

**SCOTTSDALE CITY COUNCIL
REGULAR MEETING AND WORK STUDY SESSION MINUTES
MONDAY, NOVEMBER 3, 2025**



**CITY HALL KIVA
3939 N. DRINKWATER BOULEVARD
SCOTTSDALE, AZ 85251**

CALL TO ORDER

Mayor Lisa Borowsky called to order a Regular Meeting and Work Study Session of the Scottsdale City Council at 5:40 p.m. on Monday, November 3, 2025 in the City Hall Kiva Forum.

ROLL CALL

Mayor Borowsky asked City Clerk Ben Lane to conduct the roll call.

Present: Mayor Lisa Borowsky; Vice Mayor Adam Kwasman; and Councilmembers Jan Dubauskas, Barry Graham, Kathy Littlefield, Maryann McAllen, and Solange Whitehead

Also Present: City Manager Greg Caton, Interim City Attorney Luis Santaella, City Treasurer Sonia Andrews, Acting City Auditor Lai Cluff, and City Clerk Ben Lane

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Cub Scout Pack 618.

INVOCATION

Vice Mayor Kwasman introduced Rabbi Yossi Bryski from the Aleph Institute to give the invocation.

MAYOR'S REPORT

Mayor Borowsky discussed last week's Town Hall Meeting that was held on October 29th at Mustang Library. She thanked all those who attended and noted appreciation for their questions and ideas. She announced that the next Town Hall Meeting will take place in the Spring at a new location.

PRESENTATION/INFORMATION UPDATES

- **Employee Recognition Program**
The City Council will recognize employees with 20 or more years of service as of November 2025.

NOTE: MINUTES OF CITY COUNCIL MEETINGS AND WORK STUDY SESSIONS ARE PREPARED IN ACCORDANCE WITH THE PROVISIONS OF ARIZONA REVISED STATUTES. THESE MINUTES ARE INTENDED TO BE AN ACCURATE REFLECTION OF ACTION TAKEN AND DIRECTION GIVEN BY THE CITY COUNCIL AND ARE NOT VERBATIM TRANSCRIPTS. DIGITAL RECORDINGS AND CLOSED CAPTION TRANSCRIPTS OF SCOTTSDALE CITY COUNCIL MEETINGS ARE AVAILABLE ONLINE AND ARE ON FILE IN THE CITY CLERK'S OFFICE.

Presenter(s): Holly Peralta, Public Affairs Supervisor

Note: The Council may make comments or ask questions to the presenter(s); however, no Council action will be taken.

Public Affairs Supervisor Holly Peralta gave a PowerPoint presentation (attached) which recognized City of Scottsdale employees with 20 or more years of services as of November 2025.

- **East Valley Institute of Technology (EVIT) Programs in Scottsdale**

Dr. Chad Wilson will discuss EVIT Programs available in Scottsdale.

Presenter(s): Dr. Chad Wilson, EVIT Superintendent

Note: The Council may make comments or ask questions to the presenter(s); however, no Council action will be taken.

East Valley Institute of Technology (EVIT) Superintendent Dr. Chad Wilson and EVIT Governing Board Member Peter Boyle gave a video presentation and discussed the EVIT programs available in Scottsdale.

PUBLIC COMMENT

Steve Sutton, Scottsdale resident, discussed a possible public hearing related to the parking garage at the Corral, a parking study citizen petition, and presented an action plan.

Dan Ishac, Scottsdale resident, discussed the Council vote on the solar shade project at City Hall, the related bond language, project costs, and design aesthetics.

Yvonne Cahill, Scottsdale resident, discussed Natural Area Open Space (NAOS) easements and the need to update the NAOS brochure and educate residents about NAOS requirements.

Laura Schafer, Scottsdale resident, discussed the Hercules Field property and concerns related to possible zoning violations, commercial business activity, and noise and lighting issues. She requested City Council action on these matters.

Michael Schafer, Scottsdale resident, discussed a citizen petition related to Hercules Field, commercial business activity at this location, and how the City determines if a business can operate at a residential location.

MINUTES

Request: Approve the following Council meeting minutes from September 2025:

- Regular Meeting and Work Study Session Minutes of September 9, 2025**
- Special Meeting Minutes of September 12, 2025**
- Executive Session Meeting Minutes of September 12, 2025

MOTION AND VOTE - MINUTES

Councilwoman McAllen made a motion to approve the Regular Meeting and Work Study Session Minutes of September 9, 2025; Special Meeting Minutes of September 12, 2025; and the Executive Session Meeting Minutes of September 12, 2025. Councilwoman Whitehead seconded the motion, which carried 7/0, with Mayor Borowsky; Vice Mayor Kwasman; and Councilmembers Dubauskas, Graham, Littlefield, McAllen, and Whitehead voting in the affirmative.

CONSENT AGENDA

1. **New York Bagels 'n Bialys - Hayden Peak Liquor License (67-LL-2025)**
Request: Consider forwarding a recommendation of approval to the Arizona Department of Liquor Licenses & Control for a Series 12 (restaurant) State liquor license for an existing location with a new owner.
Location: 20567 N. Hayden Road, Suite 120
Staff Contact(s): Tim Curtis, Current Planning Director, 480-312-4210, tcurtis@scottsdaleaz.gov
2. **Wicked Seafood & Meats Gourmet Market Liquor License (68-LL-2025)**
Request: Consider forwarding a recommendation of approval to the Arizona Department of Liquor Licenses & Control for a Series 10 (beer and wine store) State liquor license for a new location and owner.
Location: 7609 E. Pinnacle Peak Road, Suites C4 & C5
Staff Contact(s): Tim Curtis, Current Planning Director, 480-312-4210, tcurtis@scottsdaleaz.gov
3. **Francis and Sons Food Mart Liquor License (69-LL-2025)**
Request: Consider forwarding a recommendation of approval to the Arizona Department of Liquor Licenses & Control for a Series 10 (beer and wine store) State liquor license for an existing location with a new owner.
Location: 6002 N. Granite Reef Road
Staff Contact(s): Tim Curtis, Current Planning Director, 480-312-4210, tcurtis@scottsdaleaz.gov
4. **Intergovernmental Agreement with the Town of Paradise Valley for Town Entrance Enhancements**
Request: Adopt **Resolution No. 13444** authorizing:
 1. Contract No. 960001A2 (1996-001-COS-A2), an intergovernmental agreement between the city of Scottsdale and the town of Paradise Valley for installation of aesthetic enhancements.
 2. The City Manager, or designee, to execute such other documents and take such other actions as necessary to carry out the intent of this Resolution.**Location:** In the area of Scottsdale Road and Doubletree Ranch Road
Staff Contact(s): Alison Tymkiw, City Engineer and Transportation and Infrastructure Senior Director, 480-312-7760, atymkiw@scottsdaleaz.gov
5. **78th Street Functional Classification Map Amendment**
Request: Adopt **Resolution No. 13543** approving and adopting:
 1. An amendment to the 2022 Transportation Action Plan reclassifying 78th Street between Shea Boulevard and Mountain View Road from a minor collector to a local residential street as depicted in Exhibits A and B.
 2. That Exhibits A and B shall be incorporated into the City's 2022 Transportation Action Plan and kept on file at the Transportation and Infrastructure Department in the city of Scottsdale.**Staff Contact(s):** Alison Tymkiw, City Engineer and Transportation and Infrastructure Senior Director, 480-312-7760, atymkiw@scottsdaleaz.gov

City Engineer and Transportation and Infrastructure Senior Director Alison Tymkiw and Senior Manager - Transportation Planning Nathan Domme gave a presentation on the proposed 78th Street Functional Classification Map Amendment.

6. Dreamy Draw Music Festival Event Funding

Request: Adopt Resolution No. 13521 authorizing:

1. Funding, in an amount not to exceed \$66,250, from the portion of the Fiscal Year 2025/26 Tourism Development Fund that is allocated toward Event Retention and Development for promoting the city of Scottsdale through the Scottsdale Dreamy Draw Music Festival.
2. Contract No. 2025-167-COS with Oh Wow, LLC.

Staff Contact(s): Rachel Smetana, Tourism and Events Director, 480-312-2890, rsmetana@scottsdaleaz.gov

7. Scottsdale Ferrari Art Week at WestWorld Event Funding

Request: Adopt Resolution No. 13522 authorizing:

1. Funding, in an amount not to exceed \$75,000, from the portion of the Fiscal Year 2025/26 Tourism Development Fund that is allocated toward Event Retention and Development for promoting the city of Scottsdale through Scottsdale Ferrari Art Week at WestWorld of Scottsdale at WestWorld.
2. Contract No. 2025-168-COS with the Scottsdale Art Week, LLC.

Staff Contact(s): Rachel Smetana, Tourism and Events Director, 480-312-2890, rsmetana@scottsdaleaz.gov

8. Criminal Justice Information Integration Platform Grant

Request: Adopt Resolution No. 13537 authorizing:

1. The City Manager, or designee, to execute Contract No. 2025-175-COS with the Arizona State Department of Administration's Arizona Records Management Program, for grant funding, in the amount of \$125,900, for a pilot program related to connecting disparate records management and related programs into an integrated platform.
2. A budget transfer, of up to \$125,900, from the adopted Fiscal Year 2025/26 Grant Contingency Budget to a newly created cost center to record the related grant activity.

Staff Contact(s): Joseph LeDuc, Chief of Police, 480-312-1900, jleduc@scottsdaleaz.gov

PUBLIC COMMENT – CONSENT AGENDA

There was no public comment on the Consent Agenda items.

MOTION AND VOTE – CONSENT AGENDA

Councilman Graham requested additional information on Item 5 [78th Street Functional Classification Map Amendment].

Councilwoman McAllen made a motion to approve Consent Agenda Items 1 through 8. Councilwoman Whitehead seconded the motion, which carried 7/0, with Mayor Borowsky; Vice Mayor Kwasman; and Councilmembers Dubauskas, Graham, Littlefield, McAllen, and Whitehead voting in the affirmative.

PUBLIC COMMENT

No public comments were received.

CITIZEN PETITIONS

14. Receipt of Citizen Petitions

Request: Accept and acknowledge receipt of citizen petitions. Any member of the Council may make a motion, to be voted on by the Council, to: (1) Direct the City Manager to agendize the petition for further discussion; (2) direct the City Manager to investigate the matter and prepare a written response to the Council, with a copy to the petitioner; or (3) take no action.

