



Scenario Planning and Transportation

TPP Technical Working Group



April 13, 2023

Baris Gumus-Dawes and Dennis Farmer

Scenario Planning

What is scenario planning?

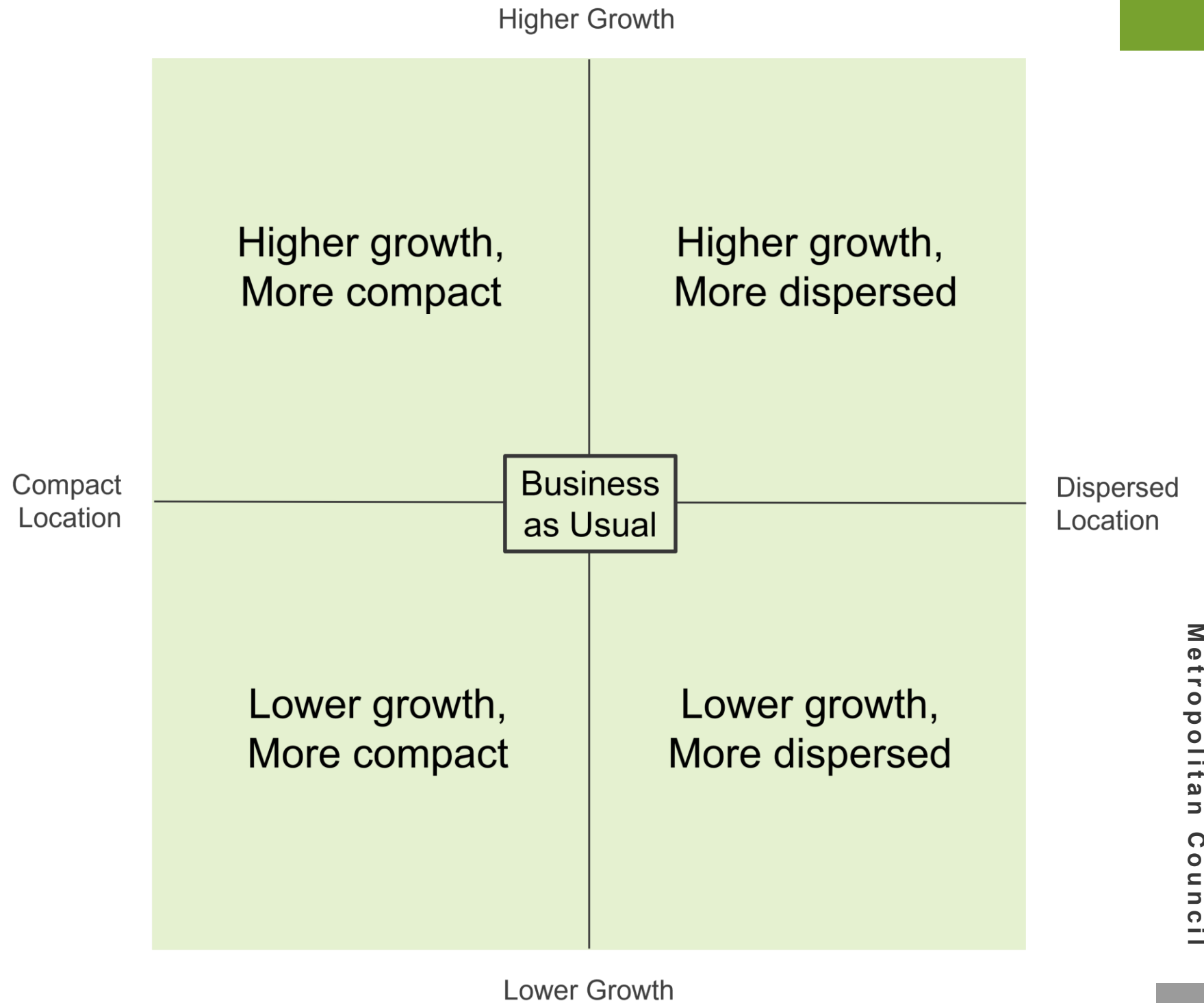


Why and how are we using it?

- Prepare for contingencies in an unknown future
- Identify future opportunities and challenges
- Inform future regional growth policies

Regional Growth Scenarios

How much?
Where?



