

Night time service on the East London Line



Information Sources

- Developed in response to a request from Mark Curran
- Aiming for consistency with London Underground's approach.
- Therefore looking at:
 - Existing late evening Demand levels on the East London Line.
 - Usage figures for bus and taxi services.
 - Demand levels for journeys on London's only current "24 hour" railway: First Capital Connect's "Thameslink" service.
- Also reviewing potential cost impacts of extended operations.



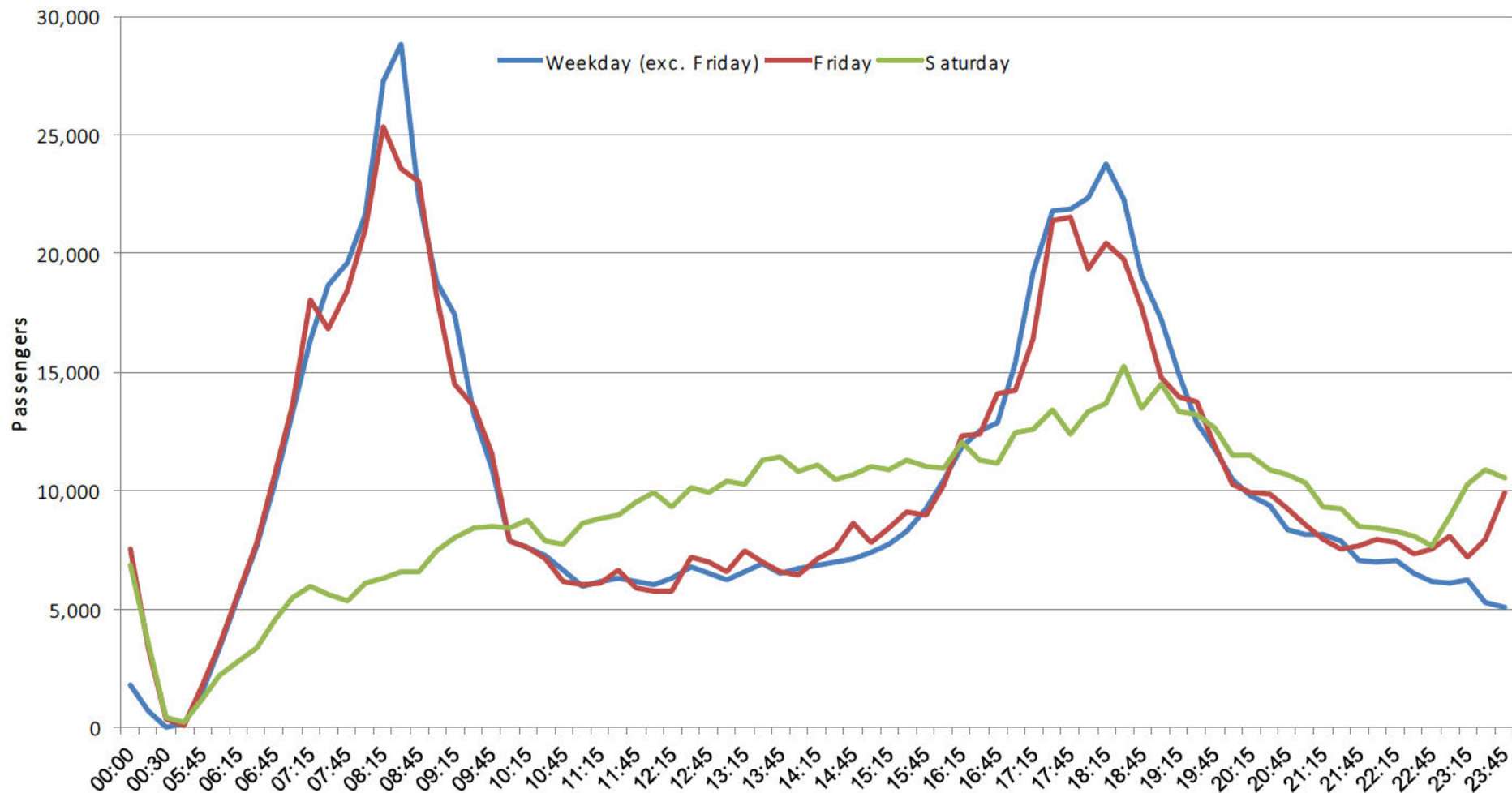
Existing Demand Levels

- Loadweigh data examined for travel between 17th & 23rd June.
- Chosen as a “typical” week – no major works or disruption.
- Noticeable difference in later evening journey patterns and levels on the Friday and Saturday.
- On the Saturday, 17% of all journeys during that day occurred after 21:00.
- Risk late night services will simply flatten the late night demand spike, keeping passenger numbers stable, but increasing costs.



