Beaches Link Tunnel Project

Submission from the Balgowlah Residents Group

1 March 2021

Extracts from the Report of Justice David Kirby into the Preservation of the Warringah Corridor for a Freeway, Sept 1983

From page 4:

. Even if the Freeway were built without a commitment to opening up Warringah (which, as we say, is most unlikely), the case for then using the Peninsula for residential purposes would be irresistible. A substantial inhibition (some would say the only inhibition) to development would have been removed. The Department of Environment and Planning, for instance, said this:-

"The Warringah Freeway, if constructed, would act as a catalyst and cause pressure for further residential development at North Warringah."

From page 5:

So, in a very real sense the Inquiry is not about traffic at all. We will demonstrate that traffic conditions, with or without a freeway, and whether four lanes or six, would be similar to traffic conditions today. Rather, the Inquiry is about whether Warringah should be developed for residential purposes. Development was pressed by the Warringah Shire Council. It was advocated by the Northside Councils. The desirability of developing Warringah is, therefore, an important issue.

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Preamble:

The Balgowlah Residents Group is a community group registered with the Northern Beaches Council. It's charter states:

> The local community we serve are residents who are likely to be impacted by the construction and operation of the proposed Beaches Link Tunnel – these are residents in Balgowlah, North Balgowlah, Seaforth and Clontarf. Any resident in Manly or the northern beaches is welcome to be a member of the Resident Group. The focus and priorities of the Resident Group include:
>
> - The proposed Beaches Link Tunnel
> - The preservation of the Balgowlah Golf Club as a Green Open Space
> - The preservation of the environmental quality of the Burnt Bridge Creek

The Beaches Link Tunnel as a Stand-Alone Project:

The EIS refers throughout the document to the "Western Harbour Tunnel and Beaches Link Program of Works". Our submission assumes that the Beaches Link Tunnel is being assessed on a stand-alone basis and not necessarily an integral part of the Western Harbour Tunnel and Warringah Freeway Upgrade project even though it would appear that it was the original intention of the government to have a single EIS for the two projects. ***The Western Harbour Tunnel and Warringah Freeway Upgrade can be built without the Beaches Link Tunnel Project.***

DPIE Refusal to Grant an Extension of Time to Review the EIS for the Beaches Link Tunnel:

We register our disappointment at the decision by the DPIE to not grant an extension of time for residents to review the EIS and to make submissions. The reason given by the DPIE that "the 62 days granted for the EIS for the Beaches Link Tunnel is the same as that granted for the review of the EIS for the Western Harbour Tunnel and Warringah Freeway Upgrade" in late 2019.

This reason is both hypocritical and illogical as residents had many opportunities to attend public Community Consultation Sessions on the EIS for the Western Harbour Tunnel. We appreciate that due to Covid-19 Restrictions, Community Consultation Sessions are not possible for the EIS for the Beaches Link Tunnel, the Virtual Briefing Sessions of TfNSW are no substitute for many in the community. This was not recognised by the DPIE.

Attachment 4 to our submission contains email exchanges with the Office of Minister Rob Stokes and James Griffin MP on our request for an extension of time.

This decision has hardened the community cynicism about the independence of the DPIE and points to the statement made by Minister Andrew Constance in late 2019 that: "I want and

will have the contracts for the construction of the Beaches Link Tunnel signed before the next State Election in 2023".

Focus of this Submission:

The focus of this submission is on section of the Beaches Link Tunnel project east of the Middle Harbour.

EXECUTIVE SUMMARY

We object to the Beaches link Tunnel project in its entirety on the basis of the following:

- The Balgowlah residents will be massively impacted by the construction of the Balgowlah Portal in the Burnt Bridge Creek Deviation and from the use of the Balgowlah Golf Course (opposite the Balgowlah Boys High School) as a construction site for 5 – 7 years. The Balgowlah Residents Group represents many of the residents in Balgowlah, North Balgowlah and Seaforth who have concerns about the proposed project.

- The Beaches Link Tunnel project has been sold to the residents of the northern beaches on the basis that; it will reduce travel times for residents driving to the City and beyond by 30+ minutes, the project represents "catch-up infrastructure" and the project will not be an excuse for the government to promote and allow wide-scale development on the northern beaches.

- At present it takes 30-35 minutes to drive from Balgowlah to the city in the morning peak – except when there are accidents on the Harbour Bridge or in the Harbour Tunnel and Eastern Distributor. The claim that the tunnel will reduce travel time to the city by 30+ minutes is based on a TfNSW forecast for 2037 for traffic demand on the feeder roads from the northern beaches that was current in 2016.

- We are of the view that TfNSW's forecast for 2037 overstates what is likely to be the actual demand because of the widescale adoption of Work-from-Home (WFH) by corporations, government agencies and residents in the northern beaches. If the demand is lower, the alleged time-savings will be lower and $-value of the time-savings will be less.

- Our analysis shows that using a discount rate of 4%, the Benefit Cost Ratio for the tunnel falls from 1.25 to 0.95 if a modest move to WFH takes place in the period to 2037.

- In the Benefit Cost Analysis we have done, more than 40% of the "benefits" coming to the State of NSW is from:

    - *Wider Economic Benefits* – in the form of new housing construction – i.e. development in addition to that proposed in the Northern Beaches Council's current Housing Strategy that is on public exhibition.
    - *The Induced Demand* – from the time saving for the occupants of additional cars coming to the northern beaches in the summer months. These visitors are additional to the current summer visitors.

Without these benefits, the Benefit Cost Ratio would fall from 1.25 (using TfNSW's traffic demand forecast for 2037) to 0.73.

- The extent of long-term irreparable damage to much-loved and valuable green open space and fragile bushland is (in our view and the views of the Save Manly Dam Catchment Committee, the Australian Conservation Foundation and the Baringa Bush Residents Group) not properly understood by TfNSW. The protection and mitigation options proposed and discussed in the EIS for several challenging activities are in our view and those of other groups, totally inadequate and need to be redone by TfNSW.

- The claimed benefits from the Beaches Link Tunnel (which we propose are over-stated) need to be assessed against the damage that will be done to the Burnt Bridge Creek and surrounding houses (due to the draining of the groundwater) and the damage to the fragile bush environment in the Garigal National Park and the Manly Dam War Memorial Park (from the widening of the Wakehurst Parkway).

- The cost of the Beaches Link Tunnel and Gore Hill Freeway Upgrade has been estimated at $10 billion (in $2017), but the end-of-project cost (in $-of-the-day) will be close to $16 billion. The DPIE and the NSW Treasury need to balance the State's overall infrastructure needs with the marginal benefits for the State from the construction of the Beaches Link Tunnel.

- The project is simply too risky for Minister Andrew Constance to be allowed to sign contracts for its construction before the March 2023 State Election.

1. Objectives of Building the Beaches Link Tunnel Project

1.1 SEARS Requirements

1.1.1 Objectives of the Project

c. a statement of the objective(s) of the project,	**Chapter 3** (Strategic context and project need), **Section 3.4** states the project objectives.

The objectives stated in Section 3.4 of the EIS for the objectives of building the Beaches Link Tunnel are vague, general and aspirational in nature - for example:

- "reduce congestion on distributors roads"
- "create faster, safer and more reliable journeys"
- "improve productivity".
- ……. the list goes on.

The list of objectives relate to "building things" – and not achieving outcomes. The outcomes are what can be described as "aspirational".

It is well documented in transport studies that building freeways do not necessarily "reduce congestion on distributors roads", "create faster, safer and more reliable journeys" and "improve productivity". There may be improvements in the short term, but within a few years journey times increase and congestion returns – resulting in any short-term productivity gains being wiped out.

We question that the construction of the Beaches Link will achieve the stated objectives.

1.1.2 Alternatives to the Project

e. an analysis of any feasible alternatives to the project;	**Chapter 4** (Project development and alternatives), **Section 4.3** provides an analysis of strategic alternatives. **Section 4.4** provides an analysis of corridor alternatives.

The EIS includes only a very limited discussion of alternatives to the Beaches Link Tunnel to achieve the stated objectives. There is an unbalanced and far greater discussion of alternative tunnel routes and tunnelling methods, that undermines public confidence in the transparency of the process.

This issue is covered in Section 1.7 of this submission.

1.1.3 Benefits of the Program of Works for the Beaches Link Tunnel

g. a description of how alternatives to and options within the project were analysed to inform the selection of the preferred alternative / option. The description must contain sufficient detail to enable an understanding of why the preferred alternative to, and options(s) within, the project were selected, including:	**Chapter 3** (Strategic context and project need), **Section 3.5** and **Section 3.6** describe the benefits of the overall program of works and the project respectively. **Chapter 4** (Project development and alternatives), **Section 4.4** and **Section 4.5** detail the assessment of alternatives.

The benefits claimed in Sections 3.5 and 3.6 from the construction of the Beaches Link Tunnel are overstated, because (for example) time savings are given for journeys in 2037 from Dee Why to the Airport using the Beaches Link Tunnel and the Western Harbour Tunnel – when this EIS is assessing the Beaches Link Tunnel. As stated in the Preamble, the Western Harbour Tunnel can be built without the Beaches Link Tunnel.

In addition, it will be demonstrated in our submission that the basis for estimating the time savings in 2037 for journeys out of the northern beaches is a TfNSW forecast of traffic volumes is grossly inflated. This forecast was done in 2016 and makes no accommodation of changes in travel needs and patterns from the widescale adoption of Work-from-Home by corporations and residents.

1.1.4 Scenarios used for Operational Modelling within EIS

The scenarios used for operational modelling in the EIS documents were as follows:

- 'Do minimum' - Not including Beaches Link, Warringah Freeway upgrade, Western Harbour Tunnel, Sydney Gateway or M6 (Stage 1).
- 'Do something' – Includes Beaches Link and Warringah Freeway upgrade, but not Western Harbour Tunnel, Sydney Gateway and M6 (Stage 1).
- 'Do something cumulative' – Includes Beaches Link, Warringah Freeway upgrade, Western Harbour Tunnel and Sydney Gateway and M6 (Stage 1).

These scenarios clearly demonstrate the ability for Western Harbour Tunnel and Beaches Link to be treated as stand-alone projects, with the Warringah Freeway upgrade required to integrate either of the projects into the existing network.

We believe these scenarios are inadequate, as they do not include a scenario with the Western Harbour Tunnel and Warringah Freeway upgrade, but not the Beaches Link. As the Warringah Freeway and current harbour crossings are the source of significant congestion in the trips modelled, we consider it negligent to not include modelling for this scenario.

This suggested scenario is particularly relevant, considering the Western Harbour Tunnel and Warringah Freeway upgrade have recently been given approval for construction. These approvals make both the 'Do minimum', and 'Do something' scenarios irrelevant, as well as downplaying the improvements achieved by stand-alone projects (such as the Western Harbour Tunnel) in the wider network.

Recommendation: Conduct operational modelling for traffic, air quality and cumulative impacts for a scenario that reflects current approved projects - Warringah Freeway upgrade, Western Harbour Tunnel, but not Beaches Link and Gore Hill Freeway Connection.

1.2 Benefits Claimed by TfNSW

There are two benefits claimed by TfNSW in the EIS that we challenge – these are:

- Time savings for northern beaches residents driving to the city, the airport or to Western Sydney; and

- The reduction in traffic along Military Road and other arterial roads that drivers will no longer use once the Beaches Link Tunnel is built.

1.3 Time Savings

As the EIS is for the Beaches Link Tunnel, it is considered inappropriate that TfNSW can claim as a benefit for the Beaches Link Tunnel any time savings that involve the other built or not-built infrastructure projects. As stated in our preamble, the EIS needs to be seen on a stand-alone basis because it is both possible and feasible that the Western Harbour Tunnel can be built without the Beaches Link Tunnel.

Any time-savings quoted in the EIS need to be based on time saved from the origin of the drive to a point where the driver will meet with a major road that connects with the intended destination – and not the time saved to get to the destination.

It is not known if, in the estimation of the time-savings, the congestion that we know will develop in Manly Vale and in Balgowlah has been taken into account.

The fine print in the sections of the EIS where the above time-savings are quoted, we are told that the savings apply in 2037 – and then during the AM peak. To have estimated or modelled these savings, TfNSW would have had to make an assumption about the increase in traffic along roads that lead to the tunnel entrance in (for example) Burnt Bridge Creek Deviation from 2017 to 2037.

If the **estimated** increase in traffic in the roads leading to the tunnel entrance is higher than the **actual** traffic because of the adoption of Work-from-Home (WFH) by northern beaches' residents, the time savings will be considerably less. Similar projects in the past have proven

that government traffic flow forecasting has consistently overstated usage. Government forecasting has been so poor that major toll-road projects have led to loan defaults (e.g. Lane Cove Tunnel and Cross City Link). It is too soon for recently opened tunnels such as WestConnex and NorthConnex to show whether traffic forecasting will be found to be accurate.

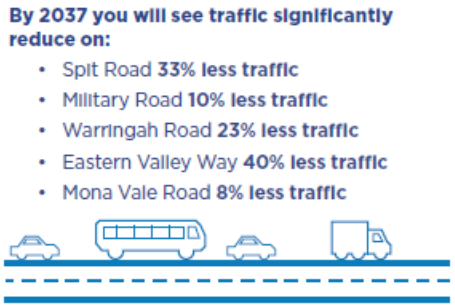
1.4 Improvement in Traffic Flows on Congested Roads

In several places in the EIS documents, much is made of the fact that Military Road is the 7th busiest road corridor in NSW and that Spit Road is the 10th busiest road corridor.

One of the major benefits claimed in the EIS for the Beaches Link Tunnel is that traffic along the Spit Road and Military Road corridors will be reduced once the Beaches Link Tunnel is built and is operating.

The "evidence" for this benefit is that:

- In 2037, there will be 10% less traffic travelling along Military Road, and
- There will be 33% less traffic travelling on Spit Road – from Spit Bridge to Spit Junction in Mosman.



The "evidence" presupposes that the forecast traffic volumes travelling down Manly Road to the Spit Bridge is accurate. We strongly challenge this – as stated on Section 1.3, this forecast was done in 2016 (21 years before 2037) and does not take into account the impact on private vehicle travel as a consequence of increased bus transport capacity (e.g. Dee Why to Chatswood Express Bus Service) and the growing acceptance and adoption of WFH.

Even with what we believe is an exaggerated high traffic flow forecast for 2037, a reduction of only 10% in the traffic flowing in Military Road is very modest – and certainly no justification for spending $10 billion + on a tunnel to bypass Mosman.

It is clear that if reduction of traffic on Military Rd is a primary objective of the project, it does not fulfill this objective.

1.5 Forecast Traffic in 2037

1.5.1 Implausibility of the Traffic Forecast for 2037

It has been pointed out by many residents that: At present, it takes less than 38 minutes to travel from Balgowlah to the city, yet the EIS claims that in 2037 drivers will save 38 minutes by using the Beaches Link Tunnel. This has invited the sarcastic comment that the tunnel will be some sort of time-machine. Rather, it means that TfNSW have forecast an unrealistic increase in traffic along the Sydney Road/Condamine Street/Burnt Bridge Creek Deviation

corridor – when TfNSW's data on the average daily crossings of Spit Bridge has remained constant for many years.

1.5.2 Importance and Relevance of the TfNSW Traffic Flow Forecast for 2037

When we challenged TfNSW about traffic forecast for 2037 along the two major road routes that will "provide" vehicles for the tunnel, we were told that TfNSW had full confidence in their traffic modelling and their traffic forecasts. Here is an extract from an email received from Tim Kwok (Senior Communications and Stakeholder Engagement Officer) from the Beaches Link Project Team: "…… *there is no plan at this time to review the modelling done for the Beaches Link EIS*" - See Attachment 1 to see the question to David Bohm from the Beaches Link Project Team sent by the Balgowlah Resident Group and the response we received from Tim Kwok.

We are of the view that for TfNSW to state that it has no plan or intention to review or update a traffic forecast made in 2016 for traffic flows 21 years later (in 2037) is symptomatic of the arrogance with which it has treated questions and challenges from residents on a range of issues. For TfNSW to refuse to acknowledge that the wide-scale WFH adopted by residents in the northern beaches during months of lockdown could continue in a reduced form in the future will have an impact on future AM peak traffic flows is just not credible.

During TfNSW's Virtual Briefing Sessions, David Bohm (Traffic and Transport Lead in the Beaches Link Project Team) explained to viewers that the traffic forecast for 2037 was based on a combination of:

- Historic traffic flows along the road corridors that would be the feeder routes to the Beaches Link Tunnel, factoring in:
    - natural population growth in those areas of the northern beaches from where car journeys to the city and beyond are known to originate
    - planned urban and industrial developments for the northern beaches

There was no mention in the Virtual Sessions of TfNSW that the Covid-19 pandemic (and WFH imposed restrictions) had, could, or would have a long term impact on the future road traffic along the feeder roads to the proposed Beaches Link Tunnel.

If TfNSW's traffic forecasts for 2037 are incorrect, the claim for time savings is wrong and the $-value benefit in the Benefit Cost Analysis for the time saved by users of the tunnel is also wrong - meaning the Benefit Cost Ratio will be wrong. In addition, the value of the toll revenue for the operator will be wrong – as will the amount an investor in the tunnel is prepared to pay the government.

These forecasts for vehicle flows in 2037 were made without:

- Taking into account the Dee Why to Chatswood Express Bus Service (or a B-Line Service) that commenced service in January 2020.

- The move to Work-from-Home (WFH) that has developed with the introduction of a range of restrictions to control the spread of Covid-19.

If the government decides to proceed with the Beaches Link project, there is expected to be a rapid adoption of WFH because of the increased congestion in Manly Vale and along Sydney Road due to the construction activities in the Burnt Bridge Creek Deviation and on the Balgowlah golf course site during the 5-7 year construction period. Moves to WFH during this period will become permanent as will the establishment of profitable WFH Hubs in and around Manly – further reducing the number of vehicles needing to travel to the city (and beyond), particularly during the AM peak.

Recommendation: Conduct traffic forecasting incorporating projected permanent changes to the levels of WFH. This would need to be undertaken at a time when the health risks from COVID-19 have been reduced to a minimal threat, the national vaccination programme is complete, and restrictions on capacity of public transport use have been lifted.

1.5.3 Adoption of WFH by Residents in the Northern Beaches

The impact on future traffic flows as a consequence of WFH and the WFH Hubs that are emerging to help residents and corporations work more efficiently does create uncertainty for corporations and consultancies trying to forecast future traffic, office rental space demand, spending habits and child care facilities.

The adoption of WFH by residents in the northern beaches is well known at an anecdotal level – and from evidence provided by the Northern Beaches Council which is the largest employer in the area. At present, approximately 52% of workers living in the northern beaches work in the northern beaches. This has arisen as people who work in the northern beaches would like to live in the area because:

- Schools are known to be very good,
- Sports facilities are excellent, and
- The lifestyle is desirable

A fair proportion of the residents who work outside the northern beaches have been enthusiastic adopters of WFH with the Covid Lockdown – and a significant proportion of those who were forced to WFH would like this to continue beyond the pandemic – for the following reasons:

- It helps with the life/work balance,
- Saves commuting time,
- Increases quality time with children,
- Enriches the social life, and

- Improves opportunities for active transport (cycling and walking) and for leisure/exercise activities

It is also suggested that Northern Beaches residents have a significantly higher level of WFH than average across Sydney, due to the larger percentage of the population in higher paid professional roles.

The broad adoption by corporations of WFH has opened up the possibility for a major change to the way workers achieve a better work/life balance, corporations can achieve greater productivity and lower costs in equipment and office space rental. This has only been possible because of high speed reliable internet in the northern beaches and software that allows secure video conferencing and secure access to networks.

Post-COVID-19, it is predicted that the opportunity and flexibility to offer WFH to employees will be a significant benefit to employers, providing low-cost entitlements to employees as part of remuneration packages, supporting higher employee loyalty and lower staff turnover rates.

