

Tooting and Mitcham Community Sports Club, Merton

PTAL Technical Note

Date: September 2022

Client Name: Tooting and Mitcham Sports and Leisure Ltd

Document Reference: WIE12163.102.R.1.2.1

This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

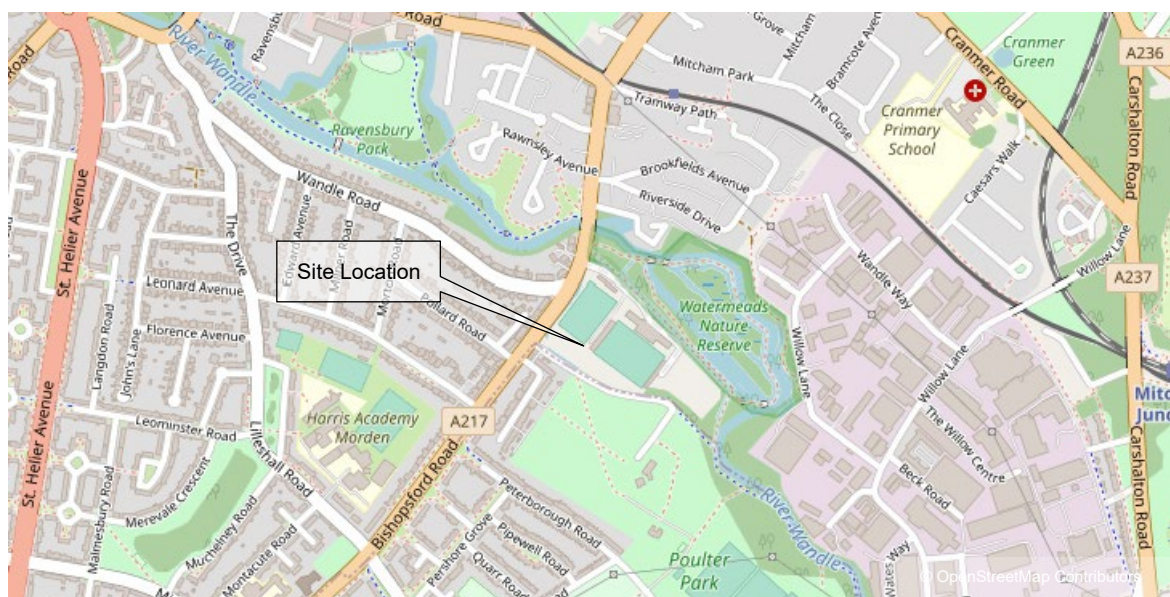
Issue	Prepared by	Checked & Approved by
1.2.1	A. McGill Transport Planner	M. Powers Technical Director

1. Introduction

General

- 1.1. Tooting and Mitcham Sports and Leisure Ltd is actively engaged in the London Borough of Merton's Local Plan process (currently at Examination in Public) in respect of their emerging site allocation (ref. Mo3; now with the benefit of planning permission ref 19/P4094) as a release from a Metropolitan Open Land, together with their continued promotion for a wider release on the adjoining land including the future south stand development. [Figure 1](#) shows the location (details at [Appendix A](#)).

Figure 1: Site Location



- 1.2. As part of the Local Plan process, the Planning Inspector has sought clarification on the Public Transport Accessibility Level (PTAL) for the site's access. Accordingly, Tooting and Mitcham Sports and Leisure Ltd has instructed Waterman Infrastructure and Environment Limited ('Waterman') to review the current PTAL.

Objective

- 1.3. The query raised by the Inspector at *'Inspectors' Matters, Issues and Questions – Stage 2 Hearings'* under Matter 8: Site Allocations (Q10) asks:

'Has the correct Public Transport Accessibility Level been referred to in site Mo3?'

- 1.4. This Technical Note reviews the publicly available PTAL information provided by Transport for London's (TfL) online WebCAT¹ service, including the Base, 2021 and 2031 scenarios. It also provides the results of a manual calculation using the published methodology² using current public transport service details.

Document Structure

- 1.5. Following this Introduction, the Technical Note is structured as follows:
- Section 2 – review of the TfL WebCAT outputs;
 - Section 3 – manual calculation of the PTAL; and
 - Section 4 – Summary and Conclusions.

¹ <https://tfl.gov.uk/info-for/urban-planning-and-construction/planning-with-webcat/webcat>

² <https://content.tfl.gov.uk/connectivity-assessment-guide.pdf>

2. TfL WebCAT Review

General

- 2.1. The WebCAT service considers three scenarios: Base; 2021; and 2031. These are based on public transport provision from the original year of 2011 which are then extrapolated to the future horizons using plan-led assumptions. As such, it is possible for the online information to be superseded by current, on-the-ground, conditions.
- 2.2. The assessment considers operational criteria including:
 - Public transport within reasonable walking distances of the site (640m for buses; 960m for rail, tram, Underground etc.);
 - Service frequencies (no. per hour);
 - Passenger waiting times (passengers are assumed to arrive at random, the scheduled waiting time is estimated as half the time interval between arrivals of the service, if a single route has several stops in the area, only the nearest is considered).
- 2.3. The PTAL methodology calculates a score (the Public Transport Accessibility Index, PTAL) for a given location based on these criteria. The Index is then assigned to a particular range, denoting the site's PTAL value. The range thresholds and descriptions are summarised in [Figure 2](#) below.

