Silvertown Tunnel Implementation Group

Meeting no. 09 25 May 2023 – 09:30-13:00

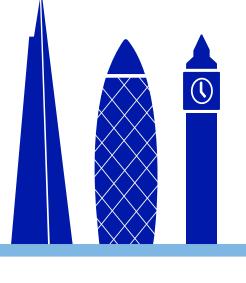
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09:30-10:15: Silvertown site visit 10:15-10:45: Cable car trip to Greenwich 11:00: Hybrid meeting start 12:15: Greenwich site visit

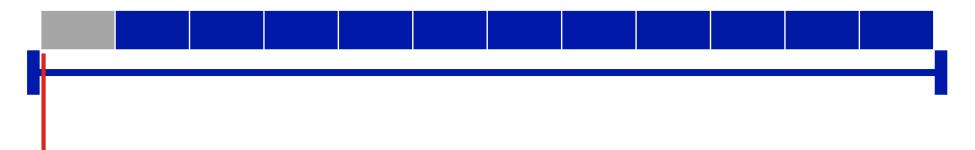


² Agenda

- 1. Introductions and welcome (5 mins) (All)
- 2. Review of actions from previous meeting 23 February 2023 (5 mins) (TfL)
- 3. Diversity & Inclusion (5 mins) (All)
- 4. Safety, Health and Environment (5 mins) (All)
- 5. Project update (10 mins) (TfL)
- 6. MMS update: (30 mins) (TfL)
 - a) Traffic modelling update (TfL/ Jacobs)
 - b) Air quality monitoring (Year 2 update) & air quality forecast update (TfL/ AECOM)
 - c) Bus network development update (TfL)
- 7. Other relevant updates (5 mins) (All)
- 8. Obligations and forward meeting planner (5 mins) (All)
- 9. Next steps and AOB (5 mins) (All)



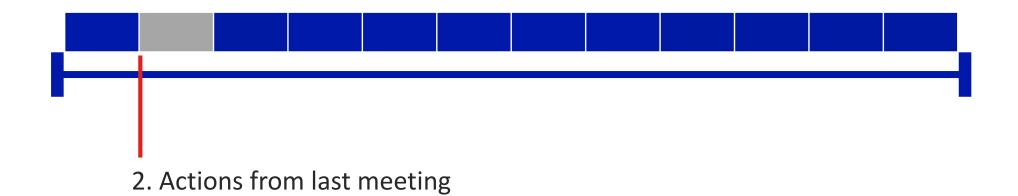




1. Introductions and welcome









Actions

5

No.	Action description (03-Nov-22)	Completed
9	ACTION: TfL agreed to report back on the cross-river bus network public consultation on three routes at a future meeting.	May STIG
12	ACTION: TfL to ensure bus consultation results are formally presented at a future STIG meeting or technical working group session. POST MEETING NOTE: link to final consultation report can be found at following link: <u>https://haveyoursay.tfl.gov.uk/19786/widgets/56145/documents/40186</u>	May STIG

No.	Action description (23-Feb-23)	Completed
1	ACTION: Share report in minutes Baroness Kennedy Report Feb 2023.	\checkmark
2	ACTION: AL requested TfL project team put RLX security team in touch with Newham to share security learning.	\checkmark
3	ACTION: TfL to provide RBG with modal shift locations [from rail to bus].	tbc
4	ACTION: TfL to further consider and agree with STIG members the appropriate level of detail to enable officers to brief members and scrutinise the draft SoS submission.	\checkmark
5	ACTION: upon receipt of the draft list of roads to be used in the dashboard, TfL and Jacobs request that STIG members review the list of locations that are being proposed regarding performance and propose any additional roads they would like to be considered for inclusion.	tbc
6	ACTION: TfL to ensure that modelling workstream remains aware of any emerging bus priority measures and potential impacts on the modelled performance of the network, with a view to undertaking any further modelling to ensure no material changes required and to keep STIG members briefed on any such developments.	Ongoing





3. Diversity & Inclusion













SILVERTOWN TUNNEL SAFETY

May 23 - STIG

TfL CONFIDENTIAL

SILVERTOWN TUNNEL SAFETY

AFR

- 0.124 to 0.109 May 2023
- 275 days since last reportable injury

TBM

- Started 2nd drive
- Zero injuries

HSE INSPECTIONS

• Meetings undertaken to discuss TBM retrieval.

LIFE

• Ongoing, including Manager specific training.

SIP

• RLX Refreshed impetus and increased targets for safe performance

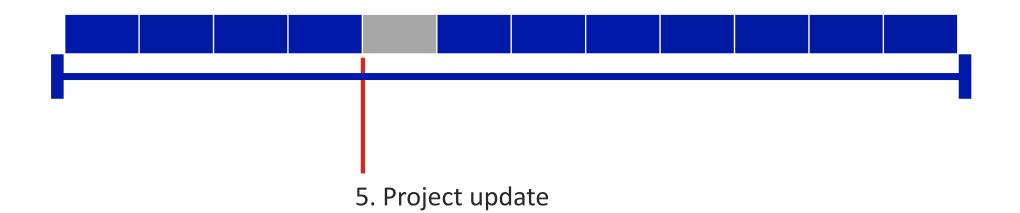
SILVERTOWN TUNNEL SAFETY

INCIDENTS

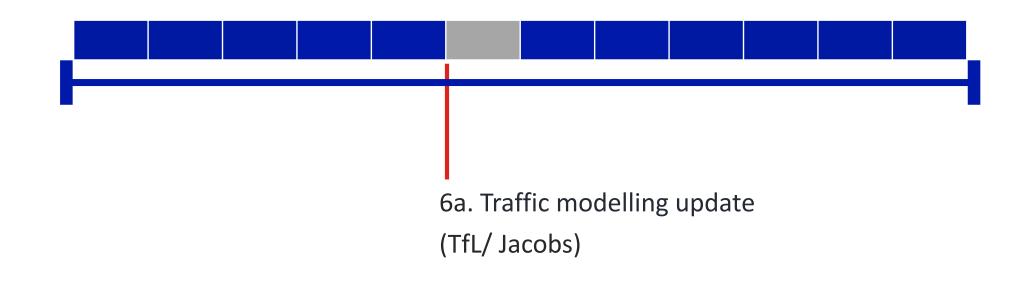
- Void in Piling Mat.
- Concrete section slid into retrieval chamber.
- Small fire portable compressor.

