JRC

London Reconnections

Beyond the Cross

Getting go-ahead for the Fleet / Jubilee Line

Jonathan Roberts, JRC

with thanks to co-author Mike Olivier
and London Reconnections

at LURS, 8 August 2017

What's in this presentation

28 year history of getting go-ahead for the Fleet / Jubilee Line...

- Based on 5 articles (so far) published in LR
- Some conclusions and observations on tube planning and its context during 3 decades

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- Based on 5 articles (so far) published in LR
- Some conclusions and observations on tube planning and its context during 3 decades
- Is Jubilee Line planning history finished? - no!

...So also a peek at the future

Starting points

Baker Street and the problem of hindsight

- Bakerloo overloaded through Central London
- Two branches = one too many, too close in
- Victoria Line added to burden from 1969

Tube with Bakerloo and new Vic Line

Starting points

Baker Street and the problem of hindsight

- Bakerloo overloaded through Central London
- Two branches = one too many, too close in
- Victoria Line added to burden from 1969
- Strong transport case for relief line...
- ...at least through the West End
- Some trust in LT planning with V/L success

  (actually, demand under-estimated, benefits greater)

Railway Plan context

Beeching in London, Southern future demand

- Unpublished Railway Plan for London, 1965
- Forecast demand: inner down, outer up
- Net growth, re-allocate inner slots to outer

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- Net growth, re-allocate inner slots to outer
- Plans for inner Sth. London tube extensions - Brixton, Peckham, Lewisham, and beyond
- Lewisham scope - extend to Hayes/Bexleyheath
- **Join with Bakerloo relief tube = Fleet Line**

1965 Railway Plan for London

A RAILWAY PLAN FOR LONDON

Preliminary Report by a Working Party of
British Railways and London Transport

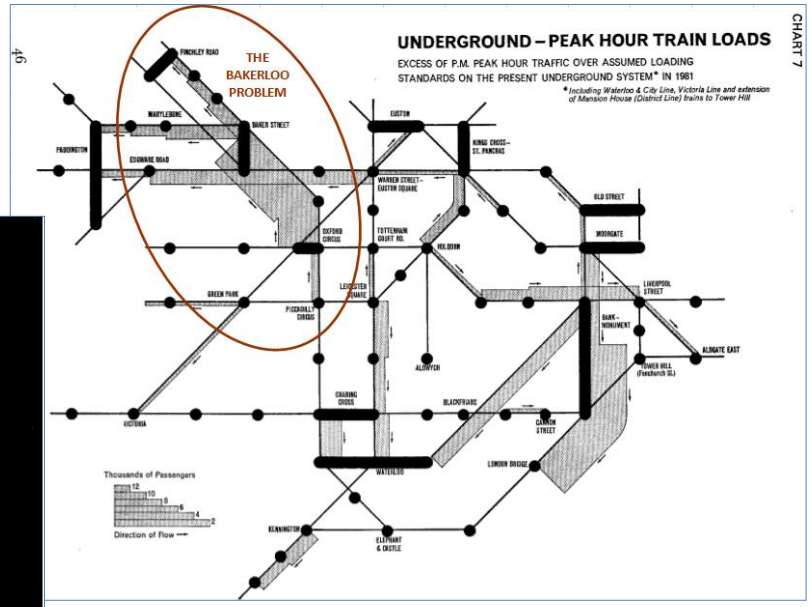
MARCH 1965

BRITISH RAILWAYS BOARD
222 Marylebone Road N.W.1

LONDON TRANSPORT BOARD
55 Broadway S.W.1

PRELIMINARY REPORT

BY A WORKING PARTY OF BRITISH RAILWAYS AND LONDON TRANSPORT



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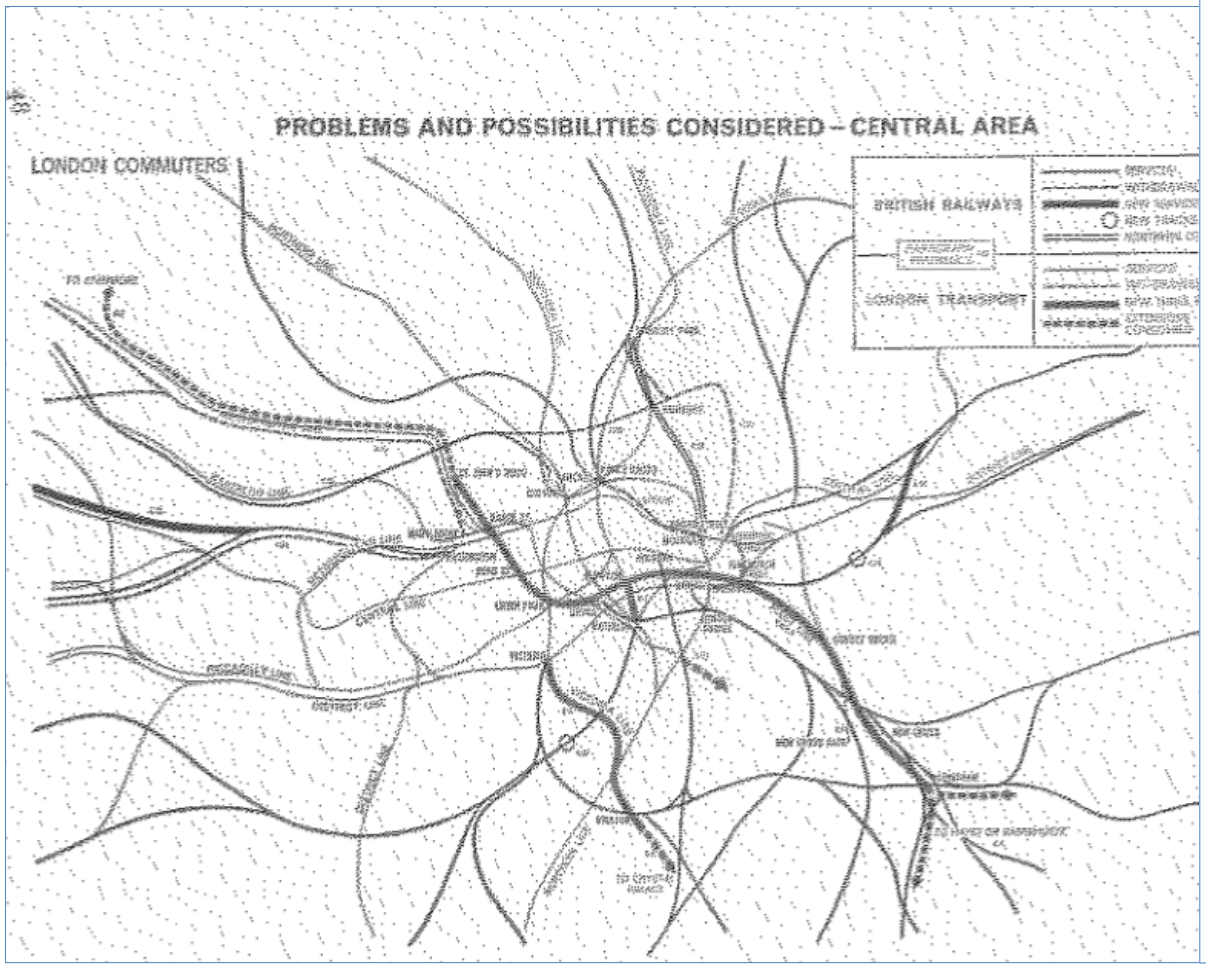

IV. Proposals

4.1. The following proposals are put forward to resolve the major problems outlined in the previous section and to accommodate the additional commuter traffic. Charts 8 and 9 illustrate the main items.

(a) Underground

4.2. *New Works.* From a consideration of the sections of the Underground system expected to be overloaded in 20 years' time it is concluded that new tube construction will be essential. The proposals are:—

The Fleet Line. This would be a new tube route crossing the central area from the north-west at Baker Street to the south-east near New Cross. This new tube railway would be linked with the Stanmore branch of the Bakerloo Line in the north-west and would then run via Baker Street, Bond Street, Green Park, Trafalgar Square/Strand, Aldwych, Ludgate Circus, Cannon Street/Monument (where a new double-ended station to replace the two District Line stations could be included) to Fenchurch Street; in the south-east it would be linked with the East London Line and, beyond New Cross, either with the Bexleyheath Line of British Railways as far as Barnehurst or with the Mid-Kent Line to Hayes. This tube line is hereafter referred to as the ' Fleet Line '.

4.3. Preliminary engineering studies indicate that the Fleet Line as conceived is practicable. An alternative alignment via St. Paul's instead of Ludgate Circus would provide an interchange facility with the Central Line and possibly Holborn Viaduct Station. Apart from engineering factors, the decision will depend on the value of the interchange with the Central Line, for which a special traffic study will be needed. East of Fenchurch Street, the most promising alignment from an engineering standpoint seems to be a direct tube to Surrey Docks, an underground station at New Cross giving interchange with the Southern Region South-Eastern Division services, and an underground station at Lewisham Clock Tower. The East London Line would be converted to a shuttle service between Surrey Docks and Whitechapel or possibly Shoreditch and the service to New Cross Gate would be abandoned.

4.4. The decision whether this line should be linked to the Bexleyheath Line or the Mid-Kent Line to Hayes and Addiscombe is fairly evenly balanced. Both lines extend a little beyond 12 miles from the centre of London, i.e. a little farther out than is desirable for an 'urban' type of service; but if an existing branch is to be absorbed into the Fleet Line, it must be one which can be severed from the Southern Region network without undue difficulty, and which allows scope for stabling and reversing

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First step – get powers

Government views, London politics, funding

- Labour ‘64-’70 political issues, low majority:
  - prioritise economic growth and funds outside London
- New Greater London Council 1965:
  - focused on Ringways, Greater London Development Plan
  - no public tpt. leverage (LT, BR nationalised) until LT 1970
- Victoria Line building, LT also in financial deficit
- **LT did ‘own thing’, sought Fleet powers 1968**
- **Assent 1969, Baker St to Charing X, but no £**

Limited go-ahead

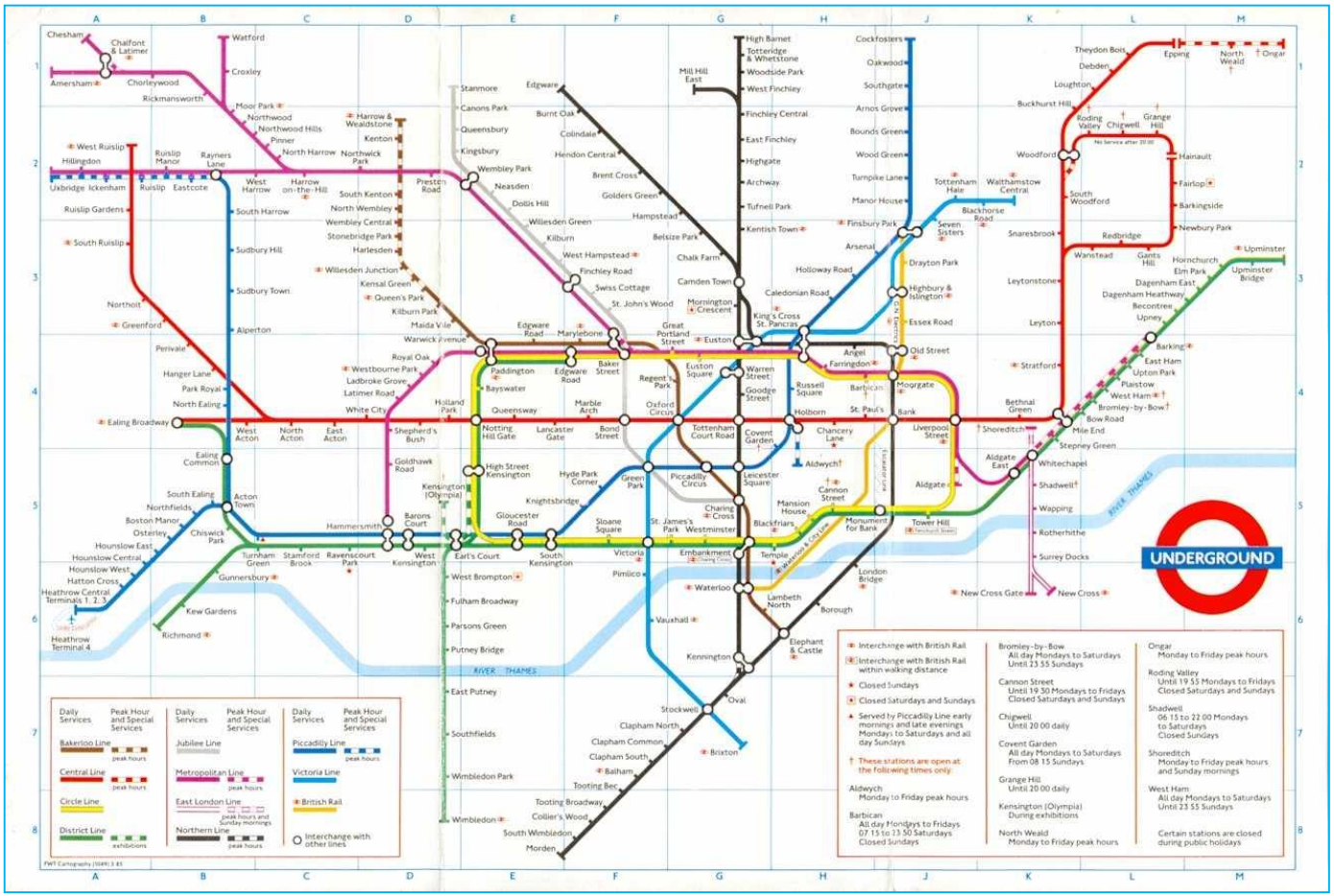
Fleet Line Stage 1 funding go-ahead in 1971

