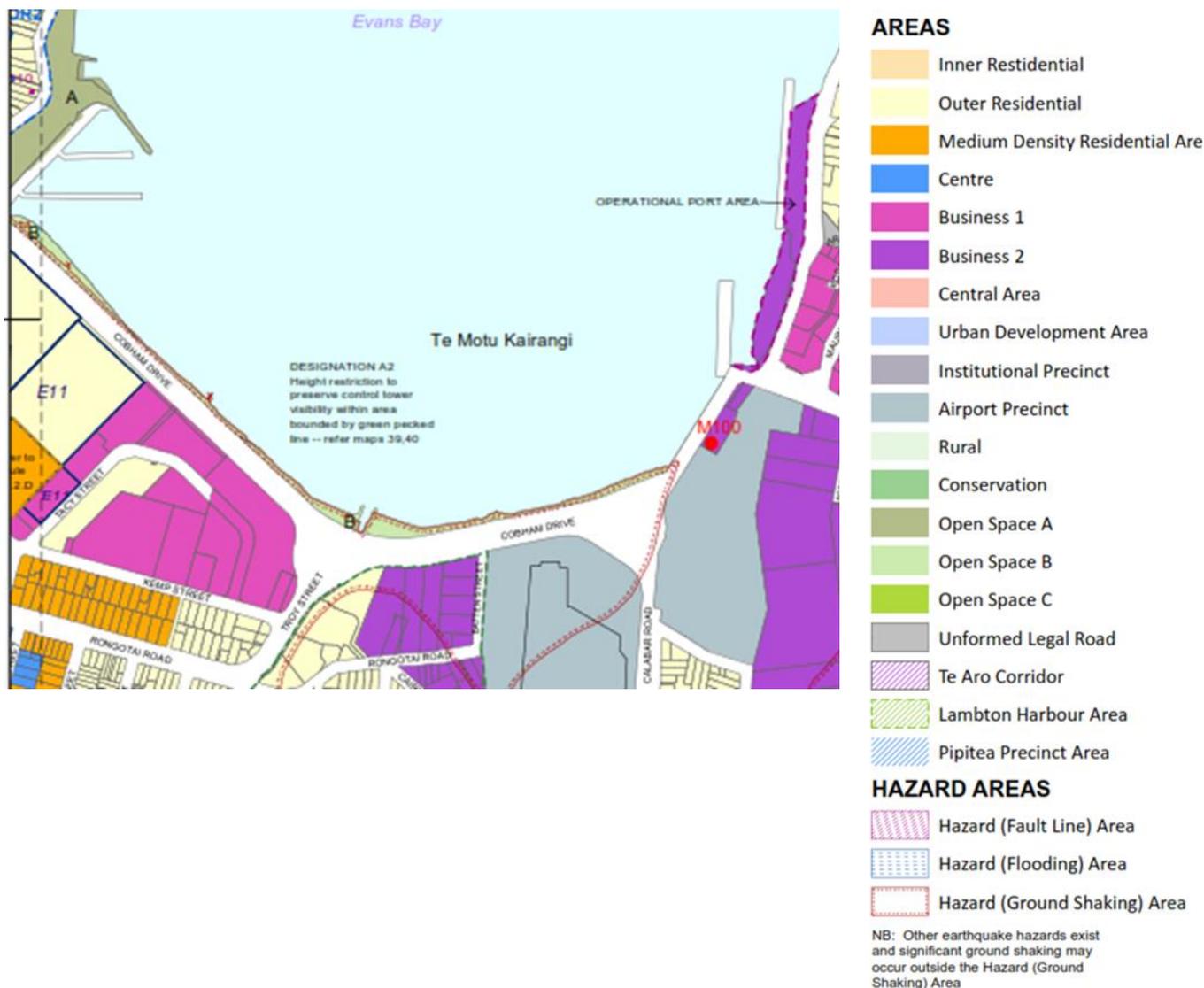


Figure 7-1: WCC District Plan Zoning Map, Cobham Drive section

The routes also fall within a Hazard (Ground Shaking) Area.

It is assumed no land adjacent to the road is contaminated. This will have to be confirmed as design progresses.

