A brief summary of ideas from workshops hosted by Sian Berry AM
Green Party Member of the London Assembly
December 2022
INTRODUCTION AND CONTEXT – OUR SUMMER WORKSHOPS AND TFL’S SILVERTOWN BUS CONSULTATION

A wide range of Londoners and their elected representatives now accept that building a new road tunnel in east London is the wrong plan at the wrong time.

Adding new road capacity is risky at any time. We know from long experience that new roads create new traffic. Indeed, the 1960s capacity increase at Blackwall Tunnel led to a more than doubling of traffic within around one year of opening. Tolls planned for the Silvertown and Blackwall tunnels now needs integration with future smart road charging plans, and cannot guarantee preventing new traffic being created.

Since the scheme was given planning permission by the Secretary of State in May 2018, the urgency of the climate crisis – and the need to avoid a car-based recovery from the pandemic – have created a policy context which should call into question the wisdom of pursuing this project.

At the time of writing, Newham and Hackney councils are strongly opposed to the scheme, and Greenwich Council representatives have also recently expressed their opposition.

It is time for a rethink but, despite calls from Greens and Liberal Democrats on the Assembly not to sign the contract with the tunnel-building consortium Riverlinx in 2019, the Mayor has continued to push ahead.

In January 2022, a Green amendment to the GLA budget showed how the cancellation costs at that point (ahead of tunnel boring starting) could be covered by a simple toll at Blackwall, which could also be used to trial new smart road charging technology.¹

This proposal was rejected by Labour in the Assembly.

With tunnel boring having now begun, it is time to think about how the single-bore tunnel that has already been started (or the two-bore tunnel that is planned) could be finished in a way that doesn’t cause so much harm.

That is why this summer I brought together children and seasoned campaigners with a scale model of the tunnel to explore other options in two separate workshops in City Hall.

Working with the children and seeing their imaginations go to work on the possibilities was wonderful. They came up with creative ideas for performances, art and play to make use of the vast space the tunnel boring machine is creating under the Thames. I think my favourite was their suggestion for a hospital for nocturnal animals.
And yes, why must we limit our ideas to just transport? Personally, I am quite taken with the idea of turning it over to ABBA to do what they want with it!

However, in order to convince the Mayor that it is not too late to do something different, we needed to come up with practical transport options for the tunnel, so our second workshop invited experts and local campaigners into City Hall.

This document explores the alternative ideas that emerged from the suggestions and earlier options we talked about at these workshops. The options are very broadly laid out in the report, along with key questions and potential problems. However, many sources are cited which look in more detail at earlier proposals that were made for this part of London.

In 2008, after securing funding from the Mayor of the time through a budget agreement with the Green group of Assembly Members, Professor John Whitelegg and his colleagues at the consultancy Eco-Logica produced a more detailed but similarly broad assessment of options to re-use or replace the Thames Gateway Bridge, which was about to be cancelled by the new Mayor.²

I have learned from my predecessors that it is always useful to take a bird’s eye and strategic view of potential alternatives to policies in this way, and this report continues that tradition.

We also need to compare the potential capacity of these options with what is being offered by the current scheme. The estimates in the table below show that our ideas could potentially provide many more people in this part of London with greener travel choices at peak hours, and throughout the day.

<table>
<thead>
<tr>
<th>Services</th>
<th>Approx peak hour passenger usage/capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silvertown Road Tunnel cars and passengers equivalent</td>
<td>2,000</td>
</tr>
<tr>
<td>Silvertown Road Tunnel bus services</td>
<td>1,200</td>
</tr>
<tr>
<td>High frequency bus</td>
<td>2,600 - 4,000</td>
</tr>
<tr>
<td>Tram</td>
<td>3,000 - 4,000</td>
</tr>
<tr>
<td>DLR</td>
<td>4,500</td>
</tr>
<tr>
<td>Walking and cycling</td>
<td>5,000 +</td>
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</tbody>
</table>

Sources for table³

Transport for London (TfL) is currently consulting on detailed proposals for two new bus services that would use the completed new tunnel from 2025-26, as well as a further service that would use the existing Blackwall Tunnel. So we now know the likely capacity of new public transport services that will run through the shared bus and HGV lane in what the Mayor and TfL now like to call a “public transport focused river crossing.”⁴

TfL’s consultation runs until 11 January 2023,* so this is an ideal opportunity for you to tell the Mayor that you would prefer the tunnel to be repurposed away from road traffic to support better and greener services.