CHALLENGES

- TBM 2nd drive
- Highway Works
- Theft / Anti Social Behaviour









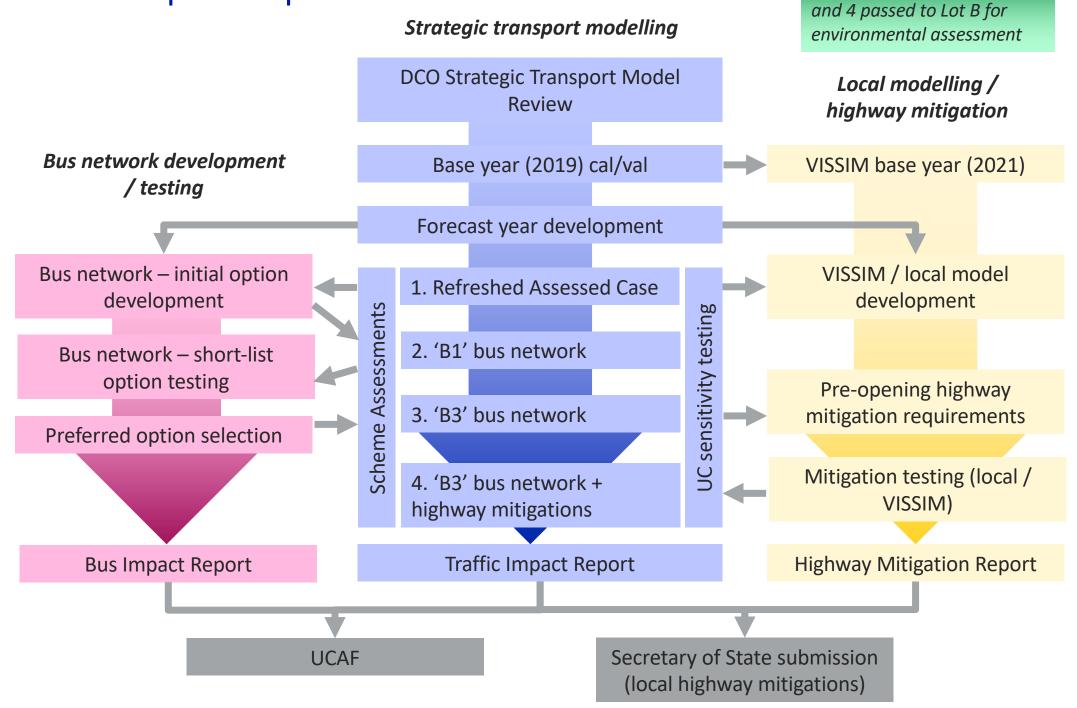


Contents

13

- Lot A Transport Modelling/Mitigation scope and process
- Refreshed Assessment scenarios and definitions
- Bus network assumptions
- Scheme Assessment 4 updates (SA1 vs SA4)
- Highway mitigation overview
- Next steps

Lot A scope and process



Scheme Assessments 1, 3

Four Scheme Assessments – due to DCO requirements, evolution of bus network and highway mitigation testing

- User Charge unchanged from DCO except for inclusion of low-income resident discount (introduced during SA2)
 - Extensive testing for DCO indicated Assessed Case charge at the right level
 - Sensitivity testing (DCO charge +/-20%) during SA1 and SA4 did not support rationale for changing charge
- SA1 required as 'refreshed' Assessed Case model comprehensively updated since DCO: use of MoTiON, updated base years, forecast years (and uncertainty log), TAG parameters (esp. Values of Time)
- Two bus networks tested 'B1' derived from initial testing and included in SA2, but testing indicated benefits would improve with alternative network 'B3', requiring SA3
- Highway mitigation development started in SA3 once bus network finalised iteration between VISSIM and LoHAM required SA4 final scheme assessment
- Each iteration provided opportunity to incrementally improve model performance

Lot A Transport Modelling – assessment definitions

Scenario reference	Description	Buses	User Charges	Other notes
SA1 DCO Assessed Case 37.5bph cr		37.5bph cross-river	DCO (no local resident discount)	~
ISAZ INIODEILING Adjustments I cross-river routes		DCO + local resident discount	Signal optimisation / no other network refinement	
SA3 modelling adjustments cross-		'B3' 20bph network (2 cross-river routes @ 7.5bph + 108)	DCO + local resident discount	Signal optimisation / network refinement
SA4	Third iteration modelling adjustments 21bph revised network highway mitigations	'B3' 20bph network (2 cross-river routes @ 7.5bph + 108)	DCO + local resident discount	Refinement of Strategic model to include latest signals etc – mitigations to be included



16

Strategic modelling summary – 'B3' network included in Scheme Assessments 3 and 4

- New X239 service (Grove Park to Canary Wharf) - frequency of 7.5 buses per hour
- Service **129** from Lewisham redirected cross-river with a frequency of 7.5 buses per hour
- Service 108 retained with minor adjustments (use of new Millennium Way slip road)





SA4 Strategic Modelling Updates



The Scheme will attract over 10,000 new bus passengers in the opening year (2025)

2025: Change in Person Trips by Mode (vs. Ref Case), 24hr

Mode		SA1		SA4
Cycle	-	300	-	100
Walk	-	3,600	-	1,400
Rail	-	7,500	-	7,700
Bus		10,800		10,900
РНV		1,200		1,000
Car Driver	-	100	-	2,100
Car Passenger	-	500	-	600
Total		0		0

- Similar to SA1, SA4 suggests an overall increase in public transport travel with a relatively small reduction in rail trips
- The transfer from active travel is lower in SA4 due to the reduced bus service frequency and the geographical coverage of the SA4 network.
- The car demand reductions are stronger in SA4. This is linked to the updates made to the SA4 Reference Case networks (which included additional local schemes and improvement to model convergence).
- SA4 also included the updates to bus speeds informed by local VISSIM models (SA1 used Strategic LoHAM speeds). This resulted in a slightly faster bus speed in the AM peak NB.



