Shared, Autonomous Vehicles and their Effect on Land Use and the Public Realm

Thomas Fisher
Director, Minnesota Design Center
University of Minnesota


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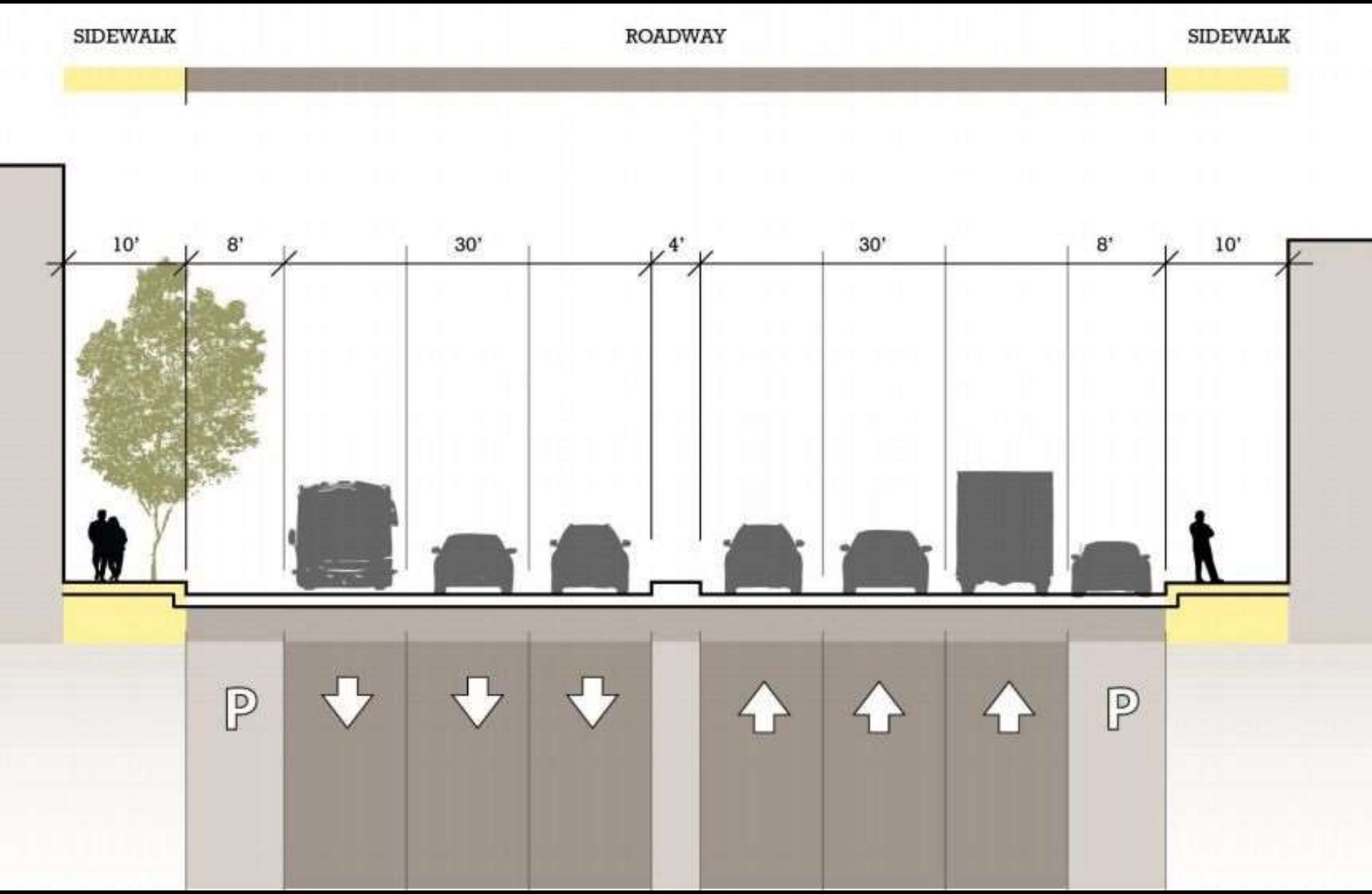
PARK
UBER

