

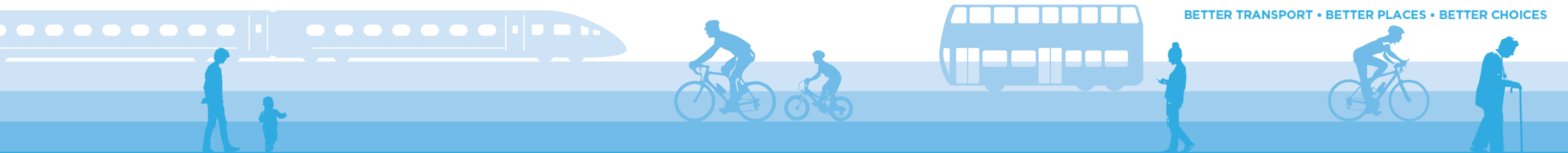
Modelling the Emissions Impacts of Transport

Beth Schuck

eschuck@mrcagney.com



BETTER TRANSPORT • BETTER PLACES • BETTER CHOICES



**There are many possible
changes which can reduce
emissions**

Reduce
Car VKT

Increase
Public
Transport
Ridership

Improve
Vehicle
Efficiency

Increase
Cycling
Mode Share



**There are many possible
changes which can reduce
emissions**

... and even more ways to
achieve these changes

Increase
Frequency

Increase
Public
Transport
Ridership

Work From
Home
Incentives

Fuel Tax

Reduce
Car VKT

Import
Restrictions

Improve
Vehicle
Efficiency

Cycleways

Increase
Cycling
Mode Share

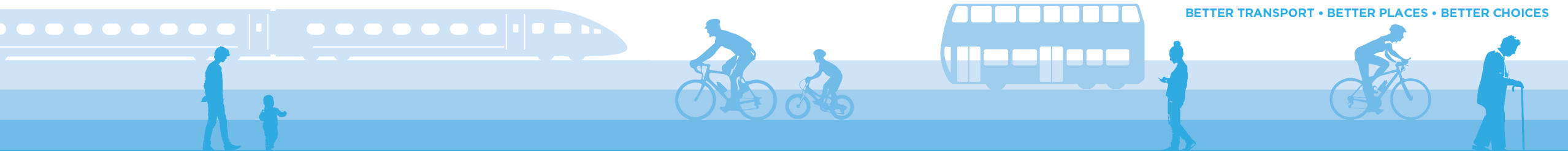
Bike
Share
Schemes

Electrification

Transport2030 - An Emissions Model

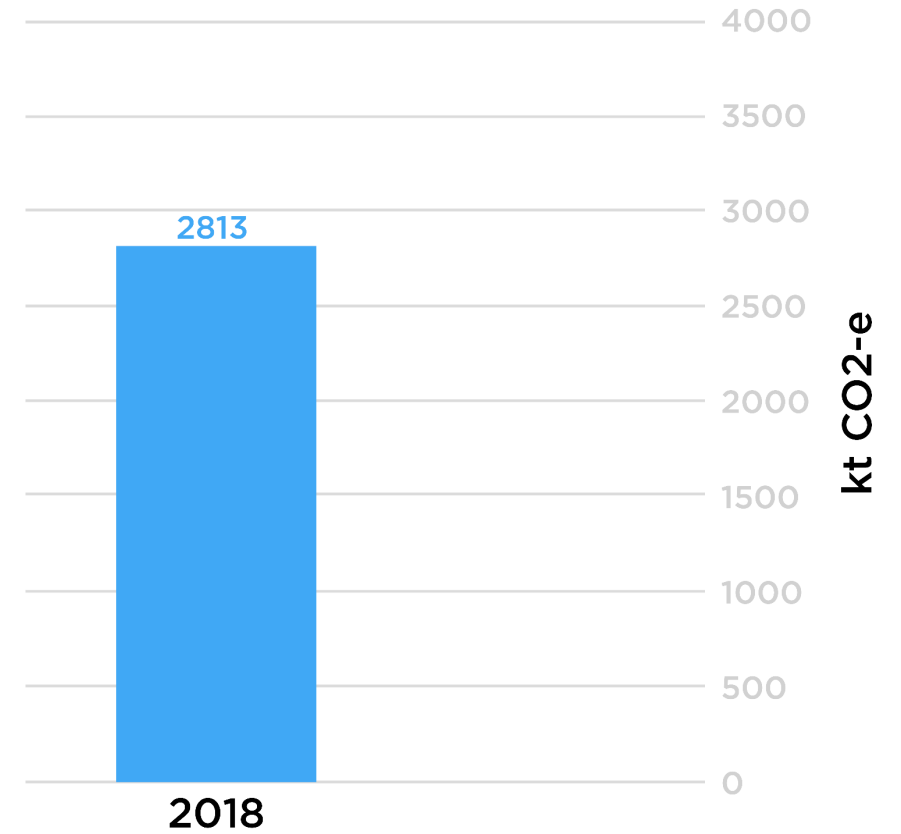


