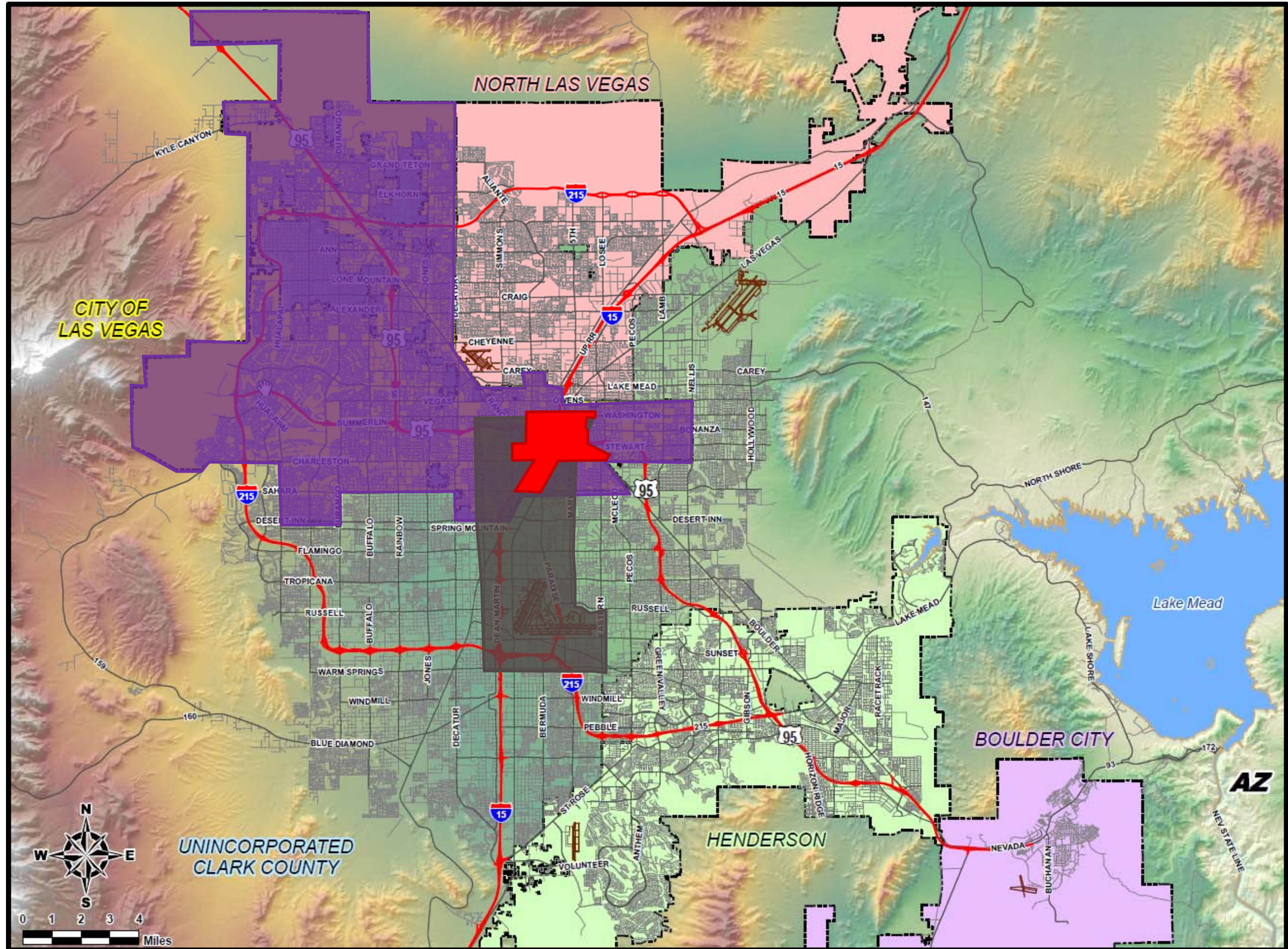


Lessons Learned from City of Las Vegas Driverless Shuttle Pilots

June 27, 2019







Citywide Strategic Planning Overview

2017 City Council Strategic Workshop

- Economic Opportunities
- Public Safety (focus on Homelessness)
- Education
- **Transportation**