Impact on Streets


SIDEWALK
ROADWAY
SIDEWALK
10'
8'
30'
4'
30'
8'
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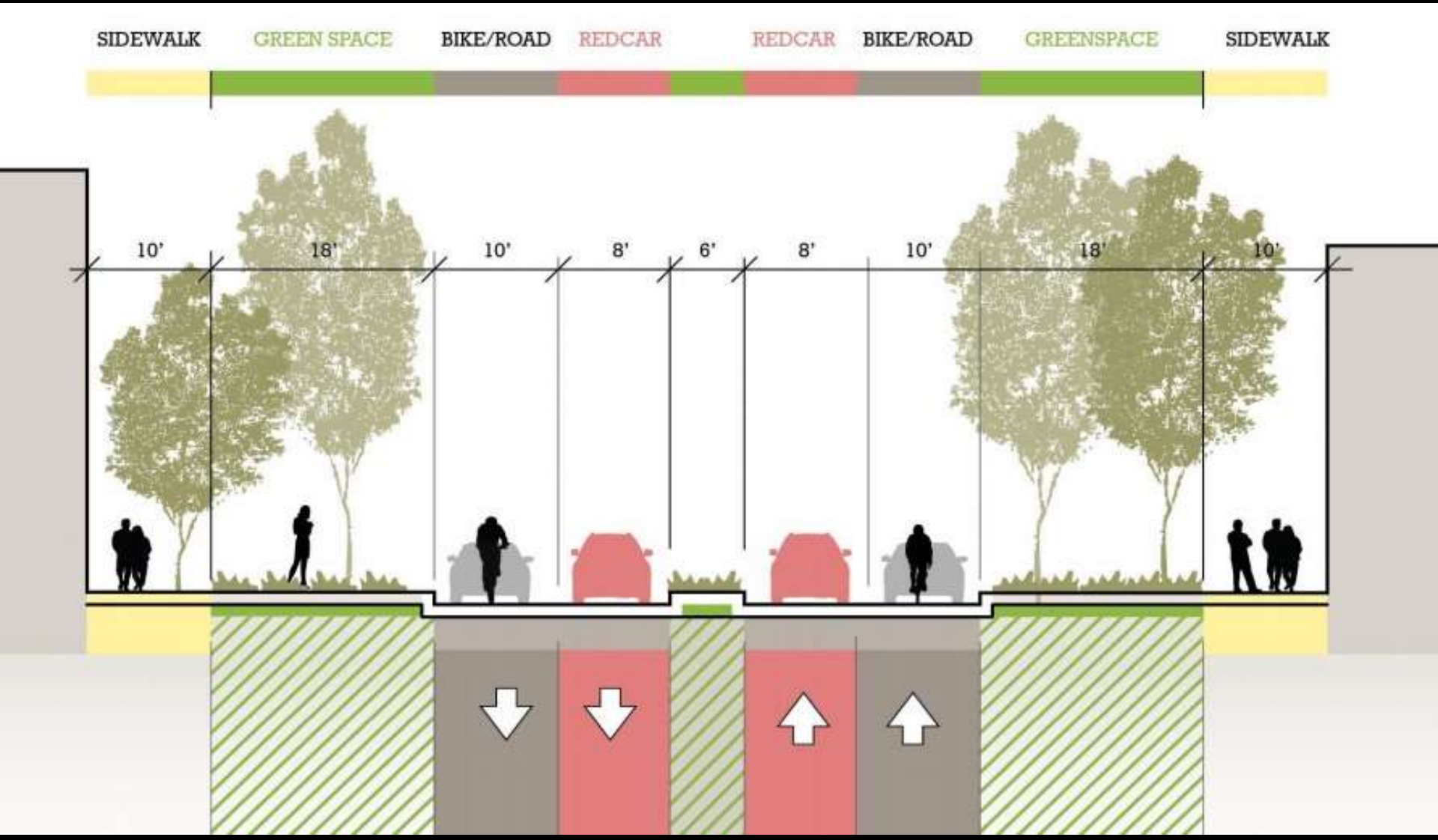
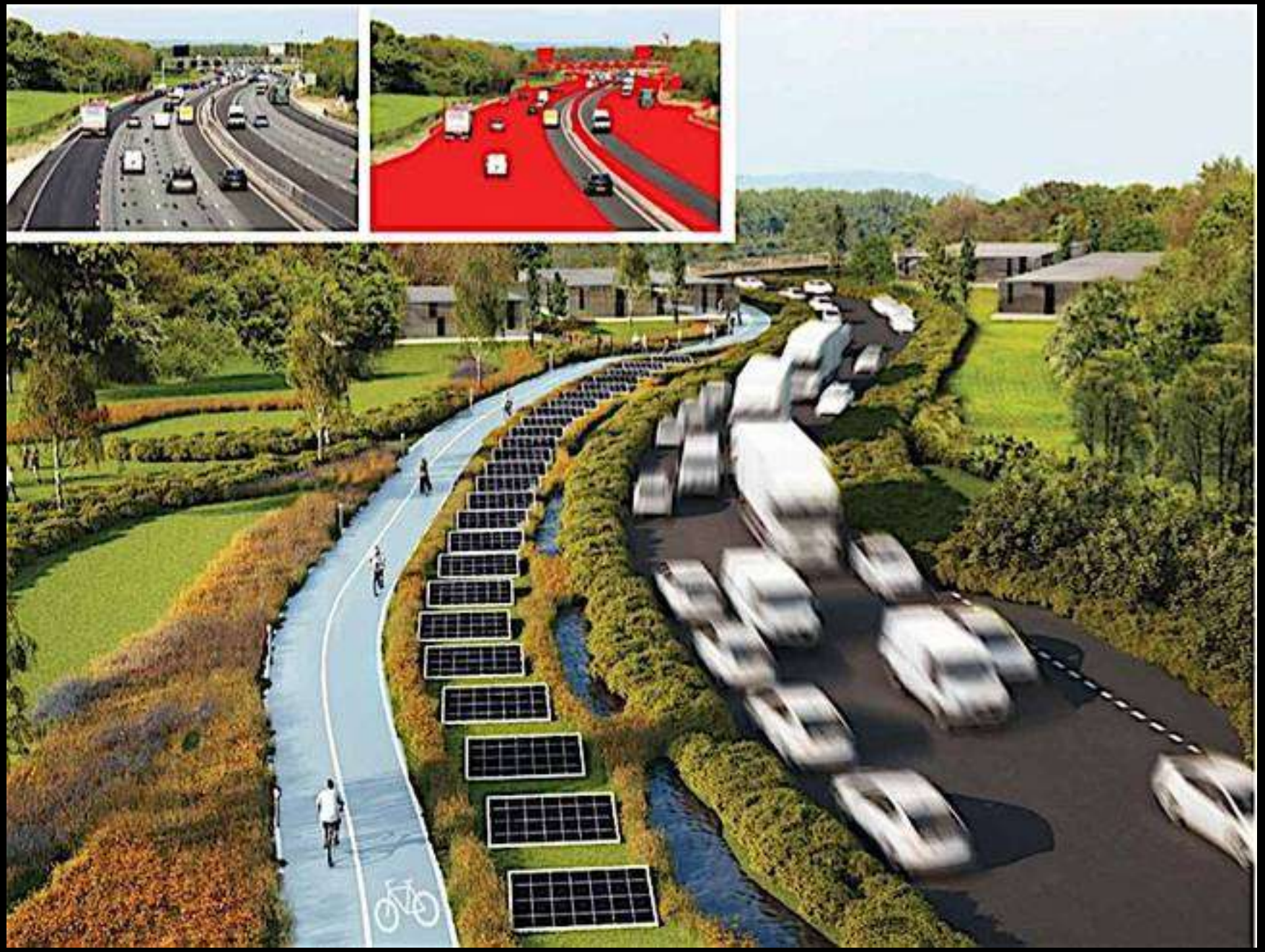