The amount of cross-river bus passengers in SA4 (21bph) is only 8% lower compared to SA1 (37.5bph) with an average bus occupancy increasing in SA4

Cross-river Bus Flows (pass) by time period

Period	SA1	SA3
AM (7.00-10.00)	2,800	2,700
IP (10.00-16.00)	4,000	3,500
PM (16.00-19.00)	3,100	2,900
12 hrs	9,900	9,100

2025: Aver. Cross-river Bus Occupancy (pass) by time period

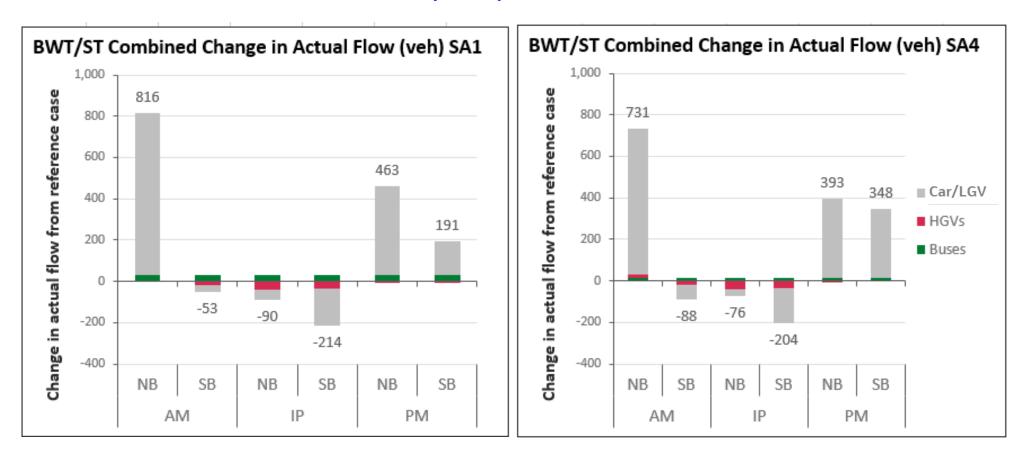
Period	SA1	SA3
AM (7.00-10.00)	12	22
IP (10.00-16.00)	9	14
PM (16.00-19.00)	14	23
12 hrs	11	18

Bus Flow Difference (SA4 v Reference Case), 2025 AM peak





Pattern of flow changes similar between SA1 and SA4 and is linked to the reduction reference case delays / queues



• Due to the mitigation measures, SA4 flows are lower in the NB direction with a higher flow in the PM SB



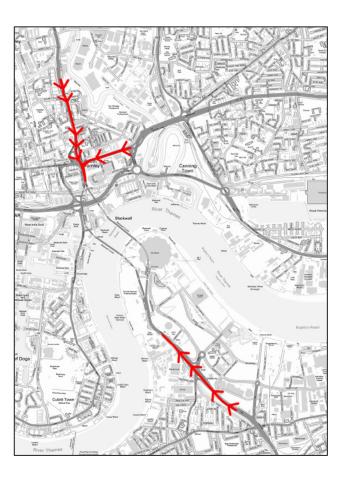
²² SA4 shows similar delay reductions to SA1 with the AM peak NB delay reducing by 15 minutes and the PM peak experiencing at least 9 minute reductions in both directions

	AM		IP		PM	
	SA1 SA4		SA1	SA4	SA1	SA4
Northbound Approach	-14:53	-15:07	-01:32	-01:43	-09:04	-09:10
Southbound Approach	-00:24	-00:38	-01:14	-01:16	-09:55	-12:10

Approach Delay Change	
30 to -30 seconds	
- 30 seconds to -5 minutes	
-5 minutes to -10 minutes	
> 10 minutes decrease	
	1

2025: Change in delay at the Blackwall Tunnel (SA vs Ref Case) (minutes)

- As a result of the mitigations, the PM SB delay has reduced further in SA4
- The Inter-peak reductions in delays are just over 1 minute (reflects lower congestion levels in "without Scheme" scenario)



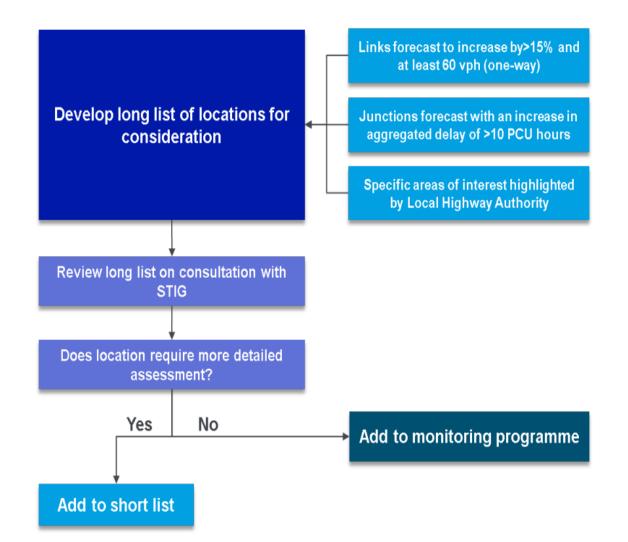


Highway mitigation



²⁴ Two-step process to identify pre-opening mitigation

- DCO Monitoring & Mitigation Strategy (MMS) set out process in flow chart
- Initial long-list developed from DCO modelling, previous discussions with STIG, existing monitoring sites
- RA modelling used to add locations where quantified thresholds are exceeded
- STIG feedback sought on long-list development