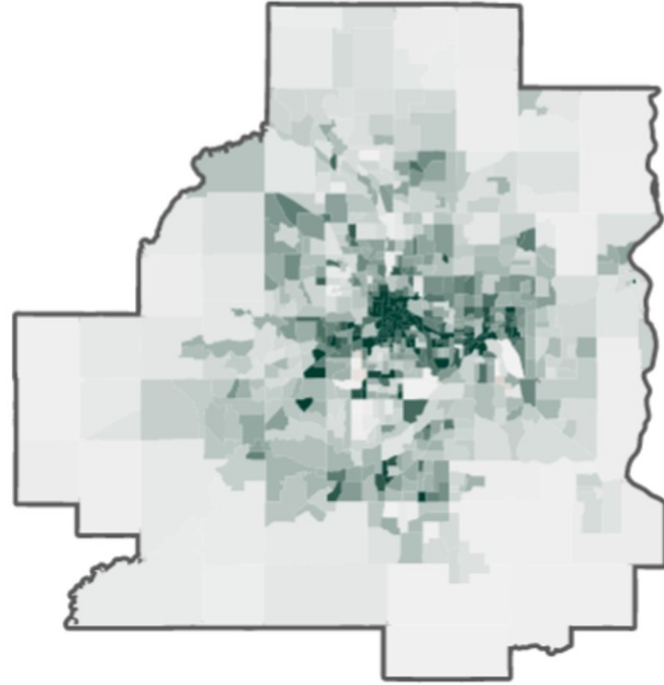
Scenario Assumptions



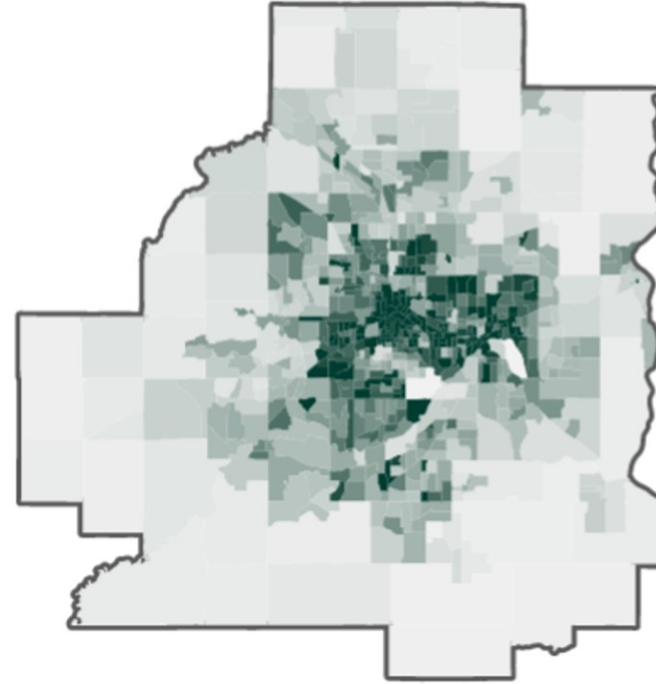
A range of plausible futures

- Based on planned land use in adopted 2040 comprehensive plans, 2040 transportation network, and 2040 MUSA boundaries.
- Simulate additional growth between now and 2050, not a wholesale transformation of the region.
- Illustrate significant yet plausible futures.

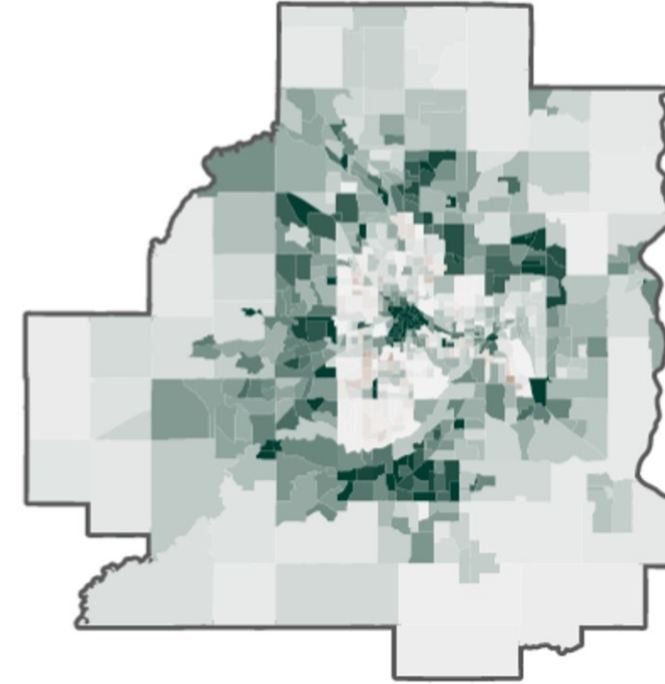
Business as usual



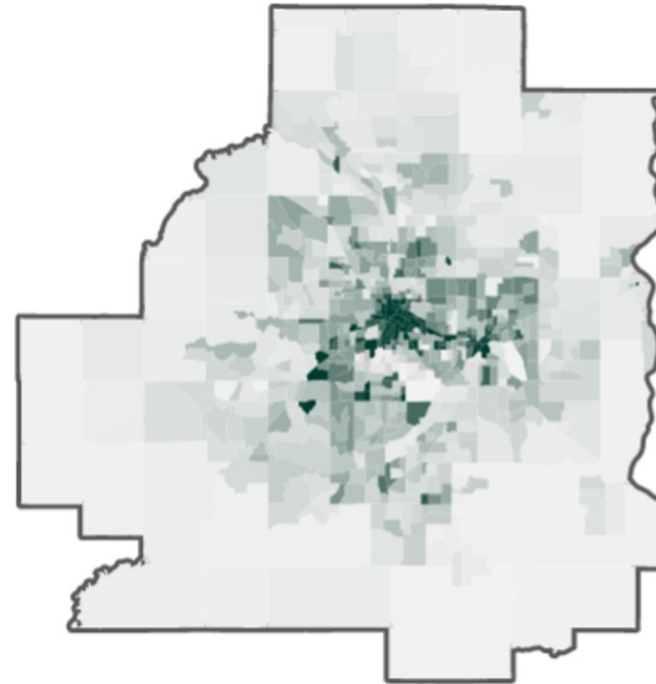
Higher growth, more compact



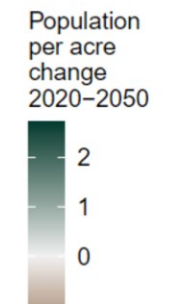
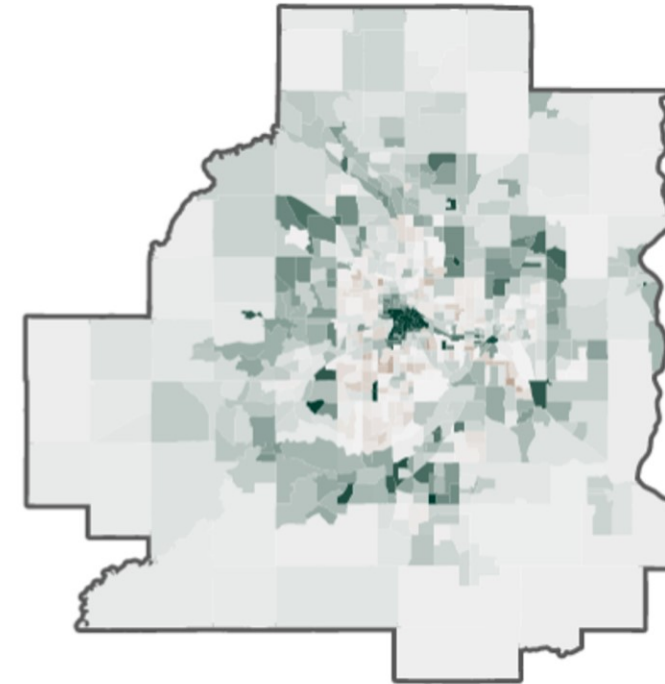
Higher growth, more dispersed



