Christchurch Commercial Vehicle Model

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Traffic Design Group

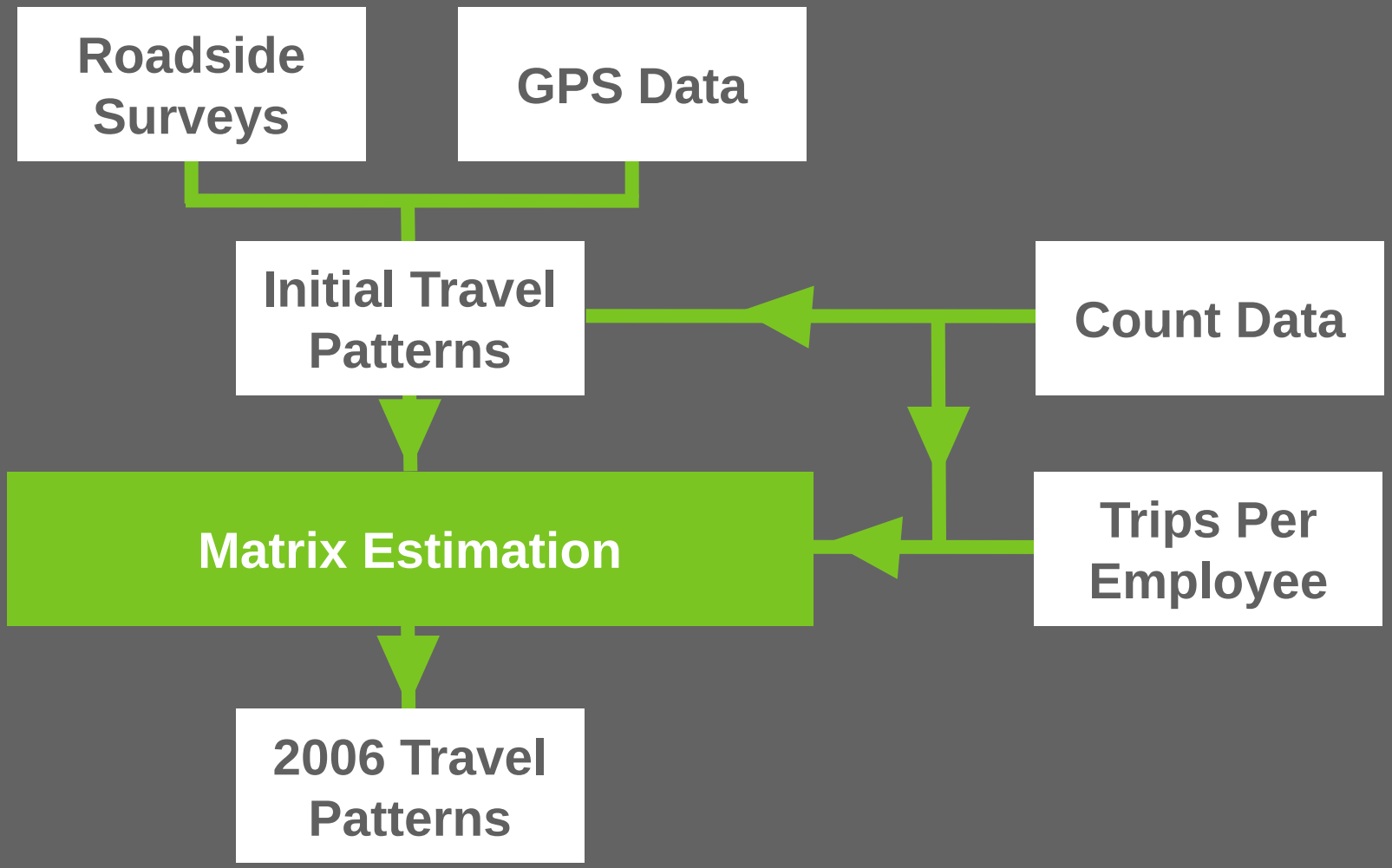
Agenda

- Study Objective
- Data Collected
- GPS Data Processing
- Using the Data

Study Objective

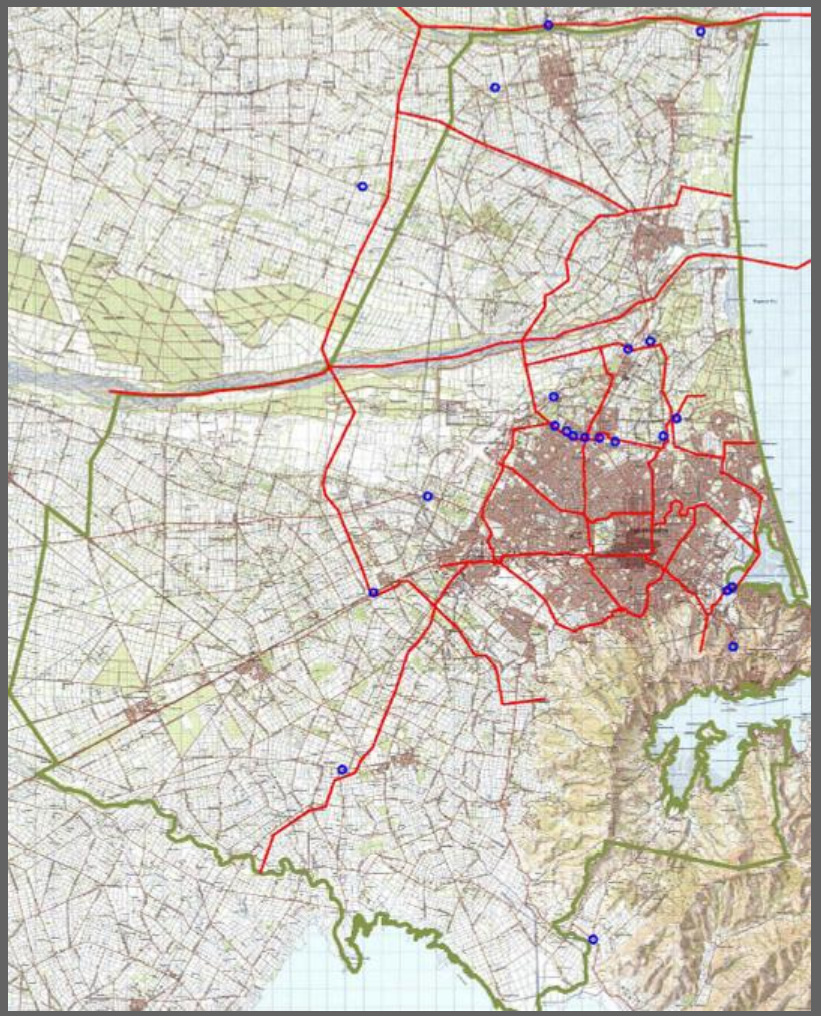
- Build “predictive” model of commercial vehicle movements
- Not just about measuring something now – develop a method of predicting future travel
- Incorporate with Person Model - Christchurch Transportation Model (CTM)
- Study area of Greater Christchurch

Data Collected



Data Collected - RSI

- 22 RSI sites in total