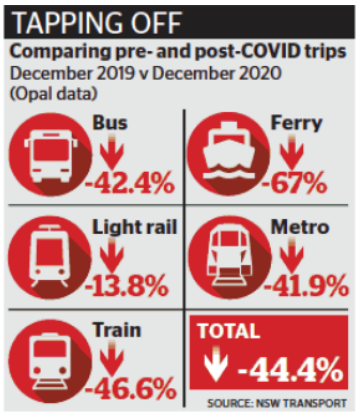
Even though the EIS was released at the end of 2020, TfNSW made no attempt to try to acknowledge or incorporate the WFH phenomenon into their forecast of future traffic flows from the northern beaches to other parts of Sydney. We believe that this omission is because the EIS for the Beaches Link Tunnel was actually contracted and written in 2019 – as part of combined agreements with the consultants who wrote the EIS for the Western Harbour Tunnel and Warringah Freeway Upgrade.

The only reference we can find to the Covid-19 pandemic and its consequences in the EIS for the Beaches Link Tunnel is:

> "*The COVID-19 pandemic is an unprecedented event that has changed the way people work and their travel patterns, while creating some uncertainty about the future of the NSW economy. While it is difficult to fully assess the impact of the event, evidence of Greater Sydney's resilience to such disruptions is already apparent. In Greater Sydney, traffic levels on most roads have returned to those experienced before NSW Government restrictions for COVID-19 were put in place. This indicates a relatively rapid response to the event by the city, and suggests that the movement of people, goods and services and demand for road capacity is returning to conditions similar to those prior to the COVID-19 Pandemic"*.

This statement has very obviously been included as an afterthought, in the EIS that was predominantly written in 2019. It invites the following comments:

- The "*traffic levels on most roads have returned to those experienced before NSW Government restrictions for COVID-19 were put in place*" deliberately and misleadingly ignores the TfNSW's own data on the fall in public transport patronage during this period - due to both perceived health risks and restrictions imposed by TfNSW on public transport capacity.



  This undermines the faith of the community in any evaluation of the EIS submissions by the DPIE when TfNSW chooses to ignore the fall in public transport patronage when it tries to convince the public of the falsehood that the overall numbers of commuters are returning rapidly to pre-Covid levels.

- By refusing to even acknowledge that future traffic levels are going to be impacted by the widescale adoption of a hybrid form of WFH, TfNSW further undermines its credibility with the public – as well as the credibility of the DPIE and Treasury. It is ironic that TfNSW has formally adopted a Hybrid WFH Protocol – with each internal department to develop its own arrangements with its staff.

There is plenty of evidence that WFH in one form or another will be a permanent feature in society. At present, approximately 52% of the residents in the northern beaches who work do not travel outside the northern beaches for their work. With the wider adoption of WFH and the establishment of WFH Hubs, this rate could increase to 80% - as residents whose traditional place of employment is outside the northern beaches work from home on 2 – 5 days per week.

A significant number of employers, large and small, have formally adopted workplace flexibility and a hybrid form of WFH (where employees are able to do so). This includes TfNSW themselves, as well as major banks, insurance companies, telecommunications, energy and real estate corporations. Recently Transurban Chief executive Scott Charlton said "*We're saying that to retain top talent and get the best productivity going forward, we think that a level of flexibility is important. Businesses are thinking now about how they're bringing their employee base back and how they might work remotely*." (Sydney Morning Herald, Feb 11 2021, "*Transurban boss says workers will leave companies without flexible hours*")

Attachment 3 contains several articles on the widescale international adoption of WFH and why the world-of-work is changing permanently as employers and employees are finding the benefits of a flexible version of WFH.

1.5.4 Infrastructure Australia 2021 Priority List

The 2021 priority list from Infrastructure Australia (IA) was released on 26 February. It has assessed the Western Harbour Tunnel and Beaches link in the lowest possible category as "Priority Initiative" - the same priority as it's first inclusion in the list in 2017. The two projects are assessed together, despite our previous assertions that they should rightfully be considered as separate projects.

Since the inclusion of the Beaches Link Tunnel in the in IA's Priority List in 2017, other projects have been escalated in importance ahead of the Beaches Link Tunnel. In the recovery to COVID-19, there is recognition of our changing priorities – particularly the urgent need for investment on upgrade the power grid in NSW to allow it to cope with the closing of coal-fired power stations and the installation of wind and solar power plants. The other priorities highlighted in the report of Infrastructure Australia are in the regions – to facilitate development through digital connectivity because of the changing work patterns that are reflected in the key themes and priority of projects. Infrastructure Australia notes "COVID-19 has had a significant impact on the way Australians use critical infrastructure. We have seen changing work patterns…"

Key themes of the 2021 Infrastructure Priority List:

- Opportunities to develop export gateways to support Australia's international competitiveness
- Investment in new sources of energy and enabling infrastructure for hydrogen exports
- Driving economic development in regional communities and improving digital connectivity
- Investment to support digital health services in regional and remote Australia
- Addressing challenges around strategic planning for water capture, use and management

"COVID-19 has had a significant impact on the way Australians use critical infrastructure. We have seen changing work patterns, a pause on Net Overseas Migration, and a 200% increase in people moving from capital areas to regional areas. These changes present a range of new challenges and the *Priority List* looks to identify infrastructure investments that will meet the diverse needs of our communities in this new environment.

Clearly Infrastructure Australia have acted on the changing priorities brought by COVID-19 and recognised the significant increases of WFH in major cities - so urban tollways such as the Beaches Link do not feature in their assessment of high priority projects.

The role of Infrastructure Australia in their own words is to "act as an independent infrastructure advisor to government" – the NSW government would be unwise to approve the Beaches Link Tunnel ahead of other more critical demands for infrastructure spend, particularly in the light of COVID-19 recovery.

It is also noted in the EIS that the Beaches Link Tunnel could be built as part of the 'infrastructure-led recovery' from COVID-19 for NSW. However, this would be an invalid assumption without any associated analysis of the value to the economy for various projects, in order to select projects with the greatest net benefit from public infrastructure spend.

1.6 The Challenges in Forecasting Future Traffic Levels

The challenges in forecasting traffic flows are well known. Appendix 2 contains a number of media articles and extracts from research papers that document the challenge. Here are a few extracts from the articles in Attachment 2:

> Mark Twain said that *"Prophesy is a good line of business, but it is full of risks".*
>
> Nils Bohr, Nobel laureate in *Physics "Prediction is very difficult, especially if it's about the future."*
>
> *Traffic forecasting is an inherently challenging task and large variations between forecasts and actual traffic volumes should be expected. Flyvbjerg et al (2005) found that for half the road projects analysed the difference between actual and forecast traffic volumes was ± 20% . The prospect for large errors exists because of the significant uncertainties associated with predicting many of the underlying traffic drivers such as population, households and employment trends and the availability of alternative routes and modes.*
>
> *However, traffic modelling inaccuracies are not symmetrical. Rather there is a propensity for over-prediction …….*
>
> 1. *…… traffic consultants typically impose ramp-up profiles on forecasts. However, these profiles are sometimes just guesstimates (e.g. 70%, 90% and 100% of the long term forecast over three years) with little empirical justification These early year inaccuracies can impose a heavy cost on the revenues of toll road operators.*
>
> 2. *Over-optimistic traffic forecasting is seen as the primary cause for the financial failure of toll road projects such as Cross City Tunnel, CLEM7 and Lane Cove Tunnel.*

Understanding and Accommodating Risk and Uncertainty in Toll Road Projects: A Review of the Literature

Jason D. Lemp, Kara M. Kockelman

First Published January 1, 2009 | Research Article
https://doi.org/10.3141/2132-12

Abstract

Forecasting traffic and toll revenues for new highway projects involves great uncertainty because of the inherent uncertainty in the models used to make forecasts. As private investment becomes more common in project financing, quantifying the levels of risk and uncertainty associated with such projects becomes critical. This paper represents a review of many key studies and reports dealing with uncertainty in traffic and revenue forecasts for highway projects. These studies found that tolled projects tend to suffer from substantial optimism bias in forecasts, with predicted traffic volumes exceeding actual volumes by 30% or more about half the time. Moreover, projects with greater uncertainty tend to overestimate Year 1 traffic volumes more and stabilize at lower final

traffic volumes. But after one controls for added optimism bias in traffic forecasts (compared with nontolled projects), there is little difference in uncertainty levels between tolled and nontolled forecasts. A typical way to address uncertainty in traffic forecasts is through sensitivity testing via variations in key inputs and parameters. A more extensive and less arbitrary version of this, Monte Carlo simulation, can provide probability distributions of future traffic and revenue, although it tends to require many simulations, demanding greater computational effort and time, unless networks are streamlined. Nonetheless, if reasonable assumptions for model input and parameter distributions can be made, Monte Carlo simulation generates a variety of useful information and establishes the actual likelihood of loss (rather than more basic win–lose indicators from a limited set of stress tests).

1.7 The Lack of an Alternative to the Beaches Link Tunnel in the EIS

e. an analysis of any feasible alternatives to the project;	**Chapter 4** (Project development and alternatives), **Section 4.3** provides an analysis of strategic alternatives. **Section 4.4** provides an analysis of corridor alternatives.

In the EIS, there is a narrow interpretation of the SEARS requirement to discuss alternate options to the Beaches Link Tunnel to achieve the projects claimed objectives as it is mainly confined to tunnel route options and methods of constructing tunnels.

There is a “token and dismissive acknowledgement” in the EIS of alternate transport options – see 1.1.2 Chapter 4, page 4-11 to 4-15, where there is the following comment in relation to buses: "buses have the capacity to make the road more congested".

The EIS make the broad claim that the Northern Beaches has low density. This only applies in relation the the area as a whole and ignores that there are areas and corridors of medium-high density - Manly Vale, Manly, Brookvale, Dee Why, Narrabeen/Collaroy, Mona Vale, and soon to be developed Frenchs Forest – a fact omitted in the EIS analysis. These regions are suitable for the higher capacity options of Bus Rapid Transit or hybrid light rail / trackless tram, as demonstrated by the unexpected popularity of B-Line services, and subsequent lack of capacity in these services at peak times. The majority of these regions will not be well served by the Beaches Link Tunnel, having to travel many kilometres on congested local roads to reach tunnel portals. These impacts are also not addressed fully in the EIS documents.

The reduction in congestion along the Military Rd corridor due to the implementation of B-Line services has not been presented or analysed as part of the EIS process. This is an obvious omission when considering how a potential extension of B-Line services in the north-south corridor would improve congestion and travel times. An evaluation of the impact of the Dee Why to Chatswood ‘Turn up and go” service in the east-west corridor has also not been evaluated, nor any impacts of extending this service in the future. Instead the EIS states “the addition of more buses to the network can contribute to congestion” (Chapter 4, Page 4-12), as if an increase in bus service provision makes no impact to the number of private vehicles on the road.

There is no attempt at acknowledging that many of the objectives and benefits claimed for the tunnel can be achieved if there is an acknowledgement that widescale adoption of WFH will reduce both the AM peak traffic demand and the overall daily traffic need to cross the Spit Bridge. In addition, the emergence of WFH Hubs and an increase in capacity and flexibility of local bus services will further reduce the need for residents to travel out of the northern beaches during the week.

The EIS highlights the potential benefits for direct bus services to use the Beaches Link Tunnel, however it is also noted that the inclusion of new bus services using the tunnel are not proposed as part of the project.

We believe that TfNSW should have a flexible approach to public transport – and not a fixation on building expensive freeways and tunnels. The alternative options of bus, light rail, metro and active transport have been given little consideration, and seemingly have been included after the decision was already made, in order to satisfy SEARs requirements for the EIS process (as leaked documents to the media revealed – SMH 17/7/2017).

The reduction in the need to travel outside the northern beaches during the week can be achieved without:

- the short and long term environmental damage to bushland in the Garigal National Park, Manly Dam War Memorial Park, Burnt Bridge Creek, Middle Harbour or Balgowlah Golf Course,
- the traffic congestion around the two tunnel portals in North Seaforth and Balgowlah during the 5-7 year construction period
- the location of unfiltered ventilation stacks in Balgowlah – close to several schools, and
- the permanent loss of the green open space that is currently the Balgowlah Golf Course.

Recommendation: A genuine comparison of alternative options - including a variety of hybrid Bus Rapid Transit, B-Line or Light Rail systems and improvements, including north-south and east-west corridors be undertaken as a comparison to the Beaches Link Tunnel project.

1.8 Conclusion

Based on a realistic forecast of traffic volumes for 2037, this very expensive infrastructure project (in its current form) might not be necessary. Some of the money saved could be better spent in expanding the very popular bus transport options and establishing community WFH Hubs that have the potential of improving active transport in the northern beaches and the amenity for so many residents.

We request that the DPIE commission (or have TfNSW commission) an independent review of the traffic flow forecasts for vehicles travelling to the city and beyond along the corridor

roads to the Spit Bridge from 2021 – 2051. The forecast needs to take the following into account:

- The modest increase in new housing proposed in the Housing Strategy (currently on display) of the Northern Beaches Council
- Development of new housing in the Frenchs Forest Hospital Precinct at levels in keeping with surrounding districts, and in consultation with Northern Beaches Council
- The impact of new bus routes and capacity connecting the Northern Beaches to Chatswood – accessing the public transport provided by existing rail and North West Metro, in conjunction with the Metro City and South West to be opened in 2024.
- The adoption of WFH by northern beaches residents and the establishment of WFH Hubs in the northern beaches, taking into account the likely increase in WFH because of the congestion during the 5-7 year construction period.
- The return to normal patronage on existing bus and public transport, including B-line, post-COVID-19 restrictions and recovery.

Unlike the single forecast for 2037 that TfNSW seems to have adopted, the independent forecast needs to be based on a risk-adjusted forecast range.

2. Benefit Cost Analysis (BCA) of the Beaches Link Tunnel

2.1 Why Include a BCA in this Submission?

TfNSW is not required to provide a BCA in the EIS for the Beaches Link Tunnel. As part of the process for the Cabinet to make decision on whether to build and proceed with the Beaches Link Tunnel, Treasury would ordinarily prepare a BCA and a Business Case.

The purpose of presenting and discussing a BCA for the Beaches Link Tunnel is not to pre-empt the BCA as part of the final Business Case to be completed by Treasury, but to show the DPIE the sensitivity of the estimated Benefit Cost Ratio to a range of assumptions in the EIS.

However, as Ross Gittins pointed out in an article in the SMH on 25 October 2020 (titled: *Budget's infrastructure spend more about sex appeal than jobs*)**:**

> *In practice, many infrastructure projects aren't as useful and productivity-enhancing as they could be because they've been selected to meet political objectives, not economic ones.*
>
> *Politicians favour big, flashy projects – preferably in one of their own party's electorates – that have plaques to unveil and ribbons to cut. It's surprising how many of these projects are announced during election campaigns.*
>
> *An expert in this field, who keeps tabs on what the pollies get up to, is Marion Terrill, of the Grattan Institute. She notes that since 2016, governments have signed up to 29 projects, each worth $500 million or more. But get this: only six of the 29 had business cases completed at the time the pollies made their commitment.*

We in the community are very concerned that the NSW Government will make a decision on the Beaches Link Tunnel without disclosing to the public the economic basis on which the decision is made. In the past, the business cases for major infrastructure has not provided to the public, except in a highly redacted form using the protection provided by commercial-in-confidence.

What is also of great concern to us is the statement made by Minister Andrew Constance in late 2019 that he wanted the contracts for the Beaches Link Tunnel signed before the next State election in March 2023. This is frightening because from the experience of those residents who have experience in major infrastructure projects, it is very unwise and actually irresponsible to rush into contracts for complex high cost projects.

In late 2019 Andrew Constance told the Mayors of Mosman, North Sydney and the Northern Beaches:

"I want and will have the contracts for the construction of the Beaches Link Tunnel signed before the next State Election in 2023".

In December 2020, at the launch of the EIS for the Beaches Link Tunnel, Andrew Constance said "*Many said that this tunnel will never be built …….. only a Liberal government can deliver the Beaches Link Tunnel".*

After the above slide was shown at the Community Webinar on 15 February, we received many comments from residents saying that they were horrified at that Minister Constance was prepared to put his personal political agenda ahead of the economic and environmental fundamentals of a project does not appear to have a sound business case.

Other examples have recently come to light that put into question the decision-making process of Minister Constance. This includes a seemingly unilateral decision to order TfNSW to plan clearing of trees to a width of 80 metres around state highways, and the subsequent termination of employment of Secretary of Transport Rodd Staples, after he alerted the department has limited power to enact it under law.

We refer also to the acquisition of 9 homes in Jannali for a carpark as planned by TfNSW in seemingly a 'knee-jerk' proposal, occurring after delays and the breakdown of discussions with Sutherland Shire Council on alternative sites not requiring compulsory acquisition. This has caused much concern in the wider community with regards to the planning process.

These examples undermine the public's confidence in the role and capability of the Minister for Transport in decision-making, and the overall planning process for the transport infrastructure of NSW.

We in we community are hoping (perhaps naively) that the DPIE will play a leadership role within the government to ensure that the decision on the Beaches Link Tunnel project is not rushed – and that any decision is based on sound and defensible assumptions.

The project simply has too many uncertainties and potential long term problems to rush. Further work needs to be done on understanding the long term environmental damage and whether the tunnel is really necessary

Minister Constance's Agency would have a cabinet full of trophies for "biggest capital cost blow-outs for the year". Many of these blow-outs could have been avoided if the decision to proceed with the projects were not rushed.

The BCA will show that if TfNSW had adopted a more realistic approach to forecasting traffic demand in the northern beaches, the Benefit Cost Ratio falls – very substantially under certain assumptions.

2.2 What is a Benefit Cost Analysis (BCA)

A BCA is a process and a tool to analyse projects to determine if the estimated direct and indirect benefits of the project are more than the estimated direct and indirect of the cost of the project over (say) a 30 year period – using a discount rate of between 4% and 7%.

The benefits and costs are "seen from the perspective of the NSW economy" - and not necessarily from the perspective of one sector of the economy or from one geographic location (e.g. the Northern Beaches).

All benefits and costs are expressed in monetary ($-value) terms – as the Present Value (PV) in the year the project is formally approved (or commenced). This requires cost and benefits in future years to be identified, valued and discounted - these include indirect costs and benefits as well as externalities that arise from the project.

The output of a BCA is the Benefit Cost Ratio (BCR) – which is: Benefits/Costs. The BCR is a numerical expression of the "cost-effectiveness" of a project. A project is considered to be cost effective when the BCR is 1.0 or greater.

While the resultant BCR is a useful metric, the process of estimating/quantifying the benefits and costs and sensitising the resultant BCR to a range of values for the assumptions used in the BCA provides useful insight into the project's risks.

2.3 The Major Benefits in the BCA for the Beaches Link Tunnel Project

The major direct and indirect benefits that need to be accounted for in the BCA are:

Journey Time Saved:

- ***By users of the Beaches Link Tunnel:***
    - 30 minutes per trip to the junction with the Warringah Freeway – deteriorating at 0.8%/year due to growing congestion
    - Valued at $25/hour for private vehicles and $50/hour for commercial vehicles – in 2017. The value increases at the rate of CPI. This is the $-value of time used in the WestConnex BCA.
    - Commercial vehicles are assumed to be 10% of all vehicles travelling.
    - 1.27 occupants per vehicle.
- ***By drivers who avoid using the Beaches Link Tunnel and choose an alternate route.***
    - The following alternate routes for avoiding the Tunnel are:
        - Spit Bridge
        - Roseville Bridge
        - Mona Vale Road
    - Journey saving times for these routes are assumed to be:
        - Spit Bridge: 10 mins
        - Roseville Bridge: 8 mins
        - Mona Vale Road: less than 5 mins.

This is because only 10% of the current users of Mona Vale Road would choose to use the Tunnel. This small reduction in time is considered too small to have any impact – and will be assumed to be zero.

- Journey time saved is assumed to deteriorate at 0.8%/year due to congestion
- 1.27 occupants per private vehicle
- Valued at $25/hour for private vehicles and $50/hour for commercial vehicles – in 2017. The value increases at the rate of CPI.

- ***By drivers in Mosman who will benefit from the reduction in traffic on Military Road:***

  - The average savings for these vehicles is assumed to be 6 minutes per trip – constant through the period of analysis.
  - Valued at $25/hour for private vehicles and $50/hour for commercial vehicles – in 2017. The value increases at the rate of CPI.