A preliminary assessment of the Wellington District Plan suggests that there may be some activities associated with upgrading the cycleway / pedestrian route which would not require resource consent however, this will require confirmation:

- Recreation activities are permitted in the Open Space B zone (Rule 17.1.1), provided that:
 - Noise levels don't exceed 45dB(L_{AEQ}(15min)) – this is likely to be achieved as there is an existing pedestrian/cycleway way in the same area.
 - Dust is managed – this is likely to be achieved through route surfacing.
 - Lighting of outdoor areas not to exceed 8 lux at windows of residential buildings within any Residential areas. The route must have lighting at a minimum of 10 lux and no line of sight between any light source and a street or Residential Area – compliance is assumed, as this is a design matter.
- Landscaping planting (Rule 17.1.7).
- Upgrade and maintenance of existing formed roads (including earthworks) is a permitted activity (Rules 17.1.14).
- Modification, damage, removal or destruction of indigenous vegetation associated with creation of pedestrian tracks not exceeding 1.5m wide (Rule 17.1.15).
- Earthworks that comply with height / depth or area limits (Rule 30.1.2)
- New buildings or structures less than 30m² and 4m high (Rule 17.1.10)

- Car-parking and access drives provided not more than 200m²/hectare (Rule 17.1.11)

There are activities that could require a resource consent – this will require confirmation:

- Earthworks within Open Space B zoned land which may not meet the height/depth limits or the area limits (Rule 30.2.1).
- Signs within Open Space B zoned land which may not meet maximum area, volume and height requirements (Rule 17.2.2).
- Modification or removal of indigenous vegetation (Rule 17.2.4)
- Buildings or structures that don't meet permitted activity standards (Rule 17.3.2)

Ngati Toa and Taranaki iwi have advised that consultation should be undertaken with iwi on all proposed Cobham Drive cycleway routes as there may be additional sites of significance to Maori not shown on the District Plan Maps, which could be affected by any proposed works.

7.1 DISTRICT PLAN RESTRICTIONS ON ACCESS

No restrictions on vehicle access in the study have been identified.

7.2 REGIONAL PLAN REQUIREMENTS

There are two relevant regional plans:

- Greater Wellington Regional Coastal Plan 2000 (GWRCP)
- Proposed Natural Resources Plan for the Wellington Region (PNRP)

Greater Wellington Regional Coastal Plan 2000 (GWRCP)

The GWRCP is operative and rules within this document could be relevant. There are few relevant features identified in the plan:

- The entire harbour is managed for Contact Recreation
- There is a Commercial Port area at Burnham Wharf.
- There are mooring areas at Evans Bay

A preliminary assessment of the GWRCP suggests that there may be some activities which are permitted or controlled, however it isn't possible at this stage to confirm this with any certainty.

The overall consent status is likely to be **Discretionary**, including if reclamation was required to create a suitable route alignment. The Discretionary Activity consent status could be triggered by:

- Reclamation (Rule 4)
- Construction of a structure parallel to Mean High Water Springs (Rule 25)
- Destruction or disturbance of the foreshore or seabed (Rule 40)
- Deposition of substances on the foreshore or seabed (Rule 48)
- Potential for discharges associated with construction (Rule 61)

A further assessment will be required where there is a more detailed route design available.

Proposed Natural Resources Plan for the Wellington Region 2015 (PNRP)

The PNRP is not operative, but many of the rules have immediate legal effect on notification, as they relate to the protection of water, historic heritage and areas of significant habitats of significant indigenous fauna (Section 86B of the Resource Management Act 1991). Broadly speaking, the rules are similar to those of the GWRCP, although they are more detailed and in the case of reclamation, more onerous.

The coastal marine area Cobham Drive has a number of features which are specifically recognised in the plan, which could influence potential consent requirements:

- Schedule B – Nga Taonga Nui a Kiwa - Te Whanganui-a-Tara
- Schedule F2c – habitat for indigenous birds in the CMA
 - Point Jerningham – Shelly Bay Road – six threatened or at risk indigenous bird species known to be resident or regular visitors – fluttering shearwater, variable oystercatcher, red-billed gull, little black shag, pied shag and white-fronted tern
 - Wellington Harbour – inland waters – little penguins, fluttering shearwater, red-billed gull, spotted shags, caspian tern and white-fronted tern
- Statutory Acknowledgement Areas – Wellington Harbour – Taranaki Whānui and Ngati Toa Rangatira

Consent requirements

A preliminary assessment of the PNRP suggests that there may be some activities which would not require resource consent, particularly if all works are contained within the existing formed road. If works extend into the coastal marine area, the overall consent status would likely be **Discretionary**.