- 8 external sites
- One direction sampled
- 12 hours (continuous)
- All vehicles sampled



Data Collected - RSI

Data Collected - RSI

- 30,000 interviews (1,200 medium + heavy)
- 30% sample overall (17% - 81%)
- Methods:
  - Roadside bay + Interview
  - Stop-in-lane + Interview
  - Postcard-in-lane
  - Video survey + ANPR capture + Postcard

Data Collected - ANPR

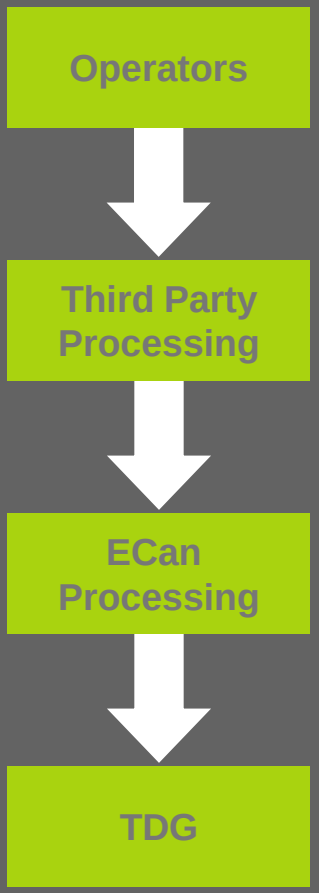
- Needed for busy sites
- Issues:
  - Maintained good sample rates
  - Less disruption to traffic -> positive public feedback
  - Concerns over “big brother” not realised
  - Potential bias for non-response of large companies