Plot of daily passenger numbers for ELL & ELLX services

Passengers per day on ELL (17th - 23rd June 2013)



Individual sector loads

- Comparing load levels on individual trains shows that on Saturdays after 21:00 some sections are much busier than the whole day average.
- While the “top two” sectors do have low loads during the rest of the week, the link between Shoreditch & Whitechapel, reflects the growing nightlife activity in this area

Link Name	Busier/quieter than average
Crystal Palace to Sydenham	245%
West Croydon to Norwood Junction	206%
Shoreditch High Street to Whitechapel	157%

- For Fridays the same sectors show as the busiest although between 115 & 156% busier



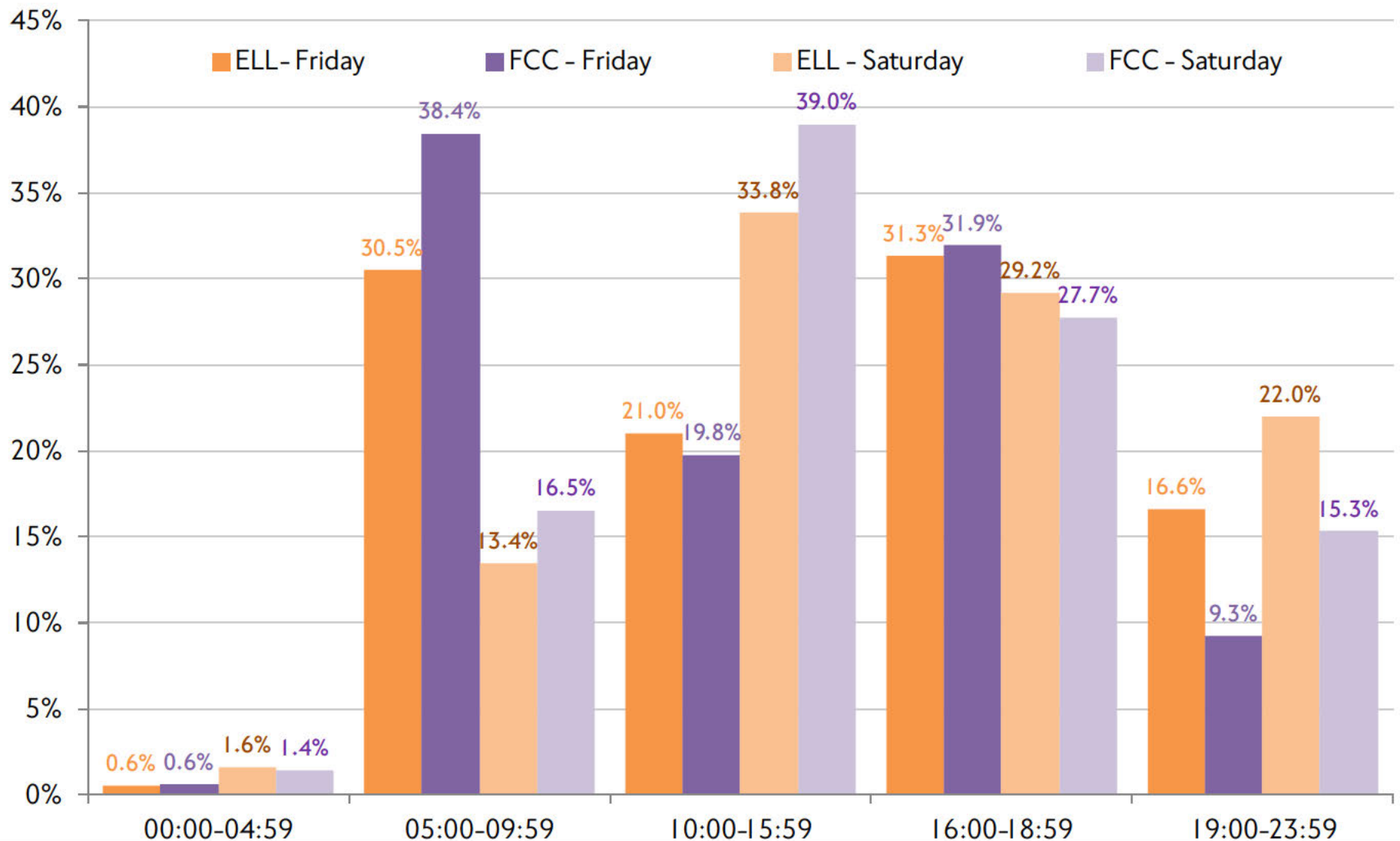
Demand on other rail services

- First Capital Connect operate an hourly night time service between Bedford & Three Bridges calling at 11 stations in the TfL travelcard zones.
- Oyster entries and exits at these stations were analysed for the period 19th May – 24th July 2013 to understand the possible distribution of demand across a full 24 hours of service. Numbers include allowance for ticketless travel based on previous research for Greater Anglia services.
- “Out of hours” services (between 00:00 & 04:59) accounted for 0.6 & 1.4% of total daily demand on Friday and Saturday nights respectively.
- By comparison, demand for the last hour of service on the ELL accounted for 0.6 & 1.6% of demand on the same days.
- The one FCC station that is noticeably busy late at night is East Croydon with in excess of 250 paying passengers on Friday & Saturday nights.



Late night FCC services attract a very modest number of Oyster journeys within London...

Proportion of total daily passenger demand by time band



Other modes – Bus

- A study undertaken by MIT in collaboration with TfL in 2012 looked at the impact of ELL opening on demand on parallel bus services.
- The study observed an impact on bus patronage levels along the “Kingsland Road Corridor” between Dalston Junction & Shoreditch High Street stations.
- Following the introduction of ELL, demand for certain bus routes fell by up to 7% (average figure was 6%) compared with 4.4% demand growth across the entire London bus network.
- Some journeys at the South end of the ELL were also analysed, however there was a far less pronounced reduction in demand for bus services. In addition, none of these services operate on a 24 hour basis or have night bus equivalent services.



Other modes – Bus

- Oyster boarding data analysed for routes 149, 242, 243 & N35 between 00:00 & 05:00 at stops along the “Kingsland Road Corridor” for a typical week between 1st & 7th July 2013.