The Discretionary Activity status could be triggered by:

- Need to discharge water or contaminants into the coastal marine area during construction (Rule R68)
- Removal or demolition of existing structures – restricted discretionary activity (Rule R152)
- Structures in the airport height restriction areas or navigation protection areas, provided written approval secured from the Harbour Master and Wellington Airport (Rule R158)
- New structures or alterations/additions to existing structures in the coastal marine area outside certain sites of significance (Rule R161)
- Replacement of structures – restricted discretionary activity (Rule R164)
- Occupation of the coastal marine area (Rule R184).
- General disturbance to the coastal marine area (Rule R194)
- Reclamation of the coastal marine area, as the combined pedestrian/cycleway is defined as a combined utility/recreation route in the Regional Land Transport Plan 2015 (Rule 214).

Issue: There are elements of the project (Earthworks, new signs, modification and removal of indigenous vegetation and structures) that may require Resource Consent.

8 PROXIMITY TO SEA

The study area is located within a low lying area which may be impacted by future sea level rise. There is already indication of erosion at the beach interface with a wide range of waste materials e.g. concrete used to afford some protection.

The existing shared path along the northern side of Cobham Drive lies typically at 2.20 m above Mean Sea level (MSL). The Mean High Water Spring (MHWS) tide level is 0.70 m above MSL. Sea level during the last century has typically risen by 2.1 mm/year.

The recommended figure for consideration of future potential sea level rise over the next 100 years published by the Ministry for the Environment (MfE) is 0.8 m. Wellington City Council commissioned a study into ‘the implications of potential sea level rise’ in 2013 with this report adopting a nominal 1.0 m rise over the next 100 years in line with the recommendations from central government. The study evaluated the impacts and mitigation strategies over a range of sea level rises from 0.6 m to 3.0 m. The three mitigations strategies were withdrawal, soft sea protection and hard sea protection. The preferred action for Miramar / Rongotai / Kilbirnie was hard protection, i.e. structural sea defences.

Providing coastal protection is constructed to counteract future erosion from higher sea levels the cycleway will not be directly affected by erosion during the life of the asset.

The area is affected by wave run up and sea spray over the site which is understood to reach the existing shared path on the north side of Cobham Drive in some locations. This is likely to increase with higher sea levels. Wave overtopping may become an issue that needs to be managed to limit backwash erosion.

Proximity to the sea raises a number of issues including:

- Coastal protection requirements to limit erosion.
- Protection to cycleway / footpath users in sea spray conditions.
- Construction and ongoing maintenance.

9 GROUND MATERIALS

Cobham Drive was constructed from cut and fill from the construction of the Wellington Airport runway in the 1950s. While most of the material appears to be clay and weathered rock fill on the surface there may have been other material used to fill the site.

There is also the possibility of uncovering contaminated material from the Evans Bay coal fired power station which was located where the Kilbirnie fire station is now located. The station operated from 1924 to 1968. Note that Greater Wellington Regional Council's SLUR register indicates that the ASB arena site may have been or may be potentially contaminated.

Issues:

- Possible deleterious or contaminated material on site.
- Potential for liquefaction in the event of an earthquake. This will be exacerbated by sea level rise as this lifts the ground water level.

10 UTILITY SERVICES

Services record plans obtained indicate the following services:

| Service Provider | Services |
|------------------------|--|
| City Link | Their plans indicate that there is an underground cable crossing Shelly Bay Road and along the northern side of Miramar Avenue. |
| LINZ | There are a number of LINZ Survey marks along the route which may be affected by the proposals. |
| Wellington Water | Stormwater – Stormwater outfalls are under the area of the proposed works flowing into the harbour. Sumps and stormwater pipes exist in Cobham Drive (eastern end) and Miramar Avenue. Wellington Water has a stormwater investigation project in Kilbirnie however the scope of this is still to be determined by Wellington Water. This may need to be taken into account when planning the project. Sewers – Exist in Miramar Avenue and Evans Bay Parade. Potable Water – Water mains exist at the Evans Bay Parade intersection and Miramar Avenue. |
| Wellington Electricity | Lighting and Low Voltage cables existing along the route. At the east end in Cobham Drive and Miramar Avenue 11kV/33kV/Strategic Cables exist. Whilst these are on the east side of Cobham Drive and the Southern side of Miramar Avenue and generally not affected, they may be affected if road widening is required on the approach to the airport roundabout. |
| PowerCo | Gas mains are shown as being present at the Evans Bay Parade intersection and the Eastern end of Cobham Drive and Miramar Avenue. |
| Chorus | The route appears to be clear of Chorus ducts and cables except in Miramar Avenue. |
| Transpower | They appear to have assets or designations in Cobham Drive (East) and these appear to be clear of any proposed works. |
| Vodafone | Vodafone have assets in Evans Bay Parade and Cobham Drive (East) and these appear to be clear of any proposed works. |
| NZTA | Streetlight poles are located at the back of the footpath in the project site. These may need relocating. |

| Service Provider | Services |
|-------------------|---|
| Trolley Bus Poles | There are trolley bus poles and wires but they are not affected by the proposals. However the infrastructure will be removed in the future when GWRC start running their high capacity buses. |

Issues:

- **Wellington Water’s Kilbirnie stormwater investigations and timescales need to be considered further when details are known.**
- **Generally, services are unlikely to be a major issue with the exception of the Wellington Electric high voltage cables if road widening is required at the eastern end of Cobham Drive.**
- **Streetlights may require relocation.**
- **Timing of the removal of Trolley bus infrastructure which currently supports some street lights.**

11 DEVELOPMENTS

11.1 AIRPORT

Traffic Design Group “Technical Report 9 Wellington International Airport – Proposed Runway Extension - Transportation Assessment Report”, April 2016, noted that with the proposed traffic arrangements, construction, operation and maintenance of the proposed runway extension can be achieved in a manner that would not unduly compromise the function, capacity and safety of the road network. The existing state highways and urban road networks are capable of supporting all construction related traffic subject to the implementation of a Construction Traffic Management Plan (CTMP). The passenger increases forecast following construction of the runway extension will give rise to airport-related road traffic increases that can be regarded as minor.

Once the runway extension works are fully commissioned, the area will attract only routine maintenance vehicles, both airside and landside. These operational requirements already apply for the existing runway.

Future roading improvements that may be required in response to airport growth, including as influenced by the runway extension, are addressed by Wellington International Airport Limited’s (WIAL) Masterplan.

The March 2016 ‘Wellington International Airport Air Traffic Forecasts’ Report prepared by InterVISTAS submitted with the application sets out the ‘most likely’ passenger forecasts for a number of forward years. Vehicle trip forecasts have been derived from these passenger forecasts.

The report presents busy hour vehicle trip forecasts for the Business as Usual (BAU) (i.e. no lengthening of the runway) and Runway Extension (RE) options for Wellington Airport, for FY2030, relating to the published 2030 Masterplan, and also for FY2045, representing a 30 year forward period.

The 2030 Masterplan forecasts annual passenger numbers increasing to about 10.5 million in 2030. This forecast represents a downward adjustment of previous forecasts for the same period.

The key infrastructure features of the 2030 Masterplan are currently and will continue to be progressed, independent of a runway extension. The key road traffic difference between the BAU and RE options arises from the ability to operate larger aircraft types under a longer runway scenario, and improve operating restrictions for other aircraft.

The vehicle trip forecasts are based on the following assumptions:

- the busy hour peaking factor, which is used to identify the number of busy hour passengers from total passengers, will remain constant; and
- the vehicle mix will remain the same throughout the forecast period.

