

The background of the slide is a photograph of a green and red trolley on a cobblestone street. A white Wi-Fi symbol is overlaid on the trolley. The right side of the slide has a yellow diagonal background.

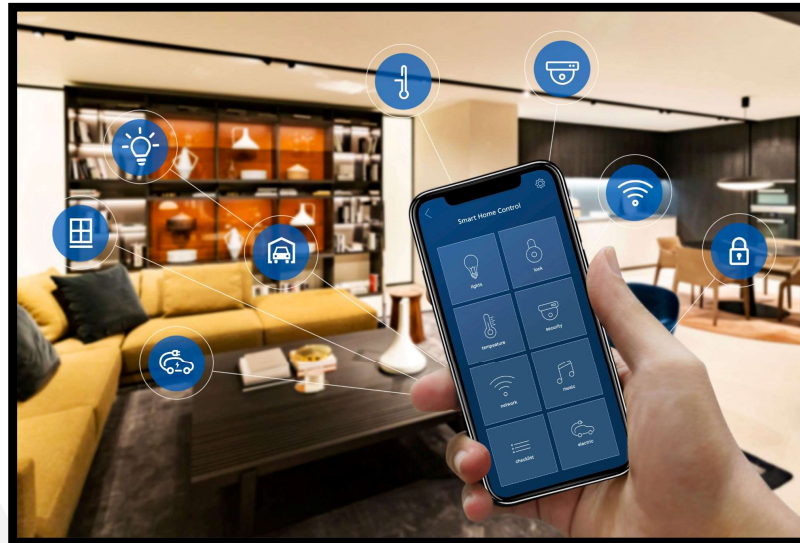
# Connected Smart Regions

Dan Nall, Director of Sales, Kapsch

**kapsch** >>>

**130 Years**  
of challenging limits

# Connected Home Devices

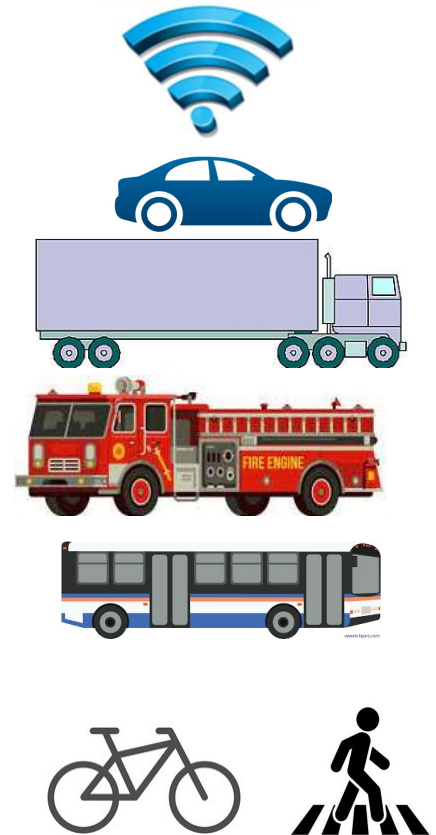
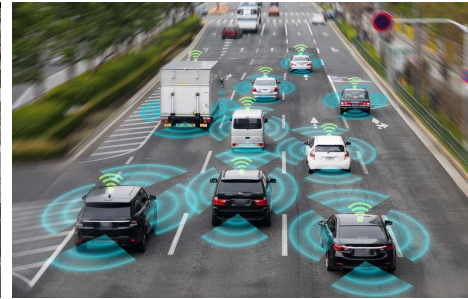
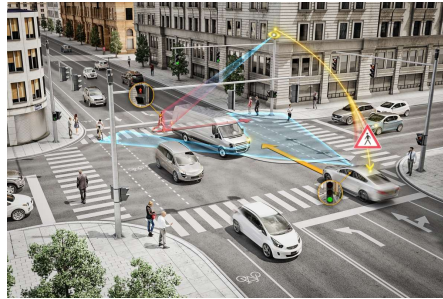


# What is a Smart City



# Not a Smart City Rather a Connected Region

- ▶ Intersection
- ▶ Freeway
- ▶ Toll Road
- ▶ VRUs
- ▶ Emergency
- ▶ Work Zone
- ▶ Transit