- LT funding thought to be stabilised by large fares increases and writing off historic debt
- Dowry by Conservative Govt. to Cons. GLC
- More Victoria Line-driven crowding pressure

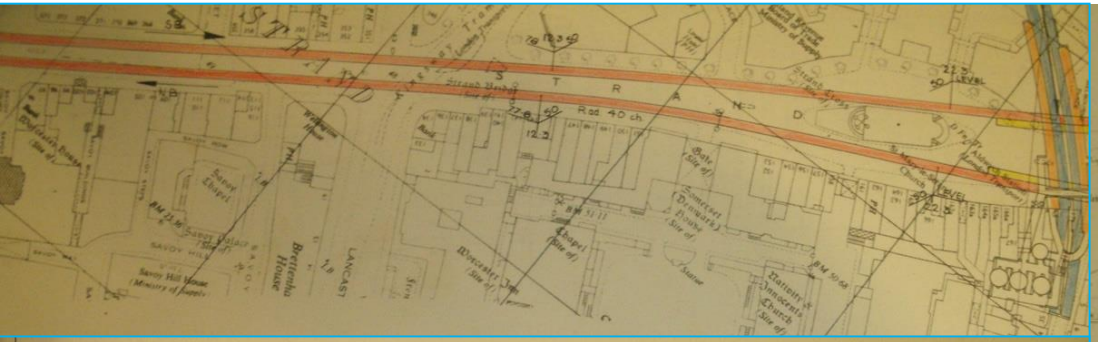
BUT

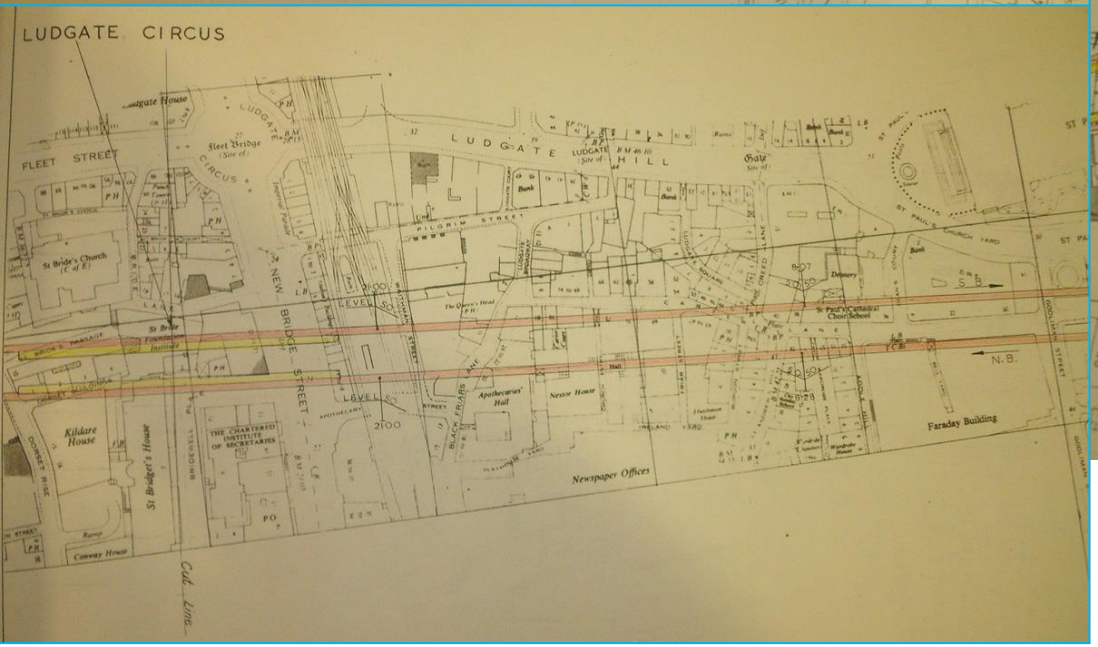
- Only Bakerloo West End relief to Charing X
- No Govt. support for line to City, SE London

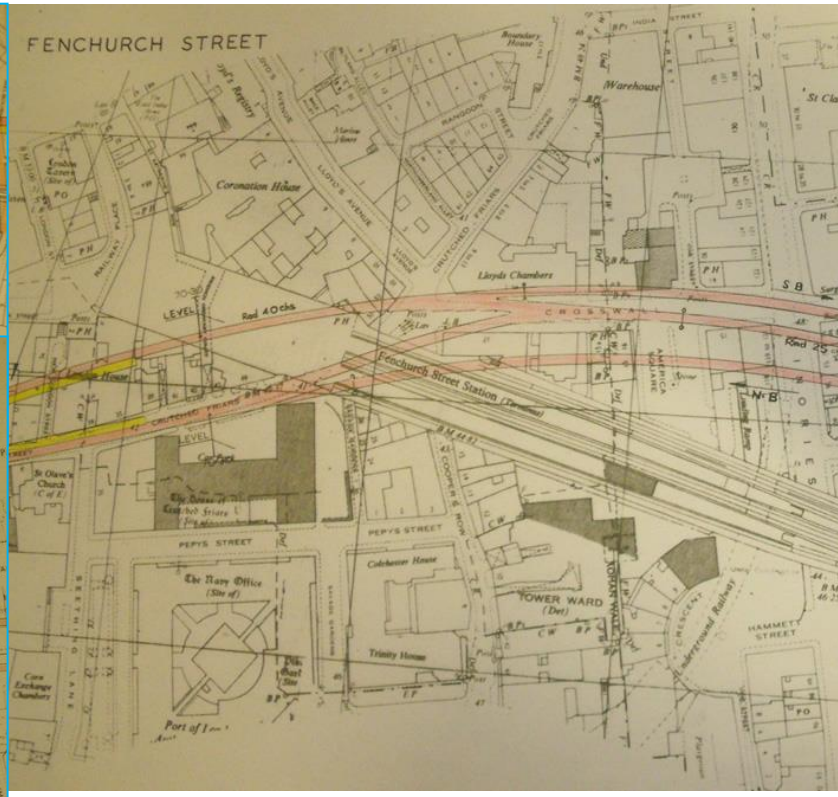
Tube with Fleet / Jubilee Line



Fleet Line Stage 2

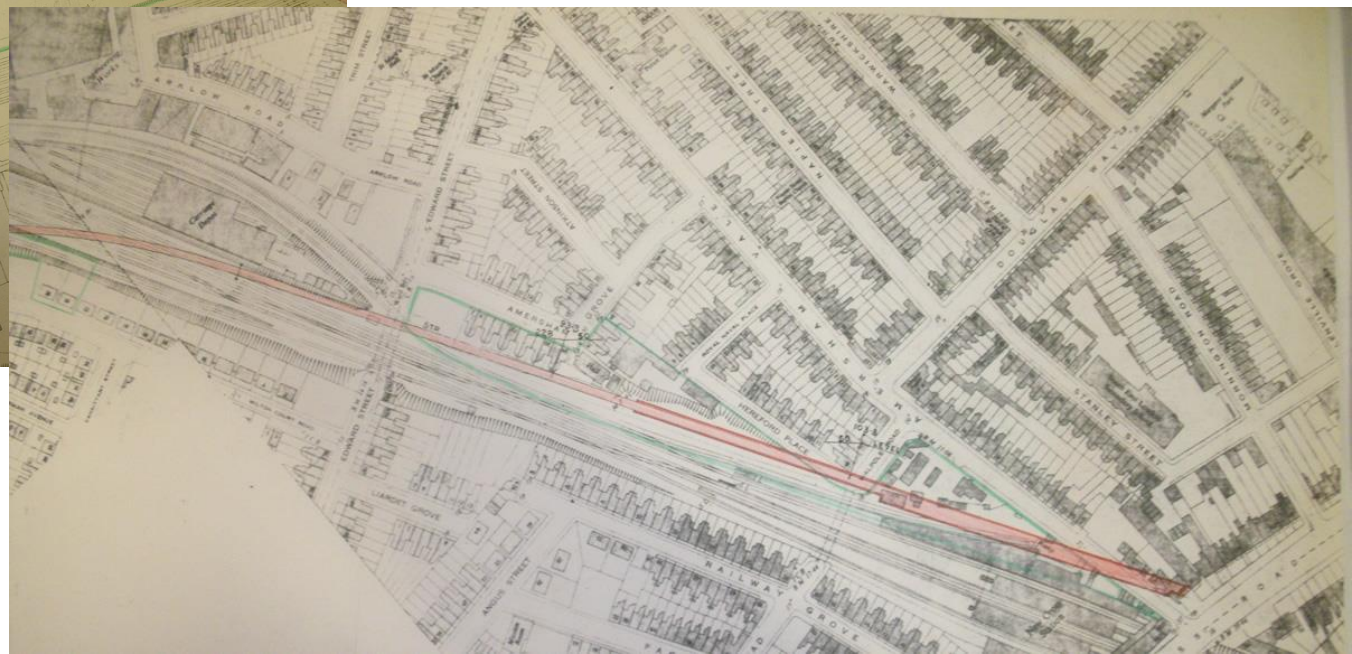






Maps provided by MRFS

Fleet Line Stage 3/4



Why not to City and SE?

