

LESSONS LEARNT FROM ENGINEERING FAILURES TRANSPORT

Webinar by Peter McGlashan



engineering
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te ao rangahau

CONTENTS

INTRODUCTION	1
About the presenter	1
ARTHUR GREY LOW TRAFFIC AREA PROJECT	2
Community engagement	2
Navigating change	3
Roadblocks ahead	4
Final days	5
PERSONAL IMPACT	6
LESSONS LEARNT	7
WEBINAR QUESTIONS AND ANSWERS	7

INTRODUCTION

This case study is based on the webinar by Peter McGlashan for the Transportation Group and follows his journey in trying to establish a Low Traffic Neighbourhood (LTN) as part of the Arthur Grey Low Traffic Area project. It is based on a presentation Peter gave at the Decarbonising Transport Conference in March 2021, called “Letter from the front line: LTN PTSD”.

The webinar highlights lessons to be learnt from leading community projects. It also highlights lessons related to managing stress while leading projects.

ABOUT THE PRESENTER

Peter McGlashan is a lead advisor in the urban mobility, multi modal, and innovation team at Waka Kotahi, New Zealand Transport Agency. Peter has worked in higher education, media broadcasting, and social development sectors. He is also a former cricketer, having represented New Zealand in 11 Twenty20 Internationals and four One Day Internationals.

Peter also serves on the Maungakiekie-Tāmaki Local Board of Auckland Council. He played a leading role in the Auckland Council Low Traffic Neighbourhood projects funded by Waka Kotahi’s Innovating Streets for People Fund. His webinar focused on lessons learnt from his involvement in this project.

ARTHUR GREY LOW TRAFFIC AREA PROJECT

In December 2020, an advocacy group ('the group') comprising Peter as the local government representative, a couple of community champions, people from Auckland Transport and others, successfully applied for funding from the Waka Kotahi Innovating Streets fund to progress the Arthur Grey Low Traffic Area Project ('the project'). Its aim was to install a low traffic neighbourhood around Arthur Street and Grey Street in Onehunga, Auckland. Such interventions had been successfully used overseas to create safer neighbourhoods.

COMMUNITY ENGAGEMENT

The group knew that the project would be controversial and would require extensive community engagement. It first put signs on lamp posts in the project area. It also talked to the community about the project, provided information about a public meeting, and a website to gather feedback. From the outset, as much as possible was done so locals could access information about the project.

Around 80 people attended each day of the first public workshop and the group perceived good community 'buy-in'. Community members were able to identify risks in their own neighbourhood and were able to see how they might offer solutions. They were able to talk through their concerns and ideas with collaborative design and subject matter experts in the room.

The teams from Holistic Urban Environments and MR Cagney, consulting companies, did a great job of developing designs that would limit car movements in the affected streets and create places for locals to meet and socialise.

The corner of Galway and Arthur Streets was identified as particularly problematic for the community, due to many reported near misses. To understand the challenges, the project team stood on this corner and spoke to hundreds of people, including children walking to school, about their experiences and ideas. This was part of the process of coming up with functional, community-centred designs.



The project began on 8 March 2021, with new road marking painted and the delivery of crates that would be used to block traffic movement. There were positive images of children riding their bikes through the neighbourhood, and a 'paint the crate' day. This was embraced; the community came and painted the crates with 70 to 80 people involved. Things were looking good, and there was an appreciation from those who turned up, that the project was going to meet its goals.



ROADBLOCKS AHEAD

The project was supposed to reduce 'rat running' – streets being used as short cuts to beat peak hour congestion – on Arthur Street and Grey Street in Onehunga. However, the project had not considered how to reach the 5000 people who used these streets in this way – a population that was neither local nor resident. This only became apparent when drivers came to take their shortcut and found it was no longer an option. It was a hard lesson in planning – that no matter how much you plan, there will always be elements beyond your control.

Controlling the uncontrollable

Not until the crates were placed did the project team hear from thousands of people who now found their routes blocked. These people were bamboozled by these crates appearing, as if from the sky, despite eight weeks of public awareness – including but not limited to local community articles, Facebook posts, signs on lamp posts – to reach the people the group thought would be affected by the project.