Data Collected - GPS

- 5 Companies
- All used the same GPS system
- Up to 6 months of data
- 130 vehicles sampled in total
- ChCh fleet approx 2,500 (5% sample)

Data Processing - GPS

- Concerns over confidentiality
  - Could ECan check vehicle speeds?
- Solution:
  - Multiple groups involved
  - Provide trip start time but no end time
  - No companies or vehicles identified
- How to define a trip?
  - GPS polls every 2-5 minutes



Data Processing - GPS

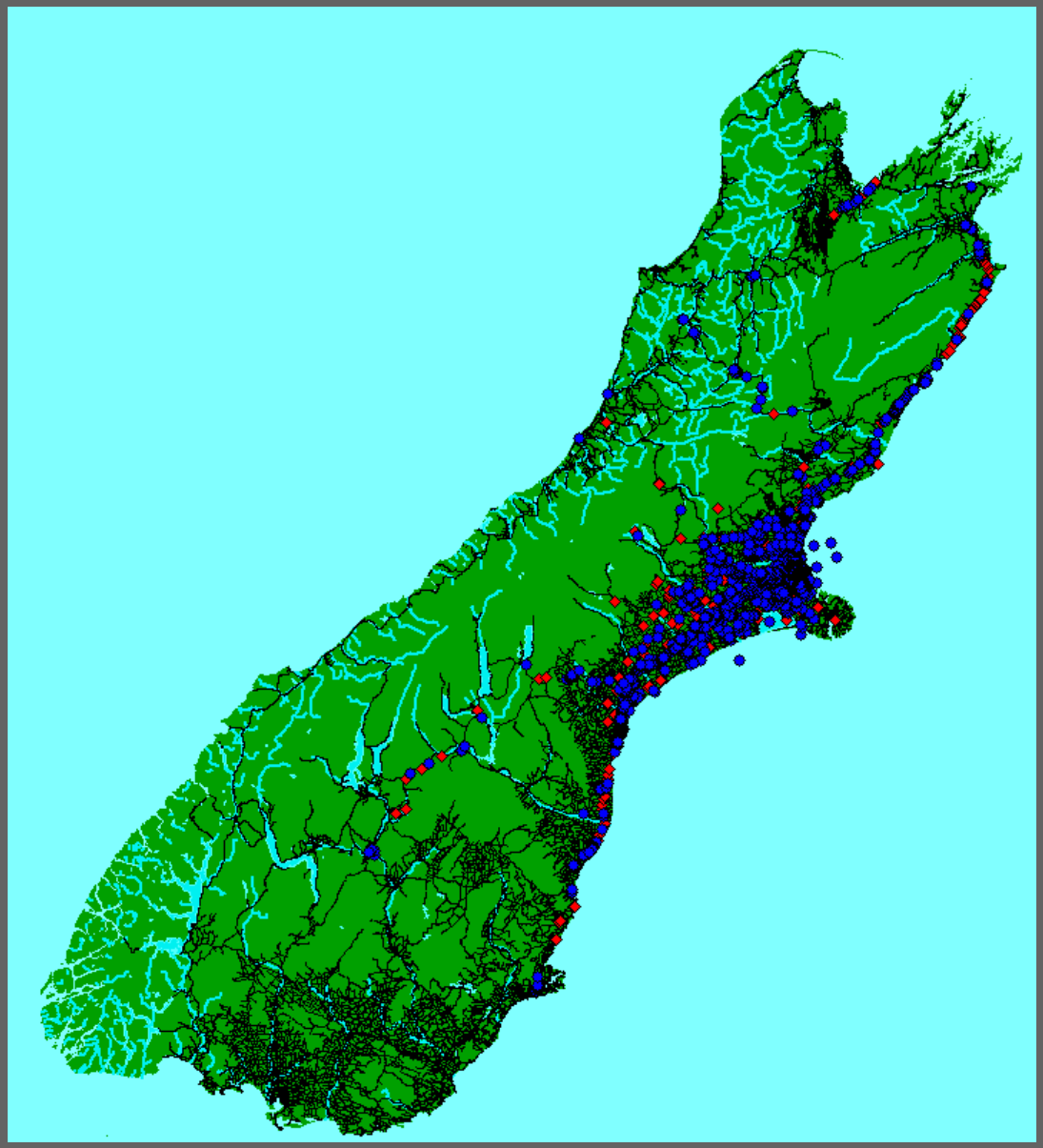
START

- Ignition on
- 1st record of movement after a period of idling

