

AVS, TRANSIT & EQUITY

A DC REGION CASE STUDY

FEHR & PEERS

May 9, 2019

Urbanism Next Conference

This project was completed in partnership with the Union of Concerned Scientists.

AVS + TRANSIT

How do they interact?

- Compete
- Complement
- Contribute



AVS + TRANSIT

How do they interact?

Compete

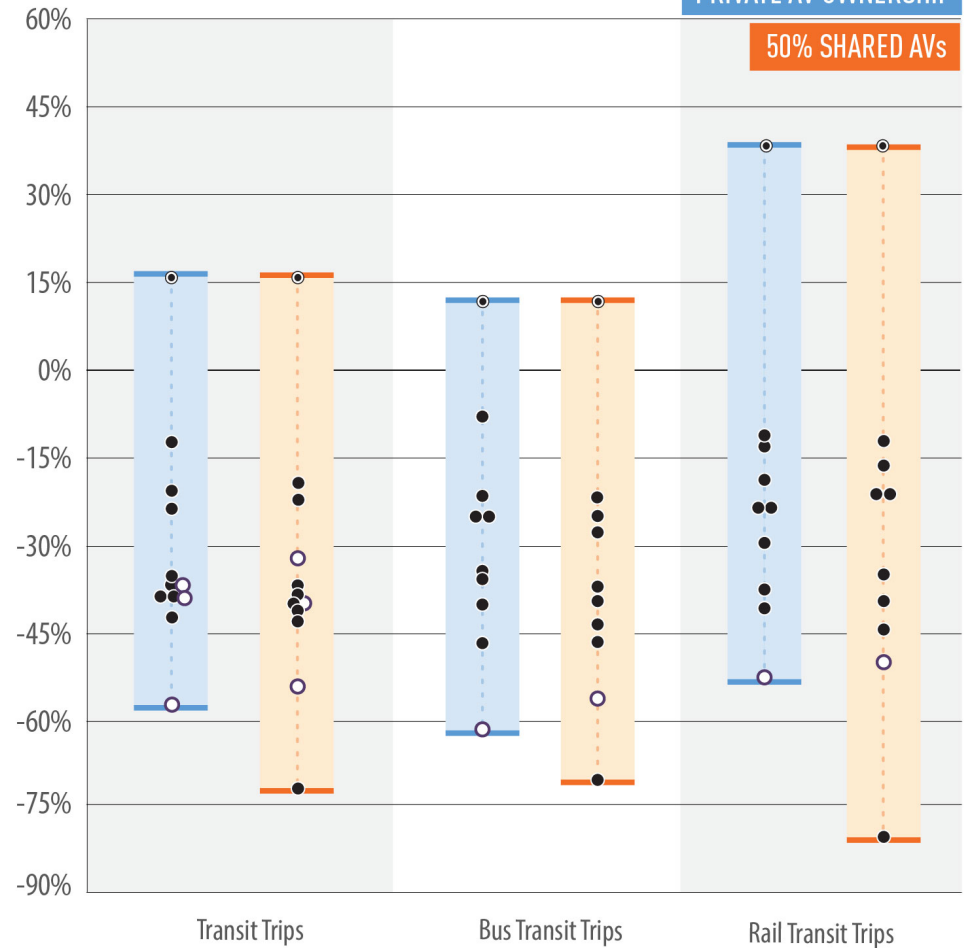
TRANSIT TRAVEL TRENDS

How Will Autonomous Vehicles Influence the Future of Travel?

- Trip-Based Model
- Activity-Based Model
- ◉ Limited Sensitivity Model

PRIVATE AV OWNERSHIP

50% SHARED AVs



AVS + TRANSIT

How do they interact?

Complement



<https://communityimpact.com/austin/northwest-austin/top-stories/2018/06/25/autonomous-shuttles-will-be-driving-in-downtown-austin-this-fall/>

AVS + TRANSIT

How do they interact?