Lower growth, more compact

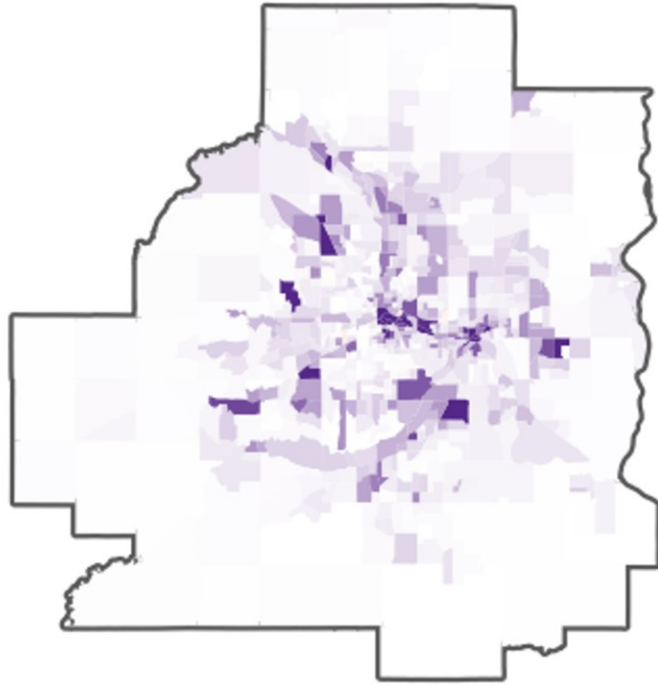


Lower growth, more dispersed

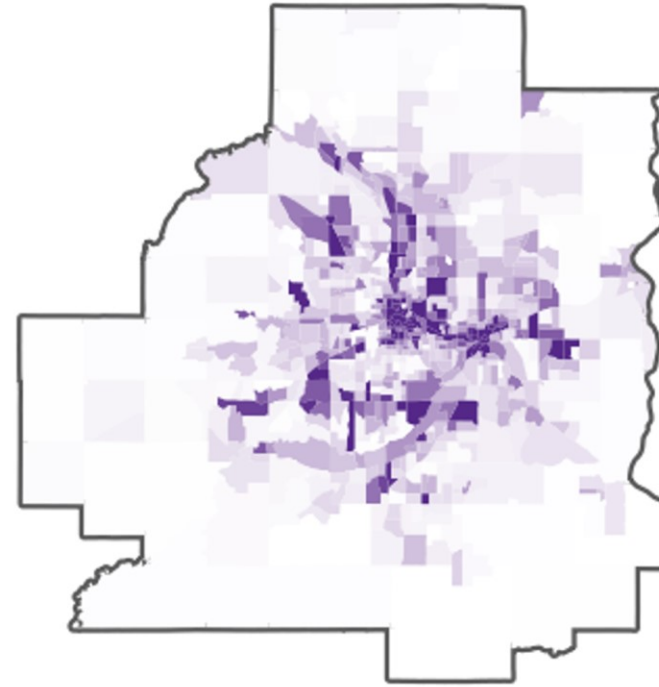


Population Per Acre Change, 2020-2050

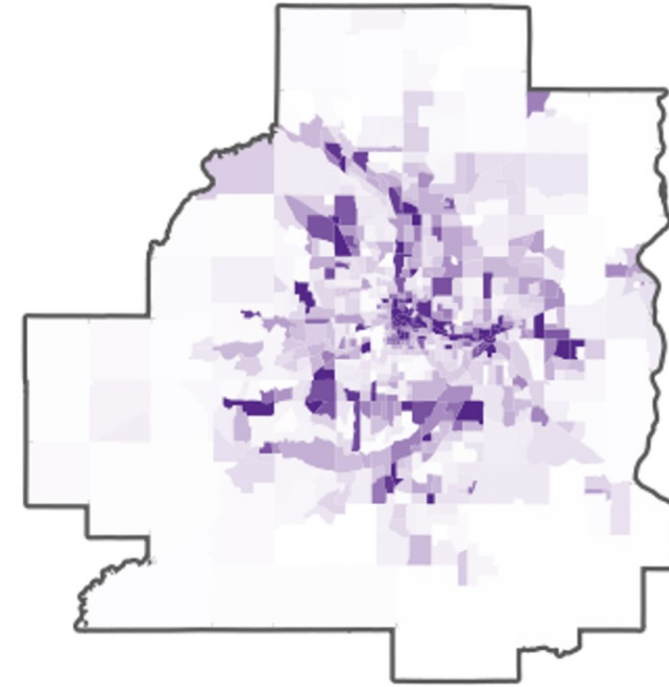
Business as usual



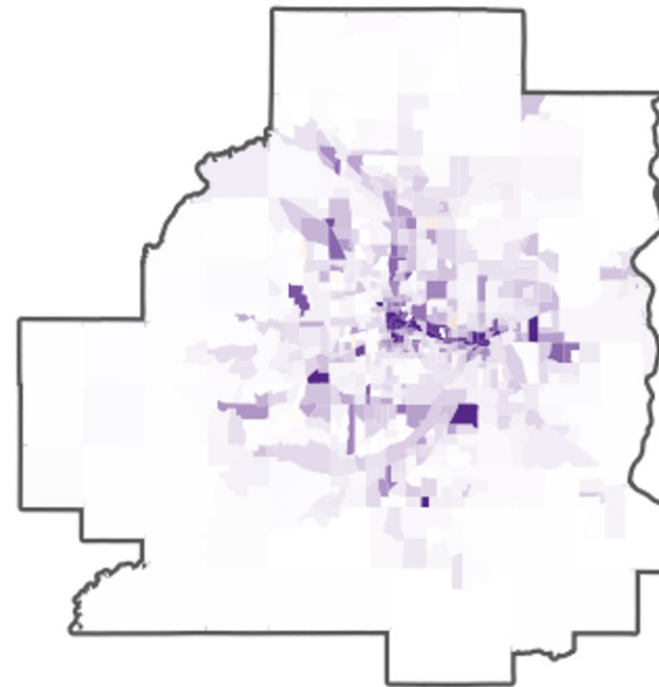
Higher growth, more compact



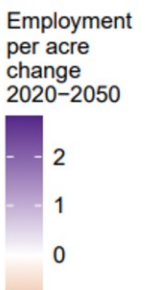
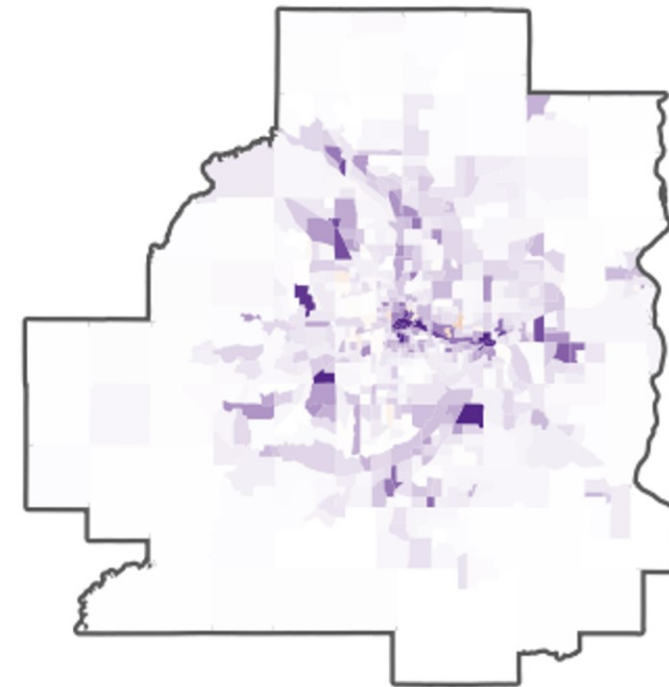
Higher growth, more dispersed



Lower growth, more compact



Lower growth, more dispersed



Employment per Acre Change, 2020-2050

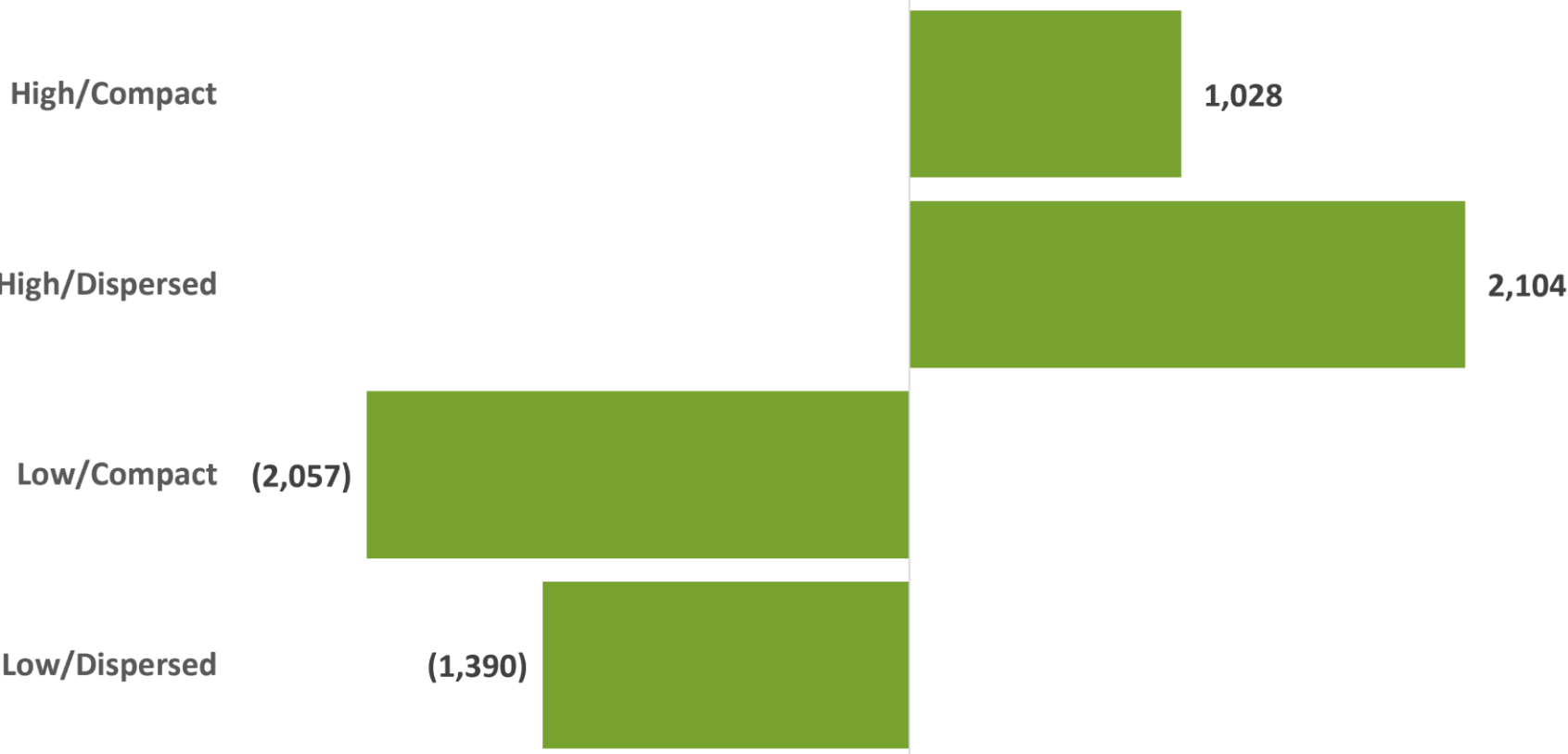
Transportation Measures of Scenarios

Measure	Council Vision Components			
	Equitable Inclusive Welcoming	Healthy Safe Vibrant	Climate Mitigation Adaptation Resilience	Natural Systems Protected Restored
Greenhouse Gas Emissions		✓	✓	✓
VMT per Capita			✓	
Job Accessibility by Car	✓	✓		
Job Accessibility by Transit	✓	✓		
Transit Market Areas		✓		

Daily Green House Gas Emissions

Climate concerns are better addressed by compact growth, which produces lower GHG emissions than dispersed growth, no matter how much the region grows.