Continuing national spending pressures - also:

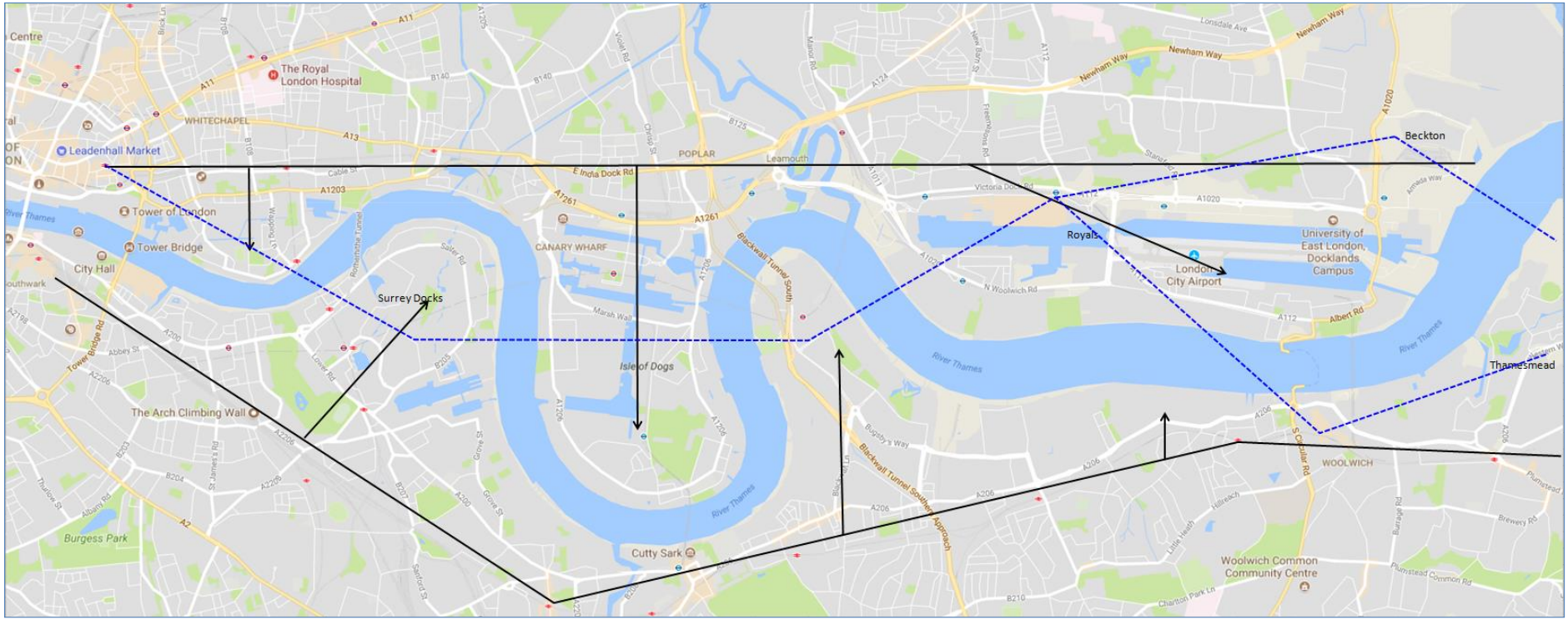
- Priority lower, linked to lower BR volumes
  - inner population fewer, BR slot capacity less critical
  - BR planning major capacity gain for SE London approaches
  - SE London tube access less vital, City on own = poor VfM
- GLC took over LT 1/1/1970, new relationships
  - End of 'transport-only' London rail planning process?
- GLC thinking of Ringway priorities until 1973
  - 1969 *Movement in London* was 1st GLC tpt. study to include rail
  - also, Docklands planning emerging as new mantra

1970s - Docklands unsettled

Docklands – over 25 sq.km, vast, beyond London and Govt. Dept planning experiences

- Never before on this scale for UK regeneration
- Political and officials' mindsets the same:
  - do as you would in smaller zones (a known, safe option)
  - plan mainly for low density housing
  - plus (Labour) industrial jobs, or (Tory) business parks
- None with tube-helpful high density scope
- But tube worth reviewing, with River bends

Docklands and access



The main Docklands area, and strategic access choices:

- follow the river banks and have entry/exit routes
- build road or rail river crossings N-S
- have a cross-river ‘Spine Line’ E-W, also road or rail

1970s – GLC planning failures

Attempts at large scale land use planning, but not 360 degree viewpoint to align transport

- Didn't matter which party was running the GLC
- Multiple land use ideas from 1972 onwards
- 1976 London Docklands Strategic Plan:
  - sellotaping different boroughs' visions is not a masterplan
- LDSP land use priorities, & Thamesmead under construction, meant poor leverage for tube case

Early 1970s – LT vs GLC

LT still preferred Lewisham for Fleet Line

- LT sought powers for Fleet Line extensions:
  - 1969/70 for Fleet Line Stage 2 to Fenchurch Street
  - 1970/71 Stage 3 to New Cross, 1971/72 Stage 4 to Lewisham
- Stages 2 & 3 assent 1971, Stage 4 1972
  - 1973: LT *SE London and the Fleet Line* land use proposals
  - 1974: LT continued to press for Stage 2 go-ahead, decision delayed until conclusions of 1973/74 London Rail Study
- 1974 LT brought under tighter GLC control

Mid 1970s – GLC thinking prevails

River Line becomes the favoured corridor…

- 1973/74 London Rail Study published River Line idea, + Crossrail, Chelney, N.London orbital
- Extensive LT and GLC planning involvement

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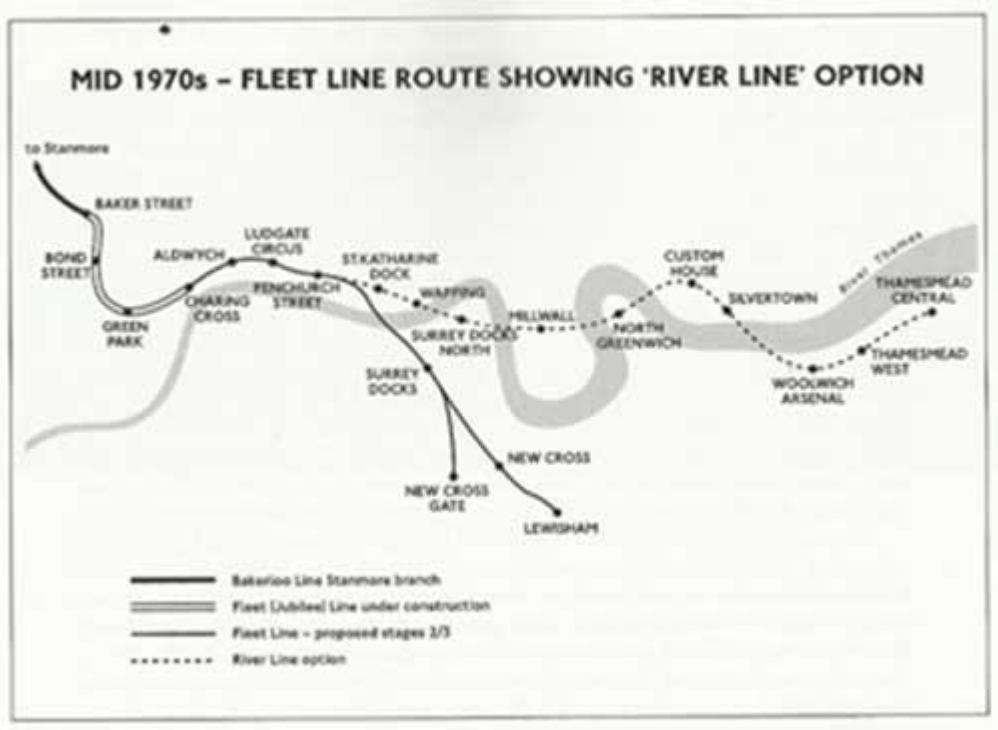
- Extensive LT and GLC planning involvement

…**But** central Government constantly refused to allow GLC to use grant, even for Stage 2

- Charing Cross to the City seen as poor value in own right (not known what the value was of possible Central Line i'change)
- only worth doing if an adequate case for Docklands line
- Govt. did not accept there was a valid case for that (£146-180m)

Illustrations



Map provided by Greg Tingey

High costs, poor benefits

London Rail Study favoured early Stage 2 work

- DoE view - justification beyond Charing X depended on main Docklands plan due 1976
  - this low-density plan did not make a tube essential
  - strong support in consultation but still debates on routeing

High costs, poor benefits

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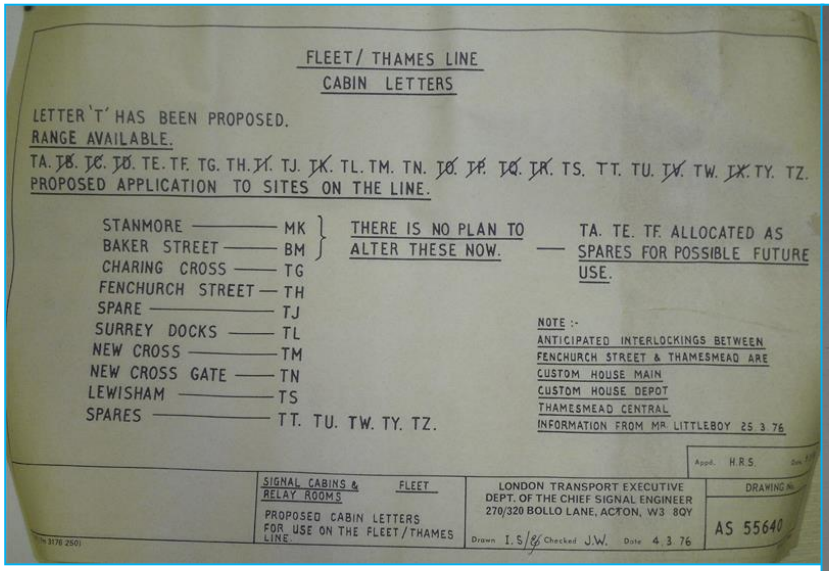
- DoE view - justification beyond Charing X depended on main Docklands plan due 1976
  - but this low-density plan did not make a tube essential
  - strong support in consultation but still debates on routeing
- Expedients undertaken:
  - extension of Powers for Stage 2 (1976)
  - safeguarding properties & tunnel space on this route
  - development of multiple options to minimise costs

UK impoverished mid-late 1970s, IMF limits

Examples of River Line thinking



FLEET/ THAMES LINE
CABIN LETTERS

LETTER 'T' HAS BEEN PROPOSED.
RANGE AVAILABLE.
TA. ~~TB.~~ ~~TC.~~ ~~TD.~~ TE. TF. TG. TH. ~~TI.~~ TJ. ~~TK.~~ TL. TM. TN. ~~TO.~~ ~~TP.~~ ~~TQ.~~ ~~TR.~~ TS. TT. TU. ~~TV.~~ TW. ~~TX.~~ TY. TZ.
PROPOSED APPLICATION TO SITES ON THE LINE.

STANMORE — MK
BAKER STREET — BM
CHARING CROSS — TG
FENCHURCH STREET — TH
SPARE — TJ
SURREY DOCKS — TL
NEW CROSS — TM
NEW CROSS GATE — TN
LEWISHAM — TS
SPARES — TT. TU. TW. TY. TZ.

THERE IS NO PLAN TO ALTER THESE NOW.

TA. TE. TF. ALLOCATED AS SPARES FOR POSSIBLE FUTURE USE.

NOTE :-
ANTICIPATED INTERLOCKINGS BETWEEN FENCHURCH STREET & THAMESMEAD ARE
CUSTOM HOUSE MAIN
CUSTOM HOUSE DEPOT
THAMESMEAD CENTRAL
INFORMATION FROM MR. LITTLEBOY 25.3.76

Appd. H.R.S.

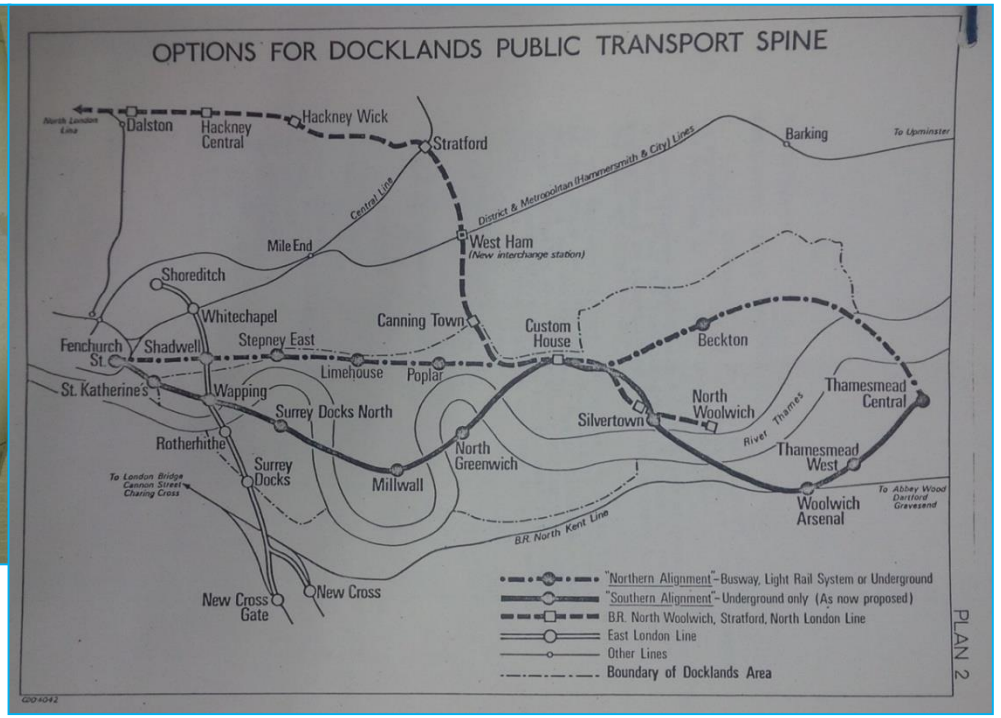
SIGNAL CABINS & RELAY ROOMS — FLEET
PROPOSED CABIN LETTERS FOR USE ON THE FLEET/THAMES LINE.