BETTER TRANSPORT • BETTER PLACES • BETTER CHOICES



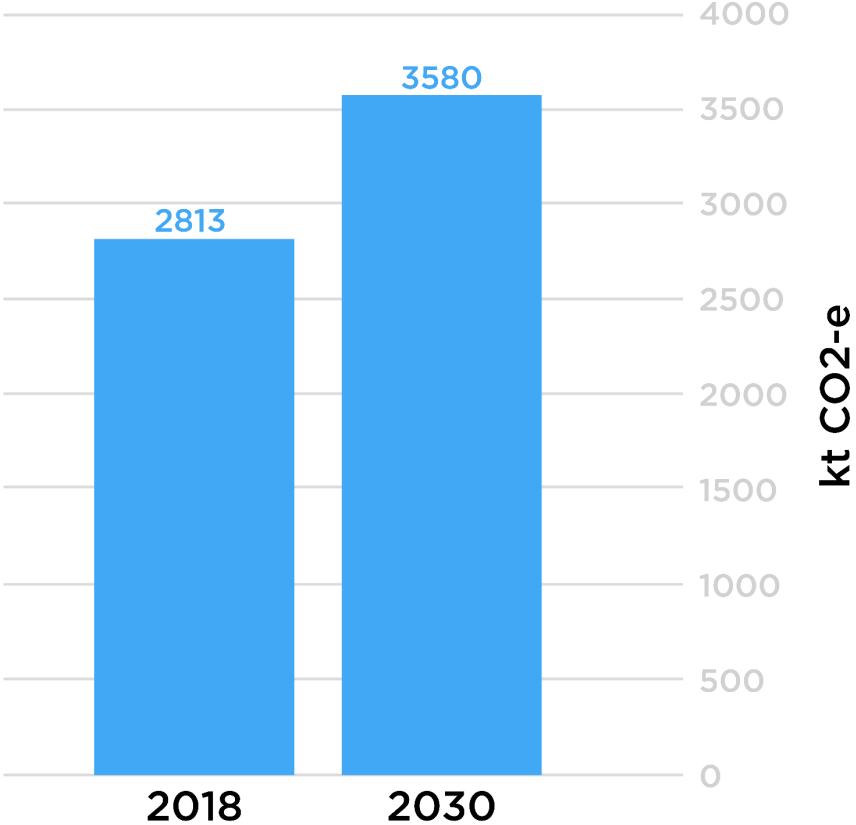
Baseline - 2018

Annual Emissions from Passenger Transport in Auckland



Baseline - 2030

Annual Emissions from Passenger Transport in Auckland

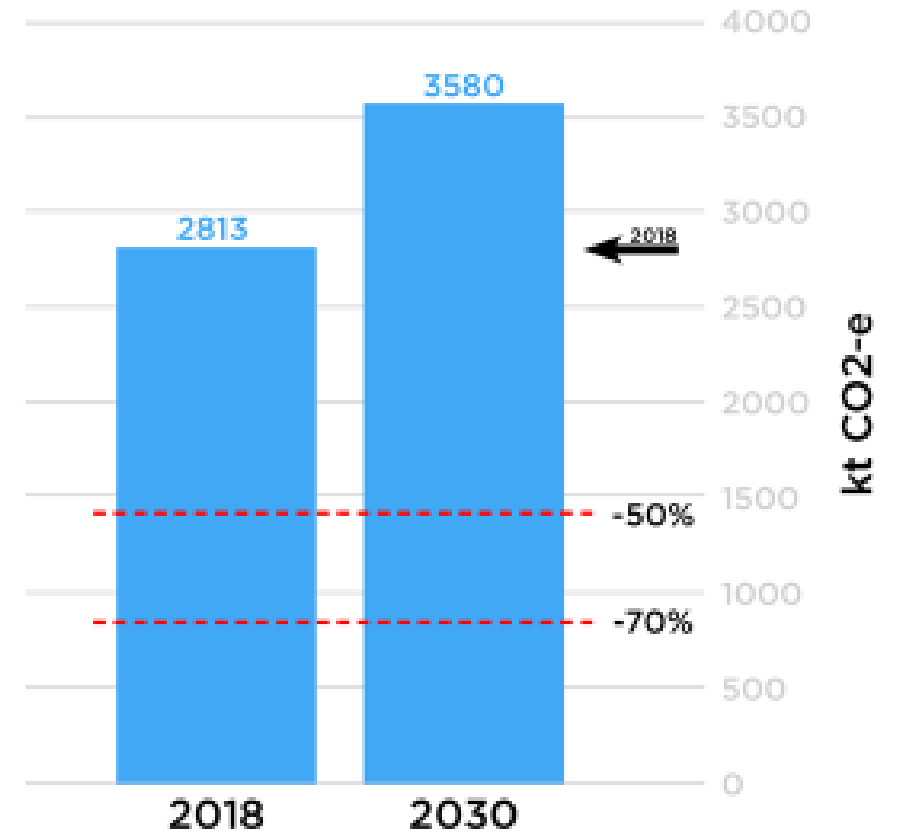


Emission Reduction Goals

Te Tāruke-ā-Tāwhiri - Auckland's Climate Plan

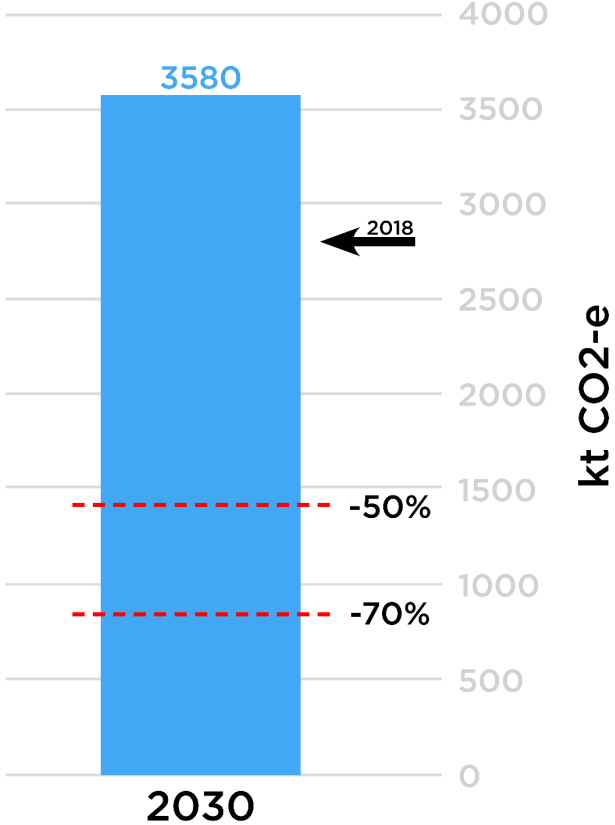
The 1Point5 Project

Annual Emissions from Passenger Transport in Auckland



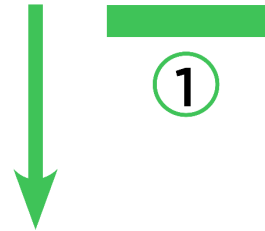
Emissions - Scenario One

Annual Emissions from Passenger Transport in Auckland



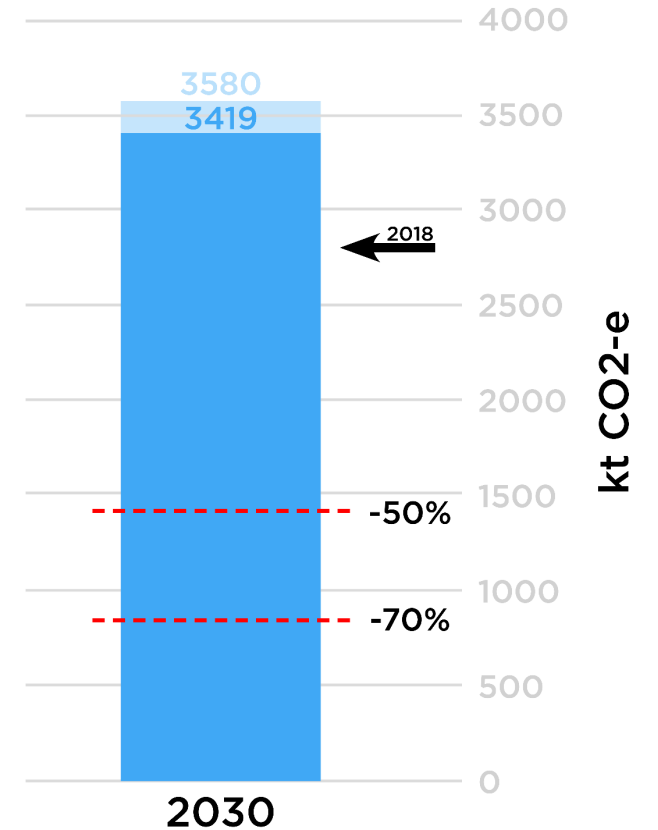
Emissions - Scenario One

① Public Transport Projects



- City Rail Link
- Airport to Botany
- Eastern Busway (AMETI)
- New Lynn-Onehunga Busway
- Airport-City Light Rail
- Northwestern Light Rail

