

Note on Rotherhithe to Canary Wharf User Demand: Walking and Cycling (work done up to August 2017).

TfL has undertaken a walking and cycling demand analysis to provide estimates of the number of users of each of the potential Short List of crossing options. It should be noted that these demand forecasts could be revised over time, but will likely remain of broadly similar magnitude.

User demand- cycling

Cynemon is a network based cyclist assignment model that has recently been developed by TfL using Citilabs' CUBE software. This tool is able to estimate cyclists' routes, flows and journey times. Cynemon can provide an understanding of patterns of cycling trips across London and how these patterns would be expected to change in response to network changes. It represents the movements of cyclists between origins and destinations across London and models their choice of route. It can be used to assess the impact of new schemes in terms of re-routings of existing cyclists and mode switch from other modes to cycling. Cynemon looks at both route based (e.g. gradient) and link based (e.g. footpath/Cycle superhighway) penalties and weightings.

There are four aspects to the forecast cycling growth in Cynemon:

- Population/employment growth – derived from Greater London Authority forecasts.
- Policy impact – trips switching from other modes to cycling as a result of committed and funded future schemes.
- Push factors – Elasticity of cycling demand relative to fuel prices, highway journey times, public transport fares and public transport journey times.
- Unexplained growth – A factor capturing unmeasured growth (for example due to 'safety in numbers', normalising the image of cycling, etc.). The forecast is based on the assumption that these factors continue to contribute the same percentage of cycling growth as they did from 2004 to 2014, based on a backcasting exercise. The model was applied to the period between 2004 and 2014 to estimate the growth due to population/employment growth, policy impact and push factors. This was then compared to the observed growth over the same period. The difference is taken to be the 'unexplained growth'.

Cynemon models three weekday time periods:

- AM Peak hour 08:00 – 09:00
- Average Inter Peak hour between 10:00 – 16:00
- PM Peak hour 17:00 – 18:00

London-wide factors to convert Cynemon peak hour flows to peak period or daily flows have been derived from the London Travel Demand Survey (LTDS).

Period	Factor
AM Peak Hour to AM Peak Period	2.10
IP Average Hour to IP Period	6.00
PM Peak Hour to PM Peak Period	3.25
12 Hour to 24 Hour	1.19
24 Hour Weekday to Annual	320

A summary of morning peak, daily and annual (rounded) demand for the Short List of crossing options is presented below.

Summary of cyclist demand in 2021, 2031 and 2041

Year	Time period	Navigable bridge	Immersed Tunnel	Enhanced ferry
2021	Morning peak (1-hr)	200-400	400	<150
	Morning peak (3-hr)	400-800	800	<300
	Daily (24-hr)	1,000 – 2,200	2,200	100-750
	Annual	0.3m-0.7m	0.7m	30,000-0.2m
2031	Morning peak (1-hr)	250-450	450	<200
	Morning peak (3-hr)	500-1,000	1,000	<400
	Daily (24-hr)	1,400-2,800	2,800	150-1,050
	Annual	0.45m-0.9m	0.9m	40,000-0.34m
2041	Morning peak (1-hr)	350-550	550	<250
	Morning peak (3-hr)	700-1,100	1,100	<500
	Daily (24-hr)	1,900-3,300	3,300	150-1,400
	Annual	0.6m-1.1m	1.1m	50,000-0.4m

User demand- walking

Pedestrian demand has been derived from two sources; a strategic public transport model and a local model, the outputs from both closely align.

TfL's strategic public transport model Railplan forecasts the choice of route taken by bus, rail and Underground passengers. It can measure, analyse and predict the results of changes to London's public transport system.

TfL's River Crossings Model (RCM) is a localised gravity model where demand for river crossings is derived from the availability of crossings, the walking journey time and the availability of alternative public transport crossings. The RCM model is limited to a morning peak (0700-1000).

Since the RCM is only based on the AM peak time period, an annualisation figure has been calculated for walking trips based on data from other crossings.

Walking annualisation factors

Crossing	AM peak hour to AM peak 3-hr	AM peak 3-hr to 12-hr weekday	12-hr weekday to 24-hr weekday	24-hour weekday to annual
Hilton Ferry (hotel-related)	≈ 2.00	1.94	1.54	337
Hilton Ferry (non-hotel-related)	≈ 2.00	2.14	1.32	337
Greenland river bus	≈ 2.00	1.79	1.14	277
Greenwich Foot Tunnel	2.06	7.98	-	-
Woolwich Ferry and Foot Tunnel	3.49	6.22	-	-
Tower Bridge	2.12	7.08	-	-
Central London crossings	2.03	4.47	-	-
West London crossings	2.29	3.99	-	-
Rotherhithe to Canary Wharf estimated	2.00	4.00	1.08	320

A summary of morning peak, daily and annual (rounded) demand for the Short List of crossing options is presented below.

Summary of pedestrian demand in 2021, 2031 and 2041

Year	Time period	Navigable bridge	Immersed Tunnel	Enhanced ferry
2021	Morning peak (1-hr)	400-450	450	250-300
	Morning peak (3-hr)	800 - 900	900	500-600
	Daily (24-hr)	3,200 – 3,600	3,600	2,000-2,500
	Annual	1m – 1.2m	1.2m	0.6m- 0.8m
2031	Morning peak (1-hr)	550-650	650	300-400
	Morning peak (3-hr)	1,100 – 1,300	1,300	700-800
	Daily (24-hr)	4,400 – 5,000	5,000	2,600- 3,300
	Annual	1.4m – 1.6m	1.6m	0.85m-1.1m
2041	Morning peak (1-hr)	700-800	800	400-500
	Morning peak (3-hr)	1,400 – 1,600	1,600	800-1,100
	Daily (24-hr)	5,600 – 6,500	6,500	3,300-4,200
	Annual	1.8m - 2.1m	2.1m	1.1m-1.4m

Ranges

In light of the uncertainty about the impact of openings on the attractiveness of the bridge (particularly to cyclists), demand is expressed as a range. The high end echoes the demand for the immersed tunnel option i.e. no opening penalty is applied. The low end applies a penalty to reflect the bridge opening to allow river traffic to pass. The number and duration of bridge openings is assumed to be in line with Tower Bridge for the moment.

Further surveys are underway to generate a large sample size of vessel movements (time of day, time of year, vessel height etc.) and work is being done to understand the optimum height of a bridge deck. Combined, this work will enable the analysis of likely openings to be refined. Moreover, responses to our consultation will help us to better understand how users would perceive an opening and therefore the impact of a bridge opening on usage.

The ferry demand is presented as a range because we modelled the impact on usage with and without a fare applied. We also modelled a range of plausible values for the disincentive of waiting (given there is no standardised way to deal with the impact to cyclists of waiting).