

TECHNICAL NOTES



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1. Introduction

This Technical Note has been produced by Peter Brett Associates (PBA) in response to a commission from Renewal, to provide transport advice on a proposed mixed-use development on land adjacent to Ilderton Road at Bermondsey in south-east London. This development area is known as Surrey Canal and is bounded by Ilderton Road, Surrey Canal Road and the South London Line, although there is some additional development area outside this.

The site currently has a Public Transport Accessibility Level (PTAL) of 2 and initial discussions with Transport for London have raised concern about the ability of the existing network to cope with development travel demands and therefore the sites suitability to accommodate the proposed levels of residential and commercial development.

The purpose of this Note is therefore to:

- Set out the existing conditions relating to public transport and accessibility levels at the site;
- Create a 'long list' of potential options for improvement of the bus network;
- Screen these options to a 'short list' of potential, deliverable schemes; and
- Select a preferred option that improves the public transport offer to a sufficient level.

2. Existing Conditions

Public Transport Accessibility Levels (PTALs)

Transport for London use PTALs to identify the accessibility of a given point and compare it against other areas. The scores range from 1a (very poor) to 6b (Excellent) based on recommended distances from bus (640 metres) or rail (960 metres) services. The PTAL rating of this site is 2, based on the current bus and rail services operating within TfL's recommended distances; the analysis for this is shown in Appendix 1. These services are detailed below as follows:

Bus Services

Bus stops are located at South Bermondsey railway station and Millwall Football Ground, both on Ilderton Road. No bus services serve Surrey Canal Road at the present time.

Service/ Operator	Route	Frequency	
		Mon – Sat daytime	Evenings & Sundays
P12 London Central	Brockley Rise – Nunhead – Peckham – South Bermondsey – Canada Water – Surrey Quays	10 mins	20 mins

Route P12 is the only services operating within the guideline distance of the PTAL centroid within the site, and runs every 10 minutes between Honor Oak Park and Surrey Quays (every 20 minutes in the evenings and on Sundays). It is currently the only service operating via Ilderton Road and has a Peak Vehicle Requirement (PVR) of 12 (13 on Saturdays).

Other bus services operating nearby but outside of the recommended walking distance include:

- *Trundleys Road (approx. 690 metres):* London Central service 225 to Hither Green and Canada Water (every 15 minutes Monday to Saturday daytimes and every 20 minutes evenings and Sundays); and
- *Rotherhithe New Road (approx. 815 metres):* London General service 1 to Tottenham Court Road and Canada Water (every 7-8 minutes Monday to Saturday daytimes, every 12 minutes evenings and Sundays, every 20-30 minutes overnight) and Abellio London service 381 to Waterloo and Peckham every 10 minutes Monday to Saturday daytimes, every 12 minutes evenings and Sundays and every 30 minutes overnight).

Rail Services

South Bermondsey rail station is the closest access point to the National Rail network and is situated on the South London Line between London Bridge and Peckham Rye, from where services radiate to various destinations in south London. The principal services calling at the station are as follows:

Station/ Operator	Route	Frequency	
		Mon – Sat daytime	Evenings & Sundays
South Bermondsey Southern	London Bridge – Peckham Rye – Tulse Hill – Streatham – Selhurst – West Croydon	30 mins	30 mins
	London Bridge – Peckham Rye – Tulse Hill – Crystal Palace – Beckenham Junction	30 mins	1 journey eve
	London Bridge – Peckham Rye – Denmark Hill – London Victoria	30 mins	30 mins
	London Bridge – Peckham Rye – Tulse Hill – Mitcham Junction – Sutton – Wimbledon (some journeys to Epsom)	30 mins Mon-Fri peaks	No service

During peak times (Monday to Friday) South Bermondsey is served by 8 trains per hour to/from London Bridge, with 6 trains per hour during the off-peak periods and 4 trains per hour in the evenings and on Sundays. Other key destinations include West Croydon, Crystal Palace, Beckenham Junction, London Victoria and Sutton.

3. Option Development

The current level of public transport services in the area will be insufficient to meet the needs of the development. As a result it is necessary to consider some of the available options for service changes, alterations and extensions which may help improve the site’s accessibility and satisfy forecast travel demand from the site.

