



PUBLIC MEETING AGENDA

Transportation Commission

MEETING DATE

Tuesday, September 13, 2022 at 7:30 a.m.

MEETING LOCATIONS

Join Via Cisco Webex

<https://tempe.webex.com/tempe/onstage/g.php?MTID=e48c49a47962e4a6ea58b50e5a8e65092>

Event password: 2Rbfap48JJk

United States Toll+1-408-418-9388

Access Code/Event Number: 2481 609 4856

AND

Tempe Transportation Center
Don Cassano Community Room
200 E. Fifth Street, 2nd floor
Tempe, Arizona, 85281

AGENDA ITEM	PRESENTER	ACTION or INFORMATION
1. Public Appearances The Transportation Commission welcomes public comment for items listed on this agenda. There is a three-minute time limit per citizen.	JC Porter, Commission Chair	Information
2. Approval of Meeting Minutes The Commission will be asked to review and approve meeting minutes from the August 9, 2022 meeting.	JC Porter, Commission Chair	Action
3. EV Ready Code Development Staff will provide an update on Tempe’s efforts to amend building codes to make new buildings electric vehicle ready.	Brianne Fisher and Maddie McConville, Sustainability Department	Information
4. Ash/University Intersection & 1st/Ash/Rio Roundabout Traffic Data Counts Update Staff will present traffic data related to the Ash/University Intersection & 1 st /Ash/Rio Roundabout.	Cathy Hollow, Engineering & Transportation Department	Information
5. Crosswalk Signal Countdown & Signal Detection for Bicycles Staff will provide information about Crosswalk Signal Countdown & Signal Detection for Bicycles.	Cathy Hollow, Engineering & Transportation Department	Information
6. Department & Regional Transportation Updates Staff and commission members will provide information on relevant meetings and events.	Engineering & Transportation Department Staff and Transportation Commissioners	Information

7. Future Agenda Items Commission may request future agenda items.	JC Porter, Commission Chair	Information
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According to the Arizona Open Meeting Law, the Transportation Commission may only discuss matters listed on the agenda. The city of Tempe endeavors to make all public meetings accessible to persons with disabilities. With 48 hours advance notice, special assistance is available at public meetings for sight and/or hearing-impaired persons. Please call 350-4311 (voice) or for Relay Users: 711 to request an accommodation to participate in a public meeting.



Minutes City of Tempe Meeting of the Transportation Commission August 9, 2022

Minutes of the meeting of Tempe Transportation Commission held on Tuesday, August 9, 2022 at 7:30 a.m. via Cisco Webex and at the Tempe Transportation Center located at 200 E. Fifth Street, Tempe AZ 85281.

(MEMBERS) Present:

Jeremy Browning
Susan Conklu
Brian Fellows
Alana Chavez Langdon
Bobbie Cassano
John Christoph

Pam Goronkin
David A. King
Amanda Nelson
JC Porter
Peter Schelstraete
David Sokolowski

(MEMBERS) Absent:

Dawn Hocking
Alice Bimrose
Paul Hubbell

City Staff Present:

Shelly Seyler, Deputy Engineering & Transportation Director
Robert Yabes, Principal Planner
Chase Walman, Senior Transportation Planner
Tony Belleau, Transportation Planner
Sue Taaffe, Senior Management Assistant
Eric Iwersen, Interim Sustainability & Resilience Director
Shauna Warner, Neighborhood Program Manager
Keith Burke, Deputy City Manager

Laura Kajfez, Neighborhood Services Specialist
Able Gunn, Transportation Financial Analyst
Sam Stevenson, Interim Transit Manager
Bonnie Richardson, Principal Planner
TaiAnna Yee, Public Information Officer
Jill Bushbacher, Econ. Dev. Program Manager
Cathy Hollow, City Traffic Engineer
German Piedrahita, Senior Civil Engineer

Guests Present:

Hillary Foose
Helen Romesburg
Alexis Kinsey

Ray Carranza
Amy McNamara

Commission Chair JC Porter called the meeting to order at 7:31 a.m.

Agenda Item 1 – Public Appearances

None

Agenda Item 2 – Minutes

JC Porter introduced the minutes of the May 10, 2022 meeting of the Transportation Commission and asked for a motion for approval.

Motion: Commissioner Brian Fellows

Second: Commissioner David Sokolowski

Decision: Approved by Commissioners

Jeremy Browning
Susan Conklu
Brian Fellows
Bobbie Cassano
David Sokolowski

Pam Goronkin
David A. King
Amanda Nelson
JC Porter
Peter Schelstraete

Agenda Item 3 – Smith Road Improvements Apache to University

Jill Bushbacher and Ray Carranza made a presentation about the Smith Road Project. Topics included:

- Project area
- Purpose
- Background
- Meeting 1 recap
- Existing conditions
- 15% design conditions
- Next steps

Discussion included shade, low impact development, green water runoff, Smith/Rio Salado intersection, traffic calming for Escalante neighborhood, and lighting.

Agenda Item 4 – Bus Operations RFP

Sam Stevenson made a presentation about the bus operations request for proposals. Topics included:

- Transit program overview
- Chronology of bus service in Tempe
- Transit Investment Study key findings
- Next steps

Discussion included vendor incentives, control of local services, peer cities, transfers from city operated service to fixed route, farebox revenue, number of metrics and the benefit vs. risk of contracting service directly with the vendor.

Agenda Item 5 – Downtown Neighborhood Transportation Safety Plan

German Piedrahita made a presentation about the Downtown Neighborhood Transportation Safety Plan. Topics included:

- Project overview
- Explanation of data collection/methodology
- Findings: speed, volume
- Impacts by device
- Summary of public input
- Explanation of alternatives
- Voting rules & procedures
- Next steps

Discussion included ability for bicyclists and pedestrians to travel easily through devices, star diverters, and public comment process.

Agenda Item 6 – Upcoming Transportation Public Meetings & Announcements

Shelly Seyler introduced Keith Burke as the new Deputy City Manager.

Brian Fellows stated that the City of Phoenix received FHWA funds to travel to Tucson to look at bicycle and pedestrian facilities.

Agenda Item 7 – Future Agenda Items

The following future agenda items have been previously identified by the Commission or staff:

- September 13
 - Ash/University Intersection & 1st/Ash/Rio Roundabout Traffic Data Counts Update
 - Crosswalk Signal Countdown & Signal Detection for Bicycles
- October 11
 - Grand Canal MUP
 - Annual Report
 - Transit Security Update FY 21/22
- November 8
 - Annual Report
 - Transportation Survey Results
 - ADA Transition Plan and recently completed ADA facilities
 - Speed reduction, compliance, and tickets issued near “35 mph only when lights flashing” devices
- December 13
- January 10
 - Commission Business
 - Streetcar Update
 - North/South Rail Spur MUP
- February 14
- March 14
- April 11
- May 9
- June 13
- July 11
- TBD: Bike Bait (once program resumes)
- TBD: Personal Delivery Devices
- TBD: Crime Prevention Through Environmental Design

The next meeting is scheduled for September 13, 2022. The meeting was adjourned 8:56 a.m.