The table below shows the forecast busy hour vehicle trips for the BAU option. These are shown separately for the inbound and outbound directions, for the overall hour and on a per minute basis.

| BAU Option | FY2015 | FY2030 | FY 2045 | 2030 Masterplan |
|---|--------|--------|---------|-----------------|
| Passengers (000) | 5,457 | 7,796 | 11,553 | 10,500 |
| Busy hour Passengers | 1,388 | 1,983 | 2,939 | 2,671 |
| Busy hour inbound vehicle trips | 1,013 | 1,448 | 2,145 | 1,950 |
| Busy hour outbound vehicle trips | 1,069 | 1,527 | 2,263 | 2,057 |
| Busy hour inbound vehicle trips /minute | 17 | 24 | 36 | 32 |
| Busy hour outbound vehicle trips per hour | 18 | 25 | 38 | 34 |

It will be clear from these comparisons that the passenger forecasts of the 2030 Masterplan are noticeably larger than the latest FY2030 forecasts, and more closely related to the FY2045 forecasts. The table below shows the equivalent forecast busy hour vehicle trips for the RE option.

| RE Option | FY2015 | FY2030 | FY 2045 | 2030 Masterplan |
|---|--------|--------|---------|-----------------|
| Passengers (000) | 5,457 | 8,654 | 12,072 | 10,500 |
| Busy hour Passengers | 1,388 | 2,202 | 3,071 | 2,671 |
| Busy hour inbound vehicle trips | 1,013 | 1,607 | 2,242 | 1,950 |
| Busy hour outbound vehicle trips | 1,069 | 11,607 | 2,365 | 2,057 |
| Busy hour inbound vehicle trips /minute | 17 | 27 | 37 | 32 |
| Busy hour outbound vehicle trips per hour | 18 | 28 | 39 | 34 |

In this instance, the forecasts of the 2030 Masterplan sit midway between the FY2030 and FY2045 forecasts.

The effect of the proposed runway extension is minimal compared to the planned growth of the airport which could increase traffic volumes in both directions by approximately 20 vehicles per minute or 1,200 vehicles per hour over current volumes.

11.2 SHELLY BAY

Proposals by the Wellington Company to redevelop Shelly Bay into a new suburb housing approximately 800 people with a 50 room boutique hotel, 140 bed rest home, and 350 houses will increase traffic flows. The development may include a community centre, micro-brewery, restaurant, cafe, artist's studio and shop, a gym, childcare and a medical centre.

Using a factor of 7-10 vehicle movements per day for each housing unit it can be expected that traffic volumes will increase by 2,450 to 3,500 vehicles per day plus vehicles serving the other facilities in the development. The peak one-hour traffic flow is generally 10% of this, that is, up to around 350 vehicles per hour.

This will affect the intersection of Shelly Bay Road and Miramar Avenue just beyond the study area. It will also increase the traffic flows on Cobham Drive

Issue: Developments will increase traffic and may degrade LoS for existing facilities and users.

12 LET'S GET WELLINGTON MOVING (LGWM)

In the wake of the Basin Flyover decision an alliance has been established between Wellington City Council, the NZ Transport Agency and Greater Wellington Regional Council to develop an integrated multi-modal solution for Wellington's transport needs. The focus is the area from Ngauranga Gorge to the Airport, encompassing the Wellington Urban Motorway and connections to Wellington Hospital and eastern and southern suburbs.

Called, Let's Get Wellington Moving, this alliance has a programme to develop and consult on recommended scenarios.

While this is being progressed, most of the previously planned improvements on key parts of the network have been placed on hold, including the Mt Victoria Tunnel Duplication project.

Issue: Potential to produce plans or construct something that conflicts with the outcomes from LGWM.

13 LANDSCAPE, ENVIRONMENT AND URBAN DESIGN

Landscape values relate to the area's importance as part of the gateway experience for Wellington City including a narrow strip of public open space and the state highway transport corridor set along a wild urban coastline. Urban form and function is characterized by the existing transport, commercial, infrastructure and formal sports facilities to the south and informal recreational land use along the immediate harbour edge.

Although the area is reclaimed and highly modified, and part of the coastal route into the city, it is wild and rugged and has perceptions of natural character values that will need to be addressed.

The design response will require a unique treatment with a 'softer' approach to earthworks/landform, reclamation (if required), path alignment and paving, furniture and other structures.

Existing vegetation patterns, while of limited habitat value, provide visual interest and amenity value and cues to an appropriate palette.

Views to and from the harbour will need to be maintained and enhanced including a palette and approach to avoid visual clutter and good sightlines for passive surveillance.

Varying condition and width of the existing coastal edge – result in ongoing hazards, spatial constraints for 5 m path and reduced amenity / aesthetic quality.

