



CASE STUDY

Micro Mobility Monitoring

George St - Dunedin

www.countculture.com

Countculture Sensors Provide Valuable Insights into George Street Works

New Zealand's push for urban transformation has seen City Councils throughout the country electing to transform city centres and promote cycling, public transit, and pedestrian-friendly infrastructure.



But, despite the apparent merits of ‘mode shift’ and positive experiences in cities throughout the world, these transformations haven’t been unanimously supported everywhere they’ve been proposed. Landlords and retailers fear that cycling lanes and pedestrianisation might deter customers, while concerns about parking space loss compound worries about ongoing business viability.

For this reason, Councils and city planners need to better understand how the disruption of roadworks and urban transformation actually impacts both retail trade and visitor movements - both to counter objections and to justify taxpayer investment as well as to support business investment in the city centre.

That’s where Countculture and their digital, real-time sensors have proven to be a valuable tool in understanding the actual impact of works, as well as highlighting ways Council could improve city amenities for retailers and visitors alike.

Case Study: George Street, Dunedin

Glen Hazelton, Project Director Central City Plan at Dunedin City Council, engaged Countculture to provide accurate pedestrian counts for selected areas of the city during a major construction project.

The three-year \$100m streetscape upgrade involved extensive remediation of three-waters infrastructure, transport, and amenity improvements for George St and surrounding enabling work on parts of Great King, Frederick, St Andrews and Hanover Streets.



Fearing loss of trade due to roadworks and changes to the area, some businesses and landlords had become particularly vocal about their concerns, which prompted Hazelton to establish a network of sensors to help determine how much impact there was on visitor numbers and what the Council needed to do in response.

“We needed some way of accurately measuring pedestrian visitations throughout the day and night, making sure that we're doing that in the same way all of the time, so we establish a comparable set of data,” Hazelton says.

The Dunedin City Council project team went to market and sought expressions of interest, with Countculture winning the contract to deliver the sensors.

Countculture then worked with lead infrastructure contractor, Downer, to install 14 sensors at the ends of city blocks on traffic light poles, where they could get the best viewpoint of the streets. Data from these sensors uploads to the Cloud via 4G where it is able to be viewed on a dashboard on any connected device, meaning that Hazelton and other stakeholders have up-to-the-minute data at their fingertips, 24/7.

While the initial pedestrian count sensors weren't in place before the works started (meaning there was no baseline for the data), Hazelton says data received since already confirms an upswing in visitation over that time.

“It's early days, but we've recently ticked over one year in the block where we've had the sensors in place the longest. So, now we're building some pretty good data there, and what it shows is pedestrian traffic is slightly up on the first year. Which to me is positive - that even while everything was basically dug up, yet the visitor numbers were still up,” he says.

Insights Aplenty:

Hazelton says the volume and quality of data received provides Council with the ability to go much deeper than ever before into pedestrian movements and drill down into the cause and effect of different surges in foot traffic.

“We were able to see that during the week of the Pink concert, mainstreet visitor numbers were up 30% for those couple of days. And bringing all those people extra to town contributes to more economic benefit for those places as well,” Hazelton says.

“Also, we have quite a large cruise ship season here, so it's really easy for us to see the spikes that they create in the pedestrian data as well. And we recently did an open day where we closed off the street to vehicles - being able to then see what that did to pedestrian data is really, really important.”

“On a day-to-day basis, it's helping us with those trends, whether it's weather, whether it's time of year where students are here, whether there's other things on, that's all really useful for us to understand – and how our transport network is also going to hold up as well,” he said.

Safety Considerations

Hazelton confesses that he's become a bit of a 'data nerd' from having access to the data which has allowed him to consider other aspects of pedestrian movements and issues of safety.

“Because they're counting all the time, we can see blips in some strange times of day and night, particularly after the retailers are closed - such as George Street at 3 am when all the bars have just closed. But another blip is hospital staff turnover - when the main shifts start and end.

“There's some really important decisions we can make from that data in the future. Would it be valuable for us to turn up the lighting in certain areas, for example, for increased safety for hospital staff?