## Connected – Smart Possibilities



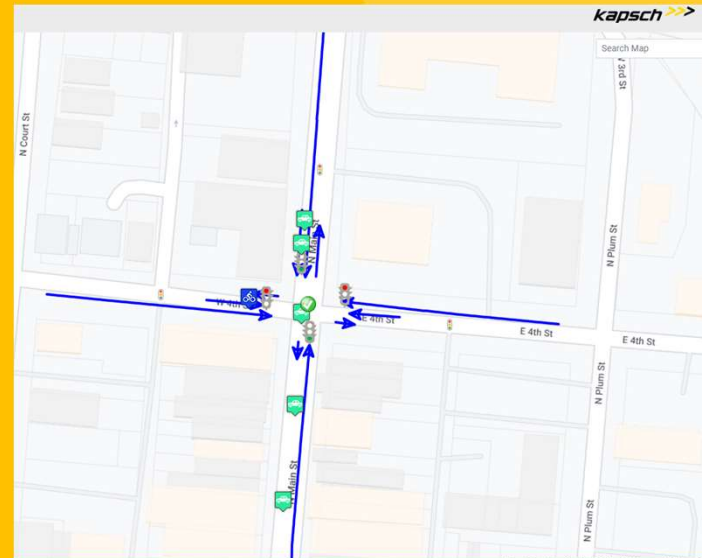
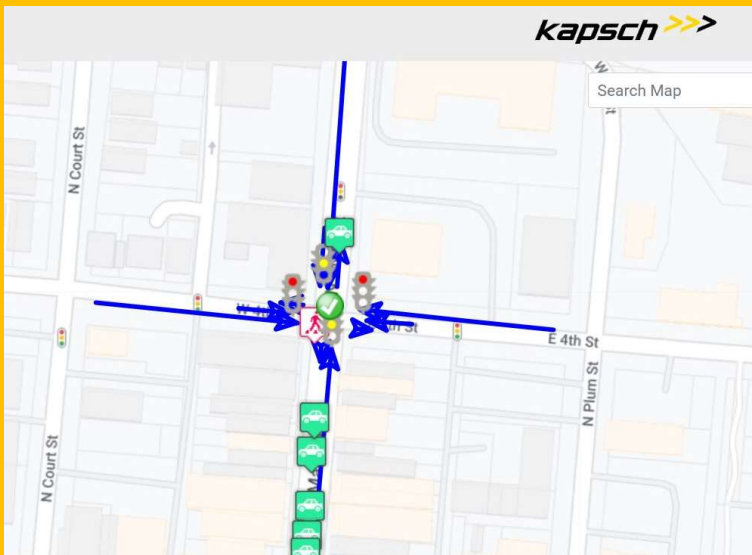
- ▶ Cars
- ▶ Trucks
- ▶ Transit
- ▶ Emergency Vehicles
- ▶ Work Zone
- ▶ Snowplows
- ▶ EV Charging Stations
- ▶ Weather
- ▶ Streetlights
- ▶ Parking
- ▶ DMS Signs
- ▶ Variable Speed Limit
- ▶ Wrong Way Detection
- ▶ Stopped Vehicle Detection
- ▶ SPAT Data
- ▶ GLOSA ( Green Light Optimized Speed Advisory)
- ▶ Scooters
- ▶ Pedestrian Safety
- ▶ Bike Safety
- ▶ HAWK/RRFB Crossing
- ▶ Bike Rental
- ▶ Cameras
- ▶ Tolling
- ▶ Weigh in Motion/Commercial Vehicles
- ▶ Near Miss Data
- ▶ Smart Waste Facilities