Prepared by: Sue Taaffe
Reviewed by: Shelly Seyler

Electric Tempe

Transportation Commission

Tuesday, September 13



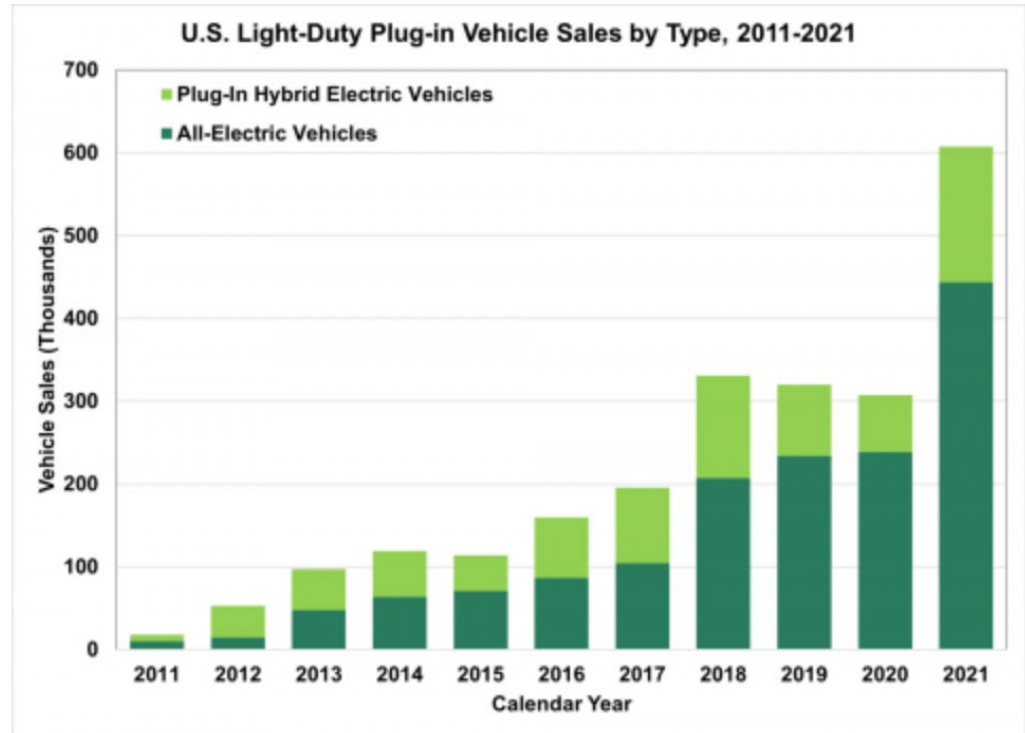
Tempe

Making waves in the desert



National & Local Trends – Federal

- President Biden has set an ambitious target of 50% of all new vehicles sold in the U.S be zero-emissions vehicles by 2030
 - \$5 Billion dollar plan to build EV Charging Network
 - Inflation Reduction Act Tax Credits
- EV sales grew by 85% from 2020 to 2021





State Trends – Companies Located in Arizona

- Zero Electric Vehicles
- Nikola Motor
- Electra Meccanica
- Lucid Motors
- Local Motors
- ChargePoint
- Li-Cycle
- Kore Power

TECH

The cars of the future can be found across Arizona

Lucid, Polestar, Rivian all have a presence in Arizona, making the state a growing hub for new automotive technology. But can their cars live up to the environment?

2-million-square-foot Gateway Grand breaks ground in Mesa



How Arizona became a hotbed for electric vehicles, microchips and self-driving tech

PUBLISHED FRI, MAY 14 2021-10:00 AM EDT | UPDATED FRI, MAY 14 2021-10:00 AM EDT



Katie Seaman
@KATIESE

Lucid Motors begins production of electric vehicles in Arizona



Lucid Motors says its Advanced Manufacturing Plant, dubbed AMP-1, is the only production facility in North America dedicated to EVs. (AZ Family)
By Peter Valencia
Published: Sep 29, 2021 at 11:07 AM MST

BUSINESS ECONOMIC DEVELOPMENT TECHNOLOGY WATER, ENERGY & NATURAL RESOURCES

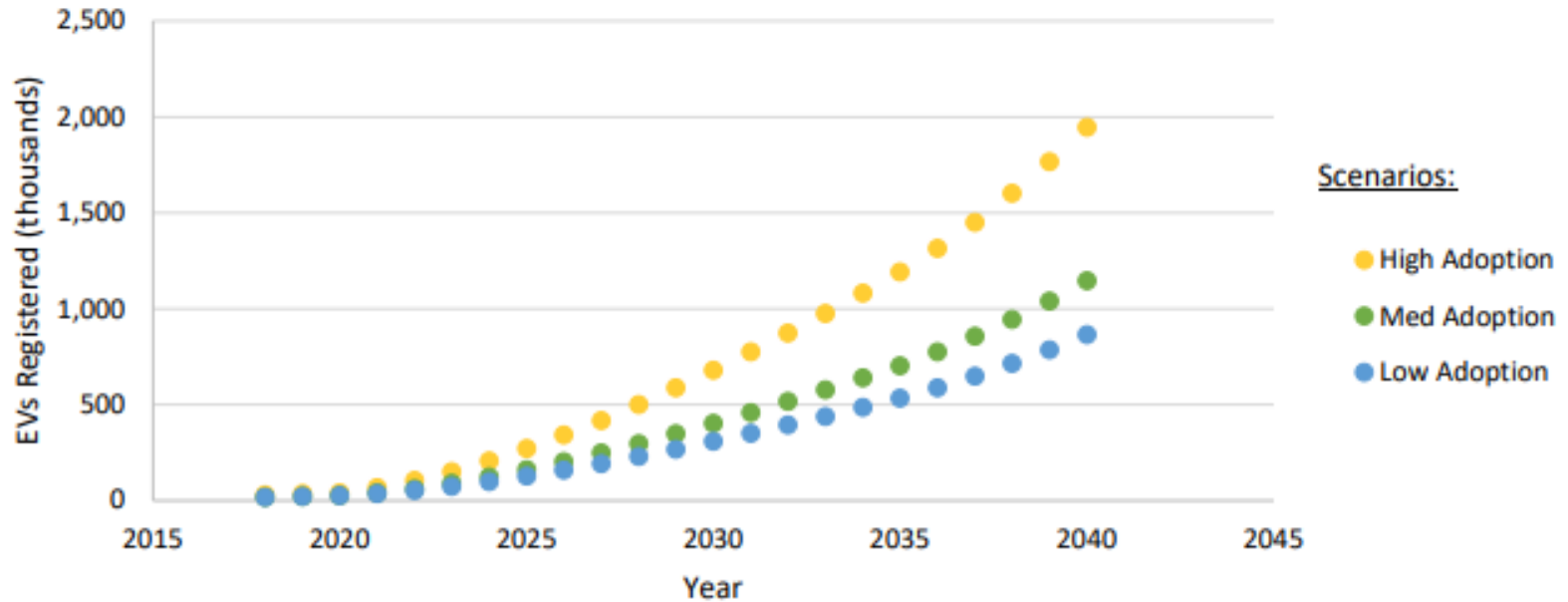
Arizona emerging as electric vehicle hub

Flannery Sloan | March 1, 2022 | 4 min read | Add comment

With four electric vehicles registered in the state for every 1,000 Arizona residents, Arizona ranks **number 7** nationally for having the most registered electric vehicles.



