

# The *Utah Connected* Program: Deploying Connected Vehicle Technology

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**Webinar #3 – Aug 21, 2023**

# Thanks!

- FHWA and their ATCMTD Grants Team and local FHWA Office
  - These webinars are brought to you through ATCMTD funding
  - Background on the ATCMTD Program and our Utah Connected Grant in Webinar #1
- Muriel Xochimitl and the XFactor Team
- Today's presenters – UDOT, Panasonic, Narwhal Group
- All of you – on this webinar, future webinars, and who will view these recorded webinars later

# Webinar Goals

- Promote information sharing
- Share lessons learned
- Foster collaboration
- Support and encourage deployment efforts by other agencies

# UDOT Transportation Technology Goals

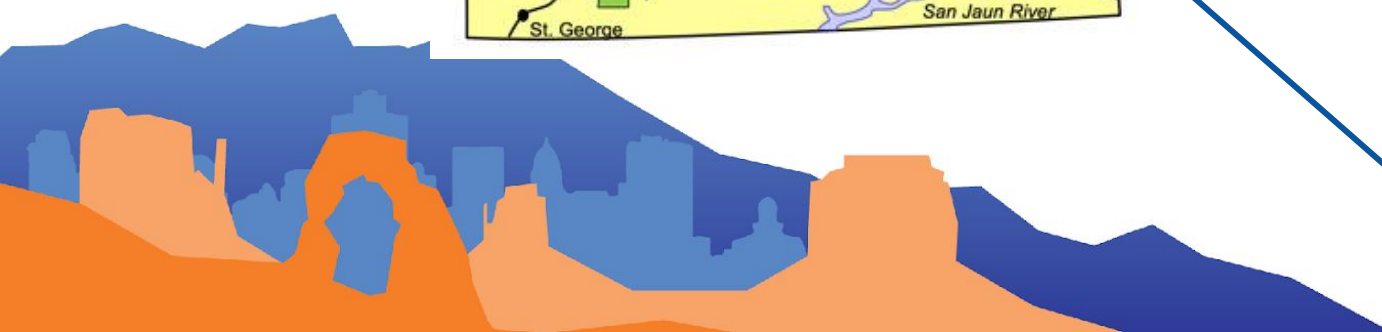
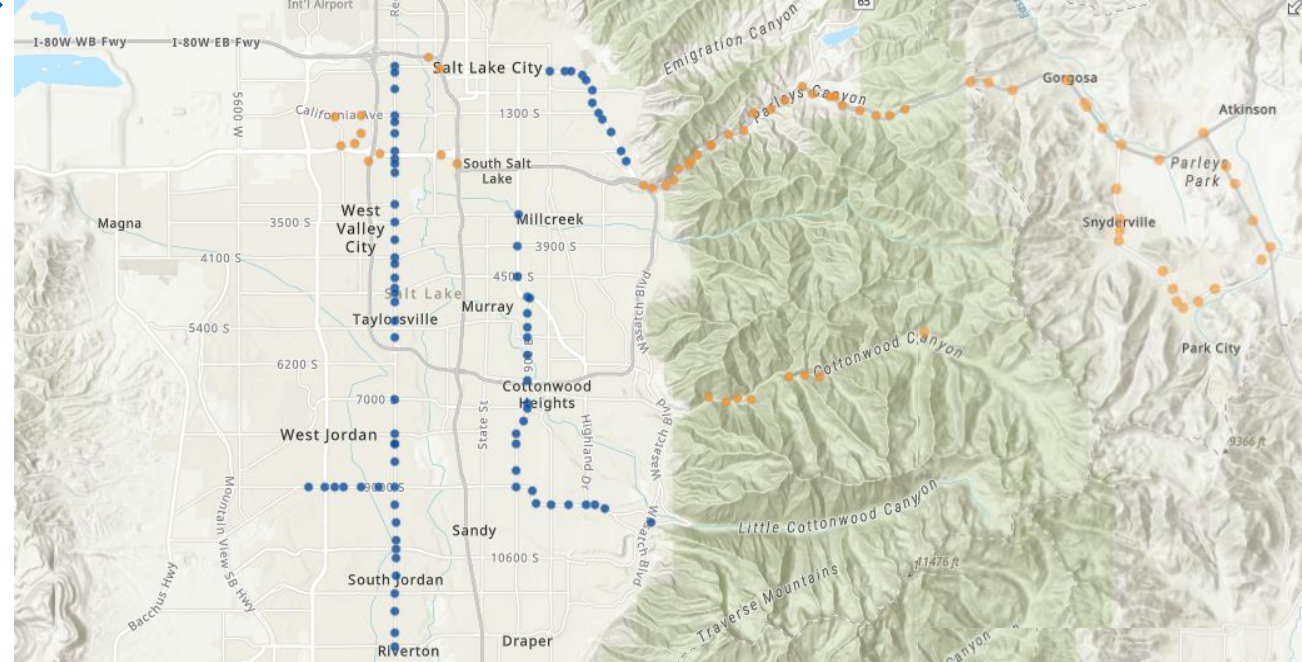
- Safety
  - UDOT's Strategic Goal: Zero Crashes, Injuries and Fatalities
- Mobility
  - UDOT's Strategic Goal: Optimize Mobility
- Achieve Full Situational Awareness
  - Know what is going on across our entire network
- Prepare for CV-Equipped Production Vehicles
  - Full CV safety benefits require that OEMs install compatible systems
  - Encourage broad deployment