Three short-list criteria applied in LoHAM

- <u>Change in delay per vehicle > 20 seconds</u>
- <u>Change in Volume/Capacity Ratio > 0%</u>
- <u>Change in total flow (actual + fixed) > 30 Passenger Car Units (PCUs)</u>
- Any locations on the final long-list that meet all secondary criteria in either peak hour short-listed
- Locations on short-list assessed further to determine requirement for pre-Scheme opening mitigation
- Long-list locations not on short-list considered for inclusion on monitoring programme



Two-short-list criteria applied in VISSIM

• Step 1: Cars

26

- 'With Scheme' approach total delay 10 vehicle-hours higher than Reference Case or
- Travel time route with 10+ vehicles between adjacent junctions increases by 30 seconds or more <u>or</u>
- Travel time 10+ vehicles between adjacent junctions increases by 15% or more.
- Step 1: Buses
 - Travel time route between adjacent stops increases by:
 - \circ 30 seconds or more <u>or</u>
 - $\,\circ\,$ 15% or more
- Step 2: Cars and buses
 - Visually assess the model to investigate the cause of the increased delay



Approach to mitigation – optimised solution to fix issues caused by the Scheme

- Target: *nil detriment* for all modes key parameters incl. traffic / bus journey time RAG assessment undertaken:
 - Outcomes for general traffic; buses; cycling; walking; people/place function
 - Scale/ complexity of intervention
- Option development starting point: lowest level of intervention (signal optimisation, setting changes etc) – physical measures only if required to alleviate identified issues
- Preferred option identified based on local modelling
- Schemes tested in VISSIM and then in LoHAM as a package
- AADTs calculated for early identification of potential environmental issues

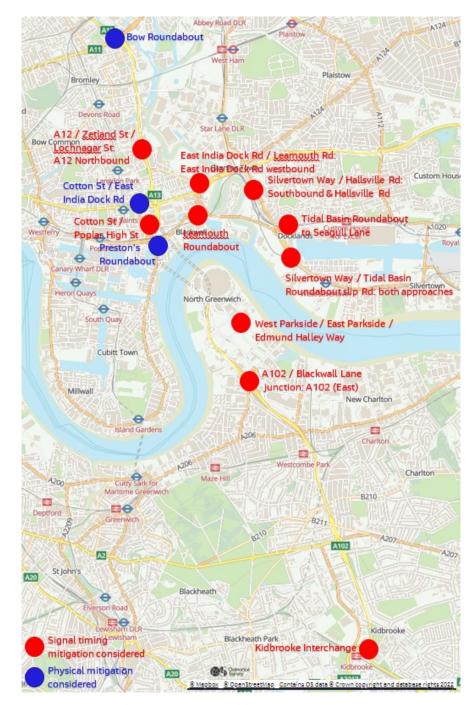
Mitigation summary

- 3 locations require minor physical mitigation:
 - Bow Roundabout

28

- Preston's Roundabout
- A13/Cotton Street (implemented at A13/A102 jct)
- 10 locations require signal optimisation*
- Final checks within the modelling underway to check no other locations require further investigation. Once this is complete, further engagement with affected boroughs will continue.

*All signal timing reviews are completed with a view to achieving an appropriate balance for all road users, including all sustainable modes of transport such as pedestrians and cyclists, as well as bus passengers. Protecting or improving the time allocated to walking and cycling crossings will be a key consideration in this work.

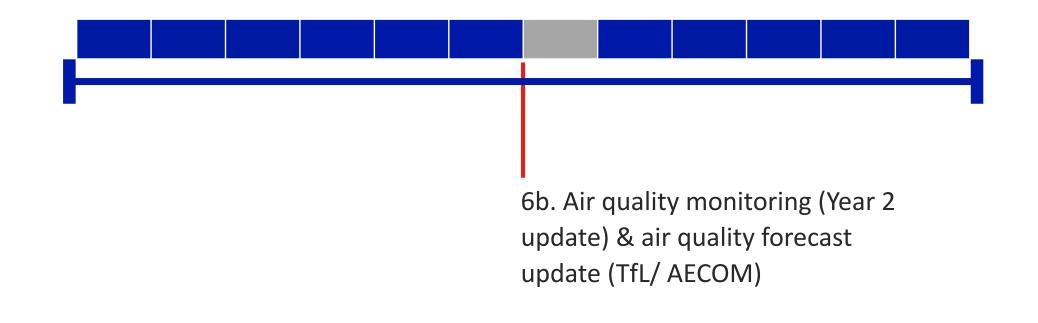


Conclusions / next steps

- SA4 provides robust modelling to support ongoing development of the Scheme in line with DCO requirements
- SA4 Mitigated model outputs currently being reviewed for residual issues likely to be minor and more suited to operational management than pre-opening mitigation – these will be discussed with relevant boroughs during forthcoming engagement
- Work underway on finalising Highway Mitigation Report and Traffic Impact Report ahead of SoS submission later this year
- Bus Impact Report and UCAF currently also under development



29







Lot B Update – Air Quality and Noise

STIG meeting, 25th May 2023

Anna Savage and Matt Muirhead, AECOM

Delivering a better world



Contents

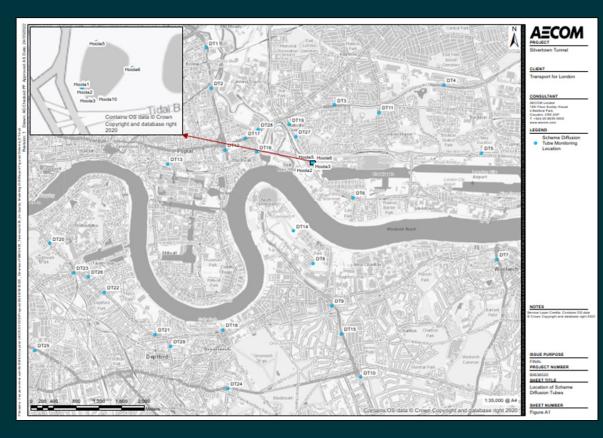
- Air Quality Monitoring Results
- Overview of Refreshed Assessment
- Air Quality Assessment
- Noise Assessment