Transportation Goals

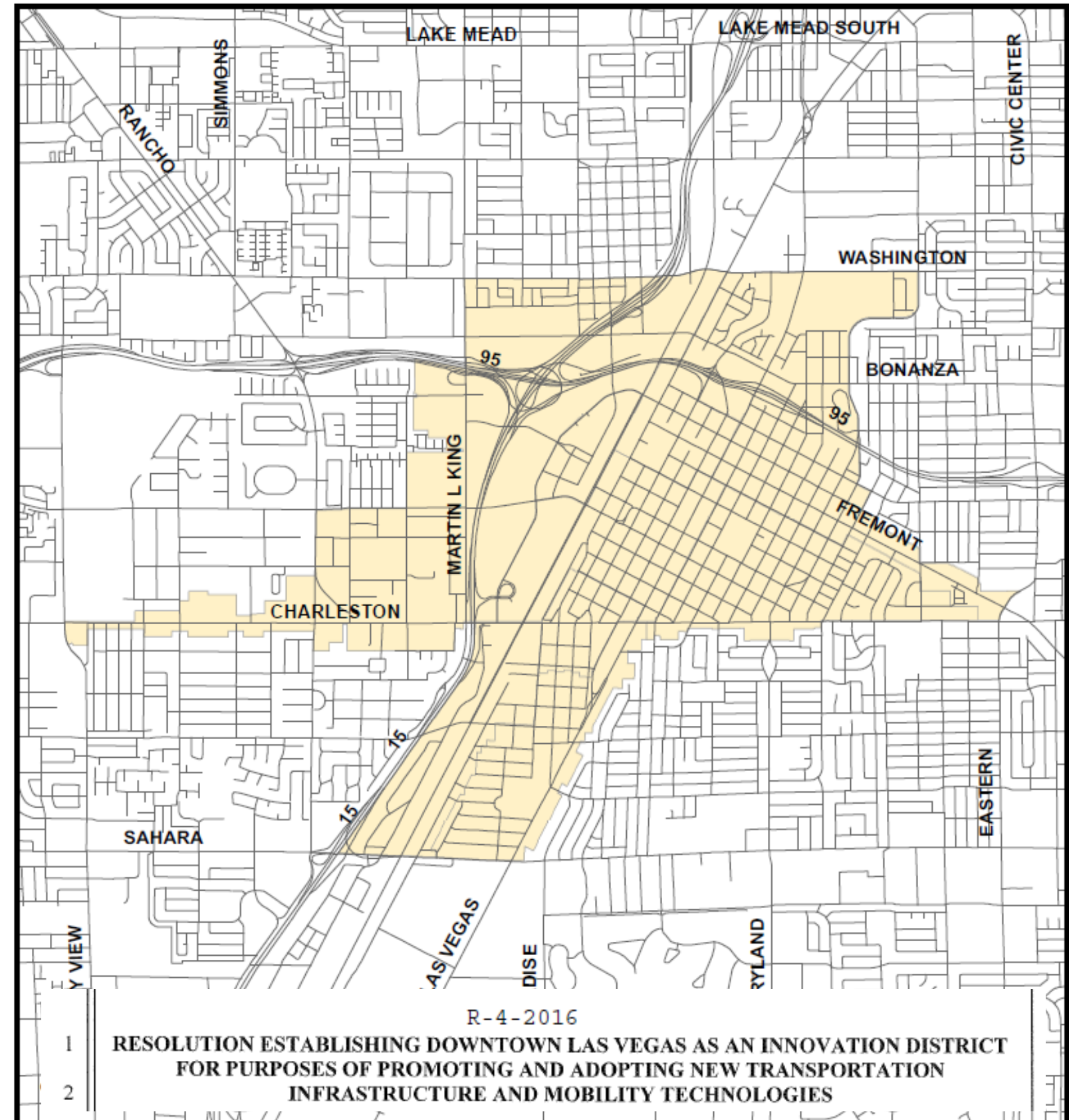
- Safe
- Efficient
- High Capacity
- Sustainable





Innovation District

How do we use technology to create a connected, downtown community that enhances the quality of the downtown experience for residents, visitors, businesses, and workers and spurs economic opportunities and vibrancy?