# Connected Roadways



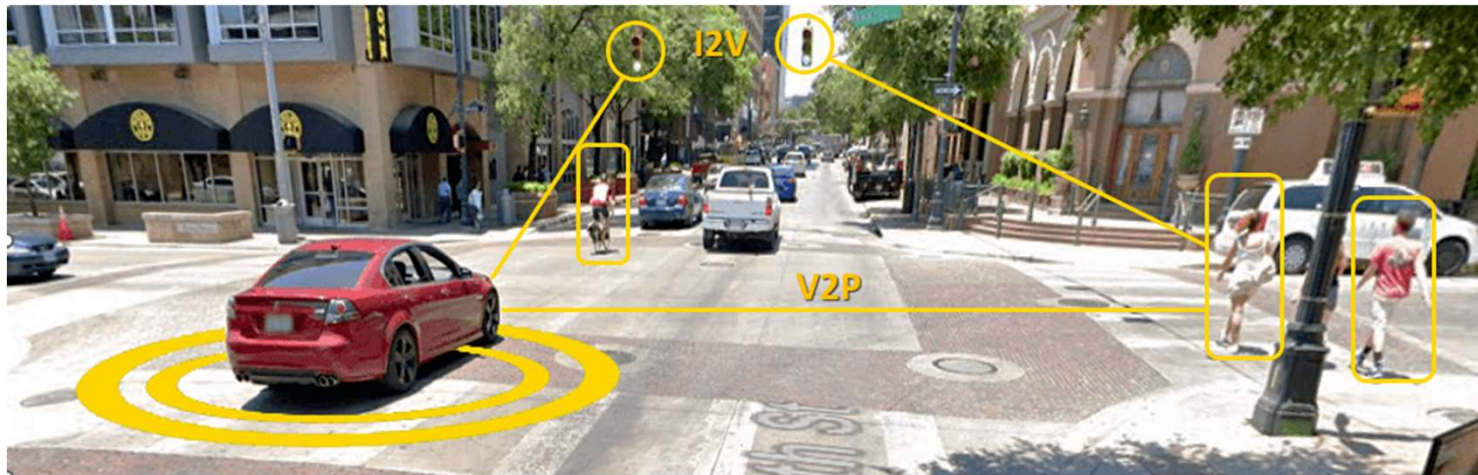


# Connected Intersections



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# Intersection Connected Services



## V2X Intersection Safety

- Red Light Warning
- Emergency Vehicle Preemption
- Special Vehicle Priority
- Work Zone
- GLOSA



## Vulnerable Road User

- Bike/PED safety messaging
- Pedestrian Assistance for visually impaired
- V2P connectivity