Diffusion Tube Monitoring

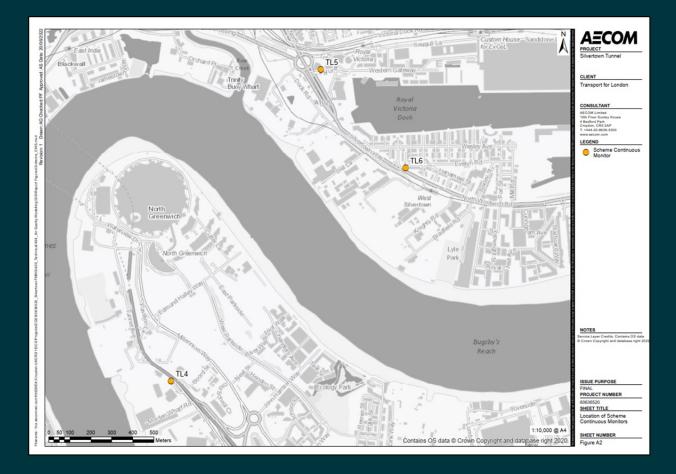


Statistic	NO ₂ Annual Mean (µg/m³)		
	2021	2022	
Min	22.2	21.9	
Мах	42.6	41.4	

- On average across all sites, annual mean NO₂ concentrations reduced by 0.5 µg/m³ from 2021 to 2022.
- In 2022, 36 out of 38 sites had NO₂ annual mean values below the Air Quality Strategy objective of 40 µg/m³ with exceedances at DT24 (Blackheath Hill, Greenwich) and DT3 (Douglas Road, Newham).
- In 2021, 35 out of 38 diffusion sites had NO₂ annual mean values below the Air Quality Strategy objective of 40 µg/m³.
- The highest concentration in 2022 was 41.4 μg/m³ at DT24.
- In 2022, NO₂ concentrations around Hoola Tower, Newham ranged from 25 µg/m³ to 29 µg/m³, well below the objective.



Continuous Monitoring Sites



 Annual mean NO₂ concentrations are below the Air Quality Strategy objective of 40 µg/m³ in 2021 and 2022

Site ID	NO ₂ Annual Mean (μg/m³)		
	2021	2022	
Tunnel Avenue, Greenwich (TL4)	34.3	32.4	
Hoola Tower, Newham (TL5)	21.8*	22.8	
Brittania Gate, Newham (TL6)	26.4	24.6	

*Low DC as site started March 2021

• Real-time data available at London Air Quality Network



Refreshed Assessment Overview

- Final scheme design in SA4 which incorporates strategic highway mitigation.
- Updates to the Do Min and Do Something traffic networks and flows/speeds.
- Reviewed the affected road network and updated where required.
- Additional roads and receptors added around A12 East Cross Route due to diversions following signal optimisations for air quality.
- Updated model runs of Do Min and Do Something and post processing of data for 2025 for air quality and 2025 and 2041 for noise.
- Final scheme design in SA4 which incorporates local highway mitigation.
- Updates to the Ordnance Survey and AddressBase data.
- Modelling approach designed to allow direct comparison with the ES, using guidance applied at the DCO.



Air Quality Refreshed Assessment

Results

- Modelling conducted at 54 sensitive receptor locations across 5 LBs as per sites reported in ES and updated AQ Assessment;
- Additional receptors also modelled on the affected road network;
- Scheme results for SA4 are similar to SA1 and SA3 runs and show improvements in the majority of the study area;
- No materially different effects for air quality from ES.

Receptor	SA1 Annual Mean NO ₂ Concentrations, 2025			SA4 Annual Mean NO ₂ Concentrations, 2025			
	Without Scheme	With Scheme	Change	Without Scheme	With Scheme	Change	
R54 (Aspen Way)	Not run			45.8 μg/m³	45.7 μg/m ³	-0.1 µg/m ³	
R13 (A13 Newham Way)	43.8 μg/m³	44.0 μg/m ³	+0.2 µg/m ³	44.1 μg/m³	44.2 μg/m ³	+0.1 µg/m ³	
R5 (Blackwall Tunnel S Appr)	45.6 μg/m³	44.1 μg/m³	-1.5 μg/m³	43.6 µg/m³	42.8 µg/m³	-0.7 µg/m ³	
R10 (A1261 Aspen Way)	40.2 μg/m³	39.9 µg/m³	-0.3 µg/m ³	40.6 µg/m³	40.3 µg/m³	-0.3 µg/m ³	
R24 (Blackwall Tunnel N Appr)	39.8 µg/m ³	40.1 µg/m³	+0.3 µg/m ³	40.7 μg/m³	42.0 µg/m³	+1.3 µg/m ³	
R50 (Blackwall Tunnel N Appr)	41.9 μg/m ³	39.7 µg/m ³	-2.2 µg/m ³	42.5 μg/m³	40.0 µg/m ³	-2.5 μg/m ³	
S10 (Blackwall Tunnel N Appr)	41.5 μg/m³	39.4 µg/m ³	-2.1 µg/m ³	42.0 μg/m³	39.7 µg/m ³	-2.4 µg/m ³	
R3 (A1206 Cotton St)	40.2 μg/m³	39.0 µg/m ³	-1.2 µg/m ³	40.2 µg/m³	39.0 µg/m ³	-1.2 µg/m³	
P1 (Knight Dragon)	40.9 µg/m³	36.6 µg/m ³	-4.4 µg/m ³	40.4 µg/m³	36.0 µg/m ³	-4.5 μg/m ³	
R9 (Ecoworld Oxbow)	39.9 µg/m ³	38.9 µg/m ³	-1.1 µg/m ³	40.2 µg/m³	39.2 µg/m ³	-1.1 µg/m³	
R18 (East India Dock Road)	39.6 µg/m ³	38.2 µg/m ³	-1.4 µg/m ³	40.4 µg/m³	38.3 µg/m ³	-2.0 µg/m ³	
R3 (Cotton Street)	40.2 μg/m³	39.0 µg/m ³	-1.2 µg/m³	40.4 µg/m³	39.1 µg/m ³	-1.3 µg/m³	