Autonomous Vehicle Licensing



- 2011 – NV first state to allow the testing of AVs on public roadways
- 2012 – NV DMV Issues First AV Testing License to Google
- 2013 – Legislation passed, SB 313
 - \$5 million insurance/bond for testing
 - Human operator in driver's seat
- 2017 – Passed legislation to allow operator to be at remote location & Create AV network companies



Keolis/Navya Initial Autonomous Shuttle Pilot



Touchdown on Sunday, Jan. 8, 2017!



Navya ARMA Vehicle





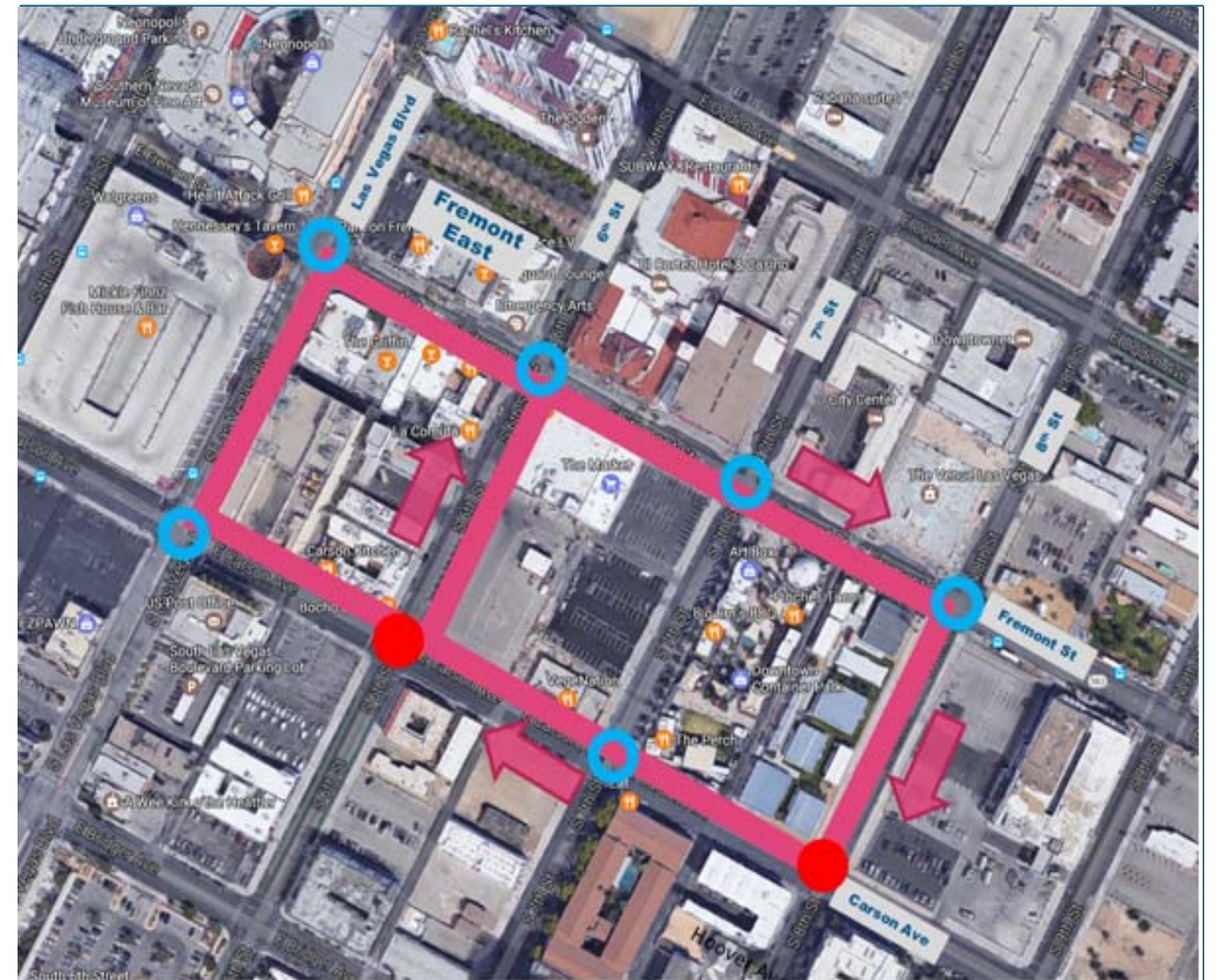
Press Event to Launch First Pilot Service (January 10, 2017)