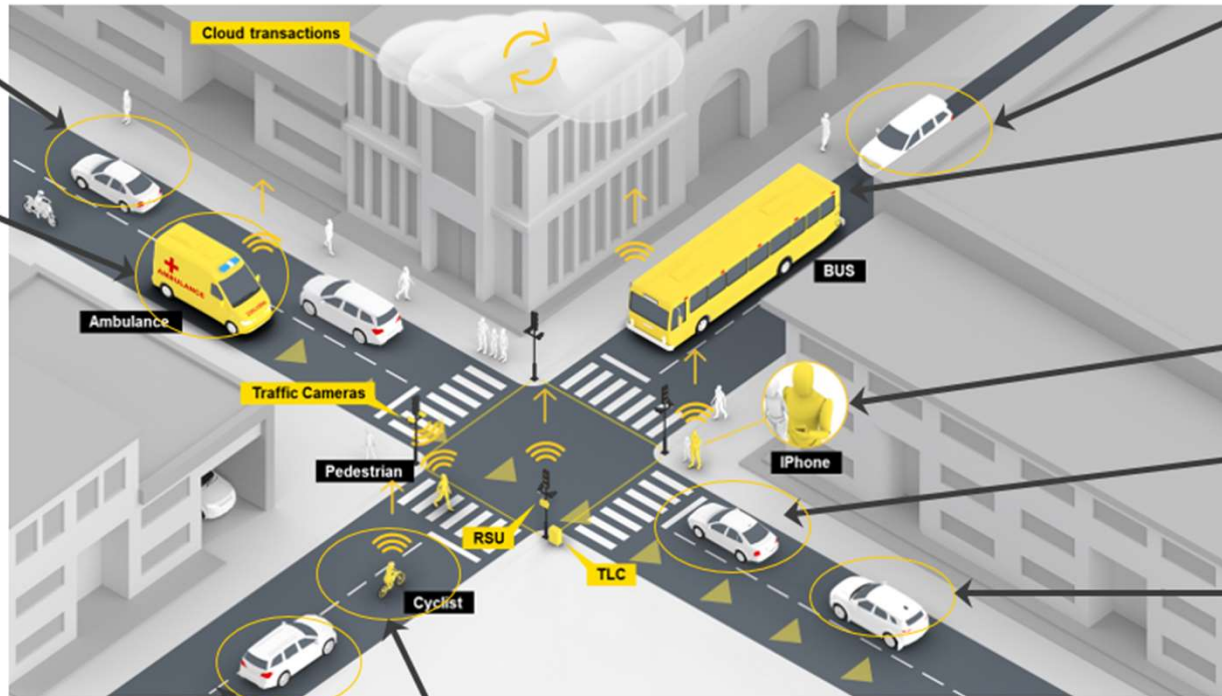




Route Guidance

Emergency Vehicle Preemption

Emergency Vehicle Advisory



EV Charging

Transit Signal Priority

Ped Actuation  
Ped Vehicle Awareness

Ped Awareness

Red Light Warning

GLOSA

Bike Awareness

# Detector Analytics



# VRU Near Miss Analytics



# Pedestrian Car Near Miss Analytics

Basler-23152626 1970-01-10 20:55:46 UTC 25.0



# Bicycle Car Near Miss Analytics

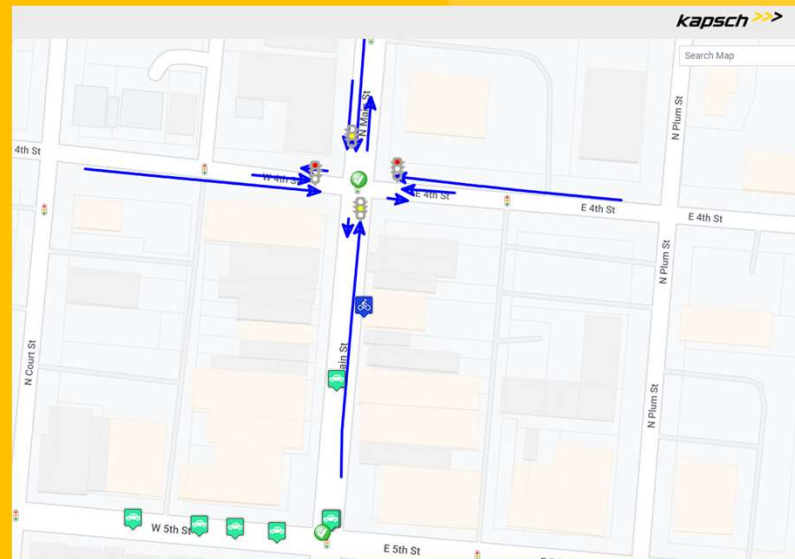
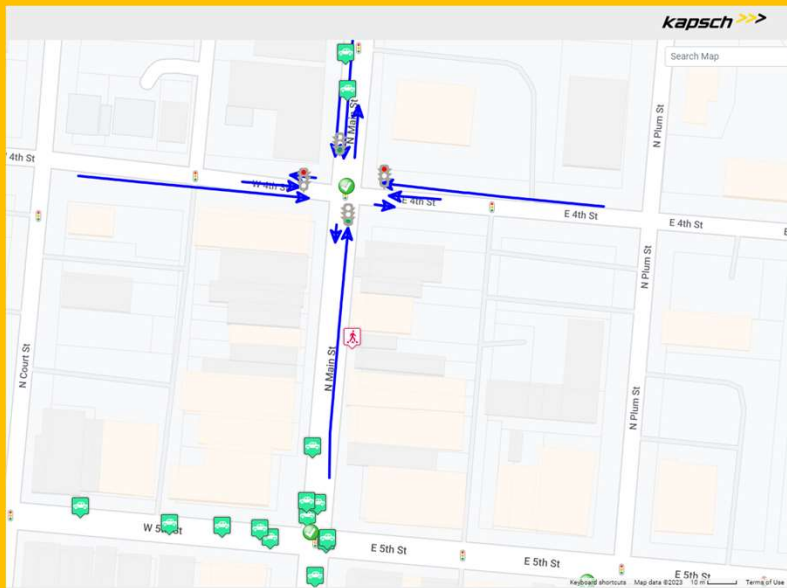




safety  
applications



# Connected Non-Intersection Crossing



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# Non-Intersection Crossings

