Anticipating Travel Demand Impacts of Automated Vehicles

Charlie Howard • April 2017

Some points from a national conference on how to address automation in plans

- Don't Panic, but be diligent
- Be skeptical of forecasts using current models
- Key short term action: pay close attention to demo projects, industry progress, and behavioral research.
- Incorporate learning on real behavior into future planning work

Scenario Testing

- Can't predict actual values, but we can define reasonable bounds
- Model "levers" we can pull today:
  - Capacity impacts
  - Travel time perception
  - Parking costs
  - Per-mile pricing

Scenario Concepts

1

"AVs increase network capacity."

- 30% capacity increase on freeways, major arterials

2

"Important trips are in AVs."

- 30% capacity increase on freeways, major arterials
- Travel time is perceived at 65% of actual travel time for high value of time household trips (>$24/hour)

3

"Everyone who owns a car owns an AV."

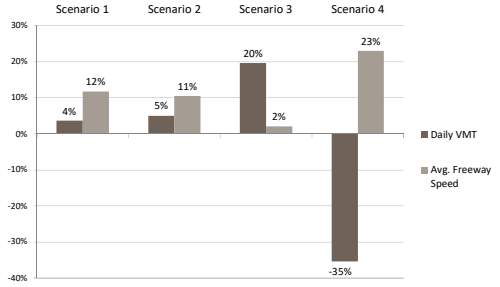
- 30% capacity increase on freeways, major arterials
- Travel time is perceived at 65% of actual travel time for **all** trips
- 50% parking cost reduction

4

"All autos are automated, with all costs of auto use passed onto the user."

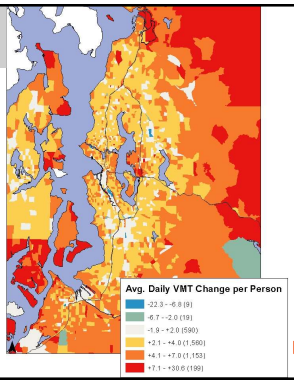
- Cost per mile is $1.65

% Change in VMT and Speed (vs. Base)



VMT per person increase

Increase in
Average VMT/Person
(Scenario 3 vs. Base)



An Uncertain Future

If we **vary the input assumptions** to the model based on plausible outcomes resulting from automated vehicles, **strikingly different transportation futures** will emerge.

Next Steps

Current model is insufficient!

- Understanding **current** influences of real-time information and other technology on demand
- Shared-ride/taxi mode
- Stated preference survey
- Automated vehicle mode choice in model