Figure 9: Expected EV Adoption in Arizona 2020-2040 Total Registrations





Regional Planning Efforts

- MAG received direction to work on regional planning for EV adoption and EVSE investment.
- MAG RFP for “Readiness Strategic Plan”
- Maricopa County Air Quality developing “data-tool”
- Sustainable Cities Network (ASU) Grant Proposal for IJA Funding

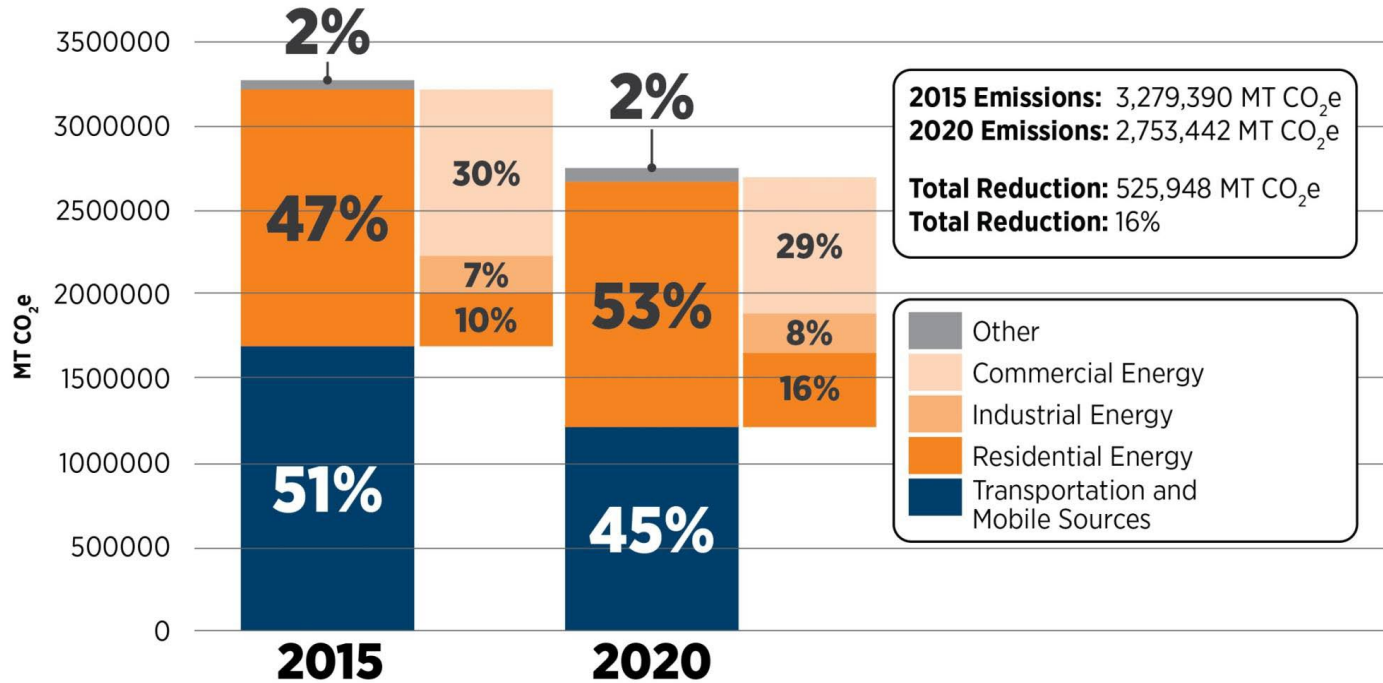
Local Planning

- City of Phoenix EV Roadmap
- City of Tucson building code adoption
- City of Mesa RFP Community EV Master Plan
- City of Tempe Electric Tempe Expo and Stakeholder Meetings