Staff Contact(s): Ben Lane, City Clerk, 480-312-2411, blane@scottsdaleaz.gov

No citizen petitions were received.

MAYOR AND COUNCIL

10. Investigate Process for Erecting a Memorial to Charlie Kirk in Scottsdale

Request: At the request of Vice Mayor Kwasman, direct the City Manager to investigate and report back to the Council on the process for erecting a Charlie Kirk memorial in Scottsdale.

Note: The only possible Council action to be taken on Item No. 10 is: (1) Direct the City Manager or responsible Charter Officer to agendize the item for a future meeting; (2) Direct the City Manager or responsible Charter Officer to investigate the matter and prepare a written response to the Council; or (3) Take no action. **No public comment will be taken at this time.**

MOTION NO. 1 – ITEM 10

Councilwoman Whitehead made a motion to have the City Manager investigate and bring back a memorial policy for Council consideration that mirrors the State's memorial policy which stipulates a person must be deceased for at least five years before a commemorative naming of a geographic feature may be approved. Councilwoman McAllen seconded the motion.

ALTERNATE MOTION NO.1 – ITEM 10

Councilwoman Dubauskas made an alternate motion to have the City Manager investigate creating a policy for memorials and to bring back his findings for Council consideration. Councilwoman Whitehead seconded the motion.

Councilwoman Whitehead withdrew her motion.

Councilwoman Dubauskas withdrew her alternate motion.

ALTERNATE MOTION NO. 2 – ITEM 10

Vice Mayor Kwasman made a motion to direct the City Manager or responsible Charter Officer to agendize the item for a future meeting and direct the City Manager or responsible Charter Officer to investigate the matter and prepare a written response to the Council. Mayor Borowsky seconded the motion, which carried 5/2 with Mayor Borowsky; Vice Mayor Kwasman; and Councilmembers Dubauskas, Graham, and Littlefield voting in the affirmative and Councilmembers McAllen and Whitehead dissenting.

WORK STUDY SESSION

PUBLIC COMMENT – WORK STUDY SESSION

Mayor Borowsky opened public comment on this item.

Steve Sutton, Scottsdale resident, spoke in support of longer pauses at intersections and lagging left turns.

Mayor Borowsky closed public comment on this item.

1. **Signaling System, Left-Turn Signals, and Red-Light Timing**

Request: Presentation, discussion, and possible direction related to Scottsdale's Signaling System, Left-Turn Signals, and Red-Light Timing.

Presenter(s): Alison Tymkiw, City Engineer and Transportation and Infrastructure Senior Director and John Hoang, Senior Manager - Traffic Engineering

Staff Contact(s): Alison Tymkiw, City Engineer and Transportation and Infrastructure Senior Director, 480-312-7760, atymkiw@scottsdaleaz.gov

City Engineer and Transportation and Infrastructure Senior Director Alison Tymkiw and Senior Manager - Traffic Engineering John Hoang gave a PowerPoint presentation (attached) on Signaling System, Left-Turn Signals, and Red-Light Timing.

Councilmembers made the following observations and suggestions:

- Leading and lagging turn signals are fascinating.
- Green-light extension options provide greater flexibility.
- Goal is to use the existing technology to maximize our infrastructure.
- Appreciate that staff is studying certain intersections.
- There is a science to the signaling system.
- Scottsdale is in the top 10 safest places to drive per a recent study.
- Lagging left arrows are preferred.
- However, in some cases, a leading left arrow is needed.
- City has struck a balance between lagging and leading left arrow usage.
- Create additional signage for leading and lagging arrows for out-of-town visitors.

2. **Photo Enforcement Cameras**

Request: Presentation, discussion, and possible direction related to photo enforcement cameras, including speed detection systems and red-light cameras.

Presenter(s): Joseph LeDuc, Chief of Police

Staff Contact(s): Joseph LeDuc, Chief of Police; 480-312-1900, jilleduc@scottsdaleaz.gov

Chief of Police Joseph LeDuc gave a PowerPoint presentation (attached) on Photo Enforcement Cameras.

Councilmembers made the following observations and suggestions:

- There is a balance between having a safe community and not being overpoliced.
- The city has come a long way with speeding enforcement.

- Photo enforcement cameras are beneficial as they prevent accidents and keep traffic flowing.
- Against photo radar enforcement as it is against the Sixth Amendment to the U.S Constitution.
- Photo radar does save lives.
- Look at photo enforcement cameras for intersections and be strategic with placement of photo enforcement cameras on thoroughfares.
- The Scottsdale Police Department is the finest in America.
- Investigate whether a noise mechanism can be added to photo enforcement cameras to assist in noise complaints.

MOTION AND VOTE – ADJOURNMENT

Mayor Borowsky made a motion to adjourn the Regular Meeting and Work Study Session. Councilwoman Whitehead seconded the motion, which carried 7/0, by voice vote, with Mayor Borowsky; Vice Mayor Kwasman; and Councilmembers Dubauskas, Graham, Littlefield, McAllen, and Whitehead voting in the affirmative.

ADJOURNMENT

Mayor Borowsky adjourned the Regular Meeting at 7:52 p.m.

SUBMITTED BY:



Ben Lane, City Clerk

Officially approved by the City Council on January 27, 2026

CERTIFICATE

I hereby certify that the foregoing Minutes are a true and correct copy of the Minutes of the Regular Meeting and Work Study Session of the City Council of Scottsdale, Arizona, held on the 3rd day of November 2025.

I further certify that the meeting was duly called and held, and that a quorum was present.

DATED this 27th day of January 2026.



Ben Lane, City Clerk

November Service Anniversaries

1

20 Years of Service

Zachariah Jones

Clara Mavis

25 Years of Service

Ryne Buycks

Jeffrey Knutsen

Tracy Spackman



PRESENTATION/
INFORMATION UPDATES

Traffic Management Center (TMC) Overview

WORK STUDY
ITEM 1

Scottsdale's Signal System, Left-Turn Signals, and Red-Light Timing

Work Study Session
11/03/2025

Signal Basics

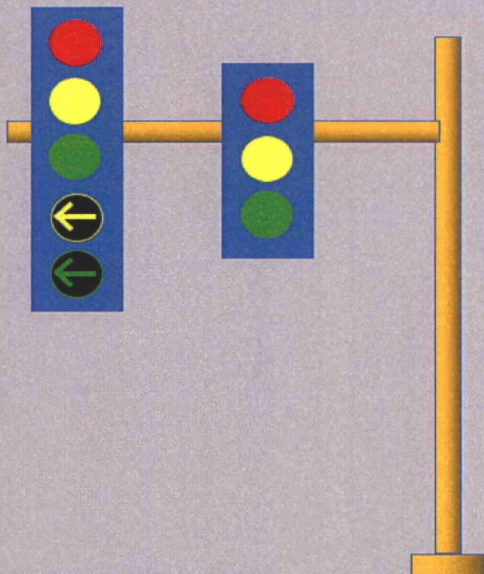
Leading and Lagging Operations

Signal Change and Clearance Intervals

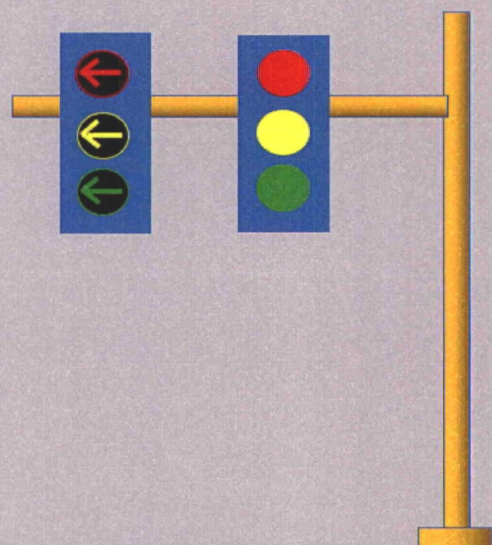
Scottsdale staff recommendations

Signal Basics

PERMISSIVE/PROTECTED

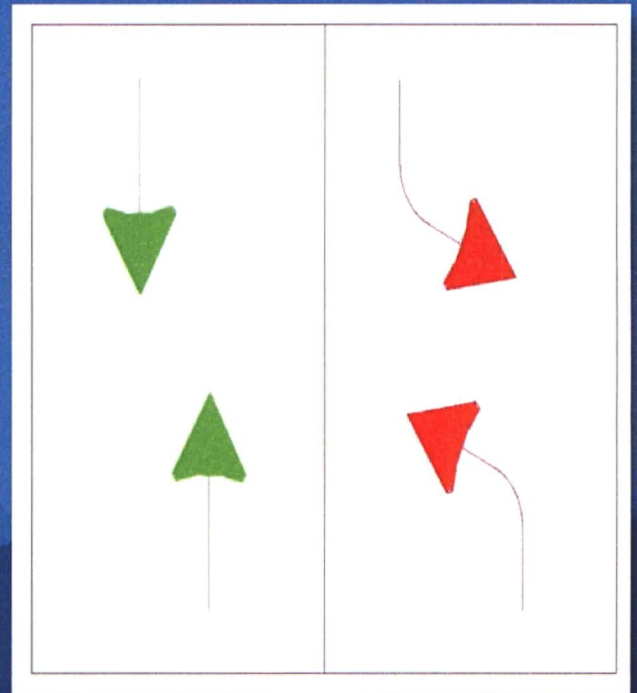
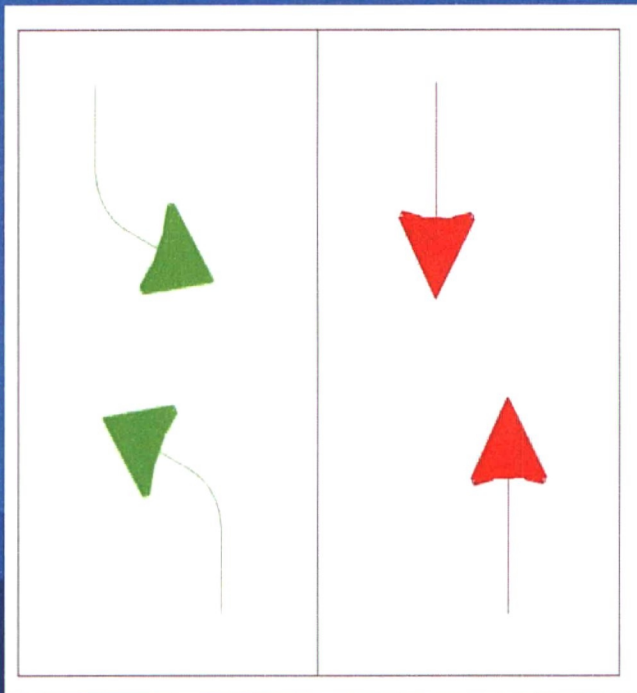


