GENERATION ZERO'S VISION FOR A PROSPEROUS LOW CARBON CAPITAL
1. Introduction

Generation Zero is a rapidly growing nationwide network of thousands of young people passionate about the solutions to climate change.

As young people, we also want to live in cities that are moving with the times. Smart, cool and modern cities - vibrant and creative, with a great quality of life.

The great thing is that we can have both. We believe the cities embracing the low carbon transformation early and wholeheartedly will be the prosperous, competitive cities in the 21st century. Many already are: cities such as London, Perth, Portland, Copenhagen and New York.

If there's one area that is vital to transforming our cities, it's transport. There is so much more to our transport system than simply how fast we can get around – it's about how our city will grow, the health of its people and economy, the look and feel of the city and the opportunities it creates. It's about providing freedom of choice to those – particularly young people – who are driving less or not at all and don't want to be shackled to a car and rising fuel costs.

Wellington is well-placed to lead. It is one of the most compact cities in the world, helping create an environment where ideas, innovation and new business opportunities can flourish. In the New Zealand context it has some of the best and most highly utilised public transport services, particularly our rail network to the north. These things are fundamental to what makes Wellington 'cool' and a great place to live.

Today, our city and region are facing some big choices about its future. We're concerned that Wellington is heading down the wrong road.

2. The current plan – pause and rewind?

The region's future is dominated by central government plans for an enormous state highway expansion: the Wellington Northern Corridor RoNS, which includes the Kapiti Expressway, Transmission Gully, the Basin Reserve Flyover and more. This series of projects comes with a total estimated price tag of more than $3 billion. Almost all components have an official benefit-cost ratio of less than one.

According to the recently released “baseline forecast” from Opus, commissioned by GWRC, simply proceeding with the RoNS plus all other currently planned projects would fail on virtually all key outcomes sought by the regional transport strategy, resulting in:

- Reduced mode shares for public transport, pedestrians and cyclists;
- Increased greenhouse gas emissions;
- Increased congestion;
- Slower average freight speeds.

The forecast decrease in public & active transport and increased congestion in Wellington city are cited as direct results of the RoNS encouraging a shift to car travel.

In our view, the plan is outdated and broken. Based on the real transport trends over the last decade we are sceptical about the forecast traffic growth – but this is certainly more likely if the huge road expansion goes ahead, encouraging sprawl and induced traffic. And if the growth does not occur for any reason then the economic case for the roads is further undermined.

Most importantly to us, the plan will do almost nothing to help build a low carbon Wellington – in fact it will work against it.
3. What about the Public Transport Spine Study?

The PTSS was undertaken to help determine a “high quality public transport solution” along Wellington’s “growth spine” from Johnsonville to Kilbirnie – addressing in particular the severe bus congestion along the Golden Mile. The two leading contenders were light rail and “bus rapid transit” (BRT). Neither solution is included in the Opus baseline forecast.

The study concluded that BRT was the best option, recommending a split route from Wellington Railway Station to Newtown and Kilbirnie splitting at the Basin Reserve. The official line is that the project can’t even get underway for at least another nine years.

However, we believe both the solution being pushed and the study itself have serious flaws. Some of the key reasons are:

1. The option being proposed is really “BRT-lite”. Having the buses mix with general traffic in places (e.g. through the proposed second Mount Vic tunnel) will cause delays. And by avoiding having passing lanes at stops and flyovers at some intersections, the network capacity is constrained, coming out significantly below a light rail network. The study actually says that BRT would already be over capacity from day one – hardly “high quality”.

2. The study predicts a very low growth in public transport ridership: even for the “best case” of BRT, just a 9.3% increase in PT trips from south and south-east areas from 2021-2041, giving an overall regional increase of just 1.4% (just making up for the reduction caused by the RoNS). If the growth were in fact higher – in line with Wellington’s strategic transport goals – then the capacity problems with BRT described in the previous point would get much worse.

3. The study seems to lack a long-term, network-wide perspective. Going with buses for the Wellington City spine would lock in the “broken spine” approach where train commuters from centres like Johnsonville and the Hutt cities are dropped off at the edge of the Wellington CBD and forced to transfer to reach their final destination. This will remain a barrier for many travelers. Light rail physically integrated with the Railway Station enables the possibility of continuous tram-train services in the future from the northern centres all the way through to Kilbirnie and eventually the airport.

4. The split route chosen resulted in an inflated cost of $940m for light rail as a result of a dedicated third tunnel through Mount Victoria, plus an extra 3km or so of track compared with a single route to Kilbirnie through Newtown. There are alternatives that we believe are cheaper and better, such as using Constable Street. We estimate this would cost around $400m based on a similar cost per kilometre.

We aren’t light rail evangelists – we just want the best solution for Wellington. But it appears BRT as proposed in the spine study won’t deliver the step change desired and will just kick a real solution off into the future, while in the meantime we spend billions of dollars on more roads.

