

TNCs & Congestion

Agenda Item 15



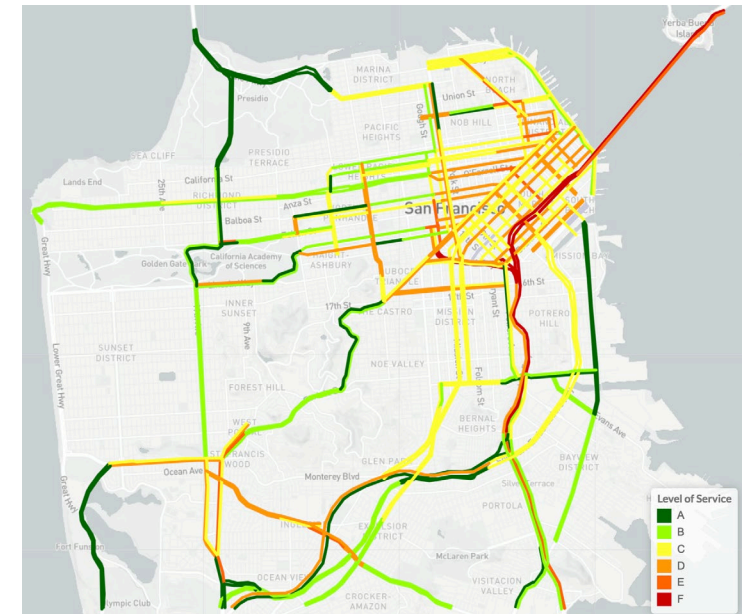
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY

October 24, 2018

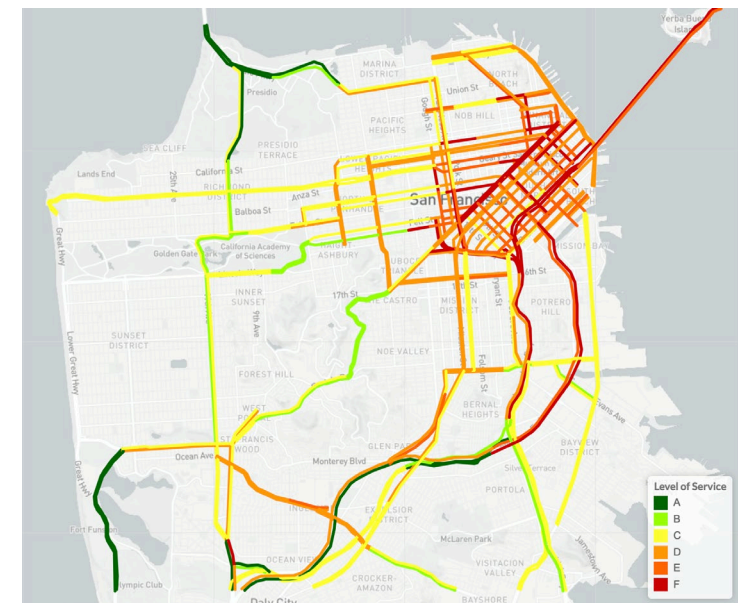
TNCs & Congestion

- Do TNCs affect roadway congestion in San Francisco?
- Report Contents
 - **Measures** of congestion
 - **Factors** that affect congestion
 - **Data** for quantifying changes in congestion
 - **Methods** for linking changes in congestion to factors
 - **Contributions of factors** to changes in SF congestion