SIDEWALK
GREEN SPACE
BIKE/ROAD
REDCAR
REDCAR
BIKE/ROAD
GREENSPACE
SIDEWALK
10'
18'
10'
8'
6'
8'
10'
18'
10'



Impact on Parking

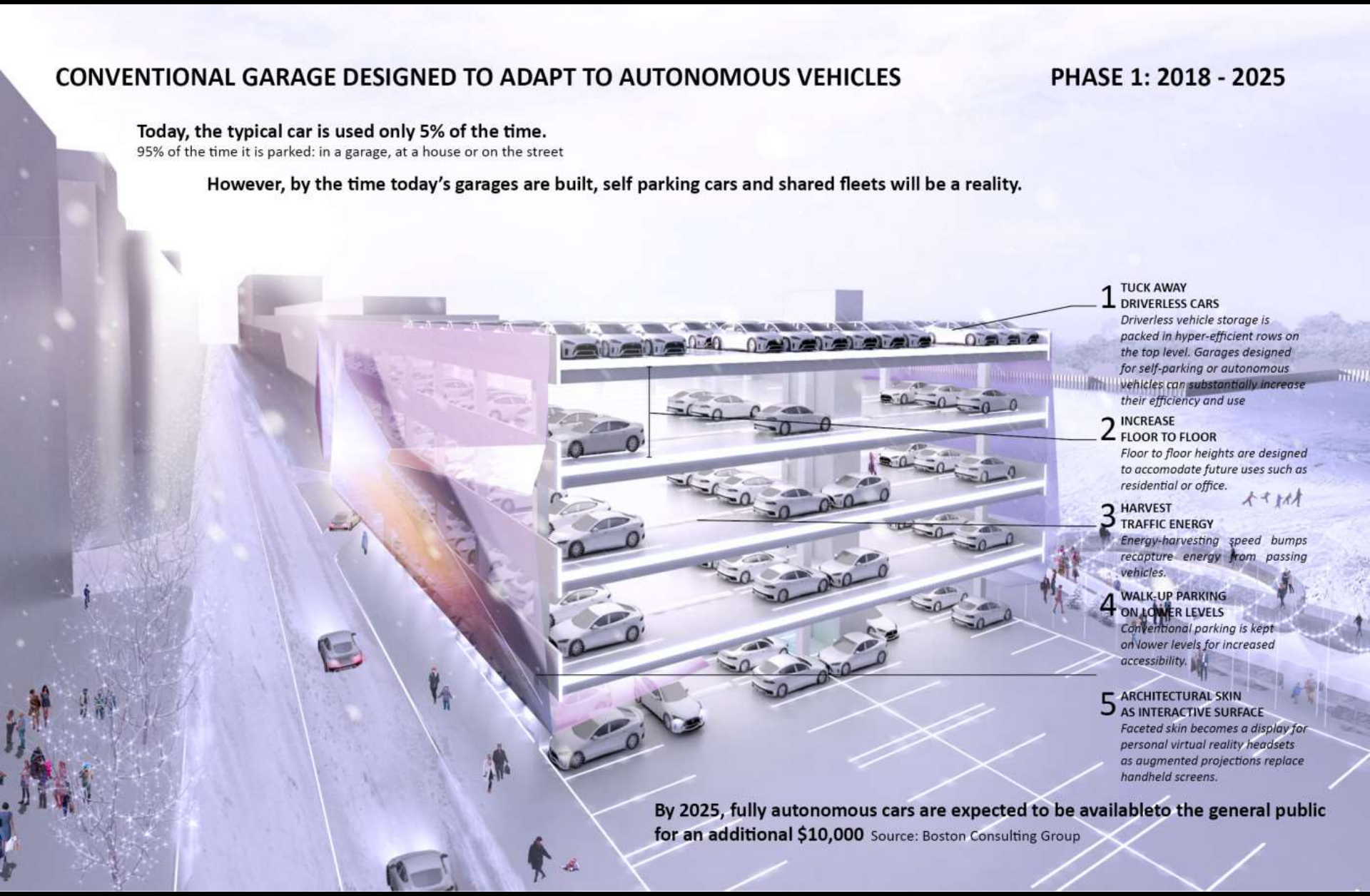

FARMERS MAR

CONVENTIONAL GARAGE DESIGNED TO ADAPT TO AUTONOMOUS VEHICLES

PHASE 1: 2018 - 2025

Today, the typical car is used only 5% of the time.
95% of the time it is parked: in a garage, at a house or on the street

However, by the time today's garages are built, self parking cars and shared fleets will be a reality.



1 **TUCK AWAY DRIVERLESS CARS**
Driverless vehicle storage is packed in hyper-efficient rows on the top level. Garages designed for self-parking or autonomous vehicles can substantially increase their efficiency and use

2 **INCREASE FLOOR TO FLOOR**
Floor to floor heights are designed to accomodate future uses such as residential or office.

3 **HARVEST TRAFFIC ENERGY**
Energy-harvesting speed bumps recapture energy from passing vehicles.

4 **WALK-UP PARKING ON LOWER LEVELS**
Conventional parking is kept on lower levels for increased accessibility.

5 **ARCHITECTURAL SKIN AS INTERACTIVE SURFACE**
Faceted skin becomes a display for personal virtual reality headsets as augmented projections replace handheld screens.

