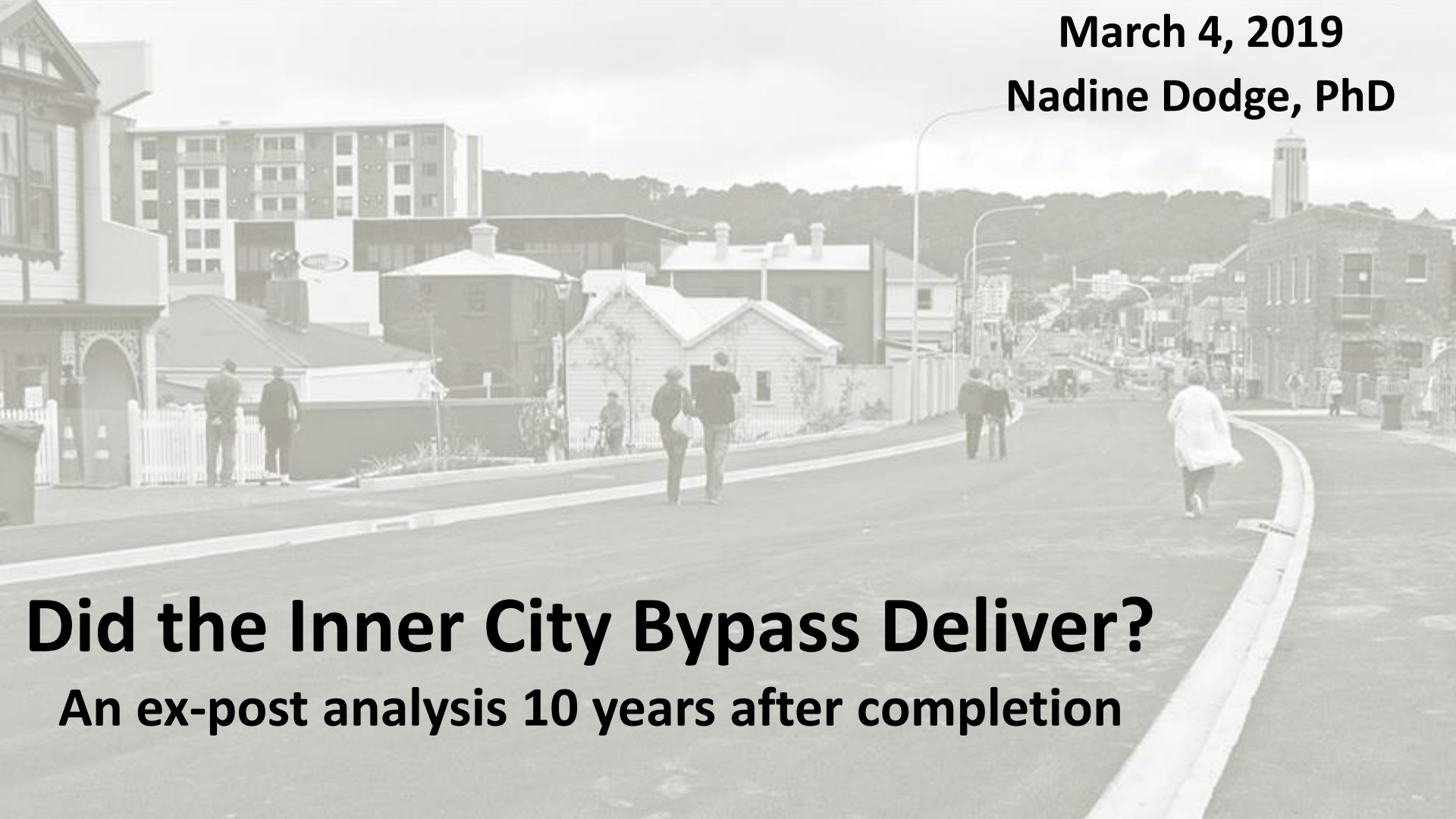


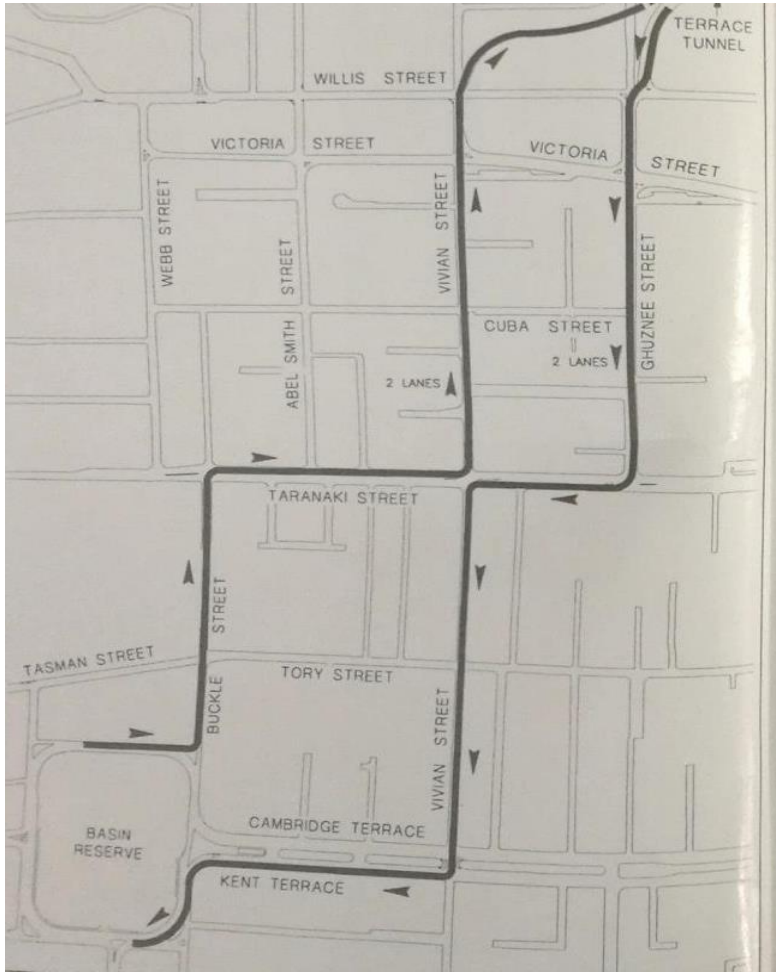
March 4, 2019