PROTECTED ONLY



Leading

Lagging



Left Turn Phasing Options

Exhibit 5-4 Left-Turn Phasing Options

Left-Turn Phasing Option	Description	Advantages	Challenges
Permitted Left-Turn Phase	Served with the adjacent through movement, requiring left-turning vehicles to yield to conflicting vehicle and pedestrian movements	□ Reduced intersection delay □ Efficient green allocation	□ Requires users to choose acceptable gaps in traffic □ Yellow trap can occur if opposing movement is a lagging left turn
Protected Left-Turn Phase	Left-turning vehicles are given the right-of-way without any conflicting movements	□ Reduced delay for left-turning vehicles □ Users always receive exclusive right-of-way; gaps in traffic do not need to be identified	□ Increased intersection delay
Protected-Permitted Left-Turn Phase	Combination of permitted and protected left-turn phasing; users receive a protected interval, but can also make permitted movements as the conflicting through phase receives a green indication	□ Compromise between safety of protected left-turn phase and efficiency of permitted left-turn phase □ No significant increase in delay for other movements	□ Fewer options for maximizing progression of through vehicles during coordination (unless flashing yellow arrow displays are used) □ Yellow trap can occur if opposing movement is a lagging left turn

Decision Making Guide for Traffic Signal Phasing (2020)

NCHRP 284

6.2 Phase Sequence Considerations

Some agencies use the same phasing sequence at all (or most) intersections. A 2003 report indicated that 83 percent of signals with protected-permissive left-turn phase mode used leading left-turn sequence, while 11 percent used lagging and 6 percent used lead-lag (NCHRP 2003). These percentages may have changed somewhat since 2003, but the leading left-turn sequence certainly remains the most common.

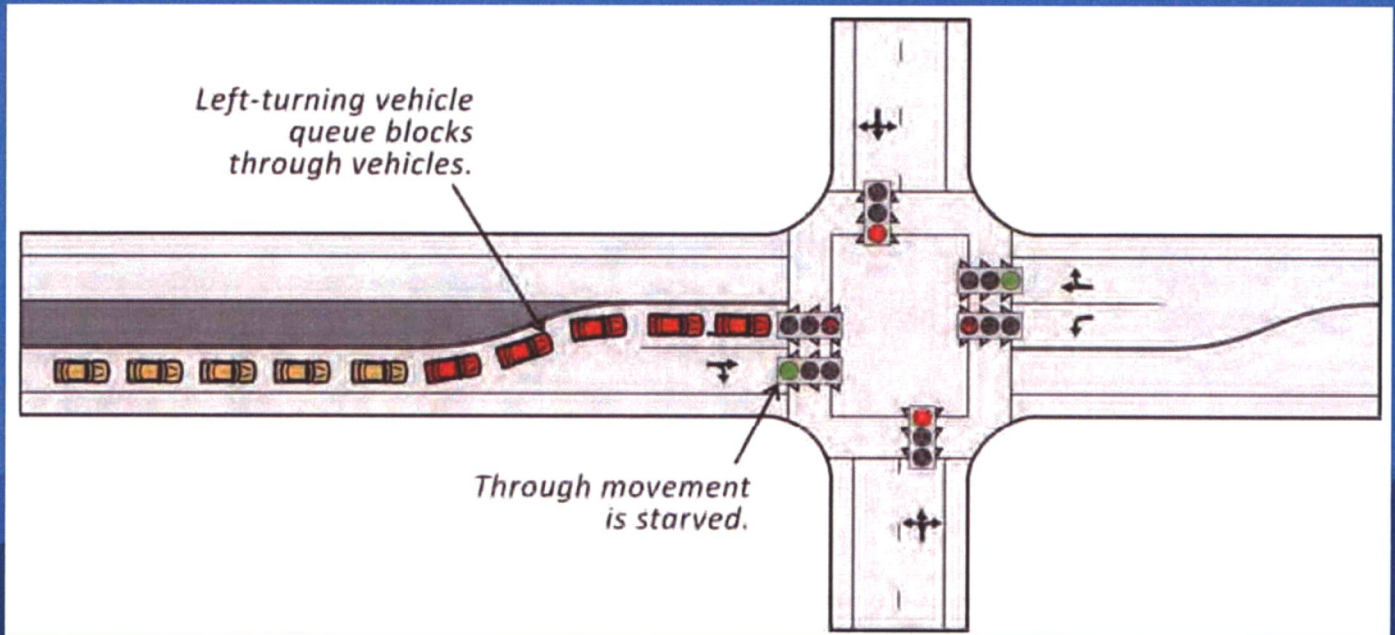
Using a common phase sequence at all intersections is likely not the most efficient, because one phase sequence may be superior on certain approaches and another may be preferable elsewhere. Phase sequence should be considered for each pair of opposing approaches to determine if a certain sequence can provide better operational or safety performance.

- **Crash Modification (CMF) Clearing House (Austin Study 2009)**
- **Comparative Analysis of Leading and Lagging Left Turns Report (Lee Study, August 1991)**
- **Box Study (November 1999)**
- **Valley Traffic Engineers (VATEC) Meeting (November 2000)**
- **Chandler-Gilbert Study (2007)**

Similar crash rates for leading and lagging
No statistical evidence of difference

Consideration should be based on multiple factors such as safety, efficiency, consistency, and resources.

Left Turn Storage Spill Back



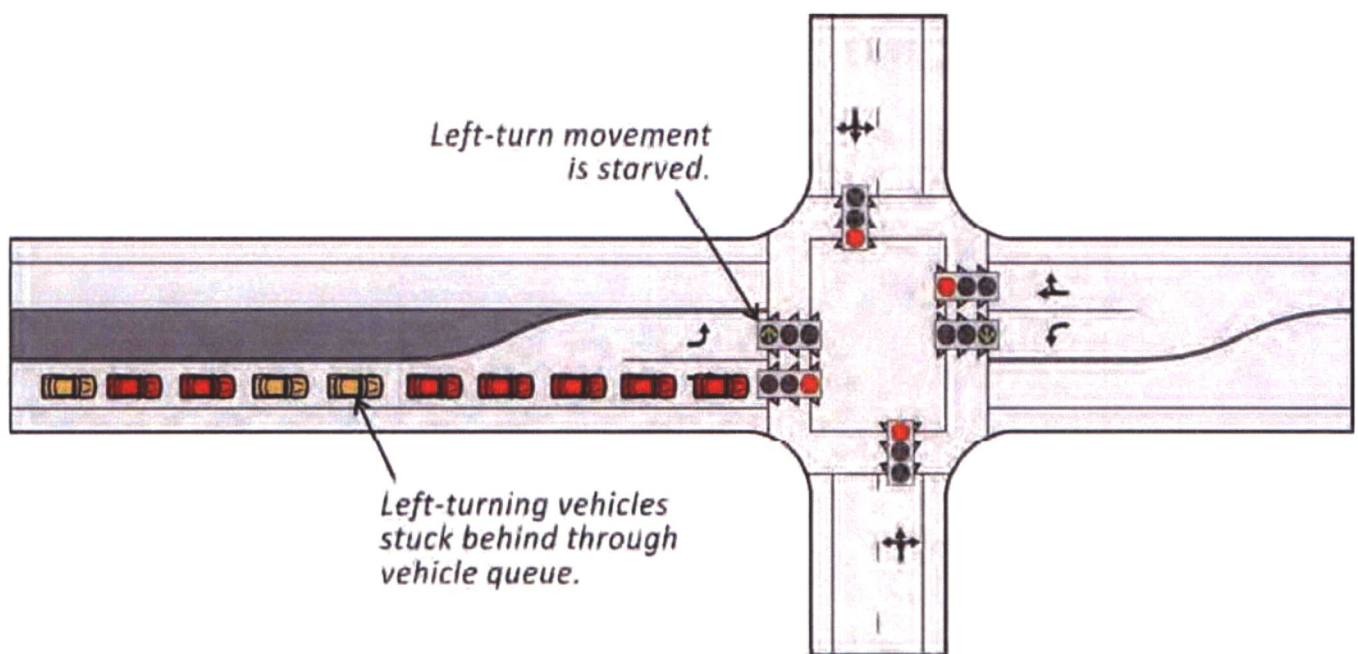
Leading option due to high volume of left turn traffic demand



Leading Left Turn Operation

- Provides additional capacity in most cases
- Affected by any interrelated factors such as geometrics, traffic volumes, cycle length, phase overlaps, driver habits, speeds, etc.
- Optimizing signals provides maximum use of available roadway capacity

Left Turn Storage Starvation



Lagging option due to high volume of through traffic demand



Lagging Left Turn Operation

- **More Effective in appropriate Situations:**
 - **Freeway Traffic Interchanges (TIs)**
 - **Unusual Signal Spacing**
 - **Geometric Constraints (Short Left Turn Storage)**
- **Utilization of both Leading and Lagging provides optimal traffic progression depending on location, time of day**