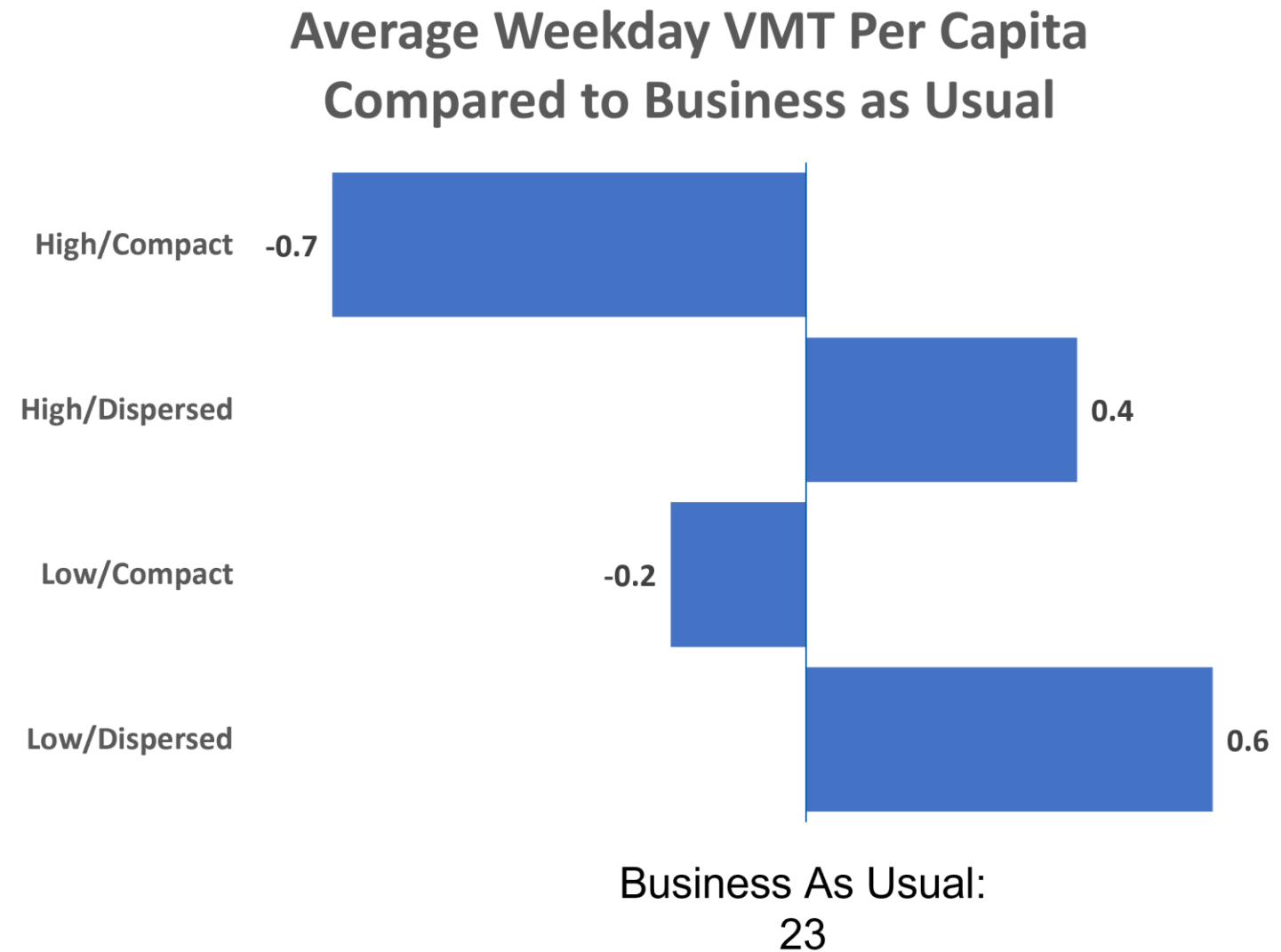
Daily Green House Gas Emissions (in Metric Tons)
Difference from Business as Usual



Business As Usual:
26,983

Vehicle Miles Traveled (VMT) Per Capita

Climate concerns are better addressed by compact growth, which produces lower VMT per capita than dispersed growth, regardless of how much the region grows.