Annual Emissions from Passenger Transport in Auckland



Emissions - Scenario One

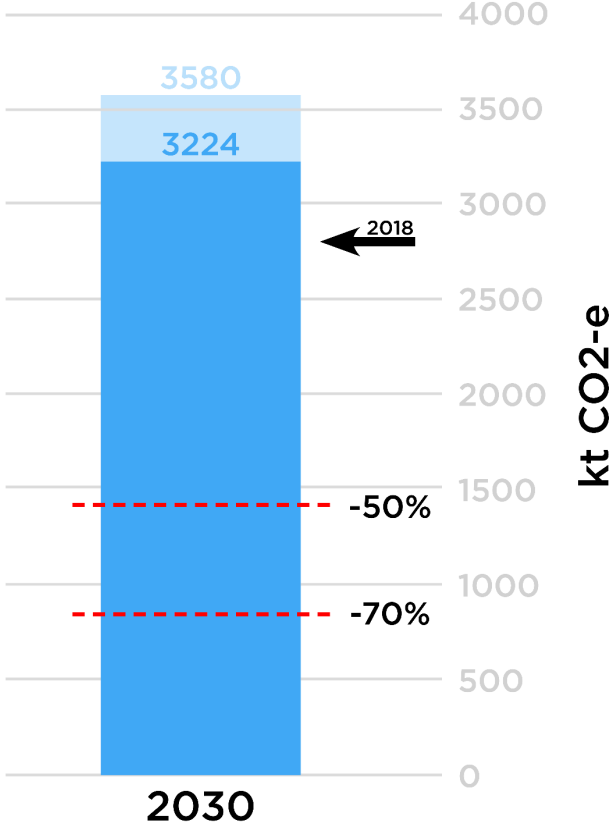
① Public Transport Projects

② Ridership Increase



- 200% Increase in Public Transport Ridership

Annual Emissions from Passenger Transport in Auckland



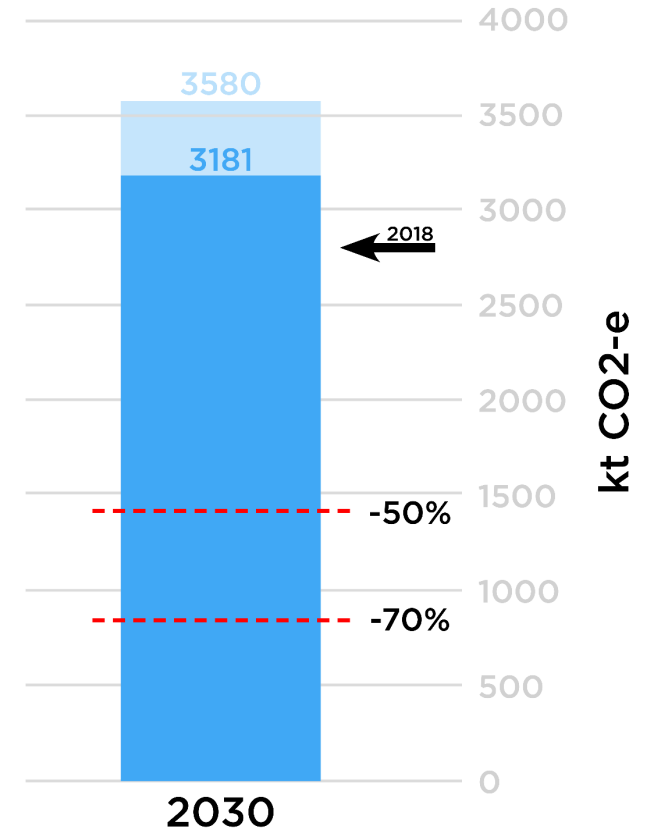
Emissions - Scenario One

- ① Public Transport Projects
- ② Ridership Increase
- ③ Bus Electrification



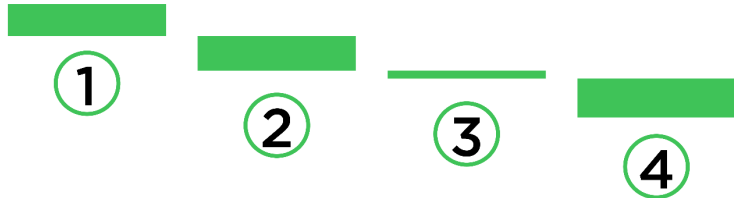
- All new buses electric from May 2021

Annual Emissions from Passenger Transport in Auckland



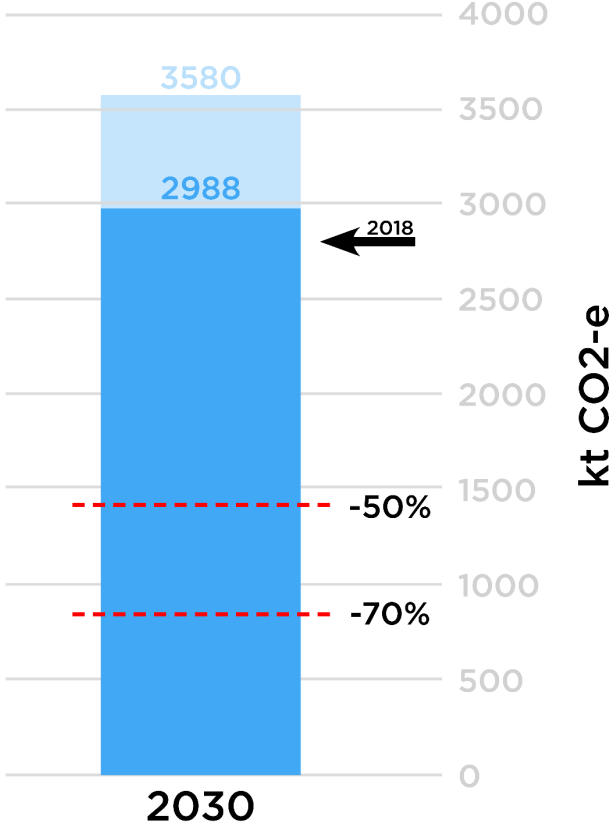
Emissions - Scenario One

- ① Public Transport Projects
- ② Ridership Increase
- ③ Bus Electrification
- ④ 10x Cycling Increase