“It's given us this ability to think about where we put our security patrols while we're doing the construction. And longer term, how do we intervene in those areas to make sure they're safer for people moving around the city at night?”



Automated Insights

Hazelton says that Countculture pedestrian data is light years ahead of the kind of data Councils would collect in the past, which typically would involve getting a snapshot of pedestrian traffic for a couple of hours once or twice a year - and not necessarily at the best time.



“I can think of some of the count days in previous years where it's been practically snowing and no one comes to town anyway. And typically, a lot of the survey work has been done by students or people that don't do it consistently. I don't think you can rely on that data for any really robust decision-making,” he says.

Armed with improved data, Hazelton says Council has been able to work more effectively with local businesses and investors. A business considering moving to George Street might approach Council for pedestrian data to help them weigh up the benefits between two tenancies for example. Or a landlord might use the data to help make a business case for a large investment in a redevelopment, these types of enquiries have already started coming through.

“So, that's really exciting for us to be able to have data available for people so that they can make those important business decisions,” he says.

Data Aggregation

Another opportunity arising from the deep, automated data provided by the Countculture platform, is the potential to aggregate data to and from other agencies and sources.

Cruise ship arrivals data could be loaded into the system, for example, so spikes in pedestrian data could be more easily understood. And, with enough historical data in place, the potential increase in foot traffic and retail trade spend in a particular area could be linked back to those movements.

Likewise, other sources like NZTA could potentially share traffic and public transport data with the system to help understand correlations between traffic and congestion with pedestrian movements.

And while Dunedin City Council is only counting pedestrians at this point, the Countculture system sensors has advanced object classification to report on pedestrians, cyclists and e-scooter movements as well if that was to be desired in future.

Hazelton says however, that not all data lines up easily, and one of those areas is retail sales data.

“We've used a few different systems to try and track that over time, which is sometimes not helpful because you're slightly comparing different data sets. The mesh blocks don't match the right areas for this project in particular.

“At least the pedestrian data gives us something that's relatively safe that people are happy to share. We can't say whether they've then translated those extra people into sales, but you'd hope that good retailers will,” Hazelton says.

“Which is why the Countculture system is so valuable. If we've got one system in place that works and we can rely on it to do its thing in the background - as long as we keep up with it, we're going to have years of data that's all comparable and can show trends and behaviours over time.

“And it's that longevity of data that I think is really important, particularly for councils who, on any project that was relatively contentious in the community, there's always suspicion about anything that we say has been a success.

“This will give us the proof about whether it was a success or not, and I think the counts will be fairly irrefutable,” he said.



Shared Future

Hazelton says he's had a lot of interest from other Councils in the project and whether Dunedin would share data on the impact of urban transformation works. He believes the Dunedin experience with Countculture could become a valuable test case for other councils.

"What I'm finding is a lot of smaller councils and agencies out there are interested in the data to test theories they have, but can't afford to invest in a system. For example, if we implement this type of layout, what is the likely outcome? Does it justify investment by attracting more people?"

"The more we can see that across multiple other councils, the more we can extrapolate out and say: 'it's most likely to have this impact'. And I think that's really important, because it often feels like we've had different councils reinventing the wheel or trying to find data in their place that could actually be just as well provided from elsewhere.

Hazelton is already looking to the future, with new cameras added into areas likely to be upgraded in future, so when the Council does begin those projects, they'll have a great baseline of data.

"On the next project that we do, I'm looking forward to being able to say: 'Here's what your average footfall data is on a weekly, or monthly basis'. It helps us future-proof that as well, so we have better data to say: 'yes, we are having an impact', or 'no, we're not'.

And if we are having an impact, then it's good data to be able to take to Council and say, "We need to put more money into some marketing initiatives to keep people coming into town".

In conclusion, Hazelton couldn't be happier with the project and how the Countculture data is performing - and how it is informing the City Council on planning for the future.

"It's been good. From my perspective, it's been a really positive part of the project. One of the parts of the project I'm most proud of," he said.