Pushback from 'rat runners' became a real challenge – and it didn't take long before cars started trying anything to save themselves maybe 90 seconds or 2 minutes. That was just a taste of what was to come.

Vandalism and activism

Graffiti appeared on the crates. A petition against the project, signed by over a thousand people, got local politicians nervous. A thousand-person petition seems like quite a lot, but this was an intervention on a road that had five thousand cars a day, in a community of 25-30,000. There was hope people would see passed the views expressed in the petition.



Physical and Digital Warfare

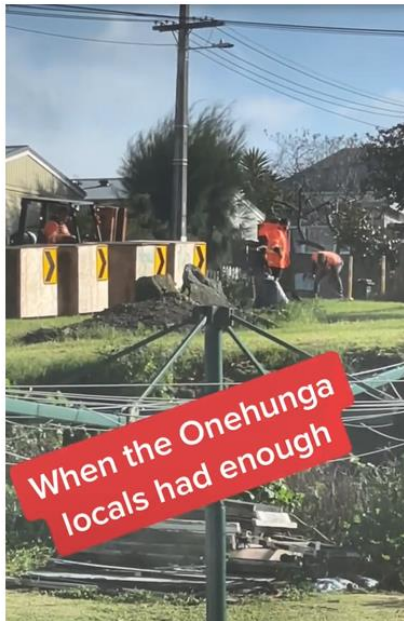
Destruction and damage to the crates followed but there was also digital warfare at work. The project team attempted to answer every Facebook post and myth-busting, trying to explain to people all the things they hadn't read from all the information available. The project team had relied on community Facebook pages to be the source of truth about the project and had tried to work hard with local media to provide balance.

Although articles debated both sides of the project, the graffiti and vandalism continued – and there was misinformation in the media too. The matter became political. Parties from both sides decided there were some easy wins and easy votes if they chose a side.

FINAL DAYS

The project ended fatally when some people with a forklift and a prybar removed the crates during one rush hour. It wasn't Auckland Transport removing them – rather some men in hi-vis vests with a forklift from their workplace, removing work that had official resolutions and hundreds of thousands of dollars spent to ensure it was compliant. Soon, cars driving through the project area posed too much of a risk to safety to continue.

The project was halted. This was a shame, as there was no opportunity to see whether the project would have led to the desired behaviour change.



PERSONAL IMPACT

Eventually the demands of the engagement and increasingly heated reaction from some members of the driving community, including attempts to sabotage the project, took its toll on Peter. This graffiti below topped things off and he decided he was not going back to Onehunga for a while, due to concerns for his personal safety. It took four days before the graffiti was removed while authorities determined who was responsible for removing it.



The stress Peter experienced with responding to the negative public reaction and fierce pushback triggered a concerning heart rhythm, Atrial Fibrillation, which can lead to stroke or heart attack. This came to the fore when he was asked to fill in a speaking slot at the last minute and give a presentation at a conference in March 2021. A few minutes before the presentation Peter felt lightheaded. He checked his heart rate on his

Apple Watch. His heart rate while seated was 222 BPM, far above the maximum recommended 180 BPM. He felt sufficiently ill to visit the hospital, where he showed the doctor his heart rate history on his phone.

The official diagnosis was a short circuit due to stress, poor electrolytes, poor nutrition, and lack of sleep. While not fatal, it could have caused him to lose consciousness while driving. Within a week, Peter went through an ablation procedure to treat atrial fibrillation.

LESSONS LEARNT

1. **Consider the wider system.** Problems may not exist in isolation, so by fixing one problem you may be creating another. In this case, the intervention designed would have solved concerns around safety and improved the local community around Arthur and Grey Streets. Although the project had obtained the social licence to operate among residents and locals, the streets impacted (and the behaviours of people using those streets) exist within a wider community in which may or may not have a licence to operate. This specific example is about transport but could equally be applied to other systems in which engineers work – for example water, or energy.
2. **Put your health before your work or cause.** Your kids won't care if your bridge won an award if you aren't there to walk over it with them... It doesn't matter whether you are holding the pen at the start of a project, in the construction on the high rise clipping in your harness, or at the ribbon cutting, it is really important to remember that no project is worth dying over.

WEBINAR QUESTIONS AND ANSWERS

Did you think of doing a license plate survey to determine the origin and destination?