Expanded Autonomous Shuttle Pilot (Launched November 8, 2017)

- Operates Tuesday thru Sunday
 - 11 am to 7 pm
- Free to the public to ride
- 0.6 mile loop
- Private Funding (Keolis and AAA of CA/NV/UT)



Fremont East Entertainment District



Goals of Deployment

- Gain firsthand experience with AV technology
- Expose the public to the technology for the first time
- Evaluate performance, viability, and acceptance for transit service
- Evaluation Methods
 - Ridership Data
 - Vehicle Performance
 - User Feedback





4.9 out of 5 star passenger rating

Over 32,000 riders on the AAA Free Self-Driving Shuttle

+30% lift in autonomous vehicle sentiment score after ride

91% of all riders agreed AAA made them feel safer with AV technology

+98% of riders agreed to recommend this experience to a friend.



What did People Say?

“It was really fun and interesting. Great way to learn about the technology.”

“I can’t wait to never hear the term ‘road rage’ ever again.”

“I am looking forward to not only riding in, but someday owning a self-driving vehicle. I am legally blind and can no longer drive. I had AAA since I was 16 and loved the security it gave me. A self-driving vehicle sponsored by AAA is a perfect partnership to gain the average consumer’s confidence.”



What We've Done Well

- Enacted enabling legislation for AV's by NV DMV
- Established Public-Private Partnership with Keolis and AAA
- Started small
- Held Partnering sessions with technology companies
- Collaborated with city team early in the process
- Informed private business along the route
- Conducted pre-testing of technologies





What We'd Do Differently

- Initiate earlier outreach to community stakeholders (i.e. Police, Fire, Emergency Responders)
- Identify a solution for curbside management
- Educational outreach to public (adjacent drivers)