- Cycling distance travelled annually increased to 10 times current distance

Annual Emissions from Passenger Transport in Auckland



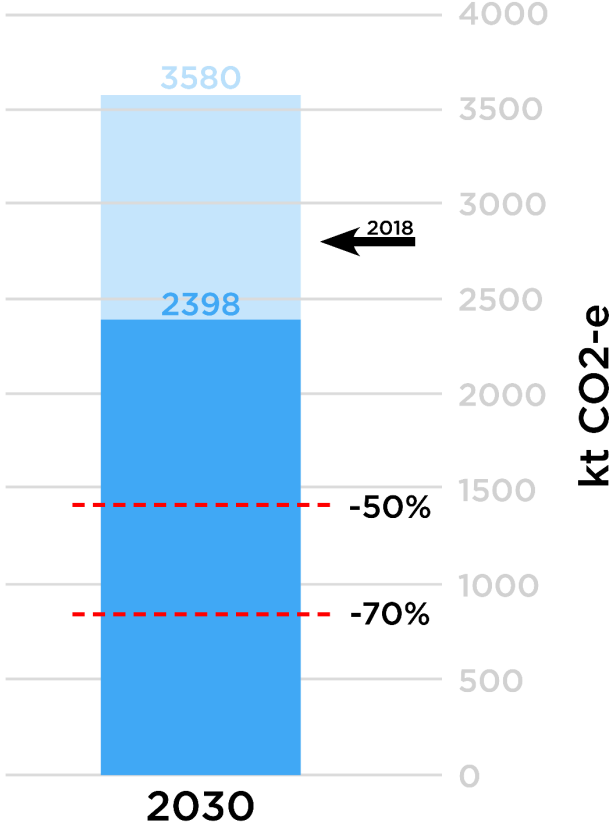
Emissions - Scenario One

- ① Public Transport Projects
- ② Ridership Increase
- ③ Bus Electrification
- ④ 10x Cycling Increase
- ⑤ 20% Reduction in Trips Taken



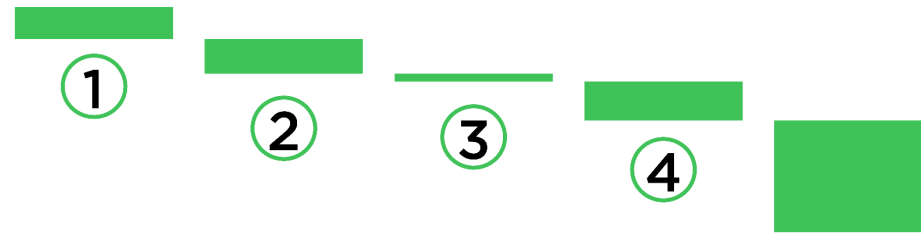
- Total distance travelled per person annually is decreased by 20%

Annual Emissions from Passenger Transport in Auckland

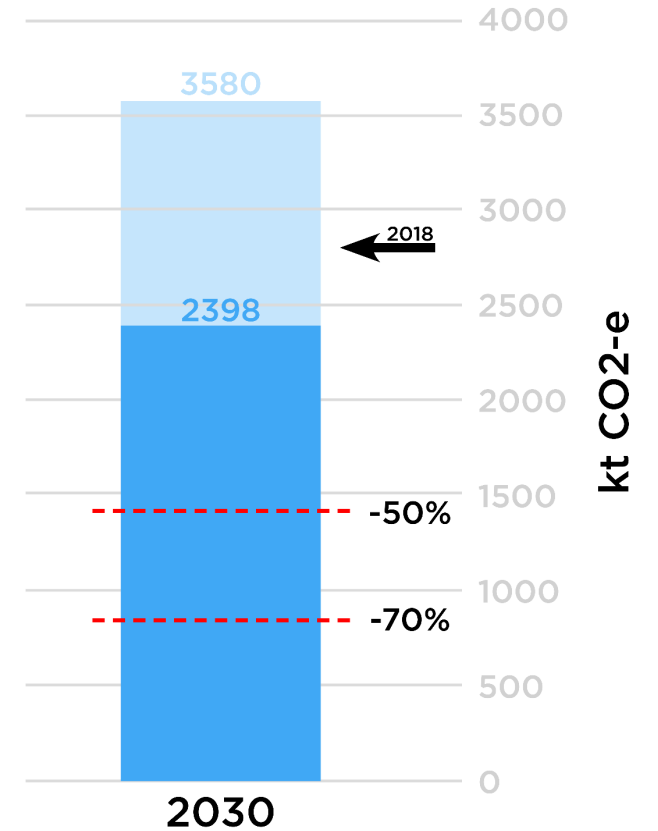


Emissions - Scenario One

- ① Public Transport Projects
- ② Ridership Increase
- ③ Bus Electrification
- ④ 10x Cycling Increase
- ⑤ 20% Reduction in Trips Taken