I am assuming this means that there is someone standing there, recording the licence plates and then try and contact the owner and then try and work out where they started and where they finished. I think if there was more time, we might have tried to do this, but I think at the time, we were just in the trenches and taking fire, and we struggled to come up for air and logically think things through. I wish we had those types of foresight before the project happened. In hindsight, we would have done things differently. We wouldn't have charged on after the lockdown; there were many things that we would have done differently.

What is the problem with rat running if people follow the speed limit and drive safely?

Answered by John from the Transport Group: Peter has the most accurate and relevant data. But that's not the problem – the problem is that people were using this neighbourhood as a shortcut to the main route to try to save some time, which means they will be speeding. Most of the innovative street projects and now the Streets for People project include monitoring; it is called user-optimal routing, which means they will be speeding. It requires extensive monitoring before and after to determine the speed and volume of traffic.

Peter: No one ever drove slow on a shortcut, as they are not going to dawdle along. We did all the monitoring "before" and "after" the project to collect as much data as possible. But the fact is that those small and narrow roads are not designed to facilitate a high volume of traffic. They are small narrow residential streets and leafy suburbs where kids walk to school. Arterial routes are designed for higher

volumes of traffic, they have different rules around entry points and footpaths and visibility. In the end, there is only so much smaller residential system can take before it harms local neighbourhood citizens.

Is there a way that unless there was a crash on the motorway, those alternative routes didn't show on Google Maps and turned into a big problem?

It is one of the major challenges, and technology may or may not help us get where we want to be. At the moment, Google Maps shows the quickest route and tells you to change direction to go that way – but it tells everyone the same thing. So I started matching up the Waka Kotahi traffic announcements when people were complaining about the traffic build-ups, and sure enough, when I got a notification on my phone that there was an accident at Ellerslie on the motorway, “so choose an alternative route”, sure enough within half an hour the East-West stream of people trying to get off the Southern Motorway and over to the Waterview tunnel, would cause congestion in Onehunga. There is a direct correlation, and you could match the traffic volume on the motorways, and as soon as that snarled up, it followed on to the arterials and then as soon as they filled up, it flowed onto the residential street. So, with more data and AI, we could do prevent routing onto smaller residential streets, but there are some barriers to overcome before we can put that in place.

Are low traffic neighbourhoods in Onehunga still on the agenda?

They are a critical tool, and we are seeing them working well in the UK; almost always, people oppose them, and almost always, if you leave them in, after a time, people warm to them. Always if you ask someone in 2 or 3 years whether they would like it removed, they say no. You can't visualise what it is like to live in a low traffic neighbourhood until you are there. In the UK, there was a real issue with politicians pulling them out. And they had to do things like saying if it is vandalised, the clock starts again, it's going to be a one-year trial, so if you vandalise it, then the clock starts again for one year. That was the only way the vandalism would stop, and people would get used to it. We have a video from someone in Onehunga who said, “I always thought the solution to our street was judder bars but actually, having seen this trial and walked these streets, I have realised that what we need is a cul-de-sac, and the boy racers won't come down our street if it is a dead end, but they will still come down our road if they had judder bars.” But until she saw it for herself, she didn't believe there was an alternative. It will be a critical tool as we move forward. These have been installed before, but not in a time when social media allowed people to complain about it as much.

What would you do differently now, and what lessons have you learned if you could go back and have the same knowledge you have now?

This was something that everyone who was involved in the project and the bigger programme reflected on. There were some time pressures that were there last time round, which were modified for this time round. Waka Kotahi now runs a programme called Streets for People, the next evolution of Innovating Streets – it's over two or three years as opposed to one year. I think you always need to find people who don't think like you. We were naturally drawing people pre-implementation that were supportive of the project, and it wasn't until you installed the project that you heard from the people who were against it.

What you struggle to then do is balance the sentiment because all of a sudden, you are getting a wave of negative, and you are trying to match that – you aren't hearing from the positive people anymore, and that's because you have already heard from them, and they don't realise that need to keep coming back to you. It got to a point where it looked like the project was going to be pulled early. But hang on a minute, we told everyone the trial would be in place for six months, and everyone that liked the project was told they would be expected to provide feedback at the end of the six months; it's only the angry people that are

getting in touch in the first 2 or 3 months, so how do we balance that immediate demand for change versus those who trust the system and that trust the process that was outlined, and are therefore still waiting.