Receptors with exceedances in 2025 opening year

• Selected Adverse Impacts

Receptor	SA1 (DCO scheme Concentrations, 20	·	2	SA4 Annual Mean NO ₂ Concentrations, 2025			
	Without Scheme With Scheme Change		Without Scheme	With Scheme	Change		
R51 (Hoola Tower ground floor)	30.1 µg/m³	32.1 µg/m ³	+1.9 µg/m ³	32.2 µg/m ³	34.0 µg/m ³	+1.8 µg/m³	
P2 (Thameside West)	26.3 µg/m ³	27.3 µg/m ³	+1.0 µg/m ³	26.3 µg/m ³	27.3 µg/m ³	+1.0 μg/m³	
R39 (Silvertown Way)	29.0 µg/m ³	29.6 µg/m ³	+0.6 µg/m ³	28.8 µg/m ³	29.6 µg/m ³	+0.8 µg/m³	
R8 (Leamouth Road)	36.9 µg/m ³	37.4 µg/m ³	+0.5 μg/m ³	36.9 µg/m ³	37.5 µg/m ³	+0.6 μg/m ³	

Largest Positive Benefits

Receptor	SA1 (DCO scher Concentrations	ne) Annual Mean N , 2025	10 ₂	SA4 Annual Mean NO ₂ Concentrations, 2025				
	Without Scheme			Without Scheme	With Scheme	Change		
P1 (Knight Dragon)	40.9 µg/m³	36.6 µg/m ³	-4.4 µg/m ³	40.4 µg/m³	36.0 µg/m ³	-4.5 μg/m ³		
R49 (W Woolwich Flyover)	34.9 µg/m ³	31.8 µg/m ³	-3.1 μg/m ³	34.4 µg/m ³	31.8 µg/m ³	-2.6 µg/m ³		
R50 (Blackwall Tunnel N Appr)	41.9 µg/m³	39.7 µg/m ³	-2.2 μg/m ³	42.5 μg/m³	40.0 µg/m ³	-2.5 μg/m ³		
S10 (Blackwall Tunnel N Appr)	41.5 μg/m³	39.4 µg/m ³	-2.1 μg/m ³	42.0 μg/m³	39.7 µg/m ³	-2.4 μg/m ³		



Comparison of Significance at Receptors in 2025 Opening Year

Updated AQ Assessment Results from DCO

	Total Number of Receptors with:						
Magnitude of Change in Annual Mean NO₂ (μg/m³)	Worsening of air quality already above objective or creation of a new exceedance	Improvement of an air quality objective already above objective or the removal of an existing exceedance					
Large (>4)	1	7					
Medium (>2)	1	40					
Small (>0.4)	31	234					

SA1

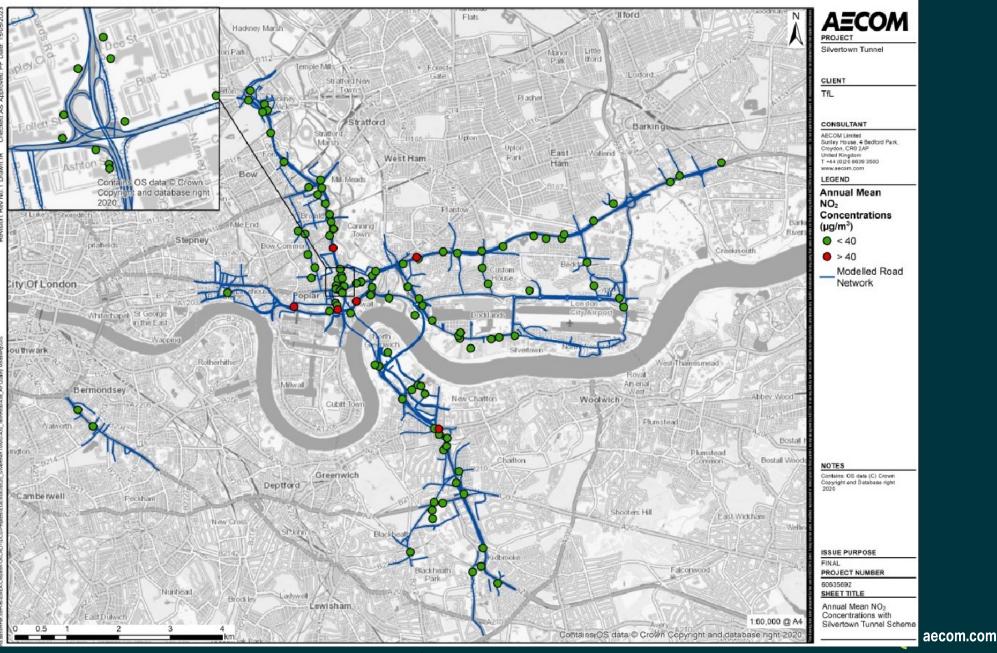
	Total Number of Receptors with:						
Magnitude of Change in Annual Mean NO₂ (μg/m³)	Worsening of air quality already above objective or creation of a new exceedance	Improvement of an air quality objective already above objective or the removal of an existing exceedance					
Large (>4)	0	1					
Medium (>2)	0	2					
Small (>0.4)	0	2					

SA4

	Total Number of Receptors with:						
Magnitude of Change in Annual Mean NO₂ (μg/m³)	Worsening of air quality already above objective or creation of a new exceedance	Improvement of an air quality objective already above objective or the removal of an existing exceedance					
Large (>4)	0	1					
Medium (>2)	0	3					
Small (>0.4)	1	3					