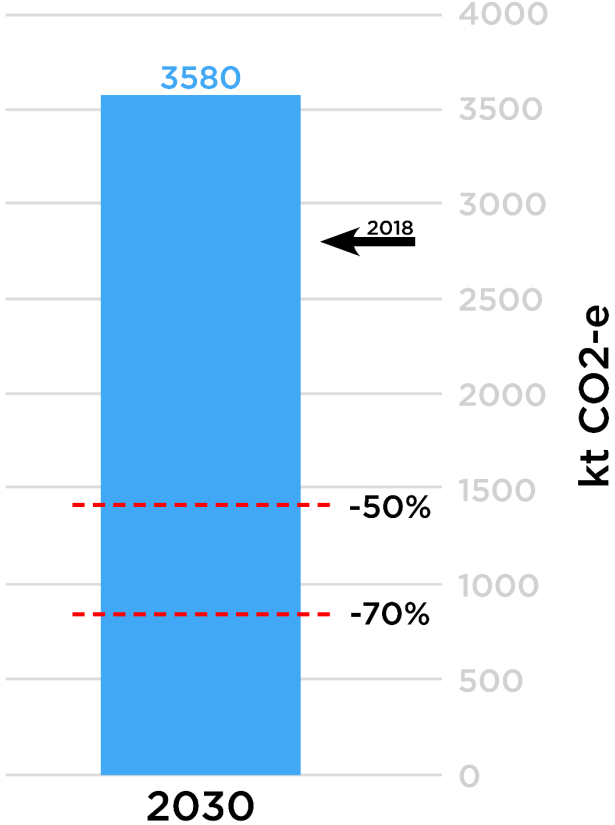


Annual Emissions from Passenger Transport in Auckland



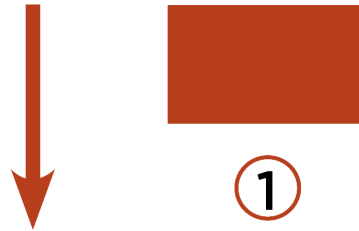
Emissions - Scenario Two

Annual Emissions from Passenger Transport in Auckland

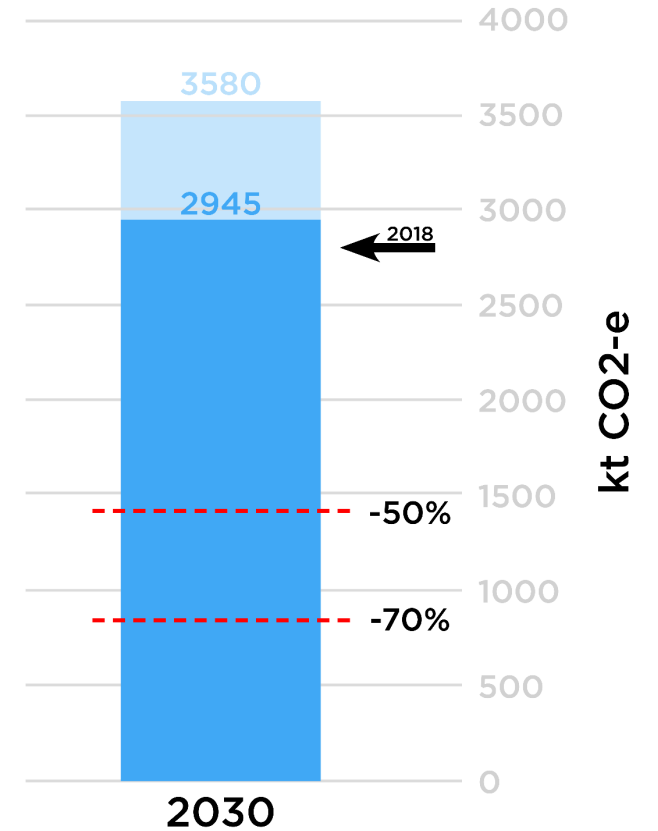


Emissions - Scenario Two

① 20% Car Electrification



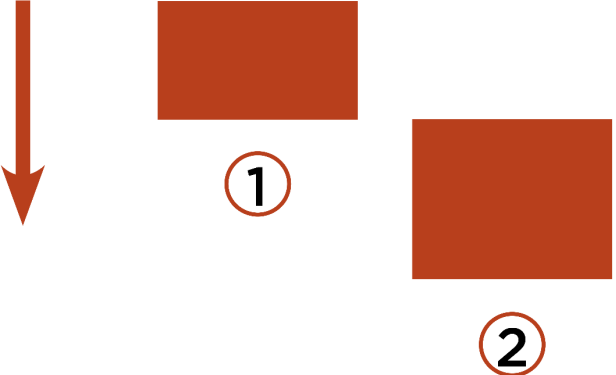
Annual Emissions from Passenger Transport in Auckland