- ***By "new users" through what is known as "induced demand":***

  These are new users who would not have made the journey from or to the Northern Beaches if there was no Beaches Link Tunnel. This would apply (for example) to vehicles coming to the Northern Beaches over weekends during the summer months – and would be additional to the weekend visitors that are included in the traffic forecasts based on historic vehicle flows.

  Unlike all other tolled tunnels in Sydney, there is limited potential for induced demand as the Beaches Link Tunnel comes to a dead-end in the northern beaches peninsula. A reasonable proxy for the induced demand is the forecast additional traffic into and out of the northern beaches on weekends in the summer.

  The induced demand is assumed for the purpose of modelling, is assumed to be:

  - Induced Demand over weekends: For 26 weekends / year
  - 40,000 vehicles per weekend – 2 occupants per vehicle
  - Time saving and value to time saved as for weekday drivers.
  - No commercial vehicles assumed in the model.

Network Benefits:

These are benefits to the overall transport network system that is closely linked with the Beaches Link Tunnel. With projects like the M2, M7 and other toll road projects, the Network Benefits were estimated to be between 50% and 100% of the direct benefits from travel time savings by users of these toll roads.

This is unlikely to be the case with the Beaches Link Tunnel because projects like the M2 and M7 are links in the sense that they allow vehicles to move "through them". The Beaches

Link Tunnel does not link one road system with another – it allows vehicles to leave the Northern Beaches or to enter the northern beaches (virtually a dead-end).

The major beneficiaries of the Beaches Link Tunnel will be the users of the tunnel.

It could be assumed that the time savings for residents in Mosman, Cremorne and Neutral Bay (included above in Journey Time Saved) could be classified as Network Benefits.

Wider Economic Benefits:

Essentially these are benefits like:

- increased investment in economic activities that would not have taken place if there was no Beaches Link Tunnel,
- construction of new homes and apartment buildings – because of the greater ease of transport into and out of the Northern Beaches,
- 500 new dwellings (or house-equivalent in apartment buildings or townhouse complexes) – to be built after completion of the tunnel. These houses or house-equivalents are additional to the additional housing mentioned in the Northern Beaches Housing Strategy (Feb 2021) because the additional housing identified in this document are meant to be built irrespective of whether the Beaches Link Tunnel is built or not:
    - Economic value of each dwelling is assumed to be $500,000 (in 2019 $) – to escalate at 3% per year.
    - construction by the State government of community facilities like schools because of the increase in population consequent on an increase in population in the Northern Beaches that can be ascribed to the easier access into and out of the Northern Beaches. None are assumed in the model.

Environmental and Health:

- The major environmental benefit is the reduction in tail-pipe emissions (particulates, sulphur oxides, nitrous oxides and others) due to the reduction in congestion along the existing arterial roads out of the Northern Beaches.
- A reduction in the amount of CO2 emitted by vehicles.

Reduction in Vehicle Operating and Maintenance Costs:

- For all vehicles that have a reduction in time travelled, there will be a reduction in operating costs (e.g. fuel and servicing costs

Reduction in Accidents:

- The EIS contains details of the number of accidents on the feeder roads for the Beaches Link Tunnel.

2.4 The Major Costs in the BCA for the Beaches Link Tunnel Project

The major direct and indirect (i.e. externality) costs of the Beaches Link Project are:

Construction Costs:

These are all the construction costs directly linked to the Beaches Link Tunnel and its integration with rest of the road network system – this includes:

- The tunnel and roads that connect the tunnel to the Warringah Expressway, the Western Harbour Tunnel, the Gore Hill Freeway and the Wakehurst Parkway – this includes the submersible tubes for the Middle Harbour Crossing from Castlecrag to Seaforth;
- Feeder roads to allow local roads to connect with entrances and exits from the Beaches Link Tunnel – including a Link Road through the Balgowlah Golf Course
- Operation and refurbishment of all dive sites – including the re-purposing of the Balgowlah Golf Course into a Recreational Precinct;
- A construction cost contingency;
- The construction cost is assumed to be $10 billion in 2017 (in 2017$). Additional assumptions are:
    - 4% capital cost escalation factor for a $2017 capital cost estimate
    - 8 year build – start in 2023
    - 10% contingency included in the capital cost estimate

Environmental Costs – during construction:

Note on estimating environmental costs: The EIS provides no estimates of the cost to the environment of the consequences of the construction activities. TfNSW states in many parts of the EIS that "there will be best practice" …… "every precaution will be taken" ……. "contractors will be required to follow all proper legislation and regulations" ……. "caution commensurate with what is technically and economically feasible". The approach taken in the BCA model on the environmental costs is:

> ***Because we do not know what the cost is, a provision for the cost will be made. The quantum of the provision can be the subject of debate, but there should be no doubt that there will be a cost – and this needs to be acknowledged.***
>
> ***It will be shown in the BCA model that the provisions used for each of the identified environmental costs does not have any material impact on the Benefit Cost Ratio – for the range of assumptions used to estimate the benefits and non-environmental costs.***

- ***Middle Harbour crossing*** – from dredging and the erection and operation of the coffer dams in the waters off Castlecrag and Seaforth: The water depth in this part of Middle Harbour is 18 fathoms – the second deepest part of Sydney Harbour. Water turbidity and associated damage from construction and approximately 4 year dewatering operation of the coffer dams will result in environmental damage.

- ***Reduction in groundwater flows into the Burnt Bridge Creek***

- ***Removal of trees and the dumping of tunnel spoil on the Balgowlah Golf Course***: As the Balgowlah Golf Course will be used as a dump and construction site for the Balgowlah entrance to the Tunnel, it is assumed 300+ trees and the on-course pond will be removed. The environmental damage to the fauna and flora of the construction activity and the building of playing fields, roads, parking lots and recreational buildings will result in the death of much of the wild life that is currently reliant on the vegetation and the wildlife corridor to the Burnt Bridge Creek watercourse.

- ***Dive and Construction Site Activity and Tree removal in Artarmon and Cammeray***: The environmental damage to the fauna and flora of the construction activity will be significant.

- ***Widening of the Wakehurst Parkway***: The construction of the dual carriageway from the North Seaforth Entrance to the Tunnel to Warringah Road will result in parts of the Garigal National Park (west of the Wakehurst Parkway) and the Manly Warringah War Memorial State Park (Manly Dam) to be damaged and have bushland vegetation removed for the road. The environmental damage to the fauna and flora of the construction activity related to the widening of the Wakehurst parkway will be substantial.

- ***Flat Rock Creek***: The dive site at this location is on an old tip. It is acknowledged in the EIS that there is the potential for a number of toxins to be released and leached out from the excavation activities – these will be carried down the valley to Tunks Park and into Middle Harbour. The potential damage is documented in the Submission of the Save Flat Rock Community Group.

Disruption Costs – during construction:

During the 7-8 year construction period, there is increased traffic congestion. The disruption to local traffic trying to access the major routes or simply driving around the neighbourhood as a consequence of construction activities. These can be estimated by assuming how much extra time drivers will spend in their cars – compared with the time spent before the construction commenced. The following areas will experience disruption for much of the construction period:

- Artarmon/Cammeray – local roads
- Burnt Bridge Creek Deviation and Manly Vale
- Seaforth, North Seaforth and Balgowlah – local roads

Property Acquisitions:

Balgowlah – Dudley Street properties: In the BCA Model, these costs are included as part of the estimate for the construction costs for the project.

Tunnel Operating and Maintenance Costs:

These costs are on-going throughout the life of the Tunnel.

It has been assumed that these costs are based on a % of the capital cost of the tunnel-only component of the overall cost.

Environment and Health Costs – After Construction Completed:

- ***Increase in Cancers from an Increase is Levels of PMs close to the Ventilation Stacks***

  The concentration of air-pollutants (particularly small diameter particulates) around the Exhaust Emission Stacks in Balgowlah, North Seaforth, Cammeray and Artarmon will lead to additional deaths from cancer. This is despite the drop in the total quantum of air particulates emitted into the atmosphere from the vehicles using the Tunnel. While the advice provided by the Chief Scientist and the Chief Medical Officer that the ground-level concentration of particulates are within the acceptable levels determined by the WHO, there is no guarantee that there will be events (e.g. plume wash during inversion and during high smoke levels from bush fires in the Sydney Basin) that will not lead to spikes in the concentration of small diameter particulates that could lead to deaths.

- ***Groundwater Loss in Seaforth and North Balgowlah***

  After completion of the tunnel, groundwater levels in the whole of Seaforth and parts of North Balgowlah will fall – leading to a number of structural issues for some residences and the death of trees in the area. The EIS does not attempt to quantify these potential losses, but in the BCA a provision for the loss has been included in the model.

- ***Biodiversity Loss and Fall in Water Quality in Manly Dam***

  Even after the damage done to the bushland in Garigal National Park and the Manly Dam War Memorial Park during the widening of the Wakehurst Parkway, there will be ongoing problems for the bushland because of the changes to the landscape and the reduction in important vegetation.

- **Sunk Costs:** These costs include all the activities necessary to develop the Project Description for Consulting with the Community and preparing the EIS – e.g. geotechnical work, consulting reports, base case air monitoring, traffic modelling, …. etc. These costs are not included in a BCA.

2.5 The Benefit Cost Ratio (BCR)

2.5.1 Using Traffic Modelling Forecasts of TfNSW

Using the traffic forecasts for 2037 and the time saving for users of the tunnel, the NPV of the total benefits (using a discount rate of 4%) is approx. $19 billion.

The key assumptions in the TfNSW's traffic forecasts of relevance in the determination of the benefits are:

- Traffic flows along the feeder roads in the northern beaches are expected to grow at 0.7% per year from 2017 until the completion of the project in 2030 and then at 1.5% per year from 2031.
- The time savings for journeys from a point before the tunnel entrance to where the tunnel joins the Gore Hill Expressway is 30 minutes – deteriorating at 0.8% per year from 2031.
- A range of time-saving assumptions for drivers avoiding the tunnel and using the feeder roads have been made in the model.

Assumes No Adoption of WFH	
Benefits:	**$ Mill**
Time Saved for:	
Users of the Tunnel	6,111
Avoiders of the Tunnel	4,200
Residents in Mosman and Cremorne	474
Induced Demand	1,194
Total	**11,978**
Wider Econmic Benefits	6,741
Environmental	89
Reduction in Car Operating Costs	147
Reduced Accidents	50
Wider Health Benefits	50
Total Benefits	**19,055**

The NPV of the costs (using the same discount rate) is $15 billion – resulting in a Benefit Cost Ratio of 1.24.

If a discount rate of 7% is used (the rate recommended by Treasury for Benefit Cost Analyses for State infrastructure projects, the Benefit Cost Ratio drops to 0.80.

Costs:	**$ Mill**
Construction of Tunnel	13,517
Tunnel Operating Costs	1,076
Delays during construction	272
Environmental:	
During Costruction	226
Post Construction	238
Total	**465**
Health	8
Total Costs	**15,337**

2.5.2 Recognising the Adoption of WFH by Residents on the Northern Beaches

The adoption of WFH is a post-Covid world, will result in fewer residents driving to work in private vehicles and via public transport. The move to WFH has started. If the tunnel is built, the challenges facing northern beaches residents trying to avoid the traffic congestion and chaos around the tunnel entrances in the Burnt Bridge Creek Deviation, in Sydney Road opposite Balgowlah Boys High School, and on Wakehurst Parkway Seaforth will most certainly accelerate the adoption of WFH by residents in the northern beaches.

In the BCA Model, the impact of the move to WFH is done by changing the following assumptions:

- For the period 2024 – 2030, the traffic along the feeder roads falls by 5% per year, but from 2031 it starts to increase by 1.5% per year. This represents a reduction in the average daily traffic over (for example) Spit Bridge of 20,000 vehicles per day from 2023 to 2030.
- The time savings for both users of the tunnel and the avoiders of the tunnel will be 80% of the time assumed for the TfNSW Traffic Forecast.

Assumes Adoption of WFH	
Benefits:	**$ Mill**
Time Saved for:	
Users of the Tunnel	3,251
Avoiders of the Tunnel	2,793
Residents in Mosman and Cremorne	474
Induced Demand	955
Total	**7,473**
Wider Econmic Benefits	6,741
Environmental	223
Reduction in Car Operating Costs	89
Reduced Accidents	50
Wider Health Benefits	50
Total Benefits	**14,626**

Costs:	**$ Mill**
Construction of Tunnel	13,517
Tunnel Operating Costs	1,076
Delays during construction	272
Environmental:	
During Costruction	226
Post Construction	238
Total	**465**
Health	8
Total Costs	**15,337**

It can be seen that the costs remain at $15.3 billion, but the benefits fall to $14.6 billion.

Using a discount rate of 4%, the Benefit Cost Ratio is 0.95 – representing a reduction from 1.25. If a discount rate of 7% was used, the Benefit Cost Ratio is 0.61.

2.6 Discussion of the Economic Benefits Ascribed to the Beaches Link Tunnel

Using the quantified benefits from Section 2.5.1 of this submission (repeated in the following table), a number of interesting observations can be made:

Assumes No Adoption of WFH			
Benefits:	**$ Mill**	**% of Tot**	**For NB**
Time Saved for:		**Benefits**	**Residents**
Users of the Tunnel	6,111	32%	32%
Avoiders of the Tunnel	4,200	22%	22%
Residents in Mosman and Cremorne	474	2%	
Induced Demand	1,194	6%	
Total	**11,978**	63%	
Wider Econmic Benefits	6,741	35%	
Environmental	89		
Reduction in Car Operating Costs	147		
Reduced Accidents	50		
Wider Health Benefits	50		
Total Benefits	**19,055**		

- About half of the total for estimated benefits apply to the residents of the northern beaches. More than 40% of the benefits go to people and corporations who do not necessarily reside in the northern beaches. The Beaches Link Tunnel has been “sold”

to the residents of the norther beaches residents on the basis that they will benefit from the time saved in travelling to the city and beyond. The reality is different.

- The wider economic benefits (from 500 additional houses or house-equivalents per year) account for 35% of the benefits. Both of these are beneficial for the State of NSW – and this demonstrates why many residents are justified in their conviction that the real reason for the government rushing a review of the EIS is to sign the contracts for the Beaches Link Tunnel before the March 2023 State Election.

- The residents of the Northern Beaches were never told explicitly by the Government that without the extra residences being built in the Northern Beaches and the increase in visitors to the Northern Beaches over weekends, the Benefit Cost Ratio for the Beaches Link Tunnel will be significantly less than 1.0. Instead, residents have been told by elected representatives that the Beaches Link Tunnel was "catch-up infrastructure" with no mention the developments and induced demand necessary to boost the Benefit Cost Ratio.

- Both of these "benefits" (Induced Demand from weekend visitors to the northern beaches and the construction of 500 new residences per year) will place strain on the infrastructure in the northern beaches and reduce the amenity of local residents. Currently, parking in the beachside suburbs in the Northern Beaches over weekends in the summer is problematic. Having the tunnel will result in many more people driving to the Northern Beaches – which is their prerogative. However, the impact on the amenity of local residents will be very significant.

2.7 Conclusions

It is acknowledged that a Benefit Cost Analysis is not meant to be part of the EIS.

The community believes that by undertaking the analysis, we have demonstrated that TfNSW has deliberately overstated the benefits of the Beaches Link Tunnel by refusing to accept that future traffic flows from residents in the northern beaches will be less because of the adoption of WFH following the forced introduction of Covid-19 restrictions in 2020.

The BCA also shows the overwhelming level of risk associated with the project - if traffic volumes are overestimated, if development is rejected and benefits not realised, or if cost blow-outs occur in construction or due to environmental damage caused by the project needing to be remediated. It reveals a project with ever decreasing benefits, and with overall no net benefits to the local community or wider NSW.

3. Destruction of High Value Bushland and Green Open Space

We strongly object to the Beaches Link Tunnel project on the basis of the irreversible environmental damage the tunnel will cause to the local environment.

Here are some examples of the environmental damage that will come as a consequence of building the Beaches Link Tunnel project:

Burnt Bridge Creek:

- Groundwater flows into the Burnt Bridge Creek will be reduced by around 80% while the tunnels are being built and by 96% after completion of the project. This means that the creek will become a storm water drain – reliant only on rainwater. This will impact on the vegetation along the creek (and including the valuable Baringa Bush Reserve) and on properties bordering the creek as the water table falls. In addition, the quality of water that flows into Manly Lagoon and into the ocean at Queenscliff Beach will fall – and during times of reduced rainfall the water will be polluted.

- In the EIS, it is stated that: '*While these reductions could be considered significant, in particular for Burnt Bridge Creek and Quarry Creek, they are unlikely to result in a complete loss of aquatic habitat. Pools would be retained and there would still be high flows within the waterways immediately after rainfall events*.'

  Such an analysis and conclusion has no scientific foundation. It is blatantly obvious that the removal of 96% of the water from a creek that supports such biodiversity, including many species that rely on access to its waters, will have devastating impacts for ecosystems from Seaforth to Manly. It also fails to consider or investigate the implications of reduced water flow for the Manly Lagoon including reduced oxygenation and the impact on its aquatic life. The pools the EIS mentions – again with no scientific backing – would essentially be stagnant and, therefore, unable to support many forms of life. They would also put residents at risk of mosquito borne diseases in an area known for Ross River Fever.

- When the tunnel is operational, treated wastewater will be released into Burnt Bridge Creek drawn from the tunnel. This contains contaminant risk, particularly during storm events when wastewater facilities can be overrun with water volume. This poses a significant risk to the biodiversity downstream within the Burnt Bridge Creek catchment, including the camp of threatened species Grey-headed Flying Fox, many species of fish, small mammals, birds and vegetation in the riparian zone.

- Due to the topography, even if wastewater flows compensate for some of the ground water flow losses, the top section of Burnt Bridge Creek from Hope St upstream will not be boosted by these flows, becoming mainly dry with occasional stagnant pools. This will result in a dislocation of necessary green corridors for fauna, and stream flows for aquatic life in the creek.

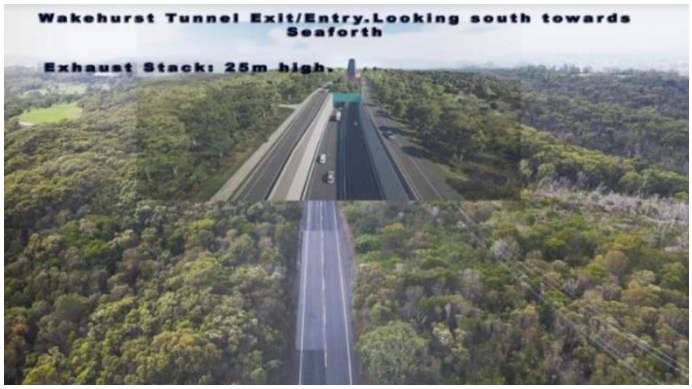
- We fully support and endorse the submission of the Baringa Bush Residents Group to the EIS.

- The loss of vegetation in Burnt Bridge Creek will be seen as a catastrophe by local residents. The Burnt Bridge Creek valley is a much-loved area for walkers and bike riders.

Widening of the Wakehurst Parkway:

- More than 12 ha of high value bushland will be destroyed with the widening of the Wakehurst Parkway from North Seaforth to the intersection of the Parkway with Warringah Road.

- Because the road widening is to be done on top of a ridge, there will be ongoing problems during construction with the management and control of water during periods of rain. This is acknowledged in the EIS.



*"The project operational water quality design targets (provided in Table 6-3) **would not be achieved** at the Wakehurst Parkway as this would require additional land acquisition, clearing of native vegetation and fencing requirements near publicly accessible areas.*

It would also require higher treatment efficiency controls such as bio-filtration swales which would not be possible due to topographical constraints."

This will result in dirty, silt-laden water flowing through bushland in the Garigal National Park into Bantry Bay and through the Manly Dam War Memorial Park into Manly Dam, with insufficient mitigation measures to stop it.

Polluted Water in Manly Dam:

- The wastewater treatment plant next to the water tanks that will be operated as part of the Seaforth Construction Site. Water from the Wastewater Treatment Plant and dirty run-off from the construction site will be channelled through what is left of adjoining bushland within the park into a small pond on the Wakehurst Golf Course. Much of the sludge and siltation will eventually flow into Manly Dam because the small pond can be expected to overflow regularly – resulting in significant pollution in Manly Dam during regular heavy rain events.