Figure 2: PTAL Thresholds

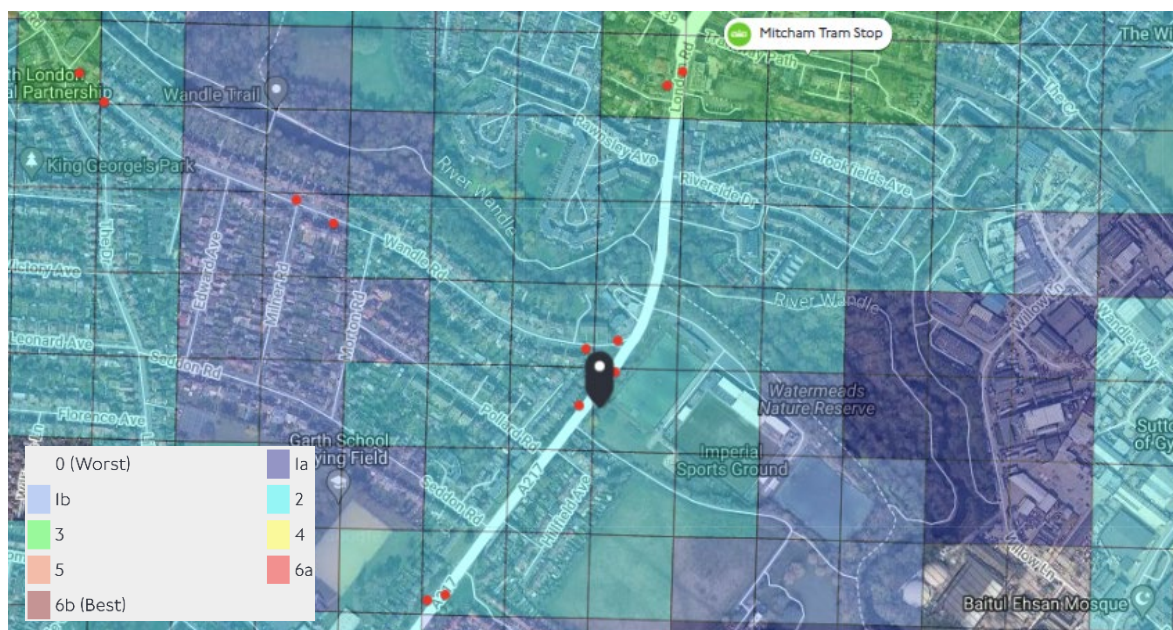
PTAL	Access Index range	Map colour
0 (worst)	0	
1a	0.01 – 2.50	
1b	2.51 – 5.0	
2	5.01 – 10.0	
3	10.01 – 15.0	
4	15.01 – 20.0	
5	20.01 – 25.0	
6a	25.01 – 40.0	
6b (best)	40.01+	

WebCAT Outputs

Base Year

- 2.4. [Figure 3](#) shows the WebCAT output for the Base Year; the Site access records a PTAL of 2. The Index value is recorded as 7.37.

Figure 3: WebCAT Output – Base Year



2021 Horizon

- 2.5. Figure 4 shows the WebCAT output for the 2021 Horizon; the Site access records a PTAL of 2. The Index value is recorded as 8.28.

Figure 4: WebCAT Output – 2021 Horizon



- 2.6. The areas that have changed PTAL rating since the Base scenario are shown with a grey border to the map cells - the site is effectively closer to improved public transport access.

2031 Horizon

- 2.7. Figure 5 shows the WebCAT output for the 2031 Horizon; the Site access records a PTAL of 2. The associated Index value is recorded as 8.28.

Figure 5: WebCAT Output – 2031 Horizon



- 2.8. As with the 2021 Horizon, the areas that have changed PTAL rating since the Base scenario are shown with a grey border to the map cells - the 2031 scenario is the same as the 2021 scenario.
- 2.9. All WebCAT outputs are included at [Appendix B](#).

Commentary on Index Values

Base

- 2.10. The index value is 7.37, comprising 5.30 from bus routes and 2.07 from tram.

2021

- 2.11. In the 2021 Horizon the PTAL is increased by 3% for bus routes. The index value is 8.28, comprising 5.39 from bus routes and 2.89 from tram.

2031

- 2.12. In the 2031 Horizon the PTAL is the same as in the 2021 Horizon.

Outputs and commentary

- 2.13. [Figure 3](#) shows the output for the base year. Referring to TfL buses and google maps, Mitcham Tram Stop may be misdescribed as Mitcham Tramway Path (bus route 201). Due to the uncertainties within web-based assessments the distances to the bus stops may be inaccurate. The TfL timetable for Mitcham tram stop does not show a Wimbledon to New Addington route but instead a Beckenham Junction to Wimbledon route. This is further reason to consider a manual calculation.