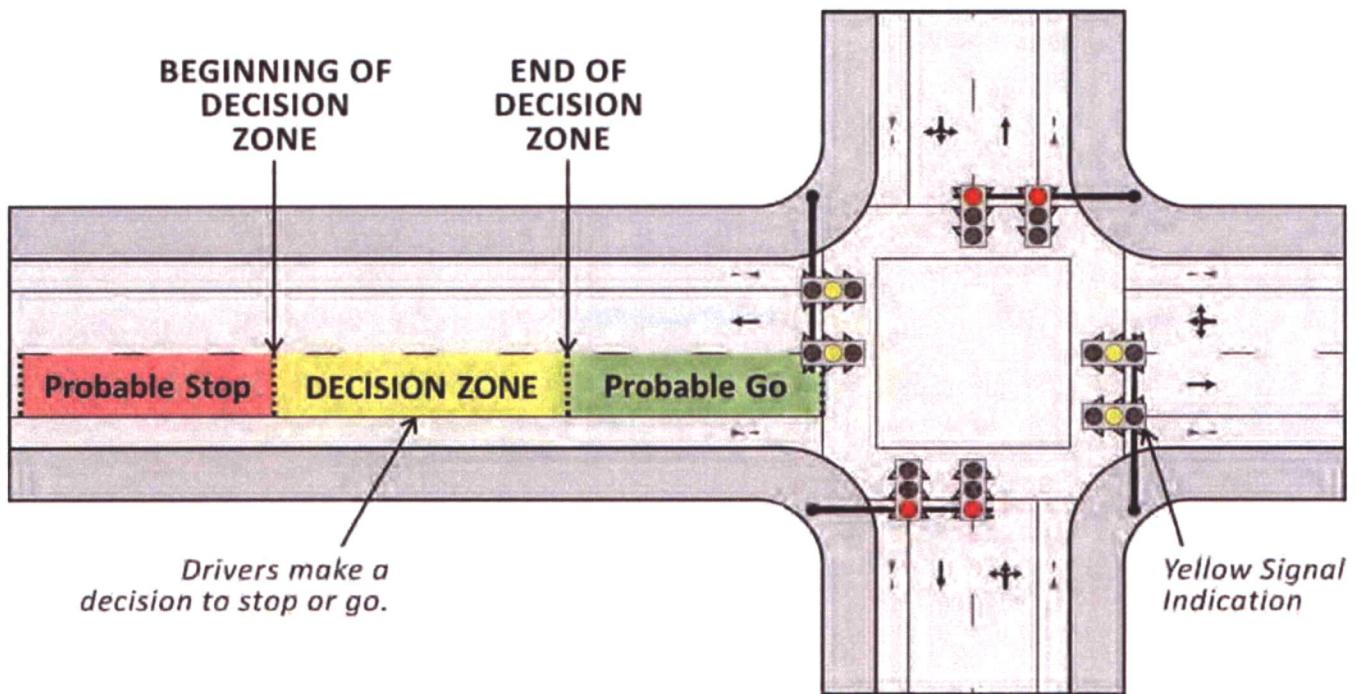
In Summary:

Leading or Lagging is not a one size fits all.

Traffic Engineers should have the flexibility to implement the appropriate left turn operation based on thorough analysis, optimal throughput, safety and available resources.

Traffic Signal Change and Clearance Intervals

Decision/Dilemma Zone



Limits of Decision Zone

Approach Vehicular Speed (Miles Per Hour)	Beginning of Decision Zone (5.5 Seconds from Stop Bar)	End of Decision Zone (2.5 Seconds from Stop Bar)
35	285 feet	125 feet
40	325 feet	145 feet
45	365 feet	165 feet
50	405 feet	180 feet
55	445 feet	200 feet

Basic Signal Timing Parameter Guidance

	Timing Parameter	Consequence for Too Little Time	Consequence for Too Much Time	Dependent On Variables Including:
Section 6.1.1	Yellow Change	□ May create a dilemma zone (Type I) □ May cause a higher frequency of red-light running	□ May encourage disrespect by familiar drivers	□ Driver perception-reaction time □ Vehicle deceleration rate □ Vehicle approach speed □ Approach grade
Section 6.1.2	Red Clearance	□ Potential conflict after phase begins	□ Wasted time at the intersection	□ Intersection width □ Vehicle length □ Vehicle approach speed

Duration of Minimum Yellow Change Interval

Approach Speed (MPH)	Minimum Yellow Change ¹ (Seconds)
25	3.0*
30	3.2
35	3.6
40	3.9
45	4.3
50	4.7
55	5.0
60	5.4

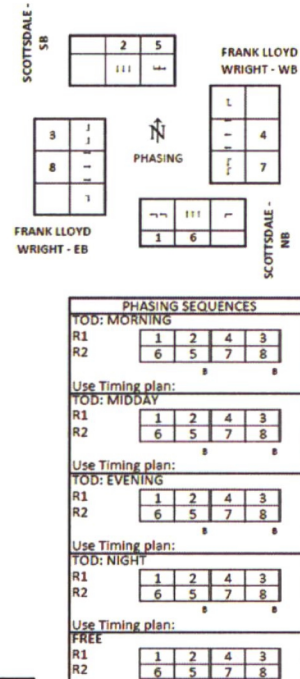
¹ Based on negligible approach grades. Adjustments are required for upgrades and downgrades.

* The MUTCD (2) recommends a minimum duration of 3 seconds for the yellow change interval.

**Scottsdale &
Frank Lloyd
Wright
signal timing
parameters**

SCOTTSDALE & FRANK LLOYD WRIGHT			System # 162
BASIC TIMING PLAN	Section #	I.P. Address	Date Designed
	1617	MM1-5-1 172.27.11.62	1/15/2025

Phase	1	2	3	4	5	6	7	8
Movement	NBL	SBT	EBL	WBT	SBL	NBT	WBL	EBT
NOTES	L-P	COORD	PROT		PROT	COORD	L-P	
MIN GRN	5	10	5	10	5	10	5	10
BK MGRN								
CS MGRN	5		5		5		5	
DLY GRN								
WALK		4		4		4		4
WALK2								
WLK MAX								
PED CLR/EDW		30		26		33		32
PD CLR2								
PC MAX								
PED CO								
VEH EXT	2	1	2	1	2	1	2	1
VH EXT2								
MAX 1	20	45	20	45	20	45	20	45
MAX 2	40	55	35	45	40	55	30	50
MAX 3								
DYM MAX								
DYM STP								
YELLOW	4	4.7	4	4.7	4	4.7	4.0	4.7
RED CLR	2	2.0	2	2.0	2	2.0	2	2.0
RED MAX								
RED RVT	2	2	2	2	2	2	2	2
ACT B4								
SEC/ACT								
MAX INT								
TIME B4								
CARS WT								
STPTDUC								
TTREDUC								
MIN GAP								
LOCK DET								
VEH RECALL		X				X		
PED RECALL								
MAX RECALL								
SOFT RECALL								
NO REST								
ADD INIT CAL								



Standard of Practice

- ITE Guidelines for Determining Traffic Signal Change and Clearance Intervals
- Signal Timing Manual 2015 (NCHRP Report 812)
- AzTech White Paper
- Two agencies in the valley are piloting projects to increase their clearance intervals completion 2026 & 2028

Study in California found increasing clearance interval greater than ITE Guidelines

Increased number of angle collisions (one of the most severe collision types) –

While overall collisions slightly decreased, that decrease was primarily led by decrease in rear end collisions (one of the least severe collision types)



Signal Timing Manual - Second Edition (2015)

DETAILS

322 pages | 8.5 x 11 | PAPERBACK

ISBN 978-0-309-30888-5 | DOI 10.17226/22097

MARCH 2020

Guidelines for Determining Traffic Signal Change and Clearance Intervals

A Recommended Practice
of the Institute of
Transportation Engineers

ite
A Community of Transportation Professionals



AZTech White Paper 2020

Clearance Interval Calculation Methodologies (13 Agencies)

YELLOW Interval

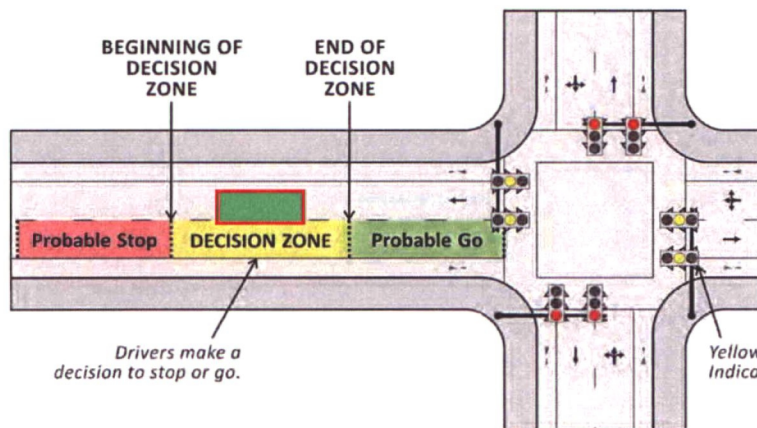
Constants and Variables:

Y = Yellow Interval (s)
 v or V = vehicle or design speed in mph (if not in mph, indicated as such in table below)
 t = perception-reaction time, 1.0s
 a = deceleration rate, 10 ft/s²
 g = % grade (downhill is a negative grade)
 G = gravity constant 32.2 ft/s²

Agency	Yellow Interval (s)	Notes/Comments
1	<u>Through phase based on speed:</u> 35 mph or less, 3.5s 40 mph, 4.0s 45 mph, 4.5s <u>Left turn phase based on speed:</u> - Leading arrow, protected/permitted, 3.0s - Leading arrow, protected only, 4.0s - Lagging arrows all operations, same as adjacent through phase	7.0s maximum
2	$Y (\text{minimum}) = t_1 + t_2$ $t_1 = 1s (\text{perception} - \text{reaction time})$ $t_2 = \frac{1.47v}{(2a + 64.4g)}$	3.0s minimum 6.0s maximum
3	$Y = t + \frac{V}{2a + 64.4g}$ V = approach speed in ft/sec	3.0s minimum 6.0s maximum - If calculated time is longer than 5.0s, the remaining time will go to the all red interval - For protected-only left-turn arrows, 3.0s yellow interval is typically used
4	$Y = t + \frac{1.47v}{2(a + 32.2g)}$	3.0s minimum for all vehicle movements 3.0s for separate left-turn phases - Rounded to the next highest 0.1 seconds - Approach speed (v) assumed to be posted speed
5	$Y = t + \frac{v}{2a + 2Gg}$	
6	$Y = t + \frac{1.47V}{2a + 2Gg}$	