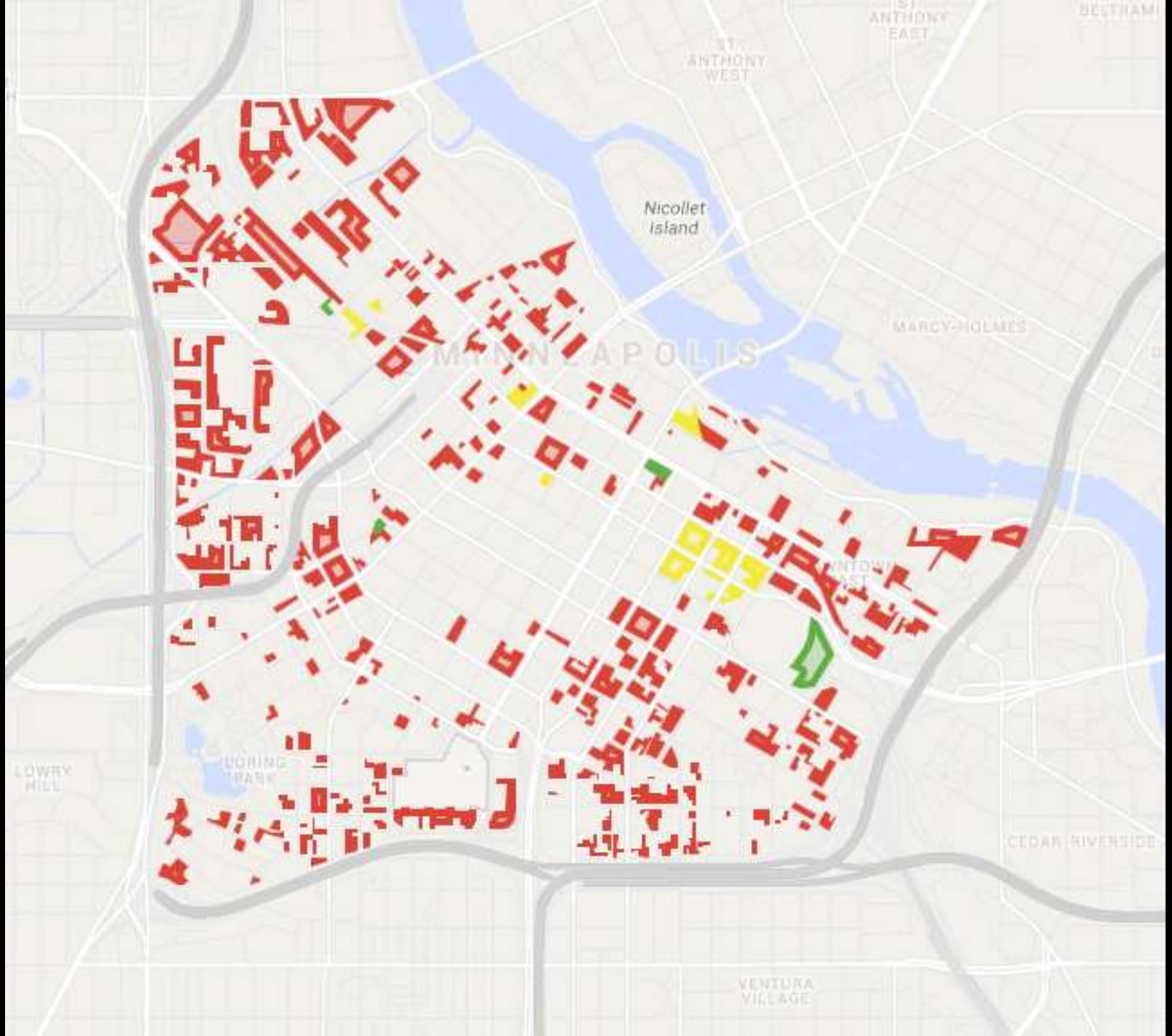
By 2025, fully autonomous cars are expected to be availableto the general public for an additional $10,000 Source: Boston Consulting Group