Figure 6: Base Year Output

Calculation data										
Mode	Stop	Route	Distance (metres)	Frequency (vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	MITCHAM TRAMWAY PATH	201	601.66	4	7.52	9.5	17.02	1.76	0.5	0.88
Bus	WANDLE RD BISHOPSFORD RD	118	296.98	5	3.71	8	11.71	2.56	0.5	1.28
Bus	BISHOPSFORD RD WANDLE RD	280	204.7	6	2.56	7	9.56	3.14	1	3.14
Tram	Mitcham	Wimbledon-New Addington	798.52	8	9.98	4.5	14.48	2.07	1	2.07
										Total Grid Cell AI: 7.37

2.14. Figure 4 shows the increased AI from the added tram route.

Figure 7: 2021 Output

Calculation data										
Mode	Stop	Route	Distance (metres)	Frequency (vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	MITCHAM TRAMWAY PATH	201	601.66	4.14	7.52	9.25	16.77	1.79	0.5	0.89
Bus	WANDLE RD BISHOPSFORD RD	118	296.98	5.18	3.71	7.8	11.51	2.61	0.5	1.3
Bus	BISHOPSFORD RD WANDLE RD	280	204.7	6.21	2.56	6.83	9.39	3.2	1	3.2
Tram	Mitcham	Wimbledon-New Addington	798.52	8	9.98	4.5	14.48	2.07	1	2.07
Tram	Mitcham	Therapia Lane - Elmers End	798.52	4	9.98	8.25	18.23	1.65	0.5	0.82
										Total Grid Cell AI: 8.28

2.15. Figure 5 shows the amended tram routes at Mitcham tram stop. The TfL timetable shows a higher frequency on the Elmers End to Wimbledon stop.

Figure 8: 2031 Output

Calculation data										
Mode	Stop	Route	Distance (metres)	Frequency (vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	MITCHAM TRAMWAY PATH	201	601.66	4.14	7.52	9.25	16.77	1.79	0.5	0.89
Bus	WANDLE RD BISHOPSFORD RD	118	296.98	5.18	3.71	7.8	11.51	2.61	0.5	1.3
Bus	BISHOPSFORD RD WANDLE RD	280	204.7	6.21	2.56	6.83	9.39	3.2	1	3.2
Tram	Mitcham	'Wimb-NewAd'	798.52	8	9.98	4.5	14.48	2.07	1	2.07
Tram	Mitcham	'Wimbledon-ElEn'	798.52	4	9.98	8.25	18.23	1.65	0.5	0.82
										Total Grid Cell AI: 8.28

3. Manual PTAL Calculation

General

- 3.1. Waterman has undertaken a manual PTAL calculation for the site access on Bishopsford Road (west frontage of the site). Outputs are included at [Appendix C](#).

Criteria

- 3.2. TfL's guidance 'Assessing transport connectivity in London' guide describes the data and steps to find an access index score for a specific location. TfL uses data on the location of all public transport stations and stops in London. They refer to them as service access points (SAPs).
1. *Calculate the walk time to SAPs. Not every bus stop is a separate SAP. If stops are close to each other, TfL code them as a group:*
 - a. *The walk time calculation uses Ordnance Survey's Integrated Transport Network (ITN), which includes all of London's roads. It removes motorways and major trunk roads as they are not suitable for walking. It adds rail bridges, footpaths, and local short cuts.*
 - b. *The calculation assumes people will walk up to 640m (approximately eight minutes) to bus service and up to 960m (twelve minutes) to rail and Tube services. Services available at a longer distance do not affect the PTAL of a selected location. The calculation measures the walk access distance using software such as RouteFinder, an application of the MapInfo package.*
 2. *Calculate scheduled waiting time (SWT) for each route at each SAP. The standard PTAL score bases its calculation on service frequencies between 08:15 and 09:15 on a weekday.*
 - a. *The calculation assumes passengers arrive at the station point at random, without adjusting their arrival to the bus timescale, as is common with frequent urban services.*
 - b. *The calculation estimates the SWT (in minutes) as half the time interval between arrivals of the service at the SAP, i.e., $SWT = 0.5 * (60/\text{frequency})$.*
 - c. *If a single route has more than one stops in the area, the calculation only considers the nearest.*
 - d. *If a service runs in both directions, the calculation uses the most frequent direction.*
 3. *Calculate average waiting times (AWT) for each route at each SAP. The AWT (in minutes) equals the SWT plus a reliability factor. The reliability factor varies by mode of transport. The reliability factor for buses is two minutes and 0.75 minutes for rail, Tube, or tram services.*
 4. *Calculate total access time (TAT) for each route at each SAP. The TAT (in minutes) combines the walk time to the SAP with the AWT at the SAP, i.e., $TAT = \text{walk time} + AWT$.*
 5. *Calculate equivalent doorstep frequency (EDF) for each route at each SAP. The EDF (in minutes) converts the TAT back into units of frequency, i.e., $EDF = 0.5 * (60/TAT)$.*
 6. *Calculate Access Index (AI). For each mode of transport available for a certain journey, a specific route from a specific nearby stop or station is the most suitable. The PTAL method bases the AI on summarising the EDFs of all routes at all SAPs (within the acceptable walking distance) but giving a weight of one to the highest EDF per mode and a weight of 0.5 to all other EDFs.*