Social media does cloud our judgement as decision-makers as to what that looks like. The programme at a higher level has learnt lots of lessons about the need for comms. It's almost a crisis comms instead of a PR comms element. Health and well-being are critical, we had lots of people burning out during those projects last time around, so health and well-being are a fundamental part of the Streets for People now. The Streets for People team did a lot of work on funding the foundation and actually building confidence with councils that they are ready. Lots of councils felt hesitant to go into battle again, so a lot more work was done around resilience and making sure those guys were ready and up for what was coming. It is likely that Low Traffic Neighbourhoods is a tool that is shifted to maybe later in the decade. I doubt that we will see many Low Traffic Neighbourhoods in the next couple of years until we take the public on a journey where they start to ask for that type of solution rather than the technical engineers and transport planners saying this is the solution you need. We need to strike a balance because there is no social licence if you force the installation without the comms or if the comms overpromises and doesn't match the installation.

What advice would you give yourself on how to deal with those sorts of pressures? What would you suggest?

It has left scars, not just the surgery scars. I was asked to housesit in Onehunga over the Christmas New Year period, and for the first couple of days, I was having panic attacks when I walked out to their letterbox, as I was fearful when I walked out onto the streets, or go to the café, that I was going to come across one of these people who'd tagged my name on a fence or had threatened me online or sent me emails or voice messages.

Over a few days, that kind of eased off and that was because I was with my family. But only a couple of weeks ago, I went to a cycling movie, a community movie showing in Onehunga, and I got up, and I tried to speak about how critical advocacy for cycling is if we're going to reduce carbon emissions and transport and it all started coming back. I was kind of weeping in front of this public audience who I knew very few of them, and I had my five-year-old daughter with me, and she was latched onto my leg. I kind of realised the physical part had gone, but the post-traumatic stress was still there, and I still have issues that I need to work through about putting myself into those conflict situations even though it was in front of a welcoming audience who was supportive and my people just talking about activism and courage and challenging the system. I got a lump in my throat.

So your mental health is critical for projects where you're trying to change a system because change is hard. Climate change is hard, and the change needed to reduce emissions is going to be really hard because we're asking people to change something that they're really comfortable with. Covid is going to have a hangover effect in so many ways we don't need to be talking about a Covid-related project for that trauma to still come through in other ways.

How do we help bring the vocal minority who opposed these schemes on the journey?

Get out and vote. Local government elections are coming up, and this is a topic which I can already see being a tinderbox for Onehunga residents. You know, the flyers from the political party, which I'm not a part of, are already making comments like a common sense approach to transport, so this will, unfortunately, divide Onehunga in the next local government election. So you can vote without putting your head above the parapet and being abused on Facebook.

You can vote for people that are supportive of things that you're passionate about. I had lots of people come up to me and say look, I wish I had the courage to do what you do, or I wish I had the courage even to take people on on Facebook. People have lost friends in Onehunga at the school gate because of this project; I heard one couple almost divorced over it because the husband liked the project and the wife didn't.

So you know this as a topic - climate change is causing a lot of stress to a lot of people, but please encourage people to vote. Make sure you learn about who you are voting for because these projects are going to become more and more determined by whom you put in decision-making positions.

With the Streets for People program, what is Waka Kotahi doing to provide support to manage situations when these types of issues arise again?

Again going back to the lessons when the debrief was done afterwards with all of the projects across the whole country. It came through really strongly that while councils appreciated the opportunity to deliver these projects, they really struggled not having the ear cover that a national agency could have provided. So I could call Waka Kotahi, traditionally, a funder and councils deliver. I guess this project needed a closer level of guardianship from Waka Kotahi, and that's what we see with Streets for People.

So the message back from Council was we can't fight these fires street corner to street corner with garden hoses. We need the monsoon bucket – the national messaging around Innovating Streets is trying to do this and this. “It's coming to a town near you” or, you know, working with your local councils instead of the councils having to have that conversation and say, “hey, this is a really important project”, and it needed to have that national cover. So this time around, it's a much more national conversation, lots of work around resiliency, dealing with conflict, key messaging and how to present things.