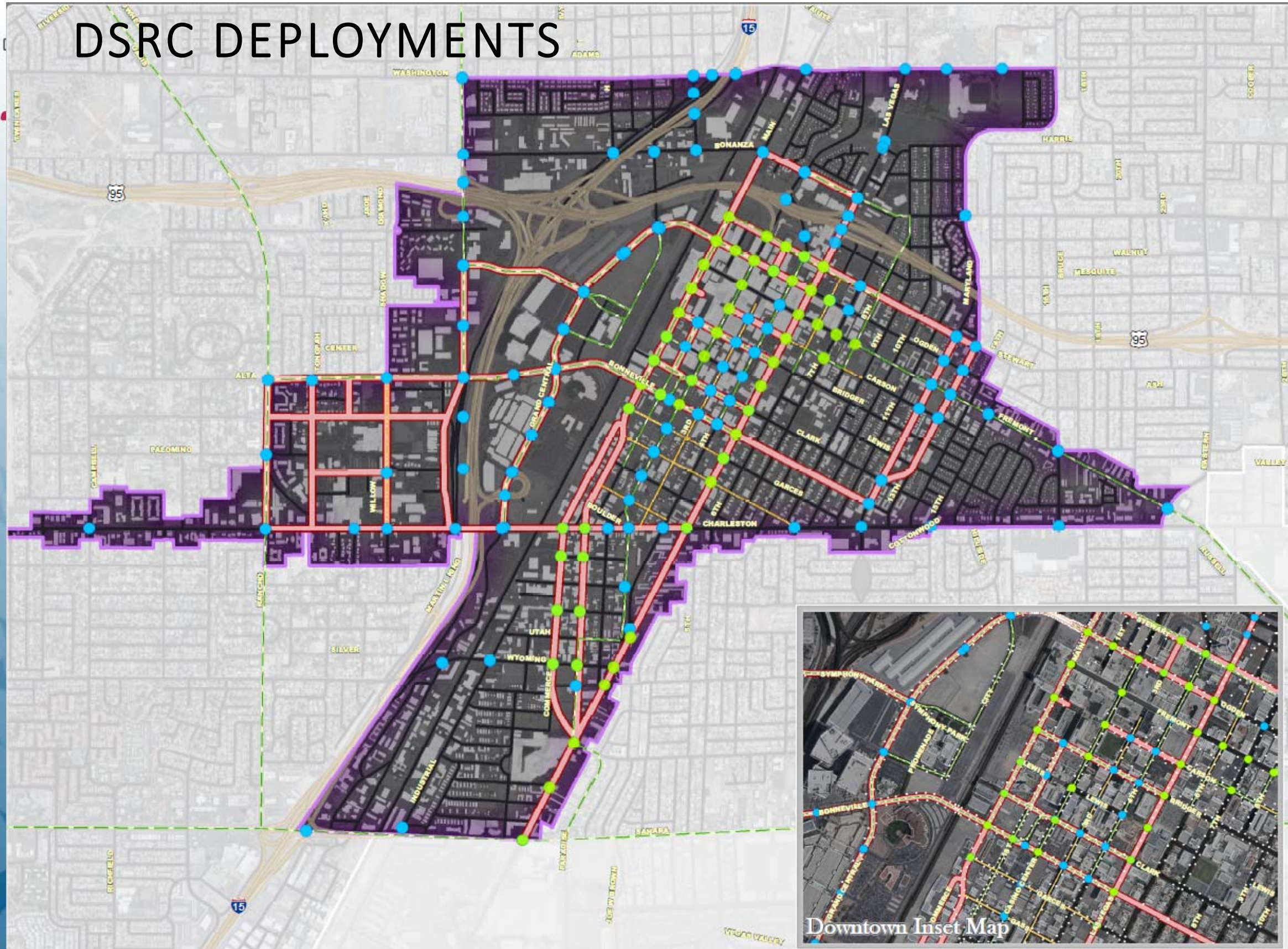


Additional Considerations

- Licensing Process (NHTSA)
- Deployment of DSRC and support technologies
- Quality of GPS and Cell Service Signals
- Location of charging stations and overnight storage
- On-going monitoring and technical support
- Future of roadway configurations to better facilitate operations



DSRC DEPLOYMENTS



LEGEND

- INNOVATION DISTRICT
- CLV BOUNDARIES
- FREEWAYS
- CONNECTED CORRIDORS
- DSRC SENSORS**
- EXISTING DSRC INSTALLATIONS
- PLANNED DSRC
- FIBER**
- EXISTING
- PROPOSED



Downtown LOOP
Service Route and
Pick-up/Drop-Off Locations

What's Next?