- Journeys along Southern end of ELL also analysed for sections of routes N381 & N47. However, combined these had fewer than 300 passengers a night use these stops so not included for further analysis.
- Journeys along the Kingsland Road see c. 3,500 boardings each night on Fridays & Saturdays.



Other modes - Bus

ROUTE	00:00	01:00	02:00	03:00	04:00	05:00	TOTAL
149	239	602	414	260	217	92	1,824
FRI	85	258	197	137	112	41	830
SAT	154	344	217	123	105	51	994
242	274	398	523	352	207	88	1,842
FRI	132	145	208	183	90	63	821
SAT	142	253	315	169	117	25	1,021
243	203	494	341	238	150	67	1,493
FRI	153	251	149	125	57	35	770
SAT	50	243	192	113	93	32	723
N35	126	441	474	255	133	-	1,429
FRI	79	171	191	100	42	-	583
SAT	47	270	283	155	91	-	846
TOTAL	842	1,935	1,752	1,105	707	247	6,588

- Table shows boardings for all stops along the “Kingsland Road” corridor, in both direction, broken down into hourly time slots.
- Peak demand levels are between 01:00 & 02:00.



Other modes – Taxi/Private Hire

- As per work for London Underground case, limited data to undertake analysis from. Therefore market assumed too small to cause significant increase in rail service custom.



Demand Scenarios

- Alternative scenarios looked at for demand for night time services
- Initially looked at re-distribution of exiting demand levels (i.e. no additional demand/revenue) – **Scenario 1**
- Then combined the re-distributed demand levels with passengers “diverted” from parallel night bus routes along Kingsland Road – **Scenario 2**
- Three rates of “diversion” looked at in scenario 2 – **A, B & C**



Demand Scenarios – 1

- Assumes same volume of demand as at present, but distributed across 24 hours as per FCC's current demand profile.
- Based on ELL counts of 77,687 Friday & 68,596 Saturday passengers between New Cross/New Cross Gate & Dalston Junction and applying the same demand distribution as seen on FCC's 24 hour service.
- Results in the following passenger numbers per night between 01:00 & 05:59:
 - Friday: 700
 - Saturday: 860
- But as no additional passengers, no additional revenue.
- Also means reduction in passenger numbers elsewhere in the day.



Demand Scenarios – 2A

- As per scenario 1, BUT, assumes 6% of bus passengers on Kingsland corridor transfer to ELL between 00:00 & 05:59.
- 6% based on figure within 2012 MIT study.
- Results in only an additional 160 passengers on each night.
- Using the assumed fare of £1.60 per head (as per BCDM) this results in only £256 additional fares revenue per night (c. £33,000 p.a.).