2009 PM PEAK LEVEL-OF-SERVICE



2017 PM PEAK LEVEL-OF-SERVICE



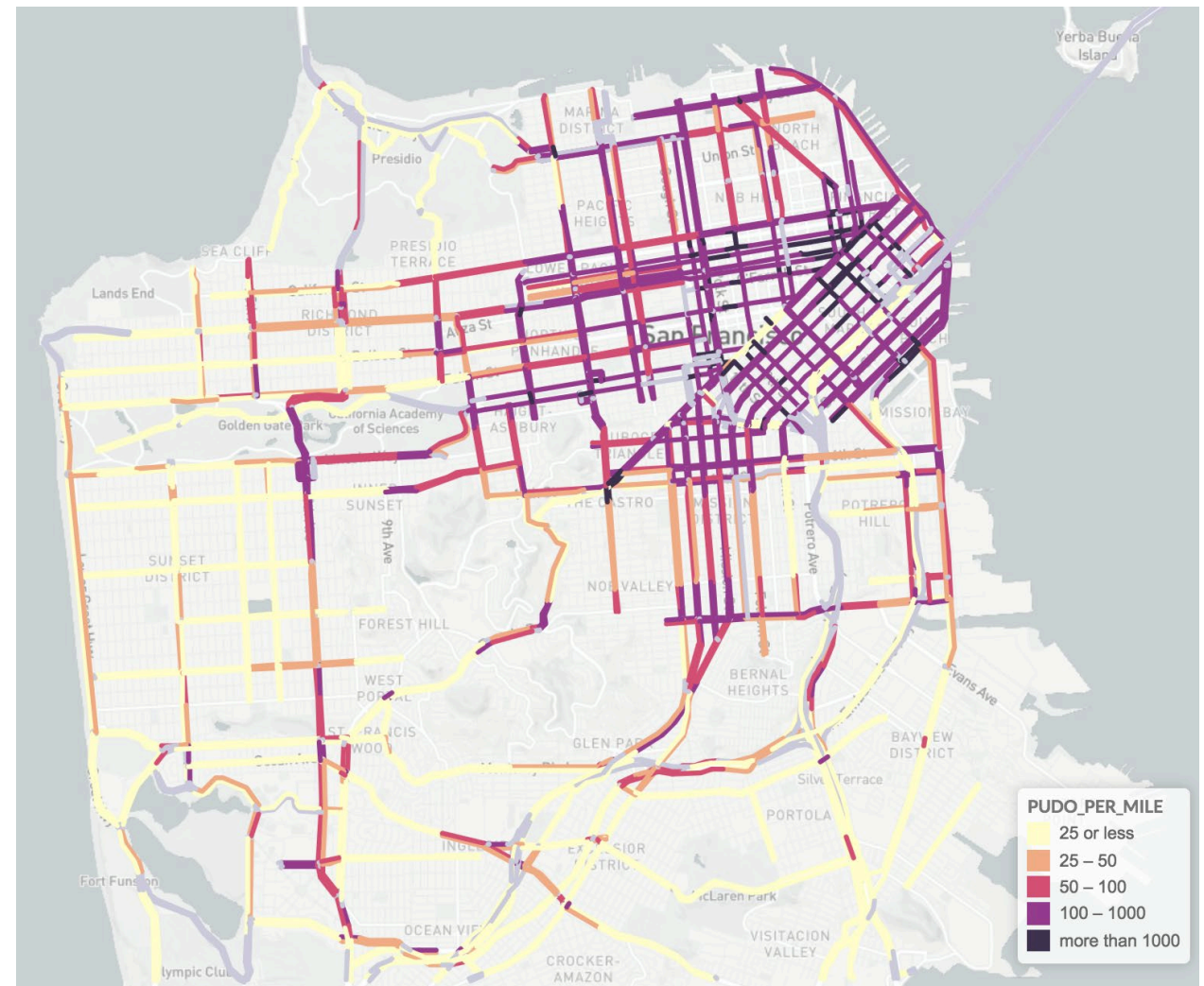
Factors that Affect Congestion

- How could TNCs decrease congestion?
 - Increased **vehicle occupancy**
 - Mode **shift to transit** due to easier access (first/last mile)
 - Mode **shift away from auto** due to reduced auto ownership
- How could TNCs increase congestion?
 - Add “dead head” or **out-of-service vehicle miles**
 - Mode **shift away from transit and non-motorized** modes
 - **Disrupt traffic flow** due to pickups and drop-offs
- Background traffic and roadway performance
 - **Network** changes (increases or decreases in roadway capacity)
 - **Population** changes
 - **Employment** changes
- Other

