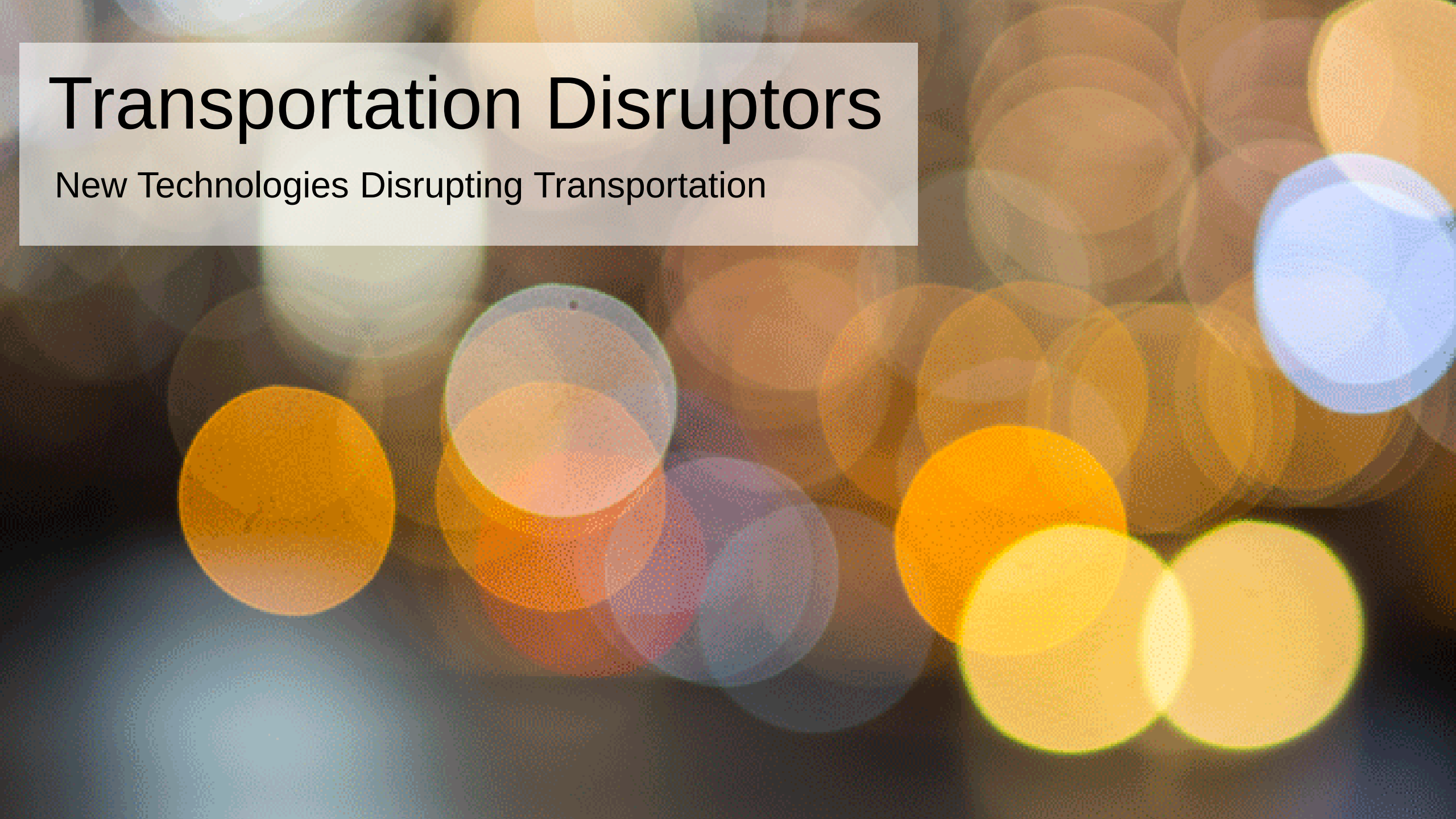
Transportation Disruptors

New Technologies Disrupting Transportation

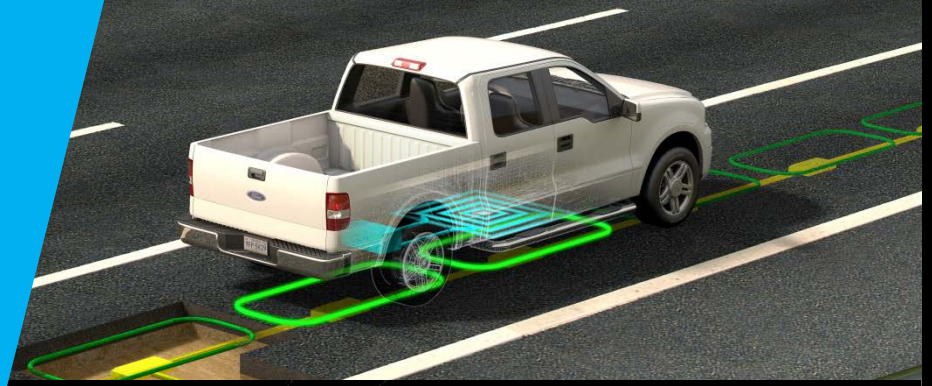


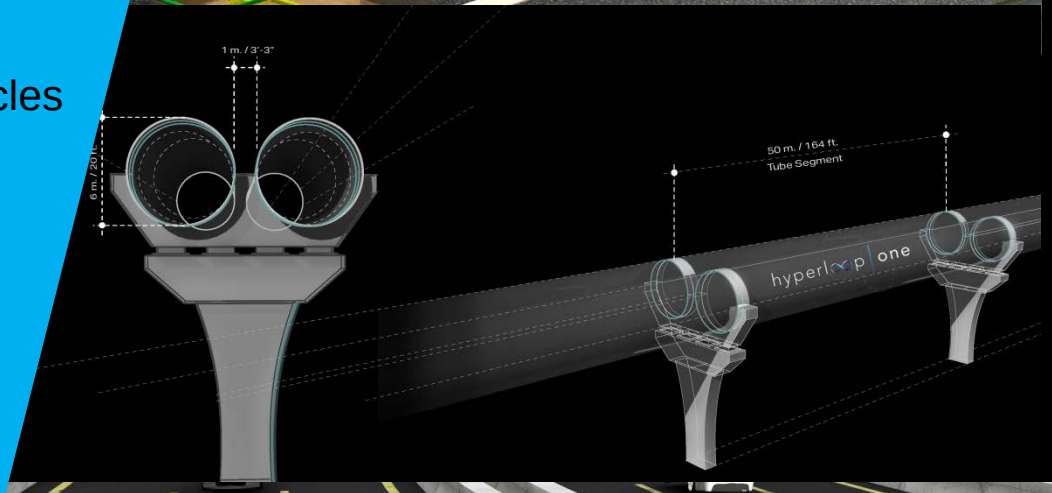
AECOM Ventures

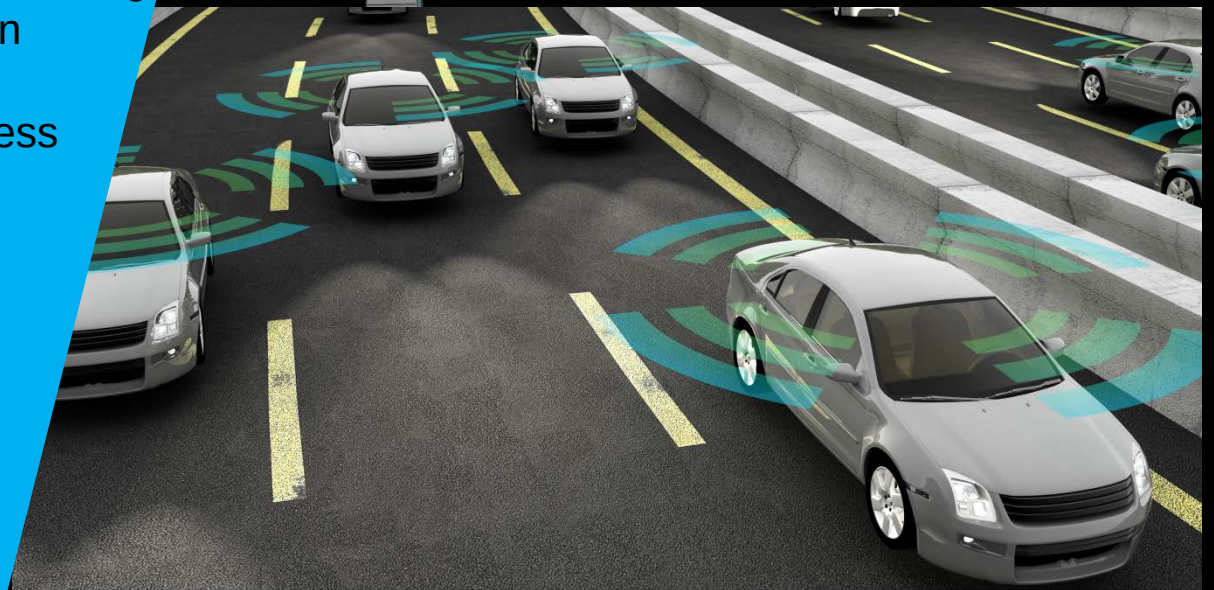
Focused on Innovation and Technology
In Our Evolving Infrastructure

Transportation Initiatives
Connected and Automated Vehicles
Electric Vehicle Infrastructure
