YOU MAY HAVE HEARD…
SELECT Arizona Smart Initiatives

- Arizona/Mexico SMART Border Projects
  - Governor Ducey’s Office; Arizona-Mexico Commission; Arizona Commerce Authority; Arizona DoT

- Bloomberg “What Works Cities” Collaborative
  - Gilbert, Glendale, Mesa, Tempe, Scottsdale

- Bill Gates’ Smart City @ Belmont along future Interstate 11 freeway

- US Ignite/Smart Gigabit Community
  - Institute for Digital Progress; City of Phoenix; Arizona State University

- Local Motors, Manufacturer of 3D Printed Autonomous Vehicles

- AV Testing
  - Governor Ducey’s Executive Order 2015-09
YOU MAY NOT KNOW…
TUCSON, AZ

County seat of Pima County

120 miles south of Phoenix, Arizona’s capital

90 miles north of Mexico
A VARIETY OF WEATHER CONDITIONS IN THE REGION

Sept. – April = Sunny; Winter showers
May – June = Extreme heat
July – August = Extreme heat; Monsoons

Rain can cause “Flash Flooding” – walls of water that flood streets and drainage ways in seconds

9,152 ft. (2,790 m)
Access to various elevations and weather conditions within a 75-minute drive

2,643 ft. (806 m)

64 days with rain
11.6" rainfall
107 monsoon days
Tucson city is 236.2 square miles (611.8 km$^2$)

2015 population estimates:
- 531,641 in Tucson
- 843,168 in metro Tucson area
- 1,016,206 in Pima County

Densities are in the urbanized areas of metro area (yellow-orange-red)
TUCSON INFRASTRUCTURE

- Roads = 1,934 centerline mi.
- Freeways = 73 miles
- Arterials = 385 mi.
  - Good condition = 143 mi.
  - Future good condition = 313 mi.

- LED street lights = 20,000
- Signalized Intersections = 460
  - ~70%+ on mesh network
- Fiber Optic = 600 mi.

- 100 regional EV charging stations (Level 2 & 3)

75% of daily VMT is carried on arterials
5,000+ collisions occur each year on our streets

280 people sustained severe injuries in 2017 from collisions

Unsafe speed is the top contributing factor to collisions resulting in death

People walking are involved in only 2% of collisions but account for almost 40% of all traffic deaths

QUESTIONS WE HAVE…

What are we doing, why, and how – and with what $? 
How do we compete? Do we need to compete? 
How do we address our whole community? 
How can we afford the technologies?
WHAT WE ARE DOING TODAY…

CITY OF TUCSON TRANSPORTATION
INITIATIVES: Cultural Change & Innovation

Transforming Organizational Culture

CITY OF TUCSON TRANSPORTATION
INITIATIVES: Cultural Change & Innovation

Smart City Initiatives Coordination

- Smart City Working Team: I.T., Environmental Services, Public Safety, Transportation, Water, Procurement, Attorney’s, Risk Management, Parks, Housing

- Initial accomplishments:
  - Established an initial work plan and goals
  - Multi-day Smart Cities Workshop event for departments
  - Initial inventory of existing and potential projects

- Immediate focus:
  - Strategic prioritization of projects and investments, and
  - Inventorying data

- City Manager’s Office of Innovation & Strategy
INITIATIVES: Cultural Change & Innovation

Smart City Initiatives Coordination

- Smart Water Readers
- Water Line Monitors
- Smart Trash Compactors
- Interoperable First Responders Communications Network
- Police Officer Body Cams and Video
- Fleet Oversight – GPS tracking
- LED Streetlights
- Digital Governance – Consolidated customer service; online services
- Creating a Culture of Innovation!

Tucson Department of Transportation Priorities

- Drone Program
- Smart Mobility
- Regional Traffic Data Network (RTDN)
- Living Lab Partnership with UA
- Innovation & Deployment Districts
Connected Infrastructure
(Signals, Cameras, Lighting, etc.)

Digital Data
(Traffic Counts, Delay, Navigation Apps, CAVs, etc.)

Communications Networks
(Fiber Optic, DSRC, 4G/5G, etc.)
Initiatives in Tucson Region

- Autonomous Vehicle (AV) Proving Grounds
  - Musselman Honda Circuit Tracks
  - UA Tech Park @ Rita Ranch Expansion
  - Racing the Sun – Autonomously!