Key links to be investigated include services to National Rail and London Overground/ Underground interchanges at Canada Water, New Cross Gate and New Cross, together with direct services to central London. The latter may be of significant importance given the capacity issues currently

experienced on trains from South Bermondsey to London Bridge and the likely level of demand in this direction from the residential area of the development.

The first stage of option development is to consider all the potential opportunities for improvement that can be realistically achieved. These improvements fall into four categories:

- Enhancement of frequencies on existing services P12 and 225;
- Extension of existing routes from current termini at Canada Water, Peckham, New Cross Gate and Old Kent Road;
- Diversion of existing services currently terminating at Canada Water and New Cross Gate; and
- New services on the key corridor between Canada Water, Surrey Quays, the site, New Cross and Greenwich (to link to other development sites).

The table overleaf indicates a 'longlist' of potential improvements which have been considered in this note. The options presented consider the following:

- Impact on Peak Vehicle Requirement (PVR);
- Impact on PTALs;
- The likely level of cost of provision; and
- The relative advantages and disadvantages of each option, considering the range of destinations, cost of buses, accessibility improvements and requirements for increased bus stands.

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Option	Route	Description	PVR	Future PVR	PTAL Impact	Cost	Suitability	Advantages	Disadvantages
1a	P12	Enhance frequency to every 7.5 mins, no change to route	12	16	Low	✓	x	Higher frequency links to Canada Water, Surrey Quays and Peckham 4 additional buses required No stand required in site	No new destinations offered Very low PTAL increase High reliance on one route
1b		Enhance frequency to every 5 mins, no change to route		24	Moderate	x	x	Higher frequency links to Canada Water, Surrey Quays and Peckham No stand required in site	No new destinations offered Low PTAL increase High reliance on one route 12 additional buses required
2a	225	Enhance frequency to every 12 mins, no change to route	7	8	Very low	✓	x	Higher frequency links to Canada Water, Surrey Quays, New Cross and Lewisham 1 additional bus required No stand required in site	Still 690m walk to bus stops as unable to access site Very low PTAL increase High reliance on one route
2b		Enhance frequency to every 10 mins, no change to route		10	Low	✓	x	Higher frequency links to Canada Water, Surrey Quays, New Cross and Lewisham 3 additional buses required No stand required in site	Still 690m walk to bus stops as unable to access site Low PTAL increase High reliance on one route
2c		Enhance frequency to every 7.5 mins, no change to route		13	Moderate	x	x	Higher frequency links to Canada Water, Surrey Quays, New Cross and Lewisham No stand required in site	Still 690m walk to bus stops as unable to access site 6 additional buses required Relatively low PTAL increase compared to other options High reliance on one route

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Option	Route	Description	PVR	Future PVR	PTAL Impact	Cost	Suitability	Advantages	Disadvantages
3	168 381	Extend 168 from Tesco via Old Kent Road, Rotherhithe New Road and Ilderton Road to site. Divert 381 via Ilderton Road and Old Kent Road rather than Rotherhithe New Road	37	42	Very high	✓	✓	Two high frequency services to central London, better links to Canada Water Very high PTAL increase – sufficient to reach PTAL 4 5 additional buses required	Increase in journey time on 381 Stand requirements in site
4	197 199	Extend 197 from Peckham via Queen's Road, Asylum Road, Old Kent Road and Ilderton Road to site. Extend 199 from Canada Water via Surrey Quays Road, Lower Road, Rotherhithe New Road and Ilderton Road to site	24	28	Very high	✓	✓	High frequency links to Canada Water, Surrey Quays, Greenwich, Lewisham, Peckham and Croydon Very high PTAL increase 4 additional buses required	Convoluted route serving Surrey Quays twice on 199 Limited range of destinations to west Considerable stand requirements in site
5	343	Extend from New Cross Gate via Old Kent Road and Ilderton Road to site	22	26	Very high	✓	×	High frequency links to New Cross Gate, Peckham and central London High PTAL increase 4 additional buses required	Journey time to London Bridge over 1 hour No improved link to Canada Water Stand requirements in site
6	P13	Divert from Queen's Road via Asylum Road, Old Kent Road and Ilderton Road to site instead of to New Cross Gate	8	8	Moderate	✓	×	Improved links to Streatham and Peckham No overall increase in PVR	New Cross Gate no longer served – impact on existing users Stand requirements in site Relatively low PTAL increase No improved link to Canada Water