Nadine Dodge, PhD

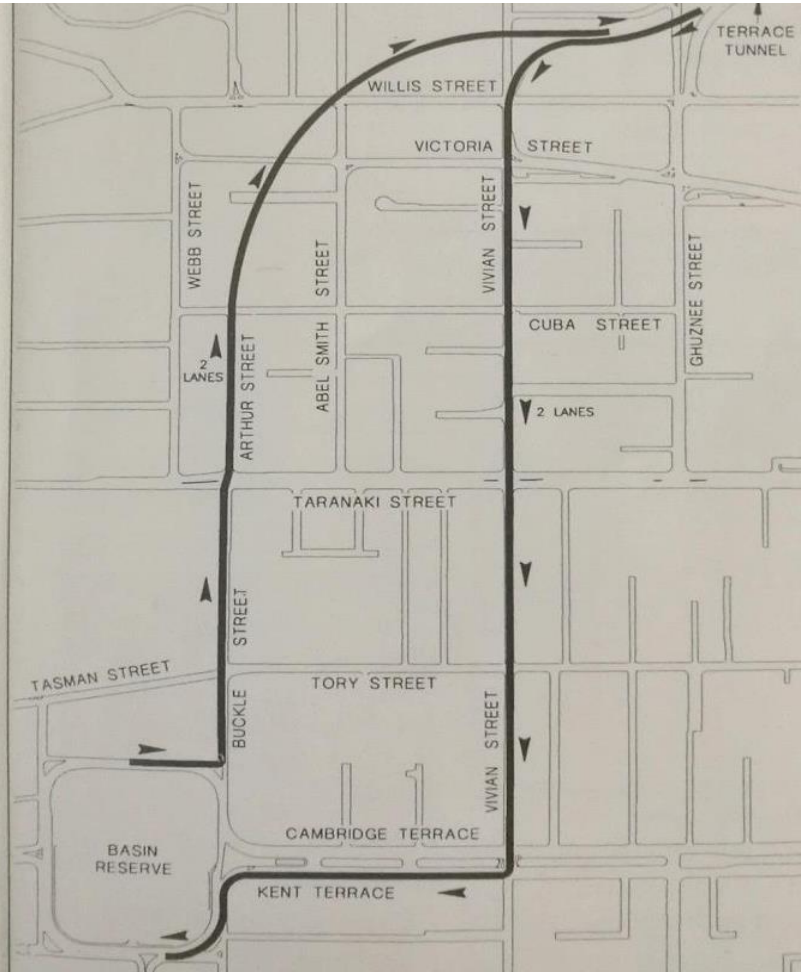
Did the Inner City Bypass Deliver?