AUTONOMOUS VEHICLES & THE EVOLUTION OF THE PARKING GARAGE

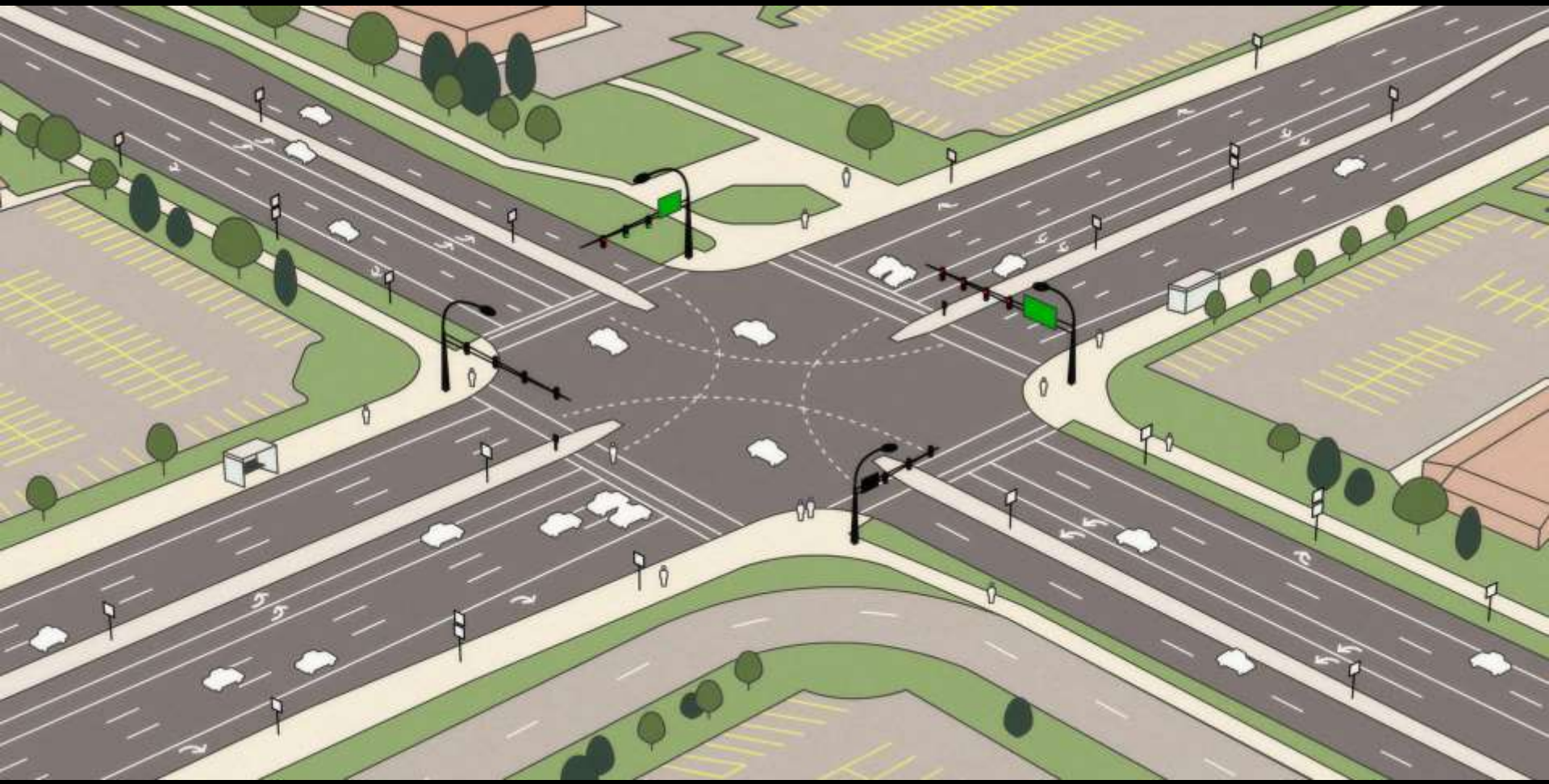
PHASE 2: 2025 - 2035

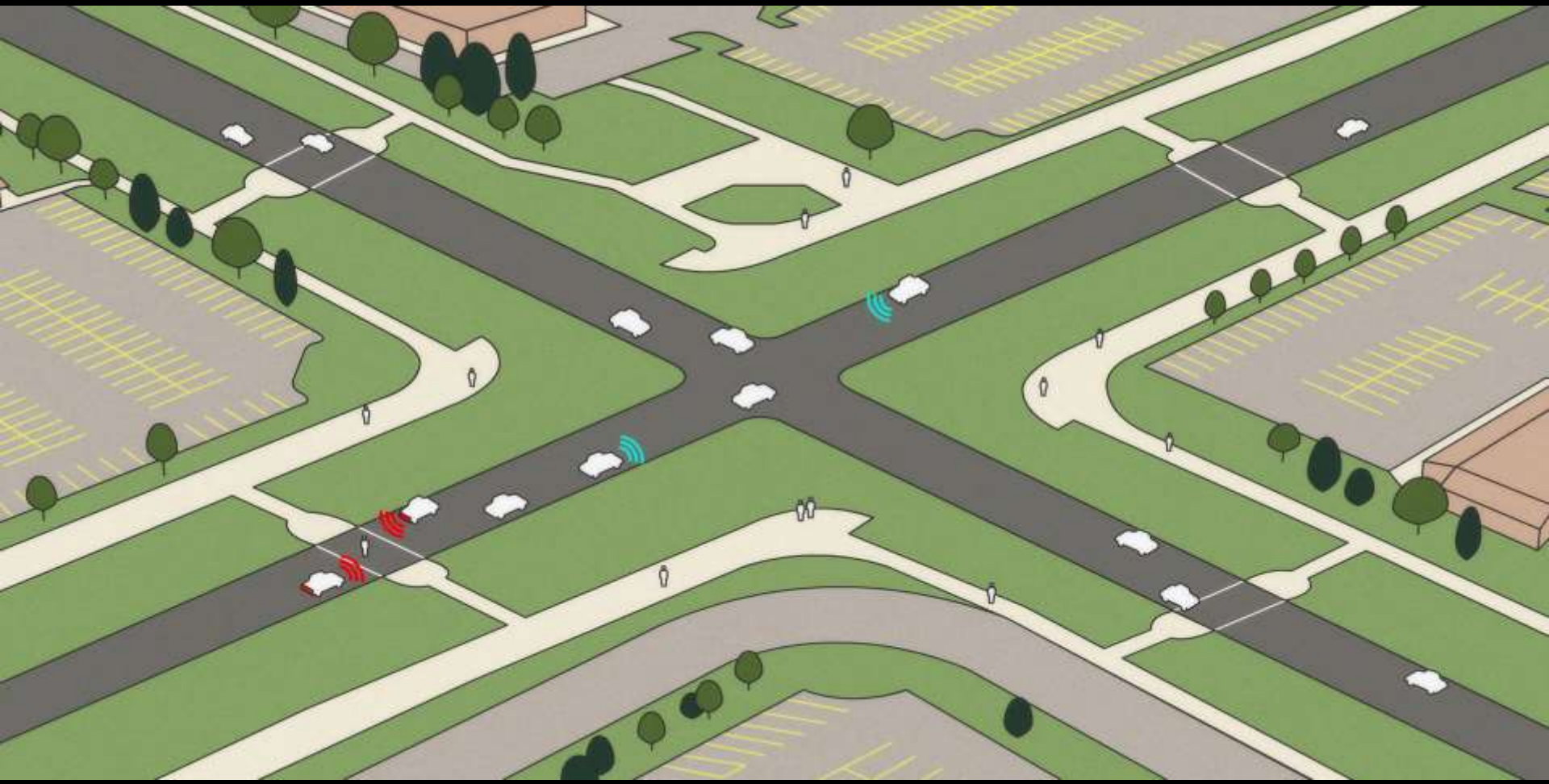
As car ownership evolves to a subscription service with intelligent fleets, there will be less need for parking.
Garages are transformed into other uses such as office, residential and hotels.

In 2035, the need for parking should decline by more than 5.7 billion square meters in the United States
(This equates to half the size of Connecticut) Source: McKinsey & Co.


ST. ANTHONY EAST
ST. ANTHONY WEST
Nicollet Island
MARCY-HOLMES
MINNEAPOLIS
LOWRY HILL
CEDAR-RIVERSIDE
VENTURA VILLAGE

Impact on Land Use





No One at the Wheel

Regional and city transportation plans for 68 of the biggest U.S. cities show little preparation for driverless cars. Among these plans:

50%

Contain explicit recommendations for new highway construction

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6%

Consider the potential effect of driverless technology

3%

Take into account ride-sharing services such as Uber or Lyft

Note: Study looked at the 50 most populous cities overall and the largest cities in every state.

Source: National League of Cities, "City of the Future: Technology and Mobility," 2015

THE WALL STREET JOURNAL.