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Option	Route	Description	PVR	Future PVR	PTAL Impact	Cost	Suitability	Advantages	Disadvantages
7	1	Divert from Southwark Park Road via Rotherhithe New Road and Ilderton Road to site instead of to Canada Water	16	16	Very high	✓	×	High frequency services to central London No overall increase in PVR required Very high PTAL increase	Canada Water no longer served – impact on existing users; no improved link from site High levels of crowding on this route Other options required to widen range of destinations Stand requirements in site
8a	-	New service from Canada Water to Greenwich via Surrey Quays Road, Lower Road, Rotherhithe New Road, Ilderton Road, Surrey Canal Road, Trundleys Road, Sanford Street, Edward Street, Pagnell Street, New Cross Road and Greenwich High Road. Every 12 mins Mon-Sat daytimes and every 20-30 mins eve/Sun	-	5	High	✓	×	Improved link to New Cross and Canada Water New east-west links to Greenwich 5 buses required High PTAL increase	Addition to current network Duplicates parts of existing bus routes Potential pressure on stands at Canada Water and Greenwich
8b	-	As above but commencing from London Bridge via Tooley Street, Jamaica Road and Lower Road every 20 mins Mon-Sat daytimes and every 30 mins eve/Sun	-	5	Moderate	✓	×	New direct service to central London; improved link to New Cross and Canada water New east-west links to Greenwich 5 buses required	Addition to current network Duplicates parts of existing routes Lower 20 minute frequency than 8a Lower PTAL increase Potential pressure on stands at Canada Water and Greenwich

The options presented in the table that are considered to have the greatest potential are:

- **Option 3:** This combines extension of existing route 168 and diversion of route 381 to provide two additional central London-bound high frequency services to the development for a relatively modest increase in PVR. The combination of the two routes ensures that no section of road is left without a bus service and the increase in journey time on route 381 is not considered a significant disbenefit in view of the likely increase in accessibility; and
- **Option 4:** The extension of services 197 and 199 deliver improved services to the north, east and south, although there are stand and routeing issues to be considered. The high frequency of these services contributes to a significant increase in the PTAL score.

The following options should not be taken forward for further consideration:

- **Options 1a-1b:** The options for frequency enhancement of service P12 do not deliver significant increases in the PTAL score for the site and offer a relatively limited number of additional seats given the small vehicles used. The range of destinations available is also limited and passengers will be encouraged onto already constrained train services at South Bermondsey and Canada Water;
- **Options 2a-2c:** The stops on Trundleys Road are currently slightly outside the preferred TfL boundaries and therefore any improvement to these routes has a low PTAL enhancement (due to the high access time). The range of destinations remains the same and there is no opportunity to divert services into the site and onto stands from the east. Option 2a may however be appropriate if a slight PTAL increase is needed in conjunction with another option;
- **Option 5:** Service 343 provides improved links to the south but not northwards so links to key destinations such as Canada Water and those within Central London are not served;
- **Option 6:** Service P13 is not a high frequency or high capacity route and serves Peckham and local destinations to the south and that are not likely to be large attractors or generators for development traffic. In addition, existing users may be lost as a result of the diversion of the service away from New Cross Gate and Sainsbury's in particular;
- **Option 7:** Service 1 is a key trunk route between Canada Water and central London and is understood to be heavily loaded, particularly at peak times. It is not considered that the benefits of diverting this service to the development are outweighed by the loss of amenity caused by removing the service from Canada Water, although further identification of passenger traffic may be necessary to confirm this; and
- **Option 8a-8b:** The options for new services can only deliver a maximum of 5 additional journeys per hour to the development for the same resource as other options with a higher frequency. As frequency is the driver for PTAL scores the return is not as high for a new service than for an extension – in addition, adding new services to the network abstracts from existing routes and duplicates provision in some areas.