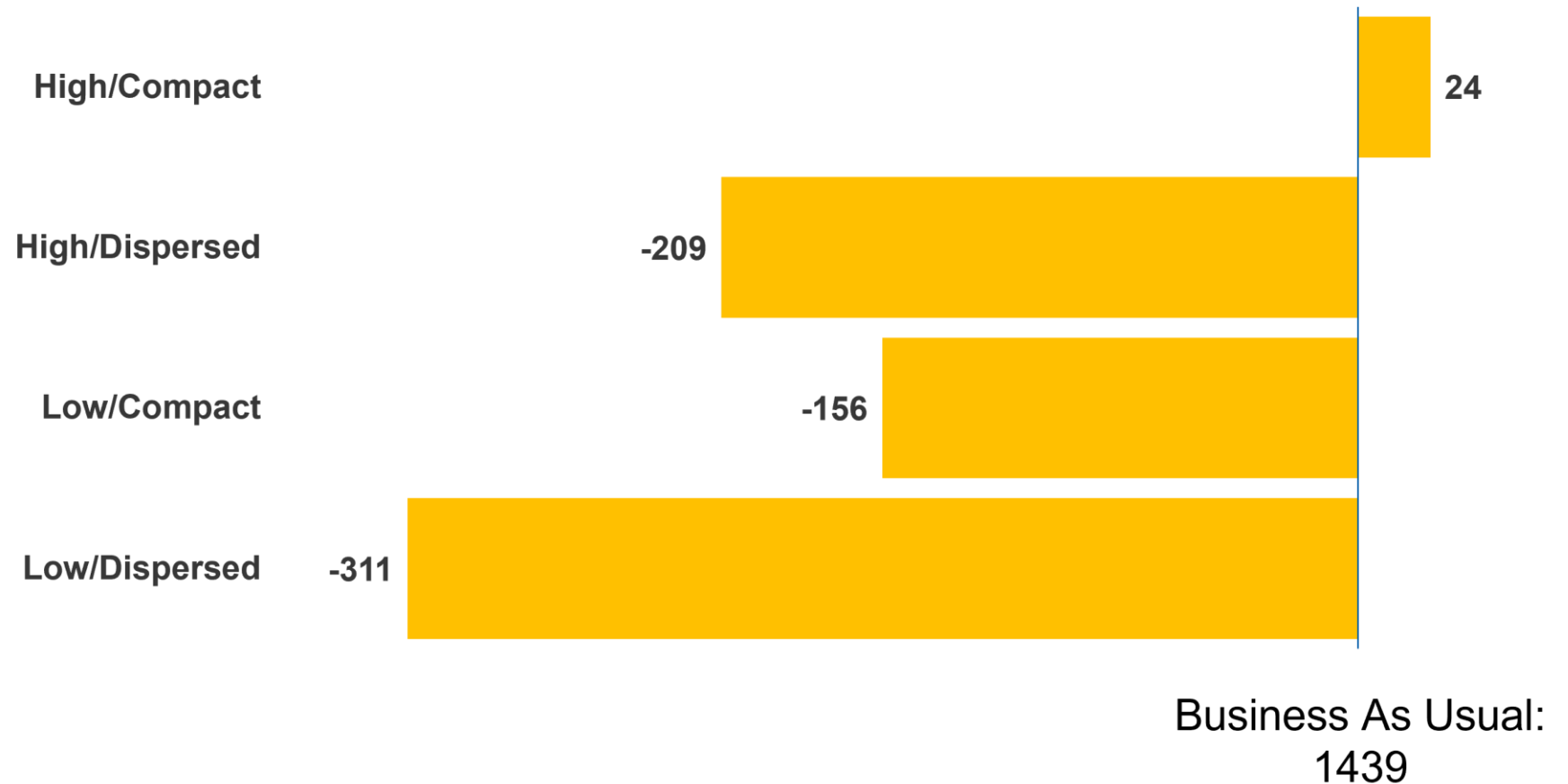


Number of Jobs Accessible in 30 Minutes by Car

Access to jobs by drivers is better in compact growth scenarios.

Drivers access more jobs in compact growth scenarios than dispersed growth scenarios, regardless of how much the region grows.

**Jobs Accessible in 30 Minutes by Car
(in Thousands)
Difference from Business as Usual**

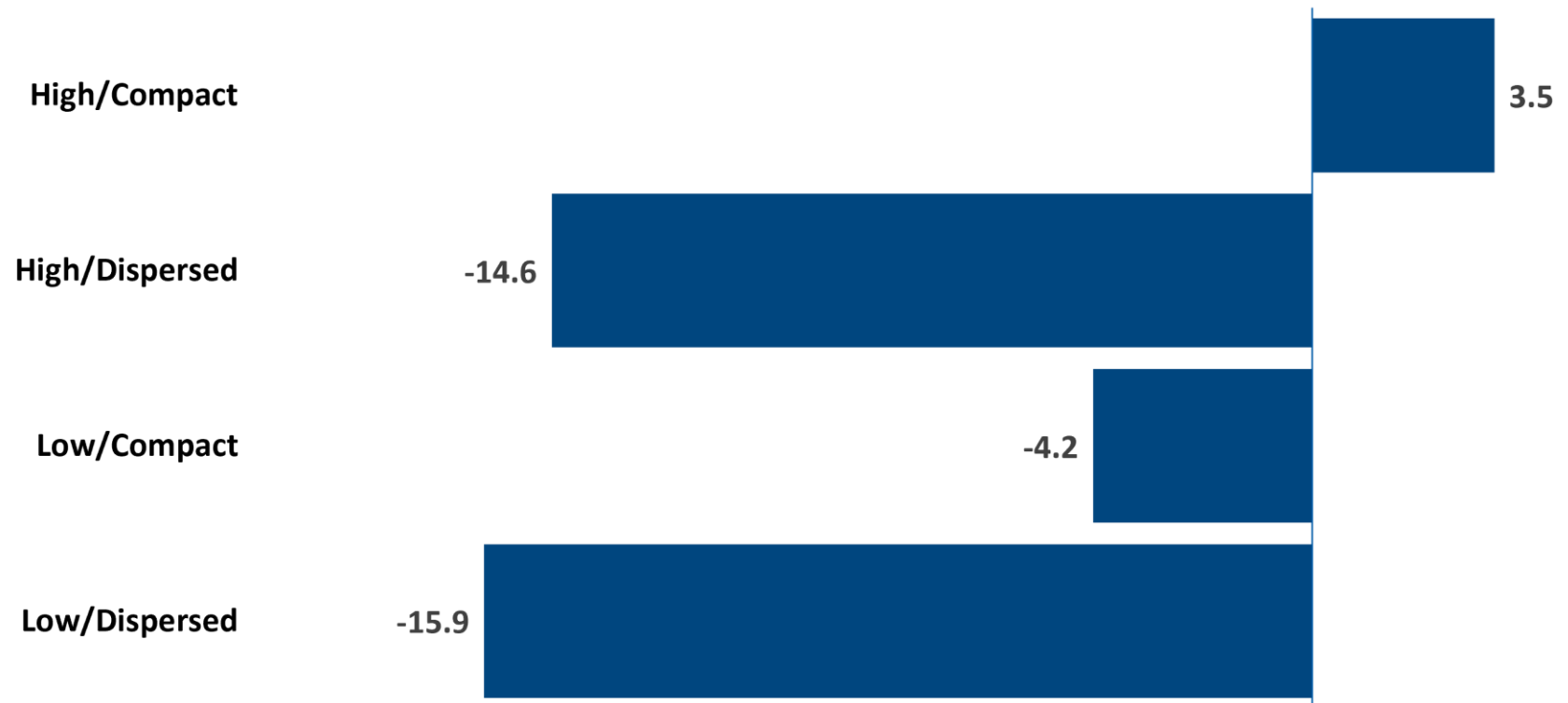


Number of Jobs Accessible in 30 Minutes by Transit

Access to jobs by transit riders is better in compact growth scenarios.

Transit riders access more jobs in compact growth scenarios than dispersed growth scenarios, regardless of how much the region grows.