- The likely loss of Water Quality in Manly Dam and it's catchments is likely to contribute to the extinction of the population of Gondwanan Climbing Galaxias fish

in Curl Curl Creek (Manly Creek) thought to have existed for 60 million years. The population in Manly Dam are the only population in Sydney.

- The impact assessment in the EIS determined that "taxa (biodiversity) in these sections of the catchment are pollution tolerant". Nothing could be further from the truth! In the Northern Beaches Council draft EIS response (page 39) it says "its loss would represent a range contraction". It also says "Council would have significant concerns about any decrease to water quality in Manly Creek". This means that Manly Dam may have to be closed to all forms of human water recreation during periods of high rainfall – and perhaps on a long term basis because of a build-up of pollutants in the dam. What is currently a gem in the Northern Beaches is at serious risk.

- We strongly support and endorse the submission of the Save Manly Dam Catchment Committee (SMDCC) in relation to the flow of polluted water into Manly Dam.

Balgowlah Golf Course:

- This has been a public golf course for more than 95 years – catering mainly for residents on the North Shore and the Northern Beaches who are older than 65.

- The decision by TfNSW to appropriate the land for a construction site and to build motorway facilities and a ventilation stack was made without any consultation with the members of the golf club. TfNSW has taken the land away from a community – because the TfNSW can – and the legislation provides this. Somehow, this makes it right.

- Aside from the gross unfairness of depriving elderly residents with a sport and leisure activity that cannot be replaced by joining another club easily, the 5 – 7 years of construction activity and the conversion of the land into a "recreational precinct" and car parks does damage to what is currently pristine parkland.

- The destruction of over 400 established trees will be a great loss, in an area already acknowledged as having insufficient green space. If some of these tress are to be offset elsewhere, there is little opportunity in the Northern Beaches Council LGA, and certainly none in the southern region of the LGA available for offset – providing no benefit to local residents overall.

- The wildlife that currently lives in the area and other wildlife from the surrounding suburbs that are dependent on the trees and dams will mostly be lost during the construction period.

- The decision by TfNSW to repurpose the area into a Recreation Precinct was negotiated in secret with the Northern Beaches Council – and without any evidence that additional playing fields were required in the southern part of the Council area.

- We strongly support and endorse the submission of the Balgowlah Golf Course and the Residents of Pickworth Avenue.

Impacts to Grey-Headed Flying Fox camp on Burnt Bridge Creek:

- The Grey-Headed Flying Fox is currently assessed as vulnerable, and the camp in Balgowlah is estimated to have up to 10,000 animals within it. The construction site for the Beaches Link tunnel is approximately 120 metres from the camp.

- Populations of flying-foxes in NSW are impacts more significantly in recent years due to loss of habitat, loss of food trees, and major heat events exacerbated by climate change.

- The EIS states that the flying-foxes "may" not be impacted by construction noise, as they live in an urban environment, and are foraging away from the camp during high noise night works (Chapter 19, pages 63-64). These statements ignore the fact that noise and vibration both during the day and during night surface road works are projected to be significantly greater than what they currently experience. It is also untrue that the flying-foxes will be away foraging at night, as young animals stay behind while their mothers go away to forage for the first 1-2 months of their offspring's life.

- The impact from the loss of waterflow in Burnt Bridge Creek will also significantly impact the flying-foxes, as the creek and current dam on Balgowlah Golf Course are their primary water source. Flying-fox camps are chosen by the animals for their proximity to a reliable water source, and any pollution events would have a severe impact, particularly if occurring during significant heat events. If Burnt Bridge Creek were to suffer a reduction of around 80% total flow, it would likely cause the animals to abandon the camp.

- If a person 'experienced in flying-fox behaviour' were contracted to monitor the camp for impacts, it would not be possible to stop any impacts before they occur, and the animals would not be able to monitored for all events, day and night.

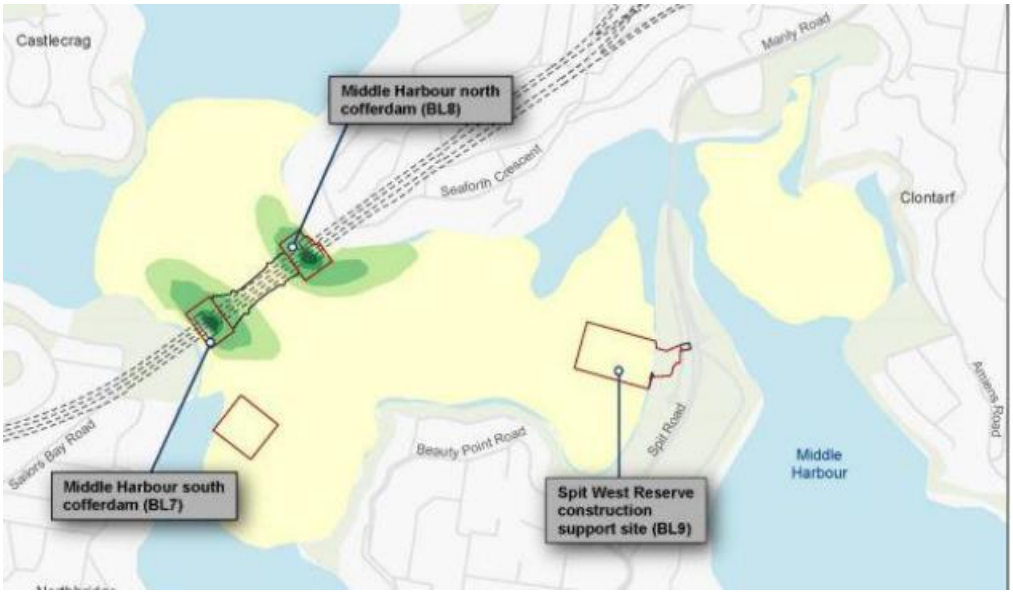
- Significant clearing of food trees both on Balgowlah Golf course and on the Wakehurst Parkway as part of the project would also have a cumulative impact to the flying-foxes, already impacted by ever-reducing foraging habitats. Any biodiversity offsets in other regions would not assist these animals within their foraging range.

- We object to the Beaches Link Tunnel because the construction would unavoidably lead to vulnerable Grey-headed flying-fox deaths, and potential abandonment of the camp.

4. Toxic Sediment and from Coffer Dams, dredging and installation of immersed tubes in Middle Harbour

The disturbance of sludge on the bottom of Middle Harbour (in fact at one of the deepest parts of Sydney Harbour) presents a major problem for communities that spend time in Middle Harbour, Spit Marina, Sandy Bay and Clontarf Beach and Children's Ocean Pool.

The tide will carry the sludge towards Spit Bridge and beyond – with potentially high levels of very nasty toxins in the waters of Sandy Bay and in the Clontarf Ocean Pool.



The control of sediment, silt and sludge by means of floating curtains around the construction site in Middle Harbour is a serious challenge – and the contractor will not be able to provide a guarantee that the levels of toxins in the waters of Sandy Bay and Clontarf Beach will be within safe levels.

We believe that the risks for the community are unacceptable. We support the concerns expressed in the submission of Dr Katherine Dafforn from the Australian Marine Sciences Association in March 2020 to the EIS for the Western Harbour Tunnel in March 2020 in relation to the dredging in the White Bay Area. From our reading of Dr Daffron's submission and the section of the EIS covering the work in Middle Harbour (Appendix M), we believe the following statement from Dr Daffron's submission to be valid:

Insufficient containment measures for dredging activities.

Sydney Harbour typically experiences good visibility and water quality unless there is a rainfall event and so increases in turbidity from dredging activities should be prevented. Shallow silt curtains will not be effective at full containment of contaminated resuspended sediments. Full length silt curtains anchored to the sea floor are the only viable method of restricting the movement of fines. It should also be recognised that silt curtains cannot prevent the dispersal of toxic sediment pore water and sediment plumes created by dredging will be compounded by wind, tide and vessel movements.

5. Over-Development in the Northern Beaches

In any submission to the EIS, it is pointless to raise this issue, because it is not part of the EIS. It is however of significant relevance to residents in the northern beaches.

James Griffin MP and Brad Hazzard MP have assured residents that the Government does not intend to use the Beaches Link Tunnel to justify mass rezoning to allow rapid development of medium density residences. They claim that the Beaches Link Tunnel is "catch-up infrastructure". This is wrong. Why would the main tunnel be six lanes wide – when tunnel like NorthConnex will carry much more traffic are only four lanes wide? The Beaches Link Tunnel goes to a dead-end. All other tunnels in Sydney take traffic into or around parts of Sydney – none go to a dead-end.

The reason why the government will "allow" over-development in the northern beaches is that the overall cost of building the Beaches Link Tunnel is going to be massive ($10 billion in 2017, but closer to $20 billion in $-of-the-day once the project has been completed) and the best it can expect from an investor in the project is likely to be $5 - $6 billion. The subsidy gap (more than $10 billion) needs to be recouped somehow.

We return to the conclusion of Justice David Kirby in his 1983 Inquiry into the Retention of the Warringah Corridor:

> So, in a very real sense the Inquiry is not about traffic at all. We will demonstrate that traffic conditions, with or without a freeway, and whether four lanes or six, would be similar to traffic conditions today. Rather, the Inquiry is about whether Warringah should be developed for residential purposes. Development was pressed by the Warringah Shire Council. It was advocated by the Northside Councils. The desirability of developing Warringah is, therefore, an important issue.

6. Weekend Traffic in Manly in the Summer

Just like the issue of over-development in the northern beaches, it is pointless to raise this issue as well. TfNSW and the DPIE are not concerned about the problems resulting from the massive influx of visitors to Manly in summer, once the Beaches Link Tunnel has been built.

The Beaches Link Tunnel project has been sold to the residents of the northern beaches on the basis that "it will save 30+ minutes to get to the city and you will avoid 19+ sets of traffic lights". The same applies to residents in Western Sydney who will now find that it is quicker to drive to the northern beaches than to drive to Bondi, Coogee or Cronulla.

Even at present residents of the northern beaches have difficulties in finding a park close to Clontarf Reserve, Little Manly Beach, Queenscliff Beach or Freshwater Beach in the summer. Once the tunnel is built, the situation will be much worse. The following warning from the Northern Beaches Council will become commonplace.

7. Rat Runs through Balgowlah and Seaforth

Even TfNSW acknowledges that traffic congestion in Manly Vale and Balgowlah will increase significantly during construction and once the tunnel is built. But, the EIS simply says that "this is a problem for the Council to sort out", attempting to absolve responsibility for the traffic problems created by the tunnel.

Rat-runs will be a significant problem for many streets in the region – both from traffic trying to find the quickest way into the tunnel or trying to avoid the tunnel and toll payment. Council have observed that very little modelling has been performed to determine the effects of the project on the local road network, meaning that while certain rat-run streets are identified, the overall cumulative impact is unknown.

The EIS states that rat-run traffic will increase through North Balgowlah along Woodbine and Kitchener Streets, taking short-cuts through Wanganella St, Rickard St and West St. It states these streets will be need traffic calming devices installed to push the extra traffic to use Woodland or Condamine Streets (in consultation with Northern Beaches Council). We believe any traffic calming measure in Wanganella St will be ineffective, as the benefit from using this road will be too great for traffic to be deterred. The only option will be to close the road off at the northern end, but this will in turn push rat-run traffic into the narrower Rickard and West Streets.

This extra traffic using local roads as rat-runs makes further congestion at intersections, increases the danger to residents, and increases noise levels for residents – severe enough to potentially qualify for noise mitigation on Wanganella St.

The EIS documents on traffic detail increased delays and congestion on various local roads, including Burnt Bridge Creek Deviation / Condamine St Manly Vale, Wakehurst Parkway and Sydney Rd / Condamine St Balgowlah. The impacts to Kenneth Rd / Condamine St Manly Vale are not modelled as part of the project, but significant increases in delays are predicted.

These increased delays on roads and intersections include the majority of all major intersections in the region, and residents anticipate any time savings from using the tunnel will be eliminated by increased delays on local roads.

We object to the Beaches Link Tunnel portal design, on the basis that insufficient consideration has been given to the traffic impacts on feeder roads, and local residential streets.

The potential problems for residents in Manly Vale and Balgowlah from the rat-runs is acknowledged in the submission of the Northern Beaches Council.

We support the Council's submission in relation to:

- the traffic congestion during construction (from parking by workers and from heavy duty trucks waiting in local roads to enter the work sites in Balgowlah and North Balgowlah)

- proper traffic modelling for local roads to establish the bottlenecks and rat-runs through Balgowlah and Manly Vale.

- Inclusion of all upgrades to local roads impacted by increased traffic accessing tunnel portals.

8. Unfiltered Ventilation Stacks in Balgowlah, Seaforth, Cammeray and Artarmon

The image below shows 2 maps of air quality impacts from the exhaust stack at Balgowlah – showing both the increases to 1-hour maximum NOx under the 'Do something cumulative' scenario (DSC).

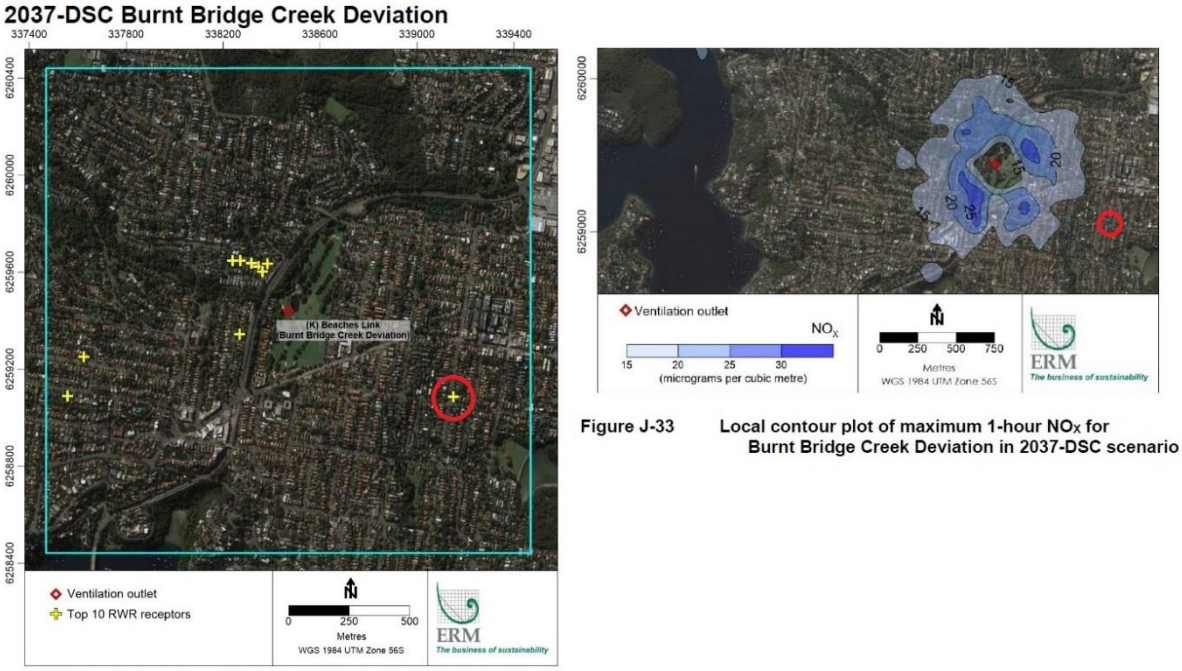


Figure 8-14 Top 10 receptors for 1-hour NO_X for 2037-DSC

Figure J-33 Local contour plot of maximum 1-hour NO_X for Burnt Bridge Creek Deviation in 2037-DSC scenario

The map on the left shows the 'top 10' RWR receptors (EIS Appendix H Part 1, Figure 8-14, page 114). According to TfNSW when asked, these are "the receptors with the 10 largest NOx (oxides of nitrogen) contributions around each outlet", showing the ventilation stack emissions only. It is influenced by factors such as proximity to the stack, topography, prevailing wind and building height.

The map on the right is a cropped version showing contour plots for ventilation stack emissions only around the region near the Balgowlah stack (EIS Appendix H Part 2, Figure J-33, page J30).

One of the top 10 RWR receptors is located near the intersection of Woodland St and White St Balgowlah, circled in red on both maps. We find it impossible to understand the reasoning why this location is a 'top 10' receptor, as it is located in a low point of a valley, is a row of single storey properties, and has numerous other properties that are up to 25 metres higher topographically between itself and the ventilation stack. The map on the right also shows the property completely unaffected by the ventilation stack emissions.

When comparing the EIS documents from both the Western Harbour Tunnel and Beaches Link projects, they present the same vehicle kilometres travelled (VKT), same changes to emissions, same community receptors assessed (CR) and only a tiny change to the RWR receptors assessed, with 4 fewer receptors assessed in the Beaches Link EIS, from a total of 35,436 receptors in the 'Do something cumulative' scenario (Beaches Link EIS, Appendix H

Part 1, Tables 8-8 to 8-13, pages 97-105, and Western Harbour Tunnel EIS, Appendix H Part 1, Tables 8-8 to 8-14, pages 91-106).

We refer you to the following tables from the EIS documents for the Western Harbour Tunnel and Beaches Link projects (Beaches Link EIS, Appendix H Part 1, Tables 8-17, page 120, and Western Harbour Tunnel EIS, Appendix H Part 1, Figure 8-20, page 124).

Western Harbour Tunnel:

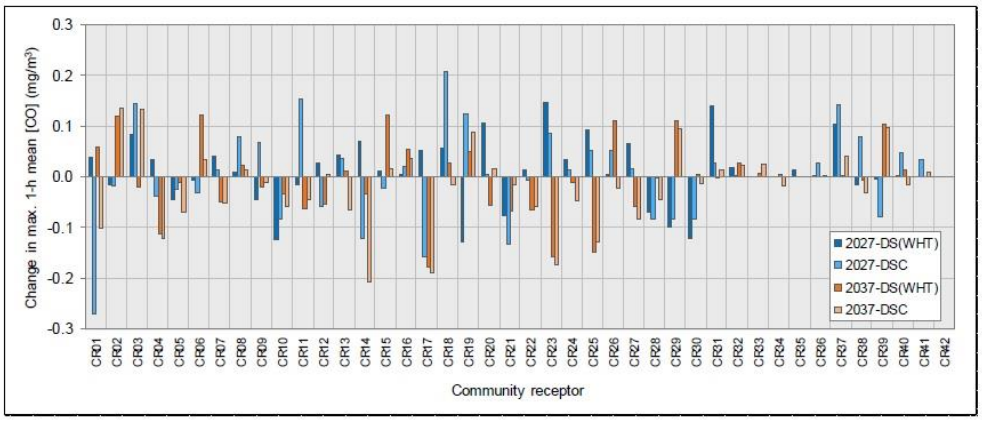


Figure 8-20 Change in maximum 1-hour mean CO concentration at community receptors (with-project and cumulative scenarios, relative to corresponding Do minimum scenarios)

Beaches Link:

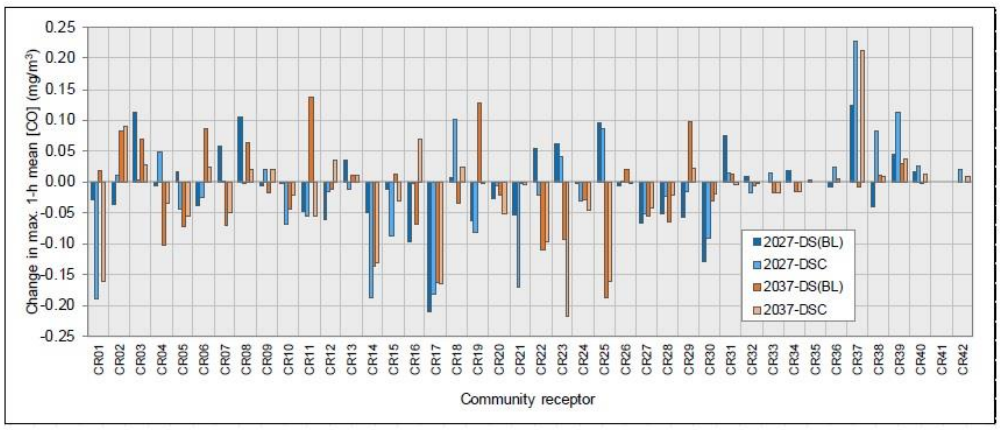


Figure 8-17 Change in maximum 1-hour mean CO concentration at community receptors (with-project and cumulative scenarios, relative to corresponding 'Do minimum' scenarios)

When we look at the results for the same community receptors, under the 'Do something cumulative' scenarios (DSC, which include all the same projects) - we see a marked difference for most receptors when comparing the figures released in Beaches Link against those in the Western Harbour Tunnel EIS.