4. Preferred Options

Following consideration of the available options and the rejection of those that are not considered to be of sufficient merit, two options (3 and 4) remain. To identify which of these are preferred, a more detailed analysis of the likely impact on bus departures per hour from the development and the PTAL score has been undertaken, and is shown in the table below (the full analyses are contained in Appendix 1):

Option	Current BPH	New BPH	Base PTAL	Improvement	New PTAL	New Rank
3	20	42	11.19	4.45	15.64	4
4	20	30	11.19	3.14	14.33	3

BPH = Buses per hour from site in all directions (0815-0915).

The table above assumes that the baseline PTAL score is 11.19 (rank 3), which includes:

- Existing bus service P12 at a 10 minute frequency;
- Existing bus service 225 at a 15 minute frequency;
- Existing rail services at South Bermondsey and Surrey Quays stations; and
- A new rail station at Surrey Canal Road with a 15 minute train frequency.

Option 3 creates a PTAL score of 4 for the development and provides an additional 22 buses per hour to/from the site to central London, Canada Water and Peckham. Whilst this is lower than previously thought necessary, both services 168 and 381 are double deck worked meaning a substantial increase in capacity over and above the type of single deck buses used on route P12.

Meanwhile Option 4 provides only an additional 10 buses per hour and would create a PTAL score of 3. Providing an additional 1 bus per hour on service 225 in Option 4 would still not be sufficient to increase this further.

As a result, only Option 3 delivers sufficient additional capacity to meet the needs of the development. Option 3 requires bus stands to be made available to enable terminating buses to layover in the area; these will be used by route 168 as opposed to their existing stands at Old Kent Road Tesco.

Figure 1 indicates the public transport network serving the development site with this preferred option.

5. Conclusions

This note has:

- Set out the existing conditions relating to public transport and accessibility levels at the site;
- Create a 'long list' of potential options for improvement of the bus network;
- Screen these options to a 'short list' of potential, deliverable schemes; and
- Select a preferred option that improves the public transport offer to a sufficient level.

Thirteen options for improvement of the local bus network to the site have been considered, comprising a mixture of frequency enhancements, route extensions, route diversions and new routes.

In conclusion:

- The current bus and train service offer will be inadequate for the number of expected travellers to and from the development;
- Potential improvements can be secured through a mixture of frequency enhancements, extensions to existing routes, diversions of existing routes and provision of new services;
- Of thirteen potential options, only one offers a sufficient mix of high frequency and affordable cost – option 3 which proposes the extension of route 168 and the diversion of route 381;
- This option provides improved links to central London on double deck worked routes, with other benefits including better links to Peckham, Canada Water and north London;
- Option 3 delivers an additional 22 buses per hour to the site and generates a PTAL score of 4 when local rail services and the new Surrey Canal Road station are included. Therefore, it is the preferred option at this stage.

The purpose of this technical note is to act as a discussion paper for further consultation with Transport for London and the local authorities on the most appropriate way forward for serving the development site by public transport. Preferred options are subject to change following these further discussions.

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Appendix 1: PTAL Analyses for Existing Scenario, New Options 3 and 4

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SURREY CANAL PTAL - FUTURE BASELINE

Bus

SAP	Bus	Walk Distance (m)	Walk Speed (km/h)	Walk Time (min)	Reliability Factor	Headway (mins)	Average Wait (mins)	Access Time (mins)	Initial EDF	Factor	Adjusted EDF
Millwall Ftbl Grd	P12	330	4.80	4.13	2.00	10.00	5.00	11.13	2.70	1.00	2.70
Trundleys Rd	225	690	4.80	8.63	2.00	15.00	7.50	18.13	1.66	0.50	0.83
Sub Total											3.52

Rail

SAP	Service to	Walk Distance (m)	Walk Speed (km/h)	Walk Time (min)	Reliability Factor	Headway (mins)	Average Wait (mins)	Access Time (mins)	Initial EDF	Factor	Adjusted EDF
South Bermondsey	Victoria-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
	Beck Jn-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
	Wimbledon-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
	W Croydon-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
Surrey Quays	Croydon-D Junction	1150	4.80	14.38	0.75	15.00	7.50	22.63	1.33	0.50	0.66
	New X - D Junction	1150	4.80	14.38	0.75	15.00	7.50	22.63	1.33	0.50	0.66
	C Pal - D Junction	1150	4.80	14.38	0.75	15.00	7.50	22.63	1.33	0.50	0.66
Surrey Canal Road	Clapham-D Junction	175	4.80	2.19	0.75	15.00	7.50	10.44	2.87	1.00	2.87
Sub Total											7.67

