NTNU

Norwegian University of Science and Technology

Using TomTom Speed Data in Transport Model

Zakiya A Pramestri, Trude Tørset

MoST

Trøndelag fylkeskommune
Tröndelagen fylhkentjielte

green 2050

Miljøpakken
– bedre by

Statens vegvesen

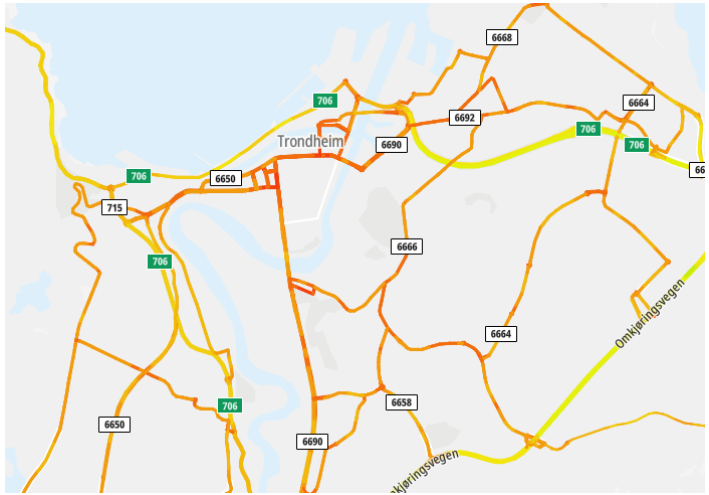
Using Tomtom Speed Data in Transport Model

Currently, what transport model is used in Norway?

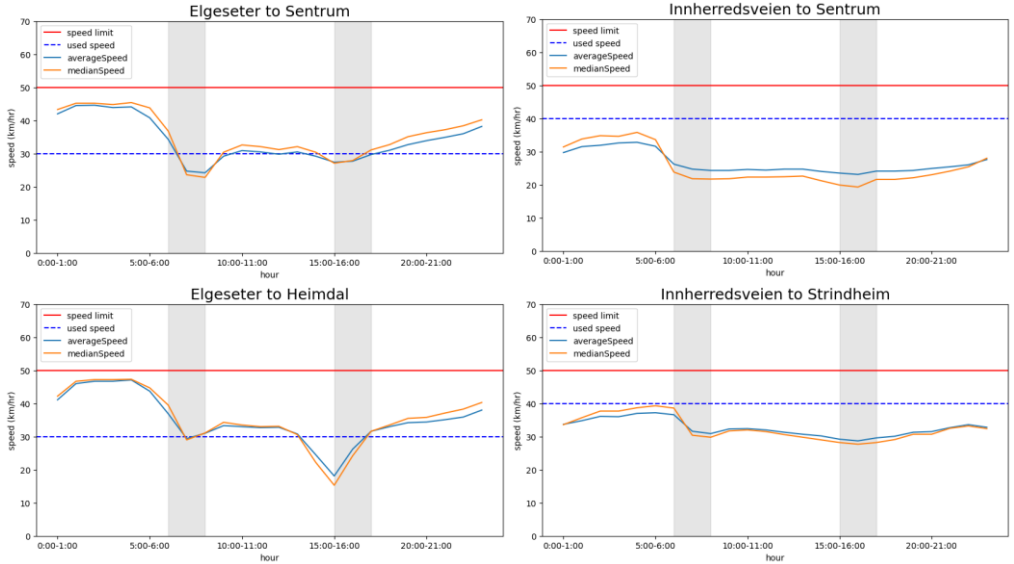
- Regional Passenger Model (RTM) is used to model **travel demand**
- Travel demand is calculated by:
  - Mode
  - Trip purpose
- Output:
  - Traffic volume assignment in road network
  - Total trip estimated per time period

What is the problem of RTM?

- Estimated **travel time** in the model is not capturing:
  - Delay by traffic load in intersections
  - Dynamic of traffic pattern
- What is the impact?
  - Too **optimistic for car trips,** despite interventions for car restriction
  - Less sensitive to **non-car demand**