# Deploying Connected Vehicle Technology



# Connected Vehicle Deployments





# Connected Vehicle Deployments

Redwood Road

- Selected an Application (Transit Signal Priority)
- Form Partnership with Utah Transit Authority
- Identify a Corridor to Support TSP
  - Bus route with schedule adherence challenges
  - Acceptable traffic characteristics
  - Convenient location
- Identify Buses that Operate on the Corridor
- Develop TSP Software



# Connected Vehicle Deployments

Redwood Road

- Selected an Application (Transit Signal Priority)
- Form Partnership with Utah Transit Authority
- Identify a Corridor to Support TSP
- Identify Buses that Operate on the Corridor
- Develop TSP Software
- Identify, Purchase, and Test RSUs and OBUs
- Install, Integrate, Test, and Tweak





# Connected Vehicle Deployments

Freeway Interchanges  
Big Cottonwood Canyon

- Selected an Application (Curve Speed Warning)
- Identify Corridors to Support CSW
  - Prioritize high curve-related crash locations
  - Acceptable traffic characteristics
  - Convenient Locations
- Identify Fleet Vehicles Using These Corridors
- Develop CSW Software
- Identify, Purchase, Install, Integrate, Test, and Tweak



# Connected Vehicle Deployments

- Application - Spot Weather Impact Warning
- Application – Additional TSP
- Application – Additional Snowplow Preemption
- Application – Vehicle Insights in Urban Environment