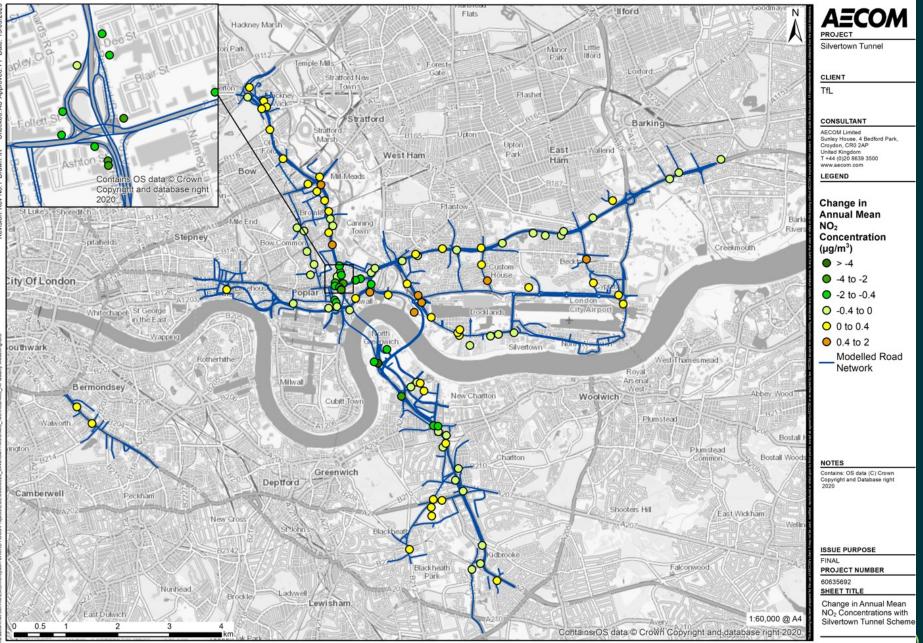


2025 annual mean NO₂ concentrations with scheme



IFL RESTRICTED

2025 change in annual mean NO₂ concentrations with scheme

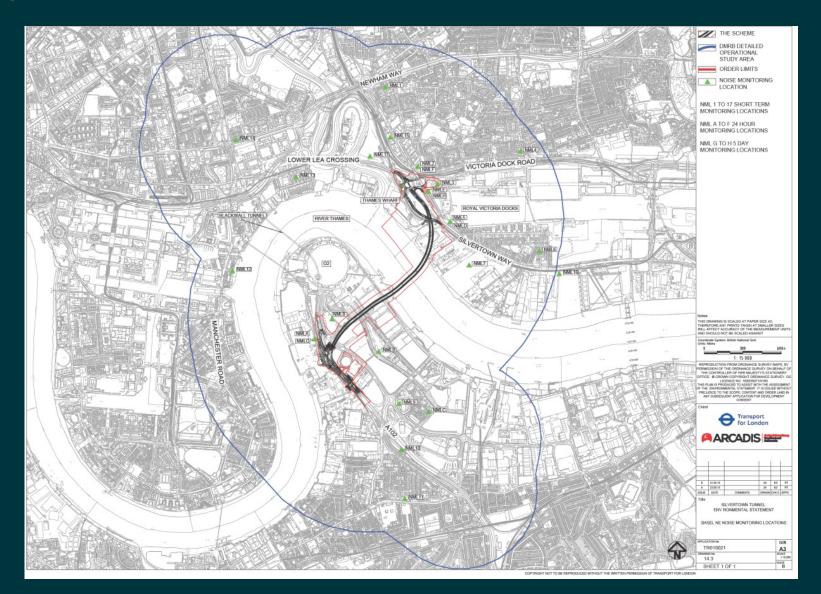


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Noise Refreshed Assessment

Study Area





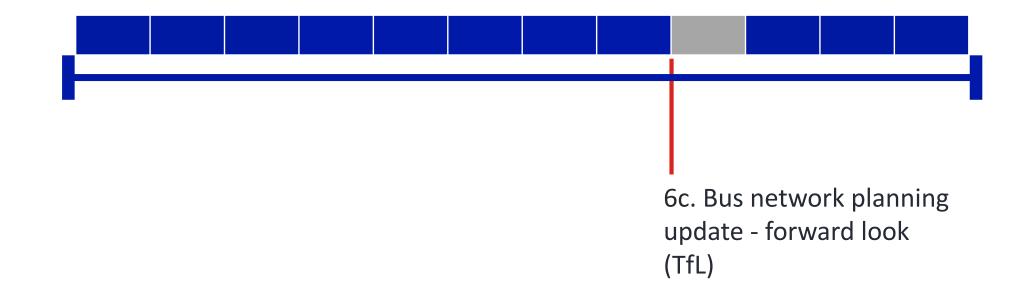
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Noise Refreshed Assessment

Initial Results

- Results for the rerun of SA1 (the DCO scenario) demonstrate similar trends in noise impact to those reported in the ES. There are no material differences. Results for SA4 indicate no materially different effects for noise when compared to SA1
- The overall trend is for small increases in road traffic noise south east of the O2 and around the Hoola Towers and Silvertown Way coupled with small decreases along the A102 approach to the south and around East India Dock Road to the north
- The Hoola Towers are predicted to be adversely affected from the modelling. However the modelled noise levels conform with the design of the building and relevant noise specifications. These were the same noise design levels that were reported in the ES.
- Next Steps: Technical meetings with affected boroughs will be arranged shortly with further updates shared with STIG members in due course.







Bus Network planning update – Consultation Report

- Public Consultation on Preferred Option (B3) concluded 11 Jan 2023, with a total of 644 responses
- Consultation Report formally published
 28 March 2023

https://haveyoursay.tfl.gov.uk/silvertown-tunnelbus-network?cid=silvertown-tunnel-buses

The report includes the detailed analysis of the consultation responses and our responses to issues frequently raised throughout the consultation.