Data

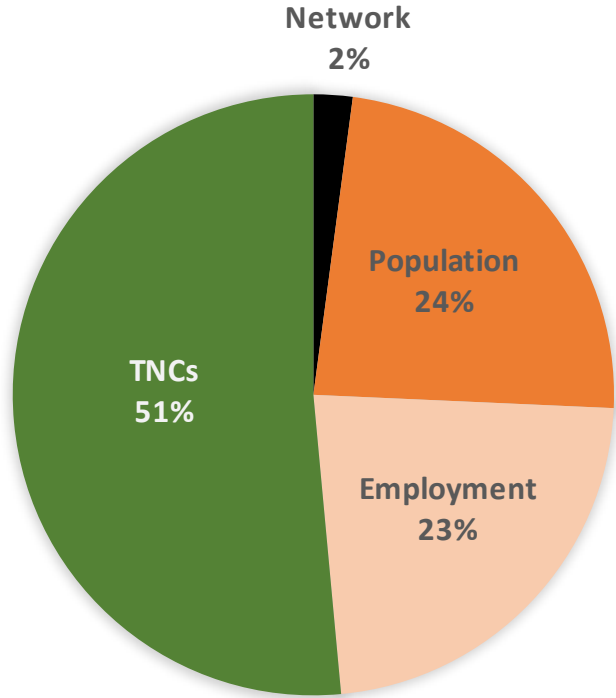
- Congestion (INRIX)
 - Nov / Dec 2010 & 2016
 - 1400 “TMCs” (segments) in SF
 - Speeds, imputed volumes
- TNCs
 - Nov / Dec 2016
 - In-service and out-of-service volumes
 - Pick up and drop off locations
- Background traffic (CHAMP)
 - 2010, 2016 (adjusted from 2015)
 - All streets in SF
 - Volumes, imputed speeds

TNCs Pickup/Dropoff per Mile

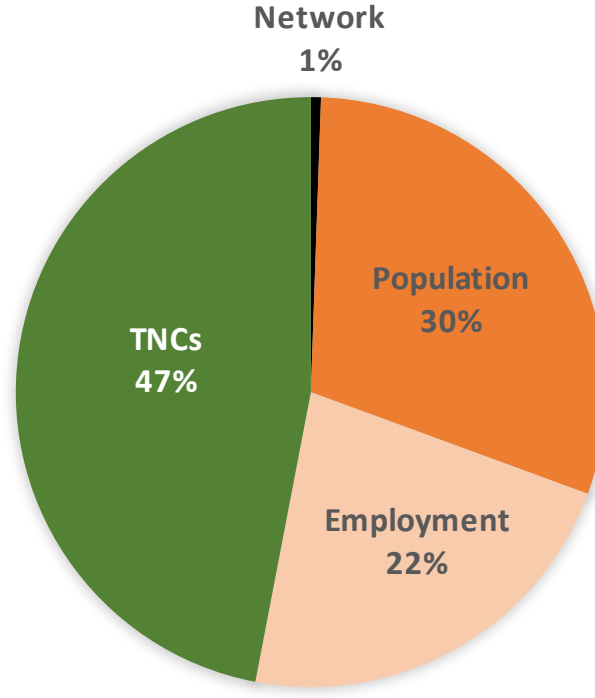


Causes of Changes in Congestion (2010-2016)