Smart Cities
Mobility as a Service
Hyperloop

Focuses
- Policy and Strategic Planning
- Technology Integration and Deployment
- Infrastructure Readiness
- Partnerships







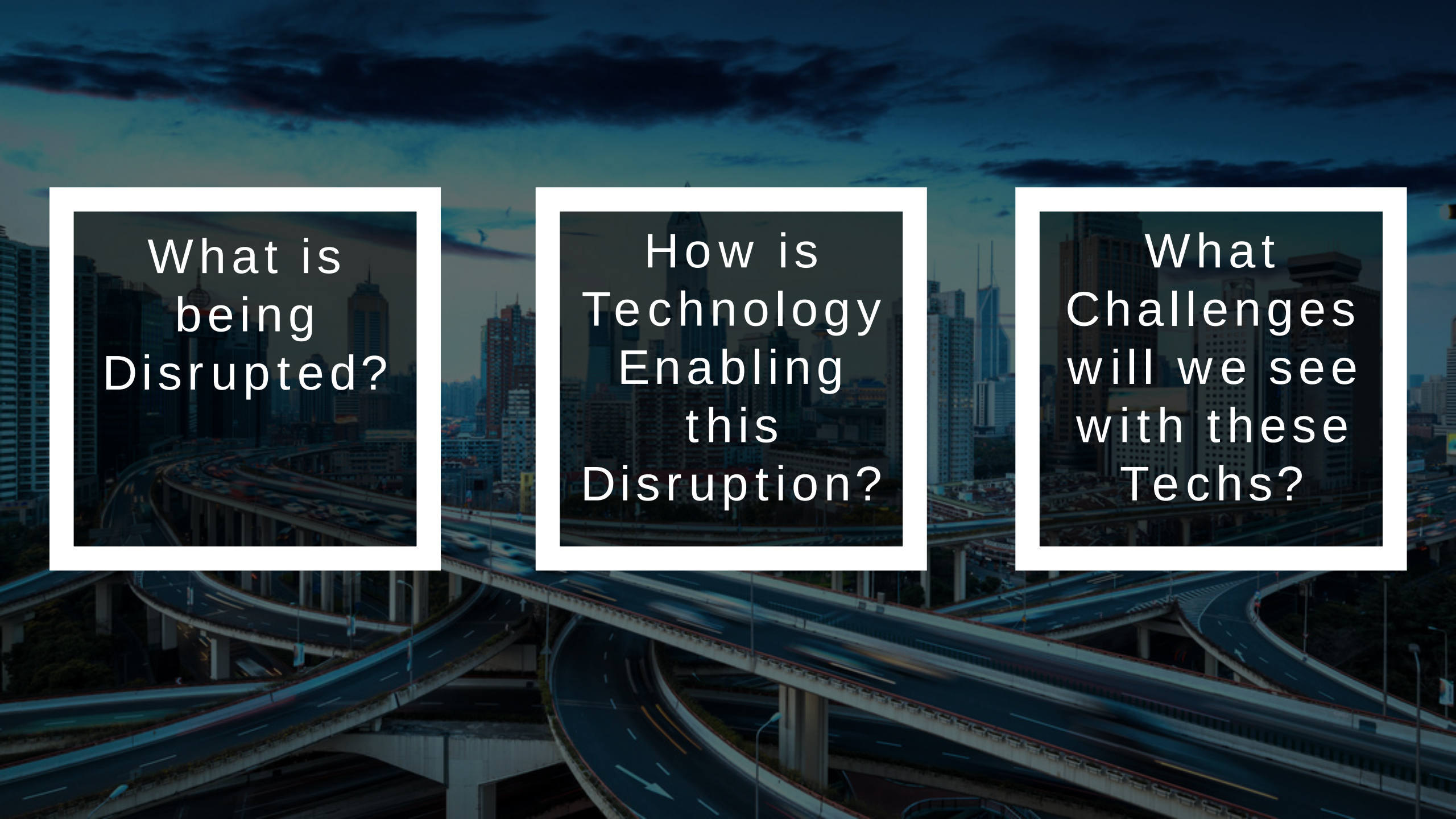
SPACEX

Google

Virgin hyperloop one

THE BORING COMPANY

AECOM


What is being Disrupted?
How is Technology Enabling this Disruption?
What Challenges will we see with these Techs?