Key decisions made after careful consideration of public responses have been summarised in the next slide.



Silvertown Tunnel Bus Network

Consultation Report March 2023

MAYOR OF LONDON





Bus Network planning update – Key Report Outcomes

- Proposed new route X239 will run between Grove Park and Canary Wharf, Westferry Circus, with a nonstopping section between Sun-in-the-Sands roundabout and Orchard Place.
- Consultees were asked for their preferences on how route X239 accesses Blackwall Way. In response to this question, the new route will travel via Orchard Place to serve the Leamouth Peninsula developments.
- We asked consultees their preferences for how route X239 accesses Wood Wharf. Wood Wharf will not be accessible until at least 2027, therefore we have decided to route X239 via Baffin Way and Trafalgar Way in the interim. This section of the route will be kept under review.
- Route 129 will be extended from North Greenwich to Great Eastern Quay via the Silvertown Tunnel
- Consultees were asked for their preferences for how route 129 accesses the Royal Docks. Although Tidal Basin Road was the preferred option, route 129 will be routed via Dock Road to benefit the future riverside development
- Route 108 will be re-routed to access North Greenwich Station via the new slip road connecting to Millennium Way when travelling towards Lewisham



45

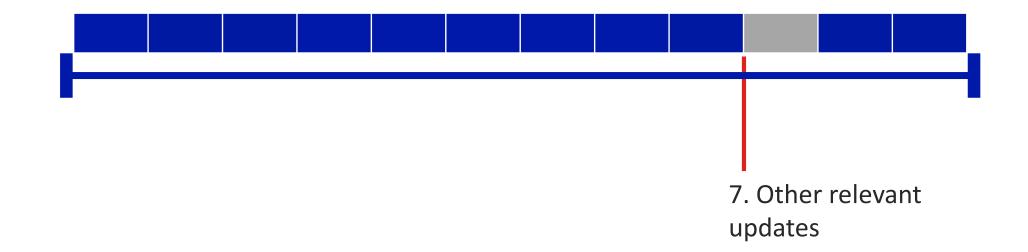
Bus Network planning – updates and next steps

Progress Update:

46

- Invitation to Tender pack for the bus service operator was submitted to the market 17 May - pack specifies we are seeking to introduce electric vehicles for tunnel opening.
- Identification of locations on the enhanced bus network that would benefit through bus priority works is underway further STIG engagement to follow once short-list has been compiled.
- Final modelling exercise for 60-year appraisal will commence soon.
- Identification of options for the application of the host-borough residents bus fare concessions is underway:
 - Complete list of options to be provided to team for review within next few months.





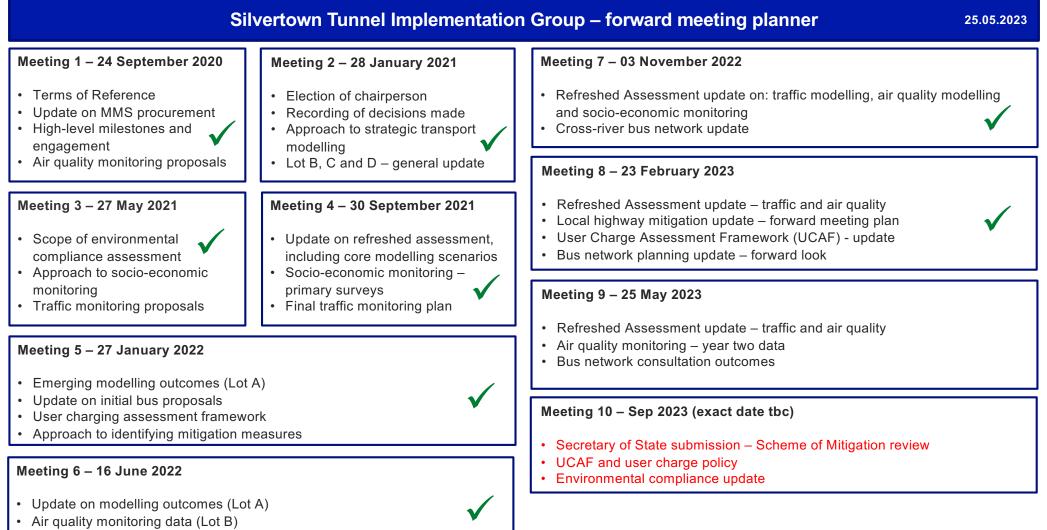




8. Obligationstracker andforward meetingplanner (TfL)



Forward Meeting Planner



Bus network planning progress

49

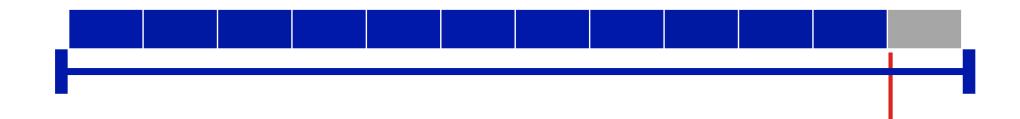
TfL Key Milestones

Indianting Milastons Description (Data	Mile- stone Date	2021		2022		2023		2024		2025
Indicative Milestone Description/ Date		H1	H2	H1	H2	H1	H2	H1	H2	H1
A&B: Commence Refreshed Assessment (A)	Sept 2021		Х							
C: Commence socio-economic monitoring (primary surveys)	Sep 2021		Х							
D: Commence traffic monitoring	Dec 2021		Х							
Conclusion of Refreshed Assessment (modelling and identification of mitigation)	Q1 2023					х				
Submission to Secretary of State	Q3 2023						Х			
SoS decision	Q4 2023						x			
Scheme of Mitigation delivery	Q4 2024									
Scheme opening	Q1 2025								PTU:	x

KEY: H1 = JAN to JUN/H2 = JUL to DEC



50



9. Next steps and AOB