Altogether, the story is that Wellington is being sold a lemon – a $3B+ highway expansion that will drive more traffic into the city, won’t solve congestion and will undermine regional transport goals; plus a sub-standard public transport solution that doesn’t deliver capacity for growth. We think Wellington deserves better. We need a real long-term transport vision.

What if there were a smarter plan that could deliver good outcomes for everyone and move Wellington forward to a prosperous low carbon future? Working with some independent transport experts we had a crack at developing one. Over the page is a visualisation of what this could look like.
4. Our vision - Fast Forward Wellington

Fast Forward Wellington is about getting on and building a holistic low carbon transport system right now.

We are not claiming this is the perfect plan down to every fine detail – the options and the precise routes are of course up for debate. But it's a realistic and achievable vision intended to spark a conversation: would we prefer the status quo, or something like this?

Fast Forward Wellington revolves around three big ideas.

1) A “congestion free” transit network connecting key centres with dedicated public transport corridors.

This means giving people the choice of high frequency PT services physically separated from congestion, like we see in so many cities around the world. This can be a combination of light rail and buses, but we think light rail is the best choice for the main spine for reasons explained in sections 3 and 5.

The first step is to build light rail on our alternative spine route from the Railway Station to Newtown then on to Kilbirnie over Constable St. If we move fast, we believe this could be completed by 2020. The network can then be extended outwards over future years, to the airport, Miramar, Island Bay and Karori. In the interim these lines could be bus-only lanes connecting to the rail spine for transfers and some through-services.

As mentioned in section 3, over time there is the possibility of introducing continuous tram-train services from the existing heavy rail network onto the new light rail network, with some modifications required. The light rail line should be built with this in mind.

We also propose some separated bus routes: a full divider-segregated bus lane through Porirua, and peak-hour bus-only lanes for Brooklyn and Wainuiomata.

2) A comprehensive “Copenhagen-style” cycleway network throughout urban centres.

This means giving people the choice of a safe and pleasant trip by bike with protected bike-only corridors.

Our proposed network would see about 150 km of segregated cycleways built throughout Wellington, Porirua and the Hutt Cities. This would be in conjunction with more on-road cycleways and traffic-calming measures to make the streets safer. With adequate funding of about $20 per resident per year matched by central government this could all be completed within a decade.

3) A city- or region-wide car share system.
This means giving people an option of not owning a car but still having the service available when they need one. In a car share scheme, people pay a subscription plus a per-use fee, and can rent a car for minutes, hours or days at a time with little notice required.

The world's leading car sharing network is Zipcar, with over 800,000 members and nearly 10,000 vehicles available throughout the US, Canada, the UK, Spain and Austria. A NZ-owned company called CityHop currently operates two shared vehicles in Wellington and is looking at adding a third in Newtown.

Our proposal would see upwards of 200 vehicles rolled out across greater Wellington, making it a world-leader in car sharing. Furthermore, we propose at least half of these could be full electric vehicles, with the rest plug-in hybrids or other high fuel efficiency vehicles.

Other components

Complementing these three big ideas, our vision involves two other key components.

4) Several new pedestrian zones and shared spaces.

In the CBD, Lambton Quay, Courtenay Place and Manners St could become car-free, with pedestrians and cyclists sharing the space with light rail. In Newtown, Riddiford St between Rintoul St and Constable St could become a low-speed shared space or a timed car-free zone, as could the Kilbirnie shopping area on Rongotai Rd and Bay Rd.

Additionally, building several pedestrian and cycling overbridges or underpasses to avoid heavy traffic areas – particularly around the Basin Reserve, and Wakefield & Cable Streets – would further improve Wellington's walkability.

5) Major improvements to the existing northern rail services.

In addition to the potential for developing continuous tram-train services from the north through the CBD, there are a number of initiatives that could be taken to make train services more frequent, more reliable and more appealing – some of which are underway or under investigation by GWRC. These include:

- Electrification further north to Otaki and north of Upper Hutt;
- New stations in places such as Raumati South;
- Double-tracking in bottlenecks such as between Trentham and Upper Hutt;
- Integrated ticketing.

There are also a huge range of more minor improvements that could be made such as more cycle lockers, more parking at park & ride facilities, route improvements, platform improvements, seating at stations, and speed and safety improvements.
5. The Prize

By focusing our efforts and investments on building real alternatives to car dependence, we believe our Fast Forward Wellington proposal would deliver greater benefits for all Wellingtonians than the status quo would. The components of the system will work on their own and together to deliver better transport outcomes, grow a cleaner and leaner economy, and build on Wellington's strengths as a compact, liveable city.

Here are some of the outcomes we could expect based on international experience.