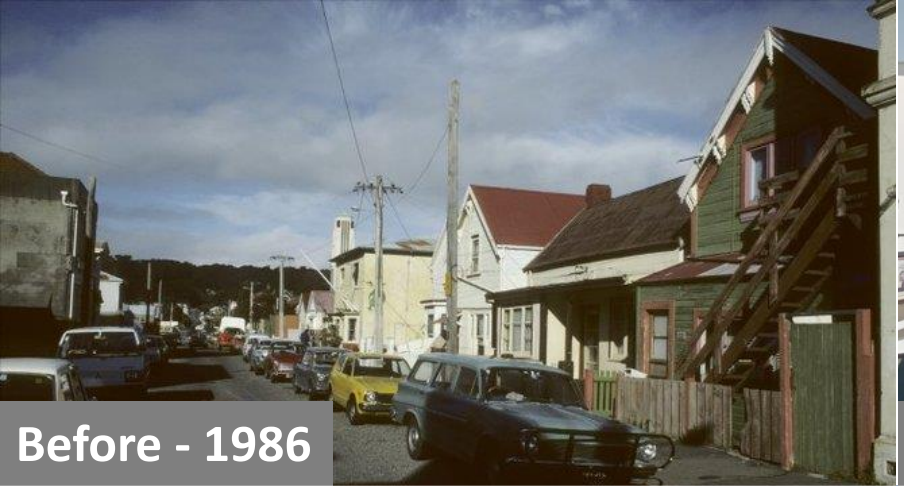
An ex-post analysis 10 years after completion