END

- Ignition off
- At the beginning of a period of idling

At speeds below 20kph, NAVMAN assumes the vehicle is stationary



Data Processing - GPS

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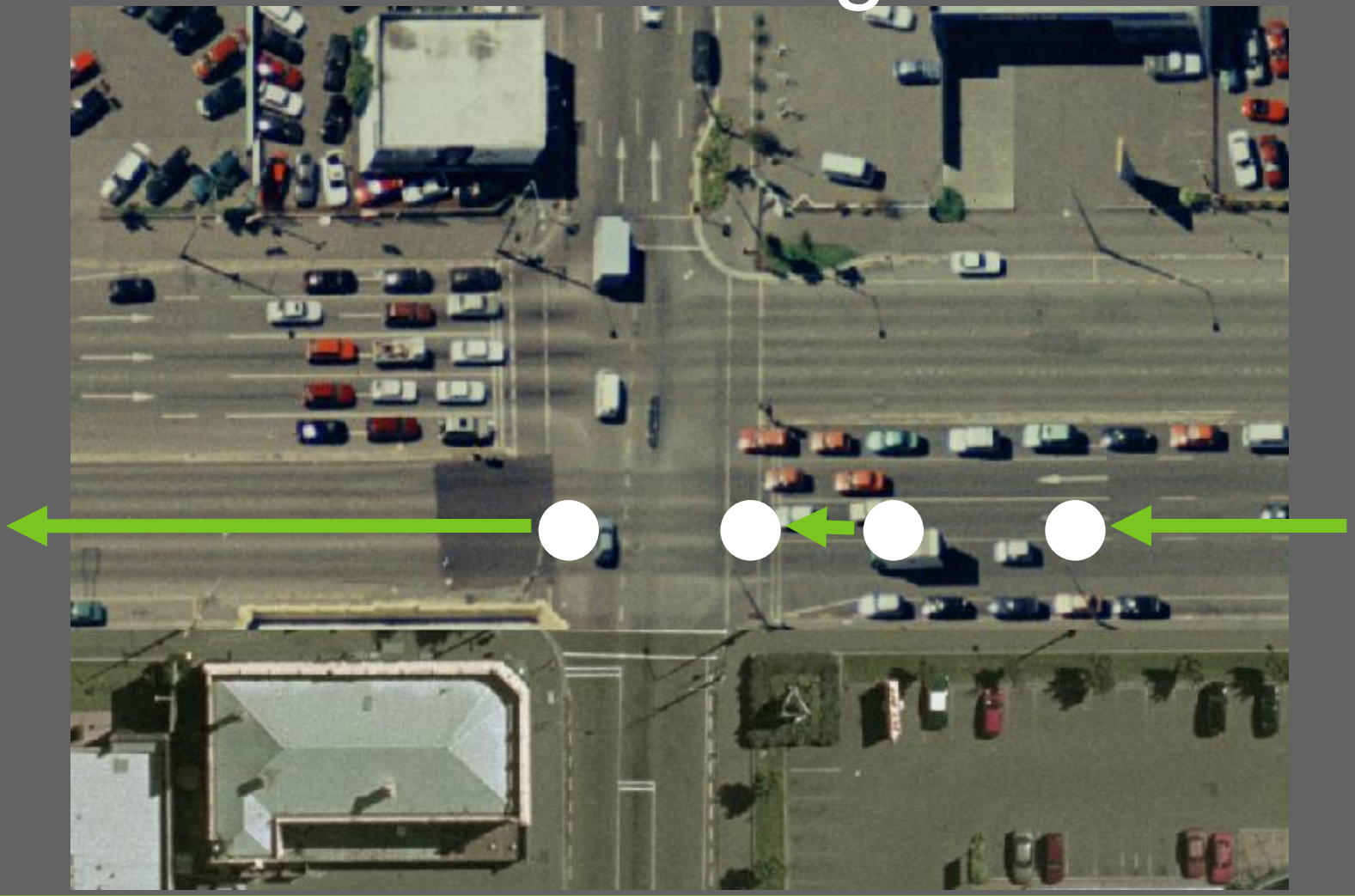
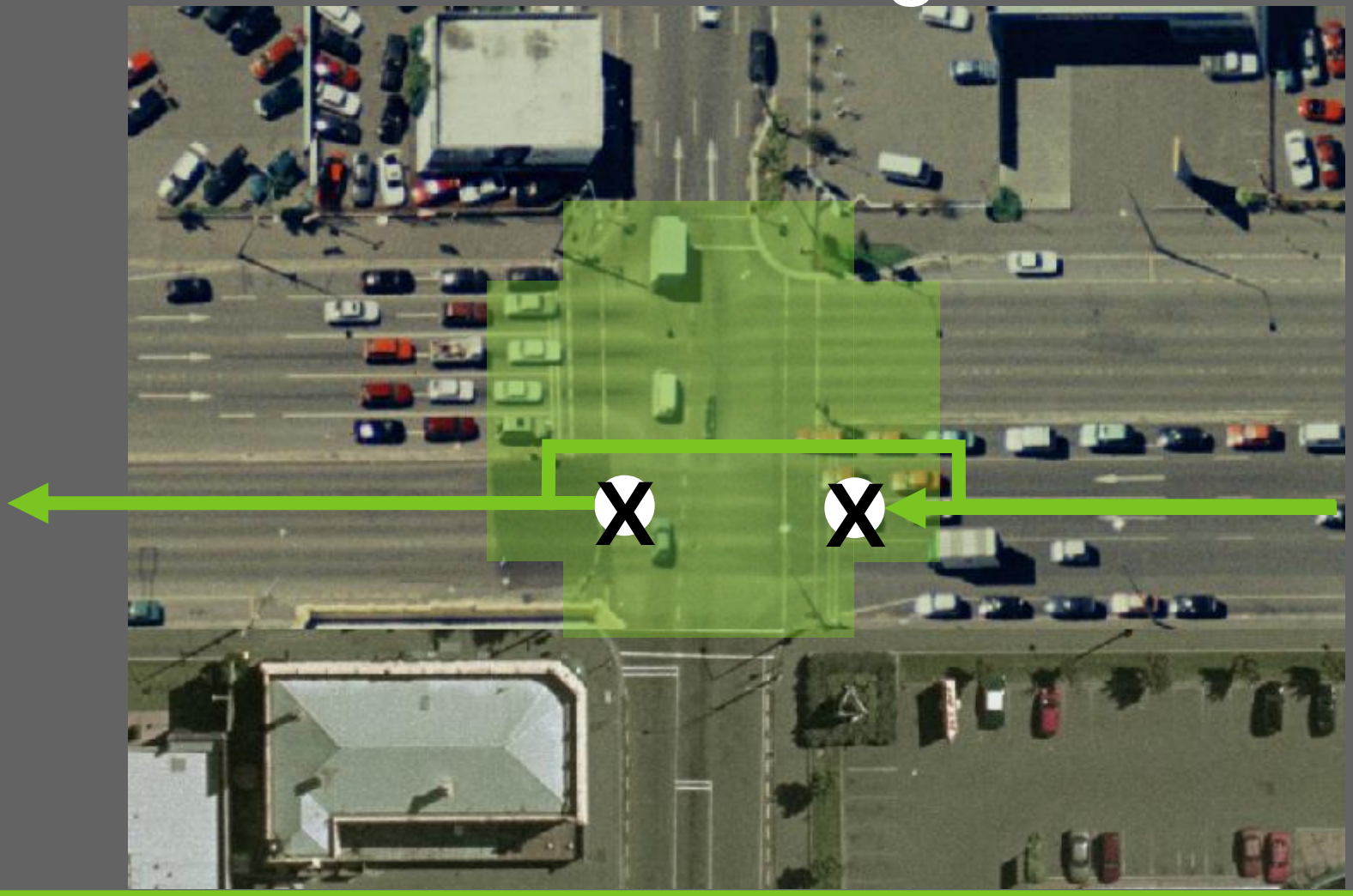