Agency	All Red Interval (s)	Approach Speed (v or V)	Intersection Width (W) (ft)	Notes/Comments
1	R = Vehicle Clearance Interval - Y <u>Left turns:</u> Leading arrow, protected/permitted, 1.0s Leading arrow, protected only, 1.0s Lagging arrow, all operations, same as adjacent through phase	Speed limit in ft/s	Near side stop line to the far edge of the conflicting traffic lane (in feet)	- The all red interval is defined as difference between the vehicle clearance interval and the yellow interval, rounded to the nearest half second - Maximum all red interval is typically 2.5s
2	$t_1 = \frac{W + L}{1.47V}$	Posted speed limit	Stop bar to the farthest conflicting lane	
3	$R = \frac{W}{V}$	Posted speed limit in ft/s	Curb to curb line of the street being crossed	1.0s minimum 1.0s is typically used for protected-only left-turn arrows
4	$R = \frac{W + L}{1.47v}$	Approach speed assumed to be posted speed	Distance from the stop bar to the opposite furthest curb line extended	2.0 s minimum for through movements - Rounded up to the next highest 0.1s 1.0s for separate left turn phases
5	$R = \frac{W + L}{V}$	Design speed in ft/s	Near stop bar to far crossing curb line extension, plus length of a vehicle	
6	$R = \frac{W + L}{1.47V} - t$			
7	Through movements, 2.0s Left turn movements, 1.0s			
8	$R (\text{through}) = \frac{W + L}{1.47(V_r)} - 1$ $R (\text{left turn}) = \frac{W + L}{1.47(V_{LR})} - 1$	V_r (through movement) = Posted Speed Limit V_{LR} (exclusive left turn) = 20 mph	Near-side stop line to the far edge of the conflicting traffic lane along the actual vehicle path	1.0s minimum 2.0s maximum
9	Through movements, 2.0s Left turn movements, 1.0s			
10	$R = \frac{W + L}{1.47(V)} - 1$	V (throughs) = posted speed limit + 7 mph V (left turns) = 20 mph	Stop bar to the curb prolongation of the farthest conflicting movement (including bike lanes). If there is a striped-out lane (unused pavement width) adjoining the curb prolongation, then the intersection width will be measured from the stop bar to the outside edge of the farthest conflicting lane	1.0s minimum 2.0s maximum
11	$t_1 = \frac{W + L}{1.47V}$	Posted speed limit	Stop bar to the farthest conflicting lane	
	R(through) Saved to 1/2 Drive			Yellow plus all red is equal to 6.0s for

Green time extension for vehicles



Adaptive detection zone



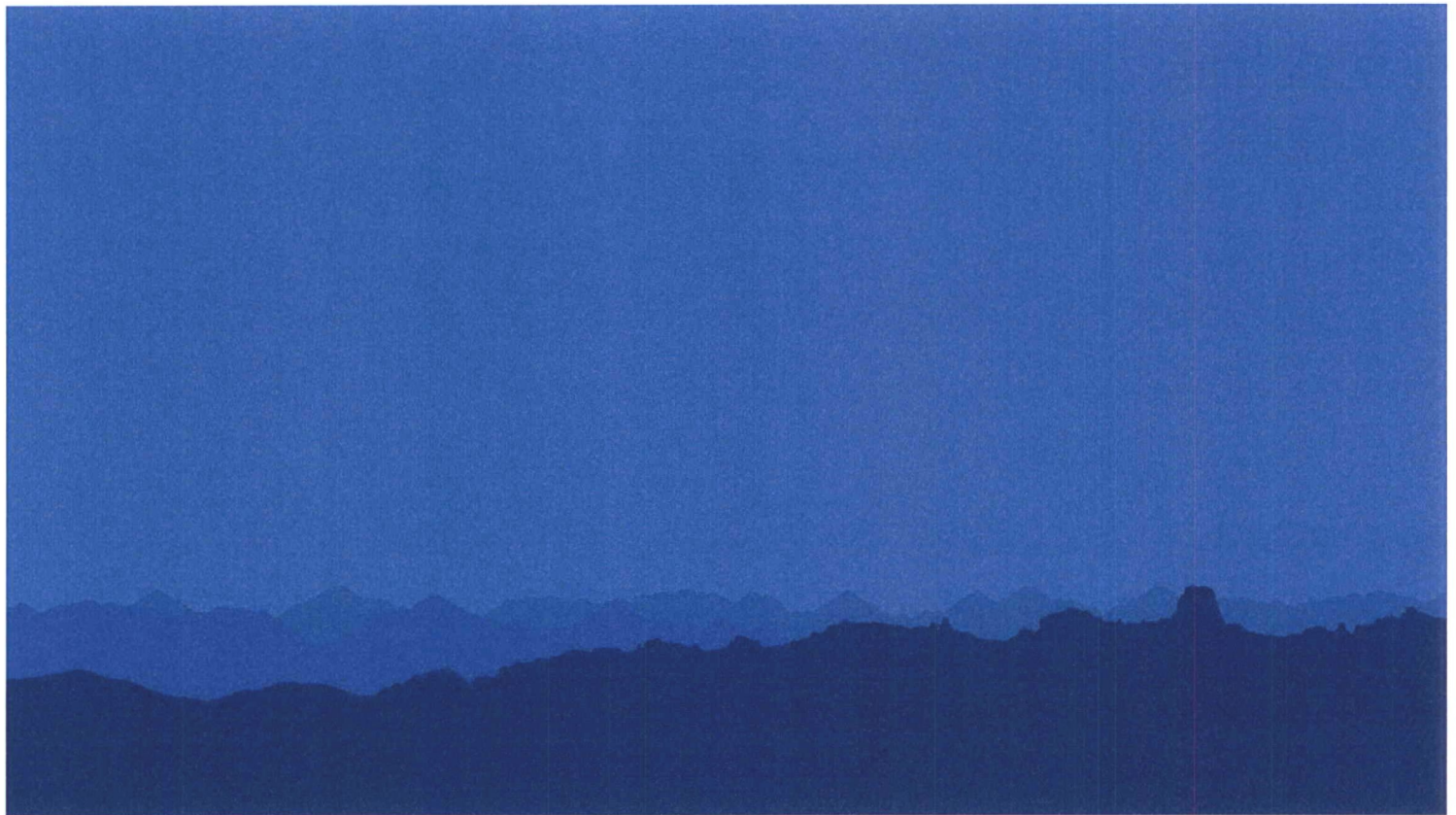
Staff Recommendation

- **City of Scottsdale currently meet or exceed the minimum yellow change.**
- **Our clearance times are more conservative and consistent with standard practice and requirements.**

Continue to leverage ITS technologies such as adaptive systems to pilot projects with green time extension to increase intersection safety



Questions
and
Discussion



	A	B	C	D	E	F	G	H	I	J	K	L	M
	Intersection	No. of Crashes	Crash Score	Volumes	Volume Score	Average Severity	Severity Score	Composite Score	Ranking	Max Direction		Weighting Factors	
1												No. of Crashes	0.5
2	SCOTTSDALE RD & SHEA BLVD	52	0.50	70400	0.18	1.48	0.07	0.75	1	NB		Volumes	0.2
3	HAYDEN RD & THOMAS RD	52	0.50	62800	0.16	1.56	0.08	0.74	2	EB		Injury Severity	0.3
4	SCOTTSDALE RD & CACTUS RD	46	0.44	77300	0.20	1.46	0.07	0.71	3	SB			
5	92ND ST & SHEA BLVD	47	0.45	61800	0.15	1.26	0.04	0.64	4	WB			
6	SCOTTSDALE RD & FRANK LLOYD WRIGHT BLVD	36	0.34	71700	0.18	1.67	0.10	0.63	5	SB			
7	90TH ST & SHEA BLVD	40	0.38	69900	0.18	1.40	0.06	0.62	6	EB			
8	HAYDEN RD & MCDOWELL RD	48	0.46	43400	0.10	1.38	0.06	0.62	7	NB			
9	HAYDEN RD & MCDONALD DR	41	0.39	59400	0.15	1.44	0.07	0.61	8	SB/WB			
10	GREENWAY HAYDEN LOOP & FRANK LLOYD WRIGHT BLVD	38	0.36	61700	0.15	1.45	0.07	0.58	9	WB			
11	SCOTTSDALE RD & INDIAN SCHOOL RD	37	0.35	45700	0.11	1.78	0.12	0.58	10	NB/SB			
12	THOMPSON PEAK PKWY & FRANK LLOYD WRIGHT BLVD	31	0.29	46400	0.11	2.06	0.16	0.56	11	SB			
13	SCOTTSDALE RD & MCDOWELL RD	36	0.34	54400	0.13	1.47	0.07	0.55	12	NB			
14	SCOTTSDALE RD & THOMAS RD	37	0.35	53800	0.13	1.32	0.05	0.53	13	EB			
15	HAYDEN RD & FRANK LLOYD WRIGHT BLVD	38	0.36	49500	0.12	1.34	0.05	0.53	14	WB			
16	90TH ST & VIA LINDA	35	0.33	46300	0.11	1.43	0.06	0.51	15	SB/WB			
17	HAYDEN RD & CACTUS RD	31	0.29	56200	0.14	1.42	0.06	0.50	16	WB			
18	SCOTTSDALE RD & MOUNTAIN VIEW RD	26	0.25	46900	0.11	1.92	0.14	0.49	17	SB			
19	64TH ST & THOMAS RD	30	0.28	41700	0.10	1.73	0.11	0.49	18	NB			
20	SCOTTSDALE RD & PINNACLE PEAK RD	26	0.25	53000	0.13	1.65	0.10	0.47	19	SB			
21	HAYDEN RD & SHEA BLVD	29	0.27	68800	0.18	1.10	0.02	0.47	20	EB			
22	96TH ST & SHEA BLVD	27	0.25	51000	0.12	1.56	0.08	0.46	21				
23	SCOTTSDALE RD & CAMELBACK RD	32	0.30	42300	0.10	1.38	0.06	0.46	22				
24	SCOTTSDALE RD & LINCOLN DR	26	0.25	66100	0.17	1.27	0.04	0.45	23				
25	GOLDWATER BLVD & CAMELBACK RD	29	0.27	45400	0.11	1.41	0.06	0.44	24				



Clearance Interval Calculation Methodologies Used in the Phoenix Metropolitan Area State of the Practice

Prepared by April Wire
Maricopa County Department of Transportation (MCDOT)
&
Keith Christian
Kimley-Horn

Interagency collaboration is critical in establishing a successful regional transportation system. This paper documents the current state of the practice for determining vehicle change and pedestrian clearance intervals within the Phoenix Metropolitan Area. This paper does not recommend a specific process or guideline but serves only as a reference for agencies interested in vehicle change or pedestrian clearance interval timings and policies used by agencies throughout the region. It is meant to help promote collaboration between agencies and uniformity of signal timing practices throughout the region.