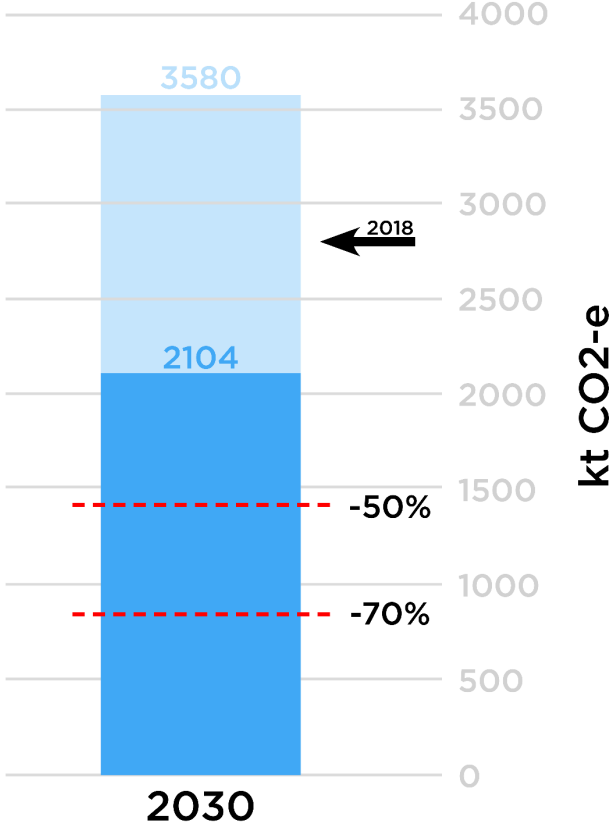
Emissions - Scenario Two

① 20% Car Electrification

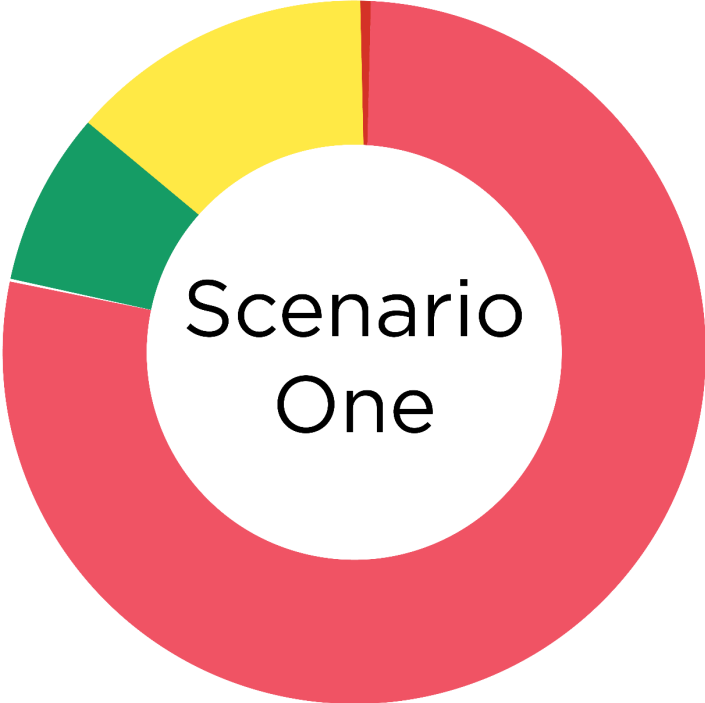
② 30% Efficiency Increase



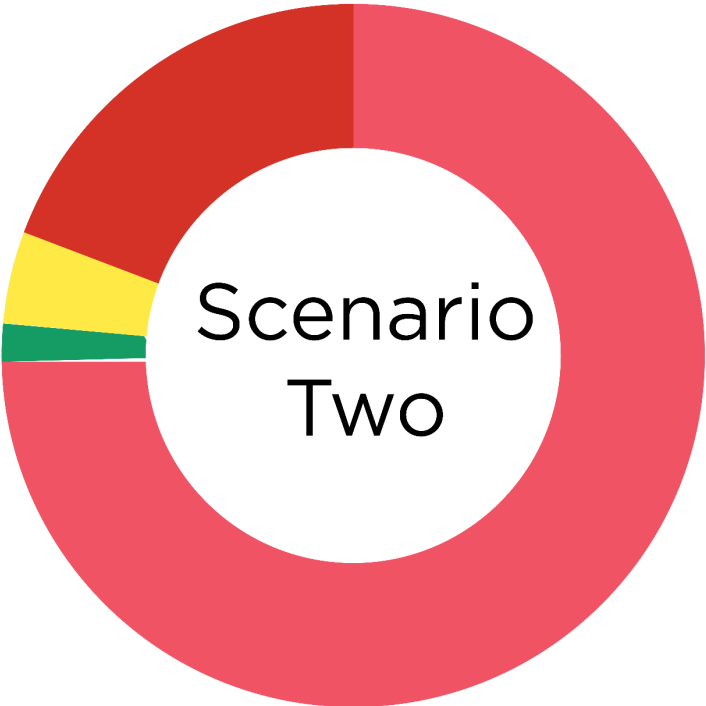
Annual Emissions from Passenger Transport in Auckland



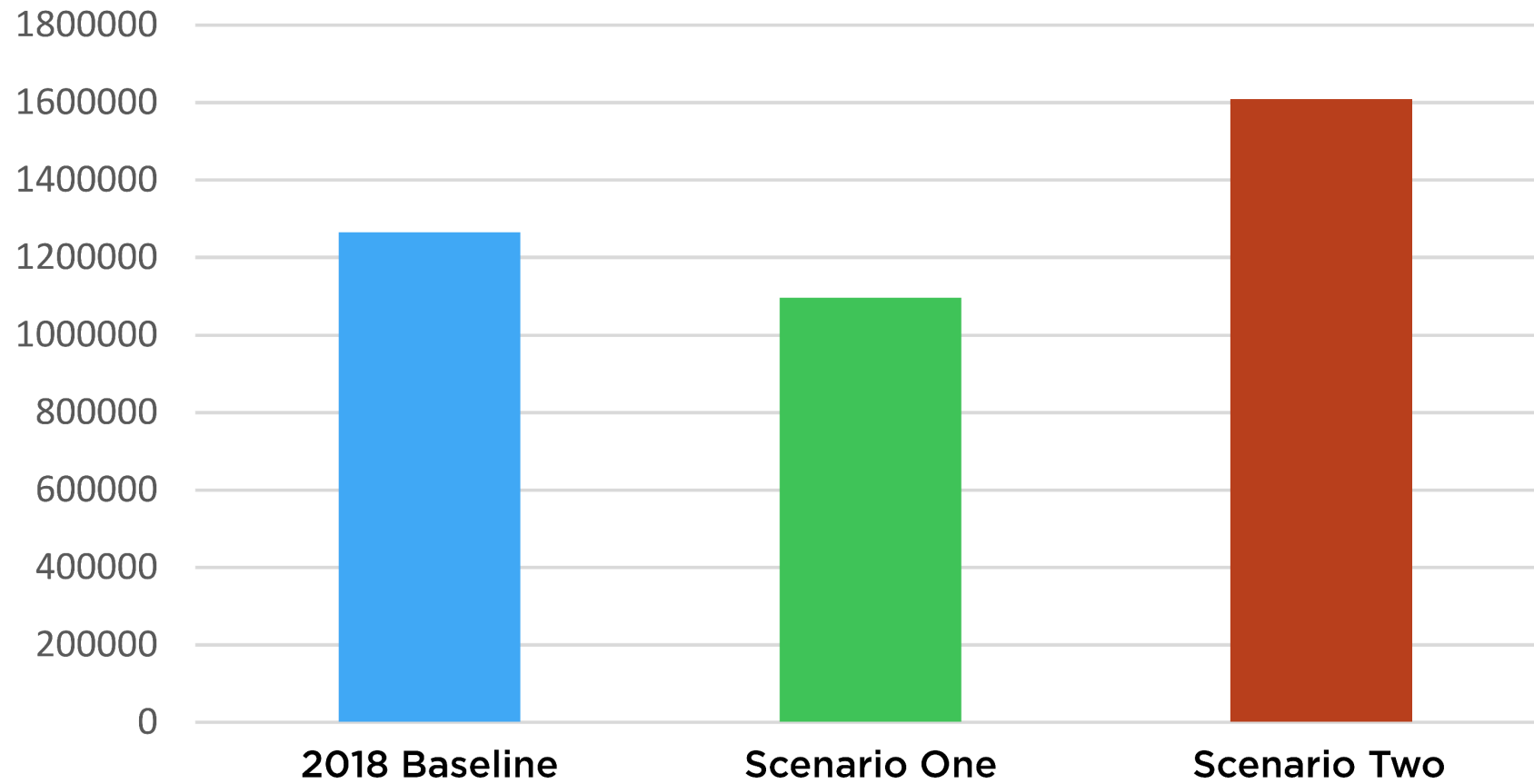
Proportion of Passenger Distance by Mode