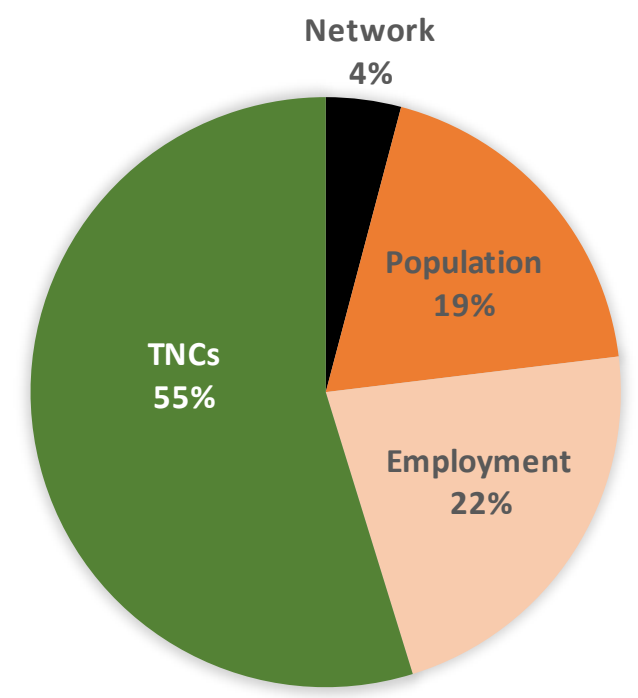
SHARE OF CHANGE IN DELAY BY FACTOR



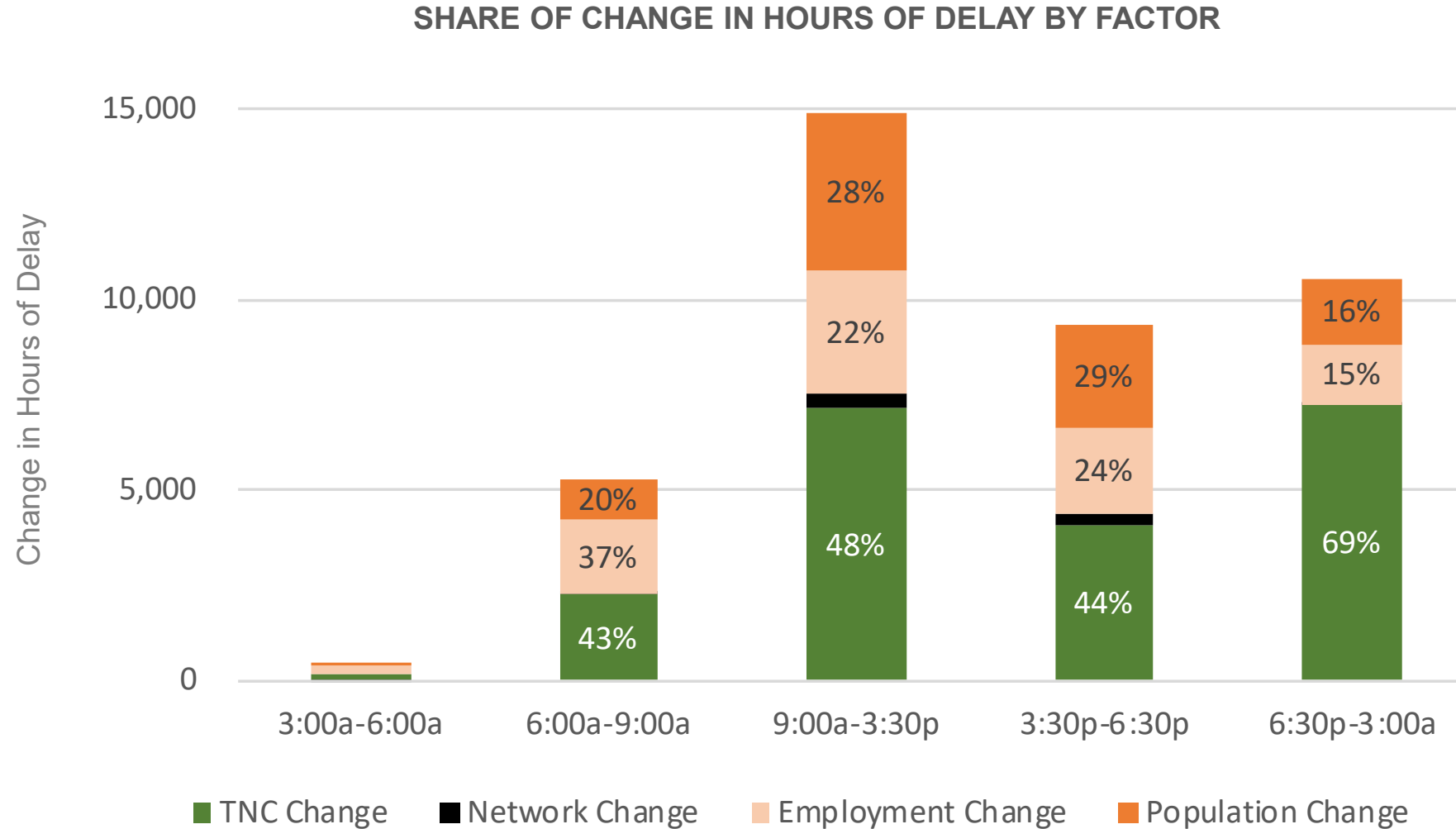