Total	11.19
PTAL	3

(Moderate)

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SURREY CANAL PTAL - OPTION 3

Bus

SAP	Bus	Walk Distance (m)	Walk Speed (km/h)	Walk Time (min)	Reliability Factor	Headway (mins)	Average Wait (mins)	Access Time (mins)	Initial EDF	Factor	Adjusted EDF
Millwall Ftbl Grd	P12	330	4.80	4.13	2.00	10.00	5.00	11.13	2.70	0.50	1.35
Trundleys Rd	225	690	4.80	8.63	2.00	15.00	7.50	18.13	1.66	0.50	0.83
Surrey C Tri	168	125	4.80	1.56	2.00	6.67	3.34	6.90	4.35	1.00	4.35
Millwall Ftbl Grd	381	330	4.80	4.13	2.00	8.57	4.29	10.41	2.88	0.50	1.44
Sub Total											7.97

Rail

SAP	Service to	Walk Distance (m)	Walk Speed (km/h)	Walk Time (min)	Reliability Factor	Headway (mins)	Average Wait (mins)	Access Time (mins)	Initial EDF	Factor	Adjusted EDF
South Bermondsey	Victoria-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
	Beck Jn-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
	Wimbledon-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
	W Croydon-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
Surrey Quays	Croydon-D Junction	1150	4.80	14.38	0.75	15.00	7.50	22.63	1.33	0.50	0.66
	New X - D Junction	1150	4.80	14.38	0.75	15.00	7.50	22.63	1.33	0.50	0.66
	C Pal - D Junction	1150	4.80	14.38	0.75	15.00	7.50	22.63	1.33	0.50	0.66
Surrey Canal Road	Clapham-D Junction	175	4.80	2.19	0.75	15.00	7.50	10.44	2.87	1.00	2.87
Sub Total											7.67

Total	15.64
PTAL	4
(Good)	

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SURREY CANAL PTAL - OPTION 4

Bus

SAP	Bus	Walk Distance (m)	Walk Speed (km/h)	Walk Time (min)	Reliability Factor	Headway (mins)	Average Wait (mins)	Access Time (mins)	Initial EDF	Factor	Adjusted EDF
Millwall Ftbl Grd	P12	330	4.80	4.13	2.00	10.00	5.00	11.13	2.70	1.00	2.70
Trundleys Rd	225	690	4.80	8.63	2.00	15.00	7.50	18.13	1.66	0.50	0.83
Surrey C Tri	197	125	4.80	1.56	2.00	12.00	6.00	9.56	3.14	0.50	1.57
	199	125	4.80	1.56	2.00	12.00	6.00	9.56	3.14	0.50	1.57
Sub Total											6.66

Rail

SAP	Service to	Walk Distance (m)	Walk Speed (km/h)	Walk Time (min)	Reliability Factor	Headway (mins)	Average Wait (mins)	Access Time (mins)	Initial EDF	Factor	Adjusted EDF
South Bermondsey	Victoria-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
	Beck Jn-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
	Wimbledon-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
	W Croydon-L Bridge	450	4.80	5.63	0.75	30.00	15.00	21.38	1.40	0.50	0.70
Surrey Quays	Croydon-D Junction	1150	4.80	14.38	0.75	15.00	7.50	22.63	1.33	0.50	0.66
	New X - D Junction	1150	4.80	14.38	0.75	15.00	7.50	22.63	1.33	0.50	0.66
	C Pal - D Junction	1150	4.80	14.38	0.75	15.00	7.50	22.63	1.33	0.50	0.66
Surrey Canal Road	Clapham-D Junction	175	4.80	2.19	0.75	15.00	7.50	10.44	2.87	1.00	2.87
Sub Total											7.67

Total	14.33
PTAL	3

(Moderate)