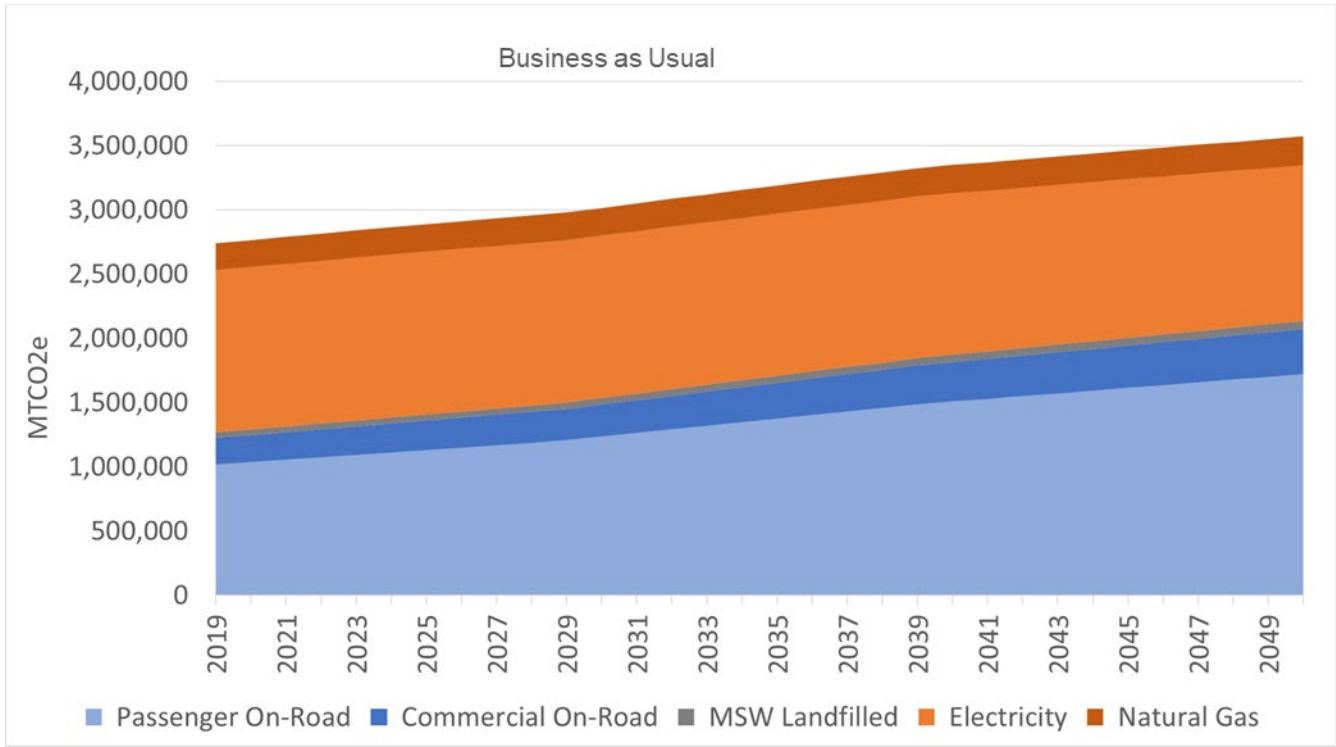
Why This is Important to Tempe

Community GHG Emissions





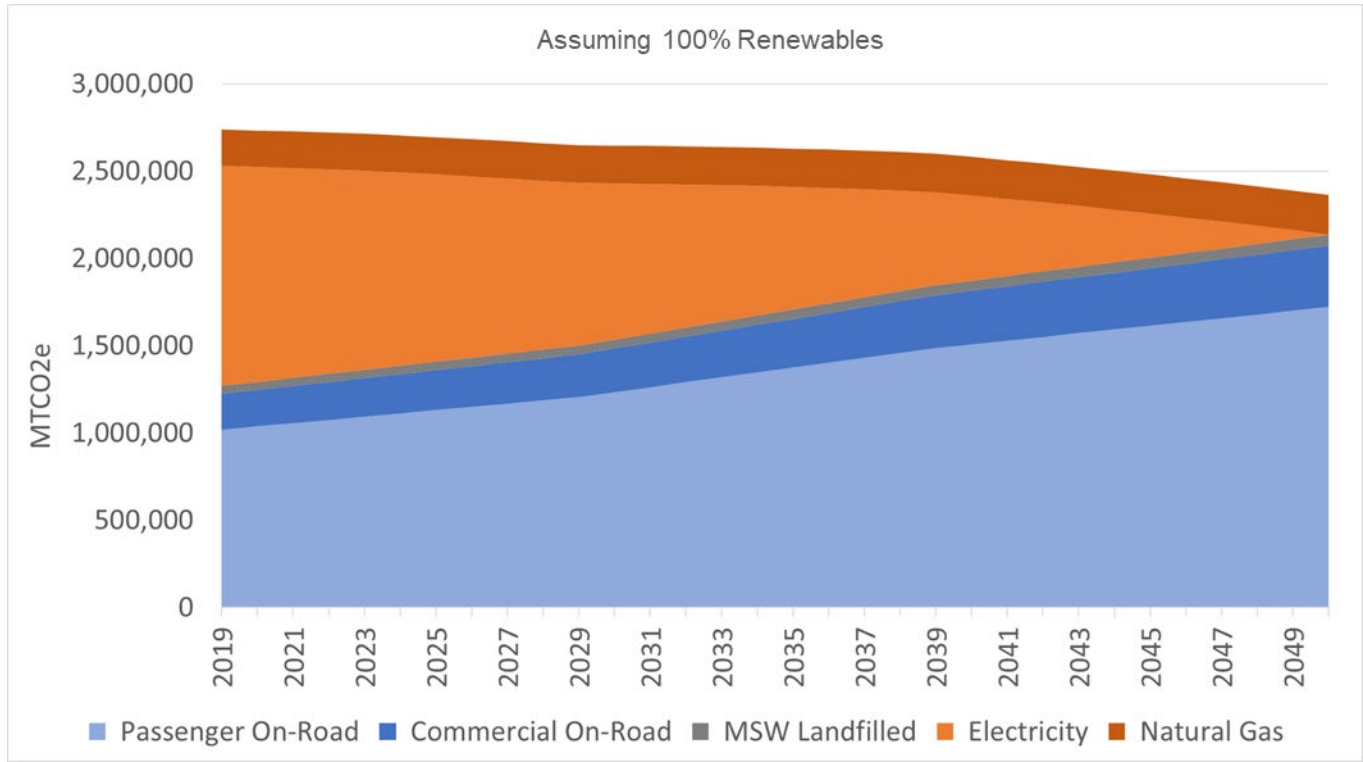
Tempe Community GHG Emissions - Business As Usual



Without local action
over 3.5 million metric tons of GHG emissions in 2050



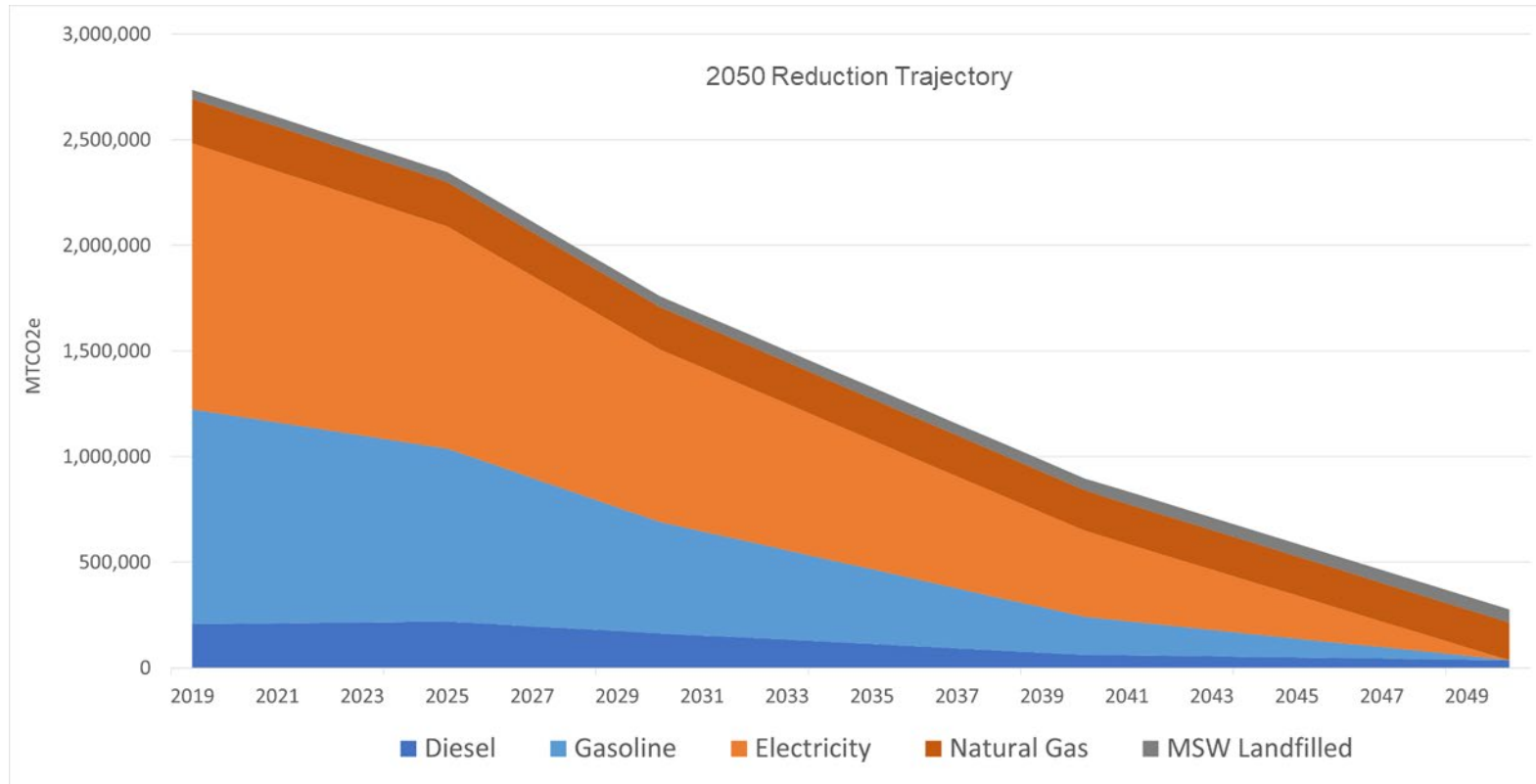
Business As Usual with Renewable Energy



Tempe's community will produce **2.3 million metric tons** of GHG emissions in 2050.