Dr Jess Berentson-Shaw has done a lot of work through her organisation, “The Workshop” around what message/ messages resonate with which people – you know you need to deliver the right message at the right time to the right person with the right messenger. Sometimes I was a red rag to a bull talking to some of these Facebook groups who just didn't want me to answer the question regardless of the fact that as Project Lead I might be the only one with the answer. There are lots of lessons that have been learned to really build that resilience, and hopefully, we should see a much more successful rollout over the next couple of years. I think the Minister is announcing in the next week or so where those projects will be around the country.

Was there any possibility of reinstating the traffic control devices after they were removed, and can you share more about that situation and the response that was considered?

They were getting moved/vandalised almost immediately, so I was often going back, and kind of pushing them back over, or there were locals who were supportive of the campaign keeping an eye out for them, shoving boxes back to where they were; they were getting nudged out of the way by people opposed to the trial in their vehicles, and that was a daily thing.

Every morning, we went back and tipped them back over and put them back. But the day the guys brought in the forklift and the pry bars, it kind of got a bit real for everyone. The reality was they undid three weeks of installation in 45 minutes. I was staggered; I was like, who are these guys? How do I hire them? It was staggering how quickly they were getting rid of this stuff that we had spent hours painstakingly positioning to make sure it met all the rules and regulations and distances from curbs etc. They didn't care and just ripped it all out.

So you know a lesson for materials; I think a couple of other low traffic neighbourhoods ended up using concrete blocks instead of the wooden boxes that we used; ours were fruit crates. They kept about five or six guys employed during a slow period of Covid who would have been unemployed otherwise. So there were so many good parts about using the wooden boxes. In hindsight, we should have just made it brutal and put in super heavy concrete blocks and painted them a nice colour; someone would have still complained about the colour we chose, but at least they wouldn't have moved.

Residential roads should never carry that much traffic.

One of the criticisms from some is that low traffic neighbourhoods are “denying me the right to get to my house”, but low traffic neighbourhoods don't stop you from getting to any of the properties, they might just ask you to go a different way.

You can get to where you want to go; it might just take a little bit longer. You might have to go around the block and that's because we need to stop the through traffic, which is unnecessary and potentially harmful to those that live there.

The network planning that goes into these things is critical, but the challenge that I guess planners have had is that they've been a little bit laissez-faire about what the consequences of those plans are because it really gets down to the person in the house, having to look out their front door. If it's a constant stream of traffic outside your front door, you're not going to feel safe walking. You're going to get in your car and join that stream of traffic and add to the congestion, whereas if you open the curtains in the morning and there are no cars, you're much more likely to walk or bike to your destination because you don't feel like you've got to wrap yourself in a metal box to join that traffic. So it's really important – the psychology as well as just the technical parts of planning and delivery.

With more of these projects getting underway across the country, how can we avoid kicking the multitude of Hornets' nests? Rather than relying on this abstract term social license for us to act, is there a database of communities that really want low traffic neighbourhoods?

Possibly. In Waltham Forest in the UK, it was decided that they were going to use this tool but what they did is they kept the pulse of the different communities and as soon as they felt through their surveying that the community were getting a little bit cool on the idea they'd just say “look it looks like you need a little bit more time to have to think about this – we're going to go and work over in that next neighbourhood over and get back to us when you're ready.”

What that did is it forced the community to kind of look inward and say, “well, actually do we want to do this or not?” And then they look over to the neighbours, and all of a sudden, their kids are running around on the street having a great time, and they get themselves organised, and they start to lobby to get the project back there.

The criticism we got was people outside the area complaining, asking “why do they get special treatment. Why isn't my neighbourhood getting chosen?”, and then people inside the neighbourhood saying “why did you choose me? Why didn't you do it somewhere else?”

So you were constantly in this friction between people's own frustration with things that were being changed either through jealousy of them not getting the special treatment or through the frustration that they were getting special treatment. So, back to your complex problem scenario – it was really difficult to get to the bottom of why it was possible, and I think it's a political thing as to whether or not you're on the right and you see yourself as a voice for the current people that have elected you or if you're on the left

and you're a progressive who's thinking about the next generation; that then makes it hard to make decisions in this space because the social license for someone who's more conservative will be very different to social license for someone who's more progressive.