Demand Scenarios – 2B

- As per scenario 1, BUT, assumes 80% of bus passengers on Kingsland corridor transfer to ELL between 00:00 & 05:59. As per highest London Underground calculations.
- Results in an additional 2,400 passengers on Friday night and 2,900 passengers on Saturday or c. 270,000 per annum
- Equivalent of £8,400 additional fares revenue per weekend (c.£440,000 p.a.).
- Including “displaced” passengers from scenario 1, results in 6,860 passengers travelling between 00:00 & 05:59 each weekend (approx. 350,000 per annum)



Demand Scenarios – 2C

- As per scenario 1, BUT, assumes 40% of bus passengers on Kingsland corridor transfer to ELL between 00:00 & 05:59. To show middle point between two forecasts.
- Results in an additional 1,200 passengers on Friday night and 1,400 passengers on Saturday or c.135,000 p.a.
- Equivalent of £4,200 additional fares revenue per weekend (c.£220,000 p.a.).
- Including “displaced” passengers from scenario 1, results in 4,160 passengers travelling between 00:00 & 05:59 each weekend (approx. 215,000 per annum)



Costs

- Train running costs derived from a calculator developed for costing Overground service options for a range of upgrades.
- Initial outline calculations suggest that cost of an additional 5 ½ hours (i.e. the difference between existing 18.5 and new 24 hour operation) of service two days a week would be £8-900,000 per annum.
- Based on service frequency of 4 trains per hour, running 10 trains.
- Station staffing requirement assumed as two members of staff for each sub-surface station and Shoreditch High Street (6 in total) and one person at the remaining three stations.
- At New Cross Gate assumed need to pay for one extra full time role to SouthEastern at £31,750 p.a.



Costs – II

- Indicative assumption of £1,000 extra energy consumption per Overground station per year.
- Assumed no additional staff costs for Underground stations (Whitechapel & Canada Water).
- Train staff costs based on an additional 10 drivers required at £56,400* per head p.a. as currently weekend driver coverage on the line is tight.
- Station staff costs based on two scenarios:
 - A. Additional staff can be recruited through existing agency contracts, therefore need for 16 staff per night at £15[^] per hour plus cost of additional TOC station staff at New Cross Gate at £31,750* p.a.
 - B. Additional staff requirement filled by 16 additional part time recruits at £15,875 p.a.* per head plus cost of additional TOC station staff at New Cross Gate at £31,750 p.a.*

*: Staffing costs based upon those used for inner Southeastern franchise devolution business case

[^]: indicative figure



Costs - Summary

	Initial Estimate	Station Staffing Scenario A	Station Staffing Scenario B
Track access charge	£11,000	£11,000	£11,000
Capacity charge	£1,000	£1,000	£1,000
Traction electricity charge	£35,000	£35,000	£35,000
Additional station energy	£0	£10,000	£10,000
Train staff costs	£150,000	£564,000	£564,000
Station staff costs	£600,000	£290,000	£140,000
TOTAL	£797,000	£911,000	£761,000



Financial Implications

- Most optimistic forecast suggests 350,000 night time journeys a year, generating £220,000 p.a.
- This is some way below the level of costs (c. £8-900,000) for extended operation, largely due to staffing costs.
- Thus minimal to no savings from reduced frequencies below 4 trains per hour.
- Operating a four train per hour service over the East London Line would require additional funding above revenue of at least £550,000 p.a.
- Based on the evidence, night time running on the ELL has no business case and its additional cost is currently not budgeted for.



For further research/consideration cont...

- Given the absence of routes that run parallel to the ELL for its entirety, it is difficult to directly compare bus services across its whole length.
- Along the “Kingsland Road corridor” off peak bus journey times are 9 - 11 minutes, compared to 6 minutes for the train between Dalston Junction & Shoreditch High Street.
- Thus, adding waiting times of up to 15 minutes suggests conventional journey time benefits would be marginal.
- However, there could be potential to consider the possibility of induced demand created by a night service on the ELLL given the lack of alternative public transport modes to travel the length of the route.



For further research/consideration...

- Potential restrictions on fleet maintenance and having adequate units to operate a 24 hour service at weekends.
- Existing cost calculations may have underestimated staff costs for night time working and potential additional recruitment. For instance anti-social hour payments.
- Whitechapel and Canada Water stations are staffed by London Underground and thus have not been included in this analysis.



For further research/consideration cont...

- Engineering work – handled by 3rd party (Network Rail), therefore potential scheduling difficulties.
- Also compressed engineering hours may result in increased future Track Access Charges from Network Rail.
- Difficult to expand service beyond limits of Dalston Junction & New Cross / New Cross Gate as requires additional agreements with Network Rail.