TRANSPORTATION

Movement of **people** or **goods**

Safety

Access

Capacity

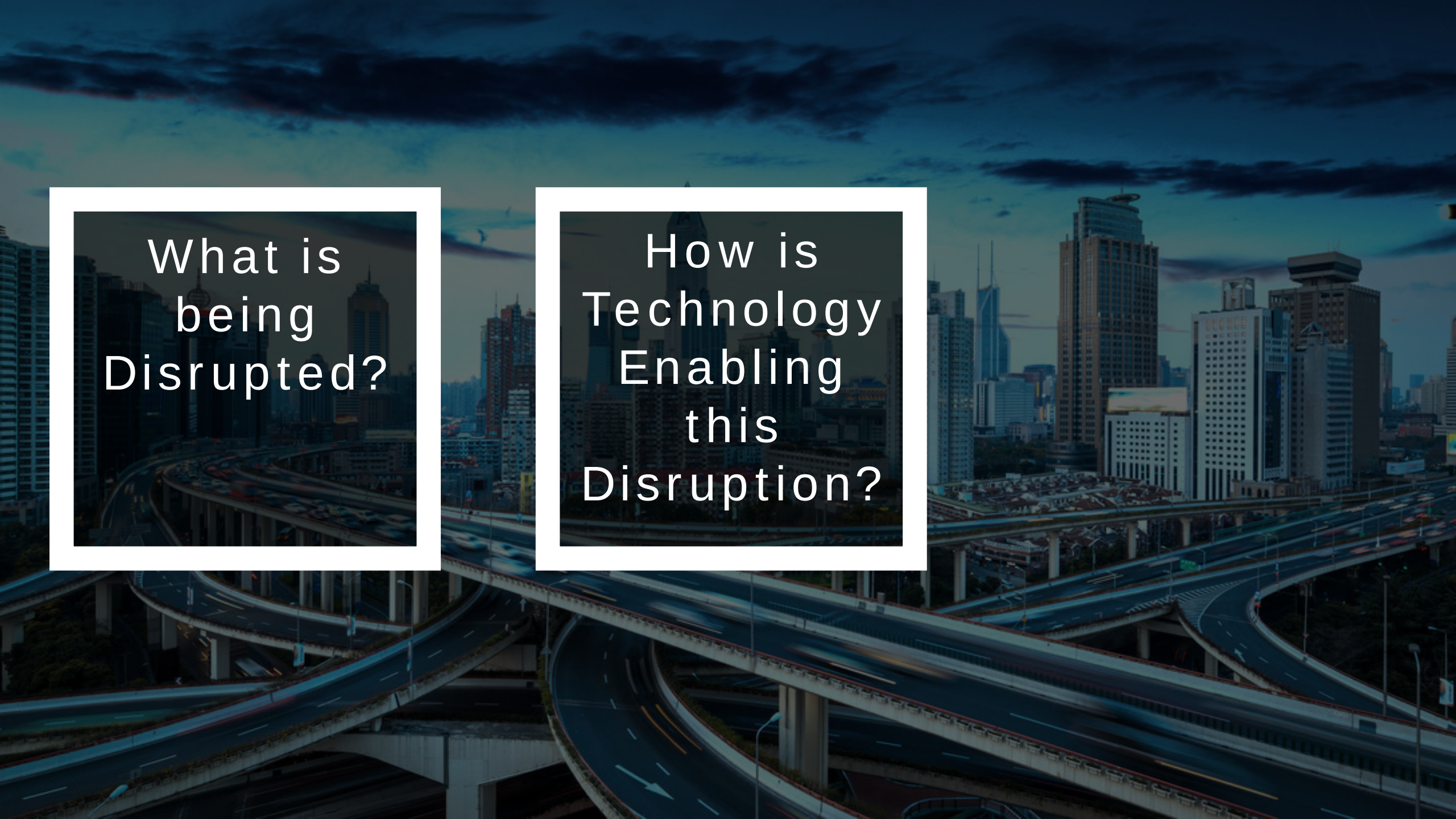
Immediacy

Efficiency

Community

Ability to move **freely**

MOBILITY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How is Technology Enabling this Disruption?

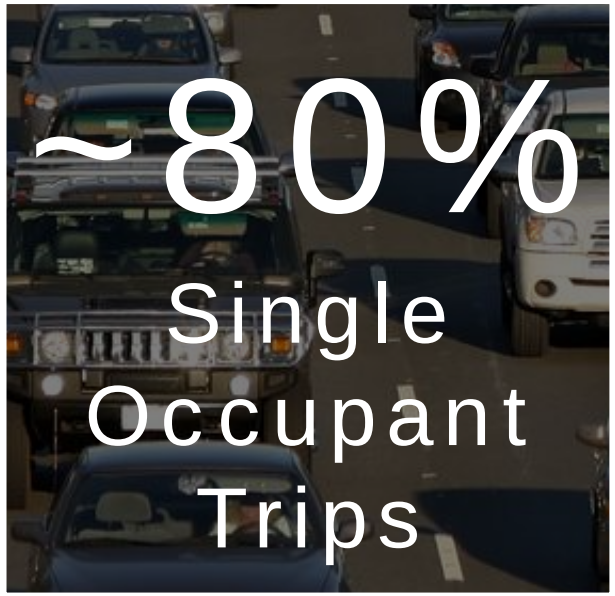
TRANSPORTATION TRENDS

SHARED

SUSTAINABLE

HIGH SPEED

SHARED MOBILITY



~80%

Single Occupant Trips

1.1

Cars per Licensed Driver

SHARED MOBILITY

Mobility Based Apps

Ride Hailing, On-Demand Transportation

Parking, Car Ownership

CONNECT STOPS

	Connecting Routes
non St E	19, 66L
Pine Ave N	67, Countryside/Oldsmar/ Tampa Connector
atricia Ave	61, 66L, 78, Dunedin/ Palm Harbor Connector
St Layby	4, 11, 52, 59, 97, 98
Park Transit Center	11, 34, 52, 74, 75, 97, 444
ble Blvd & Orange m Ln	18
St S & 18th Ave S	23
ay Dr & Missouri Ave N	18, 52, 98