Calculation

- 3.3. Using google maps, the manual calculation uses a walk distance of 3m for Wandle Road bus stop (route 280), 130m for Bishopsford Road bus stop (route 118). The manual calculation uses Gedge Road bus stop for route 201, a walk distance of 640m. On the 03/07/2021 the S1 bus route contract was novated from Quality Line and now serves the Green Wrythe Lane bus stop with a walk distance of 450m. The manual calculation also uses the Mitcham tram stop, with a walk distance of 600m.
- 3.4. Using the TfL timetable information Gedge Court bus stop (201) and Green Wrythe Lane bus stop (route S1) have a frequency of four vehicles per hour between 08:15 and 09:15. Bishopsford Road bus stop (route 118) has a frequency between 08:15 and 09:15 of five vehicles per hour. Wandle Road bus stop (route 280) has a frequency of six vehicles per hour. The Beckenham Junction to Wimbledon tram route has a frequency of six vehicles, and the Elmers End to Wimbledon of seven.
- 3.5. Table 1 shows the manual calculations for the access, including Green Wrythe Lane bus stop, which now serves the S1 route.

Table 1: Manual PTAL calculation

Mode	Stop/Stn	Route / Service	Distance (m)	Frequency (vph)	Walk Time (mins)	SWT (mins)	Reliability	AWT (mins)	TAT (mins)	EDF	[EDF Ranked]	EDF Weighting	Index
Bus	Gedge Court	201	640	4	8.000	7.500	2.000	9.500	17.500	1.714	4	0.5	0.857
Bus	Bishopsford Road	118	130	5	1.625	6.000	2.000	8.000	9.625	3.117	2	0.5	1.558
Bus	Wandle Road	280	3	6	0.038	5.000	2.000	7.000	7.038	4.263	1	1	4.263
Bus	Green Wrythe Lane	S1	450	4	5.625	7.500	2.000	9.500	15.125	1.983	3	0.5	0.992
Tram	Mitcham	Beckenham Junction - Wimbledon	600	6	7.500	5.000	0.750	5.750	13.250	2.264	2	0.5	1.132
Tram	Mitcham	Elmers End - Wimbledon	600	7	7.500	4.286	0.750	5.036	12.536	2.393	1	1	2.393
TOTAL													11.195

- 3.6. Figure 6 shows the manual calculation for the site access.

Figure 9: Manual PTAL Calculation

PTAL		Min	Max	PTAI
0	N/A	0	0.01	
1a	Very Poor	0.01	2.5	
1b	Very Poor	2.5	5	
2	Poor	5	10	
3	Moderate	10	15	11.195
4	Good	15	20	
5	Very Good	20	25	
6a	Excellent	25	40	
6b	Excellent	40		

- 3.7. Table 1 shows the actual AI score is 11.195, which gives a PTAL of 3.

4. Summary and Conclusions

Summary

- 4.1. This Technical Note reviews the PTAL of potential site allocation 'Mo3' located at the Tooting and Mitcham Community Sports Club in the London Borough of Merton.
- 4.2. TfL's online WebCAT analysis shows a PTAL rating from the base year (PTAL 2) with the 2021/2031 scenarios recorded an area of PTAL 3 close to the site. However, it is noted that the online service does not always present accurate, on-the-ground, conditions.
- 4.3. A review of the timetable information contained within the TfL website shows increased frequency on the Elmers End to Wimbledon tram route.
- 4.4. A manual PTAL calculation, that includes the current bus routes and tram operational conditions, demonstrates that the site access records a PTAL of 3.

Conclusions

- 4.5. The base year scenario is now outdated, although the future year scenarios better reflect the current PTAL, the manual calculation provides a more accurate PTAL using the most recent information supplied by the TfL timetables.
- 4.6. It is therefore shown that the Site access demonstrates a PTAL of 3.