Background

- There are approximately 3,000+ signalized intersections within the region.
- Within the region, there are eleven jurisdictions with 50 or more signalized intersections:
 - ADOT;
 - Chandler;
 - Gilbert;
 - Glendale;
 - MCDOT;
 - Mesa;
 - Phoenix;
 - Peoria;
 - Scottsdale;
 - Surprise; and
 - Tempe.
- There have been various documents published by different entities regarding vehicle change and pedestrian clearance intervals such as Institute of Transportation Engineers (ITE) and Federal Highway Administration (FHWA).
- Although these documents exist, each agency can create their own policies, guidelines, and procedures regarding how to determine these intervals.

Vision

The agencies within the region have a vision to make the various practices for determining vehicle change and pedestrian clearance intervals more uniform across the region. To achieve this vision, the agencies would like to learn from their peers regarding best practices and lessons learned. A good starting point for this is to see and understand how the peer agencies are currently determining these signal timing parameters.

Current Methods

Each jurisdiction currently has policies, guidelines, and procedures regarding how vehicle change and pedestrian clearance intervals are calculated. The primary variables used to perform these calculations include vehicle speeds, intersection width, presence and location of pedestrian push buttons, and pedestrian walking speeds. These variables are relatively consistent from agency to agency. However, the manner in which these exact values are derived may vary slightly from agency to agency and in some cases are subject to engineering judgment.

September 2020

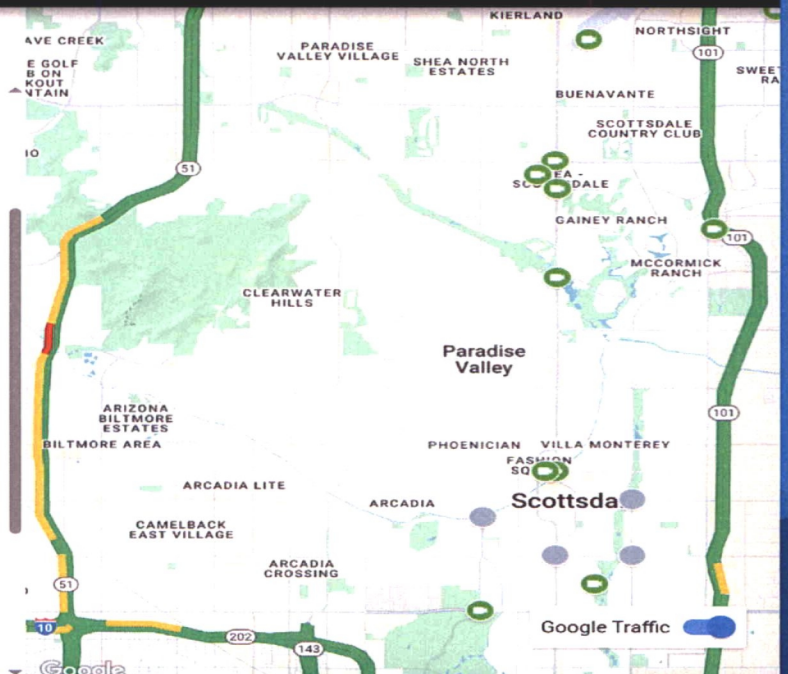
Network

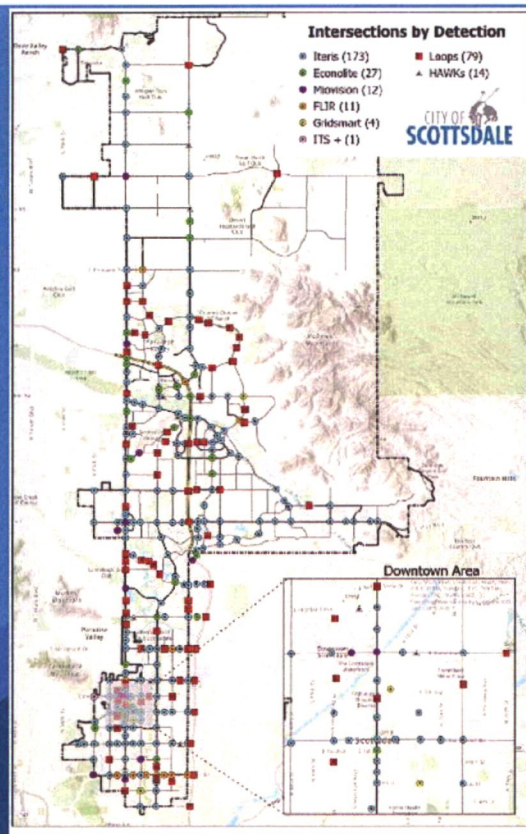
Installations

SmartLink + SmartSense + Camera

- 90th St-Pima and Loop 101
- Camelback and Marshall
- FLW and Thompson Peak
- Gold Dust and 70th St
- McDowell and 64th St
- Miller and Oak
- Redfield and Airport Taxiway
- Scottsdale and Camelback
- Scottsdale and Dynamite
- Scottsdale and FLW
- Scottsdale and Legacy
- Scottsdale and McCormick
- Scottsdale and Mountain View
- Scottsdale and Shea
- Scottsdale and SkySong

Active Alerts



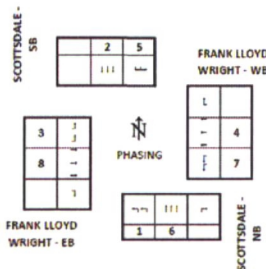


The ITS systems includes:

- 226 miles of fiber optic cable
- 86 radio communication devices
- 229 video detection systems
- 243 live-feed pan tilt zoom cameras
- 307 signalized intersections
- 14 Pedestrian Hybrid Beacons
- 9,358 Streetlights

SCOTTSDALE & FRANK LLOYD WRIGHT				System #	162
BASIC TIMING PLAN		Section #	I.P. Address	Date Designed	
		1617	172.27.11.62	1/15/2025	

Phase	1	2	3	4	5	6	7	8
Movement	NBL	SBT	EBL	WBT	SBL	NBT	WBL	EBT
NOTES	L-P	COORD	PROT	PROT	COORD	L-P		
MIN GRN	5	10	5	10	5	10	5	10
BK MGRN								
CS MGRN	5		5		5		5	
DLY GRN								
WALK		4		4		4		4
WALK2								
WLK MAX								
PED CLR/FDW		30		26		33		32
PD CLR2								
PC MAX								
PED CO								
VEH EXT	2	1	2	1	2	1	2	1
VEH EXT2								
IMAX 1	20	45	20	45	20	45	20	45
IMAX 2	40	55	35	45	40	55	30	50
IMAX 3								
DYM MAX								
DYM STP								
YELLOW	4	4.7	4	4.7	4	4.7	4.0	4.7
RED CLR	2	2.0	2	2.0	2	2.0	2	2.0
RED MAX								
RED RVT	2	2	2	2	2	2	2	2
ACT B4								
SEC/ACT								
MAX INT								
TIME B4								
CARS WT								
STPTDUC								
TTREDUC								
MIN GAP								
LOCK DET								
VEH RECALL		X				X		
PED RECALL								
MAX RECALL								
SOFT RECALL								
NO REST								
ADD INIT CAL								



PHASING SEQUENCES							
TOD: MORNING							
R1	1	2	4	3			
R2	6	5	7	8			
Use Timing plan:							
TOD: MIDDAY							
R1	1	2	4	3			
R2	6	5	7	8			
Use Timing plan:							
TOD: EVENING							
R1	1	2	4	3			
R2	6	5	7	8			
Use Timing plan:							
TOD: NIGHT							
R1	1	2	4	3			
R2	6	5	7	8			
Use Timing plan:							
FREE							
R1	1	2	4	3			
R2	6	5	7	8			

SCOTTSDALE & FRANK LLOYD WRIGHT										System #	162	
COORDINATOR						Section #		Date Updated				
						1617		1/15/2025				
PLAN 1 AM PLAN OPERATIVE TIMES 6:00	PHASE	1	2	3	4	5	6	7	8			
	FDW		30		26		33		32			
	YELLOW	4	4.7	4	4.7	4	4.7	4	4.7			
	ALL RED	2	2	2	2	2	2	2	2			
	WALK		30		26		33		32			
PLAN 2 MIDDAY PLAN OPERATIVE TIMES 9:00	R1	1	↶	2	↓	4	↶	3	↑	COORD PATTERN	OFFSET	
	R2	6	↑	5	↷	7	↷	8	→	Balanced	67	
	RING 1					RING 2						
	PHASE	1	2	3	4	5	6	7	8			
	SPLIT	12	51	29	28	19	44	15	42	Target Cycle Length		
	COORD		X				X			120		
	RECALLS		V				V			Actual Cycle Length		
	GREEN	6.0	44.3	23.0	21.3	13.0	37.3	9.0	35.3	120		
	PLAN 3 PM PLAN OPERATIVE TIMES 15:00	R1	1	↶	2	↓	4	↶	3	↑	COORD PATTERN	OFFSET
		R2	6	↑	5	↷	7	↷	8	→	Balanced	91
RING 1					RING 2							
PHASE		1	2	3	4	5	6	7	8			
SPLIT		25	39	17	39	20	44	17	39	Target Cycle Length		
COORD			X				X			120		