LONDON TRANSPORT EXECUTIVE
DEPT. OF THE CHIEF SIGNAL ENGINEER
270/320 BOLLO LANE, ACTON, W3 8QY

Drawn I.S./[illegible] Checked J.W. Date 4.3.76

DRAWING No. AS 55640

London Transport Executive 1976 proposed signal cabin letters. Note the unannounced and unpublicised "Thames line" name. Courtesy MRFS



Late 1970s tube and light rail options

Examples of scheme options

High inflation in the 1970s means that it is hard to make a simple value comparison between different schemes at different dates, or even similar schemes at different dates. To attempt to rationalise this, we propose a simple comparative cost measure– the cost per single track mile, in the following table of the Fleet / Jubilee extension variations proposed.

Date	Sponsor	Line	Main Routeing	Cost £m	£m/stm	GLC	Govt
1974	LT	Tube tunnels only	Aldwych – Fenchurch Street	10	2.4	Lab	Lab
1976	LT/GLC	Tube tunnels only	Cannon Street – Fenchurch Street	Unknown	Unknown	Lab	Lab
1978	LT/DTp	Jubilee Stage 2-3 Express	Aldwych (no station) – Fenchurch Street – Wapping – Surrey Docks	107*	14.3	Con	Lab
		Jubilee Stage 3 Express	Surrey Docks – Millwall – Custom House – Beckton	62*	6.1	Con	Lab
		Jubilee Stage 4 Express	Custom House – Thamesmead	75*	7.9	Con	Lab
Jan 1979	GLC/LTE	Tube tunnels only	Aldwych (no station) – Fenchurch Street	70*	16.7	Con	Lab
		Full build	Aldwych – Ludgate Circus – Cannon Street – Fenchurch Street	103*	24.6	Con	Lab
1979	LT/GLC		Aldwych (no station) – Fenchurch Street – Wapping – Surrey Docks (implied no depot)	95	12.7	Con	Con
			Aldwych (no station) – Fenchurch Street – Wapping – Surrey Docks – Millwall	110	11	Con	Con
1980 Study of Lower Cost Alternatives to the Jubilee Line in Docklands		Jubilee Stage 2-3 Express	Aldwych (no station) – simple Cannon Street – Fenchurch Street – Wapping – Surrey Docks – Millwall – Custom House -Beckton	200	11.3	Con	Con

Table 1: Fleet / Jubilee extension options 1974-1980 (*These project estimates include rolling stock.)

Late 1970s – action but no £

GLC and LT became increasingly desperate

- LT actions:
  - detailed planning for Thamesmead route via Woolwich
  - aimed to secure River Line powers shortly
  - gained extension of time for Fleet Line construction powers

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- LT actions:
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  - aimed to secure River Line powers shortly
  - gained extension of time for Fleet Line construction powers
- GLC and its Leader Horace Cutler (from 1977):
  - renamed the Fleet Line as the Jubilee Line
  - started a £100m 'war chest' for Stage 2
  - enabled £6m pre-tube area investment (ELL, N.Woolwich)
    ...helped on this by Government inner city grant
  - proposed a pre-Jubilee Woolwich main line rail Tunnel

Throw of dice before 1979 election

The London Transport Bill proposed to Parliament in early 1979 before the May election included authorisation for Stage 3 of the Jubilee Line, from Fenchurch Street by way of Custom House and the Docklands under the Thames to Woolwich Arsenal, with a branch to Beckton.

For Stage 2 of the Jubilee line, 24tph were planned from Charing Cross to Fenchurch Street, and 16tph east of there for the subsequent stages. The am peak hourly ridership per segment per direction was projected to be:

Charing Cross – Aldwych	6,000
Cannon Street – Fenchurch Street	11,000
Surrey Docks – Millwall	9,500
Woolwich – Thamesmead	3,000

This was estimated to add 6m new passenger miles annually to LT, and 4m new to BR

Jubilee Line Stages 3 and 4 Projected Benefits

The GLC case and the 1979 Parliamentary Bill cited the following benefits for fully extending the Jubilee Line to Thamesmead:

- Significantly improve cross-Thames mobility
- Provide fast direct access to central London
- Provide fast convenient transport within the Docklands
- Relief of BR North Kent line
- Relief of London Bridge BR services
- Enable thousands of much needed housing units to be built in the Docklands
- Help contain the growth of car traffic in the area
- Reduce dependence on oil supplies (a key concern in the 1970s)
- Serve the remote Thamesmead area (as the planned local employment there quickly evaporated).

These messages failed to make a base case to change the underlying scale of benefits of the tube line

Coherent politics?

‘It’s life, Jim, but not as you know it’

- Various political and officialdom meetings:
  - consistent GLC cross-party view: *in favour*
  - consistent national cross-party view: *no merits*

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- Various political and officialdom meetings:
  - consistent GLC cross-party view: *in favour*
  - consistent national cross-party view: *no merits*
- LT gloss on this (eg, 1977 Annual Report):

“Further traffic studies indicated that, in order to obtain the full benefits of the Underground railway, it will be important to develop land-use strategies deliberately related to the provision of a spinal rapid transit link through Docklands.”

- Nothing really changed until 1979 election

Funding undone

Other negative reasons

- Tube construction cost soaring with inflation
- Fleet/Jubilee Line construction delays and higher unit costs, opened delayed 1977>79
- Only progress was with powers:
  - Applied in 1978 for powers as far as Woolwich and Beckton (depot), Bill allowed to continue after 1979 election, Royal Assent in 1980
- **No** acquisition of powers to Thamesmead

Cons.GLC 0, Lab.Govt 2

To verify their assessment on the viability of the Jubilee line, the DTp compared the numbers against contemporaneous UK urban rail schemes:

- Merseyrail heavy rail loop under central Liverpool was estimated to have a return above 10%.
- The Tyne & Wear Metro's initial estimated return of 11% was determined in reality to be between 2.5%-4% due to higher capital costs and lower benefits.
- Even Manchester's Piccadilly to Victoria mainline stations (Pic-Vic) Tunnel, estimated at £100m, was only projected to have a return of 8.5% rather than 10%, so had not been approved.

There was no way the DTp was going to support a project with a 4-5% return which would have also cost 2½ times the Pic-Vic scheme.

Regarding the GLC's employment forecasts performed in 1978, the DTp calculated that each new Docklands job would cost £44,000, when the average late 1970s' salary was only around £5,000. They also noted that most of these jobs would merely be resited from other London locations. Capitalised transport benefits of the full Jubilee line were calculated to net less than £9m, leaving approximately £17m to fund.

On 31 January 1979 Joel Barnett, Chief Secretary to the Treasury responsible for public sector finances, had written to Bill Rodgers, the Labour Transport Minister, to provide the Treasury's views on the Jubilee Stage 3 to the Docklands. He had said:
You will not be surprised to hear that I consider that we should do all we can to prevent the GLC from committing resources to these projects. Neither project is justified in transport terms and the wider economic benefits are small and uncertain... I know you also realise the danger of setting an undesirable precedent for other parts of the country.

1979 – a year of hope

Could a Tory Govt and Tory GLC do a deal?

- GLC worked on a stronger case
- Cutler appealed to the top – meeting with Mrs Thatcher and Environment Minister Tom King on 3 December 1979
  - Recognition by Tom King about Docklands access issues
  - PM had housing and home ownership on her mind
- Risk of £100m being allocated to mortgages!

Tea at No.10

Appeal to the Prime Minister

- Cutler rebuffed:
  - still undermined by GLC's own Docklands low-density plans
  - choice of GLC's £100m to be spent on housing or transport
  - hoist with his own petard as no longer responsible for choice of housing or not
- JL dead in water – but lower cost tpt. studies
- New Environment Department interested:
  - despite dislike of LDSP and rigid thinking on development
  - is it significant that Environment not Transport was at the mtg?

Record of No.10 meeting

He [Sir Horace] wanted agreement that funds recycled from under-used assets and the disposal of surplus assets could go into capital expenditure. He would emphasise with Mr. Fowler [Transport Minister] later in the day that he wanted no Government money for Stage II of the Jubilee Line. He already had £100m earmarked for this. He needed simply the authority to use his own funds. The Prime Minister asked why he wished to spend so much on the Jubilee Line given the enormous problems of regeneration of docklands. Mr King acknowledged that there was a problem of getting in and out of Docklands. [However] ***The Government had doubts on whether the Jubilee Line was the best approach to this issue…***

Sir Horace Cutler pointed out that the Jubilee Line would cross the Thames five times: no road could be provided to meet the need in an equivalent fashion *[our emphasis]. He [Horace Cutler] was concerned that if, in the difficult [election] year of 1981, the Conservative Group lost control of the GLC, then there would be a nest-egg left for an incoming party. The Prime Minister noted the problem. She said that she would prefer to see the money locked into mortgages. Mr. King said that the issue was whether to concentrate on housing or communications in dockland.*

If communications were chosen, the money could not be spent by 1981, but could be tied up on tenders and contracts. ***The Prime Minister asked whether the GLC would get a better reception by using its funds on housing rather than the Jubilee Line****. Sir Horace Cutler repeated that his problem was the restrictions on the form of his spending. The Prime Minister asked whether this should be examined in the context of the [then] Local Government Bill. Mr. King emphasised that the issue was not the ability to recycle funds, but the decision as to whether the GLC were to be allowed to use such funds. This was bound up with the issue of what would be the best use of the money. On the housing side, one could question whether significant amounts of private money might be waiting to come in. Sir Horace Cutler said that his credibility depended on the Jubilee Line Stage II being started next year. He emphasised the sound financial position now created by the Conservative GLC.*

Last chances for tube #1

Date	Sponsor	Line	Main Routing	Cost
Dec 1979	Cutler's GLC	Jubilee Stage 2	Charing Cross – Aldwych – Ludgate Circus – Cannon Street – Fenchurch Street	£103m
Early 1980	A Study of Lower Cost Alternatives to the Jubilee Line in Docklands	Interim Jubilee Line Stages 2-4	Charing Cross to Beckton, with no stations at Aldwych, Ludgate Circus, St Katharine Dock, and no Thamesmead branch	£200m
1981	LT	East London	Branch the ELL west from Wapping to Tower Hill (£40m). Branch the ELL east from Rotherhithe to Isle of Dogs Millwall (£70m)	£110m
1982	Docklands Report	East London	Branch from Surrey Docks under the Thames to Isle of Dogs	£100m+
		Jubilee Stages 2-4	To the Docklands, Woolwich and Thamesmead	£450m

Heavy rail proposals for the Docklands 1979 – 1982

Fleet Line obituary – Dec. 1982

Powers weren't renewed for the former tube

LDDC: "The challenge was to find the best system which could be implemented with the funds available. The extension...was a proposal which perhaps best met the needs of the area, but the very high costs of construction means it is not high now on the Government's list of priorities."

Key failings?