Before



After




Before - 1986

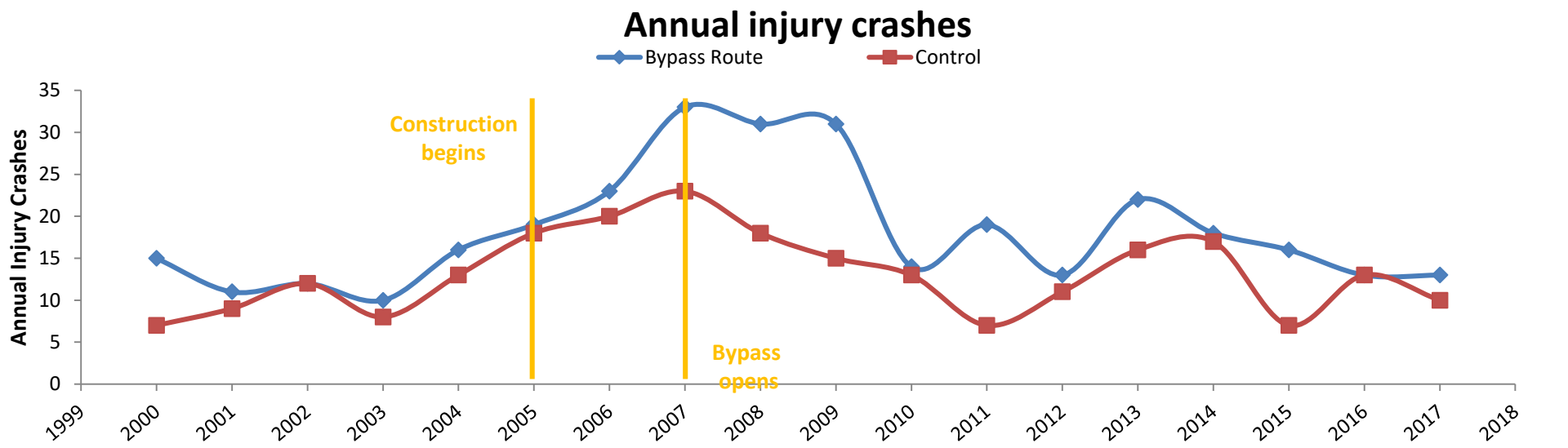

After - 2017

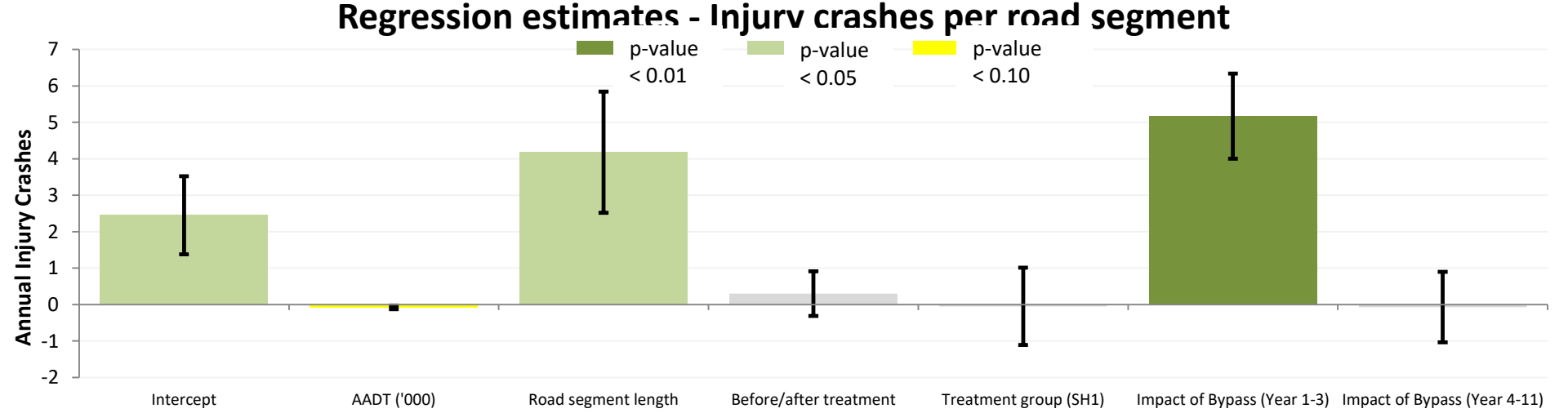

Before - 2000


After - 2017

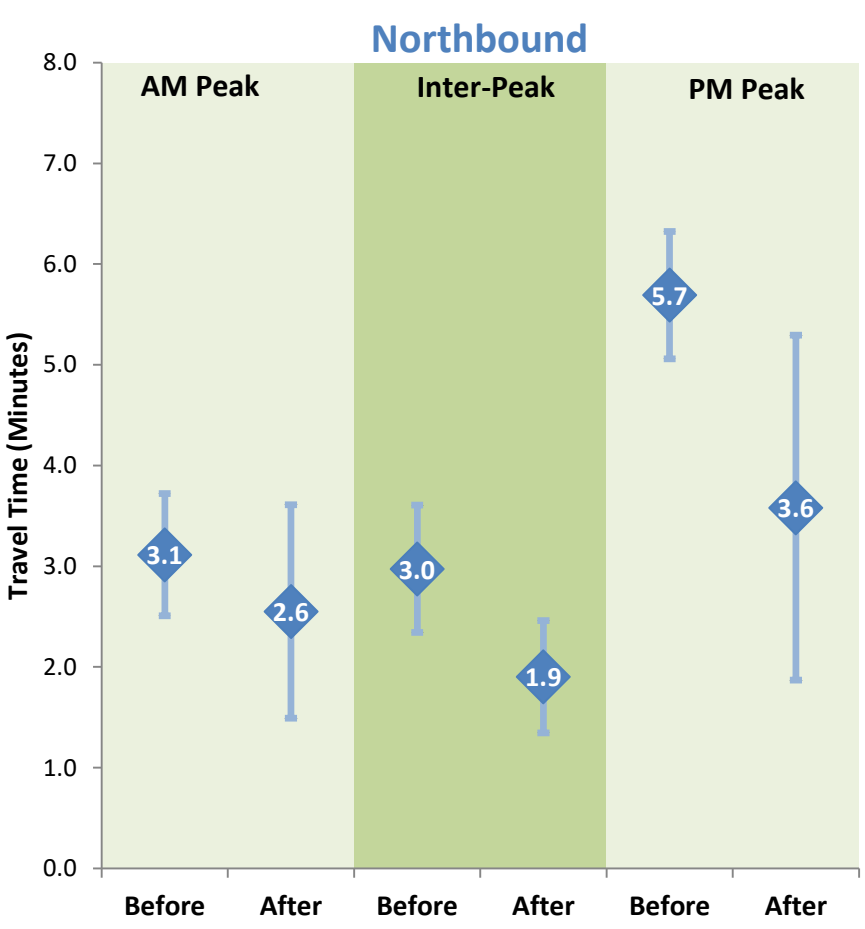
Overview

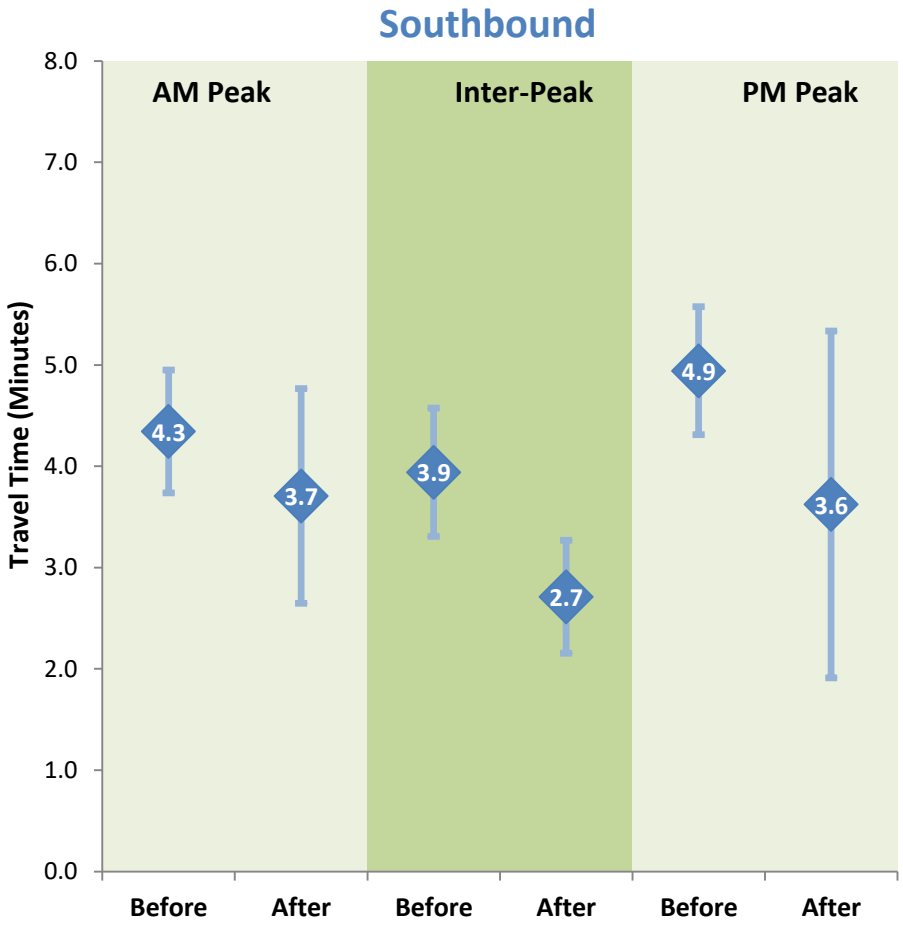
- Methodology:
  - 2004 Project Evaluation Manual
    - in place when funding was approved
  - 2018 Economic Evaluation Manual
    - currently used for assessments.
- Ex-post analysis of:
  - Travel time savings
  - Vehicle operating costs
  - Emissions
  - Safety
  - Overall economic performance