Protection of the heritage values of the sea wall at Miramar end. WCC has sought to reinstate damaged promenade walls on the south coast because of historical values

NZTA standards and requirements for highway operation will influence both construction methodology and features to be integrated including lighting, signage and the requirements to avoid safety hazards

The poor health and condition of median trees (Norfolk pines in particular) and timber tree surrounds detract from amenity/ aesthetic quality of the area – improvements could be considered as part of cycleway project.

Issues:

- **Site is constrained restricting capacity and options for amenity and connectivity improvements.**
- **Exposed environment requires robust palette including planting options and limits passive recreation uses.**
- **Works will need to avoid adverse effects on visual amenity as well as natural character.**

14 COMMUNITY INTERESTS

There are a number of community interests and stakeholders in this area that need to be identified and addressed through the community engagement on the project.

15 SUMMARY OF ISSUES

Level of Service

Issue: Maintain acceptable level of service for general traffic.

Evans Bay Parade 7 Day Survey

Roadway capacity in the study area does not appear to be an issue at present.

Speed Data

Speed data indicates traffic travels at speeds consistent with the posted speed limits.

Evans Bay Parade/Cobham Drive Intersection Crossing Survey

Issue: Crossing capacity requirements in the short term and future need to be incorporated in to the upgrades to Wellington Road.

Crash Data

Issue: Cycle turning crashes are an issue at the Troy Street roundabout. Specifically on the route there does not appear to be any issue.

Parking

Issues include:

- Some non-commuter parking demand.
- Poor quality of Troy Street roundabout 'carpark'.
- Off street parking at Troy Street roundabout visually isolated.

Regional Plan Requirements

Issue: There are elements of the project (Earthworks, new signs, modification and removal of indigenous vegetation and structures) that may require Resource Consent.

Proximity to Sea

Proximity to the sea raises a number of issues including:

- Coastal protection requirements to limit erosion.
- Protection to cycleway / footpath users in sea spray conditions.
- Construction and ongoing maintenance.

Ground Materials

Issues:

- Possible deleterious or contaminated material on site.
- Potential for liquefaction in the event of an earthquake. This will be exacerbated by sea level rise as this lifts the ground water level.

Utility Services

Issues:

- Wellington Water's Kilbirnie stormwater investigations and timescales need to be considered further when details are known.
- Generally, services are unlikely to be a major issue with the exception of the Wellington Electric high voltage cables if road widening is required at the eastern end of Cobham Drive.
- Streetlights may require relocation.
- Timing of the removal of Trolley bus infrastructure, which currently supports some streetlights.

Shelly Bay

Issue: Developments will increase traffic and may degrade LoS for existing facilities and users.

Let's Get Wellington Moving (LGWM)

Issue: Potential to produce plans or construct something that conflicts with the outcomes from LGWM.

Landscape, Environment and Urban Design

Issues:

- Site is constrained restricting capacity and options for amenity and connectivity improvements.
- Exposed environment requires robust palette including planting options and limits passive recreation uses.
- Works will need to avoid adverse effects on visual amenity as well as natural character.

APPENDICES

APPENDIX A TRAFFIC DATA

Traffic Data (Source: AECOM June 2016)

Cobham Drive/Calabar Road Roundabout

Recent traffic count data for all traffic (including cyclists) is shown in the tables below.

Table 5 - Cobham Drive/Calabar Road Roundabout - Morning Peak Hour 7:45am-8:45am

| From / To | Cobham Drive (Runway) | Cobham Drive (North) | Calabar Road | Total |
|-----------------------|-----------------------|----------------------|--------------|------------|
| Cobham Drive (Runway) | 1 | 806 (17) | 929 | 1,736 (17) |
| Cobham Drive (North) | 836 (46) | 1 | 75 | 912 (46) |
| Calabar Road | 1,218 | 7 | 1 | 1,226 |
| Total | 2,055 | 814 | 1,005 | 3,874 |

Numbers of cyclists are shown in brackets and included in the traffic flows.

4% of the total traffic is HCVs (including buses).