Summary Recommendations





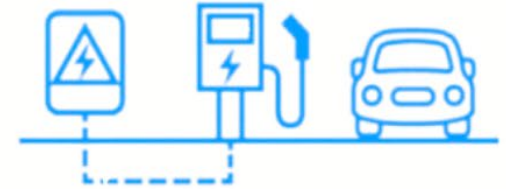
EV READINESS



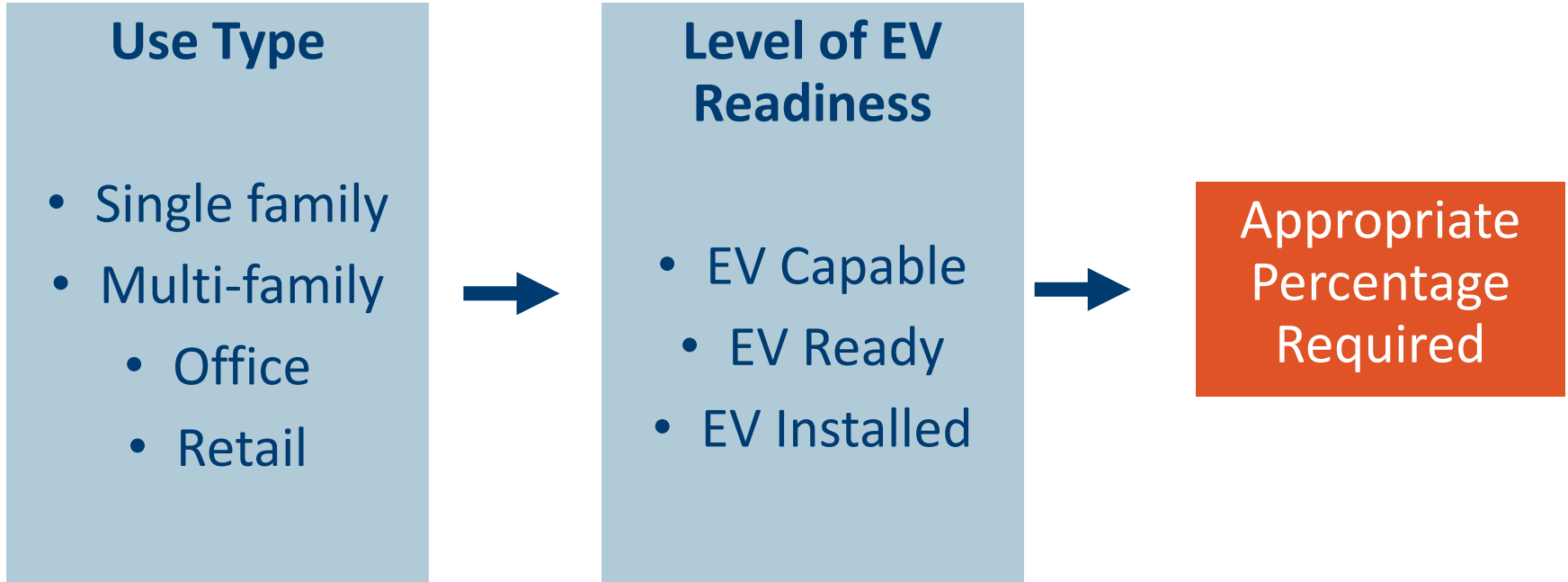
EV Capable



EV Ready



EV Installed





National & Local Trends – Spectrum of EV Policy

Municipality	State	Year Adopted	Location	Single-family	Multi-family	Commercial
Sedona	AZ	2019	IECC Appendix (2018)	1 EV-Capable space per dwelling unit	-	5% EV-Capable
Flagstaff	AZ	2019	IECC Appendix (2018)	1 EV-Ready space per dwelling unit	3% EV-Ready	3% EV-Ready
Tucson	AZ	Proposed	IECC Model Language (2021)	-	10%-EV Ready, 15% EV Capable, 0% EV Installed	Commercial 5%-EV Ready, 15%- EV Capable, 0% Installed, Retail 5% Ready, 0% EV Capable, 5% EV Installed
Denver	CO	2020	IBC/IRC	1 EV-Ready space per dwelling unit	5% EV-Installed, 15% EV-Ready, 80% EV-Capable	5% EV-Installed, 10% EV-Ready, 10% EV-Capable
Portland	OR	2022	Ordinance	50% of parking spaces (min of 6 spaces) EV Ready	50% of parking spaces (min of 6 spaces) EV-Ready	50% of parking spaces (min of 6 spaces) EV-Ready
Seattle	WA	2019	Ordinance	1 EV-Ready space per dwelling unit	100% EV-Ready up to 6 space, 20% for parking lots with 7+ spaces	10% EV-Ready
Boulder	CO	2020	IBC/IRC	1 EV-Ready space per dwelling unit	5% EV-Installed, 15% EV-Ready, 40% EV-Capable (25+ spaces)	5% EV-Installed, 10% EV-Ready, 10% EV-Capable
Madison	WI	2021	Ordinance	-	2% EV-Installed, 10% EV-Ready (increases by 10% every 5 years)	1% EV-Installed (increases by 1% every 5 years), 10% EV-Ready (increases by 10% every 5 years)
St. Louis	MO	2021	Ordinance	1 EV-Ready space per dwelling unit	2% EV-Installed, 5% EV-Ready (increases to 10% in 2025)	2% EV-Installed, 5% EV-Ready
Chicago	IL	2020	Ordinance	-	20% EV-Ready (5+ spaces)	20% EV-Ready (30+ spaces)
Salt Lake City	UT	Pending	Ordinance	-	20% EV-Capable	-
San Francisco	CA	2017	IBC/IRC	1 EV-Ready space per dwelling unit	10% EV-Ready, Panel Capacity for 20%, Raceway for 100%	10% EV-Ready, Panel Capacity for 20%, Raceway for 100%
Fort Collins	CO	2022	IBC / IRC	1 EV-Capable space per dwelling unit	10% EV-Installed, 20% EV-Ready, 40% EV-Capable	5% EV-Installed, 15% EV-Ready, 20% EV-Capable

EV Infrastructure Cost Estimates



Requirements are for new construction or existing expansion thresholds in the UDC

EV Readiness Level	New Construction	Retrofit	Unit	Sources
Trenching	\$11 - \$19	\$100 - \$150	\$ / linear ft	afdc.energy.gov, wisercosts.com
Conduit	\$11 - \$24		\$ / linear ft	
NEMA 14-50 Outlet	\$15 - \$50		\$ / outlet	
Station	\$500 - \$6,600		\$ / station	afdc.energy.gov, online.ogs.ny.gov
Permit	\$250	+ \$50 each adt ¹	\$ / station	PDSD
Warranty & Network		\$6,750	\$ / project	tep
Signage, Striping, Concrete	\$500 - \$2,500		\$ / project	futureenergy.com
Soft Costs	\$800 - \$1,500		\$ / project	
Possible Electrical Upgrades				
Electrical Panel Upgrade	\$1,800 - \$2,500		\$ / project	afdc.energy.gov
Transformer Upgrade	\$10,000 - \$25,000		\$ / project	
Current Incentives (Rebates)				
TEP Workplace	\$4,500		\$ / station	www.tep.com/smart-ev-charging-program
TEP Multifamily and Non-Profit	\$6,000		\$ / station	www.tep.com/smart-ev-charging-program
Federal tax credit	\$30,000		\$ / project	afdc.energy.gov, irs.gov



- ADOT Registration Data
- Regional projections
- City of Tempe EV Installation Permitting History
- EV User Behavior
 - Multi-family
 - Office
 - Retail

Schedule and Next Steps



Activity	June	July	August	Sept.	Oct.	Nov.	Dec.	Jan.
Research	Active	Active	Active	Light	Light	Light	Light	Light
Business Outreach	Light	Active	Active	Active	Active	Active	Light	Light
Stakeholder Outreach	Light	Active	Active	Active	Active	Active	Light	Light
Public Outreach	Light	Light	Light	Light	Active	Active	Light	Light
Develop Draft Code Language	Light	Light	Light	Active	Active	Light	Light	Light
Boards and Commissions	Light	Light	Light	Light	Light	Active	Active	Light
Council Approval	Light	Light	Light	Light	Light	Light	Active	Active

Questions?

Brianne Fisher

Brianne_fisher@tempe.gov

Madalaine McConville

madalaine_mcconville@tempe.gov

MEMORANDUM

TO: Tempe Transportation Commission
FROM: Catherine Hollow, City Traffic Engineer, 480-350-8445
Ellie Volosin, Senior Civil Engineer, 480-350-8629
DATE: September 13, 2022
SUBJECT: Traffic items
ITEM #: 4 and 5



PURPOSE:

The purpose of this presentation is to provide information to the Transportation Commission on several traffic items as requested by the Commission.

