

# Cycling through disruption: travel behaviour at the University of Canterbury in a city undergoing transition

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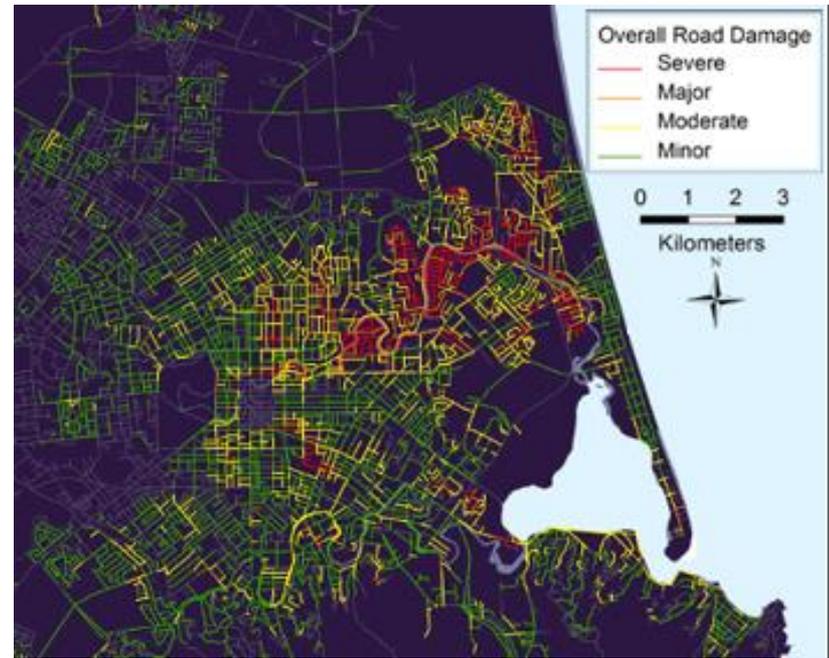
# Aim

- To investigate change in cycling mode share amongst staff and students at the University of Canterbury
  - Over a period of transition in the city
  - Against backdrop of initiatives to promote cycling

# Earthquakes

- February 2011 – 6.3 magnitude earthquake
- 185 people killed, 8000 injured
- Significant damage to buildings and infrastructure
- Much of the transport infrastructure continues to undergo repair 6 years later





# Disruption as an opportunity

- Disruptive events can present opportunities to change travel practices and policies (*Marsden & Docherty, 2013*)
  - force people into altering their travel behaviour
  - reconsider normally deeply ingrained travel practices
- Cycling increased in the immediate aftermath of the earthquakes due to disruption to other travel networks
- Opportunity for transport policy change
- BUT - transitions in land use - decentralisation of industry & residential property post earthquakes