120s cycle – 4 directions

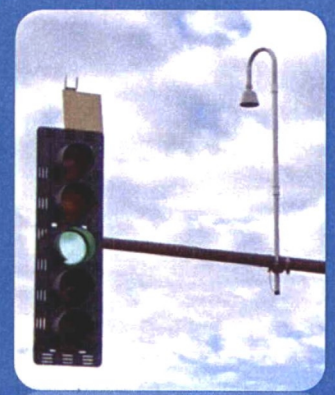
40s for N/S + 20s N/S Lefts = 60s

40s for E/W + 20s E/W Lefts = 60s

If add 2s to yellow times N/S & E/W directions = 4s

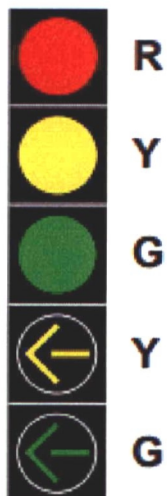
If add 2s to yellow times E/W & N/S Lefts directions = 4s

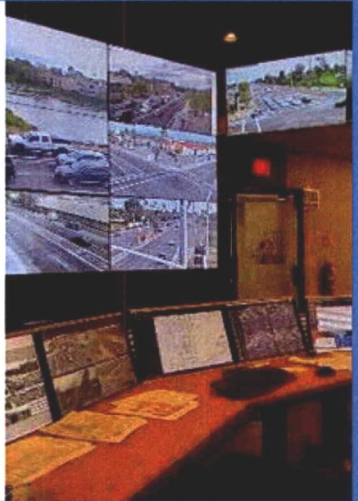
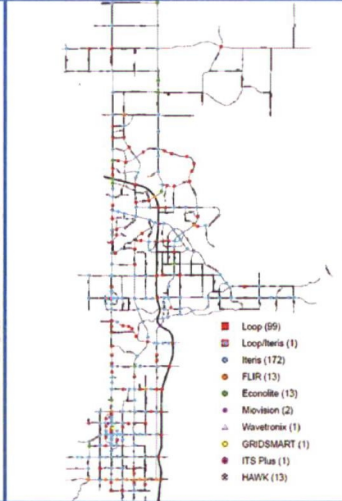
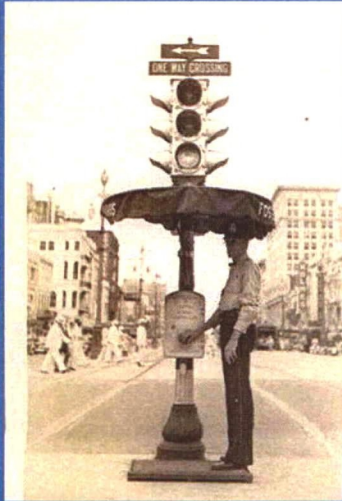
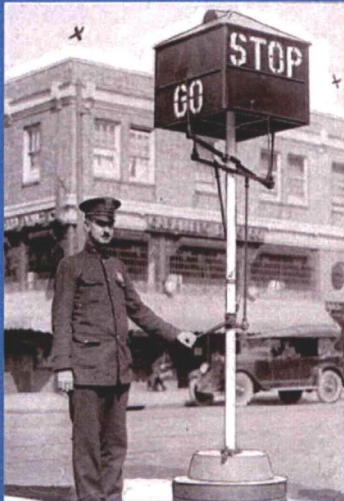
Green time for each direction will be reduced, along with start up loss time/perception reaction time. Increase in overall intersection delay.



Vehicle/Bike/Ped Detection Systems

C – Typical arrangements



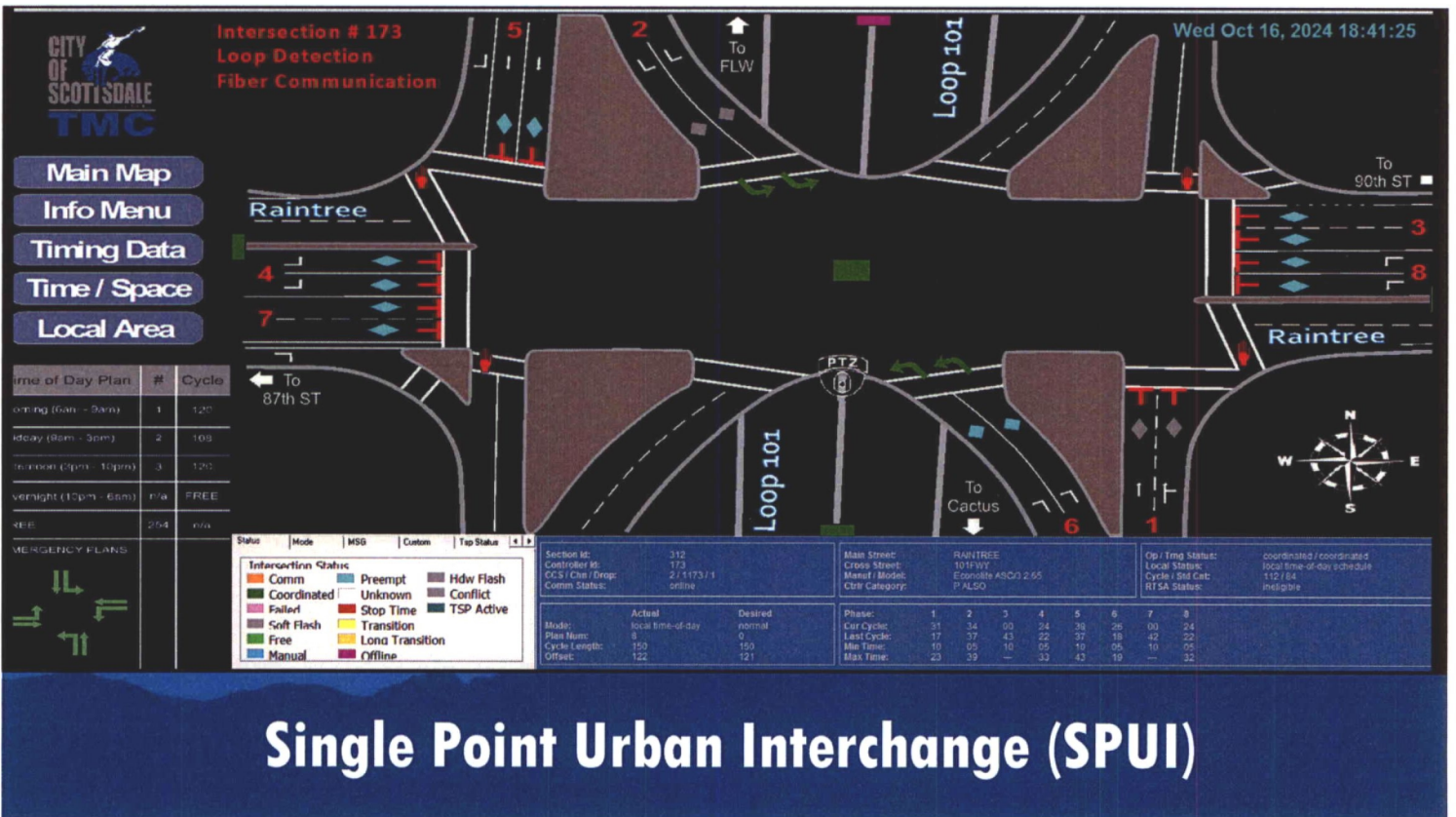
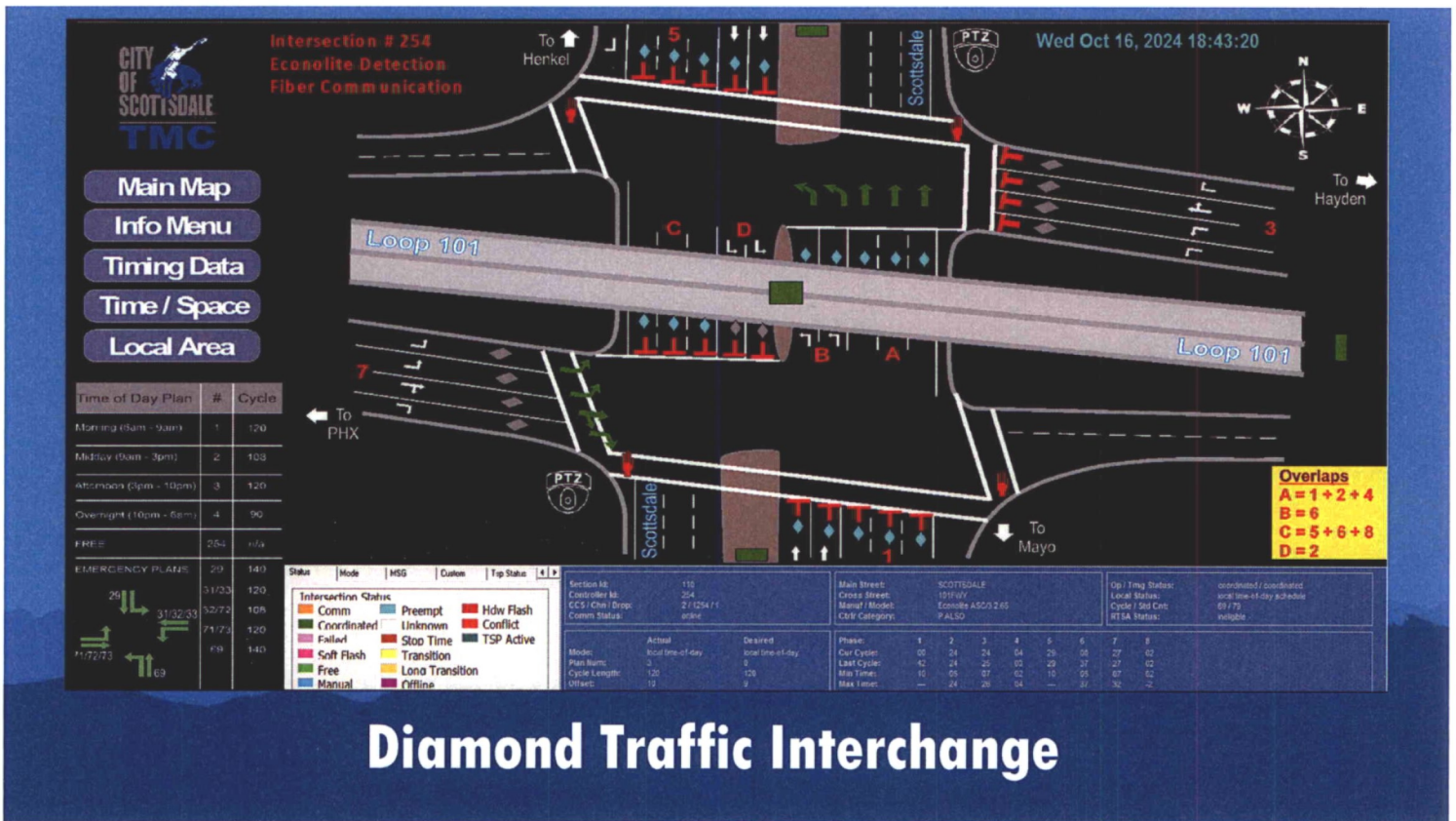