SHARE OF CHANGE IN VMT BY FACTOR



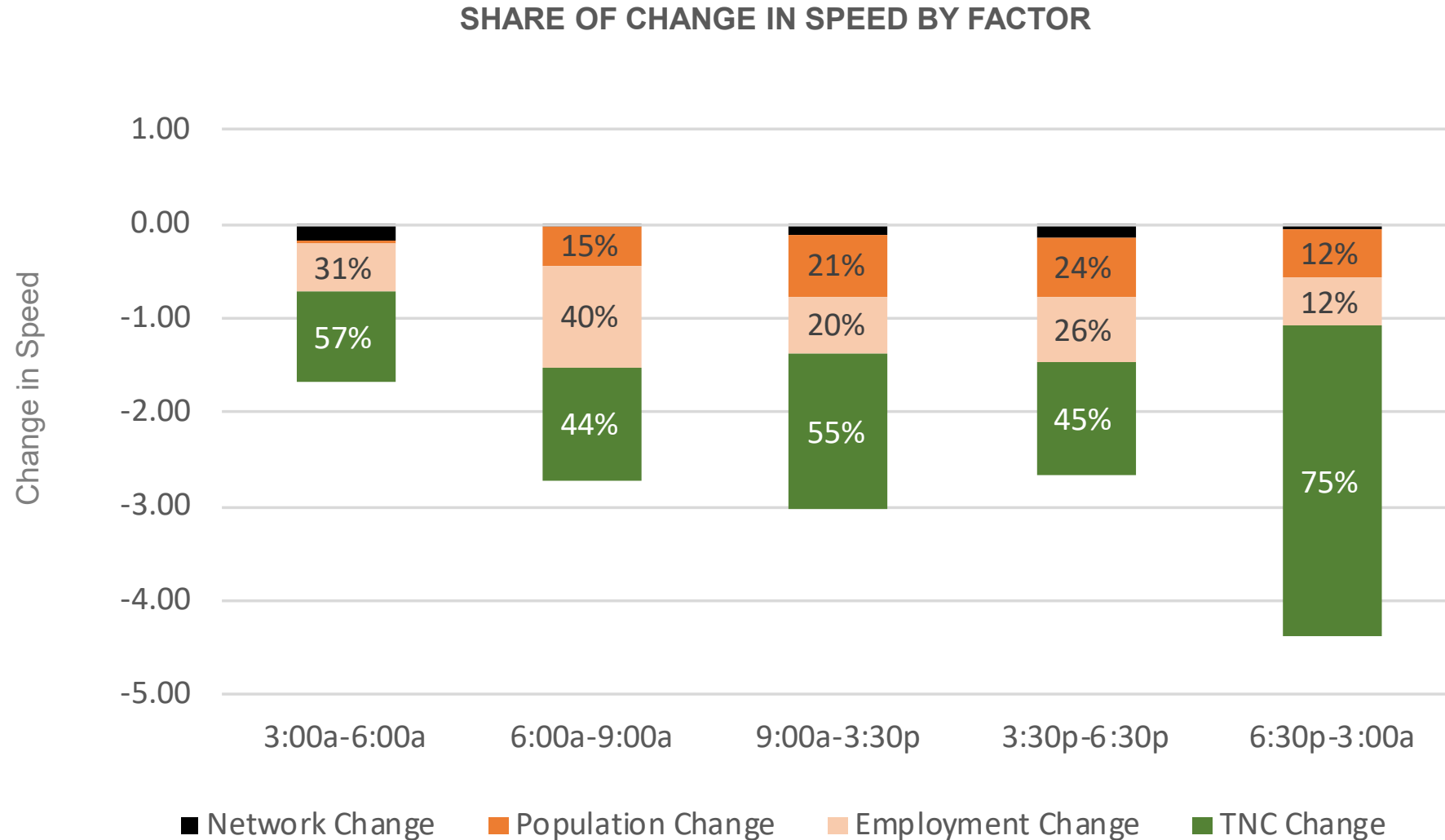
SHARE OF CHANGE IN