Annual injury crashes
Bypass Route
Control
Annual Injury Crashes
Construction begins
Bypass opens
0
5
10
15
20
25
30
35
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

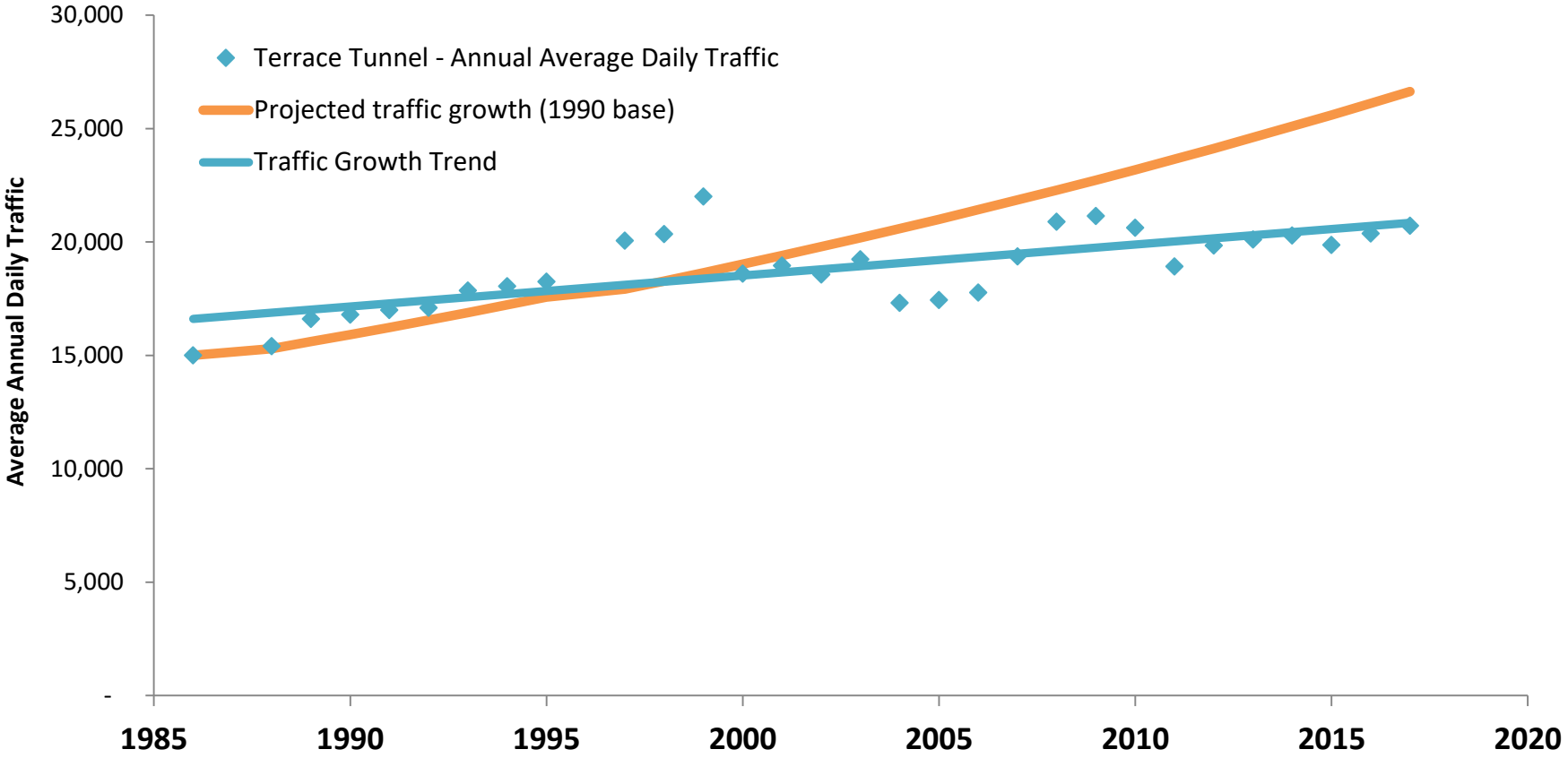

Regression estimates - Injury crashes per road segment
p-value < 0.01
p-value < 0.05
p-value < 0.10
Annual Injury Crashes
7
6
5
4
3
2
1
0
-1
-2
Intercept
AADT ('000)
Road segment length
Before/after treatment
Treatment group (SH1)
Impact of Bypass (Year 1-3)
Impact of Bypass (Year 4-11)