Sian Berry AM  
December 2022

*Respond to the bus consultation here: https://haveyoursay.tfl.gov.uk/silvertown-tunnel-bus-network
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TWO-WAY TRAM

Top: Manchester Metrolink Trams
Middle: Map of proposed routes for Greenwich Waterfront Transit

Bottom: Smiling passengers on a tram
WHAT IS IT?
A new two-way tram link from Newham to Greenwich through a single bore tunnel.

WAS IT PROPOSED BEFORE?
Yes, plans for a number of high quality busways and tram links were put together from 2001 to support new homes in the Thames Gateway area. The proposed Greenwich Waterfront Transit services ran south of the river, but planned to link up with similar schemes to the north. They were dropped in 2009.

WHERE WOULD IT GO?
It would run from Canning Town to development areas in Greenwich and Thamesmead. The Greenwich peninsula already has a busway/tramway along Millennium Way, which was built with the earlier plans in mind. This runs to the old Sainsbury’s junction, and the tram would then use regular bus lanes into Charlton and towards Thamesmead.

HOW MANY PEOPLE COULD USE IT?
A high-quality and frequent tram service running every few minutes could carry around 4,500 people in the morning peak hour. This compares very well with the 1,200 people who could use the proposed Silvertown buses.

WHAT EXTRA INVESTMENT WOULD IT NEED?
By needing only a single-bore tunnel, cost savings from the current Silvertown Road Tunnel contract could be used to help build the overall tram system. Using the existing busway would also reduce the additional infrastructure needed.

But for a high quality tram, investment in tracks, stops and technology would also be needed, in addition to running costs. The Croydon Tram system has seen an annual subsidy of £30-40 million per year.

SOCIAL AND ENVIRONMENT IMPACTS?
The environmental impact would be very low. Trams running on electricity create very little air pollution, and the social and cost benefits to people in the area who currently suffer from high car dependency and low access to public transport would be very high.

A very high quality option with a high capacity to serve passengers on long-desired new public transport routes, but with added investment and running costs required.
DLR EXTENSION

Bottom: DLR and cable car, next to City Hall
Credit SteveKeiretsu on Flickr CC BY-NC-ND 2.0
BETTER WAYS TO USE THE SILVERTOWN ROAD TUNNEL

WHAT IS IT?
A DLR extension using the single-bore tunnel, running from Canning Town to Kidbrooke.

WAS IT PROPOSED BEFORE?
Yes, in 2012 Greenwich Council commissioned studies on a number of options for using the Silvertown Road Tunnel for public transport. In discussions with TfL, an Eltham DLR extension was regarded as: “the highest profile service likely to attract the largest patronage and offering the best and most reliable journey time of all the options considered. Also the highest capacity and safest solution, providing seamless interchange with several mainline rail services and the existing DLR network.”

In October 2019, Greenwich Council leader Danny Thorpe called for the revival of this plan, among other options, in a letter to the Mayor.

WHERE WOULD IT GO?
The proposals from 2012 envisaged a new DLR line from Canning Town to Kidbrooke using the A2/A102 road corridor heading south from the Greenwich peninsula, with potential to extend the route to Eltham and Falconwood.

The feasibility study suggested narrowing the lanes on both roads and building the railway above the central reservations.

HOW MANY PEOPLE COULD USE IT?
The new links were estimated to carry 17-21 million passengers a year. This is far higher than the proposed Silvertown bus routes, which could carry around 1.3 million passengers a year based on current TfL documents (see page 3 for peak hour estimates).