Appendices

Appendices

Appendix A

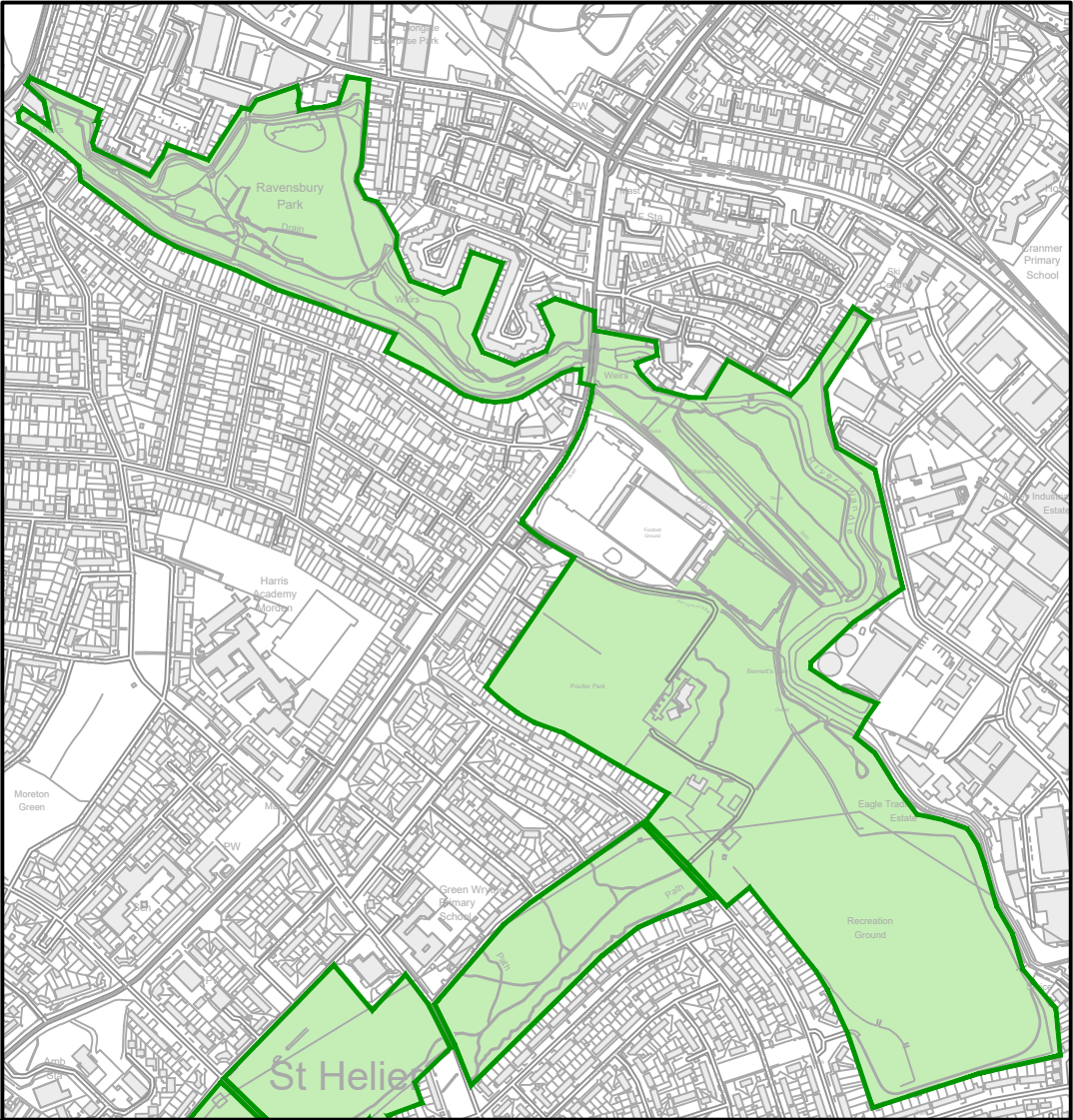
Site Layout & Designations

Appendices

Tooting and Mitcham Community Sports Club, Merton
WIE12163.102.R.1.2.1



- Site Boundary
- 5.54Ha / 13.69Ac
- Draft Allocation MO3 (to be removed from the MOL)
- 0.52Ha / 1.28Ac
- Extent of Existing MOL Boundary
- Sites with Extant Planning Permission
- Previously developed land which serves no MOL purpose with potential to be removed from MOL
- 3.28Ha / 8.11Ac
- Green Infrastructure and Biodiversity area to remain MOL
- 1.73Ha / 4.27Ac



- Draft Allocation MO3 (to be removed from the MOL)
- Extent of MOL Boundary after the removal of Previously Developed Land

Project
TOOTING & MITCHAM F.C.

Drawing Title
SITE LAYOUT AND DESIGNATIONS

Date 17.05.22	Scale 1:5000@A2	Drawn by M.D.	Check by L.P.
Project No 34142	Drawing No RG-M-01	Revision -	