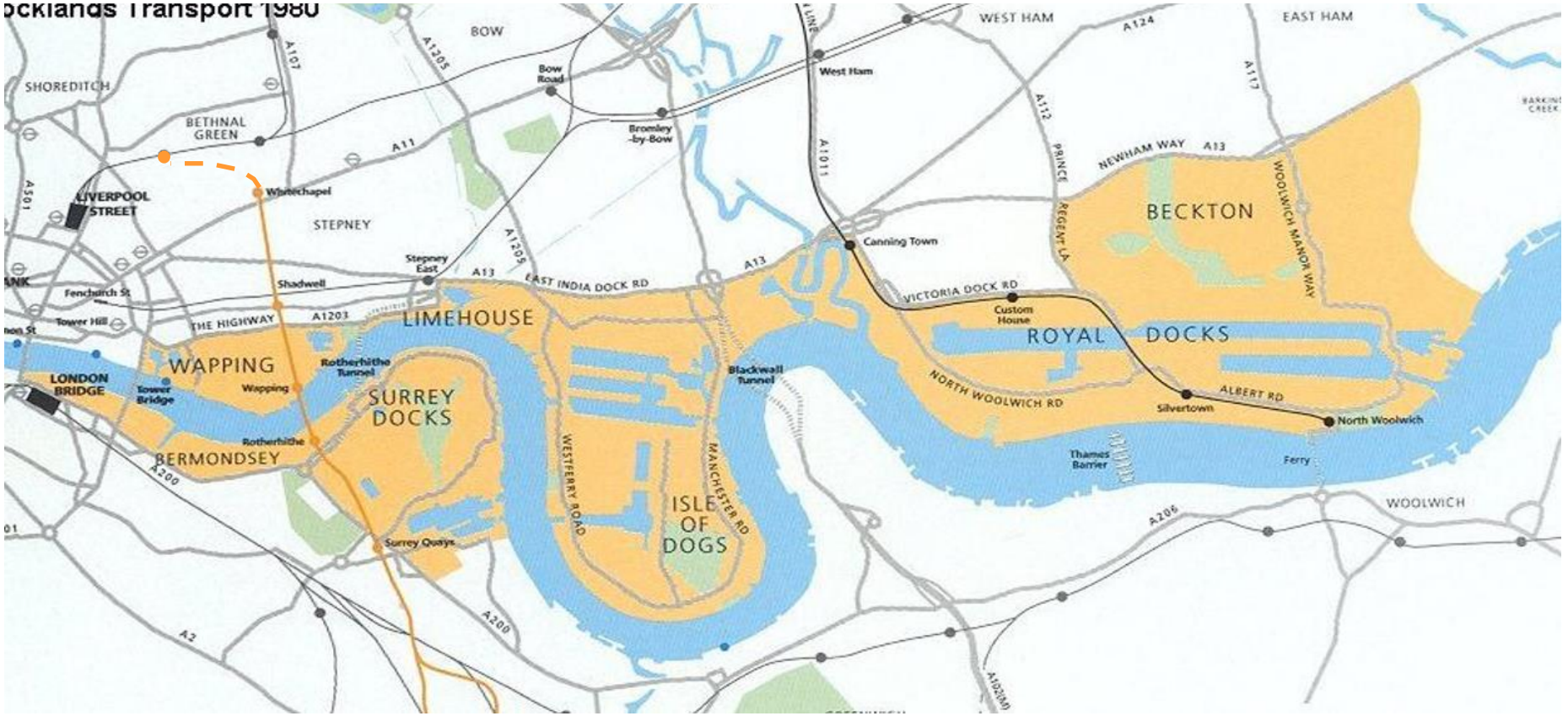
- GLC involvement dragged the Fleet / Jubilee too far, towards its beloved Thamesmead (already authorised & low density)
- 1976 LDSP locked into a low-density strategic vision, even though a tube is **cause as well as consequence** of higher densities
- Even a tube just to inner Docklands couldn't be validated

Route safeguarded or lost

Much of the original Fleet tube safeguarded route has since been built over or used for other purposes:

- There is still a ventilation shaft and emergency access for the Charing Cross overrun tunnels near Southampton Street and Maiden Lane.
- The passage safeguarded for the Fleet Tube at Holborn Viaduct (now City Thameslink) is now permanently blocked by railway equipment, and has apparently been redesignated as no longer appropriate for passenger use, even if a future line gained a station there.
- A short station box for Fleet platforms under the Cannon Street station forecourt to allow access to the future Fleet Line was recently demolished for a large new building's piled foundations.
- Bush Lane House is an eight storey office building designed as a cantilever structure over the planned Fleet Line tunnels, which were at that time planned to pass directly beneath the building, could be constructed at a later date. The building utilises an external structural frame of stainless steel lattice, which is filled with water to protect the structure in case of fire. It has since been renamed 80 Cannon Street, and the unused railway area beneath the building was renovated into restaurant/retail and office facilities.
- Station land was purchased for the Fleet Line terminal at Lewisham, but this land was later used for the DLR and bus station.

Docklands in 1980



Lower cost options

Lots of options, but no VfM for a tube

- Laissez faire land-use planning as well as preference for laissez faire transport planning
- Power play between Transport (Ridley) and Environment (Heseltine and King)
- It was the new Docklands development body LDDC, which eventually gained ascendancy
- Financial limits geared to benefits of better rapid transit links, justified only light rail (£65m)

Lower cost options

The following table lists the studies undertaken by various entities to address the blank spaces for Docklands transport, each taking the prior study's work into consideration.

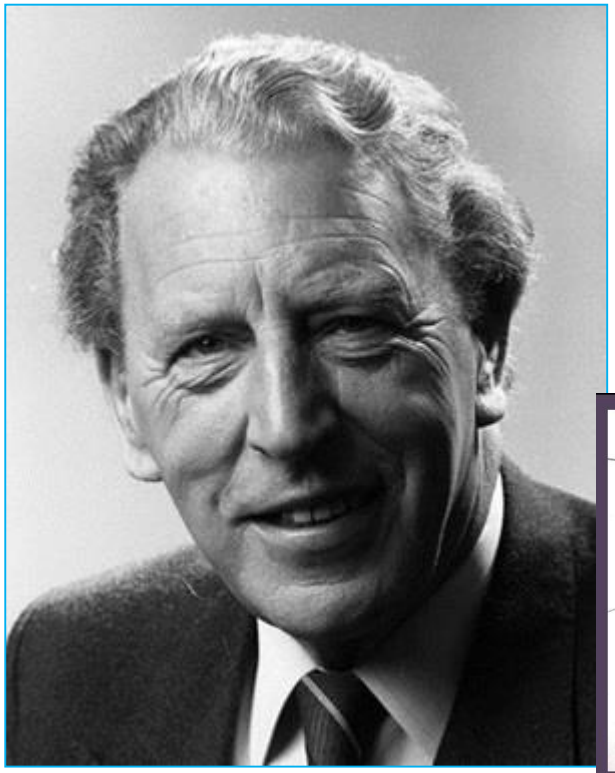
Published	Author(s)	Plan Title
Early 1980	Department of the Environment, Ministry of Transport, GLC, Docklands Development Organisation and the London Transport Executive	A Study of Lower Cost Alternatives to the Jubilee Line in Docklands
1981	LT internal study	Summary in 1981 LT Annual Report
Sept 1981	LT, commissioned by LDDC	Docklands Rail Study
June 1982	Docklands Public Transport and Access Steering Committee	Public Transport Provision for Docklands Report

Table 1: Docklands initial transport studies

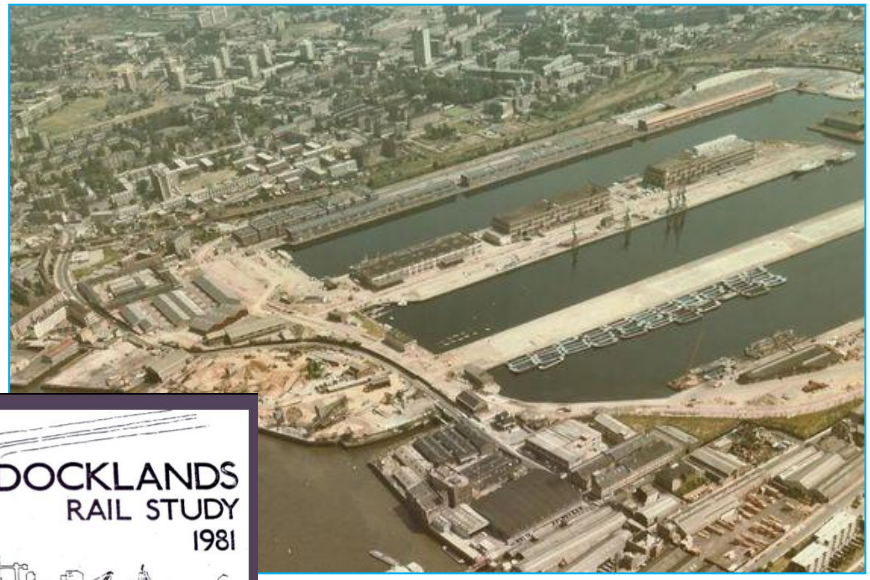
The last two studies evaluated:

- improving bus service and implementing express bus routes,
- branching the East London Line from Surrey Docks station, under the Thames to serve the Isle of Dogs, but the cost of over £100m was considered too rich.
- constructing a Jubilee line extension to serve the Docklands, at an estimated price tag of £450m. The Study recognised that nowhere near that amount of funding was available. Moreover, any Tube extension was feared to be an ongoing revenue draw, given the low-density Docklands urban form then envisaged.
- building lower cost and risk options such as a mini-tram or surface light rail from Mile End and/or the City to the Isle of Dogs (LT's preferred option was surface light rail from Mile End).

Reg and the DLR



Reg Ward, the first LDDC Chief Executive



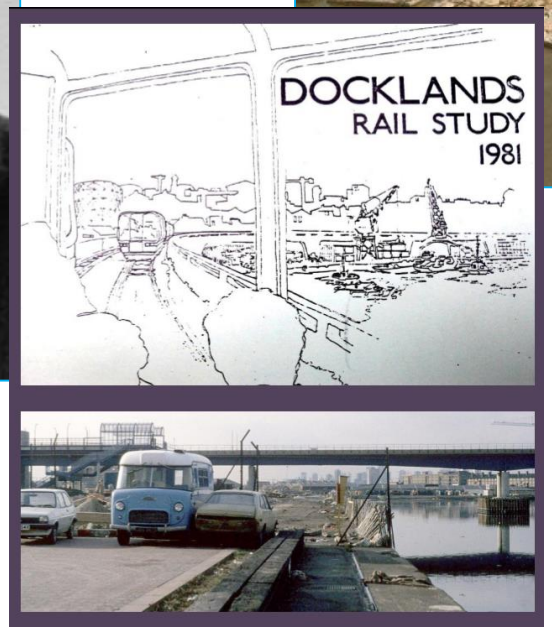


Illustration from Omega seminar, Bartlett UCL, 2013

Docklands re-focus

Creative energy from Env. Dept. and LDDC

- Reg Ward and LDDC vision *(Thanks for £100m, Horace!)*
  - Heseltine gave go-ahead for DLR after 1982 helicopter trip
- LT sought powers for DLR:
  - 1st phase City-Isle of Dogs in 1982/83 (some opposition)
  - 2nd phase in 1983/84. Authorised in 1984 (1) & 1985 (2).

Meanwhile…

- GLC faced abolition (1983>86) after vigorous anti-Govt. disputes, but not before radical fare changes which began to transform travel...