RECOMMENDATION OR DIRECTION REQUESTED:

For information only

CITY COUNCIL STRATEGIC PRIORITY:

Under Safe and Secure Communities, the Council has adopted the following performance measure:

- 1.08 Achieve a reduction in the number of fatal and serious injury crashes to zero.

Under Quality of Life, the Council has adopted the following performance measure:

- 3.26 Achieve a multimodal transportation system where residents can walk, bicycle or use public transit to meet basic daily, non-work needs.

BACKGROUND INFORMATION:

The City routinely reviews operations at various intersections. The Commission asked for information regarding Ash and University and the Rio Salado/Ash roundabout.

Also, new technologies are continually being introduced for transportation applications. The Commission asked if there was technology that would alert bicyclists as to when the traffic signal will change or any changes in crosswalk count downs.

UPDATES

1. Streetcar opened in May 2022. City staff and consultants continue to watch the intersections that streetcar travels through.
 - a). The roundabout at Rio Salado and Ash was constructed to accommodate the Streetcar through the previous T-intersection. Also, a roundabout reduces the number of conflict points at an intersection which in turn should reduce crashes. A review of crashes at this location indicates that in the year prior to Streetcar opening, there were two crashes. In the year following, there has been one crash.
 - b). At Ash and University, the Streetcar makes a left turn from the curb lane. The City gets comments about wait times at this intersection. Pavement markings on Ash indicate that vehicles are to turn right or left. There are also concerns that vehicles go straight through the intersection and create conflicts with other movements. The only marked through movement on Ash is for bicyclists (and pedestrians). The City is adding second turn arrows and ONLYs for both the approaches on Ash.

2. Traffic signals in the City of Tempe provide pedestrians indications for people in the crosswalk. The majority of the indications are pedestrian countdown signals which tell the pedestrians how much time they have to finish crossing a street. In many locations, the pedestrians have to push the button to get the walk sign. The countdown starts after the initial 5 to 7 seconds of walk, dependent on the size of the intersection.

Bicycle detection is ever changing. To assist bicyclists, Tempe started installing bike push buttons where needed on the mid-section/arterial intersections. In some locations, loop detection has been installed for bikes similar to vehicles. Vehicle detection has shifted to video detection technology. Improvements in video detection is making it possible to use it for bikes as well. It should be noted that there isn't a count-down provided for vehicles or bikes. Research on traffic safety outcomes from countdown timers for vehicles has reported mixed results.

Devices are available which provide indication to cyclists that they have been detected, which could help to reduce uncertainty. However, these devices would require significant changes to existing detection function and in some cases to roadway lane configurations.

FISCAL IMPACT or IMPACT TO CURRENT RESOURCES: as programmed

ATTACHMENTS:

Power Point

**Ash/University Intersection & 1st/Ash/Rio
Salado Roundabout Traffic Data Counts AND
Crosswalk Signal Countdown & Signal Detection
for Bicycles**

Transportation Commission

September 13, 2022



Tempe

Making waves in the desert



1) Ash Avenue

Ash and Rio Salado
Roundabout

Ash and University

2) Bike Detection

Current Detection
System

New Technology to
Consider

Ash and Rio Salado Roundabout



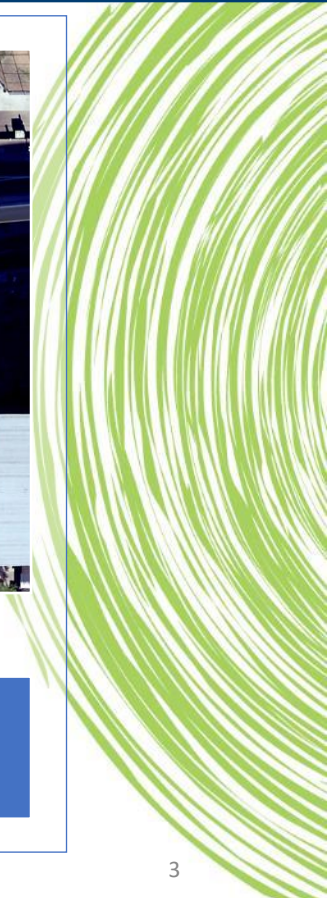
Ash and Rio Salado

Prior to 2020

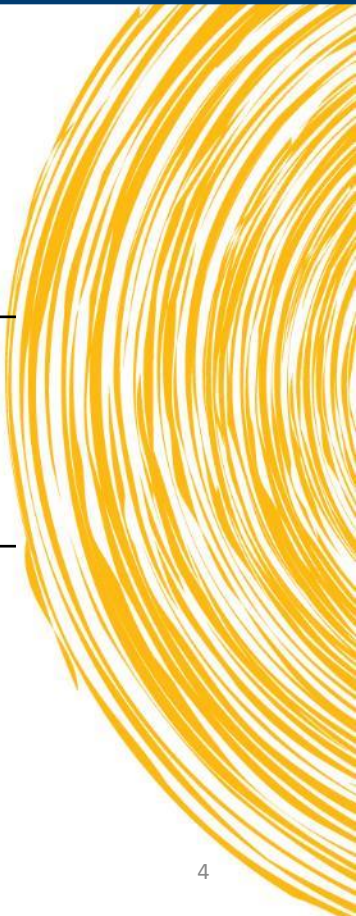
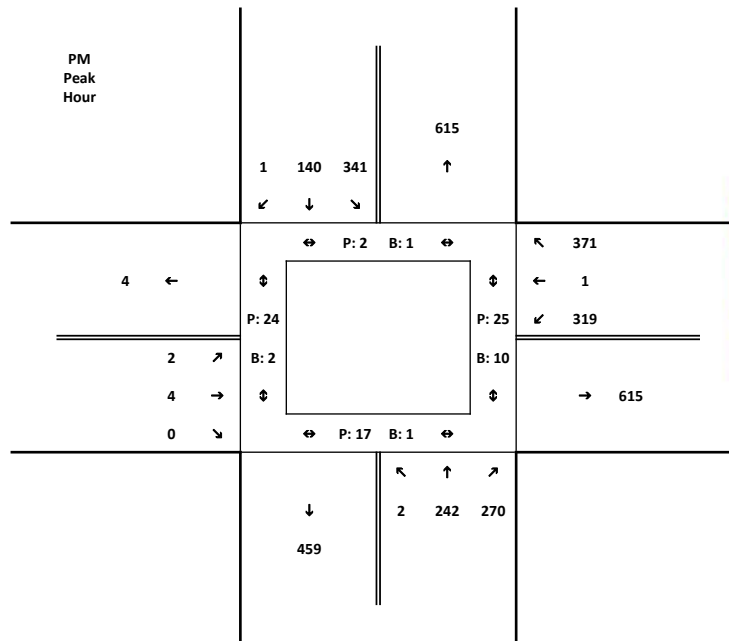
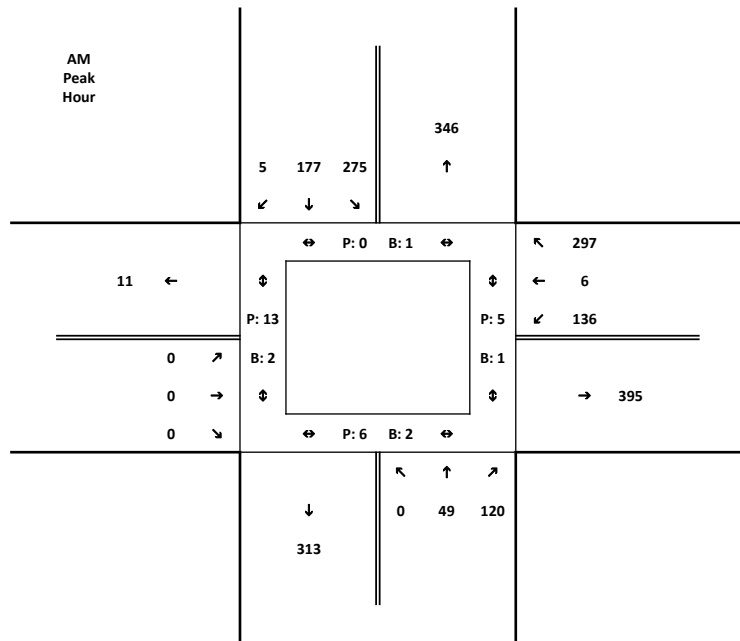