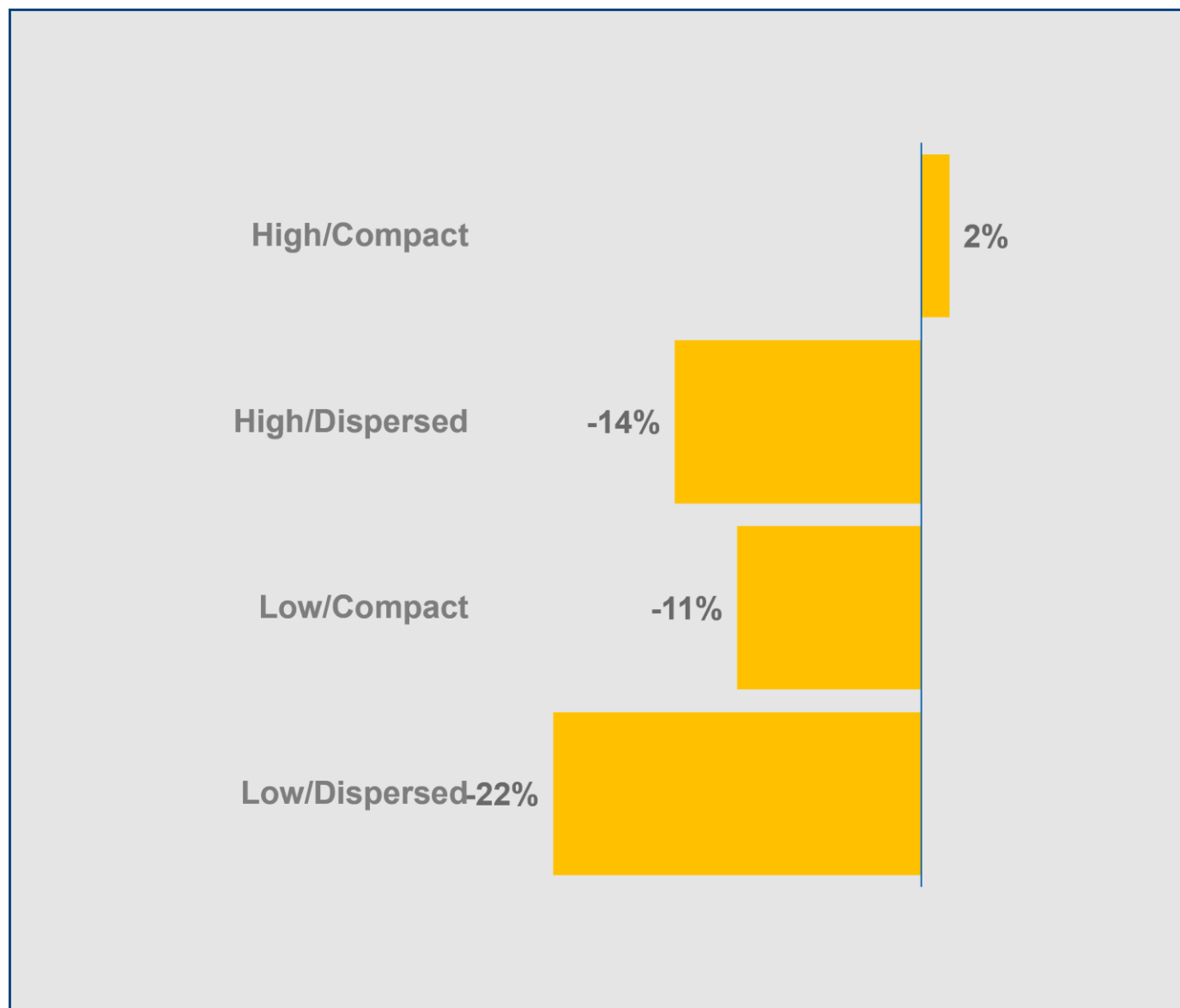
**Jobs Accessible in 30 Minutes by Transit
(in Thousands)
Difference from Business as Usual**