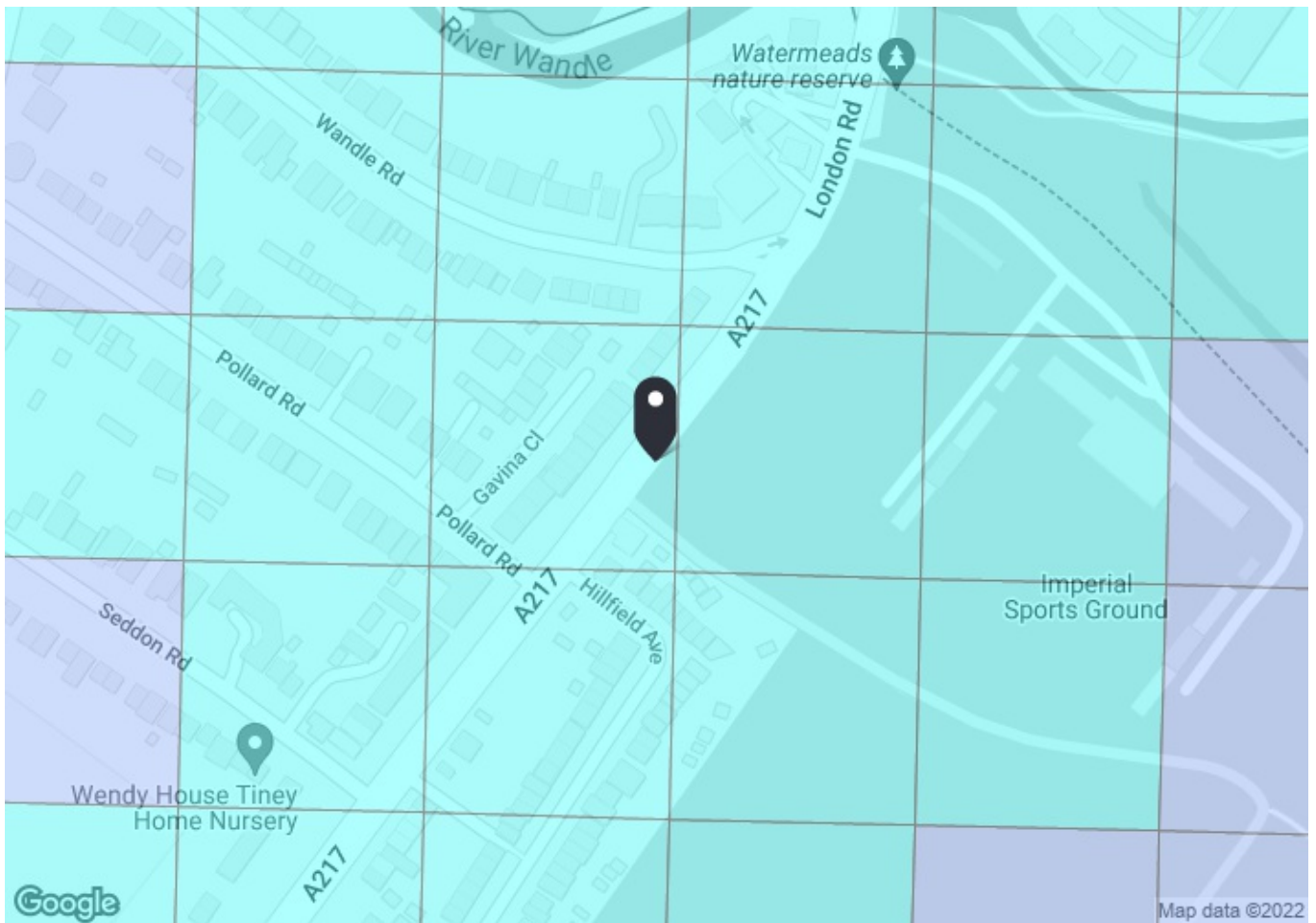
Town Planning • Master Planning & Urban Design • Architecture •
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Appendix B