Outlet Mall

Arts District

Plaza Hotel & Casino

BTC

Pawn Plaza

Mob Museum

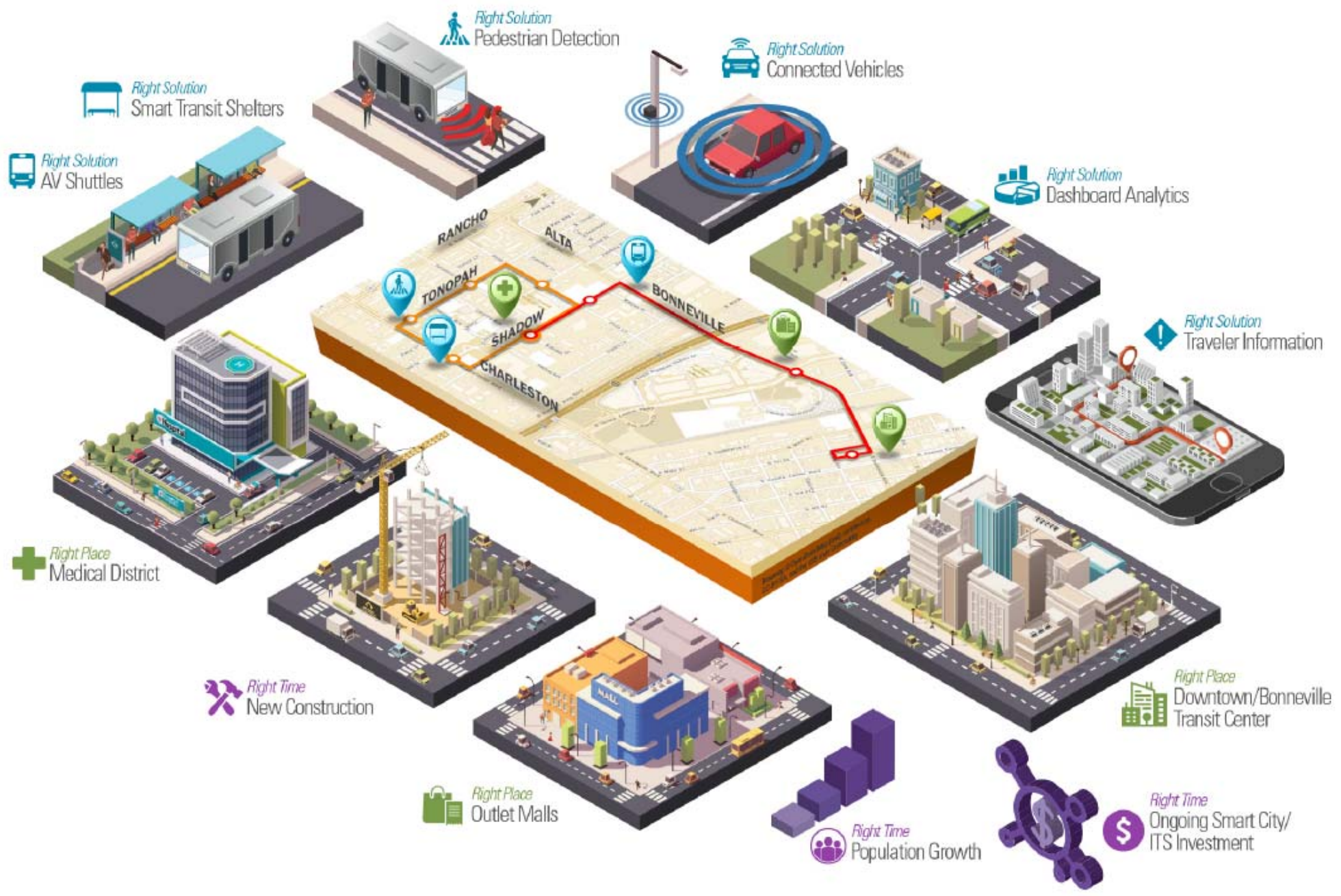
Fremont East

Driverless Shuttle Connected Route

DOWNTOWN

ORLEANS SQUARE

Las Vegas Medical District Automated Circulator and Connected Pedestrian Safety Project



BENEFITS OF CONNECTED VEHICLES

- ✓ Improved safety & system efficiency
- ✓ Increased opportunity to work with private sector
- ✓ Real-time data for operational and planning decision making



Private Driverless Vehicle Operations



Self-driving rides are here. Accept to be eligible.