Contribute



Image source:

<https://www.curbed.com/2017/11/6/16614986/zhuzhou-china-art-rail-bus>

CASE STUDY

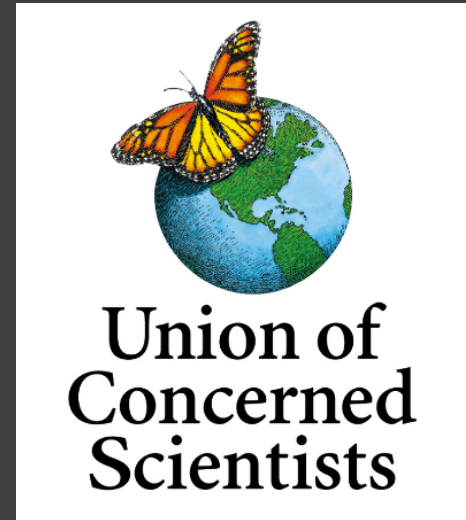
AV Impacts on Transportation Equity in the DC Metropolitan Region

Report

Where Are Self-Driving Cars Taking Us?

TRB Paper

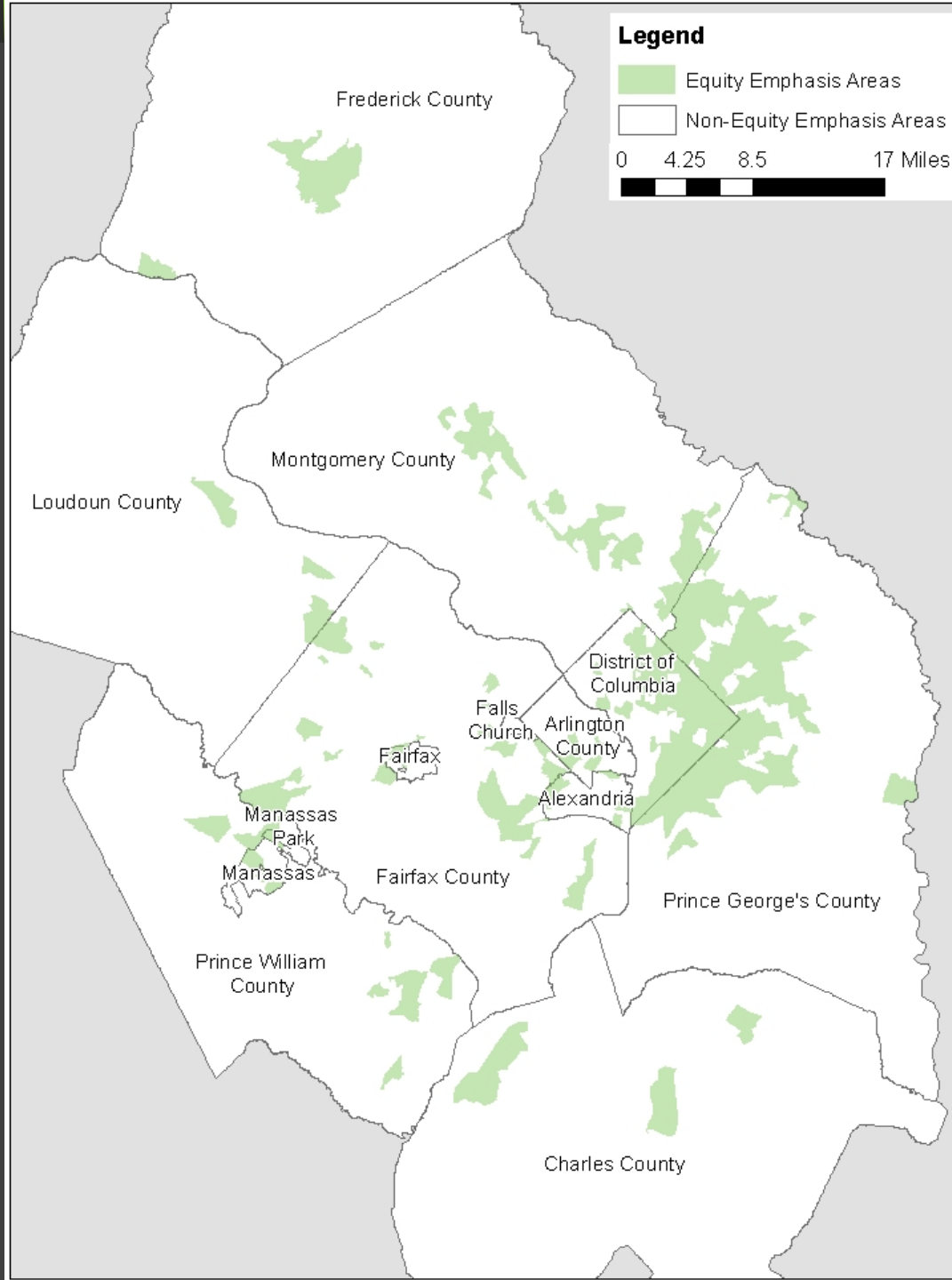
Examining the Equity Impacts of Autonomous Vehicles: A Travel Demand Model Approach