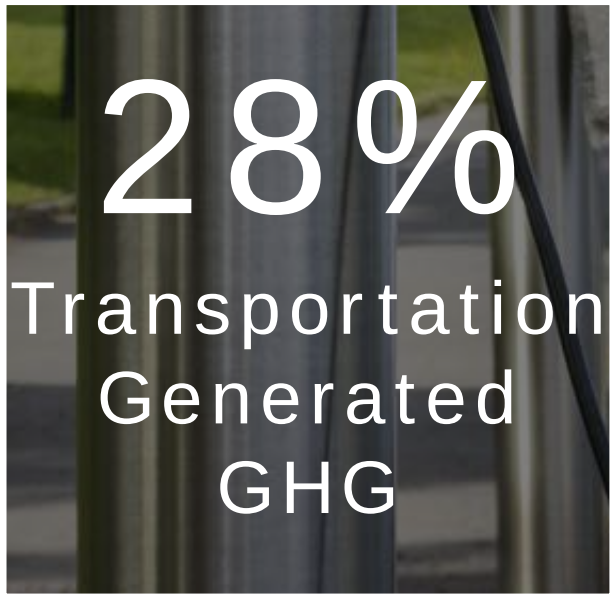
OW TO RIDE

Choose a provider

Hail a ride

Travel to/from a designated PSTA stop

ELECTRIC VEHICLES



28%

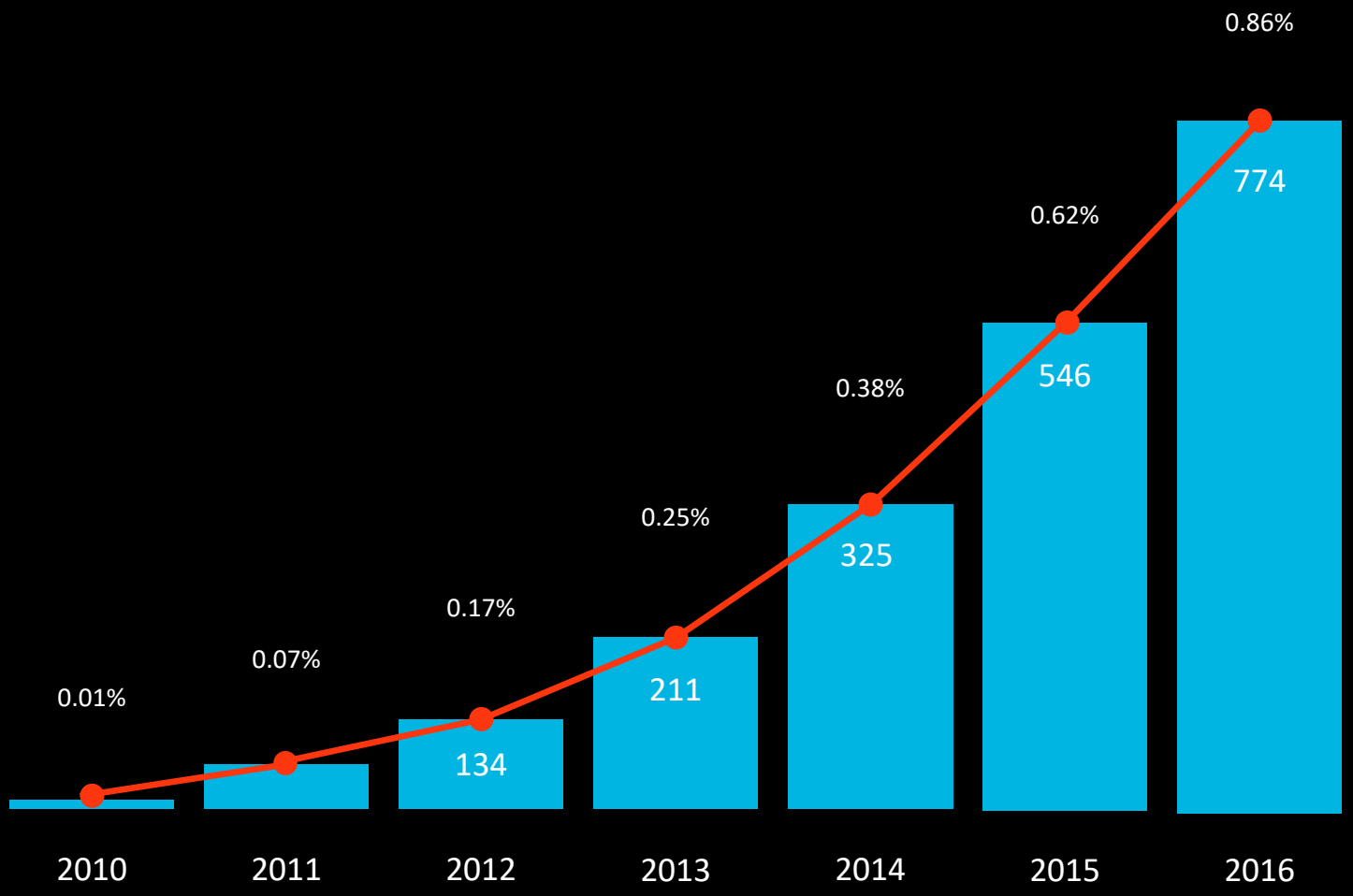
Transportation Generated GHG

57%

Less Cost to Operate EV vs ICE Vehicles

ELECTRIC VEHICLES

Light Duty Vehicle Adoption



GLOBAL EV STATISTICS

2016 EV SALES

774K

2016 GROWTH

42%

EVs ON THE ROAD

2M

EVs ON THE ROAD BY 2017

3.1M

EV OEMs

>40

BATTERY COST REDUCTION

50%

ELECTRIC VEHICLES

Buses

98% **of world sales of electric buses were in China in 2016**

- LA Metro pledge for Electric Fleet by 2030
  - Full cycle Zero-Emissions
- Antelope Valley Electric Bus Fleet by 2018
- $15B Volkswagen Settlement
- CPUC Proposal for all California Transit Buses to be Electric by 2040