# Christchurch

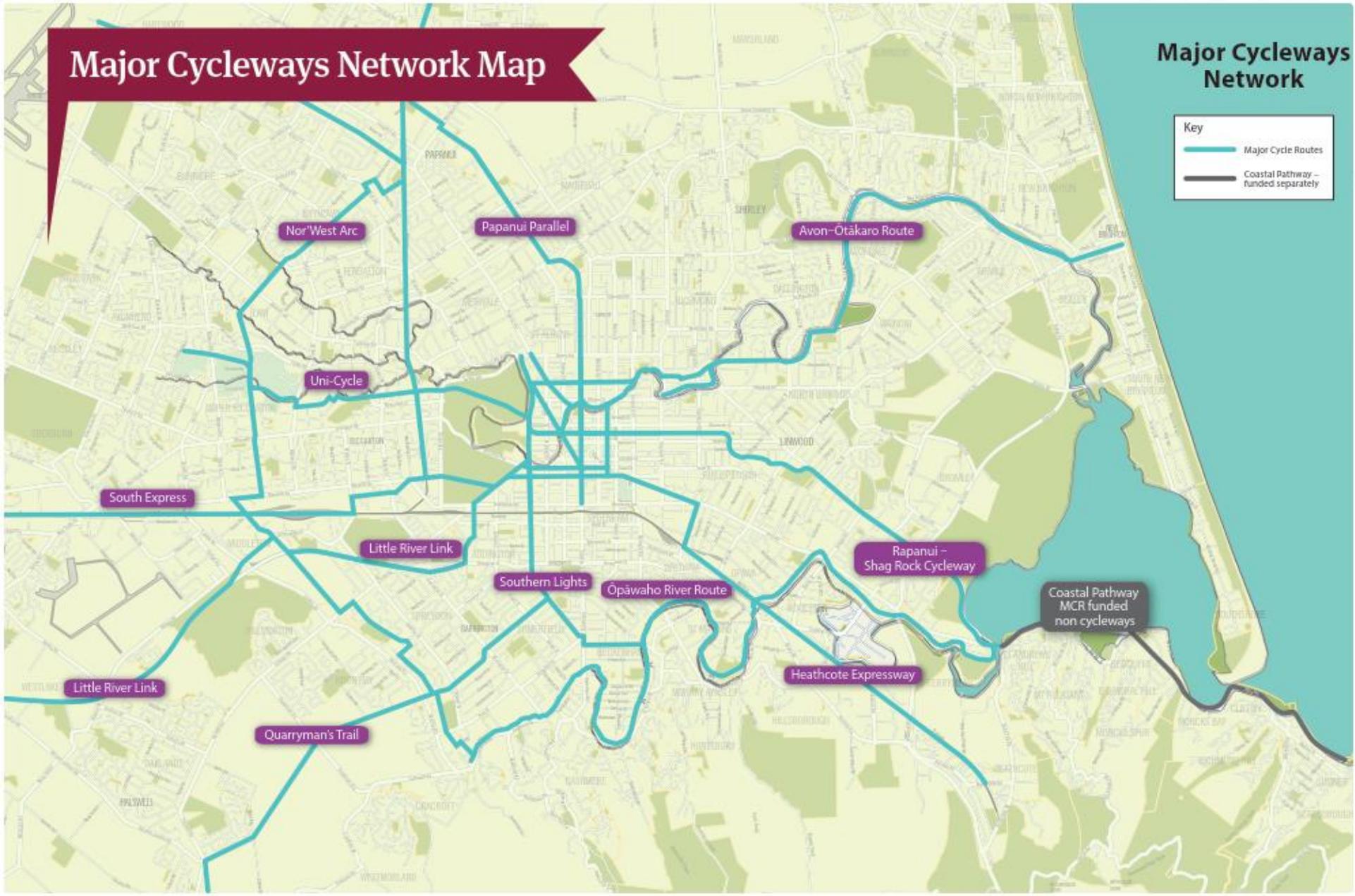
- Relatively flat
- Low density
- Average journey to work 8km
- 8% of journeys to work are by bicycle
- Investment in network of major cycle routes