- Electric Cars
- ICE Cars
- Public Transport
- Active Modes

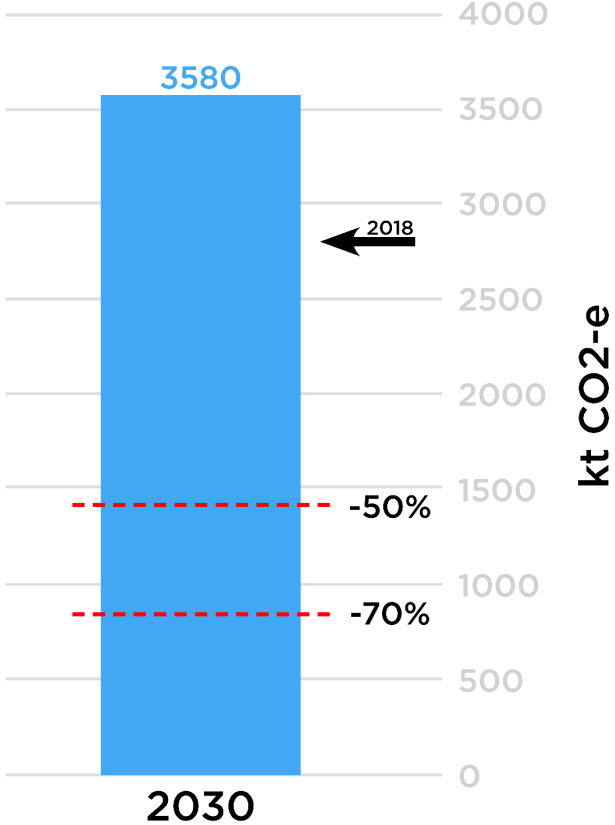


Cars on the Road



Emissions - Combined Scenario

Annual Emissions from Passenger Transport in Auckland

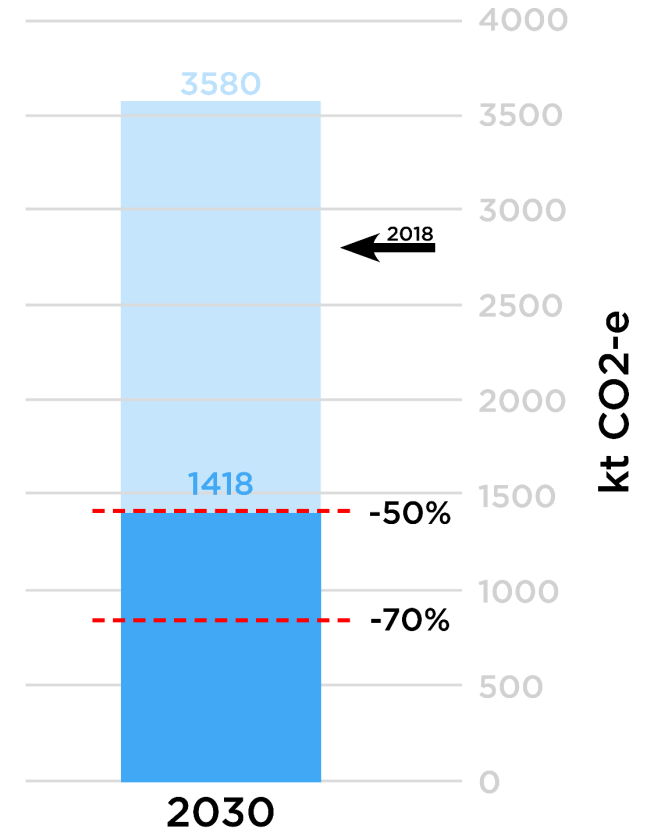


Emissions - Combined Scenario

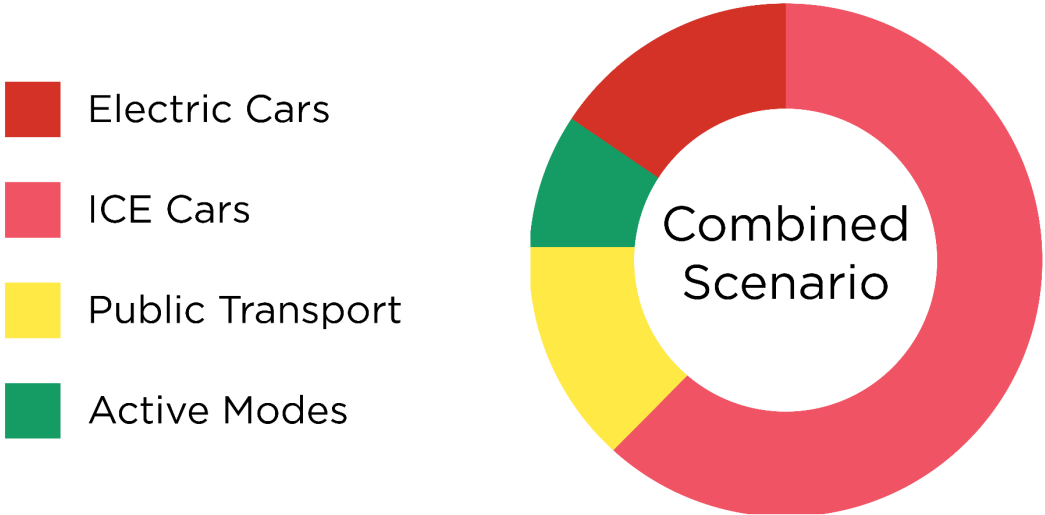
- 1 Public Transport Projects
- 2 Ridership Increase
- 3 Bus Electrification
- 4 10x Cycling Increase
- 5 20% Reduction in Trips Taken
- 6 20% Car Electrification
- 7 30% Efficiency Increase



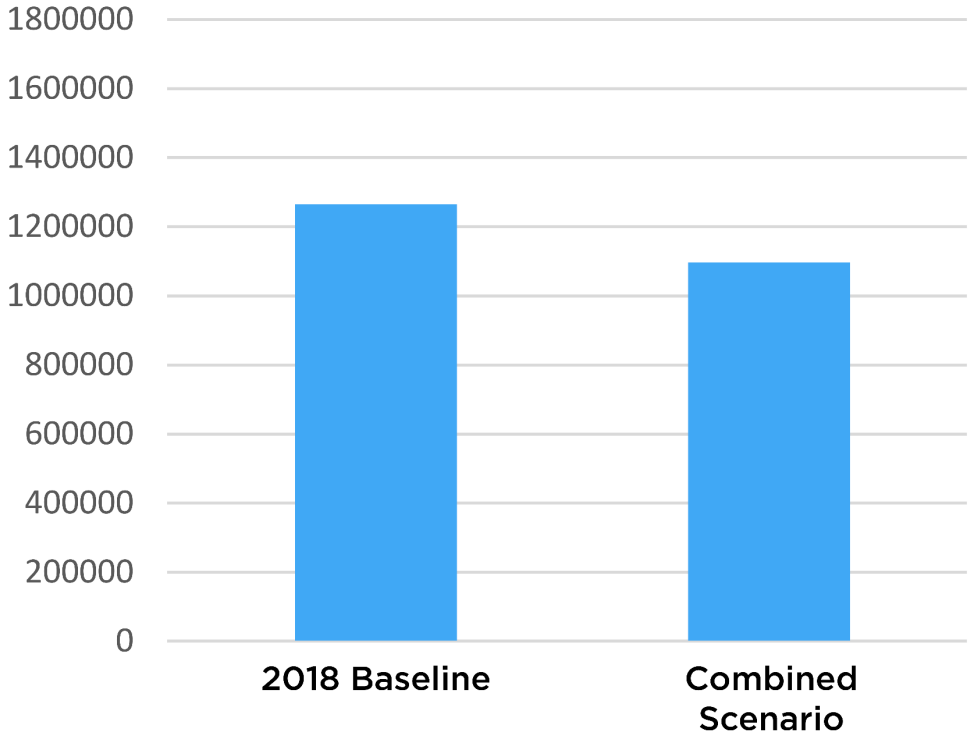
Annual Emissions from Passenger Transport in Auckland