For example, CR29 (St Cecelia's School) has a reduction of maximum 1-hour mean CO of approx 0.09 mg/m^3 under the DSC scenario in 2027 in the Western Harbour Tunnel EIS. In the Beaches Link EIS, the same scenario shows a decrease of approx 0.01 mg/m^3. The same CR29 in 2037 DSC shows an increase of approx 0.1 mg/m^3 in the Western Harbour Tunnel EIS, but an increase of 0.02 mg/m^3 in the Beaches Link EIS.

Similarly, CR37 (Hardi Aged Care) shows an increase of approx 0.04 mg/m^3 in the DSC 2037 scenario in the Western Harbour Tunnel EIS, but an increase of over 0.2 mg/m^3 in the Beaches Link EIS.

On every pollutant measure under the 'Do something cumulative' scenario with the same projects assessed, similar inconsistencies in the data can be found. Clearly the calculations have been done differently and produced different results, despite the inputs of VKT and CR receptors being the same.

The community can have no confidence that these modelled air quality figures are correct, for either the Western Harbour Tunnel or Beaches Link projects.

Whilst the community is not privy to the full modelling method, data inputs and outputs, the inconsistencies and errors shown here have called the accuracy of the air quality modelling into serious question.

The air quality modelling in the EIS is designed to give the public confidence in the safety of ventilation stacks, so the information should be presented in a way that it is reasonable to be understood and trusted by the general public. It should not require a degree in engineering or fluid dynamics, nor is it acceptable for the community to be told to "just trust the information that you can't understand".

It is already difficult for the communities close to ventilation stacks to accept that the air quality they live with will decrease as a result of the tunnel - it does not seem like natural justice, or indicative of public health being considered as a priority.

It is critical that the wider public has confidence in the accuracy and safety of air quality modelling - as a true measure of what emissions will be experienced when the tunnel is operational.

The EIS documents also include assumptions on a timetable of improvements to fuel emissions standards, and take-up of electric vehicles. This schedule cannot be confirmed at this point in time, and is subject to many other factors to determine it's accuracy. If the reality is that fuel emissions standard improvements are delayed, or the adoption of electric vehicles is not supported, the modelling for air quality will be incorrect.

The EIS clearly demonstrates that the vehicle kilometres travelled (VKT) increases over time as a result of the project in the region / GRAL domain (EIS, Appendix H Part 1, Table 8-8, page 97). Thus the only improvement to emissions and air quality is achieved by fuel emissions standards and EV take-up – and these would be achieved with or without the project. A benefit of the Beaches Link Tunnel is demonstrably not better overall air quality.

The government refuses to consider having filtration in the ventilation stack that is so close to Balgowlah Boys High School, St Cecilia's and Seaforth Public Schools. In the EIS, there are thousands of pages of very technical information that is supposed to justify their decision not to install filtration.

We can summarise their reasons as follows*: In the view of the medical experts (through the NSW Chief Medical Officer and the technical experts on air flow from ventilation stacks)*

there will definitely be an increase in the level of air toxins in the atmosphere close to the stacks (1.2 km and below), but the "modelling" tells the experts that not enough people will die as a result of the increase in air toxins to justify the expenditure on filtration to justify the additional expense on installing filtration in order to reduce those additional deaths.

We stand by the position that: there is no safe level of particulate matter under 5 microns in the atmosphere. Whilst it is not possible to remove all particulate matter from the ventilation stacks, the lack of filtration and the position of the ventilation stack in the Balgowlah Valley so close to three schools increases the risk of a cancer cluster forming in Balgowlah developing at some stage in the future.

On this issue, we strongly support the submissions of WEPA, Larissa Penn and the P&Cs of Balgowlah Boys School, St Cecilia's School and Seaforth Public School.

Perhaps we should give the final say to the Premier Gladys Berejiklian and the Minister for Planning Rob Stokes:

Gladys Berejiklian MP*: "Members of Parliament should examine their conscience and consider how they would feel if their children or the children of loved ones were exposed to this level of fumes every day and they were part of a government that could have put in place measures to reduce the impact of the fumes. It is not too late: the Government can still ensure that filtration is a possibility"*. Statement in the Parliament

Hon Rob Stokes MP: '…… there is no way in hell I will countenance exhaust stacks from the Beaches Link tunnel being built anywhere near a school'.

Recommendation: All air quality modelling for the Beaches Link Tunnel and Western Harbour Tunnel projects must be recalculated by a second independent contractor. This is absolutely necessary to give the public confidence in the safety of air quality modelling for the projects, due to demonstrated inconsistencies and errors in the material published in the EIS documents. We support other communities in recommending all ventilation stacks for tunnels over 5 km in length be filtered using world's best practice technology.

9. TfNSW's Dismissal of Potential Problems for Residents during Construction

The constant use in the EIS of terms such as 'negligible' as well as various promises of 'feasible and reasonable mitigation measures', 'should not occur' provide neither the accurate nor robust information residents are entitled to. The choice of these words provides no assurance to residents.

It has been obvious to residents from reading the EIS and watching the Virtual Briefing Sessions that TfNSW has deliberately and dishonestly downplayed or glossed over some very major potential problems for residents. This could be done out of a misplaced desire to not alarm residents or to have them believe that the problems will not be as terrible as they imagine.

In the 2018 Parliamentary Inquiry into the WestConnex Project, it was found that:

6.55 Of the 1,909 complaints received, they fall into the following categories:

- Noise and vibration outside of hours complaints – 779
- Noise and vibration outside of hours during standard hours complaints – 396
- Odour complaints – 376
- Dust complaints – 234
- Water complaints – 38
- Waste complaints – 21
- Other – 65.[586]

…… so much for the patronising approach and attitude of TfNSW in assuring the residents that the concerns they are raising are valid and that there will be contracts and mechanisms in place to minimise the problem incidents.

Finding 14 stated "That the various noise mitigation measures offered by Roads and Maritime Services are wholly inadequate to substantially reduce heavy construction noise." What are the protections to ensure the Northern Beaches community does not suffer the same fate?

The EIS does not fully address construction noise and vibration mitigation measures for particular streets or properties, so residents and school communities currently have no indication of whether they will be eligible to receive sufficient measures, or none at all. We also do not know if improvements determined as a result of the 2018 Parliamentary Inquiry have been implemented.

The community finds insufficient restrictions on worker vehicle parking in the EIS. The guidelines detailed do not prohibit workers parking their vehicles in residential streets nearby worksites. Suggestions of workers using public transport or being shuttle bused to worksites represents wishful thinking, with no guarantees these outcomes will be achieved.

The following extract from the Parliamentary Inquiry is about the inadequacy of the complaint procedure:

6.62 A number of inquiry participants asserted that they have not received adequate responses to their complaints. For example, Dr Jacinta Green, a resident affected by the construction of the WestConnex, shared her experience of making repeated complaints about night-works, and her distress when the complaints have not been handled appropriately:

> Lodging complaints (which is so necessary) and the efforts you have to go to, to ensure your complaint is lodged is incredibly distressing. The number of times I have rung up to complain about un-notified night works and been informed that there are no workmen on sight is ridiculous, my bedroom overlooks the work site. I have sent through photos and videos of night works and still had multiple staff members state that there was no work happening. The contractors cannot simply say that they aren't getting complaints when they make complaining so distressing, when they fail to lodge your complaint. Perhaps they should be asked to document how many calls they get from residents. I am tense and anxious all the time, I dread Friday afternoon, when the weekly email comes through, I dread hearing the reversing beeps at 5:30 in the morning as it signals works I haven't been notified about. There needs to be a third party that channels the complaints and doesn't dismiss, ignore or downplay phone calls from residents in distress"[593]

The tone of the EIS with regards to resident complaints seems more focussed on "managing people to shut up" rather than actually addressing problems.

We are afraid that residents in Balgowlah, North Balgowlah and North Seaforth will have similar experiences to those during WestConnex construction, with appropriate measures not implemented as a result of the Parliamentary Inquiry. Numerous examples can be found from similar projects of contractors breaking restrictions during construction, and it relies on residents to report these breaches. It should not be a resident's responsibility to monitor TfNSW's worksites.

Under current guidelines detailed in the EIS, the onus is upon residents to both know what restrictions to noise levels exist, the time of use permitted, or choice of equipment / method applies to each construction activity. It also requires residents to be in a position to lodge a complaint when construction activities are occurring in breach of restrictions.

The community should be provided with an independent advocate who acts on their behalf, appointed external to government to ensure independence. They would work onsite and ensure contractor compliance for aspects like noise, type of machinery used, justification for night work undertaken, worker parking, truck movements etc. They would have the power to stop work if breaches to appropriate work conditions are found.

<u>Recommendation:</u>

A fully independent advocate or arbitrator must be appointed to work on behalf of residents and the community. They would work onsite during both standard hours of construction and out of hours construction to monitor contractor compliance with regards to noise, vibration, choice of machinery, night work, worker parking and truck movements, and hold stop work powers.

10. Contribution to Climate Change and Increasing Greenhouse Gas Emissions

The project's construction and operations contribution to greenhouse gas emissions and climate change are assessed as 723.7 kt for construction, and yearly operational emissions of 45.3 kt in 2027, then rising each year to 52.5 kt in 2037. This includes both operating the tunnel (ventilation, lighting etc.) and additional traffic induced by the project using the tunnel.

The EIS states that emissions will be less because traffic is free-flowing, with less stop-start than current surface roads. These calculations are disingenuous because they do not include factors such as emissions from increased congestion on local roads and intersections near portals. In fact it is assumed that congestion will decrease resulting in free-flowing roads, despite traffic modelling detailed those relevant sections of the EIS. An analysis on the increase in emissions from the Beaches Link tunnel is also not provided compared to public transport options (which would reduce emissions overall), or the impacts of increased car dependency in general.

That one single road can contribute 0.04% of the emissions of the entire state of NSW (as projected in 2037) is abhorrent to the community, and must be rejected. Climate change is a global challenge, but by locking in future emissions increases in projects like these, we make the challenge even harder.

The NSW government has committed to a strategy of Net Zero greenhouse gas emissions by 2050, and projects like the Beaches Link Tunnel are the antithesis to those goals. We object to the Beaches Link Tunnel on the basis that it is not consistent with NSW greenhouse gas emissions reduction policy.

11. Inadequacy of the Environmental Impact Statement Consultation and Submission Process

We question the legitimacy of the EIS process as an appropriate method of community consultation with necessary transparency.

We have already detailed the rejection of our community group's request for an extension of the time available for community consultation and submissions, also included in Attachment 4.

The EIS documents are very lengthy and technical in nature, and over 12,000 pages in length. This has been difficult to access for many in the community with limited technology available to them. Some of the documents are so long that a search for key words does not function properly, having to skim too many pages of text (for example an address search in Appendix G Part 2).

The readability index of one of the more simple chapters (as opposed to the more technical appendices) is approximately grade 17 to comprehend the document – a reading and comprehension level available to less than 20% of the population. This demonstrates the lack of availability of the information included in the EIS.

Due to COVID-19 restrictions, normal face-to-face community consultation sessions were cancelled. Requests for alternative sessions with restricted numbers, held in under COVID-safe methods were also rejected on the basis of TfNSW protocol. The Northern Beaches community was also under COVID-19 lockdown for a period of approximately 2 weeks during the consultation period.

The alternative to face-to-face sessions were virtual sessions held via Microsoft Teams software. This have proven a significant obstacle to some members of the community with limited computer or technology experience, adding to personal anxiety.

Questions could be asked during the virtual sessions using the chat function in the software. Analysis of the Q&A chat function from the Air Quality Virtual Session revealed only approximately 40% of questions receiving any response. Of those 40% a significant number did not address the person's question – stating things like "Your question may be answered in the presentation" or just referring the person to a particular Chapter in the EIS documents. This is not a reflection upon TfNSW staff; it is a measure of the inadequacy of the format to adequately answer people's questions.

Other options for consultation have been via phone or email. Staff answering the phone had limited information at hand and could not answer technical questions, but would pass the questions on to more appropriate staff to give feedback via email. The response time for email questions has been slow, with answers taking up to week, particularly in the later half of the consultation period. Email correspondence is also unsuitable for many questions from the community, as it lacks the to-and-fro conversation available via phone or in person.

TfNSW have stated that due to the volume of enquiries, some questions may not be able to be answered before the deadline for submissions – which the community finds unacceptable.

All these factors contribute to a community consultation and submission process that is not legitimately accessible and disenfranchises the community. We ask that alternative options for appropriate community consultation are provided as part of the project assessment process.

12. In Conclusion

- The Beaches Link Tunnel is proposed to solve a long-term problem that may not exist because of changes to the work/life balance following the broader adoption of Work-from-Home (WFH) and investment in WFH Hubs in the Northern Beaches.

- Fewer people will need to or want to drive to the city (and beyond) during the morning peak. Many will drive to the office on the days they are required during non-peak times. Consequently, there will be a big reduction in the peak morning traffic flow.

- The potential for long term permanent damage to the beautiful bushland and the rich biodiversity of the Burnt Bridge Creek Valley, the Garigal National Park and the Manly Dam War Memorial Park is a risk that has not been fully acknowledged in the EIS. The long-term damage needs to be balanced against what we believe to be dubious and only marginal benefits from the construction of the Beaches Link Tunnel.

- By having more residents in the northern beaches working from home, presents opportunities to increase local public transport options within the northern beaches and for active transport possibilities like walking and bike riding.

- The Beaches Link Tunnel will have a disastrous impact on the lifestyle of residents and during the construction phase cause long term irreparable damage to our precious environment and green spaces and to the influx of cars in the summer months.

- We are hopeful that the DPIE will take seriously the issues raised in our submission – and challenge the many spurious claims made by TfNSW in the EIS.

Balgowlah Residents Group

Jo Casserly (Chairperson), Nerissa Levy (Treasurer), Jenny Anderson (Co-Chair) and Terry le Roux (Secretary)

Email: beachestunnel@gmail.com

Attachment 1: TfNSW on its Forecast of Future Traffic Flows in 2037

-------- Forwarded Message --------
Subject:RE: Beaches Link Tunnel: Question for David Bohm
Date: Mon, 15 Feb 2021 06:12:38 +0000
From:whtbl <whtbl@rms.nsw.gov.au>
To:terry.leroux@bigpond.com <terry.leroux@bigpond.com>
CC:whtbl <whtbl@rms.nsw.gov.au>

Hi Terry,

Thank you for your email and feedback.

At this time long-term impacts to traffic from COVID-19 are still unknown, and current traffic conditions and travel behaviours are the result of a variety of temporary factors, including reduced public transport capacity and demand. Ongoing traffic and transport analysis shows that traffic in the project area has already returned to levels near that of the pre-COVID-19 period. Given the interim nature of current conditions, and also the relative stability of traffic levels, while noting some traffic is likely related to suppressed demand for public transport, there is no plan at this time to review the modelling done for the Beaches Link EIS.

Transport will continue to monitor and analyse the potential long-term effects of COVID-19 on travel demand, including changes to existing travel conditions as well as future travel behaviours and underlying economic demand drivers.

Regards,

Tim Kwok

Western Harbour Tunnel & Beaches Link
Greater Sydney
Transport for NSW

T 1800 931 189
nswroads.work/whtbl

From: Terry le Roux [mailto:terry.leroux@bigpond.com]
Sent: Wednesday, 10 February 2021 5:31 PM
To: whtbl <whtbl@rms.nsw.gov.au>
Cc: Nerissa Levy <nerissalevy@gmail.com>; Delene Evans <delene.evans@optusnet.com.au>; 'Jo Casserly' <joannacasserly@gmail.com>; Marco

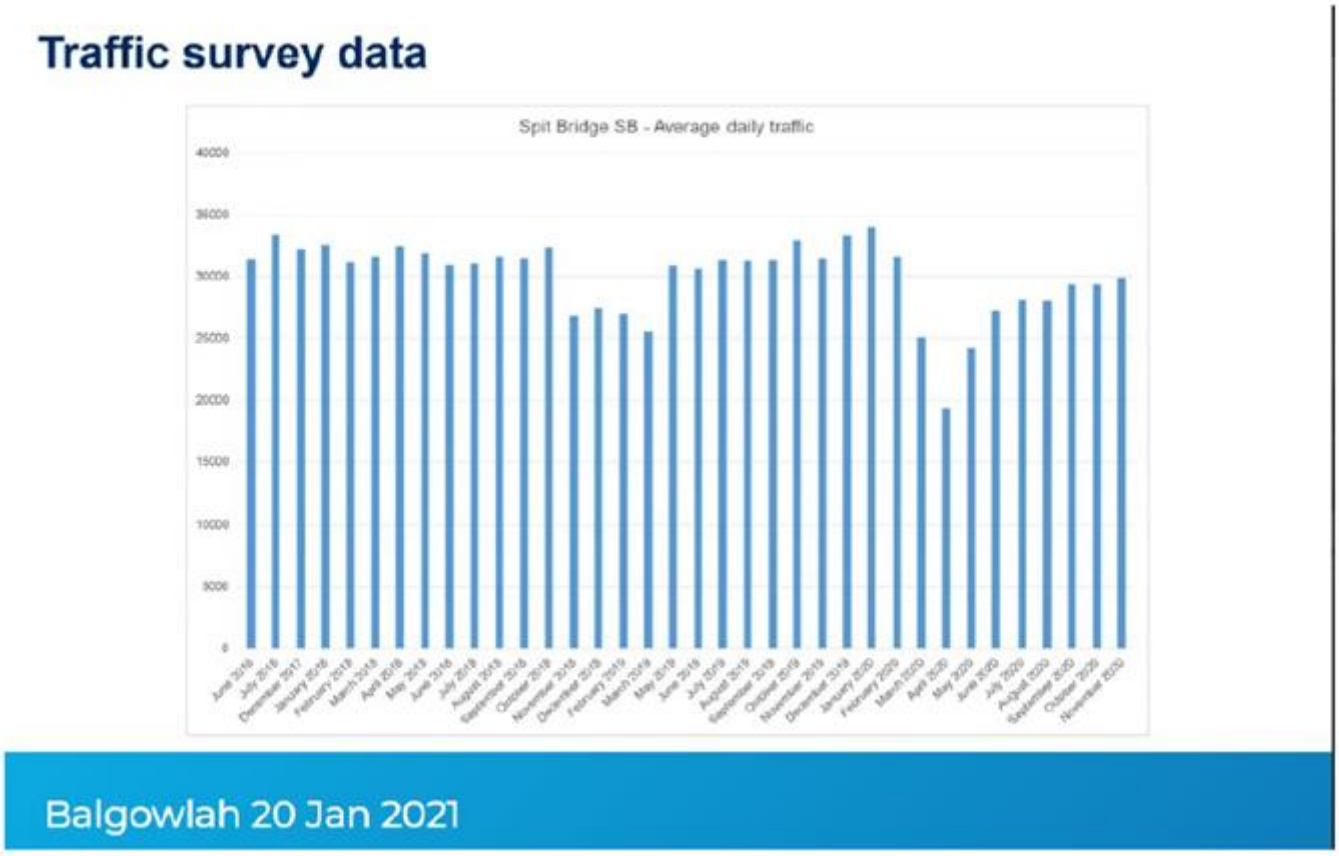
Corrent <Corrent27@hotmail.com>; Bruce Kitson <bruiser014@icloud.com>
Subject: Beaches Link Tunnel: Question for David Bohm

David

You might recall that I tried to ask you some questions after the first Virtual Session on the Balgowlah Site.