SPEED BY FACTOR



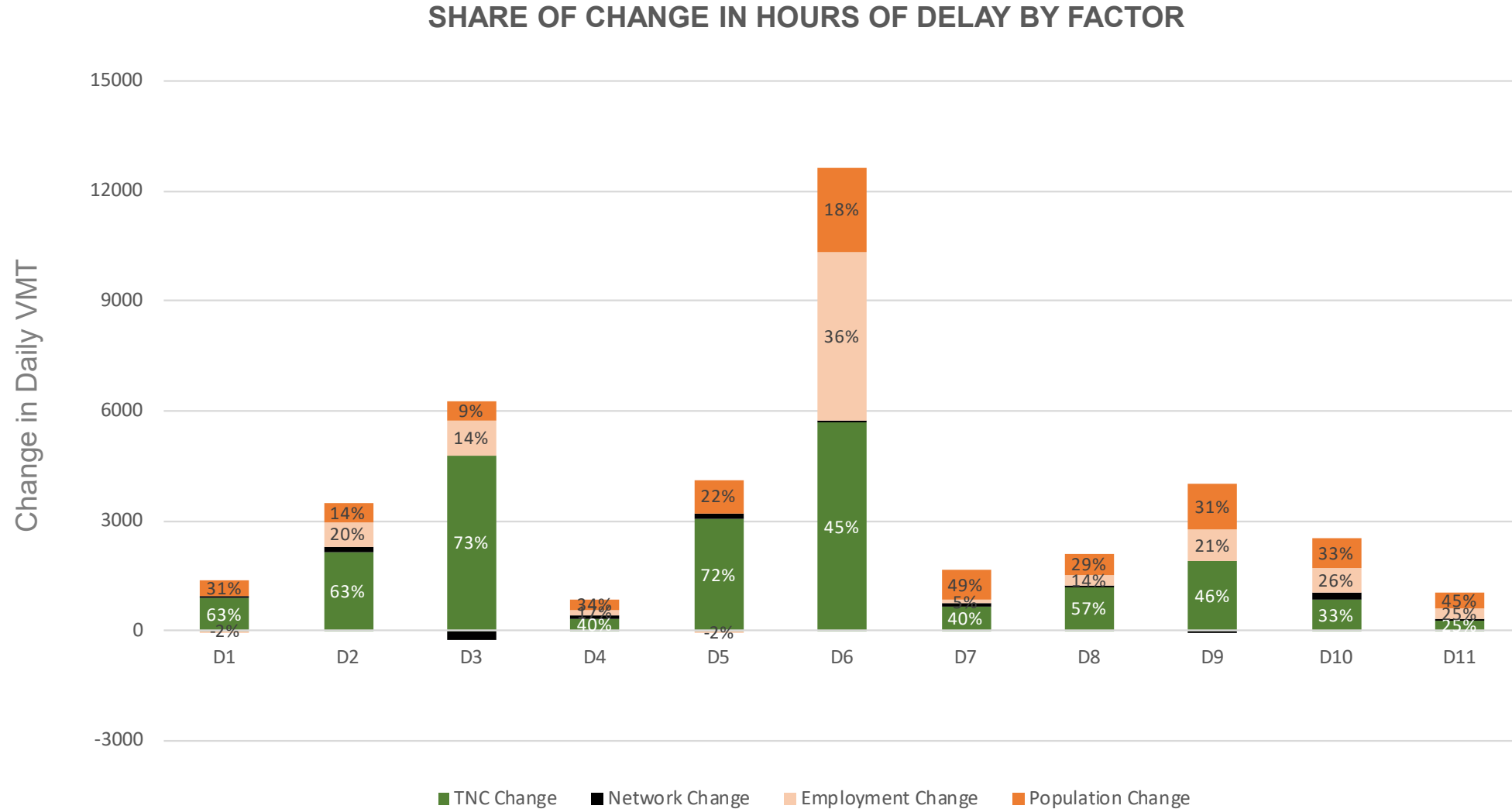
Factors Affecting Hours of Delay by Time Period