Proportion of Passenger Distance by Mode

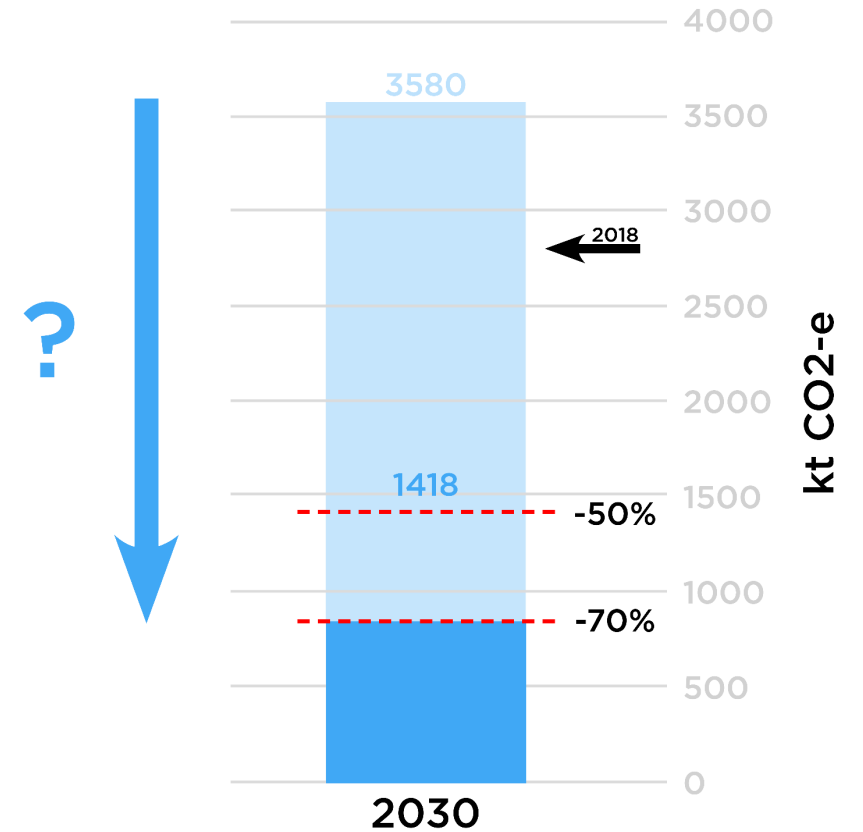


Cars on the Road

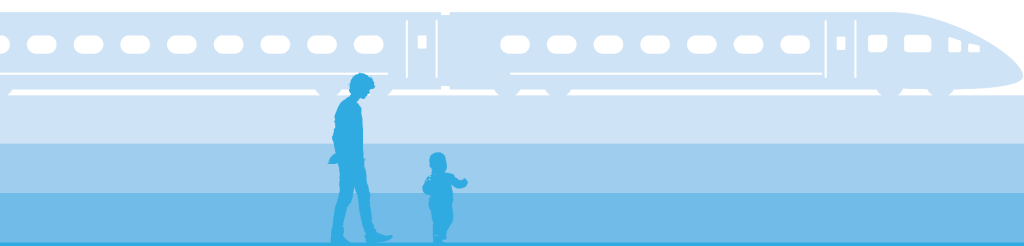


Can we get there?

Annual Emissions from Passenger Transport in Auckland



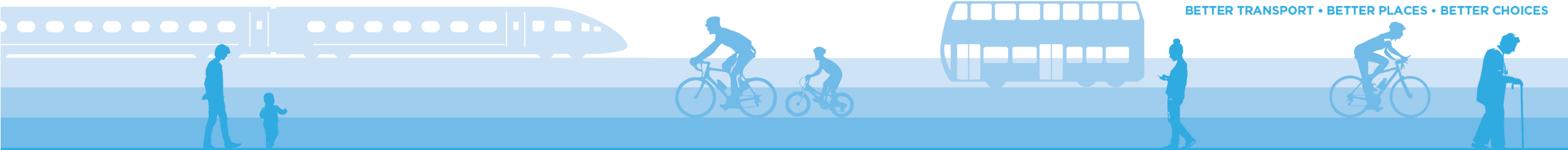
- **Think bigger than big**



 **MRCagney**

BETTER TRANSPORT • BETTER PLACES • BETTER CHOICES

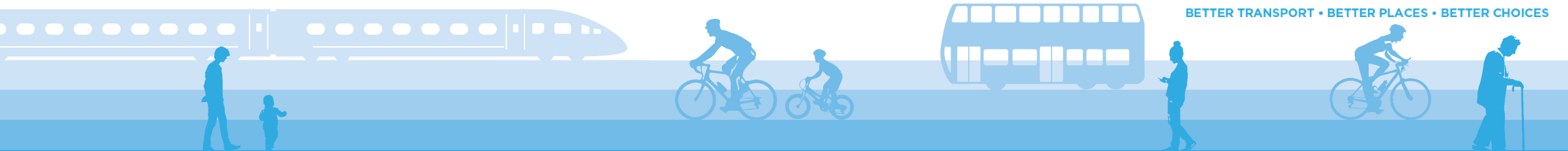
- **Think bigger than big**
- **Many good answers**



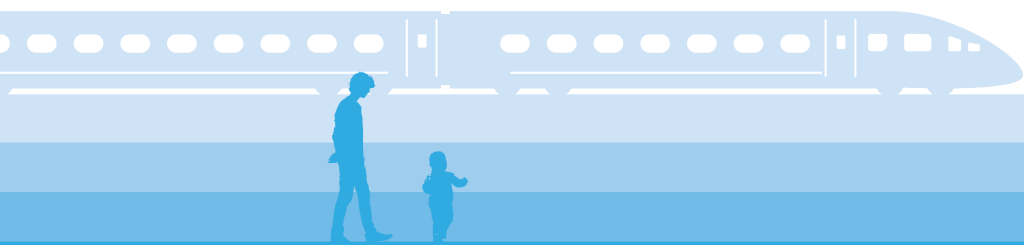
 **MRCagney**

BETTER TRANSPORT • BETTER PLACES • BETTER CHOICES

- **Think bigger than big**
- **Many good answers**
- **Good decisions require good information**



Try for yourself:
transport2030.org



 **MRCagney**

BETTER TRANSPORT • BETTER PLACES • BETTER CHOICES

Modelling the Emissions Impacts of Transport

Beth Schuck

eschuck@mrcagney.com

 **MRCagney**

BETTER TRANSPORT • BETTER PLACES • BETTER CHOICES