Poor start but tpt. planning revival

Poor business case methodology hadn't helped the Fleet / Jubilee 'River Line' scheme

- Land use planning dismantled at GLC level
- Transport planning as a mechanism barely survived the initial Thatcher years – LT taken from GLC during 1984 and re-nationalised
- New 'London Regional Transport' however retained core Underground planning rôle

New dynamics

Govt. pressures (Serpell, bus dereg, tight £), but tpt. planning + demand forced the pace

- London demand trends diverged from UK
- Unforeseen travel growth as city living re-grew and non-car demand grew – helped by GLC fares
- Better project evaluation (LT 1970s/80s)
- Urgency with Docklands replanning
- Route-level planning & developer demands

New dynamics

	1938/39	1951	1961	1971	1981	1991	2001	2011	2031	2041	2051
									projected		
	POPULATION MILLION				turning point 1988 6.7m						
England								53.5	*60.4*	63.3	65.9
Greater London	**8.6**	**8.2**	**8.0**	**7.5**	**6.8**	**6.8**	**7.3**	**8.2**	***9.7***		
Central & Inner London	4.4	3.7	3.5	3.0	2.6	2.6	2.9	3.2	*4.0*		
Outer London	4.3	4.5	4.5	4.4	4.3	4.2	4.5	4.9	*5.7*		
	PASSENGER JOURNEYS MILLION										
London Underground	**492**	**702**	**675**	**654**	**541**	**751**	**970**	**1,171**			
National Rail	1,237	1,030	1,025	816	719	792	960	1,462			
				London & South East Rail operators			*664*	*994*			
				of which wholly within London			*248*	*405*			
	GROSS VALUE ADDED £MILLION NUTS 2 valuation										
					GREATER LONDON		**174,426**	**282,972**			
					EAST AND SOUTH EAST		**207,040**	**306,466**			
					Rest of England		379,728	535,443			
					Rest of UK		144,412	215,746			
				TOTAL UK GROSS VALUE ADDED			**905,606**	**1,340,627**			
	Sources: TfL Travel in London Issue 5, ONS, ORR										

Favourable conditions for growth of commuting demand in the London and Home Counties during the 1980s

Changes in London travel, AM peak

London transport AM peak travel data

Source: LT Annual Reports

Travel volumes passing Central London cordon, inbound AM 3 hour peak, 07:00-10:00

	Tube only				Bus/T'bus		All Public	Private transport		All Private	
Year	+DLR	BR+Tube	BR only	All rail	Tram	Coach	Transport	Car	2-wheel	Transport	TOTAL
1952					286,000			45,000	24,000	**69,000**	
1953											
1954					269,000			55,000	23,000	**78,000**	
1955					271,000			60,000	24,000	**84,000**	
1956	377,000	103,000	311,000	**791,000**	259,000		**1,050,000**	65,000	24,000	**89,000**	**1,139,000**
1957	367,000	104,000	314,000	**785,000**	255,800		**1,040,800**	68,900	19,900	**88,800**	**1,129,600**
1958					196,700			78,600	28,500	**107,100**	
1959					222,500			82,900	30,100	**113,000**	
1960					215,600			85,100	29,700	**114,800**	
1961	410,000	119,000	356,000	**885,000**	209,000		**1,094,000**	88,900	30,000	**118,900**	**1,212,900**
1962	433,000	112,000	338,000	**883,000**	208,500		**1,091,500**	93,900	28,900	**122,800**	**1,214,300**
1963	416,000	111,000	333,000	**860,000**	214,500		**1,074,500**	95,100	24,900	**120,000**	**1,194,500**
1964	406,000	114,000	340,000	**860,000**	191,000		**1,051,000**	97,600	22,900	**120,500**	**1,171,500**
1965	412,000	112,000	337,000	**861,000**	179,700		**1,040,700**	98,700	17,900	**116,600**	**1,157,300**
1966	409,000	110,000	333,000	**852,000**	174,900		**1,026,900**	100,000	15,000	**115,000**	**1,141,900**
1967	412,000	112,000	336,000	**860,000**	172,200		**1,032,200**	98,100	12,700	**110,800**	**1,143,000**
1968	*408,750*	*115,000*	*337,500*	**861,250**	166,600		**1,027,850**	104,600	11,100	**115,700**	**1,143,550**
1969	405,500	*115,000*	339,000	**859,500**	156,600		**1,016,100**	159,300	13,300	**172,600**	**1,188,700**
1970	386,700	*115,000*	348,700	**850,400**	152,400		**1,002,800**	156,900	14,800	**171,700**	**1,174,500**
1971	385,000	118,000	342,000	**845,000**	145,000		**990,000**	163,000	12,000	**175,000**	**1,165,000**
1972	381,000	114,000	328,000	**823,000**	144,000		**967,000**	172,000	13,000	**185,000**	**1,152,000**
1973	370,000	112,000	323,000	**805,000**	144,000		**949,000**	174,000	14,000	**188,000**	**1,137,000**
1974	374,000	109,000	310,000	**793,000**	143,000		**936,000**	170,000	13,000	**183,000**	**1,119,000**
1975	344,000	103,000	300,000	**747,000**	148,000		**895,000**	166,000	19,000	**185,000**	**1,080,000**
1976	316,000	108,000	293,000	**717,000**	151,000		**868,000**	165,000	22,000	**187,000**	**1,055,000**
1977	321,000	107,000	293,000	**721,000**	139,000		**860,000**	170,000	22,000	**192,000**	**1,052,000**
1978	324,000	111,000	299,000	**734,000**	133,000		**867,000**	176,000	24,000	**200,000**	**1,067,000**
1979	345,000	111,000	310,000	**766,000**	112,000		**878,000**	173,000	22,000	**195,000**	**1,073,000**
1980	324,000	111,000	300,000	**735,000**	103,000		**838,000**	184,000	27,000	**211,000**	**1,049,000**
1981	372,000	96,000	297,000	**765,000**	105,000		**870,000**	173,000	26,000	**199,000**	**1,069,000**
1982	298,000	107,000	284,000	**689,000**	99,000	22,000	**810,000**	197,000	38,000	**235,000**	**1,045,000**
1983	336,000	112,000	271,000	**719,000**	97,000	?	**816,000**	180,000	33,000	**213,000**	**1,029,000**
1984/85	375,000	109,000	277,000	**761,000**	94,000	20,000	**875,000**	180,000	26,000	**206,000**	**1,081,000**
1985/86	364,000	152,000	249,000	**765,000**	89,000	20,000	**874,000**	186,000	26,000	**212,000**	**1,086,000**
1986/87	376,000	170,000	251,000	**797,000**	91,000	28,000	**916,000**	166,000	21,000	**187,000**	**1,103,000**
1987/88	403,000	186,000	263,000	**852,000**	79,000	21,000	**952,000**	181,000		**181,000**	**1,133,000**
1988/89	411,000	188,000	280,000	**879,000**	80,000	21,000	**980,000**	177,000		**177,000**	**1,157,000**
1989/90	390,000	177,000	296,000	**863,000**	73,000	23,000	**959,000**	183,000		**183,000**	**1,142,000**
1990/91	368,000	187,000	271,000	**826,000**	70,000	20,000	**916,000**	178,000		**178,000**	**1,094,000**
1991/92	347,000	168,000	257,000	**772,000**	74,000	20,000	**866,000**	175,000		**175,000**	**1,041,000**
1992/93	337,000	155,000	246,000	**738,000**	61,000	24,000	**823,000**	149,000	20,000	**169,000**	**992,000**
1993/94	340,000	167,000	215,000	**722,000**	64,000	20,000	**806,000**	150,000	21,000	**171,000**	**977,000**
1994/95	347,000	169,000	222,000	**738,000**	63,000	23,000	**824,000**	145,000	20,000	**165,000**	**989,000**
1995/96	344,000	177,000	222,000	**743,000**	63,000	21,000	**827,000**	145,000	21,000	**166,000**	**993,000**
		Effect of									
		BR within Travelcard									

Only LT Buses counted for surface public transport until 1982. Walking into Central London is not counted.

If revised figures are shown in a later year, those are used instead of those in the actual year's report. There is considerable variance in reporting of volume on buses and roads.

Travelcard fares often raised higher than basic increases, to reflect true value of the product. Capitalcard begun in Jan.85, merged with Travelcard in Jan.89.

Figures in grey are not stated in reports, so are guesstimated from adjoining data.

Note one purpose of DLR is to carry passengers in AM peak AWAY from Central London to Docklands. These are not counted for inwards travel, except if they traverse Central London.

A new approach to Docklands

DLR linked to a wider revival: East of London accessibility, not just intra-Docklands

- Stratford, West Ham, etc, now on the map
- DLR as the start of a Docklands distributor
- Rail travel demand turning the corner
- New fare zoning, Travelcard and Capitalcard
- Active lobbying on route-level projects (eg ELL)
- Scope for radical ideas (devs, LBs), not GLC-solo

London & SE capacity review

UCS 1986-87, CLRS 1988-89 (despite Black Wed)

- Capacity studies pointing again to extra vol.
- Demand points to 3 new cross-London lines
  - Crossrail 1
  - Chelsea-Hackney
  - Jubilee extension to Ilford (but only one at a time...?!)
- Other live schemes
  - Thameslink 2000
  - DLR extensions (LB Lewisham pressed DLR cross-river)
  - ELL, Croydon Tramlink (pressed by LRT and Boroughs)

Canary Wharf – beginnings

Financial industry restructuring, during period of London non-centric planning

- 1986 OFT's banking reform anticipated
- Expecting large-scale employment growth
- Large Open-Area trading Floors needed (LOAF)
  - not available in conventional City of London
- No space/constraints in Isle of Dogs
  - DLR accessed Canary Wharf site just 10 min. from City
- G Ware Travelstead bought into Canary Wharf in 1985

Canary Wharf – Canadian Wharf!

How to deal with the 2½ miles to reach Bank?

- DLR City Extension, 1987 Bill – OK, but...
- City concerned by Wharf, planning rules reduced
- GWT backers concern, **Reichmann** takeover
- Olympia & York – the world's largest dev. co.
- Larger vision, larger development = new tube
  - from 12,000 employees on site, to 50,000 and rising
- Direct distributor from south termini: Wloo, LBdg

Private sector can't wait

CLRS unhelpful, Canary Wharf must be in front

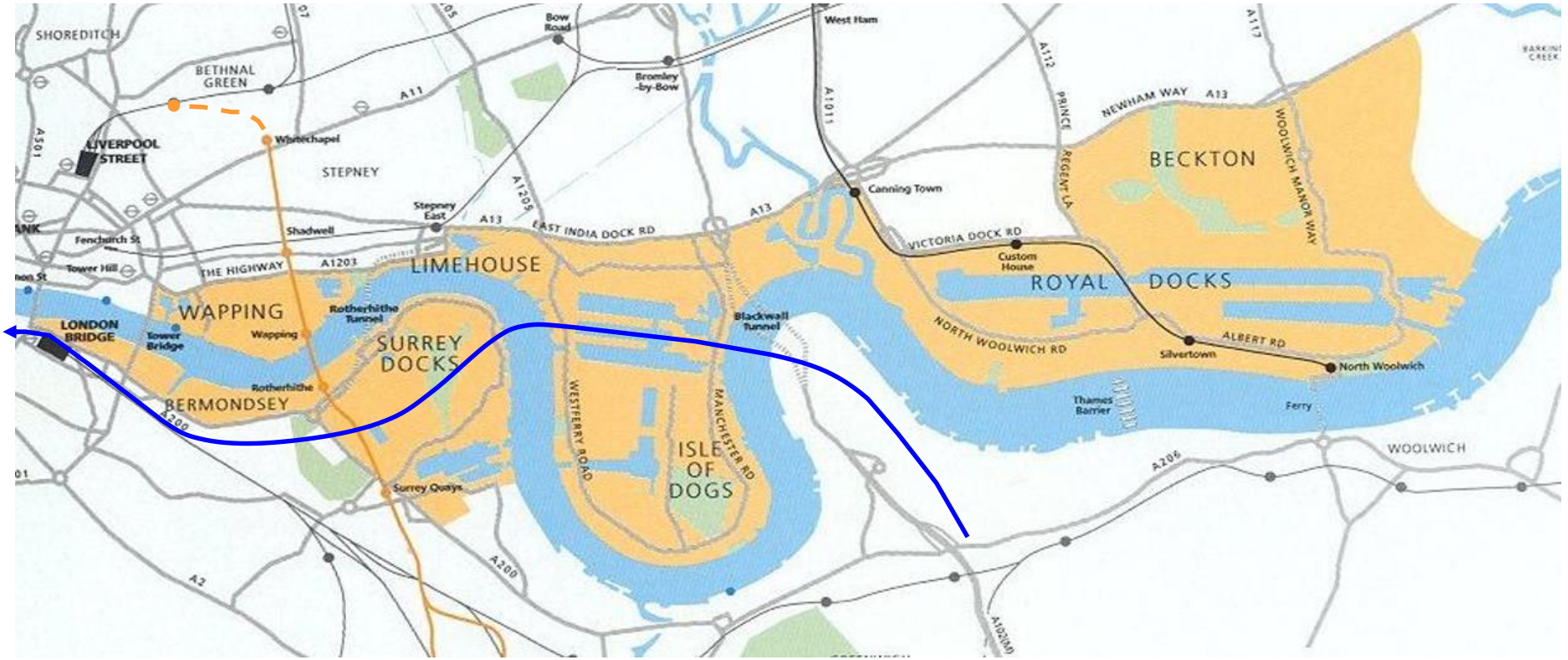
- Canary Wharf can't wait for 10-15 years in Q
- Put £148m up-front to get DLR links fixed
- Needs new tube – but dead powers no help, and wrong route missing key Southern links
- Some tubes to consider – Bakerloo, Jubilee
- Private sector tube scheme (1st for 60 years?)
  - Waterloo & Greenwich as 'Drain' equivalent

Back to No. 10!