Factors Affecting Speed by Time Period

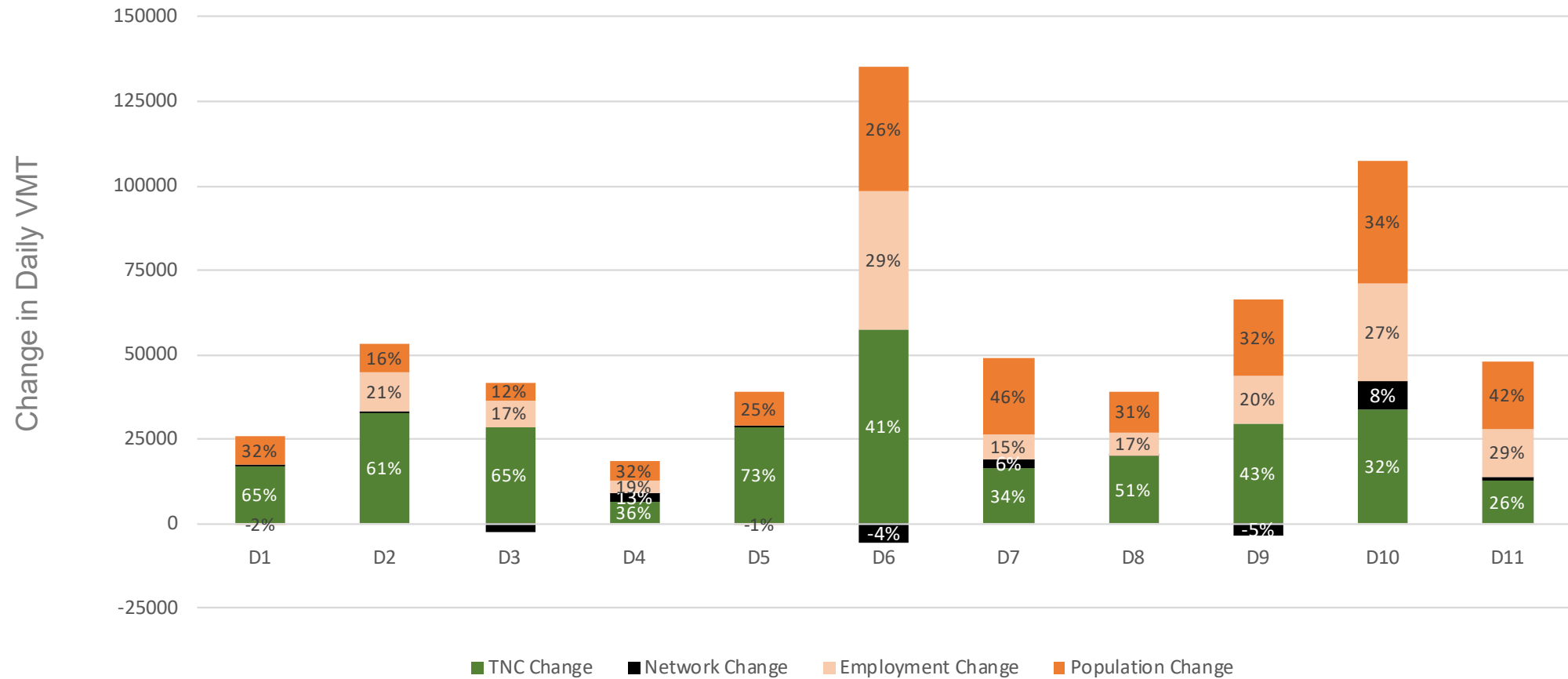


Factors Affecting Hours of Delay by District

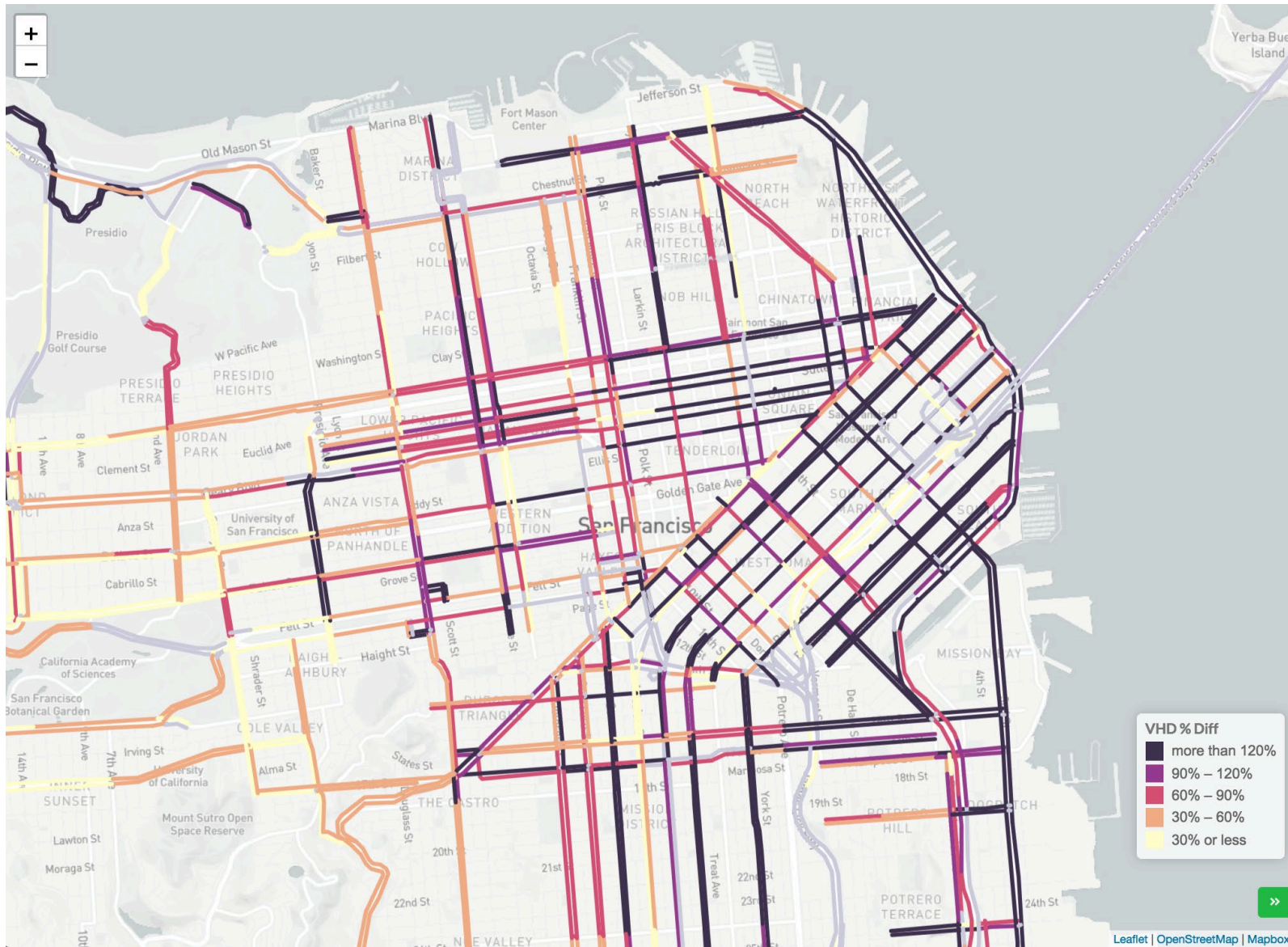


Causes of Increased VMT by District

SHARE OF CHANGE IN VMT BY FACTOR



Interactive Data Visualization



TNCs & CONGESTION

What is this? ⓘ
Learn More →

Vehicle Hours of Delay (VHD)

Vehicle Miles Traveled (VMT)

Speed

CHOOSE FACTORS AFFECTING CONGESTION:

Network Effect

Population Effect

Employment Effect

TNC Effect

CHOOSE TIME PERIOD:

Daily
6:00a-9:00a
9:00a-3:30p
3:30p-6:30p
6:30p-3:00a
3:00a-6:00a

FACTORS AFFECTING CHANGE IN CONGESTION

All Segments Combined

Factor	Percentage
Network	51%
Population	24%
Employment	23%
TNC	2%

Network
 Population
 Employment
 TNC

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Questions?

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