Ash and Rio Salado

Today



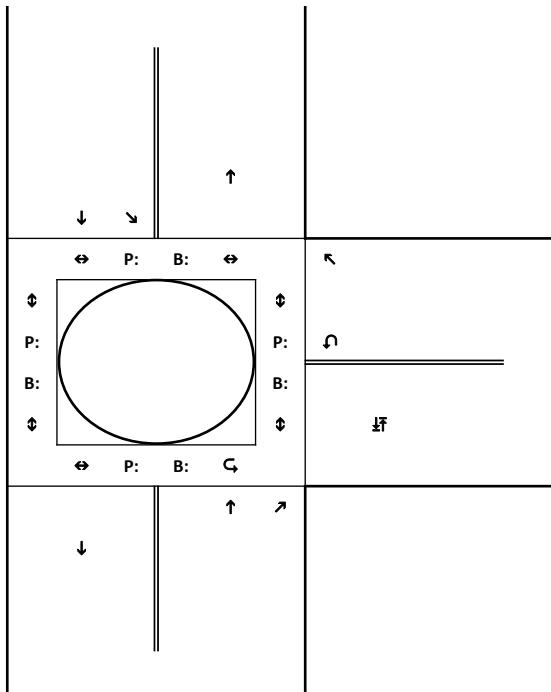
Ash and Rio Salado Counts Feb. 2018



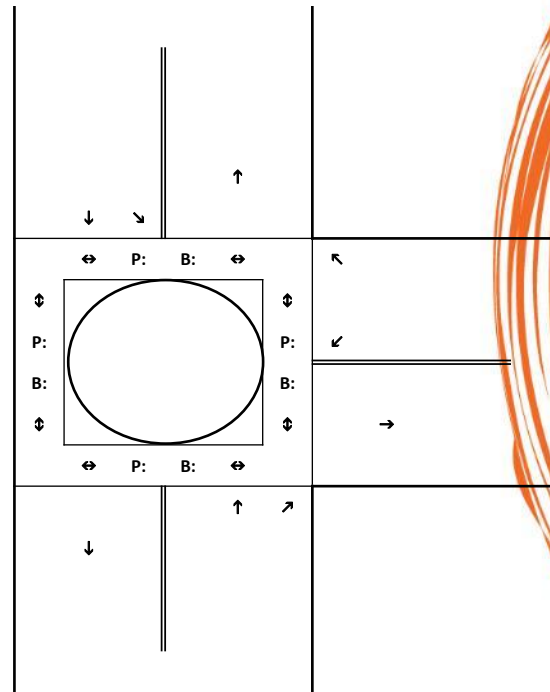
Ash and Rio Salado Counts Sept. 2022 *IF AVAILABLE



AM
Peak
Hour



PM
Peak
Hour



Ash and University



Ash and University

Ash and University Counts Sept. 2022 *IF AVAILABLE



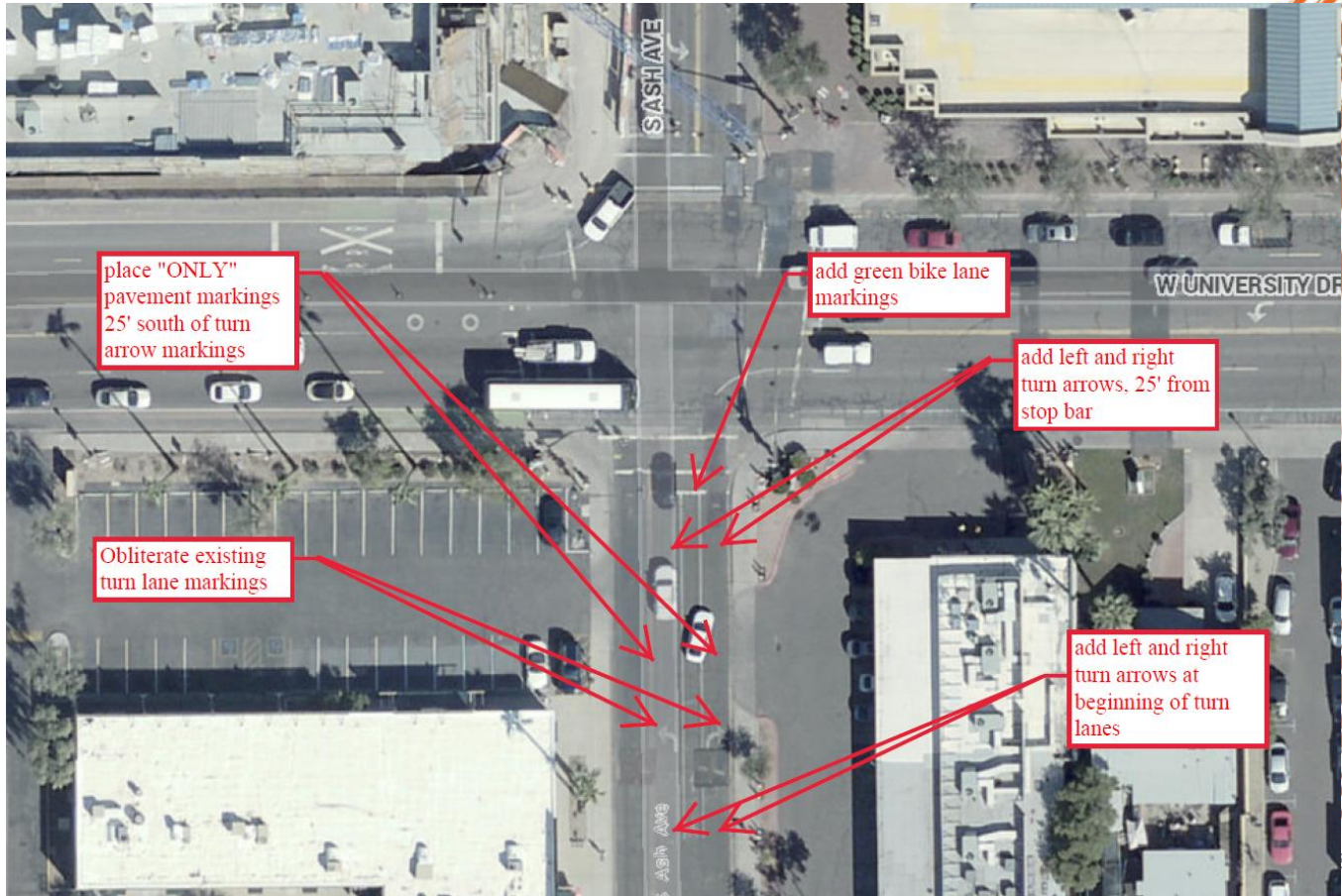
AM Peak Hour				297 ↑	
	177 ↙	0 ↓	275 ↘		
	↔ P: 0 B: 1 ↔			↖ 297	
232 ←	⊕	Street car ↘ 2		⊕	← 6
	P: 13			P: 5	↙ 136
0 ↗	B: 2		B: 1		
0 →	⊕		⊕		→ 395
0 ↘	↔ P: 6 B: 2 ↔				
				↖	↑
	↓			49	0
	136				120