Close relations gave support for development

- However, tube scheme in conflict with CLRS
- CWG published reference plan Nov. 1988
- 1 week to publishing Bill
- Govt. worried by uncontrolled scheme
- W&GR Bill not published, new ELRS Jan 1989
- Designed to provide option for eastern JLE
- Final CLRS Mk.2 revised priorities, JLE now #1

A Waterloo & Greenwich Railway?



LRT and DfT discomfort

JLE 1st, though CLRS priority to Crossrail and Chelney

David Bayliss, LRT Director of Planning:

"Our priority was to get on with relieving the hard-pressed general rail network..."
"While [the JLE] was important, we thought that underpinning the existing commercial centres was probably more important than providing a new railway out to Docklands to assist a third commercial centre."

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"Had it not been for the Department of the Environment-led, O&Y-led, pressure, the DfT would have pushed the other proposals... the Jubilee Line behind those two."

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Lord Wakeham, Cabinet member overseeing Canary Wharf dealings:

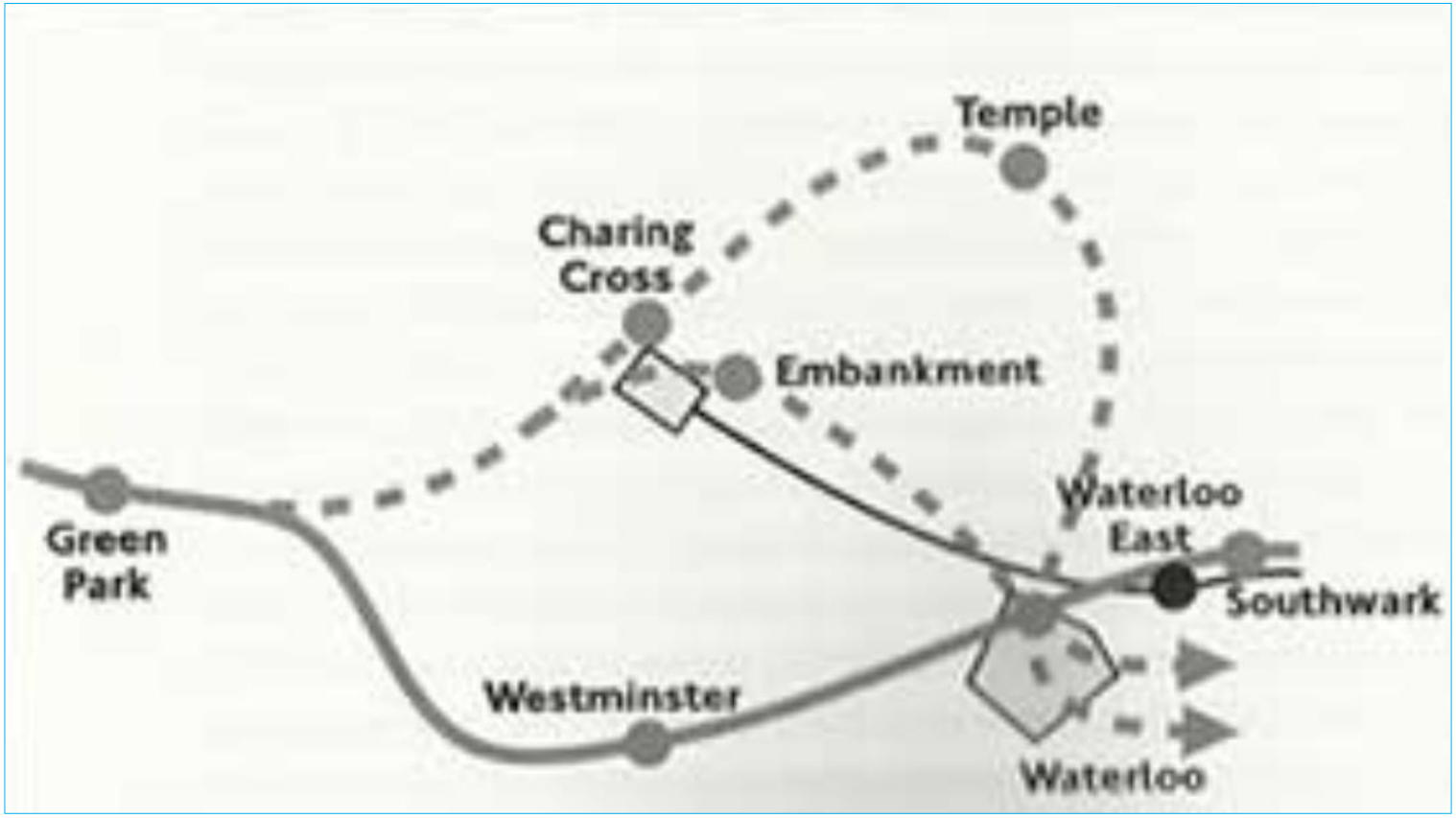
"The original proposals for the Jubilee Line came out at a cost which was in excess of the value laid down by the DoE when they did a cost-benefit analysis. On its own it would never have been approved... However O&Y undertook to produce in round figures £400m over a longish period, and we said, 'Right. Subject to the private sector contribution, the public sector contribution will be forthcoming'."

Beyond the Cross – Jubilee twist

Urgent effort to make Jubilee Line do the job

- LUL required to re-design a JL extension
- Almost impossible to get ‘Beyond the Cross’
- How do you get from the Cross to Waterloo?
- Bakerloo option reviewed, eventually no go

Beyond the Cross



Beyond the Cross – Jubilee twist

Urgent effort to make Jubilee Line do the job

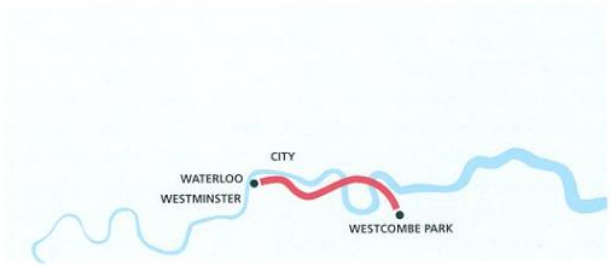
- LUL required to re-design a JL extension
- Almost impossible to get 'Beyond the Cross'
- How do you get from the Cross to Waterloo?
- Bakerloo option reviewed, eventually no go
- Final solution: shut Charing X, go via Waterloo
- New tube Bill to Stratford via CW, 1990-1992
- £1bn tube, £400m (W&GR) offered for 25 yrs*
- But then 19 months delay and frustration

* £400m = £180m in real terms. JLE £1.8bn in 1992, outturn nearer £3.5bn

Beyond the Cross

Figure 18: 1988, Olympia & York: Bakerloo Line Extension
1. Waterloo to Isle of Dogs via London Bridge.
2. Waterloo to Isle of Dogs via Bricklayers Arms.
3. Isle of Dogs to Stratford and Tottenham Hale.
4. Isle of Dogs to Beckton.

Figure 19
1988, Olympia & York: Docklands Second Rail Line
Waterloo to Westcombe Park



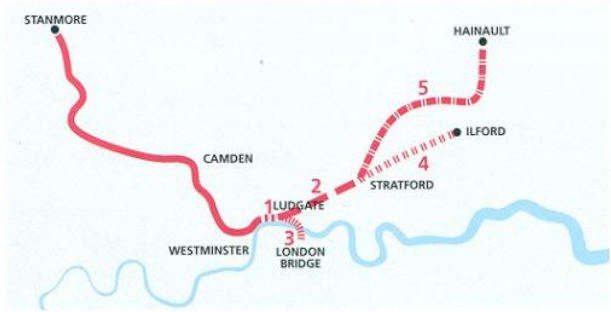


Figure 20: 1989, Central London Rail Study: Jubilee Line Extension
1. Aldwych to Ludgate. 2. Ludgate to Stratford.
3. Ludgate to London Bridge. 4. Stratford to Ilford.
5. Stratford to Hainault.

Figure 22: Jubilee Line Extension route options 1990

Beyond the Cross

Date	Sponsor or Plan	Line Extension	Main Routing	Cost
Mid-1988	O&Y	Bakerloo	Waterloo – (London Bridge or Bricklayers Arms) – Isle of Dogs – (Stratford and possibly Tottenham Hale or the Royal docks)	Unknown
Nov-88	O&Y	W&GR	Waterloo – (London Bridge or Bricklayers Arms) – Isle of Dogs – Greenwich Peninsula	£400m
Jan-89	CLRS Mk 1	Bakerloo	Waterloo – London Bridge – Surrey Quays – Canary Wharf – Westcombe Park [Many routes presented, detailed study deferred to ELRS]	Unknown
Jan-89	CLRS Mk 1	Jubilee	Aldwych – Ludgate Circus – (London Bridge or Stratford) – (Ilford or Hainault) [Many routes presented, detailed study deferred to ELRS]	£560m
Spring 1989	O&Y/LT/LUL	Jubilee	Joint team set up to further the Jubilee Line Extension design work	-
Jul-89	ELRS	Jubilee	(Aldwych or Waterloo) – London Bridge – Canary Wharf – North Greenwich – Stratford	£1bn
Jul-89	CLRS Mk 2	Jubilee	Waterloo – London Bridge – Canary Wharf – North Greenwich – Stratford	£1bn
Nov-89	Government	Jubilee	London Underground (Jubilee) Bill 1989 deposited to Parliament	-
Feb-90	LUL	Jubilee	Project Team established	-
Nov-90			Second Parliamentary Bill deposited proposing changes to 1989 Bill 1989 Bill	
Feb - Dec 1991	Government	Jubilee	Parliamentary Committees study and approve the Bill	-
1992	Government	Jubilee	Waterloo – London Bridge – Canary Wharf – North Greenwich – Stratford	£1.8bn
16-Mar-92	Government	Jubilee	London Underground Act 1992 receives Royal Assent	-
29-Oct-93	Transport	Jubilee	Secretary of State for Transport gives go-ahead once private sector funding was secured (100m)	-
Heavy Rail Proposals for the Docklands and JLE Parliamentary Timeline 1987-1993				

Canary Wharf financial collapse

Early 1990s banking pressures stopped O&Y

- Political patronage gone (Mrs.T, Heseltine)
- On 29 March 1992 O&Y failed to pay £98m first instalment on Jubilee Line extension
- But tenants moving in from 1991
- UK Govt still didn't do anything, dire situation, eventually O&Y Administrators found funds
- Construction finally started on JLE in 1993

Where we are now

JLE has emerged as a very successful tube

- It was a politically pressured, developer-led line
- However the ideas leading to its routeing have been proved correct, and JLE is very busy throughout
- Demand now exceeds capacity, even at 30+ tph, particularly for the cross-river sector from South London and main line termini to Canary Wharf
- Canary Wharf re-incarnated as a developer (Songbird)

Isle of Dogs now aims for 250,000 jobs, a quarter of the historic Central London total

Where we are now

Lessons from history

(from LURS Bakerloo lecture 2011!)