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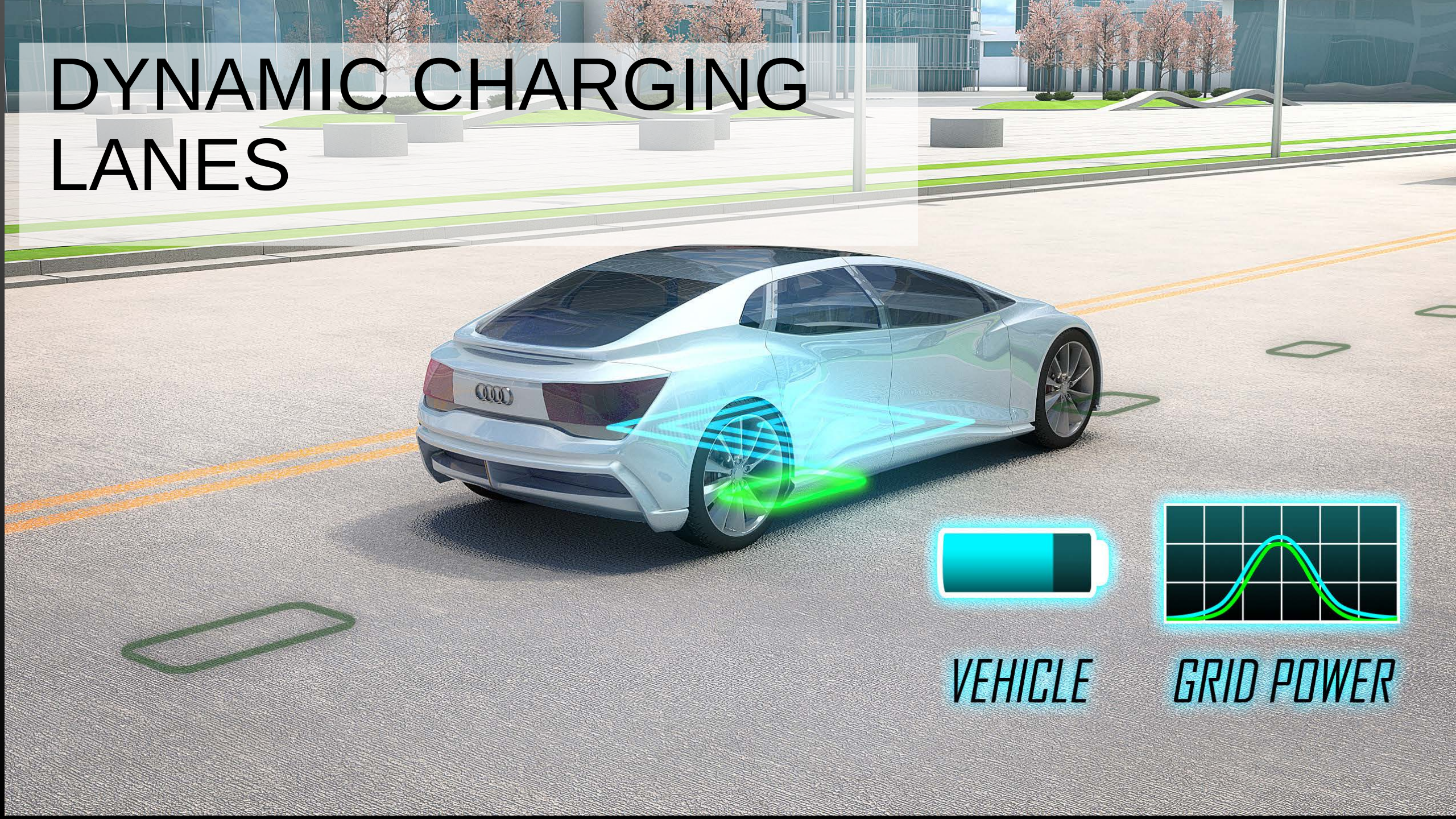
DYNAMIC CHARGING LANES



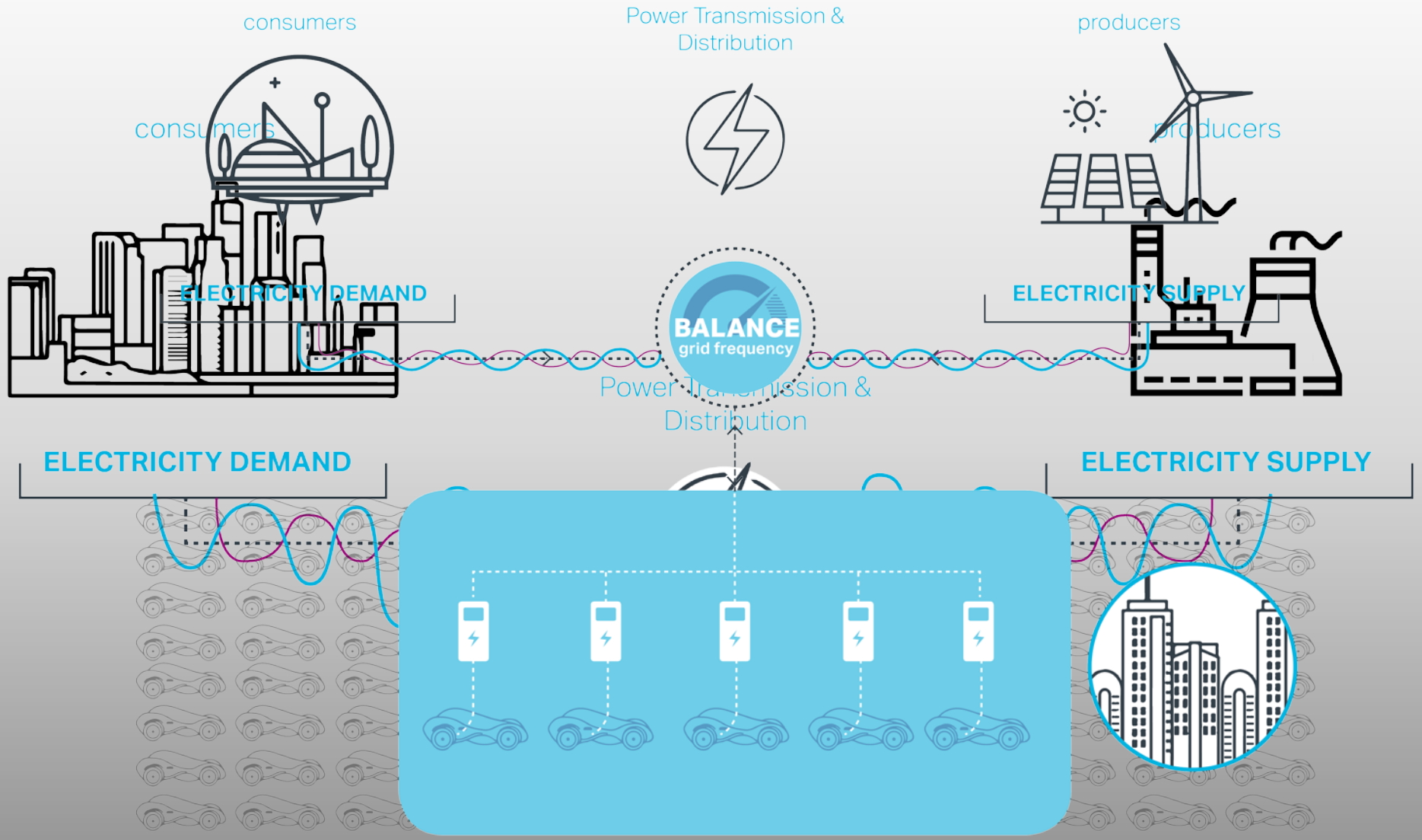
Lower cost to electrify fleet vehicles

Better fleet efficiency with electric vehicles that don't need to stop to charge

Cleaner vehicle fleets that are not reliant solely on fossil-based fuels

Reduce transportation operations costs

Minimal changes in operations, maintenance and required facilities


consumers
Power Transmission & Distribution
producers
consumers
producers
ELECTRICITY DEMAND
BALANCE
grid frequency
ELECTRICITY SUPPLY
Power Transmission & Distribution
ELECTRICITY DEMAND
ELECTRICITY SUPPLY