WHAT EXTRA INVESTMENT WOULD IT NEED?
This scheme would use a single bore tunnel, enabling cost savings from the current road tunnel contract. However, the plans involve a large investment in new infrastructure for the remainder of the route and would need additional funding. The total cost estimated in 2012 was as high as £818 million.

SOCIAL AND ENVIRONMENT IMPACTS?
The DLR is an electric service with a very low impact on pollution. However, construction of new stations and new elevated sections of the line would require a large amount of concrete and associated embodied carbon. The social and car-dependency reduction benefits would be even higher than for a tram option.

A high quality and efficient public transport option, but with higher capital costs, as well as potential running cost subsidies.
Top: Visualisation of the proposed Thames Barrier Bridge. Credit: www.thamesbarrierbridge.com
Middle: Pedestrian tunnel in Lyon. Credit: Tiffany on Flickr CC BY-NC 2.0
WHAT IS IT?
A single-bore tunnel repurposed for a high-quality walking and cycling link.

WAS IT PROPOSED BEFORE?
Not at this location, but the Greenwich Foot Tunnel is nearby and suffering from high demand and limits to reliability due to problems with lifts. Pre-pandemic, capacity at Greenwich was forecast to be reached throughout the peak hour before 2025.\textsuperscript{11}

The need for new walking and cycling links across the Thames in this area is demonstrated by the choice of this location for the cable car, and the number of other proposals in the area, including the Thames Barrier Bridge and the Rotherhithe to Canary Wharf crossing.\textsuperscript{12,13}

WHERE WOULD IT GO?
This idea would use the single bore of the Silvertown Road Tunnel as the basis for a new walking and cycling link, which would also need further work to link it to the existing cycling network.

There is also the potential to adapt the current Silvertown Road Tunnel contract to divert the boring machine after the first bore is complete to add a further tunnel at the location of the proposed Rotherhithe project to create links both sides of Canary Wharf.

HOW MANY PEOPLE COULD USE IT?
Though the journey would be around 1,000 metres, in a 11 metre diameter tunnel a high quality environment could be provided. The city of Lyon in France has a 1.8 km cycling and walking tunnel.\textsuperscript{14} Demand would likely be high. In 1937 traffic surveys in London recorded 1,315 people a day cycling through the Blackwall tunnel (13 per cent of daily traffic at the time).\textsuperscript{15} Busy parts of the current cycleway network already see 2,000 people cycling in a peak hour.\textsuperscript{3}

WHAT EXTRA INVESTMENT WOULD IT NEED?
This scheme would use a single-bore tunnel, and we estimate this option could be completed well within the current cost of the Silvertown Road Tunnel.

SOCIAL AND ENVIRONMENT IMPACTS?
There are few walking and cycling options to cross the river in this area, so this would have huge benefits for active travel. Current ways to reach Canary Wharf from south east London mainly attract fare costs, so creating new free options would bring large social benefits.

A less costly option with significant social and environmental benefits for local people.
ISSUES WITH A SINGLE-BORE TUNNEL?
SAFETY CONCERNS WITH A SINGLE-BORE TUNNEL?

At this point we need to pause to consider potential safety issues with putting a new two-way public transport link inside a single-bore tunnel.

These include noting the fact that the Silvertown Road Tunnel is designed with eight cross-passages to be built between its dual tunnels approximately every 150 metres. These cross-passages are intended to provide escape routes and emergency service access in the case of collisions within the road tunnels.

Public transport tunnels do not have such frequent cross passages. For example, the Jubilee Line Extension was built with connections between its tunnels at approximately 1,000 metre intervals. Crossrail was built with 19 cross passages over its length, giving an interval of 600 to 800 metres between them.

Generally, public transport tunnels are also now built with a walkway to provide for alternative access during an emergency, as this provides a safe space within the tunnel itself, which cross-passages do not.