TfL WebCAT Outputs



PTAL output for Base Year 2

Wandle Road, Morden SM4 6AY, UK
Easting: 527088, Northing: 167638

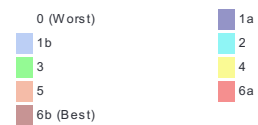
Grid Cell: 23796

Report generated: 05/09/2022

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Map key - PTAL

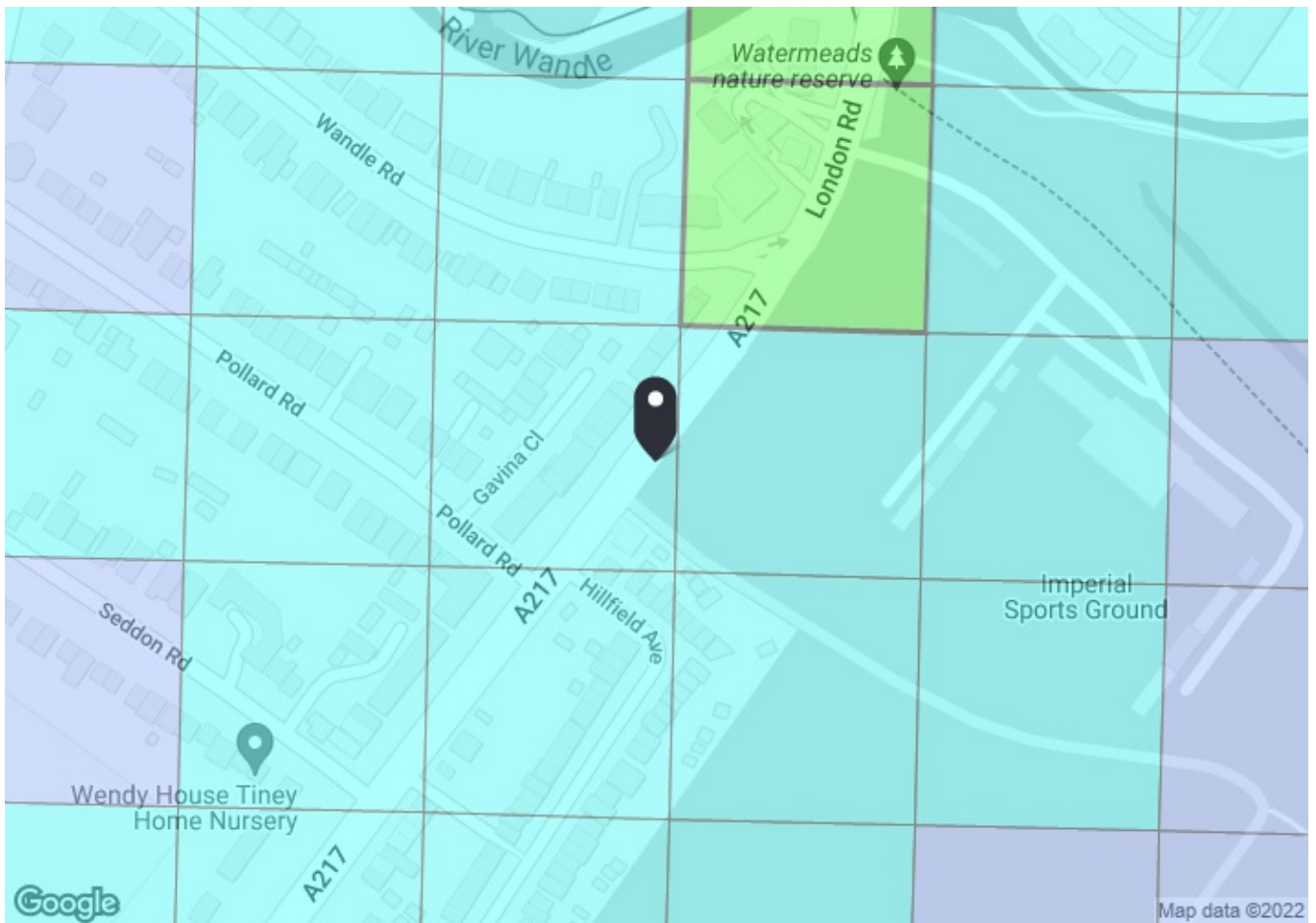


Map layers

 PTAL (cell size: 100m)

Calculation data

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	MITCHAM TRAMWAY PATH	201	601.66	4	7.52	9.5	17.02	1.76	0.5	0.88
Bus	WANDLE RD BISHOPSFORD RD	118	296.98	5	3.71	8	11.71	2.56	0.5	1.28
Bus	BISHOPSFORD RD WANDLE RD	280	204.7	6	2.56	7	9.56	3.14	1	3.14
Tram	Mitcham	Wimbledon-New Addington	798.52	8	9.98	4.5	14.48	2.07	1	2.07
										Total Grid Cell AI: 7.37



PTAL output for 2021 (Forecast) 2

Wandle Road, Morden SM4 6AY, UK
Easting: 527088, Northing: 167638

Grid Cell: 23796

Report generated: 05/09/2022

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Map key - PTAL

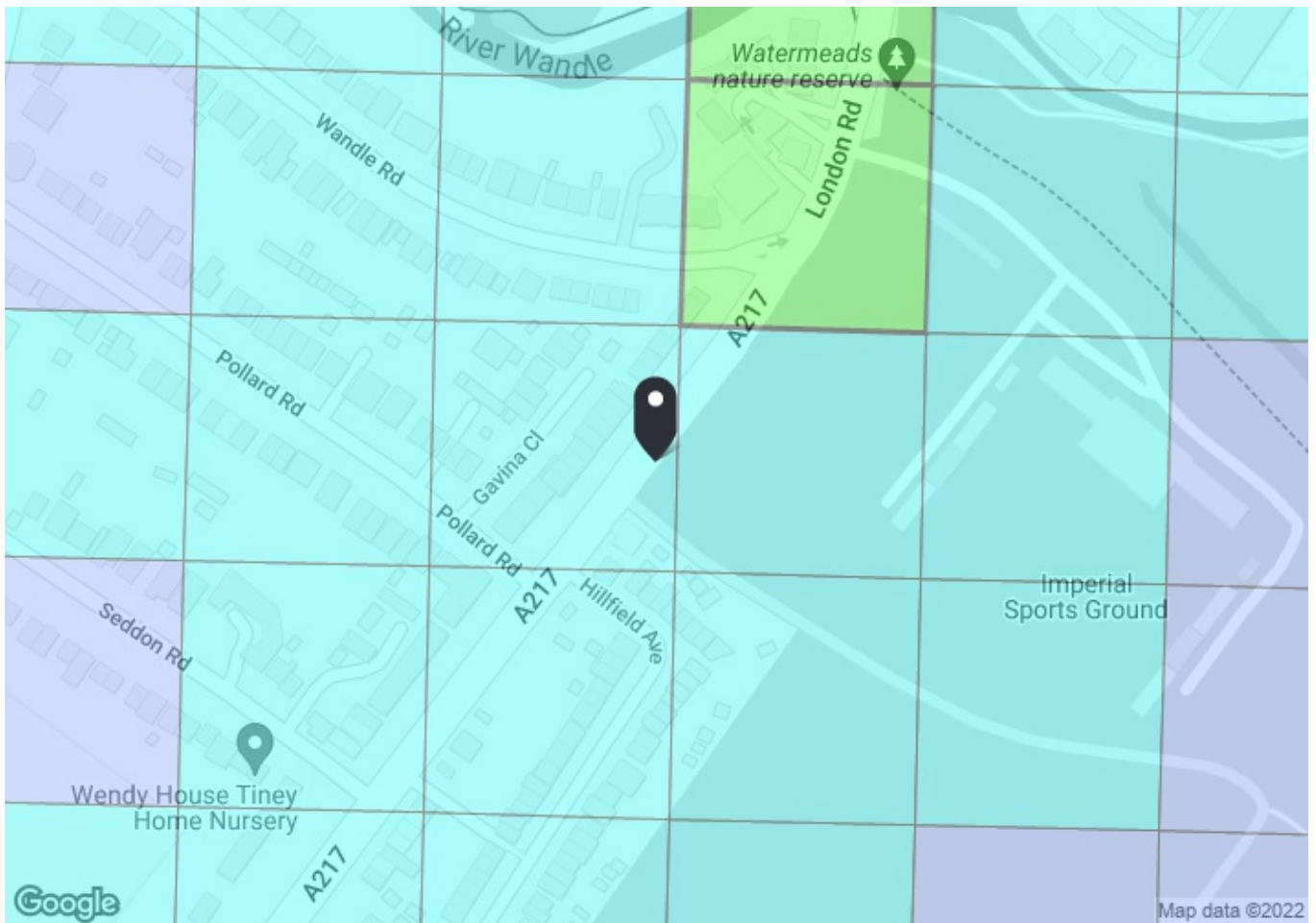
0 (Worst)	1a
1b	2
3	4
5	6a
6b (Best)	Change from base year