HIGH SPEED TRANSPORTATION

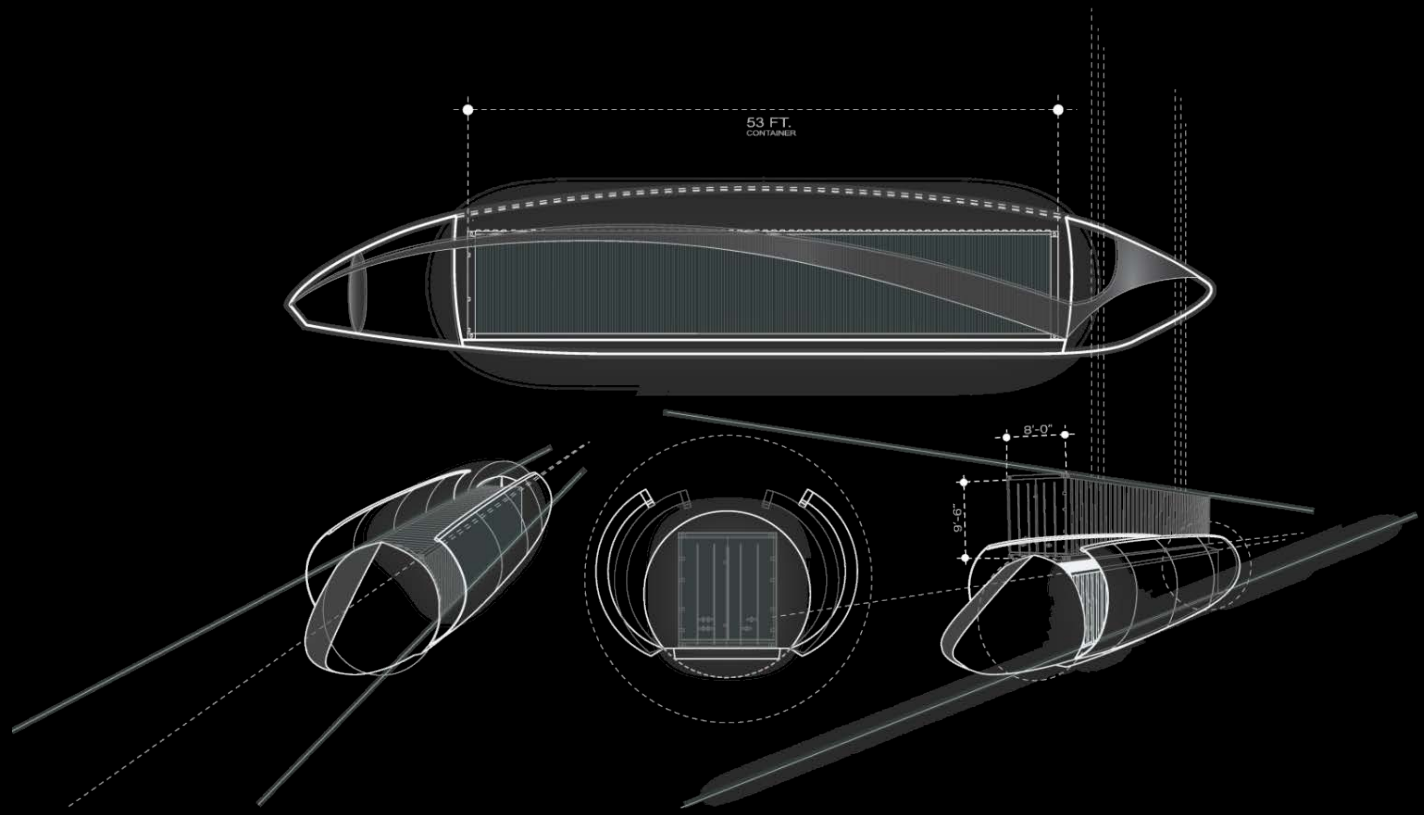
Hyperloop

KEY ASPECTS

- Isolated environment
- Reduce pressured
- Levitation

BENEFITS

- High speeds, up t0 760mph
- Autonomous and separated
- Sustainable



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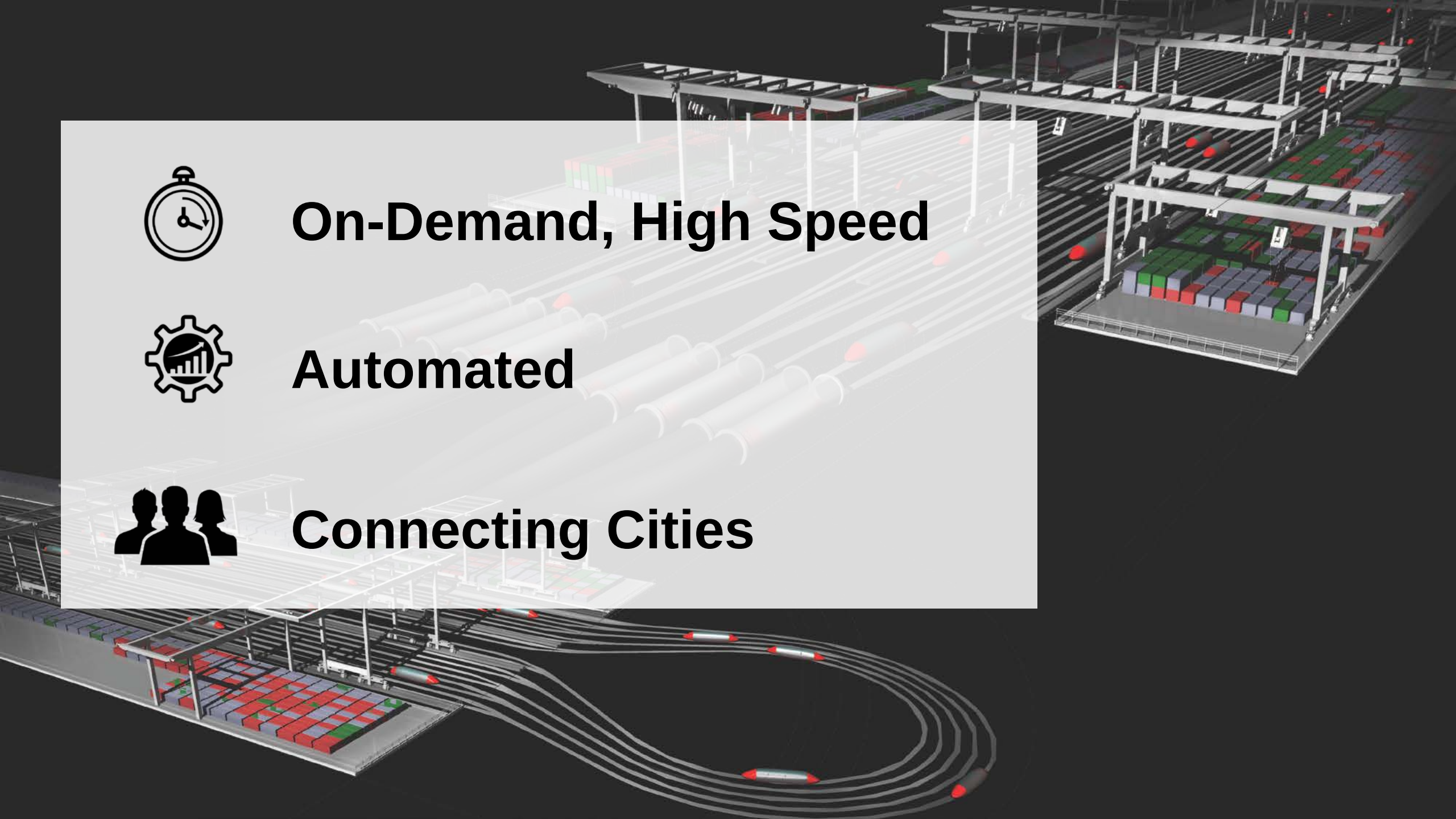