It would be best practice to design any public transport link with these kinds of walkways alongside it, which the space within the tunnel allows for in all of our options.

With any cycle lanes, it would also be sensible to make them wide enough to enable maintenance or servicing using vehicles. A suitable width would also allow for emergency vehicle access in case of any incidents in the tunnel.

There is also an established precedent for new cycleways in London to be used when needed by ambulances, which creates an important extra option when traffic congestion threatens response times. Therefore, it may be a good idea to provide for more regular ambulance access for ambulances to our tunnel, if it is used for walking and cycling.
MULTIPLE MODES IN ONE BORE?

Bottom: Duplex vehicle tunnel diagram. Credit: World Road Association
WHAT IS IT?

A single-bore tunnel with a revised internal structure to enable multiple tiers and different modes at each level.

WAS IT PROPOSED BEFORE?

Double decker tunnels are not uncommon. And when looking at the scale model of the Silvertown tunnel, many workshop participants pointed out the potentially wasted vertical space currently designed into the plans. Many participants wondered: could a redesign within the tunnel enable walking and cycling to fit alongside public transport?

The current project design includes a very large ventilation system, and we questioned whether this would need to be as high in capacity if we pursued options that excluded traffic.

The ventilation system for the Silvertown Road Tunnel is intended to handle general-purpose motor traffic. The guidance in the Design Manual for Roads and Bridges document notes that ventilation requirements depend upon the risk, speed and volume of motor traffic. For walking, cycling and approved vehicles, such as buses, trams or DLR trains, a tunnel would have a lower fire risk and may need less ventilation.

In fact, in early optineering for the Silvertown Road Tunnel, consultants looked at an option that would use the ‘invert’ space beneath the traffic deck for a walking and cycling route (see below).

There are recent examples of this kind of dual-use tunnel in other cities, including a double decker car tunnel in Paris, and the walking and cycling tunnel in Lyon mentioned on page 11 already includes public transport.

WHAT ARE THE PROBLEMS TO SOLVE?

The height of the deck (and thus the space between the deck and the ventilation system) is currently designed to allow for full-height HGVs and double decker buses to pass comfortably underneath. However, it can be seen from the schematic diagrams in this report that a lower clearance is needed for DLR and Tram vehicles.

We could not see any reason why the tunnel shouldn’t be redesigned internally to create space for a low-level walking and cycling route and the additional separate ventilation system that would be needed. With suitable access points, the lower level space could also be used for emergency access and evacuations.

There are clear advantages for adding new modes and significant new capacity, so we strongly believe these kinds of options should be considered for future exploration.
TWO-BORE OPTIONS

Bottom: TFL map showing the alignment of the Blackwall and proposed Silvertown tunnel bores under the Thames.
WHAT ARE THESE?
This report is being published while the Silvertown Road Tunnel boring machine is currently in the process of digging the first of two proposed tunnels to house four lanes of new traffic in total. We have proposed options above that stop the digging after the first bore, without reversing the machine in Greenwich and sending it back to the Royal Docks.

However, there are also several different potential options that could make use of a two-bore tunnel to create combinations of the above options, or to also repurpose the current Blackwall tunnels. These pages outline very briefly what these options could be, in order to stimulate future ideas and discussion.

COMBINE WALKING AND PUBLIC TRANSPORT?
With a two-bore Silvertown Tunnel, any of the options considered before and described above could theoretically be combined so that the new tunnels could create multiple new options for crossing the river. The capacity estimates on page 3 of this report would be added together, creating even more benefit, but the overall cost of the scheme would be higher.

SHIFT TRAFFIC FROM BLACKWALL?
The resilience of the (older) northbound Blackwall Tunnel bore is something the current Mayor is now making a major plank of his justification for the Silvertown Road Tunnel Scheme. So we might also consider using one bore of the Silvertown Tunnel as a new route for northbound traffic, while repurposing the northbound Blackwall tunnel for other modes?