Table 6 - Cobham Drive/Calabar Road Roundabout - Evening Peak Hour 4:45pm-5:45pm

| From / To | Cobham Drive (Runway) | Cobham Drive (North) | Calabar Road | Total |
|-----------------------|-----------------------|----------------------|--------------|------------|
| Cobham Drive (Runway) | 2 | 1,139 | 1,215 | 2,356 (65) |
| Cobham Drive (North) | 686 (3) | 0 | 44 (1) | 730 (4) |
| Calabar Road | 961 | 32 | 1 | 994 |
| Total | 1,649 | 1,171 | 1,260 | 4,080 |

Numbers of cyclists are shown in brackets and included in the traffic flows.

2% of the total traffic is HCVs (including buses)

Table 7 - Cobham Drive/Calabar Road Roundabout - Saturday Peak Hour 12:00pm-1:00pm

| From / To | Cobham Drive (Runway) | Cobham Drive (North) | Calabar Road | Total |
|-----------------------|-----------------------|----------------------|--------------|-----------|
| Cobham Drive (Runway) | 0 | 1,027 (1) | 851 | 1,878 (1) |
| Cobham Drive (North) | 935 (16) | 0 | 35 | 970 (16) |
| Calabar Road | 816 | 34 | 2 | 852 |
| Total | 1,751 | 1,061 | 888 | 3,700 |

Numbers of cyclists are shown in brackets and included in the traffic flows.

2% of the total traffic is HCVs (including buses).

Cobham Drive and Troy Street Roundabout

Table 8 – Cobham Drive/Troy Street Roundabout – Wed 2 March 2016, 8.00am – 9.00am

| From / To | Cobham Drive (Runway) | Cobham Drive (North) | Calabar Road | Total |
|-----------------------|-----------------------|----------------------|--------------|------------|
| Cobham Drive (Runway) | 12 | 1,253 (1) | 957 | 2,222 (1) |
| Cobham Drive (North) | 1,175 (9) | 0 | 217 (1) | 1,392 (10) |
| Calabar Road | 47 | 566 | 0 | 613 |
| Total | 1,234 | 1,819 | 1,174 | 4,227 |

Numbers of cyclists are shown in brackets and included in the traffic flows.

4% of the total traffic is HCV (including buses).

Table 9 – Cobham Drive/ Tory Street Roundabout – Wed 2 March 2016, 5.30pm-6.30pm

| From / To | Cobham Drive (Runway) | Cobham Drive (North) | Calabar Road | Total |
|-----------------------|-----------------------|----------------------|--------------|------------|
| Cobham Drive (Runway) | 9 | 1,266 (1) | 642 | 1,917 (1) |
| Cobham Drive (North) | 1,035 | 0 | 216 (1) | 1,251 (51) |
| Calabar Road | 776 | 89 | 6 | 871 |
| Total | 1,820 | 1,355 | 864 | 4,039 |

Numbers of cyclists are shown in brackets and included in the traffic flows.

2% of the total traffic is HCV (including buses).

Table 10 – Cobham Drive/Troy Street roundabout – Sat 5 March 2016, 11.45am-12.45pm

| From / To | Cobham Drive (Runway) | Cobham Drive (North) | Calabar Road | Total |
|-----------------------|-----------------------|----------------------|--------------|------------|
| Cobham Drive (Runway) | 26 | 1,178 (1) | 646 | 1,850 (1) |
| Cobham Drive (North) | 1,117 (16) | 0 | 194 | 1,311 (16) |
| Calabar Road | 704 | 169 | 10 | 883 (16) |
| Total | 1,847 | 1,347 | 850 | 4,044 |

Numbers of cyclists are shown in brackets and included in the traffic flows.

Heavy Commercial Traffic

The percentage of heavy commercial vehicles (HCVs) and buses to total flow ranges from 2% to 5% of the total flow which is low compared to the state highway network. As this area is predominantly residential (and car parking for the airport), this is to be expected.

Recorded Cycle Flows

The cycle flows are fairly low and this could be one or more of the following reasons: Bad weather on the day of the counts

- The enumerators failed to register cyclists (too busy concentrating on vehicles)
- Suppressed demand (cyclists are deterred from travelling by bicycle due to the traffic volumes)

Recorded Pedestrian Flows

The traffic counts included pedestrian flows however these were very low, typically being one or two pedestrians an hour. The highest figure was just 3 pedestrians using the Cobham Drive - Troy Street intersection at midday on the Wednesday. As with the cyclists it is unknown if there was particularly poor weather that day or if the enumerators failed to record pedestrians.