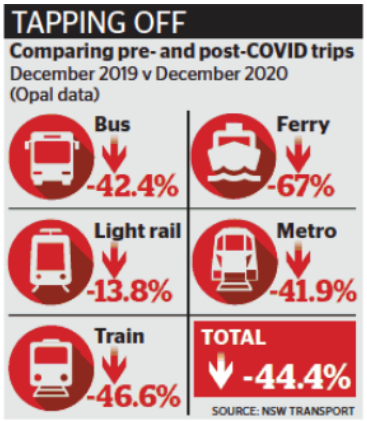
This is more of a critical comment than a question - and provides you with some understanding of why the community is skeptical of many of the claims and statements made in the Virtual Sessions.

Below is your slide showing the daily traffic over the Spit Bridge:



You kept making the point that since the height of Covid Restrictions in April 2020 the traffic crossing over the Spit Bridge has grown - and is currently at about 90% of pre-Covid levels. You are stating and imputing that traffic in the future is expected to reach its historic trajectory - as claimed in the EIS. What you are conveniently (and possibly deliberately) omitting to declare is that in the period since April passenger patronage on buses has fallen by 42% according to data from your own department.

Daily bus passenger crossings of the Spit Bridge (during pre-Covid times) was approximately 35,000 - equivalent to around 30,000 vehicle trips.



I know anecdotally from the community I work with that because of the concerns about the risk of infection on public transport, people who would normally take the bus to the city are driving by car. In addition, some parents are not allowing their children to catch buses for the same reason - and they are being taken to school by car.

To make your claims about traffic crossing the Spit Bridge is close to pre-Covid levels without taking the modal shift due to concerns about Covid infections on public transport is (in my view) both irresponsible and unprofessional.

Terry le Roux
Secretary, North Harbour Community Group and the Balgowlah Residents Group
Ph 0414 385 732

Attachment 2: The Uncertainties in Traffic Forecasting

2.1 Frontier Economics: Expecting The Unexpected: The Challenges Of Traffic Forecasting

https://www.frontier-economics.com.au/publications/expecting-the-unexpected-the-challenges-of-traffic-forecasting/
Anna Wilson | Warwick Davis
9-12 minutes

Mark Twain said that *"Prophesy is a good line of business, but it is full of risks".*

This is a truism that many toll road operators have experienced recently. A 2010 study by Li and Hensher found that for recent Australian toll roads, the first year actual traffic volumes were on average 45% below the forecast levels. Accurate traffic forecasts are important when looking to secure low cost private funding for road infrastructure. So what is causing these large inaccuracies and is it possible to address these problems?

Inaccurate traffic forecasts are not a recent phenomenon. However, these inaccuracies are increasingly being exposed as a result of the greater involvement of the private sector in road development. With more road infrastructure being delivered through PPPs, and subject to tolls, forecast inaccuracies can have a significant impact on revenue.

Traffic forecasting is an inherently challenging task and large variations between forecasts and actual traffic volumes should be expected. Flyvbjerg et al (2005) found that for half the road projects analysed the difference between actual and forecast traffic volumes was ± 20% . The prospect for large errors exists because of the significant uncertainties associated with predicting many of the underlying traffic drivers such as population, households and employment trends and the availability of alternative routes and modes.

However, traffic modelling inaccuracies are not symmetrical. Rather there is a propensity for over-prediction which may stem from two sources.

Second, the technical adequacy of traffic forecasting models must also be questioned. Are they poorly specified? Do they fail to take account of important demand drivers? Or do they merely provide opportunities for optimistic parameter selections?

The study by Li and Hensher (2010) – which reviewed the traffic forecasting accuracy of 14 major Australian toll routes – identified that the following elements influence the size of forecasting errors, many of which relate to the specification of traffic forecasting models:

- elapsed time of operation (roads opened for longer had higher traffic levels than newer roads)
- time of opening (a possible proxy for the complexity of the network i.e. more recent toll roads are operating as part of multiple tolled routes resulting in greater uncertainty and more inaccurate forecasts)
- capacity of the toll road

- toll road length (shorter roads attracted less traffic)
- the presence of cash payment (no-cash payment increased traffic)
- the structure of the charging regime.

SLOW TO ADJUST

Li and Hensher's study found that, with all other factors remaining unchanged, the forecasting error reduces by 2.5% for every additional year since opening. In other words, actual traffic volumes move closer to forecast volumes the longer a road has been open.

The slow initial uptake of toll roads can be expected.

- Adjustment can take time — Commuters may take time to experiment and become familiar with the operation of a toll road and the benefits it brings. Similarly some adjustments (such as population shifts resulting from improved connectivity) may only take place in the long-run.
- Toll roads may not operate at full capacity when opened — There maybe short term supply constraints at the time of opening with some complementary investment on the broader network still to take place, for example, improved access to entry and exit points.

For these and other reasons traffic consultants typically impose ramp-up profiles on forecasts. However, these profiles are sometimes just guesstimates (e.g. 70%, 90% and 100% of the long term forecast over three years) with little empirical justification . More often than not, they are inaccurate with overestimation still plaguing early year forecasts. In fact, the extent to which existing models have taken into account these factors may be overstated, as tolls are often reduced in the short term to stimulate demand above what would have occurred otherwise.

These early year inaccuracies can impose a heavy cost on the revenues of toll road operators. Over-optimistic traffic forecasting is seen as the primary cause for the financial failure of toll road projects such as Cross City Tunnel, CLEM7 and Lane Cove Tunnel.

PAYING THE PRICE

Interestingly, traffic forecasts for toll-free roads do not display the strong systematic tendency towards overestimation. While this may reflect the lack of optimism bias, it may also suggest that existing models fail to take into account the impact of price on demand.

Source: The Audit Office of New South Wales (2006) "Performance audit: the Cross City Tunnel Project", p.32

And price can have a significant impact on patronage. When the Cross City Tunnel in Sydney opened in June, 2005, the actual traffic was approximately one third of that forecast (see Figure 1). As a result the Tunnel Company provided 5 weeks toll-free which lead to an immediate jump in patronage. However, when the toll was re-introduced there was an immediate drop in traffic. In order to stimulate further demand, the toll was then reduced

by half; this had a much smaller effect on traffic numbers that the removal on tolls altogether.

Understanding how road users actually make travel choices is important. However, this is complex. A well specified model of demand needs to consider commuters' willingness to pay and the impact of any changes in travel costs. This requires consideration of not only tolls but also changes in vehicle related costs (such as fuel), costs of alternative modes of travel and changes in commuters' valuations of any travel time, safety or reliability improvements.

The Cross City Tunnel experience suggests price is important but that commuters' responsiveness to price changes is not linear. Li and Hensher postulated that commuters are less willing to pay for small (as opposed to large) travel time savings. The result is that short toll roads are more prone to inflated traffic forecasts.

They also found that roads with flat toll rates have better forecasting performance than those with more complicated charging systems — such as a distance-based charging where tolls vary by entry/exit points. It may be that more complicated charging systems create more uncertainty for commuters which make them less likely to use the toll road. However, a more likely explanation is that forecasters are less able to model the demand impact of more complicated pricing regimes.

Given the increased importance of toll financing, more emphasis needs to be placed on understanding commuter sensitivity to price.

These price elasticities need to be incorporated into traffic forecasting models, many of which fail to include tolls as a specific feature . In particular, the trip generation stage of many demand models is usually determined solely by a host of exogenous factors (socio-economic and land-use variables). Travel costs (including tolls) typically do not feature as an explanatory variable, although they are usually incorporated in later modelling stages to determine route selection . This approach means the dampening impact of tolls, increasing network congestion and rising fuel prices on overall traffic volumes may not be adequately considered.

Furthermore there is little capacity, within existing modelling approaches, to incorporate the fact that price elasticities may vary depending on the time of day or between freight and commercial traffic. All of these elements will become more important if toll operators look to adopt innovative price structures.

IS THIS THE BEST WE CAN DO?

Traffic forecasting is inherently challenging and large variations between forecasts and actual traffic volumes should be expected. Planning and investment decisions need to be made with this in mind.

Focus should be placed on identifying and investing in projects that can be adapted as forecasting uncertainties are resolved (i.e. investments in 'real options'). For example, a wider corridor could be set aside for a road, making it cheaper to widen if necessary.

That said, the systematic bias towards overestimating traffic, whether due to optimism bias or modelling limitations, should serve as a warning to bidders. Addressing optimism bias requires changes to internal government approval and bidding assessment processes and, ultimately, to the tendering process itself. Here it is worth looking to auction theory for guidance on how best to design the bidding process to reduce the risk of overly-optimistic traffic forecasts. For example, there are lessons about how to induce truthful forecasts from the now widespread telecommunications sector experiences with spectrum auctions.

The second task is to deal with existing traffic models' inability to adequately consider the impact of price on demand. Unless this is addressed through improved models, greater forecasting errors can be expected particularly if increasingly sophisticated pricing regimes are introduced. Further work is needed to understand commuters' responses to price and to incorporate this into modelling approaches. Governments could assist by collecting better data to improve model assumptions on price elasticities, actual ramp-up profiles, and hourly and seasonal distributions of demand.

To date, the proposals put forward to address these issues focus on government underwriting all the demand risk. This will not address the problems described. Rather, it will hide any inaccuracies. Unduly high traffic forecasts will continue to result in government prioritising the wrong projects, leading to inefficient investment. This imposes a real cost on society – and with projects in the billions, this is a high price to pay.

3 Transportation Research Record – Journal of the Transportation Research Board

Understanding and Accommodating Risk and Uncertainty in Toll Road Projects: A Review of the Literature

Jason D. Lemp, Kara M. Kockelman
First Published January 1, 2009 Research Article

From the Abstract

Forecasting traffic and toll revenues for new highway projects involves great uncertainty because of the inherent uncertainty in the models used to make forecasts. As private investment becomes more common in project financing, quantifying the levels of risk and uncertainty associated with such projects becomes critical. ……..

……These studies found that tolled projects tend to suffer from substantial optimism bias in forecasts, with predicted traffic volumes exceeding actual volumes by 30% or more about half the time. Moreover, projects with greater uncertainty tend to overestimate Year 1 traffic volumes more and stabilize at lower final traffic volumes. But after one controls for added optimism bias in traffic forecasts (compared with nontolled projects), there is little difference in uncertainty levels between tolled and nontolled forecasts. A typical way to address uncertainty in traffic forecasts is through sensitivity testing via variations in key inputs and parameters.

Attachment 3: The Adoption of Work-from-Home

3.1 From *The Economist* (17 Oct 2020)

Countering the tyranny of the clock | Business

How flexible working is changing workers' relationship with time

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Selected extracts ……

……..Remote working has brought a greater degree of freedom. A survey of 4,700 home-workers across six countries commissioned by Slack, a corporate-messaging firm, found that flexible working was viewed very positively, improving both people's work-life balance and productivity. Flexible workers even scored more highly on a sense of "belonging" to their organisation than those on a nine-to-five schedule.

It is hardly surprising that workers prefer flexibility. Working a rigid eight-hour schedule is incredibly restricting. Those are also the hours when most shops are open, when doctors and dentists will take appointments, and when repairmen are willing to visit. Parents on a conventional routine may be able to take their children to school in the morning but are unlikely to be able to pick them up in the afternoon. Many families find themselves constantly juggling schedules and giving up precious holiday time to deal with domestic emergencies.

On reflection, it is also not too shocking that home-workers feel they are more productive. After all, few people have the ability to concentrate solidly for eight hours at a stretch. There are points in the day where people are tempted to stare out of the window or go for a walk; these may be moments when they find inspiration or recharge themselves for the next task. When they do this in an office, they risk the boss's disapproval; at home, they can work when they are most motivated.

Remote working is not possible for everyone, of course. There is a long list of industries, from emergency services to hospitality and retail, where people need to turn up to their place of work. But for many office workers, remote working is perfectly sensible. They may maintain some fixed points in the week (staff meetings, for example) but perform many of their tasks at any time of the day—or night. Office workers can now be paid for the tasks they complete rather than the time they spend (which firms would have to monitor by spying on people at home).

What is striking about Slack's study is the widespread nature of support for home-working. Overall, just 12% of the workers surveyed wanted to return to a normal office schedule. In

America black, Asian and Hispanic employees were even more enthusiastic than their white colleagues. Women with children were generally keen, reporting an improvement in their work-life balance—though a gap exists between discontented American women and those in other countries, who are much happier (the availability of state-subsidised child care helps explain the difference).

Of course, the new schedule carries dangers: people may lose all separation between work and home life, and succumb to stress. To inject some human contact, companies may embrace a hybrid model in which workers go into the office for part of the week. But overall office-workers' freedom from time's yoke is to be welcomed. The clock was a cruel master and many people will be happy to escape its dominion.

3.2 From Ross Gittins, Economics Editor of the SMH

More working from home will transport us back to the future

December 26, 2020 — 12.00am

Selected extracts ……

If there's one good thing to come from this horrible year, surely it's the breakthrough on WFH – working from home. This wonderful new idea – made possible only by the wonders of the internet – may have come by force, but for many of us it may be here to stay.

If so, it will require a lot of changes around the place, and not just in the attitudes and practices of bosses and workers. With a marked decline in commuting – surely the greatest benefit from the revolution – transport planning authorities will have to rethink their plans for more expressways and metro transport systems.

If we're talking about fewer people coming into the central business district and more staying at home in the suburbs, over time this will mean a big shift in the *relative* prices of real estate. For both businesses and families, CBD land prices and rents will decline relative to prices and rents in the suburbs.

In big cities like Melbourne and Sydney, as so many jobs have moved from the suburbs to office towers in the CBD and nearby areas, the dominant trend in real estate has gone from position, position, position to proximity, proximity, proximity. Everyone would prefer to live closer to the centre.

If you measure the rise in house prices over the years, you find the closer homes are to the GPO, the more they've risen, with prices in outer suburbs having risen least.

But if WFH becomes lasting and widespread, that decades-long trend could be reversed. If you don't have to spend so much time commuting, why not live further out, where bigger and better homes are more affordable and there's more open space?

Maybe apartment living will become less attractive compared to living in a detached house with a garden, with a corresponding shift in relative prices. And if we're going to be working at home as a regular thing, maybe we need an extra bedroom to use as a study.

It's interesting to contemplate. But before we get too carried away, let's remember one thing: in human history, there's nothing new about working from home. Indeed, when you think about it you realise humans have spent far more centuries working at home than not.

3.3 Work From Home 2021: Future Trends in Remote Work

Udbhav Ganjoo

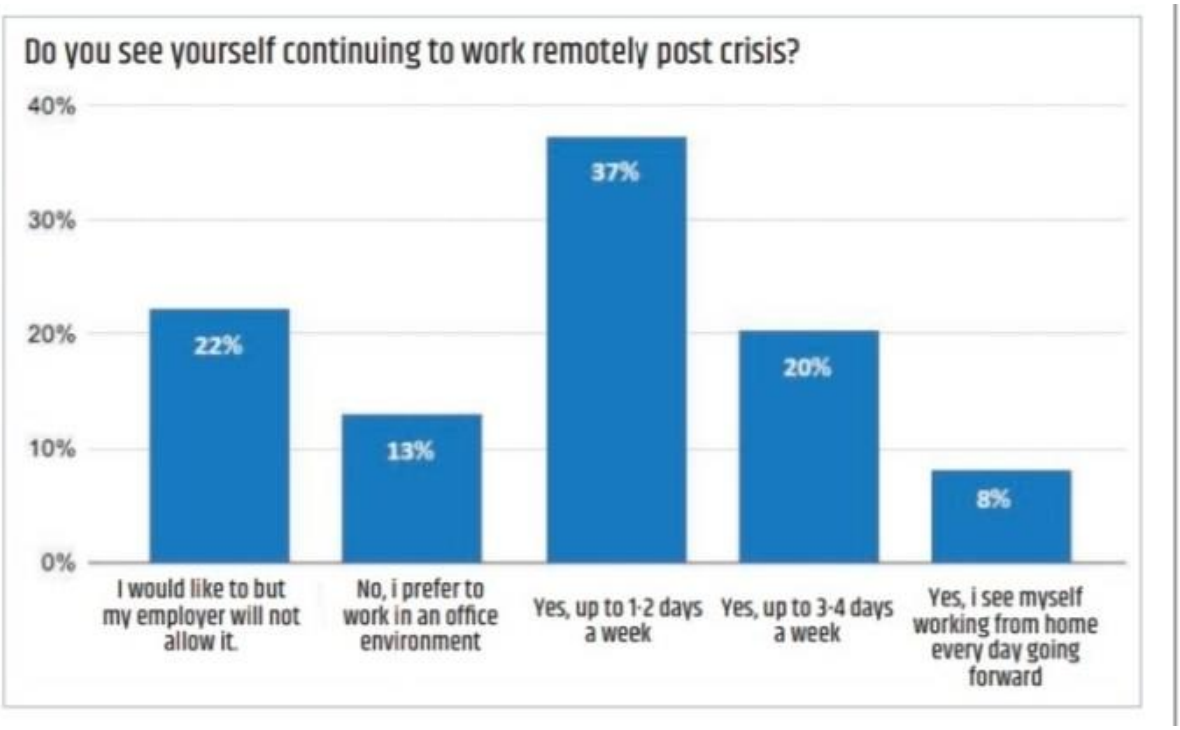
December 30, 2020

There is a growing consensus that a Hybrid model of Working will gain currency, wherein a fully in-person and remote work will be two ends of a fluid spectrum of options. Work from home was earlier present to varying degrees in different industries depending on the business context, business operating model and technical readiness. However, the onset of the Covid-19 pandemic has led many organizations to have all or some of their employees work remotely during the pandemic. While Business and HR Leaders plan for the two key challenges ahead– how to manage remote working in the current uncertain conditions of today and how to best leverage remote work for their organizations in the future, a few trends are emerging which need to be taken into cognizance while determining the way forward.

Future Trend #1: Hybrid Model of Working

The pandemic has certainly upended certain assumptions about how work should be done, shifting employee preferences and organizational policies. Most respondents in a PWC Study[1] said that even post the crisis, they see themselves working remotely for up to 1 – 2

days/ week.



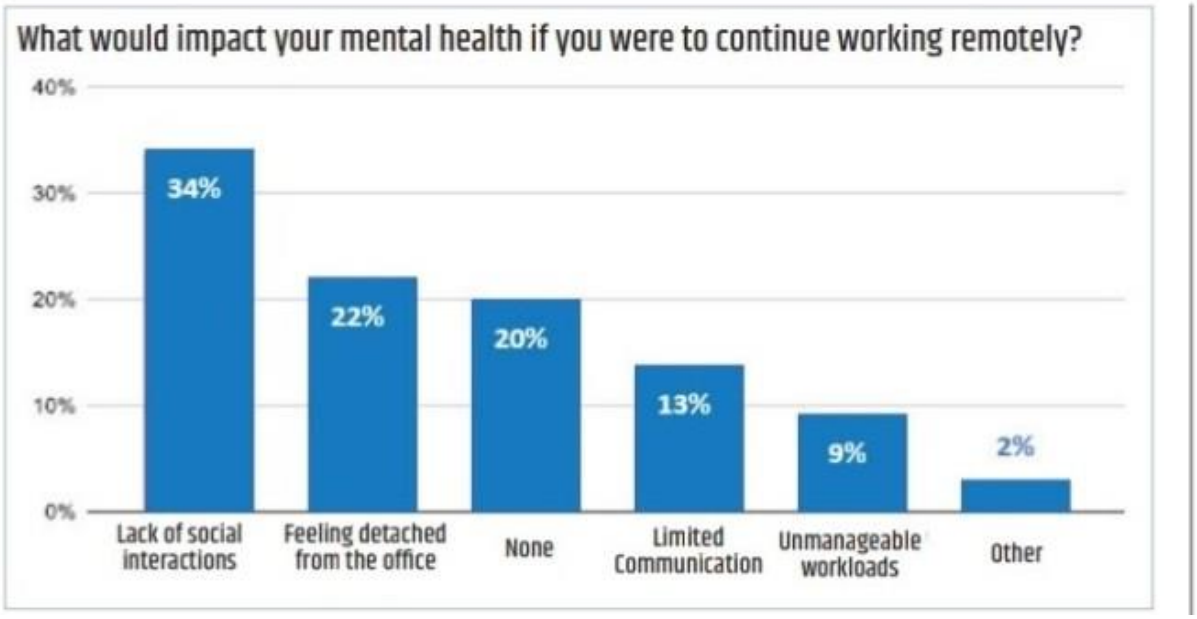
There is a growing consensus that a Hybrid model of Working will gain currency, wherein a fully in-person and remote work will be two ends of a fluid spectrum of options[2]. HR Leaders would need to use a task-based lens to determine what work can be done remotely and how often; for which a three-part ordered framework[3] might be useful:

- **Feasibility:** Determine if remote work is possible, for some workforce segments and industries, remote work is not possible wherein employees need to operate equipment/ physical products or must interact face – to – face with customers.