**Light Rail Transit:**
- As many as 40% more PT riders, 16% in the first seven years.\(^5\) This means more revenue and potential for fare reductions.
- An 8% to 25% increase in commercial and residential property values around stations,\(^6\) resulting in an uplift of around $2.5b in value on the main spine route alone.\(^7\) This also means more rates for the city, helping to pay back the investment.
- Between 33% (one year) and 71% (multiple years) increase in retail sales along the route.\(^8\)
- Faster travel speeds for all commuters – car, PT and pedestrian.\(^9\)

**Cycleways:**
- Up to 180% more Wellingtonians trying out their commute by cycling, a 37% decrease in injury crashes along cycle routes, and a 49% increase in retail sales along the routes.\(^10\)
- A large hike in cycling mode share – Seville, Spain experienced growth from 0.5% of trips in 2006 to 7% today as a result of building about 130 km of separated cycleways.\(^11\)
- Up to 2% increase in property values along the whole length of the cycleway, again resulting in more rates for the city.\(^12\)

**Car Sharing:**
- For every car sharing vehicle put in place, between 9 and 13 vehicles are dropped by owners in the area,\(^13\) helping liberate parking space for other uses such as cycleways and PT lanes. 80% of the cars dropped are households becoming car-free, resulting in higher active transport and PT ridership as well.
- A large increase in average fuel economy as the cars tend to be newer and more efficient (especially if electric vehicles are used).

**Pedestrian Areas:**
- 49% fewer commercial vacancies, 14% increase in retail sales around new seating areas, and up to 170% increase in retail sales around pedestrianized zones where parking is removed.\(^14\)

**Overall:**
- More money recirculating in the local economy rather than paying for imported oil and cars. For Wellington City alone, the amount leaving the economy each year to pay for oil for transport is over $150 million, or roughly $750 per person.\(^15\) The AA estimates the average car operating cost per year is $7,400 to $15,000,\(^16\) most of which leaves the local economy.
- Productivity and innovation have been found to correlate with density, so long as the city has good transport connections.\(^17\)
- Health benefits through more physical activity and less air pollution.
- And of course, reducing Wellington's carbon emissions to tackle the urgent challenge of climate change.
6. The cost

The estimated investment for all components out to 2030 are as follows.

<table>
<thead>
<tr>
<th>Item</th>
<th>Total cost</th>
<th>Notes/assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light rail: total of 23 km at $60m/km</td>
<td>$1.4bn</td>
<td>Approx. cost per km from Public Transport Spine Study, excluding tunnels. Includes contingency of ~30%. Main spine from Railway Station to Kilbirnie is $400m.</td>
</tr>
<tr>
<td>Bus lanes in Porirua, Wainui, Brooklyn</td>
<td>$40m</td>
<td></td>
</tr>
<tr>
<td>Approx. 150 km fully separated cycleways at $1m/km</td>
<td>$150m</td>
<td>Generous estimate based on €0.5m/km for Dutch cycleways. Consistent with estimate for Island Bay cycleway. Auckland Cycling Action Plan quotes generic average cost of $150,000 per km of cycle facility.</td>
</tr>
<tr>
<td>Car share scheme</td>
<td>$100m</td>
<td>Imprecise. Generous allowance for initial investment to buy up to ~500 cars and license carshare technology – other options exist such as public-private partnership or a scheme using existing private cars. Would pay back through revenue.</td>
</tr>
<tr>
<td>Pedestrian bridges &amp; pedestrianization</td>
<td>$150m</td>
<td></td>
</tr>
<tr>
<td>Northern rail improvements</td>
<td>$1-1.5bn</td>
<td>Proposed fund, imprecise.</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$2.8-3.3bn</strong></td>
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This is a large sum of money, but it needs to be put in perspective.

First, it is proposed over a time window of 15-20 years. The Auckland Council's Integrated Transport Plan is proposing a spend of $60bn over 30 years and the Government has committed in principle to at least $10bn of this.

Second, by comparison, the projected total spending in the scope of view on the Wellington RoNS (Transmission Gully, Kapiti Expressway, Petone-Grenada Link, Basin Reserve Flyover, second Mt. Victoria tunnel, second Terrace tunnel) plus the BRT option for the PT spine comes to more than **$3.7 billion**.¹⁹

If the majority of this was scrapped in favour of sensible improvements to the regional road network, that would free up more than enough funds for what we are proposing with Fast Forward Wellington.

**It comes down to a choice: what sort of future do we want to build for the next generation, and will our elected leaders be bold enough to stand up for it and make it happen?**
3 Greater Wellington Regional Council (2010), Wellington Regional Transport Strategy 2010-2040, Chapter 6.
9 NYCDOT (2012).
10 NYCDOT (2012).
11 See http://lcc.org.uk/pages/seville-goes-dutch
14 NYCDOT (2012)