Travel Times Before and After Construction

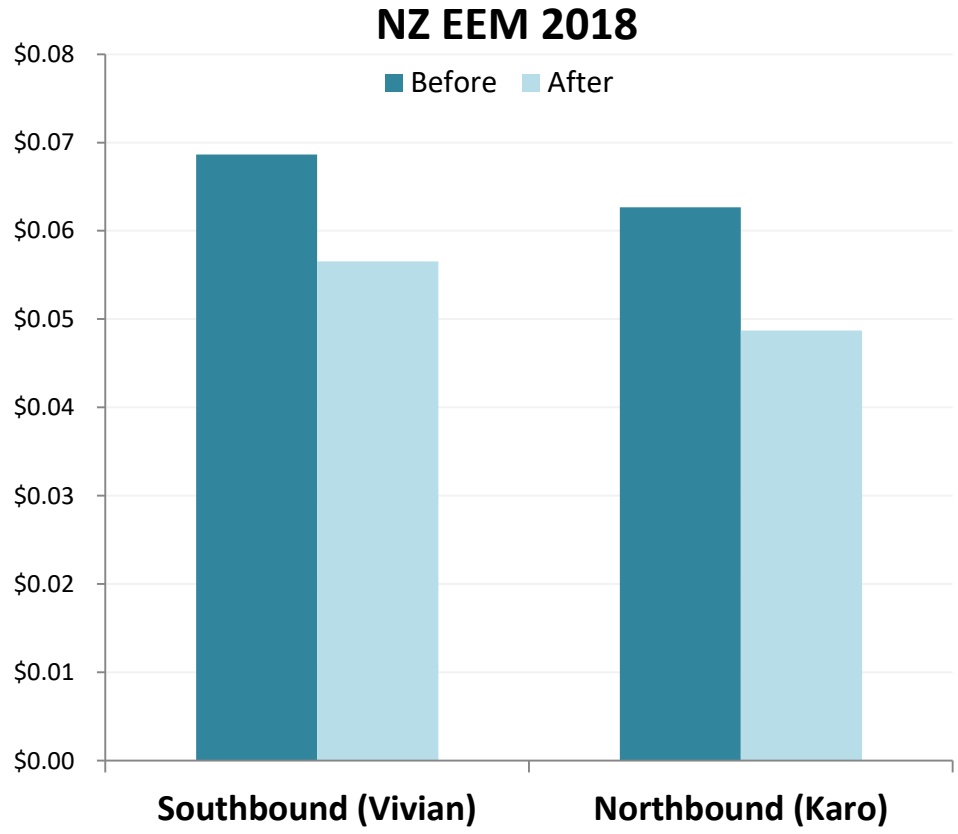


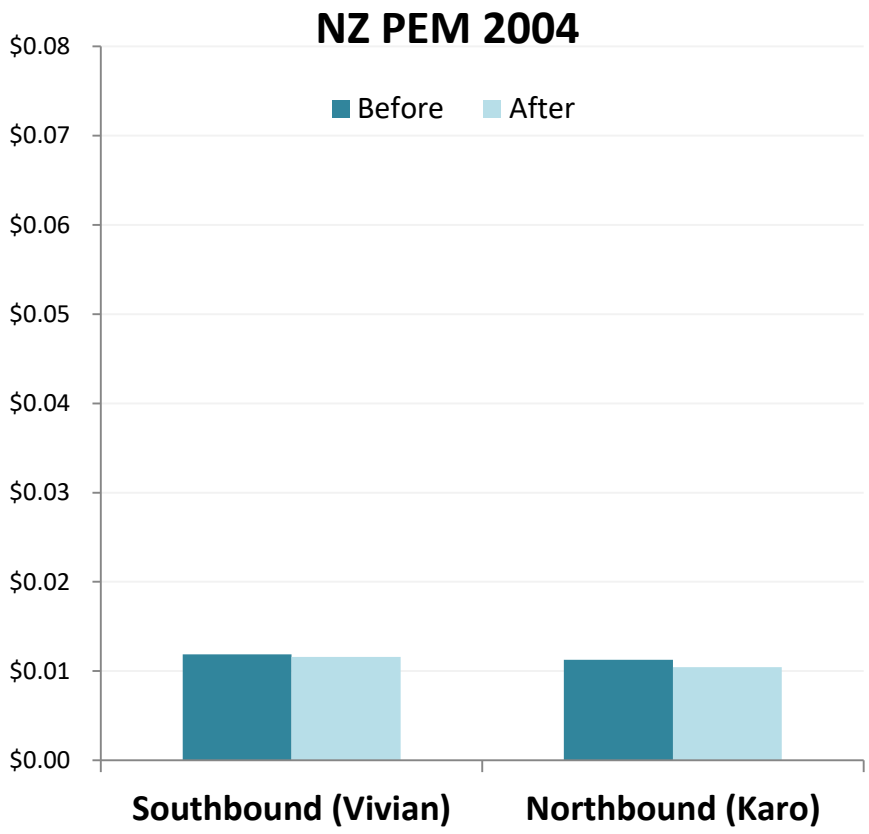


Projected and actual traffic growth

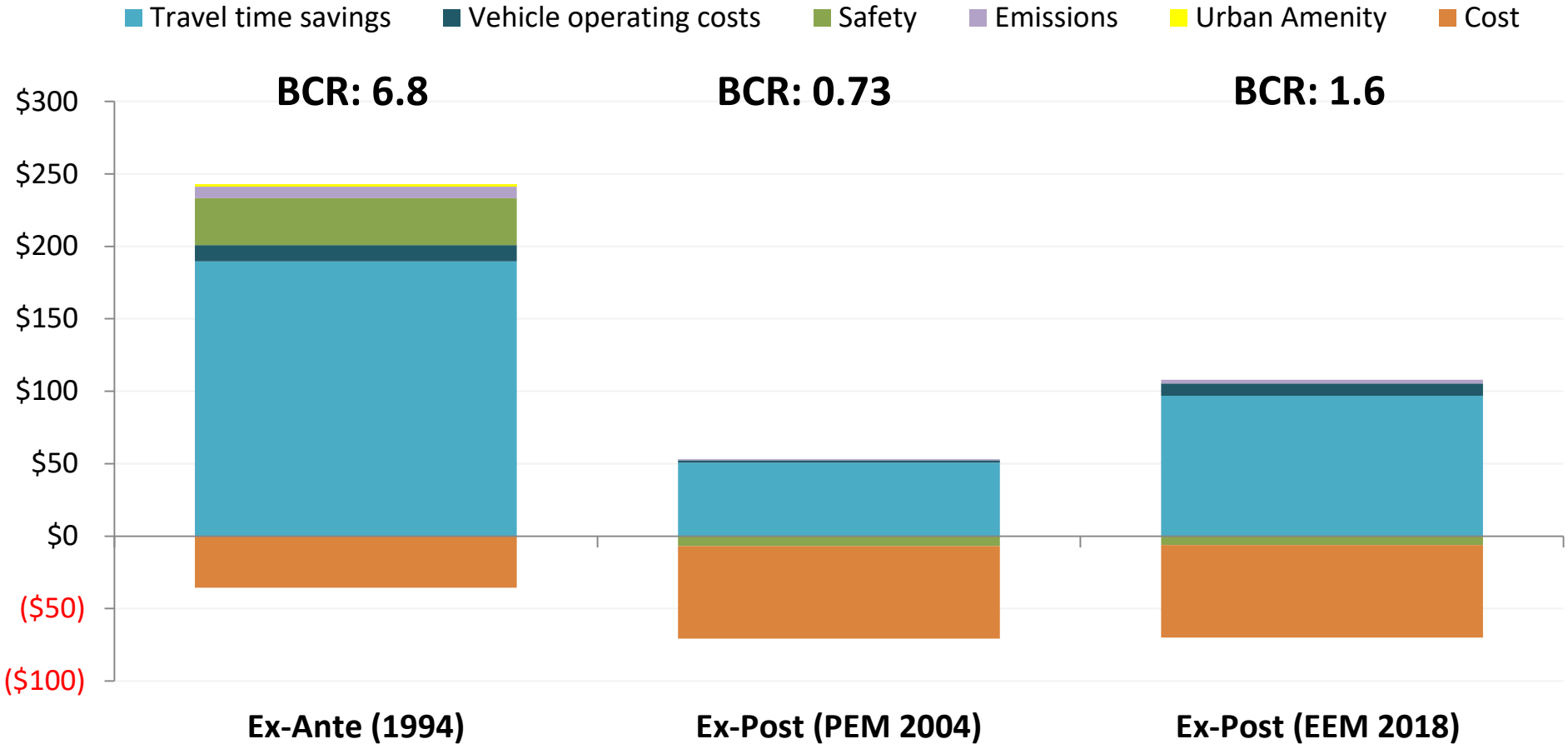


Emissions cost per vehicle on Inner City Bypass

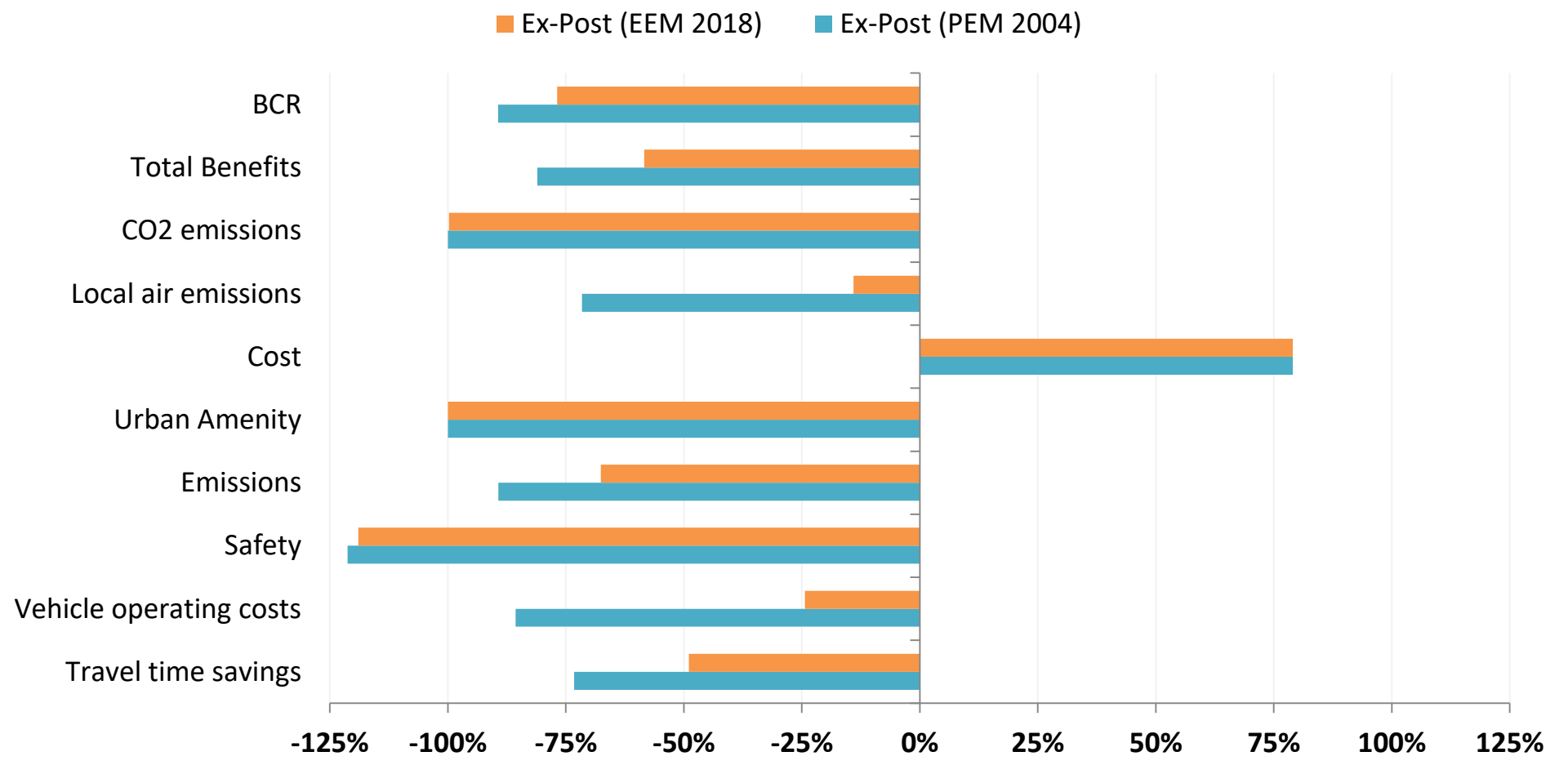




Ex-Ante vs. Ex-Post Benefits and Costs



Percentage Change – Ex Ante vs. Ex Post



Conclusion

- Ex-ante BCR was between 77% and 89% lower than forecast
  - Calls into question the reliability of ex-ante forecasts as a decision support tool
- Routine usage of a +-20% margin of error may be inappropriate
  - actual margin of error appears to be much larger
- Procedures used had a substantial impact on BCR