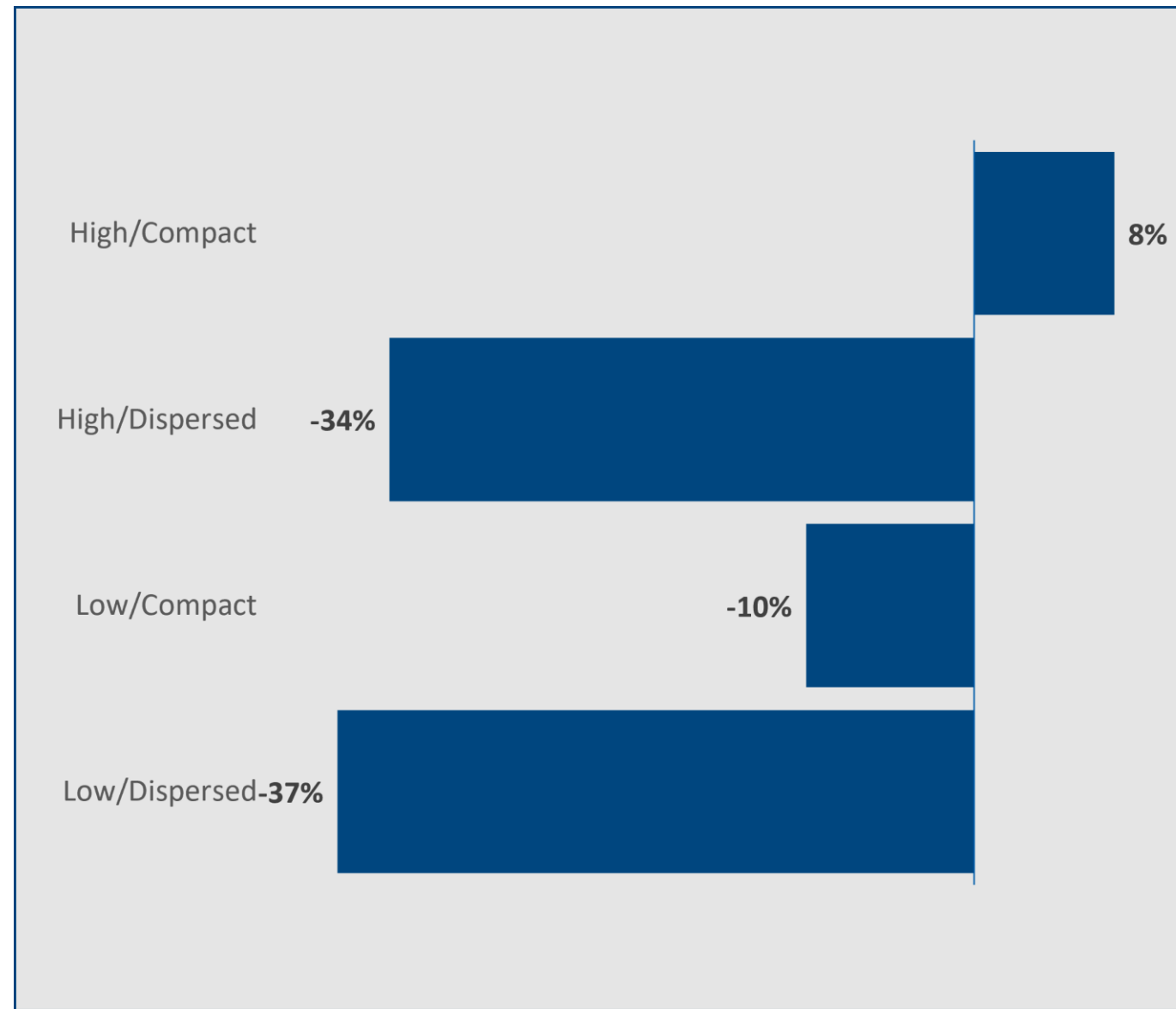
Business As Usual: 42.9

Dispersed growth reduces job accessibility for transit riders much more than for drivers.

Percent Change in Number of Jobs Accessible by Car
Compared to Business as Usual



Percent Change in Number of Jobs Accessible by Transit
Compared to Business as Usual



Transit Market Areas

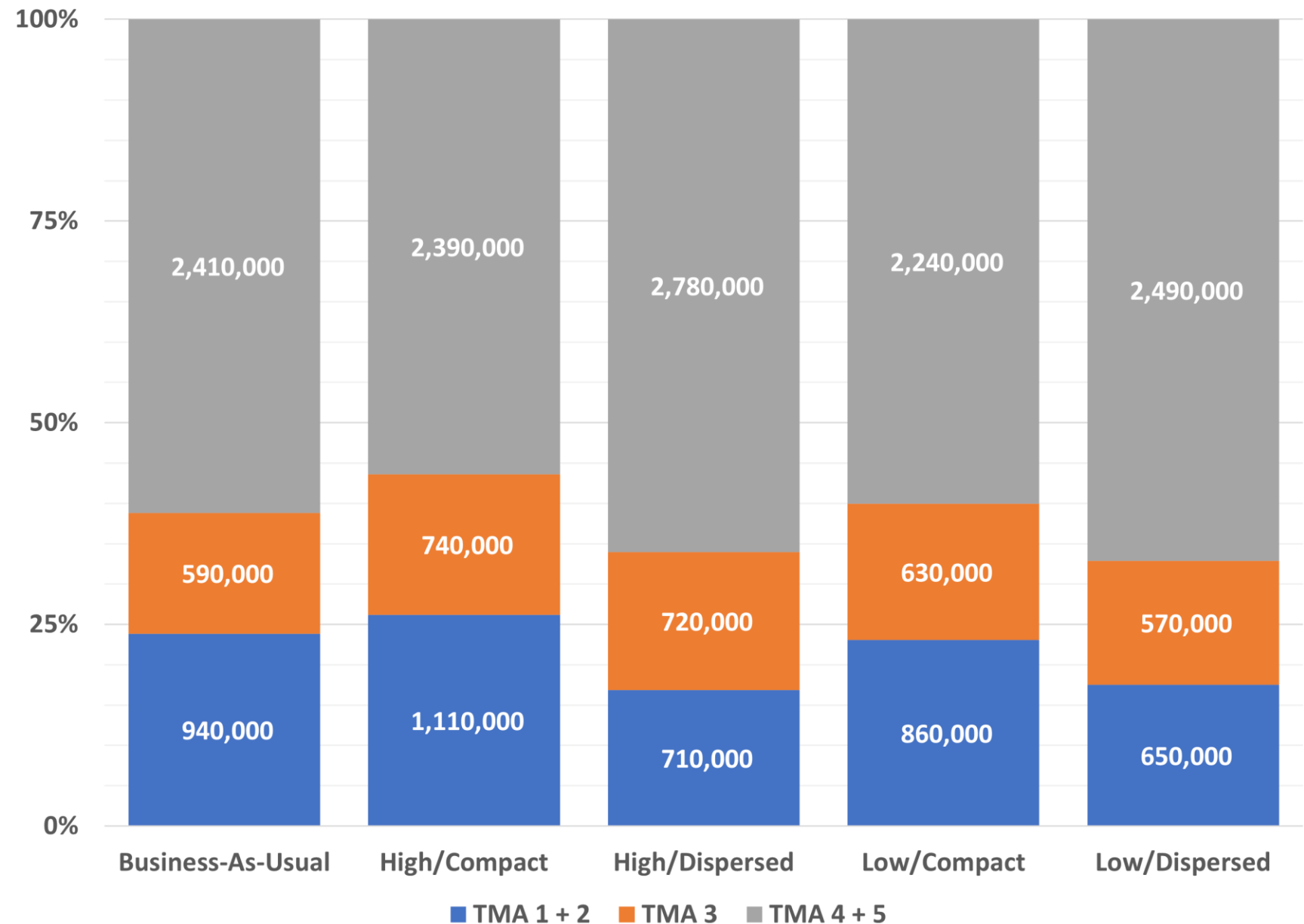
Compact growth is more conducive to transit.

Compact growth scenarios have more people living in areas that could support all-purpose transit (TMA 1&2).

Dispersed growth scenarios leave more people with minimal transit service (TMA 4&5).

Compact scenarios have slightly more people living in areas that could support intermittent transit (TMA 3).

Share of Residents in Transit Markets, 2050



Thank you

Baris Gumus-Dawes

Planning Analyst, CD Research
baris.dawes@metc.state.mn.us

Dennis Farmer

Planning Analyst, MTS/CD Research
dennis.farmer@metc.state.mn.us