Data Processing - GPS

Solution – GIS buffering

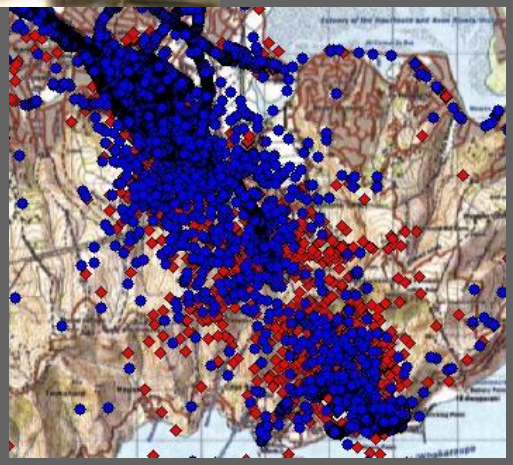
- Assume no deliveries made within (say) 30m of intersection of two road centrelines
- Then link any removed point back to the previous point

Data Processing - GPS

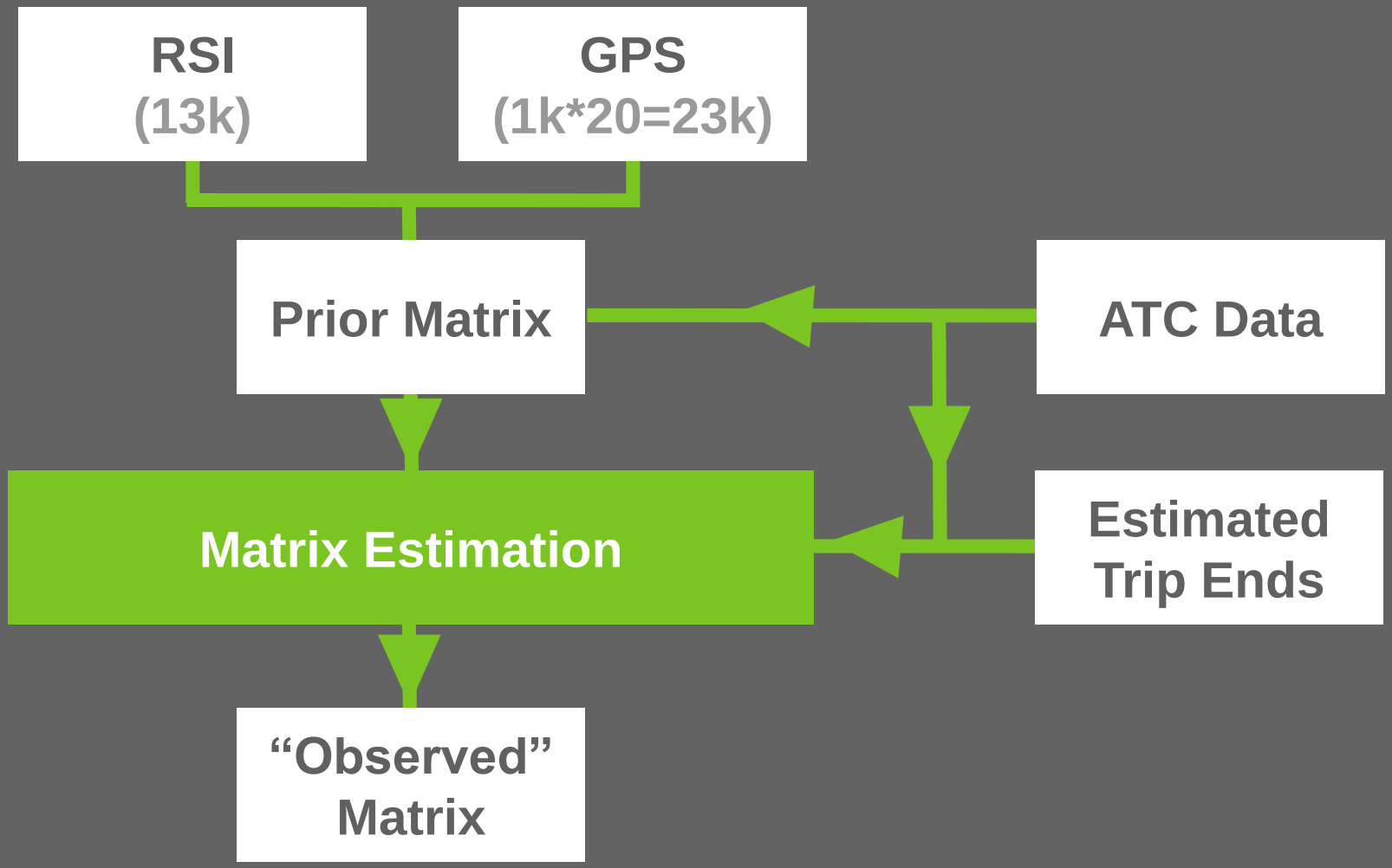


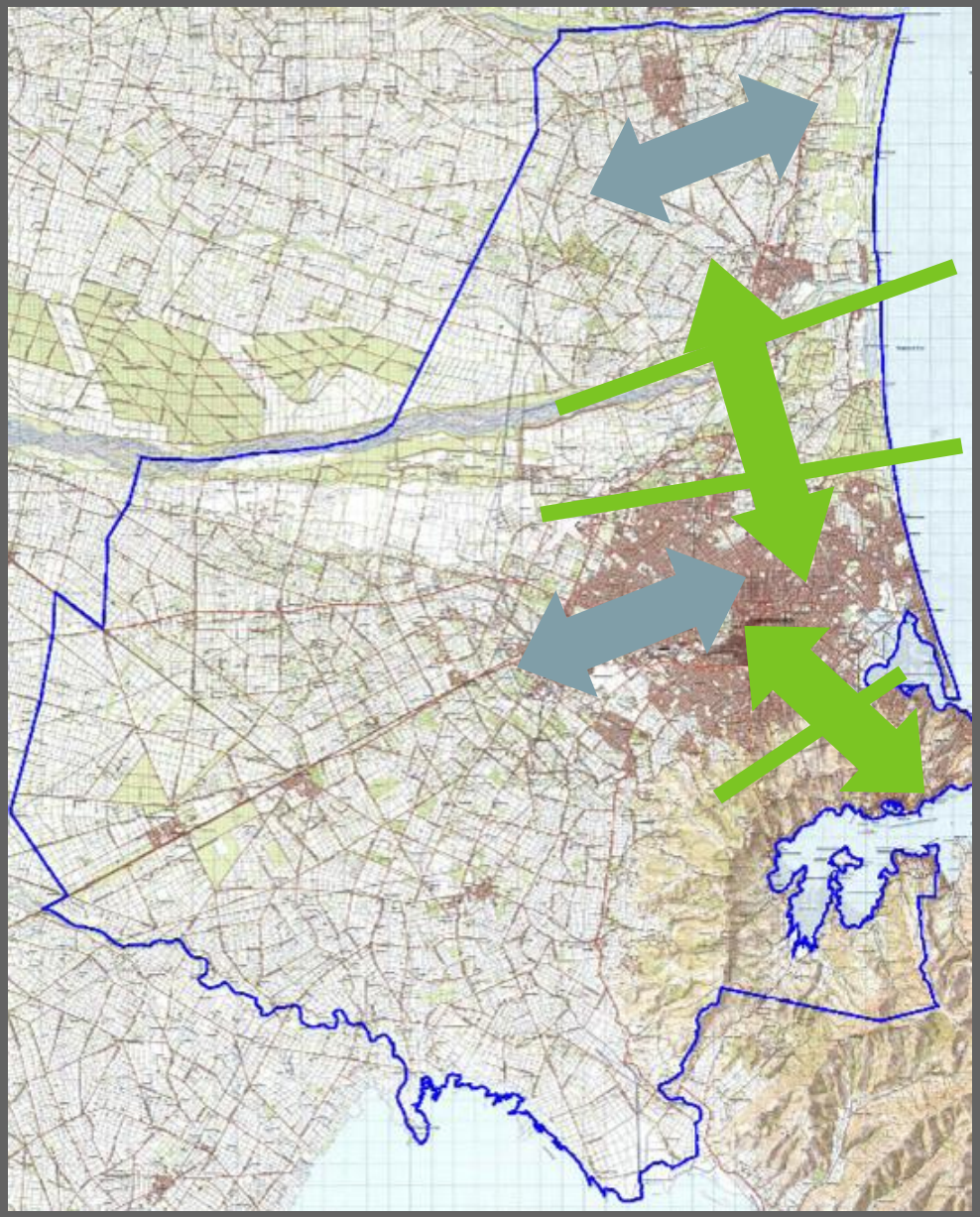
Data Processing - GPS

- Remove trips:
  - in ocean
  - at traffic lights (slow moving)
  - GPS wander around Port Hills