Your safety is our priority. Two safety dri



By tapping 'I accept,' you agree to the [Liability Waiver](#) and are eligible for a self-driving ride

I accept

[No, thanks](#)



CREATING A *SMART CITY*

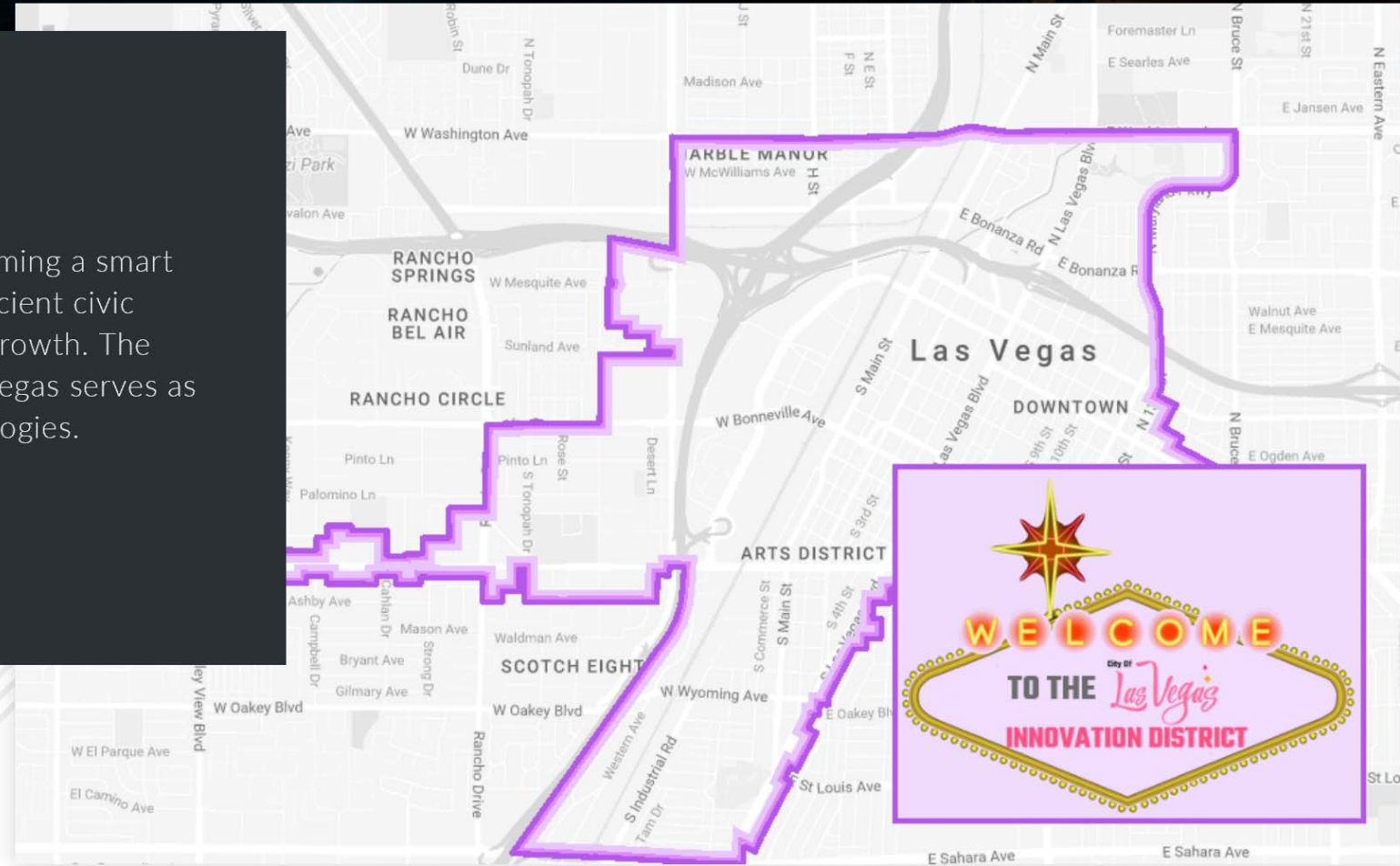
Fostering Innovation To Benefit The Las Vegas Community.

[Learn More About Us](#)

INNOVATION DISTRICT

The city of Las Vegas charter for becoming a smart city is to provide safe, reliable and efficient civic technology that stimulates economic growth. The Innovation District in downtown Las Vegas serves as a proving ground for emerging technologies.

[Learn More](#)



www.Innovate.Vegas

Questions?