PM Peak Hour				373 ↑	
	140 ↙	0 ↓	341 ↘		
	↔ P: 2 B: 1 ↔			↖ 371	
	⊕	Street car ↘ 2		⊕	← 1
	P: 24			P: 25	↙ 319
	B: 2		B: 10		
383 ←	⊕		⊕		→ 615
2 ↗	B: 2		B: 1		
4 →	↔ P: 17 B: 1 ↔				
0 ↘				↖	↑
	↓			242	0
	319				270

Recent Striping Changes at Ash and University



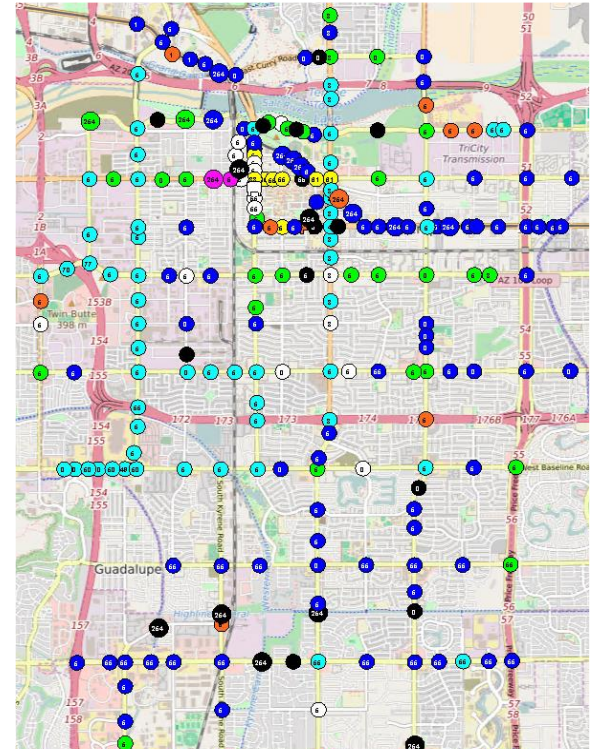
Tempe will make these changes on the south side, and Valley Metro will make similar changes on the north side.



Detection Systems in Tempe



- Most detection systems in North Tempe are video detection
 - In the image to the right, dark blue are loop detectors, and all other colors are video-based
- Most Video detection systems identify bikes in travel lanes the same as cars
 - There are some systems that can differentiate between bikes and cars
 - We are still evaluating those systems to see if they are reliable and if differentiation is helpful

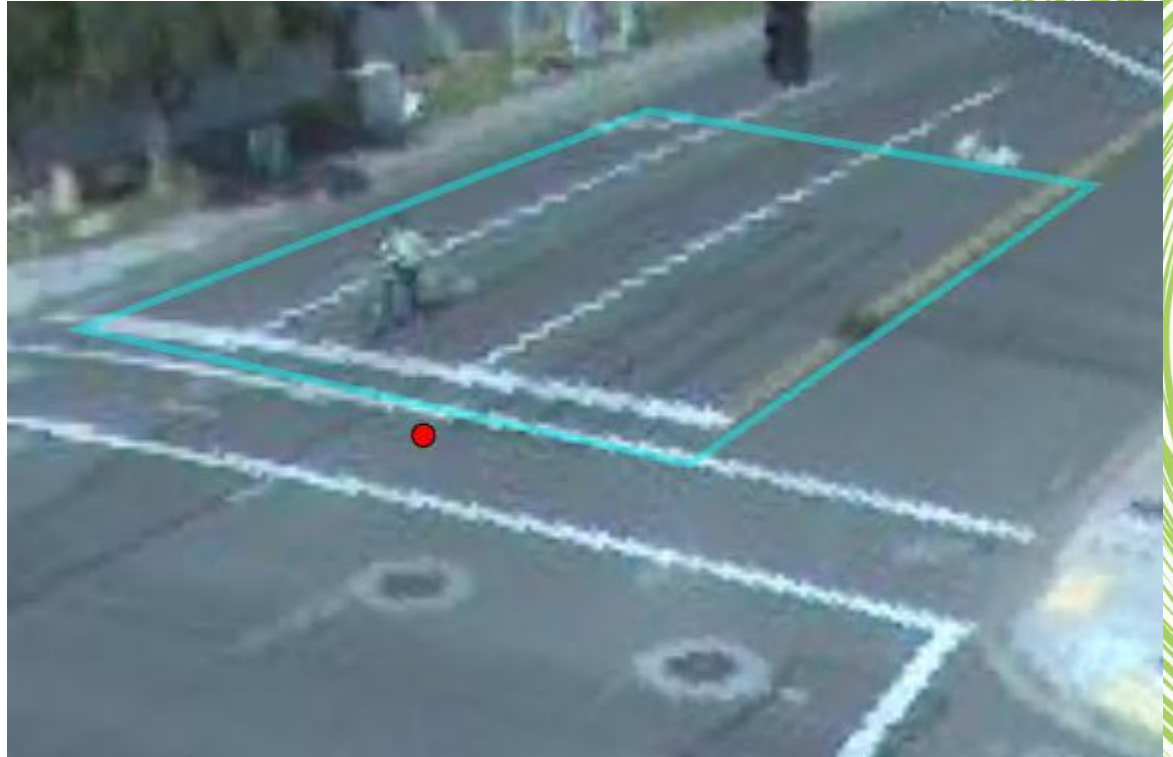


Note that some systems have been changed since the image was last updated

Existing Bike Detection



- If the bike is in a travel lane, the detectors should call the phase if only a bike is present.
- If the bike chooses to stay close to the curb, they should still use the bike push button
- Note that there are some intersection in Tempe that have bike loops as well!



Bike Detection Upcoming Technology



- Bike detection indicators
 - Lets the cyclist know that they have been detected
 - Reduces confusion about detection at each intersection
 - Reduces the urge to run the red light
- Challenges:
 - Would require additional software and hardware to incorporate and maintain
 - Would need to be able to differentiate between bikes and cars at all locations deployed

- Example: Iteris SmartCycle Bike Indicator



Bike Detection Upcoming Technologies



- Red Light Countdown Lights
- Research shows mixed safety results
 - Some research claims this reduces red-light running
- No systems have been widely deployed in the United States
- Current research deployments suggest that these work best at pre-timed intersections
 - We currently do not have any pre-timed intersections



Questions?

MEMORANDUM

TO: Tempe Transportation Commission
FROM: Shelly Seyler, Deputy Engineering & Transportation Director
DATE: September 13, 2022
SUBJECT: Future Agenda Items
ITEM #: 7



PURPOSE:

The Chair will request future agenda items from the Commission members.

RECOMMENDATION OR DIRECTION REQUESTED:

This item is for information only.

- October 11
 - Annual Report
 - Grand Canal MUP
 - Public Involvement Process
 - Proposition 400E
- November 8
 - Annual Report
 - Transportation Survey Results
 - Smith Road Improvements Project
 - General Plan 2050
- December 13
- January 10
 - Commission Business
 - Streetcar Update
 - North/South Rail Spur MUP
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- TBD: Crime Prevention Through Environmental Design