This idea appears to make most sense if walking and cycling is provided at Blackwall, as the smaller bore and the large bend would mean more complexity for public transport options. The new northbound tunnel at Silvertown could at the same time be combined with any of the public transport options above.

However, by enabling HGV traffic to travel into Canning Town, these options would still have large social and environmental impacts – and an element of induced traffic – which would need careful study and public debate.

Existing Blackwall tunnels – traffic in one bore with walking and cycling or public transport in the other?

Silvertown tunnels – traffic and tram?
WHAT DO YOU THINK?

These ideas all represent possible alternatives to a large road tunnel in the south and east of our city. Any new plans will need to be worked on in much more detail to make the case to the Mayor and for him to change his mind. I would like to hear more from Londoners about what they think the Silvertown Road Tunnel could be better used for, and from people who want to help develop these ideas to find truly viable options and investment to make something greener and less harmful happen.

Please get in touch with me if you have any comments or suggestions.

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This report sets out my views as an individual Assembly Member and not the agreed view of the entire Assembly.
BETTER WAYS TO USE THE SILVERTOWN ROAD TUNNEL

References


3 Notes on capacity table - methods used to gather and compare info:
The unit for the best comparison of potential capacity seems to be the expected demand or capacity during the morning and afternoon peak hours in either number of vehicles or number of public transport passengers. In all cases we have added together the north and southbound numbers (if given) for total peak hour capacity.

In the documentation supporting the Silvertown Road Tunnel at the DCO hearings, the traffic forecasting looked at ‘actual’ and ‘demand’ traffic flows expected, standardised as PCU (a passenger car equivalent, incorporating all kinds of traffic in a standard unit). We have used its ‘actual’ figures for our estimate, which were based on an opening year of 2021. We have also multiplied this by 1.2 to allow for average car occupancy above one.


For options that have not reached a detailed planning stage, such as trams, it is harder to see what the potential capacity is. For a realistic comparison, we have chosen to look at the potential highest hourly frequency of the services indicated in the sources, and multiplied this by the carrying capacity of the vehicles to reach an estimate of how many passengers could be served at peak hours.

High frequency bus: we have used figures from the Greenwich Waterfront Transit buses planning statement which gives a peak interval of 4 minutes.


Tram: we have used a broad estimate from the Whitelegg Eco-Logica study, 2008, ibid.

DLR: we have used figures from the Royal Borough of Greenwich/Hyder Consulting document referenced below, and the River Crossings Development Study for the Silvertown Tunnel Consultation in 2014.


Walking and cycling: we give a very conservative estimate for walking and cycling capacity. Segregated cycle lanes are around five times more efficient at moving people than a car lane, and Transport for London gives a range of evidence for high peak demand and capacity from its cycle superhighways in a presentation from 2018. Other sources for walking and cycling capacity estimates are given on page 11.


5 Parallel Lines. The London Assembly Transport Committee’s review of the East London and Greenwich
BETTER WAYS TO USE THE SILVERTOWN ROAD TUNNEL


https://drive.google.com/file/d/1m1UwpcOO3uDc7rYQQ0v8-ShICYFiY5K3/view?usp=share_link


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9 Letter from Cllr Danny Thorpe, leader Royal Borough Greenwich. via @rosslydall on twitter, Oct 2019
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Halt Silvertown Tunnel, Greenwich Council leader tells Sadiq Khan. 853, Oct 2019

10 The recently published TfL bus development plan estimates 4,250 daily passengers through the Silvertown Road Tunnel, here multiplied by 300 days to account for variation in demand over the year. 4,250 comes from Figure 4.1 in the consultation document showing daily bus passengers. Silvertown Tunnel Opening Bus Network Consultation Supporting Documentation, Silvertown Tunnel Bus Network Proposals. TfL, Nov 2022
https://haveyoursay.tfl.gov.uk/silvertown-tunnel-bus-network/widgets/56145/documents

11 Greenwich Foot Tunnel ‘to be full up with cyclists’ by 2025, TfL says. 853, Nov 2017


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