Map layers

PTAL (cell size: 100m)

Calculation data

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	MITCHAM TRAMWAY PATH	201	601.66	4.14	7.52	9.25	16.77	1.79	0.5	0.89
Bus	WANDLE RD BISHOPSFORD RD	118	296.98	5.18	3.71	7.8	11.51	2.61	0.5	1.3
Bus	BISHOPSFORD RD WANDLE RD	280	204.7	6.21	2.56	6.83	9.39	3.2	1	3.2
Tram	Mitcham	Wimbledon-New Addington '	798.52	8	9.98	4.5	14.48	2.07	1	2.07
Tram	Mitcham	Therapia Lane - Elmers End	798.52	4	9.98	8.25	18.23	1.65	0.5	0.82
										Total Grid Cell AI: 8.28



PTAL output for 2031 (Forecast)

2

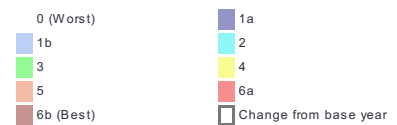
Wandle Road, Morden SM4 6AY, UK
Easting: 527088, Northing: 167638

Grid Cell: 23796

Report generated: 05/09/2022

This information is produced using forecasting tools and is subject to uncertainty

Map key - PTAL



Map layers

 PTAL (cell size: 100m)

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Calculation data

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	MITCHAM TRAMWAY PATH	201	601.66	4.14	7.52	9.25	16.77	1.79	0.5	0.89
Bus	WANDLE RD BISHOPSFORD RD	118	296.98	5.18	3.71	7.8	11.51	2.61	0.5	1.3
Bus	BISHOPSFORD RD WANDLE RD	280	204.7	6.21	2.56	6.83	9.39	3.2	1	3.2
Tram	Mitcham	'Wimb-NewAd'	798.52	8	9.98	4.5	14.48	2.07	1	2.07
Tram	Mitcham	'Wimbledon-ElEn'	798.52	4	9.98	8.25	18.23	1.65	0.5	0.82
Total Grid Cell AI:										8.28

Appendix C

Manual PTAL Calculation Outputs

Data [enter information directly]					Calculations [do not edit or alter cells]								OUTPUT
Mode	Stop/Stn	Route / Service	Distance (m)	Frequency (vph)	Walk Time (mins)	SWT (mins)	Reliability	AWT (mins)	TAT (mins)	EDF	[EDF Ranked]	EDF Weighting	Index
Bus	Gedge Court	201	640	4	8.000	7.500	2.000	9.500	17.500	1.714	4	0.5	0.857
Bus	Bishopsford Road	118	130	5	1.625	6.000	2.000	8.000	9.625	3.117	2	0.5	1.558
Bus	Wandle Road	280	3	6	0.038	5.000	2.000	7.000	7.038	4.263	1	1	4.263
Bus	Green Wyrthe Lane	S1	450	4	5.625	7.500	2.000	9.500	15.125	1.983	3	0.5	0.992
Tram	Mitcham	Beckenham Junction - Wimbledon	600	6	7.500	5.000	0.750	5.750	13.250	2.264	2	0.5	1.132
Tram	Mitcham	Elmers End - Wimbledon	600	7	7.500	4.286	0.750	5.036	12.536	2.393	1	1	2.393
TOTAL													11.195