# Major Cycleways Network Map

## Major Cycleways Network

**Key**

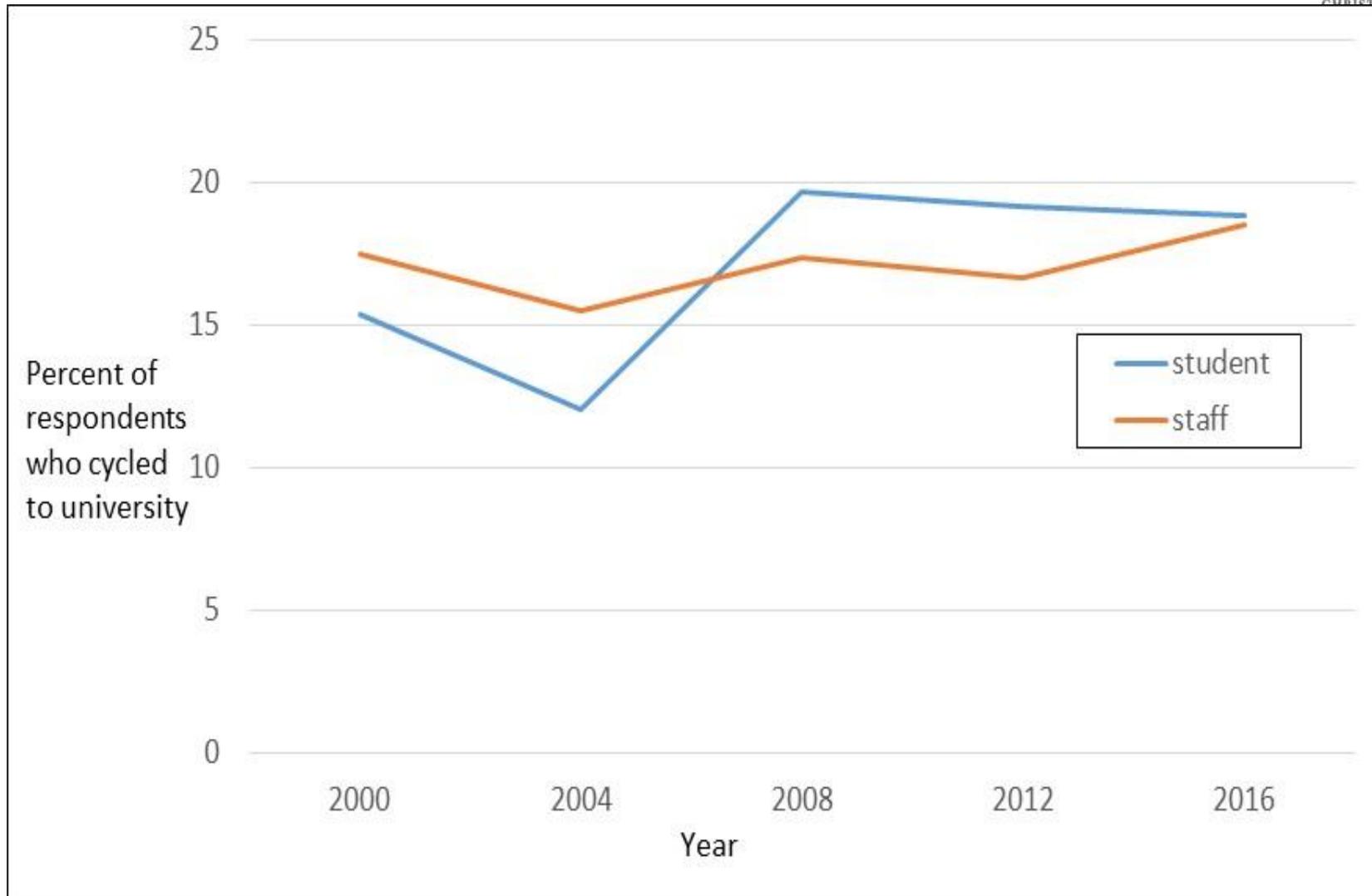
- Major Cycle Routes
- Coastal Pathway – funded separately



# University of Canterbury

- Campus university ~ 6km from central city
- The university has implemented a range of policies and initiatives to promote cycling.
- Travel survey undertaken every four years since 2000
  - 2012 – immediate aftermath
  - 2016 – medium term
- 18,960 responses over five time periods (2000, 2004, 2008, 2012, 2016)