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KEY QUESTIONS

- How will AVs impact travel in the region?
- Are outcomes different in underserved communities – both today and under different AV futures?
- Do AVs mitigate, maintain, or exacerbate existing differences?



APPROACH

DC regional travel demand model

Adjust auto mode to mimic AVs

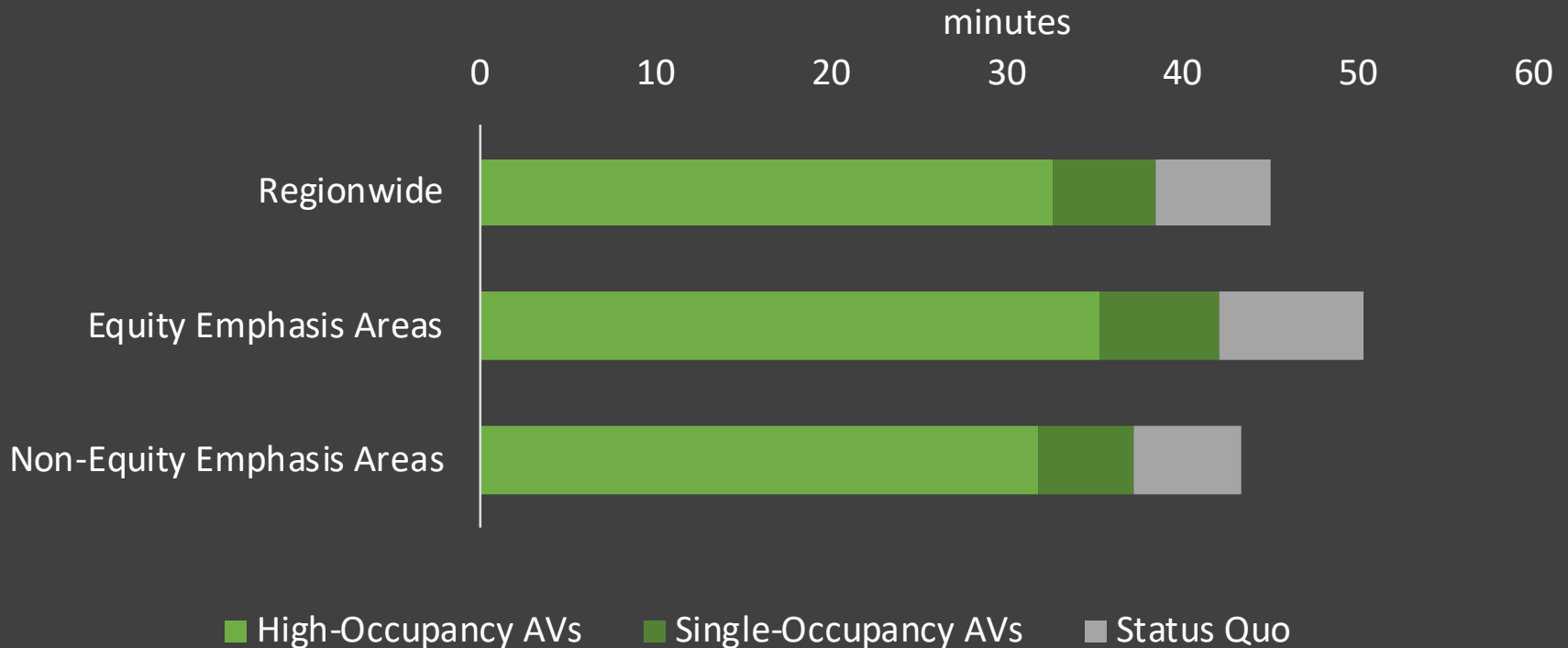
Adjust transit & vehicle occupancy
to develop different AV scenarios