- **Portability:** Where remote work is possible, identify what work can be done effectively outside the office.
- **Sustainability:** Navigate follow-on implications for the organization; including policies, processes, technology and organization culture imperatives

Future Trend #2: Enhanced focus on Employee Wellbeing and Virtual Engagement

Studies indicate that lack of social interaction during remote working can exacerbate feelings of loneliness and isolation. This coupled with the blurring of personal and professional boundaries while working from home can significantly augment stress4. Below are key mental health issues faced by employees working remotely as per a PWC Study[1]:



To combat this, employers will need to increase virtual social interactions at work, build in-person touchpoints and allow for flexibility to their employees as they work from home. Additional benefits including reimbursements for chairs/office equipment to be set-up at home may enhance focus and comfort. Most importantly, organizations and individuals alike need to foster intentional engagement strategies to preserve employee engagement, social capital and Organizational Culture.

Future Trend #3: Customized HR Processes

Standardized HR processes would need to be rejigged to meet the needs of a segmented workforce within an organization. For example, Virtual reality augmented onboarding programs offer new hires a curated experience of the organization and virtual tours of the office space can help foster a sense of connectedness to new hires. IKEA is pioneering some of these initiatives with the aim of creating an immersive experience for their new joiners.

Similarly, Virtual Cubing helps enhance team connect and clear communication protocols help optimize productivity.

Future Trend #4: More Acceptance of Using non-Traditional Workforces

Over the past decade, numerous start-ups have pioneered the concept of freelance jobs devoid of the rigid structure of traditional jobs. An extension of this concept enables workers to choose their work on a project-by-project basis, enabling them to best allocate time to their personal needs. Remote working may amplify this trend, with employees choosing flexibility and income security from multiple income streams over one steady job. However, concerns over data security and diminished employee rights need to be addressed. As Sarah Kessler notes in her book about the gig economy (Gigged)[5] – "the gig economy can create opportunities for some people, but it can also amplify problems around insecurity, increased risk, lack of stability, and diminished worker rights."

Summary

The tragic context of Covid 19, has catapulted a large proportion of the working world into an unprecedented work from home experiment. Many benefits have emerged, including reduced commute times and fewer sick days[3], a wader talent pool for the organization increased perception of autonomy and trust in the employer-employee relationship, and reduction in work-family conflict which can be attributed to increased temporal flexibility.

However, certain early-stage challenges (such as a breakdown of organizational social structures, employee mental health, the challenge of preserving organizational culture and enabling technology), have emerged in this model which need to be successfully mitigated, both in the short term to support these flexible arrangements until large-scale vaccine distribution and effectivity is established and in the long term, to enable a Hybrid Remote Working Model for identified populations, which leverages the efficiencies of remote working and at the same time addresses the social and cultural nuances[6].

References:

1. PWC, The COVID-19 Remote Working Experiment
2. BCG, 2020, Hybrid Work Is the New Remote Work
3. Gartner, 2020, Remote Work After COVID-19
4. https://www.cfr.org/in-brief/economic-effects-working-home#:~:text=Remote%20work%20has%20been%20shown,between%20work%20and%20home%20blurs.
5. Kesseler, Sarah; Gigged: The Gig Economy, the End of the Job and the Future of Work
6. CII Talentonic HR Solutions (P) Ltd; Whitepaper, Reimagining the Organization for the new Normal – Role of HR

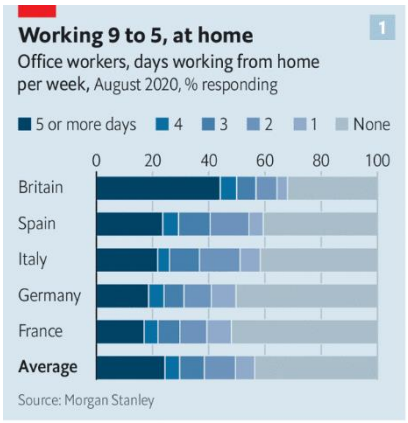
3.3 From The Economist: Covid-19 has forced a radical shift in working habits

Sep 12th 2020

Selected extracts from the article.

This does not, in itself, mean the end of the non-home office. It does mean that there is a live debate to be had. Some companies appear relaxed about a domestic shift. On August 28th Pinterest, a social-media firm, paid $90m to end a new lease obligation on office space near its headquarters in San Francisco to create a "more distributed workforce". Others seem to be against it. Also that month, Facebook signed a new lease on a big office in Manhattan. Bloomberg is reportedly offering a stipend of up to £55 ($75) a day to get its workers back to its building in London. Governments, on which some of the burden will fall if the pandemic persists, are taking a similar tack, encouraging people "back to work"—by which they mean "back to the office".

They face a difficult task. For working from home seems to have suited many white-collar employees. As lockdowns have eased, people have gone out into the world once more: retail spending has jumped across the rich world while restaurant reservations have sharply risen. Yet many continue to shun the office, even as schools reopen and thus make it a more feasible option for working parents. The latest data suggest that only 50% of people in five big European countries spend every work-day in the office (see chart 1). A quarter remain at home full-time.

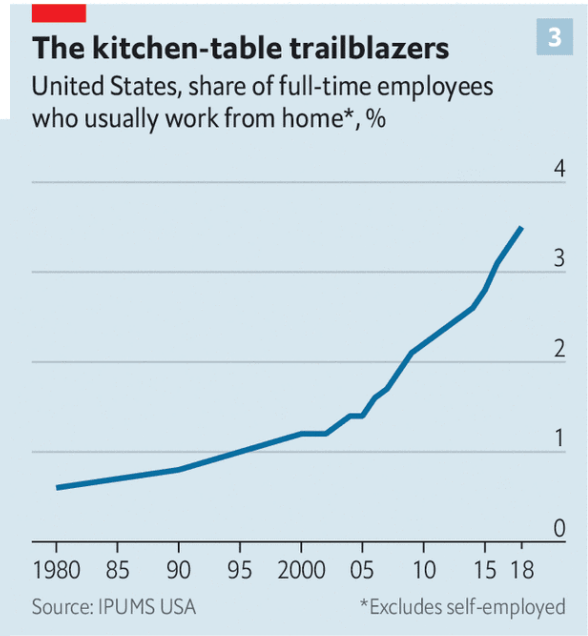


This may be due to the residual fear of covid-19 and the inconvenience of reduced-capacity offices. Until social-distancing guidance ends, offices cannot work at full steam. The average office can work with 25-60% of its staff while maintaining a two-metre (six-foot) distance between workers. Offices which span more than five floors rely on lifts; the queues for access, when only two people are allowed inside one, can stretch around the block.

Some offices are trying to make themselves safer places to work. The managers of a new skyscraper in London, 22 Bishopsgate, have switched off its recirculated air-conditioning. Others have installed hand-sanitising stations and put up plastic barriers. But even if offices are safer, it can still be hard to get there. Many employees do not want to or are discouraged from using public transport—and one-quarter of commuters in New York City live more than 15 miles (24km) from the office, too far to walk or cycle.

However it also appears to be the case that working from home can make people happier. A paper published in 2017 in the *American Economic Review* found that workers were willing to accept an 8% pay cut to work from home, suggesting it gives them non-monetary benefits. Average meeting lengths appear to decline (see chart 2). And people commute less, or not at all. That is great for wellbeing. A study from 2004 by Daniel Kahneman of

Princeton University and colleagues found that commuting was among the least enjoyable activities that people regularly did. Britain's Office for National Statistics has found that "commuters have lower life satisfaction...lower levels of happiness and higher anxiety on average than non-commuters".



The Economist

The working-from-home happiness boost could, in turn, make workers more productive. In most countries the average worker reports that, under lockdown, she got more done than she would have in the office. In the current circumstances, however, it is hard to be sure whether home-working or office-working is more efficient. Many people, particularly women, have had to work while caring for children who would normally be in school. That might make it seem as though working from home was less productive than it could theoretically be (ie, when the kids were in school).

……

Research published before the pandemic provides a clearer picture. A study in 2015 by Nicholas Bloom of Stanford University and his colleagues looked at Chinese call-centre workers. They found that those who worked from home were more productive (they processed more calls). One-third of the increase was due to having a quieter environment. The rest was due to people working more hours. Sick days for employees plummeted. Another study, looking at workers at America's Patent and Trademark Office, found similar results. A study in 2007 from America's Bureau of Labour Statistics found that home-workers are paid a tad more than equivalent office workers, suggesting higher productivity.

The experience of lockdown has simply accelerated pre-existing trends, thinks Harry Badham, the developer of 22 Bishopsgate. That may be an understatement. Although the share of people regularly working from home was rising before the pandemic, absolute numbers remained small (see chart 3). According to one view, the fact that office-working was so dominant until recently reveals that it must be more efficient than home-based work both for firms and for workers. By this logic the success of a country's emergence from lockdown can be measured by how many people are back at their desks.

But there is another interpretation. This says that home-working is actually more efficient than office-work, and that the glory days of the office are gone. The office, after all, came into being when the world of work involved processing lots of paper. The fact that it remained so dominant for so long may instead reflect a market failure. Before covid-19 the world may have been stuck in a "bad equilibrium" in which home-work was less prevalent

than it should have been. The pandemic represents an enormous shock which is putting the world into a new, better equilibrium.

Brent Neiman of the University of Chicago suggests three factors which prevented the growth of home-working before now. The first relates to information. Bosses simply did not know whether clustering in an office was essential or not. The past six months have let them find out. The second relates to co-ordination: it may have been difficult for a single firm unilaterally to move to home-working, perhaps because its suppliers or clients would have found it strange. The pandemic, however, forced all firms who could do so to shift to home-working all at once. Amid this mass migration, people were less likely to look askance at companies which did so.

The third factor is to do with investment. The large fixed costs associated with moving from office- to home-based work may have dissuaded firms from trying it out. Evidence from surveys suggests that firms have in recent months spent big on equipment such as laptops to enable staff to work from home; this is one reason why global trade has held up better than expected since the pandemic began (see article). Such investments are made at the household level too. In many rich countries the market for single-family houses is stronger than for apartments. This suggests that people are looking for extra space, possibly for a dedicated home office.

Pour yourself a cup of ambition

The extent to which home-working remains popular long after the pandemic has passed will depend on a bargain between companies and workers. But it will also depend on whether companies embrace or reject the controversial theory that working from an office might actually impede productivity. Since the 1970s researchers who have studied physical proximity (ie, the distance employees need to travel to engage in a face-to-face interaction) have disagreed on the question of whether it facilitates or inhibits collaboration. The argument largely centres on the extent to which the bringing-together of people under one roof promotes behaviour conducive to new ideas, or whether doing so promotes idle chatter.

Such uncertainty is exemplified by a study in 2017 by Matthew Claudel of the Massachusetts Institute of Technology (MIT) and his colleagues. Their study looked at papers and patents produced by MIT researchers and the geographical distribution of those researchers. In doing so, they found a positive relationship between proximity and collaboration. But when they looked at the buildings of MIT, they found little statistical evidence for the hypothesis that “centrally positioned, densely populated and multi-disciplinary spaces would be active hotspots of collaboration”. In other words, proximity can help people come up with new ideas, but they do not necessarily need to be in an office to do so.

The tide’s turned and rolling your way

And not everyone has the ability to work from home, even if they want to. Research published in April by Mr Neiman and Jonathan Dingel, both of the University of Chicago, found that across rich countries about 40% of the workforce were in occupations that could

plausibly be completed from their kitchen tables. Evidence of actual working arrangements during the pandemic backs up those speculations. A paper from Erik Brynjolfsson of Stanford University and colleagues, looking at American data, suggests that of those employed before the pandemic began, about half were working from home in May.

……

The challenge for bosses, then, is to find ways of preserving and boosting employee happiness and innovation, even as home-working becomes more common. One solution is to get everyone into the office a few days a month. An approach whereby workers dedicate a chunk of time to developing new ideas with colleagues may actually be more productive than before.

A study from Christoph Riedl of Northeastern University and Anita Williams Woolley of Carnegie Mellon University, published in 2017, suggested that "bursty" communication, where people exchange ideas rapidly for a short period of time, led to better performance than constant, but less focused, communication. Not much evidence exists that serendipity is useful for innovation, even though it is accepted by many as a self-evident truth. "A lot of people made a lot of money selling this watercooler idea," says Mr Claudel of MIT, referring to the growth in recent decades of open-plan offices, co-working spaces and trendy "innovation districts".

Coming into the office now and then is not the only way of generating bursty communication. The same can be achieved, say, with corporate retreats and get-togethers. Gitlab, a software company, has been "all-remote" since it was founded in 2014. With no offices, it gathers together its 1,300 "team members", who live in 65 different countries, at least once a year for get-togethers and team bonding.

Similarly, companies such as Teemly, Sococo and Pragli offer "virtual offices", making it easier to communicate with colleagues, rather than going through the rigmarole of scheduling a video call. Using video messaging from Loom, a worker can record her screen, voice and face and instantly share it with colleagues—more useful than a conventional video call, as the video can be sped up or rewound. Gitlab's workers follow a "nonlinear" workday—interrupting work with bouts of leisure. Rather than talk to their colleagues over live video calls they engage in "asynchronous communication", which is another way of saying they send their co-workers pre-recorded video messages.

More frequent working from home will also demand the use of new hardware, and the withering away of other sorts. At present, many companies host large data-centres, but these have proved less efficient as more people work from home. Goldman Sachs reckons that investment in traditional data infrastructure will fall by 3% a year in 2019-25. In its place, companies are likely to spend more on technology which allows workers to replicate the experience of being in the same physical space as someone else (higher-quality cameras and microphones, for instance). The more utopian technology analysts reckon that within five years, people will be able to put on a VR headset and immerse themselves in a virtual office—bad strip-lighting, and all.

There's a better life

All this has wide-ranging implications for public policy. At present it is impossible to know whether home-workers will find it easier or harder to bargain with their employer for pay rises and improvements in conditions, though the idea of asking for a raise through a video chat is hardly an appealing one. Employers may also find it easier to fire remote workers than if they had to do it face-to-face. If so, then calls may grow for governments to give home-workers greater protections.

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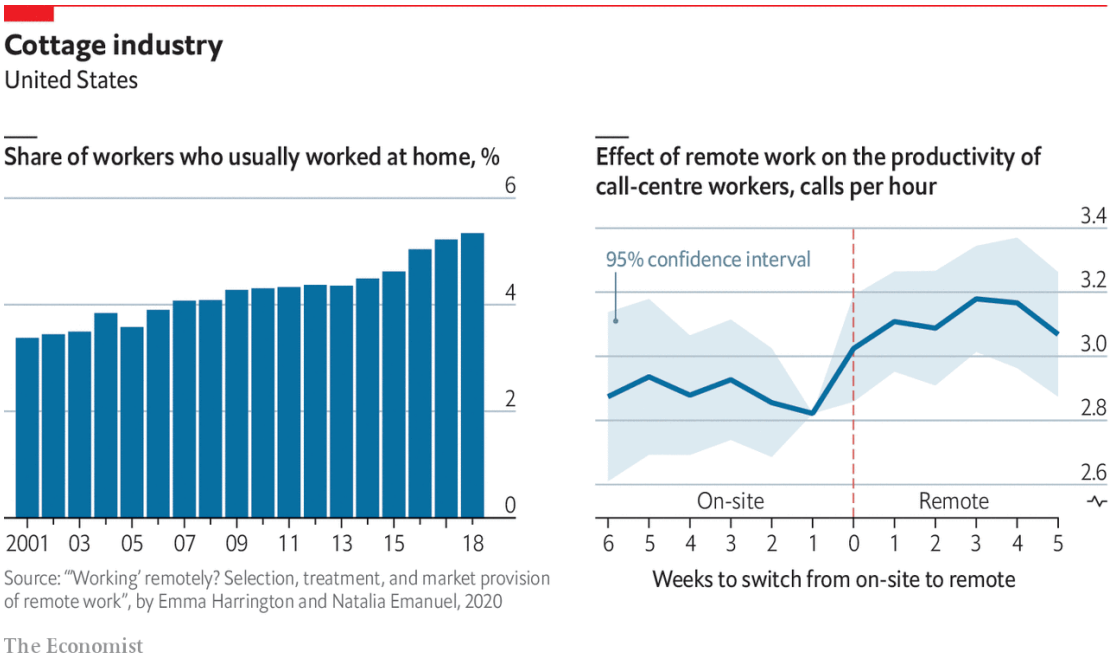
3.4 Does working from home make employees more productive?

The Economist

Dec 27th 2020



Yes,

REMOTE WORKING, relatively uncommon before the pandemic, has gone mainstream. Before covid-19 roughly 5% of Americans worked from home. By May the figure had risen to 62%. By October 40% were still shunning the office. Both employers and employees have grumbled that the shift to home-working has been disruptive. But according to new research by Natalia Emanuel and Emma Harrington, two doctoral students in economics at Harvard, firms may be better off.

Ms Emanuel and Ms Harrington analysed the performance of call-centre workers employed by a big online retailer between January 2018 and August 2020. They found that the average worker answered 26 calls a day, or about one every 20 minutes. But comparing the call

records of on-site and remote staff, the researchers found that the latter spent an extra 40 seconds on each call, making them 12% less productive.

This seems to cast doubt on the efficiency of pyjama-clad workers. But, digging deeper, the researchers found that after the online retailer offered remote positions to its office employees in 2018-2019, those who switched increased their productivity by 7% (see chart). They became more reliable too, spending less time away from their phones. When lockdowns shut down offices in April, the productivity of the firm's newly homebound workers increased by 7.6%.

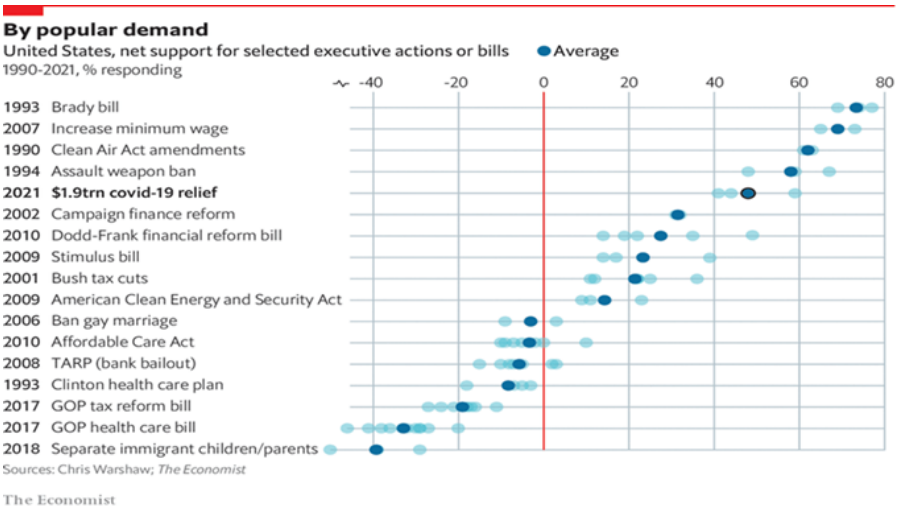
The authors conclude that, for all its distractions, working from home may be more productive for call-centre work, and possibly for other sectors as well. That their initial evidence suggested otherwise was less to do with remote working itself, than with the particular crop of workers who initially chose to work remotely, who were less productive on average than those who opted for the office.

Hence, that so few workers toil from home in normal times constitutes a market failure. The authors reckon it would be more efficient for firms to pay workers a premium to work remotely. Such incentives may not be necessary, however. A recent paper by economists at Stanford, the University of Chicago and the Mexico Autonomous Institute of Technology estimates that the share of American workers choosing to work from home after the pandemic will increase from 5% to 22%.