- Pima Association of Governments Smart Region Program

- Regional Broadband Assessment Study

- Data & Communications Infrastructure Inventory Project

- Future Sonoran Freight Corridor
TUCSON’S SMART MOBILITY

**Connected Vehicle R&D/ Deployments:**
- MMITSS sister corridor
- SPaT Challenge
- Mt. Lemmon Electric Shuttle

**Autonomous Vehicle R&D/ Deployment:**
- Uber, TuSimple
- Musselman Honda Track
- UA Tech Park
- Tucson Transportation Drone Program

**Sharing Economy** (ZipCar, Enterprise)
- Metropia’s Duo
- Ride-hail Services (Uber, Lyft, Via, Veyo, Taxis)

**Taxes funding road needs:**
- 2006-2026 Regional Transportation Authority
- 2012-2017 Street Repair Bonds
- 2017-2022 Street Repair Sales Tax
- 2018-2023 Parks & Connections Bond

**Business-specific apps**
- PAG’s RideShare
- Metropia
- Down for the Count

**GoTucson Parking app**
- GoTucson Transit app
- AMORE Project with Ruby Ride (US DOT Sandbox MOD Demo)

**TuGo Bike Share** 330 bikes @ 36 stations

**Navigation Apps & Maps** (Google)

**Metropia**
- Metropia’s Duo

**Ride-hail Services** (Uber, Lyft, Via, Veyo, Taxis)
- TransView; ATIS

**Sun Tran, Sun Link, Sun Van**
- Sidewalks & crossings
- Bike routes & boulevards

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The Tucson Region has a supportive ecosystem for Innovators & Entrepreneurs.

- Innovation & Deployment Corridors
- Public-Private Partnerships
- Skilled Workforce Readiness & Training
- Real World Test Environments
- Innovation Support
- World Class Research & Development

CITY OF TUCSON
TRANSPORTATION
INITIATIVES: Partnerships

Smart Vehicles and Intelligent Transportation Team

- **Government** – State of Arizona; Pima Association of Governments; Local Jurisdictions and Pima County
- **Research & Development** – Univ. of Arizona: Transportation Research Institute, Colleges of Engineering, MIS, Planning, CyVerse, Optics, Avionics
- **Industry, Technology & Business Development** – UA Tech Park, Arizona Center for Innovation, Musselman Honda Circuit
- **Workforce Education** – Pima Community College; Univ. of Arizona
- **Utilities** – Energy and Communications are critical
INITIATIVES: Engagement

Pop-Up Events

Quick-Build Projects

New ways to engage

- Meet people where they’re at – INCLUDING TECHNOLOGY
- Have real conversations
- Reach people who haven’t been reached before
INITIATIVES: Transit Ridership Improvement

Frequent Transit Network

Transit/Bus Stop Enhancements

First/Last Mile Connections
INITIATIVES: Curbside Management Program

- Curbside Management Program
- CITY OF TUCSON
- TRANSPORTATION
- METERED PARKING
- STREETCAR STOP
- TUGO STATION
- LOADNG ZONE
- STREETCAR STOP
- ELECTRIC SCOOTERS
- CURB EXTENSIONS
- PEOPLE WALKING
- RIDESHARE PICK UP/ DROP OFF
- BIKE PARKING
- PARKLET / OUTDOOR SEATING
- TREES & PLANTER BOXES
- METERED PARKING
- FOOD TRUCKS
INITIATIVES: Mobility Master Plan
Shared Autonomous Mobility reduces congestion.

Automated vehicles offer compelling “heaven” and “hell” scenarios.

Road congested by Zero- and Single-Occupant Autonomous Vehicles.
What does the future hold for Tucson Region?

ON DEMAND

SHARED

MICRO-

TRANSIT &

MOBILITY

DEVICES

INFRASTRUCTURE

COSTS

EQUITY, ACCESS, &

AFFORDABILITY

FOR ALL

AUTONOMOUS DELIVERY
WHAT WE PLAN TO DO TOMORROW…
INITIATIVES: Citywide Strategic Framework

Source: City of Tempe Office of Strategic Management
CONTINUE LOOKING FOR THE OPPORTUNITIES…

INITIATIVES

PROGRAMS

PROJECTS
Thank you!

Questions? Comments?