Assess regional, equity areas, and
affluent area outcomes for key
performance measures



TRAVEL TIMES

AVs could reduce travel times regionwide and reduce disparities – particularly when AVs are shared



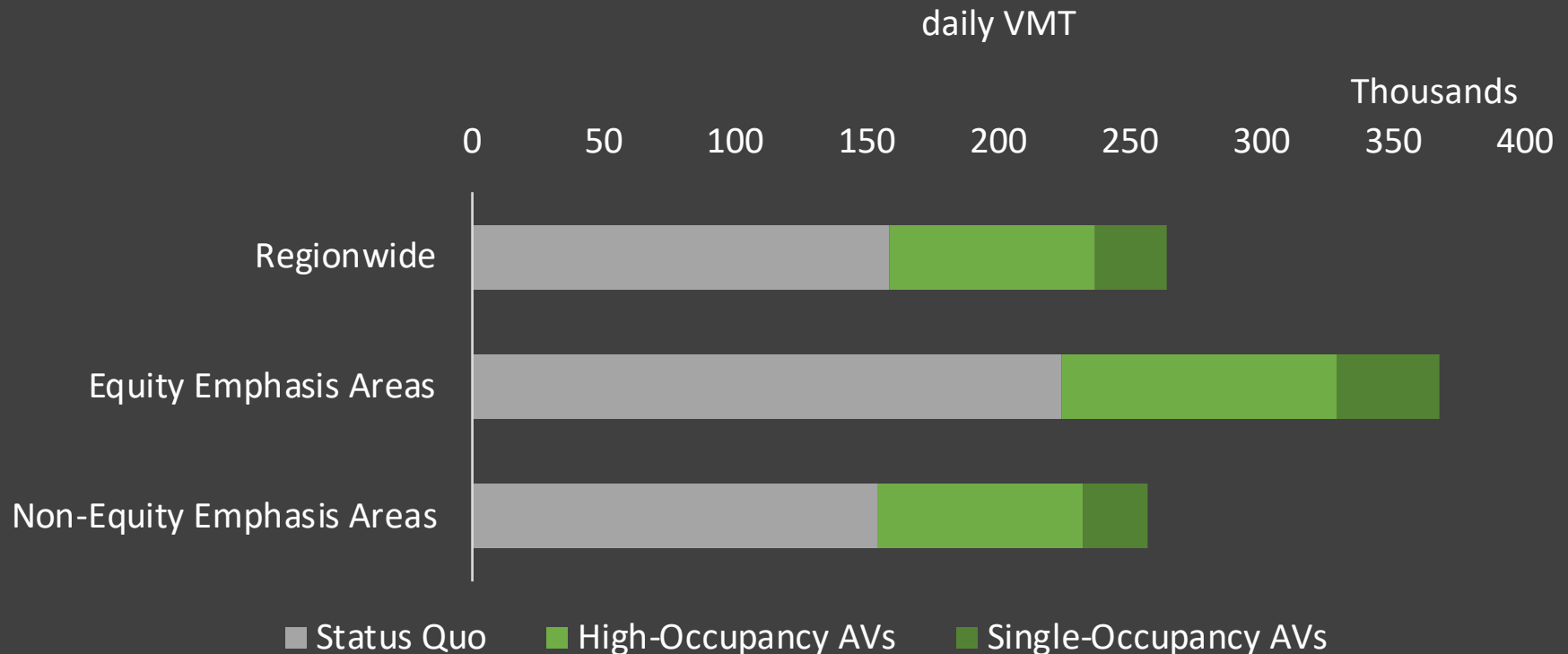
JOB ACCESSIBILITY

Equity Emphasis Areas have better accessibility due to central locations; advantage increases with AVs



EXPOSURE

AVs could increase vehicle miles traveled, increasing collision exposure, as well as exposure to noise and air pollution



RECOMMENDATIONS

- Encourage pooling
- Expand transit
- Electrify AVs

Policy resource

[Union of Concerned Scientists, Maximizing the Benefits of Self-Driving Vehicles \(2017\)](#)

THANK YOU!

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