3.5 People are working longer hours during the pandemic

The Economist
Nov 24th 2020

LOTS OF PEOPLE envisaged a life of lie-ins and long lunches when covid-19 lockdowns forced their offices to close and working from home became routine. In Britain 47% of workers clocked in remotely in April, compared with an average of around 14% in 2019, according to the Office for National Statistics. By October, four months after the first lockdown had eased, the figure was still 27%. But reality has turned out to be less idyllic than the dream. Daily commutes have been replaced by endless emails and video-meetings. A new report finds that people around the world are working for longer, on average, than they did before the pandemic.



Researchers at Atlassian, a developer of workplace software, looked at the behaviour of users in 65 countries. They recorded the first and last times people interacted with the software on a weekday, and took this as a measure of their working day. They found that working hours started to lengthen in March, when most Western countries introduced lockdown measures. In April and May the average working day was 30 minutes longer than it had been in January and February (see chart). Most of the extra toil tended to be in the evening.

Workers in different countries put in different amounts of extra effort. Israelis extended their day by 47 minutes on average, longer than anywhere else. South Koreans, in contrast, clocked up only another seven minutes and the Japanese just 16 (although both countries were already among the world's hardest workers, recording an average day of almost seven and a half hours on Atlassian's software). Only Brazil and China recorded shorter working hours during the pandemic than before it.

The researchers also detected a small shift in how people spread their workloads over the day. By counting the number of users online throughout the day, they found that people were doing a slightly smaller proportion of work in the middle of the day and a greater share in the mornings and evenings than they did before the pandemic. That may indicate that people were taking advantage of the extra flexibility afforded by working from home—but it also suggests that work was encroaching on what would have previously been free time.

Whether people will continue working from home in such numbers after the risk of covid-19 subsides remains to be seen. According to a survey by PwC, a consulting firm, 44% of American bosses think that their employees have become more productive during the pandemic, but only 28% of workers agree. Yet they see eye to eye on one point: bosses and workers alike would like to keep working from home at least a day a week. It may or may not be less productive, but everyone wants a bit more flexibility.

3.6 Zoom and gloom

The Economist
Oct 8th 2020

The covid-19 pandemic is a disaster orders of magnitude worse than a volcanic eruption. Yet it too has created an experiment. In a matter of weeks professional workers abandoned their offices en masse in favour of working from home. Meetings were replaced with Zoom calls, and commutes with longer hours at the desk. And just as for the Icelanders, the experiment has turned out to be an improvement for many. Seven out of ten affected Americans say it has gone better or much better than they expected, according to a survey carried out by Jose Maria Barrero of ITAM, Nick Bloom of Stanford University and Steven Davis of the University of Chicago. Mr Bloom reckons that two-thirds of American GDP in May was produced from peoples' houses, a shift in production techniques unmatched in peacetime.

The idea that disruption can lead to improvement is a voguish one, promoted by such writers as Tim Harford, who advocates “messiness”, and Nassim Nicholas Taleb, who terms things that get better after disruption “antifragile”. The evidence is summarised in a forthcoming paper by Michele Acuto of the University of Melbourne and three co-authors. Cities built to exploit a locational advantage that has disappeared tend to persist unless they are swept away by disaster. When faced with tube strikes in 2014, enough London commuters found new ways of getting to work that the strike is estimated to have saved more commuting time than it cost. Recessions, too, typically bring on Schumpeterian creative destruction: American firms in areas hit most by the financial crisis restructured production towards greater use of technology, leaving a mark on labour markets that persisted even after unemployment had returned to normal levels. But the scale and consequences of this year’s work from home experiment go beyond any previous example.

That firms and workers have suddenly discovered the benefits of remote work seems counterintuitive. The technology allowing it is not new. And it seems to contradict a popular idea about how the world economy functions. In 1997 Frances Cairncross, then of *The Economist*, wrote “The Death of Distance”, arguing that communication technology was making location ever less relevant to business and personal life. The next two decades seemed to defy her thesis, as economic activity concentrated in successful cities like San Francisco, New York, London, Tokyo and Sydney. The explanation, many thought, lay in the agglomeration effects of bringing together knowledge workers. Productive contacts between people grow exponentially with the numbers gathered in one place. And that is before considering the taste workers may have for the culture and services that cluster in big cities.

Could all this change as the result of one event? Believe surveys of firms and workers and the answer is: partly. The pandemic, they say, has reduced the stigma of working from home. It has spurred firms to invest in the kit needed to make remote collaboration possible. And it has proved that the combination of software and hardware that allows working from home is, for the most part, reliable (if risky; the top prize in the Chess Olympiad, one of the world’s top chess tournaments, had to be shared after two players lost their connections mid-game). According to Mr Bloom and his colleagues, American firms forecast that the proportion of days worked at home will jump from 5% before covid-19 to about 20%, a number that chimes with the average desire of workers. It seems likely that many firms will adopt a model in which large numbers split their working hours between solitary work at home and collaboration in the office.

Office envy

Working from home after the covid-19 pandemic, employees' preferences

% responding

Sources: Stanford Institute for Economic Policy Research; AlphaWise, Morgan Stanley Research

*Britain, France, Germany, Italy and Spain †Includes those who have not worked from home this year

The Economist

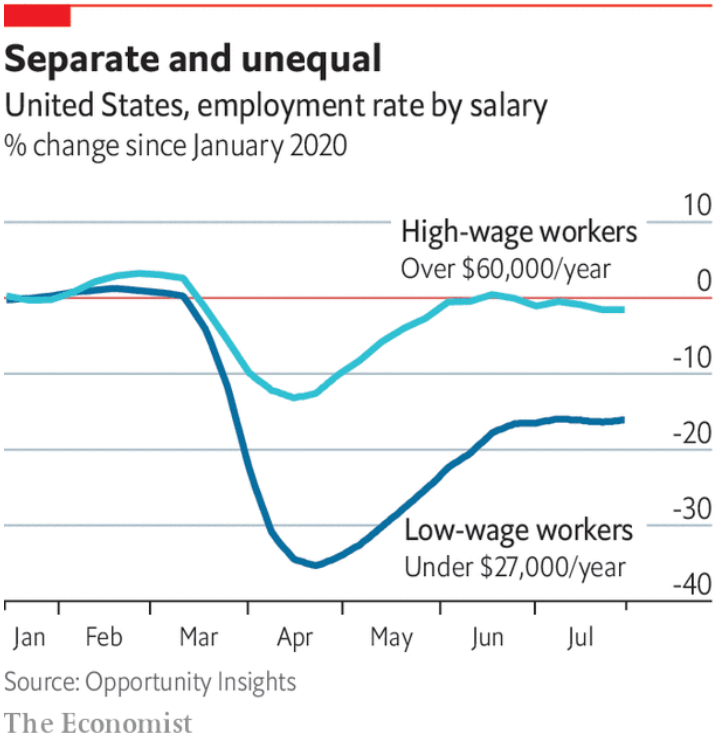
That will hardly kill off superstar cities or end agglomeration effects. Companies need offices to integrate recruits, monitor performance, build relationships and spread knowledge. Many people, especially the young, still want to cluster together and party, as packed concerts in Wuhan demonstrate. And people still need to meet in person. Recent research by Michele Coscia of the IT University of Copenhagen, and Frank Neffke and Ricardo Hausmann of Harvard University, finds that a permanent shutdown of international business travel would shrink global gross product by an astonishing 17% by hindering flows of knowledge across borders. The shift in favour of remote work also looks curiously like an anglosphere phenomenon; workers in mainland Europe have been swifter to return to the office than those in Britain and America.

Nonetheless, the shift will lead to significant structural changes. One is that many jobs lost to covid-19 will not return, because the labour market will adjust to a world with less spending in cities and more in suburbs and online. Based on surveys and share prices, Mr Bloom and his colleagues predict that one-third or more of all job losses during the pandemic will be permanent. That will come as a nasty shock to many who still expect their jobs to return. Only 19% of total American lay-offs since March have been reported as permanent, yet by August overall employment had recovered less than half its losses this year.

A second implication is a period of higher inequality. Recessions are usually worse for the poor and unskilled than for others, but the pandemic has been bad for them even accounting for the severity of the hit to the labour market, according to a working paper by Ippei Shibata of the IMF. Job losses have been heavy among service workers (who are more likely to be young, female and black) whose employment depends on the spending of high-earning professionals. Data from Opportunity Insights, a team of researchers at Harvard University, reveal that by the end of July there were 2% fewer jobs in America paying more than $60,000 a year than in January. But jobs paying under $27,000 were 16% scarcer. Those who feed, transport, clothe and entertain people who are out-and-about account for about a quarter of American employment, note David Autor and Elisabeth Reynolds of MIT.

The large number of low-paid service jobs is often lamented, but “having too few low-wage, economically insecure jobs is actually worse than having too many”.

The enormous sums that governments have spent replacing (or more than replacing) lost wages has suppressed the uneven effect of job losses on household incomes. In the early months of the pandemic America’s poverty rate probably fell, according to Jeehoon Han of Zhejiang University, Bruce Meyer of the University of Chicago and James Sullivan of the University of Notre Dame, as Americans received $1,200 cheques and unemployment benefits were boosted by $600 per week. In August consumer spending in low-income zip codes was barely down on its January level, despite the jobs collapse. But Congress has let that support expire. As governments cease replacing household incomes, a veil will be lifted, revealing a more unequal labour market.



This may not last. New service jobs—home delivery, suburban restaurants—will eventually replace those lost in city centres. But such transitions are painful, and it matters who bears the burden of them. Even if you exclude all workers who insist optimistically that they are on temporary lay-off, America’s unemployment rate in August was still about 6.6%, say Jason Furman of the Peterson Institute, a think-tank, and Wilson Powell III of Harvard University. That is roughly equivalent to the unemployment levels in early 2014, long before the labour market could be said to be healthy. Even if unemployment now falls rapidly, as it did after the recession of the early 1980s, it would take well over a year to work off just those job losses.

Housekeeping points

A third implication of the shift could boost growth and reduce inequality in the long run. It is that a drag on the world economy from housing shortages in and around successful cities will bind less tightly. Such shortages have limited growth by slowing the agglomeration effects on which it relies, as well as acting as barriers to opportunity by making it harder for the poor and young to move to better jobs. They have also widened divides between homeowners, who have enjoyed windfall gains in house prices, and renters. By one estimate

American GDP would be 3.7% higher were regulatory constraints on building as loose in New York, San Jose and San Francisco as in the median American city.

But the increase in remote working will spread opportunity across the economy regardless of housing costs. The best case is that the internet ends up beating cities at their own game. In principle, greater numbers of people can gather and interact online than in physical proximity, notes Adam Ozimek, an economist at Upwork, a freelancing website. Moreover, if it becomes possible for employers to hire not just anyone located in a city, but anyone with an internet connection, the pool of possible candidates vastly increases. The resulting better matches between employers and employees should increase growth—perhaps at last unleashing the measured productivity gains that the technological improvements of the 21st century long promised but failed to deliver.

What will it take to realise this optimistic vision? Firms will need to continue experimenting with change rather than getting into a new rut. Some see the future of remote collaboration not in stilted video conferencing but in immersive virtual environments comparable to the computer games on which many people already spend hours of leisure time without suffering from “Zoom fatigue”. Such environments can create a fuller sense of shared experience, spontaneous human interaction and thus relationship building. (Mr Bloom recently spoke at a conference on the future of work hosted on QUBE, a game-like platform complete with a virtual conference hall and spaces in which virtual avatars can mingle.) That might allow more firms to operate completely virtually, rather than in the split-time model that many now expect.

For policymakers, the challenge is to ensure that the structural transitions already under way are not inhibited by a prolonged slump like the one that followed the financial crisis.

Attachment 4: Government's Failure to Grant Sufficient time for the Community to Properly Review the EIS

The email trail below is evidence of how hard the community group tried to get the government to extend the time for residents to allow them to properly review the EIS and to make a submission.

The irrational and hypocritical rationale of the DPIE to the request has greatly upset residents and confirms the view many hold that the EIS Review by the DPIE is simply another box-ticking exercise.

Email Exchanges with James Griffin MP and the Office of Rob Stokes MP

-------- Forwarded Message --------
Subject: RE: Beaches Link Tunnel: Community Frustration at the Refusal by Rob Stokes to Grant an Extension of Time to Review the EIS
Date: Fri, 5 Feb 2021 00:03:26 +0000
From: ElectorateOffice Manly <ElectorateOffice.Manly@parliament.nsw.gov.au>
To: 'Terry le Roux' <terry.leroux@bigpond.com>

Thanks Terry for the response – I will share this with James. Kind regards Adele

From: Terry le Roux <terry.leroux@bigpond.com>
Sent: Friday, 5 February 2021 10:04 AM
To: ElectorateOffice Manly <ElectorateOffice.Manly@parliament.nsw.gov.au>
Cc: Patterson, Robbie <robert.patterson@news.com.au>; Megan Gorrey <megan.gorrey@smh.com.au>; Matt O'Sullivan <mosullivan@smh.com.au>; Delene Evans <delene.evans@optusnet.com.au>
Subject: Beaches Link Tunnel: Community Frustration at the Refusal by Rob Stokes to Grant an Extension of Time to Review the EIS

James

Thanks to you and Adele for the response to my email challenging the decision by Rob Stoke's department to what the community believes is a fair and reasonable request for an extension of time to review the EIS for the Beaches Link Tunnel.

I am pleased you and Adele are enjoying the honey from my beehive.

The reason given to us by Rob Stokes' department is that: *"The 62 day period allowed for the review of the EIS ..... is consistent with other significant infrastructure projects including the Western Harbour Tunnel and Warringah Freeway Upgrade, which was exhibited for 62 days."* Rob Stokes' department was not aware that the EIS for the Western Harbour Tunnel was released for public exhibition before there were Covid-19 Restrictions and that the residents had the opportunity of attending a series of public community

consultation sessions in multiple convenient locations for the communities impacted by the project. If the department was aware, it simply ignored it.

When challenge the inconsistency and unfairness of the department's rationale ……. there is silence at the other end of the phone. It is a case of "suck it up buttercup".

To help our stressed and frustrated residents, we asked the Beaches Link project team for smaller COVID-safe meetings with staff from Transport for NSW (TfNSW). This would allow for example 50 residents to be briefed while fully compliant NSW's current COVID rules. To add insult to injury, we have been told that despite the recent relaxation in COVID restrictions for gatherings, TfNSW's internal guidelines do not allow for any face-to-face briefings of more than 5 people (including TfNSW staff). I doubt if such internal guidelines exist - it is simply a ruse to avoid any face-to-face meetings with real people.

The Virtual Briefing Sessions are proving to be an unsatisfactory way for residents to properly understand the many complexities of a massive project and how it will impact them. The only way to ask a question is to type it on their iPad or tablet while trying to listen to a presentation. To their frustration, the answer by TfNSW to their question is often to refer to section in one of the appendices in the EIS. These are vulnerable people without the level of digital skills required to properly read the 72 pdf documents on the TfNSW portal. As one resident told me "for us older people who do not have the skills and experience necessary to make our way around the 76 documents, the government treats us as non-people. You are now only a proper person if you are expected to do everything online".

We are having to organise a community webinar to explain why Rob Stokes' department is taking such a hard line against what is a reasonable request. The community is coming around to the view that the real reason for the refusal is that Minister Andrew Constance wants to rush through the approval process so that he can sign contracts for the construction of the tunnel before the next State election in March 2023. So much for fairness and equity in allowing residents to properly understand how the project will impact them.

Perhaps you can help me explain to the residents why my request for a two month extension in time for the review of the EIS is considered unreasonable by Rob Stokes' department.

Regards

Terry le Roux
Secretary, North Harbour Community Group
Ph 0414 385 732

-------- Forwarded Message --------
Subject: RE: MDPE21/130 - Request for an Extension to the Submission Period for Lodge a Submission to the EIS for the Beaches Link Tunnel
Date: Wed, 3 Feb 2021 07:00:51 +0000

From: ElectorateOffice Manly <ElectorateOffice.Manly@parliament.nsw.gov.au>
To: 'Terry le Roux' <terry.leroux@bigpond.com>

Dear Terry (I just left a voice message to thank you personally for my honey – both James and I are very impressed to be able to taste locally grown honey! So thank you it was a very thoughtful gesture.)

I have shared your email below with James and he will follow up your request with the project team – specifically in relation to those folk who are unable to access the internet and as such have missed out on the benefit of those face to face sessions that we have all experienced and found to be of great value pre covid at the Balgowlah RSL in the early days of the Beaches Link planning.

Kind Regards Adele

Adele Heasman

Senior Electorate Officer, Office of James Griffin MP

Member for Manly, Parliamentary Secretary for the Environment and Veterans

Manly Electorate Office, Shop 2, 2 Wentworth Street, MANLY, 2095, Phone: (02) 9976 2773

From: Terry le Roux <terry.leroux@bigpond.com>
Sent: Tuesday, 2 February 2021 8:32 AM
To: Mina Nestorovski <Mina.Nestorovski@planning.nsw.gov.au>
Cc: Nerissa Levy <nerissalevy@gmail.com>; Jo Casserly <joannacasserly@gmail.com>; Louise Williams <louisewilliams.ink@gmail.com>; Phil Young <philyoung48@gmail.com>; Delene Evans <delene.evans@optusnet.com.au>; Ray Brownlee <ray.brownlee@northernbeaches.nsw.gov.au>; Candy Bingham <candy.bingham@northernbeaches.nsw.gov.au>; Sarah Grattan (Councillor) <sarah.grattan@northernbeaches.nsw.gov.au>; ElectorateOffice Manly <ElectorateOffice.Manly@parliament.nsw.gov.au>; Lynne Young <lynnemarieyoung@gmail.com>; ElectorateOffice Pittwater <ElectorateOffice.Pittwater@parliament.nsw.gov.au>; Larissa Penn <lpenn@bigpond.com>; Marco Corrent <Corrent27@hotmail.com>; Bruce Kitson <bruiser014@icloud.com>
Subject: MDPE21/130 - Request for an Extension to the Submission Period for Lodge a Submission to the EIS for the Beaches Link Tunnel

Attention: Anthea Sargeant, Executive Director Key Sites and Regional Assessments and Erica van den Honert, A/Executive Director Infrastructure Assessments

I acknowledge receipt of your response to my (several) emails to Minister Rob Stokes MP and Minister Andrew Constance MP requesting an extension to the period for reviewing the EIS for the Beaches Link (attached file Mr Le Roux - MDPE21-130.pdf) refusing our request for an extension.

I note the reason given is that "*The 62 day period allowed for the review of the EIS ..... is consistent with other significant infrastructure projects including the Western Harbour Tunnel and Warringah Freeway Upgrade, which was exhibited for 62 days. The Department considers the current exhibition period sufficiently considers the project's complexity, the Christmas period and the ongoing COVID-19 situation.*" You might not be aware that the EIS for the Western Harbour Tunnel and Warringah Freeway Upgrade was done before there were Covid-19 restrictions and that residents had the opportunity of attending a series of public Community Consultation Sessions in multiple locations at convenient locations for the communities impacted by the project.

The basis of our request for an extension is because **there are no public Community Consultation Sessions** on the EIS for the Beaches Link Tunnel project. Many residents without the proper access to the internet and without the range of skills necessary to navigate through the 72 separate .pdf files are not able to read and evaluate the EIS properly. While the DPIE is within its rights under the EP&A Act to fulfill its legal obligations in relation to public consultation on the project by simply placing the EIS documents on the portal of TfNSW, we appeal to the minister on the basis of fairness and equity to allow stressed and vulnerable people in the community the opportunity to review the EIS documents or have the EIS explained to them and for them to make a proper submission.

We feel that by refusing what we believe to be a very reasonable request is both callous and demonstrative of a lack of feeling for many in the community who are experiencing stress from the Covid restrictions and a lack of understanding of just how this large and complex project will impact on their lives.

We respectfully request that the minister review the decision to refuse our request for an extension to the period to review the EIS.

Terry le Roux
Secretary, Balgowlah Residents Group and the North Harbour Community Group
Ph 0414 385 732