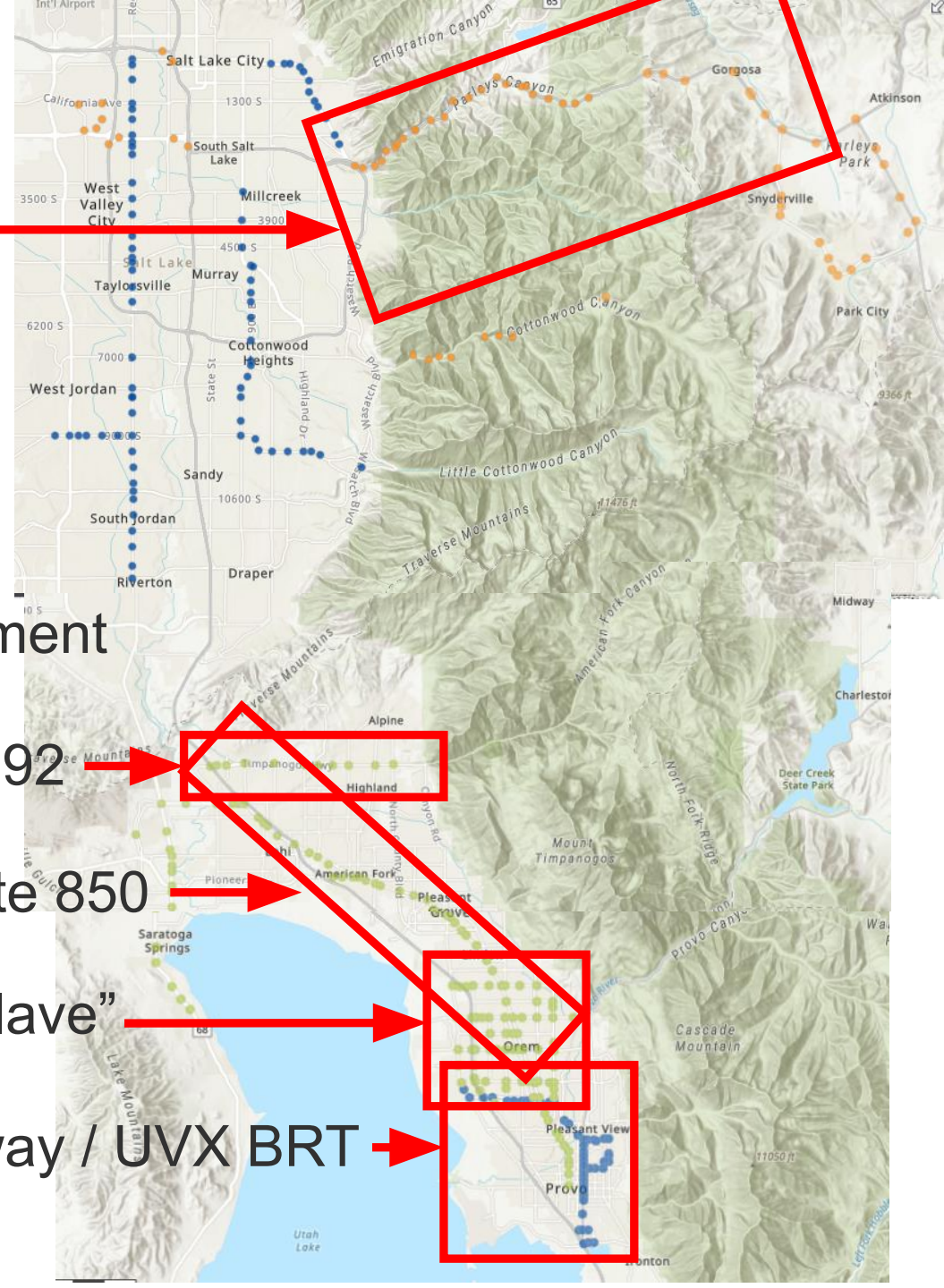
Interstate 80

State Route 92

State Street – UTA Route 850

Orem City / “Enclave”

University Parkway / UVX BRT





# Lessons Learned

- Start small and scale up
- Find use cases that can bring early, small scale benefits
  - TSP or Preemption
  - Vehicle insights from BSMs
- Corridors need to be ready for V2X
  - Evaluate & improve signal systems, timing, and backhaul
  - These improvements can be done now and will benefit all drivers
  - Use the CV PFS Connected Intersections Guidance Document  
<https://engineering.virginia.edu/cv-pfs-resources#accordion688162>



# Lessons Learned

- V2X systems have matured significantly
  - If you had troubles with early deployments, jump back in
  - There are many recently developed standards and resources
    - Connected Vehicle Pooled Fund Study
    - SAE / ITE: CTI Connected Intersections Implementation Guide (CTI 4501)
    - 5GAA Day One Deployment Guide (October 2023)
- Procurements take time
- If you don't have an FCC C-V2X Waiver, apply for one
- Start NOW



# Questions / Discussion

<https://transportationtechnology.utah.gov/>