Five main criteria to be met

- Business case
- Merits and priority against other projects
- Government and stakeholder backing
- Funding / financing
- Affordability

Lessons learnt

The history of the Fleet / Jubilee underlines that large-scale infrastructure schemes rely on:

- continuous political support at national level even if you have your own £100m spending pot
- Departmental backing and funding
- a supportive planning context

- not merely the project's own transport merits

Lessons learnt

- The Fleet Line, when re-directed to Docklands as the River Line, offered convenient access
- But it was not allowed, in this incarnation, to offer added value to development – which would in turn have repaid the high access costs, eg through higher densities
- Neither national political nor official vision found a rôle for this tube scheme, even if it was technically sound. It was an answer looking for the right question
- Its second incarnation answered the questions then arising – distribution access from key main line termini and other interchanges, into London's third commercial development

Lessons learnt

Lots of options, but no guarantee of success

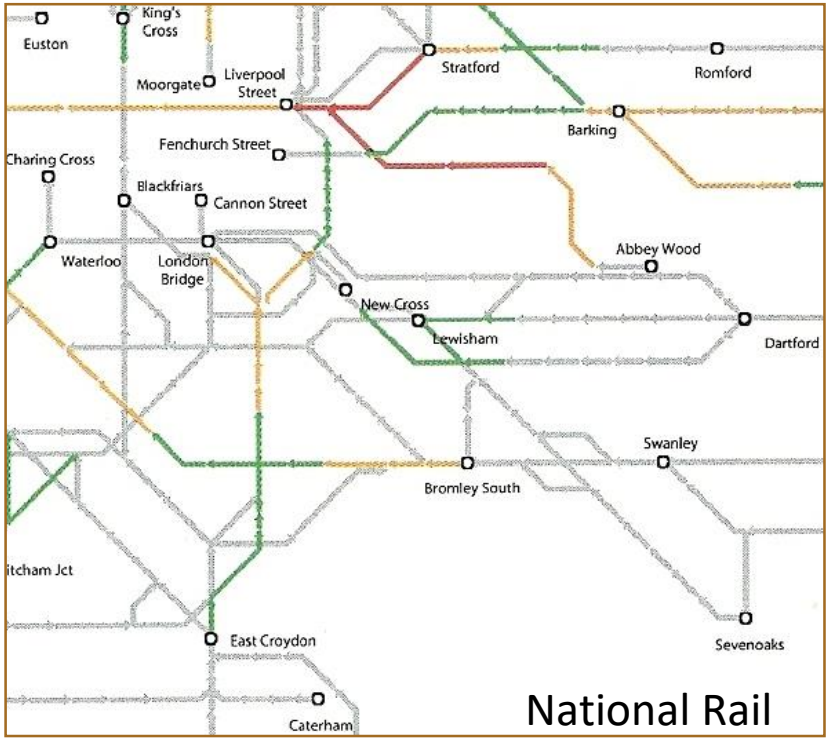
- If the promoting authorities cannot create the best possible case, then normal checks and balances are likely to see off the scheme
- A failure, as in this case, to align mutually the transport scheme and the land use requirements (or a modern equivalent, wider benefits) is likely to cause a project failure.
- Centralised decisions do not **guarantee** good decisions, that requires good appreciation of scheme merits in the round.

The end? No – dynamics in play

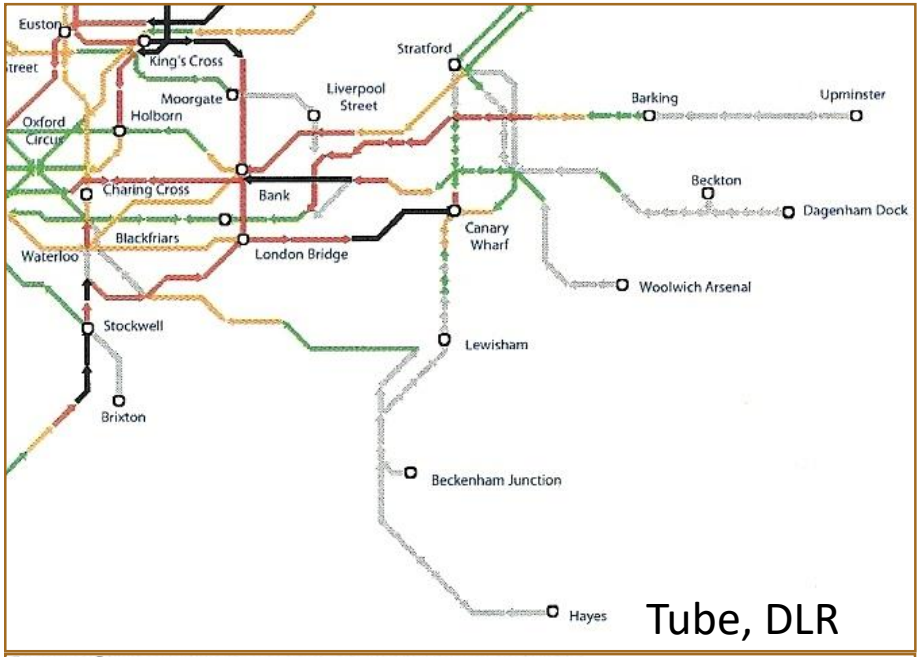
250,000 jobs and only one DLR and one tube?

- No, this is too little rapid transit capacity
- Crossrail 1 is critical to Canary Wharf and elsewhere in Central London
- CWG had a key rôle in lobbying for CR1 and including a route via Isle of Dogs, 1999-2005
- Further high density expansion including in the Isle of Dogs, is now hinting at further capacity requirements

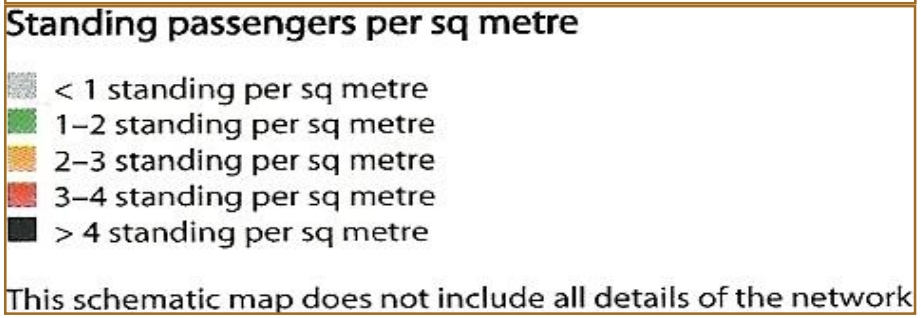
MTS crowding levels in 2031



National Rail



Tube, DLR



If all preferred schemes proceed

Where we began – starting points

Baker Street and the problem of hindsight

- Bakerloo overloaded through Central London
- Two branches = one too many, too close in
- Victoria Line added to burden from 1969
- Strong transport case for relief line...
- ...at least through the West End
- Some trust in LT planning with V/L success

  (actually, demand under-estimated, benefits greater)

Re-starting points

Foresight needed now to avoid hindsight risks

- More jobs to come at Isle of Dogs + potential large housing growth in Opportunity Area
- Jubilee overloaded now and forecast from 2030s through Canary Wharf, DLR also at risk
- A critical element is the river crossings
- Strong case for relief capacity, maybe new rail crossing of the river (NIC has considered)

Canary Wharf demand 2041

Results – Demand vs Capacity – 2041 AM Peak Hour Inbound Rail

Direction	2041 SDG Mixed Use					2041 Railplan High				
	Demand (pax/hour)	Planning standard capacity	% RFC (Planning Standard Capacity)	90% Planning Standard Capacity	% RFC (90% Planning Standard Capacity)	Demand (pax/hour)	Planning standard capacity	% RFC (Planning Standard Capacity)	90% Planning Standard Capacity	% RFC (90% Planning Standard Capacity)
Crossrail from West	12,940	18,000	72%	16,200	80%	12,787	18,000	71%	16,200	79%
Jubilee Line from West	29,583	29,232	101%	26,309	112%	27,450	29,232	94%	26,309	104%
DLR from West (Westferry – West India Quay)	7,653	8,235	93%	7,412	103%	5,314	8,235	65%	7,412	72%
Total from West	**50,177**	**55,467**	90%	**49,921**	101%	**45,551**	**55,467**	**82%**	**49,921**	91%
Crossrail from Abbey Wood	14,232	18,000	79%	16,200	88%	12,027	18,000	67%	16,200	74%
Jubilee Line from East	21,089	29,232	72%	26,309	80%	23,800	29232	81%	26,309	90%
DLR from North East (Poplar – West India Quay)	3,702	8,235	45%	7,412	50%	4,418	8,235	54%	7,412	60%
Total from East/North	**39,023**	**55,467**	70%	**49,921**	78%	**40,245**	**55,467**	73%	**49,921**	81%
DLR from South (South Quay – Heron Quays)	**11,562**	**12,627**	92%	**11,364**	102%	**6,890**	**12,627**	55%	**11364**	61%
Grand Total	**100,761**	**123,561**	82%	**111,206**	91%	**92,686**	**123,561**	75%	**111,206**	83%

Commentary on 2041

Analysis of Results and Conclusions

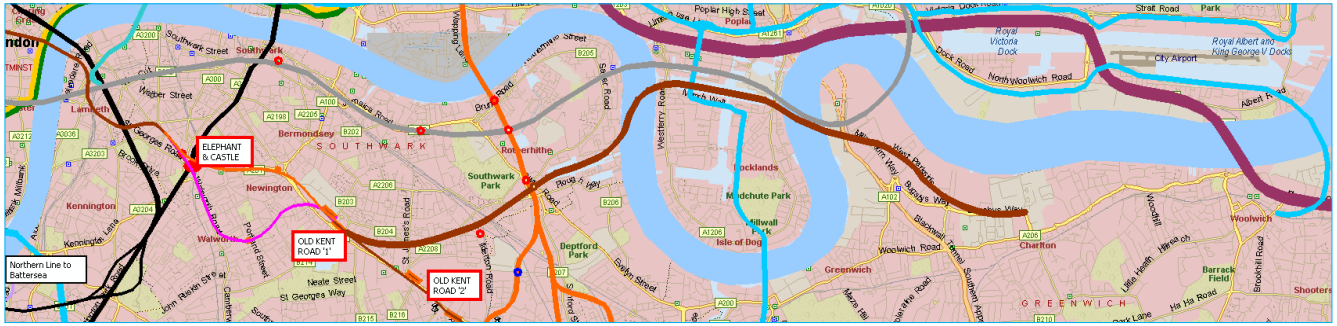
1. In the AM peak hour, the eastbound approaches to Canary Wharf/Isle of Dogs from the west are the critical links in terms of demand versus capacity now and up to 2041.
2. In the AM peak hour, demand on the Jubilee Line to Canary Wharf/Isle of Dogs from the west and from the east and on the DLR from the south is already close to capacity and is likely to exceed planning capacity before Crossrail opens in December 2018 .
3. AM peak hour demand on the DLR from other directions will not exceed capacity before Crossrail opens in December 2018.
4. In the PM peak hour to the west of the Isle of Dogs, westbound Jubilee Line flows could potentially exceed 90% of TfL's planning standard capacity prior to Crossrail.
5. The opening of Crossrail will reduce flows on the Jubilee Line and DLR but due to forecast growth (to/from the Isle of Dogs and through trips) the eastbound AM peak hour demand on the Jubilee Line in the western corridor will again exceed capacity by the 2030s.
6. By 2041, eastbound AM peak hour demand on the Jubilee Line from the west will exceed capacity and demand on the DLR from the west will exceed 90% of TfL's planning standard capacity.

Commentary on 2041

7. Crossrail will provide more resilience for Canary Wharf and opens up residential development opportunities in south-east London with direct services to jobs in Canary Wharf, the City and West End.
8. There will be spare capacity on Crossrail from Liverpool Street to Canary Wharf in the AM peak up to 2041 but this spare capacity is not likely to be easily 'usable' for travel to Canary Wharf in the peak periods because Crossrail will be at capacity west of Liverpool Street.
9. Also the Jubilee Line provides a more direct and faster route than Crossrail to Canary Wharf for a higher proportion of Isle of Dogs employees who would not easily be able to use Crossrail as an alternative to the Jubilee Line.

Commentary on 2041

- Options for more rail capacity now unlikely to include Canary Bakerloo branch to relieve Jubilee (considered in 2016, indicative diagram below)



- However more capacity may well be required, whether DLR, NIC line or Crossrail 11-car trains
- The evidence is that Crossrail would not address all flows, with specific JLE relief still worthwhile

Diving into the Fleet – LR articles

1 https://www.londonreconnections.com/2015/diving-into-the-fleet-a-look-at-londons-lost-tube/

2 https://www.londonreconnections.com/2016/diving-fleet-jubilee-line-derailed-1974-1979/

3 https://www.londonreconnections.com/2016/fleet-jubilee-line-part-third-conservative-view/

4 https://www.londonreconnections.com/2017/diving-into-the-fleet-part-5-the-eighties/

5 https://www.londonreconnections.com/2017/diving-fleet-part-5-canary-wharf-years/

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