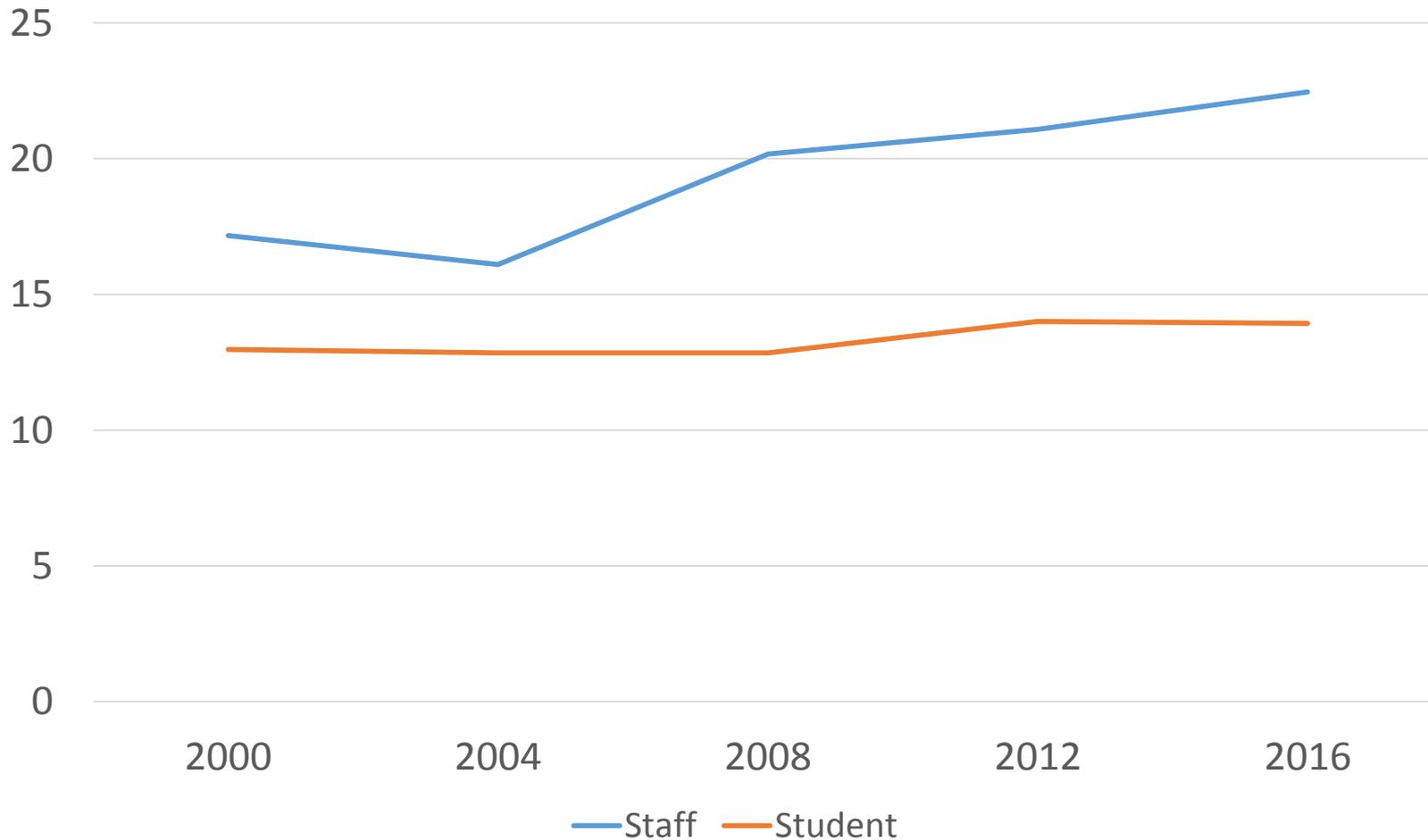
# Rates of Cycling



	Within 5km				
	2000	2004	2008	2012	2016
Car	32%		37%	46%	30%
Cyclist	21%		21%	20%	26%
Bus	2%		11%	9%	3%
Walking	46%		29%	22%	40%