On-Demand, High Speed

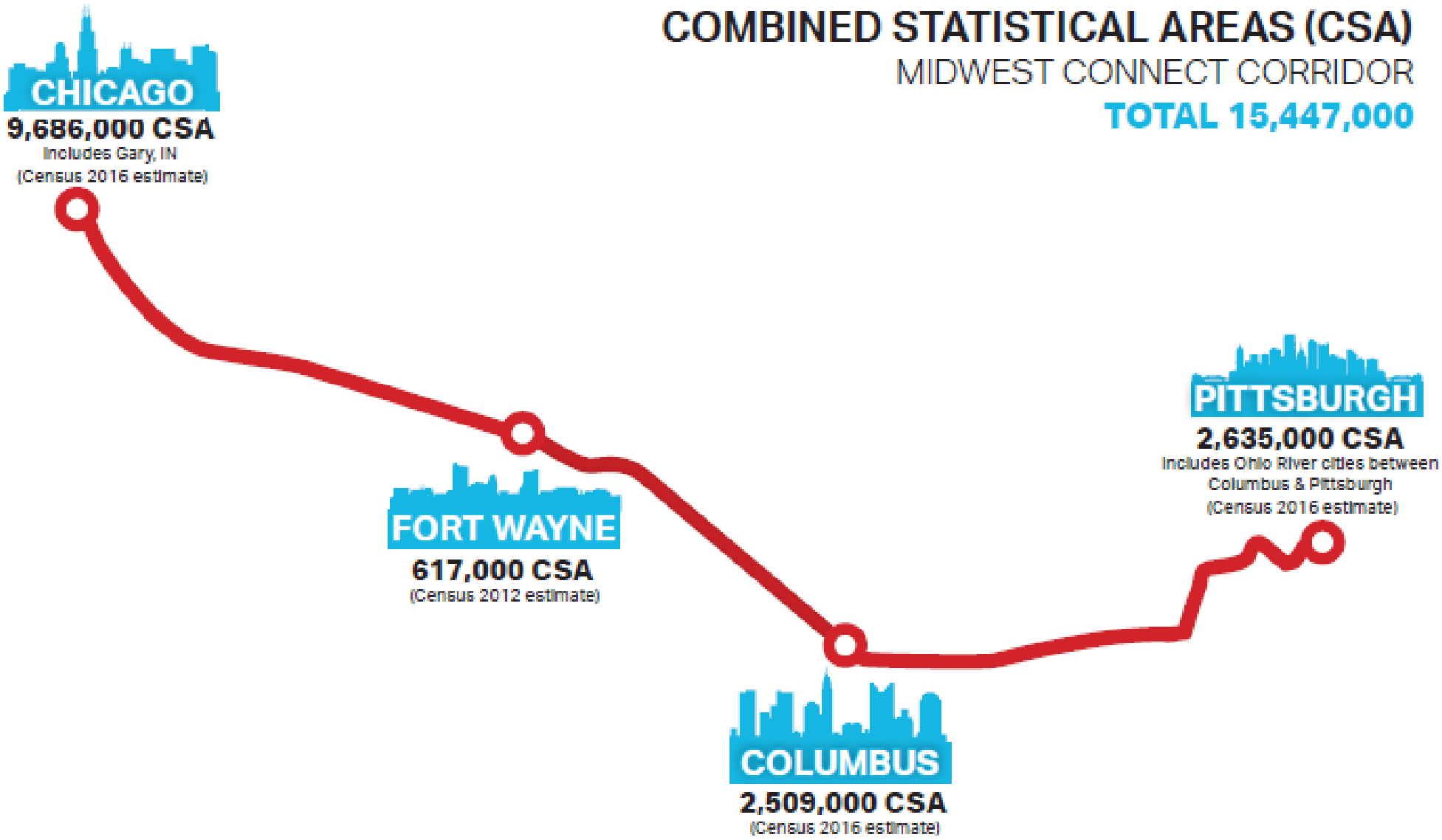
Automated

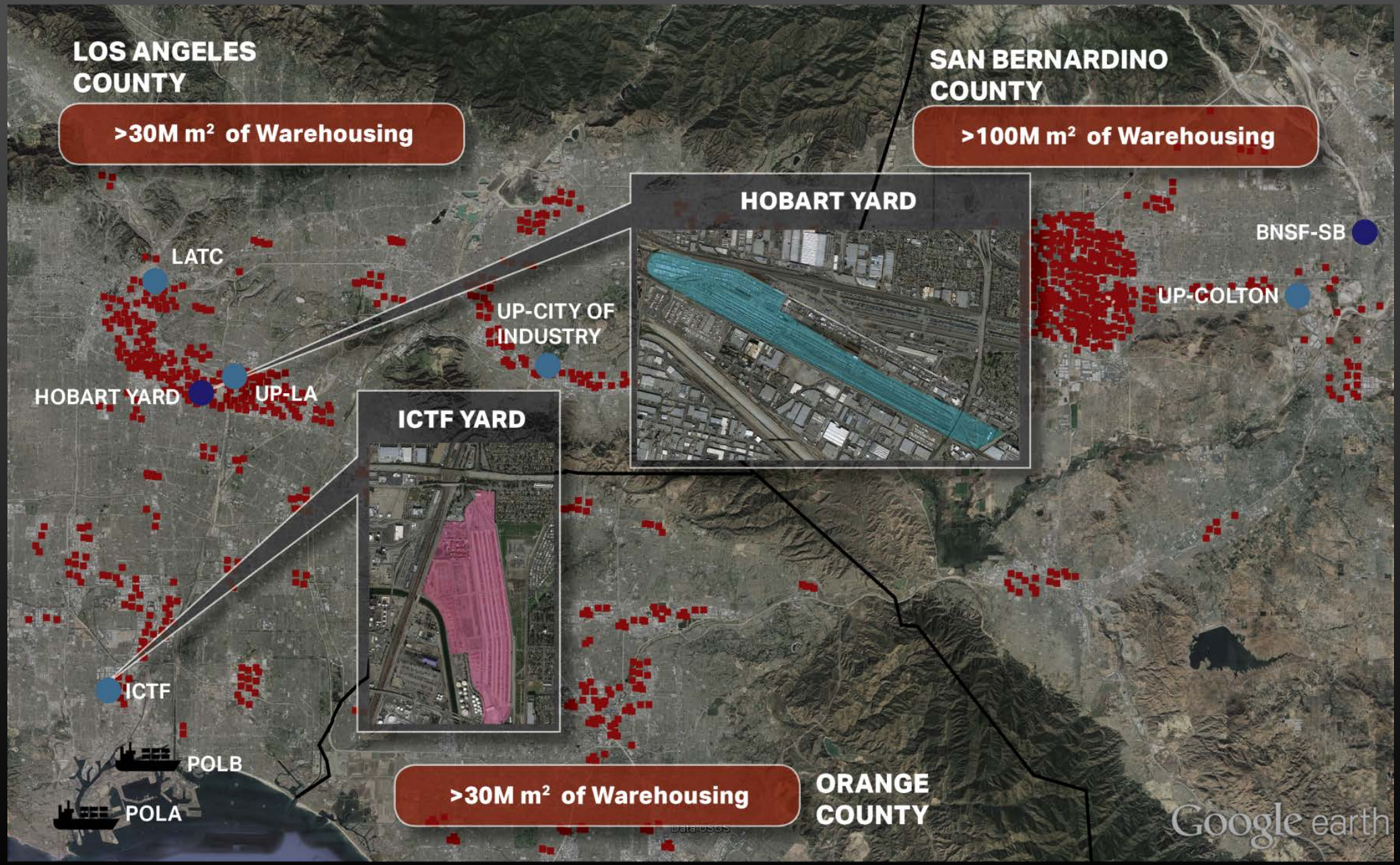
Connecting Cities

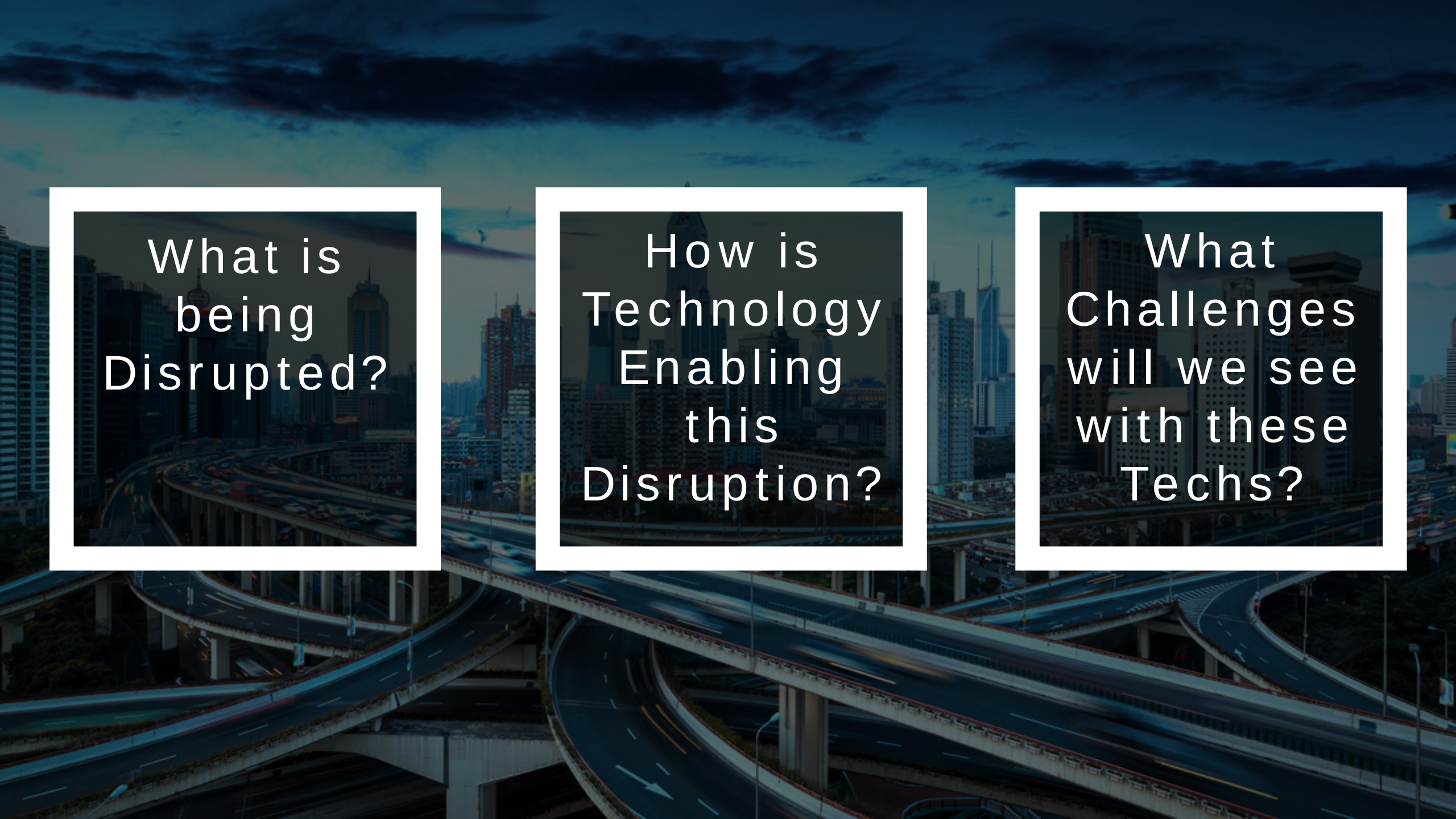
COMBINED STATISTICAL AREAS (CSA)

MIDWEST CONNECT CORRIDOR

TOTAL 15,447,000




LOS ANGELES COUNTY
>30M m² of Warehousing
SAN BERNARDINO COUNTY
>100M m² of Warehousing
HOBART YARD
LATC
UP-CITY OF INDUSTRY
BNSF-SB
UP-COLTON
HOBART YARD
UP-LA
ICTF YARD
ICTF
POLB
POLA
>30M m² of Warehousing
ORANGE COUNTY
Google earth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TECHNOLOGY CHALLENGES

SECURITY

TECHNOLOGY INTEGRATION

INTEROPERABILITY

Questions?

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