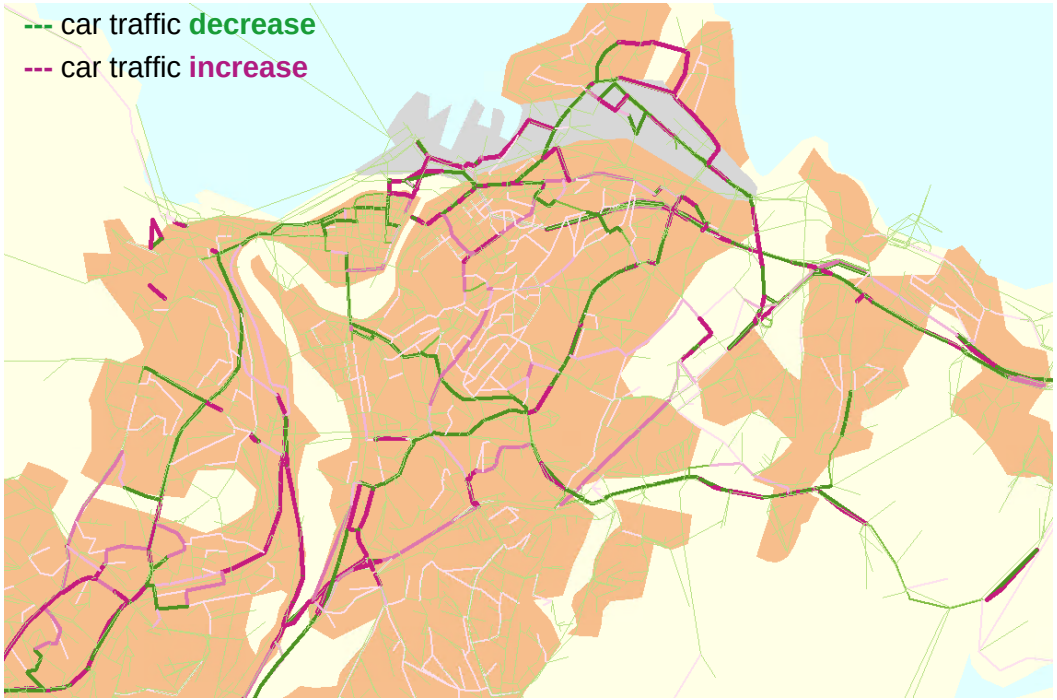


Observed Speed Data from TomTom (07:00-08:00)

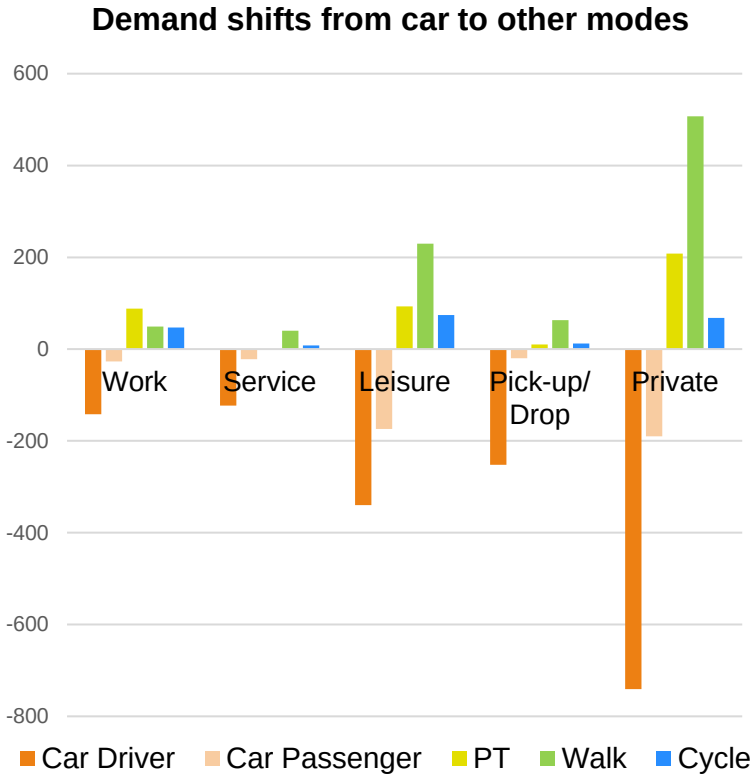


TomTom Model capture changes to more sustainable mode

Compare to basic scenario, the model using TomTom speed shows overall **less trips**. It also shows that people **shifting from car** trips to public transport, cycling and walking. Significant decrease of car trips were observed in city center.



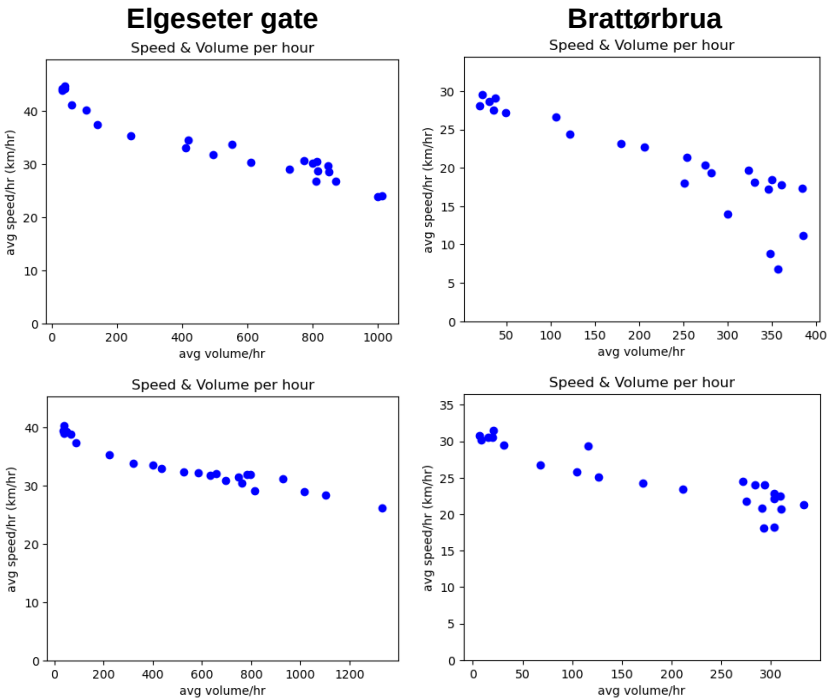
Map of Car ADT Differences



TomTom data has potential to fine-tune model in urban areas

When combine TomTom speed data with Volume data from traffic count, dynamic relationship of Volume-Speed can be observed.

Some variations of the dynamics observed:



Conclusion

- Observed speed data from Tomtom has potential to be used in transport demand model
  - It captures the **dynamic of traffic** → impact **travel demand**
  - There is a need to observe in more detail level in urban area

Further work

- Explore more about **variation** observed by Tomtom data :
  - Seasonal based on weather, holiday
  - Urban vs sub-urban area
  - Road type
  - Intersection type

- Investigate methods to involve this dynamics of speed in the model – without hard-coding
  - **Data-driven volume-delay-function** for different categories