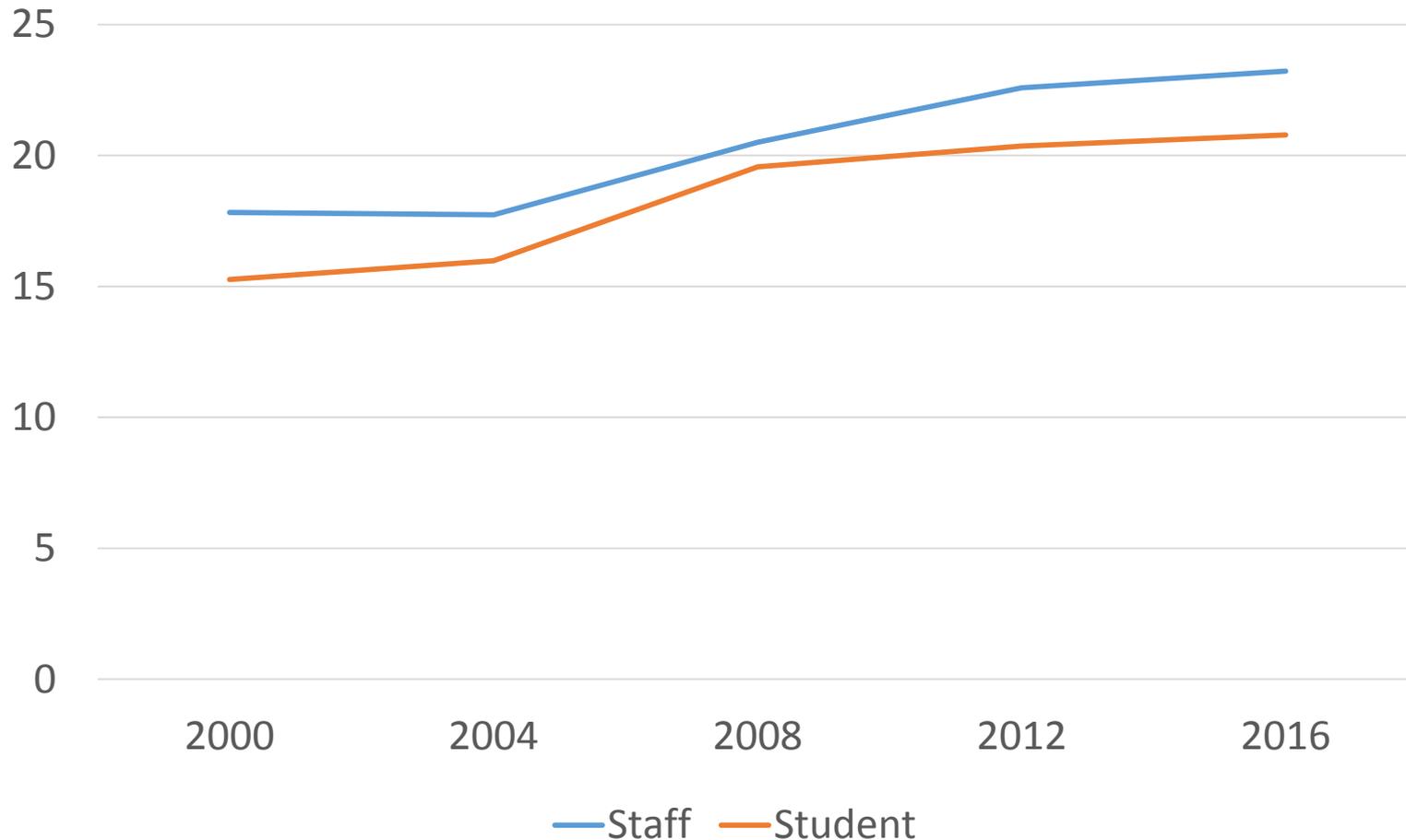
# Time spent cycling

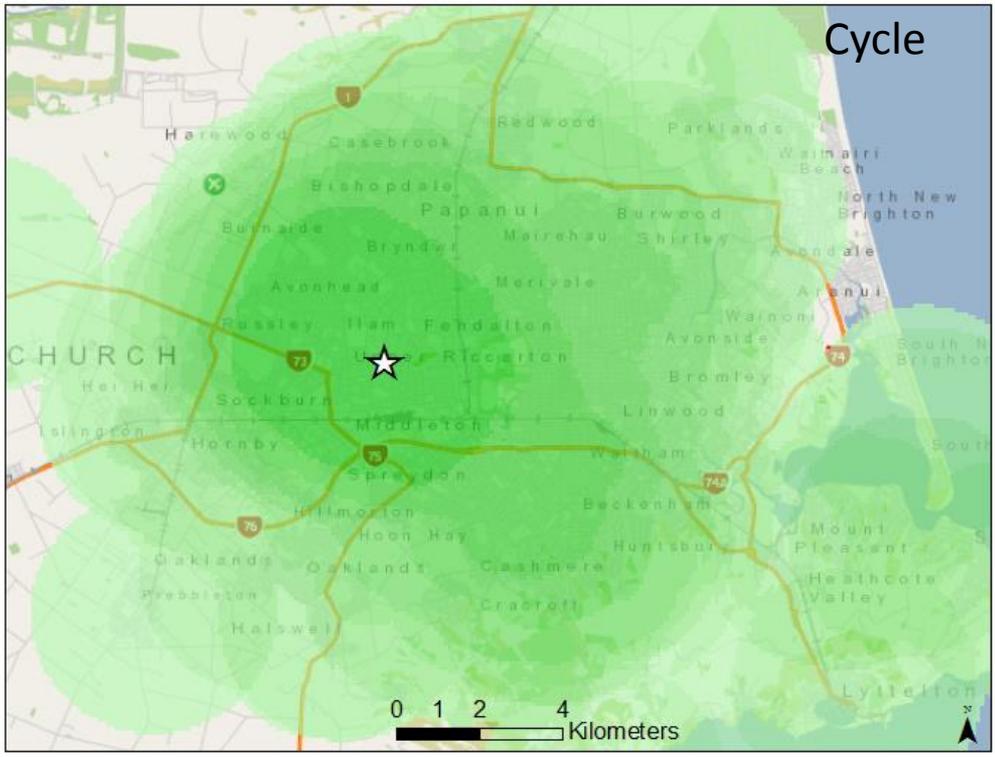
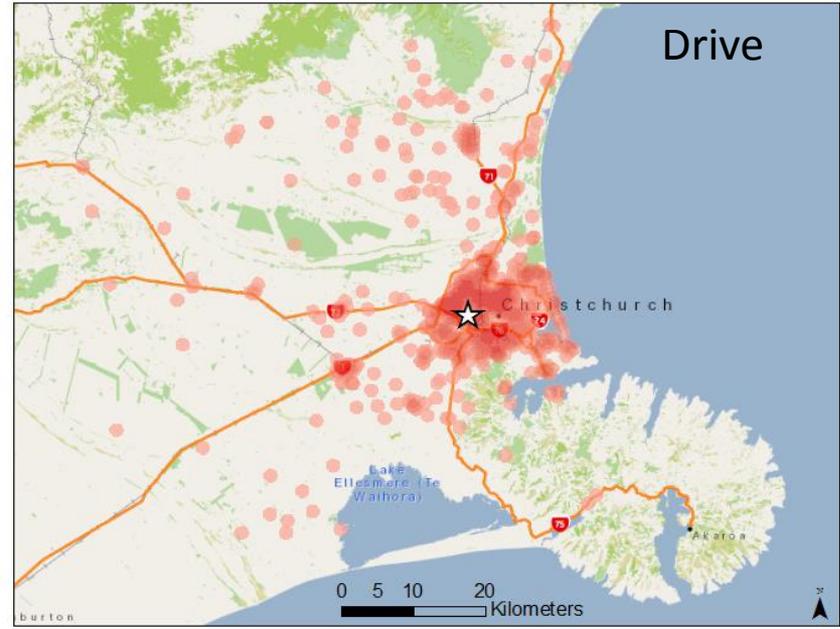
Mean time spent cycling to university



# Time spent driving

Mean time spent driving to University





# Distance and cycling

- Mean cycle distance is 6.2km (staff) and 3.3 km (students) compared with 12.3km and 11.6km for driving (2016 survey)
- Journey lengths have increased over time for cycling and driving - people living further away, not just as a results of EQ, but general trend over time
- Distance may affect cycling for students, less so for staff

# Demographics and cycling

- Academic staff consistently (~20%) more likely to cycle than other groups of staff
- Gender gap: males 2-3 times more likely to cycle (from 2000 to 2012), but closing (2016) - males 1.7 times more likely to cycle
- Cycling has also become more even across age groups. In earlier surveys older students and younger staff tended to cycle – now age is not a determining factor
- Third and fourth year students more likely to cycle
  - Live further away
  - Comfortable with their environment

# Attitudes to cycling

- Things that would encourage more cycling
  - Improved cycle routes
  - less traffic
  - more deterrents to car use
- Key benefits of cycling
  - quicker
  - cheaper
  - healthier
  - environmentally friendly
  - enjoyable
  - car parking is expensive and difficult

# Changes post-EQ (2012)

- Of those who cycle 18% did not do so pre-earthquake
  - 41% from car
  - 44% from walk
  - 10% from bus
- 22.6% shifted *from* cycling to another mode post earthquake
  - 92% to car

# Reasons for changes post-EQ

Those who no longer cycle:

- Moving further away
  - From university
  - From a good cycle route
- Not moving house – but feeling it is now unsafe to cycle

Those who have started cycling – predominantly because they now live close to university

# Summary

- Disruption has changed individual travel patterns but no evidence of significant change at aggregate level
- Moving further away has meant 22.6% of cyclists stopped – and predominantly switched to car
- But, 18% of cyclist have started since earthquakes, predominantly because of distance
- So, both effects at play

# Conclusions

- There is clear potential to influence travel behaviour and increase cycling following disruption
- Cycling rates for staff are highest ever – but unclear if this is related to disruption or global trends
- More could be done to support cycling across age groups and for females to ensure benefits of new infrastructure are even