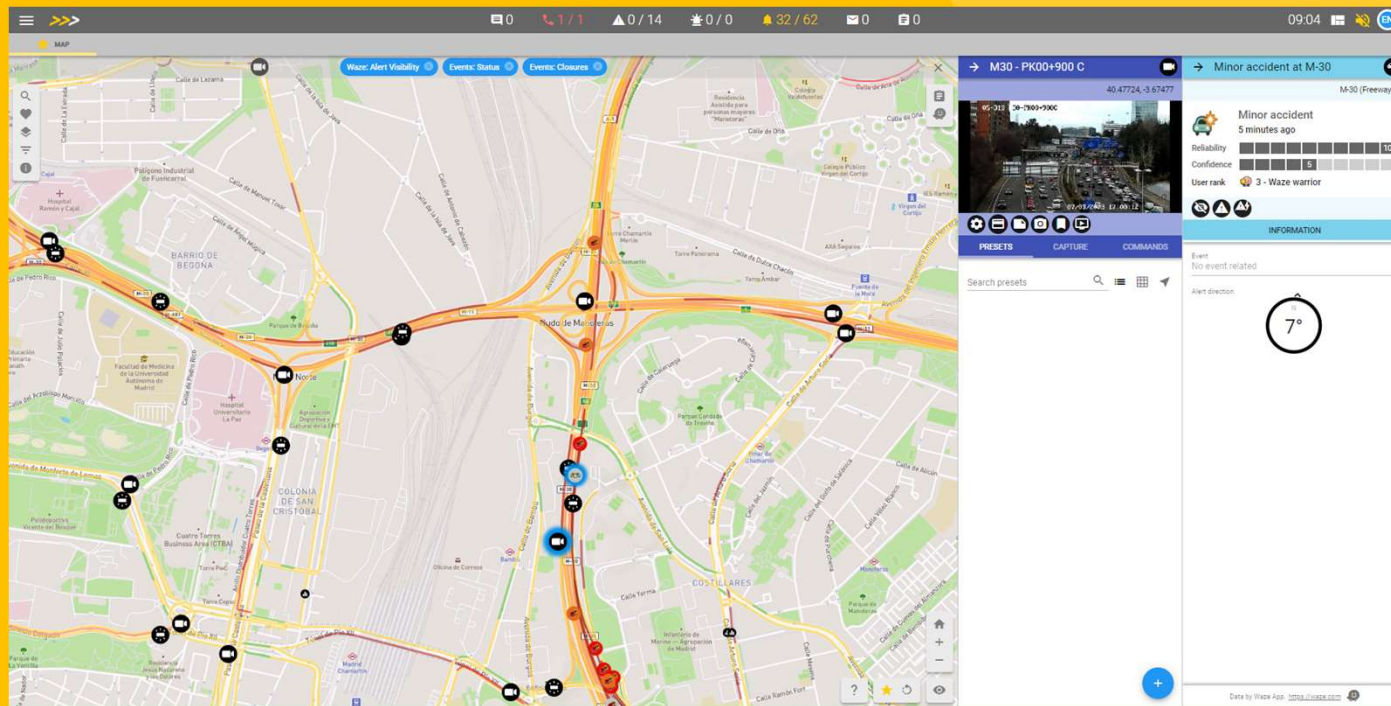






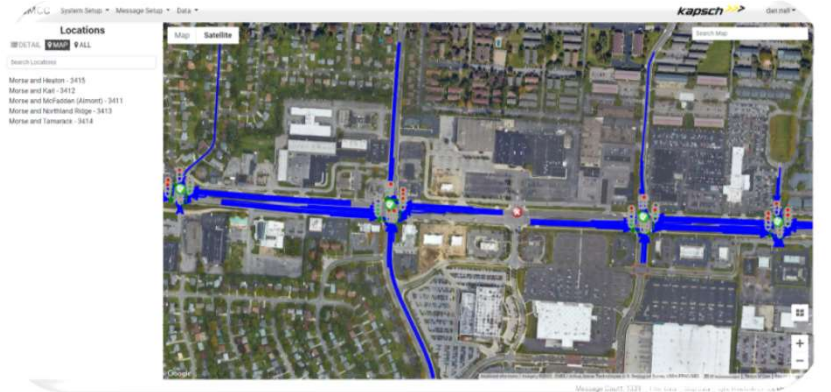
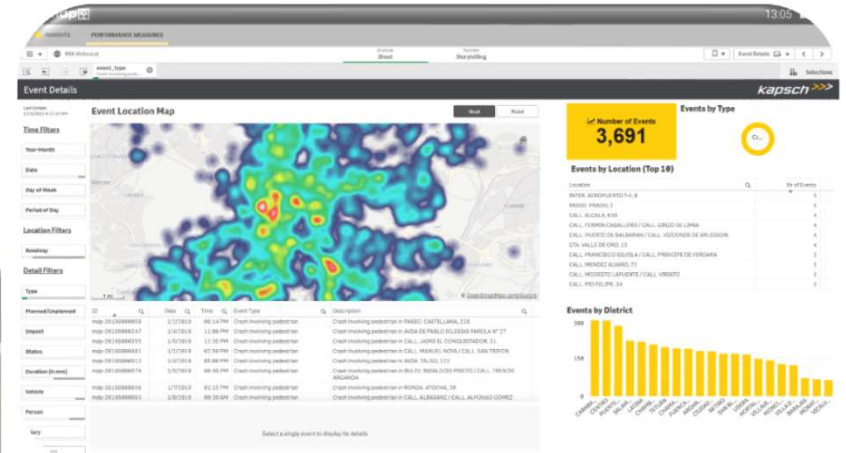
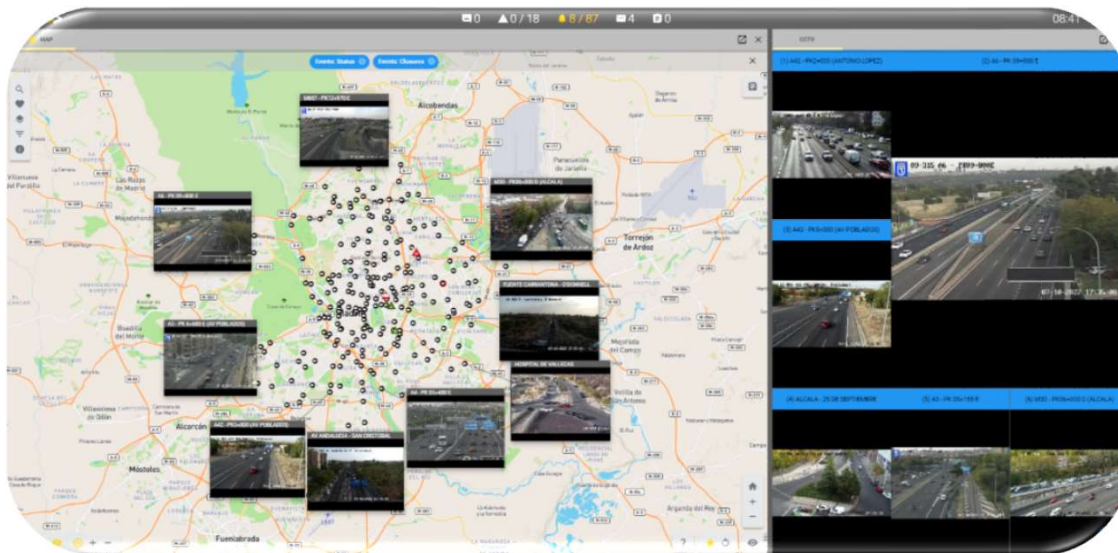


# Connected Regions



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# Regional Situational Awareness



# Phoenix, AZ September 8, 2014



Storms produced 3.30" inches of rain at Phoenix Sky Harbor airport which was the most rain ever recorded on a calendar day in its nearly 115-year period of record. Other locations across central portions of the county registered even greater totals with upwards of 4.00"-5.50"

1 inch of rain = 13 inches of snow





09:10 EN

MAP

Layer selector

- Main
- Traffic
- Transit
- Waze
- Events
- Fleet management
- Air Quality
- Weather
- POI

CPMV10332

PANEL NUM. 1 EN ERU001 - C. INTERIOR LATERAL PK 3+...

PLEASE DO NOT TEXT AND DRIVE

STACK LIBRARY COMMANDS

PLEASE DO NOT TEXT AND DRIVE

# Major Roadblocks to Connected Region



- ▶ **Operational Control**
- ▶ **Jurisdictional Boundaries**
- ▶ **Connected Facilities**
- ▶ **Funding**



## Regional Collaboration – Not just Traffic

- ▶ **Cities**
- ▶ **Counties**
- ▶ **State**
- ▶ **MPO**





# Digital Transformation of Smart Regions



Just like in our homes and offices the Digital transformation of our infrastructure will define the future

## *Issues that impact transportation stakeholders:*



### ***Safety***

Roadway safety is a key factor of all urban traffic investment initiatives.



### ***Mobility***

More efficient multi-modal transportation within and around urban areas drives economic growth.



### ***Sustainability***

A cleaner environment enables more access and use, attracting residents and businesses.

# THANK YOU

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*kapsch* >>>

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