Using the Data

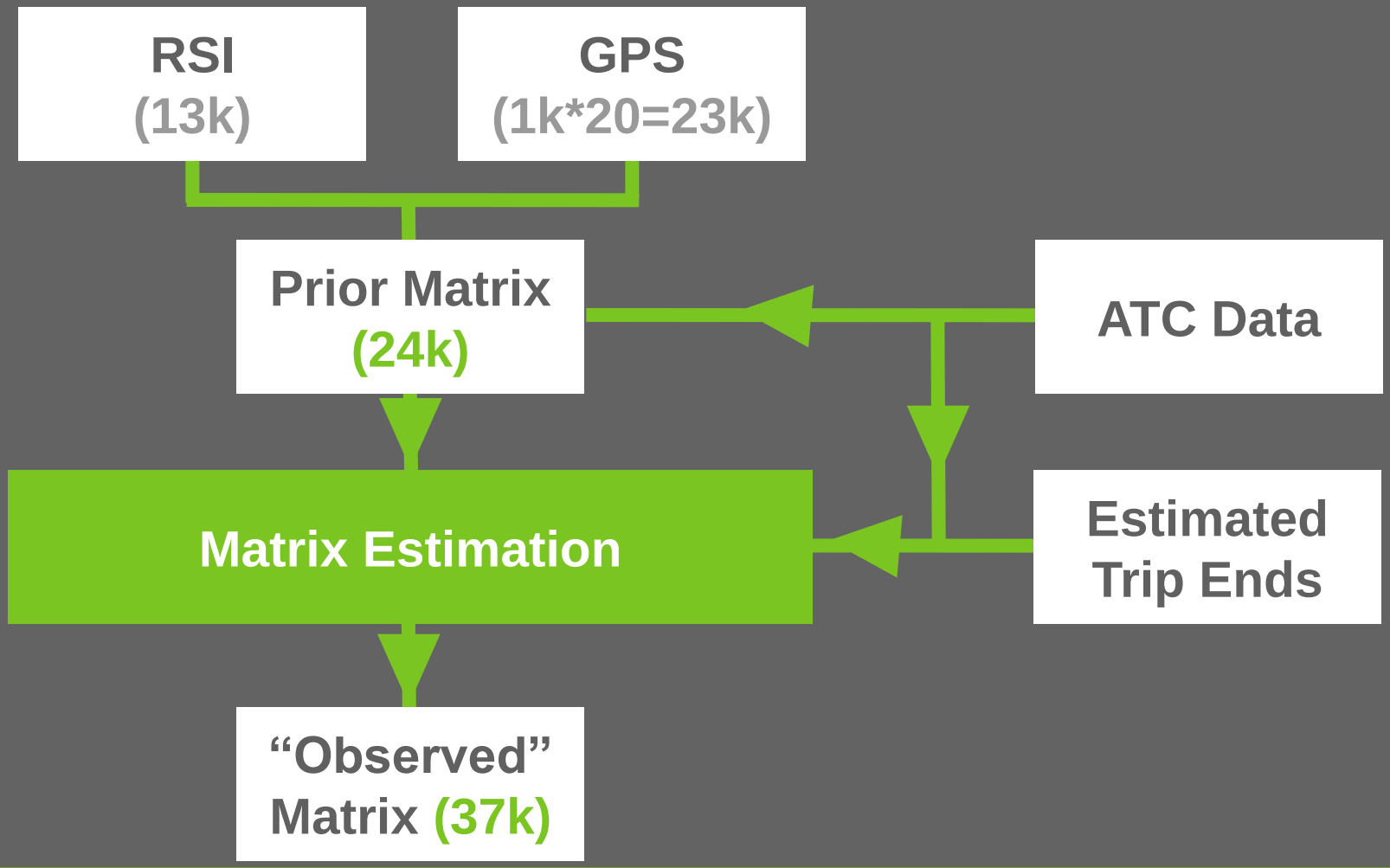




RSI

GPS

Using the Data



In Summary

- Viable process established
- Industry buy-in initiated
- Issues identifying trips from GPS data
- Larger sample of GPS data beneficial
- Improving understanding of Fleet