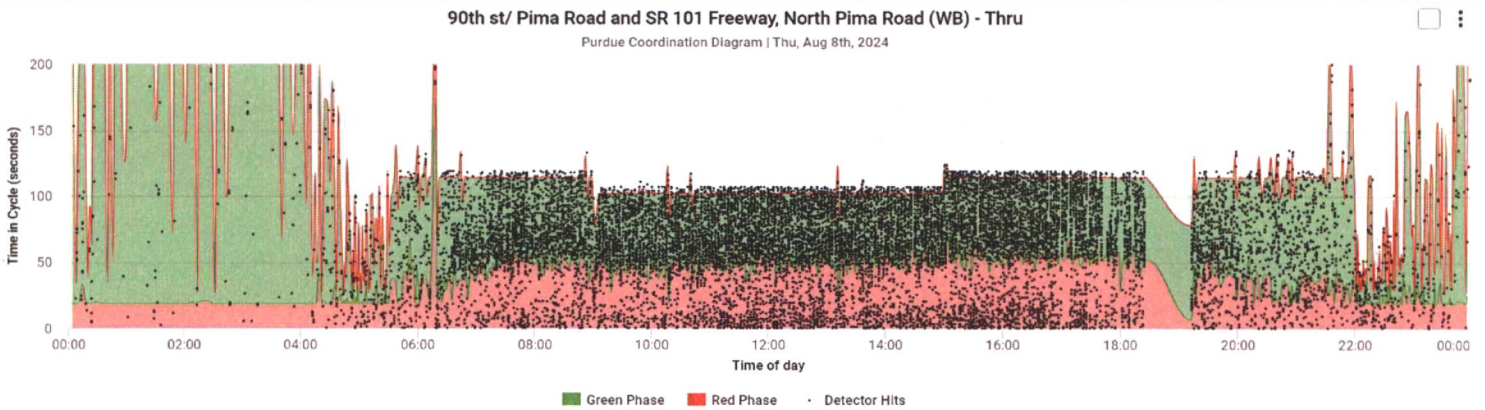
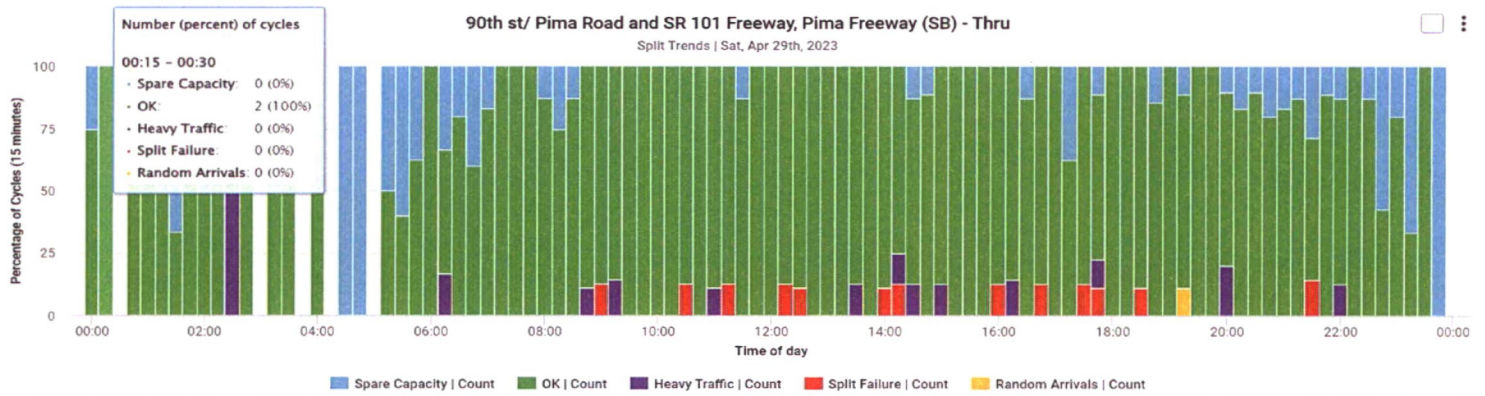
TRANSFORMATION IN TRANSPORTATION



Advanced Traffic Management System

TransSuite ATMS is used to deliver real-time status and remotely control of field traffic control devices





Traffic Signal Coordination & Simulation



TransSuite Time Space Diagram Simulation

Signal Timing Tutorial 2 - Econolite Controllers

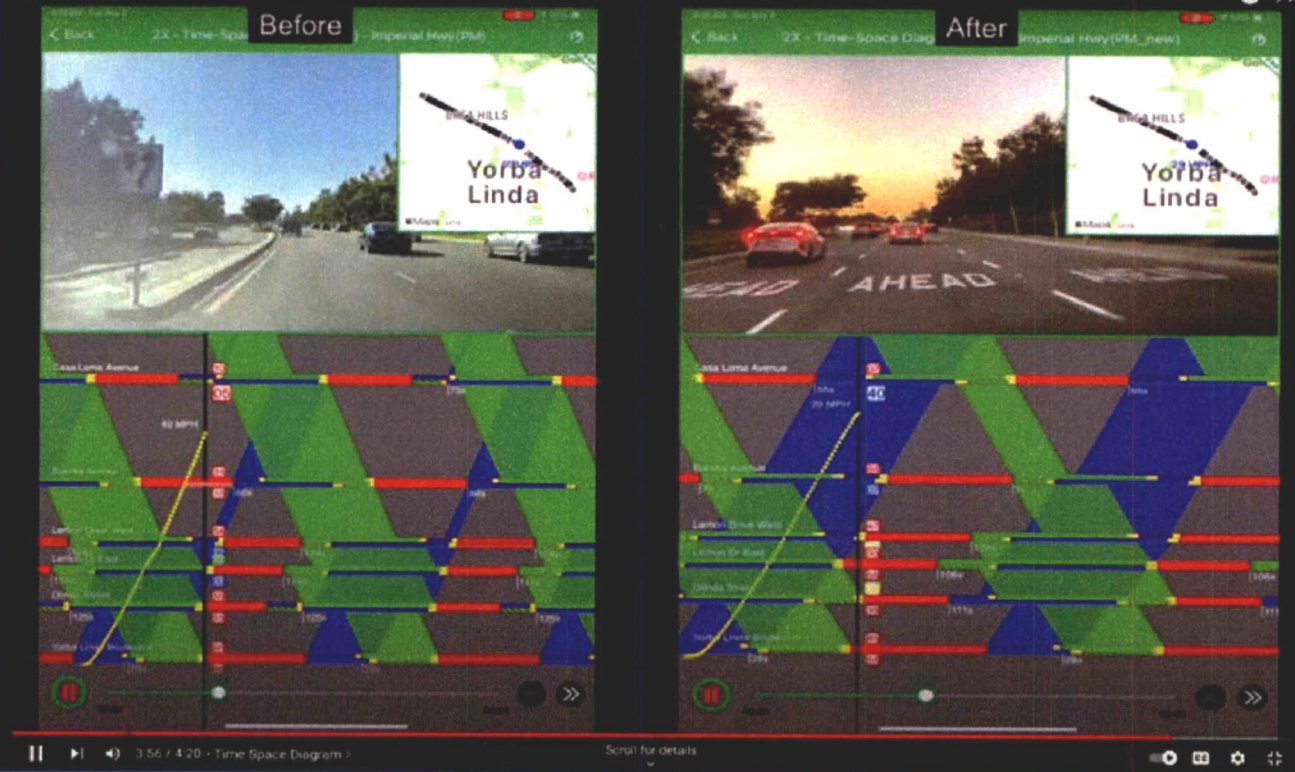


Photo Enforcement in Scottsdale

City Council Presentation | November 3, 2025

Joe LeDuc, Police Chief



2

Council Direction & Purpose

At the August 26, 2025, Council Meeting, City Council directed staff to agendize a presentation and discussion on the City's photo enforcement program, including red-light and speed enforcement systems.

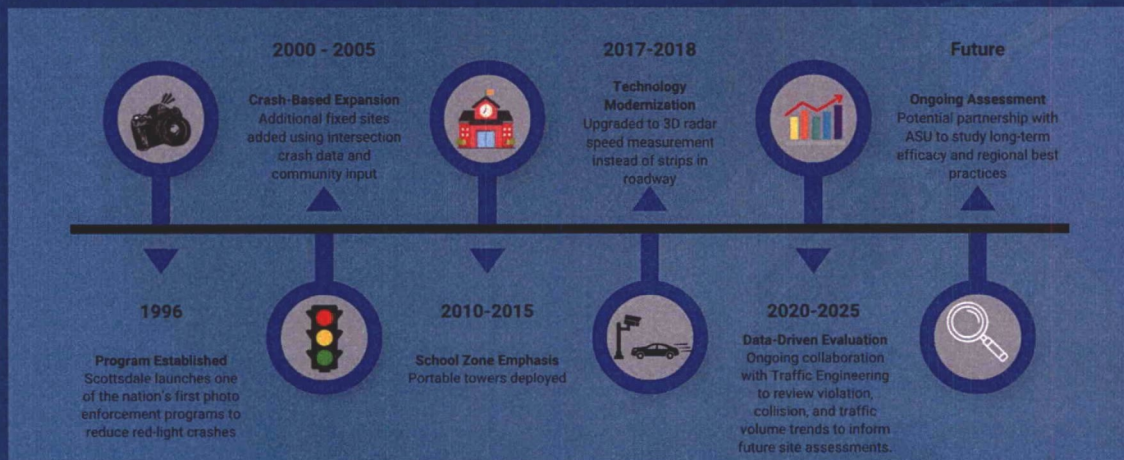
Tonight's presentation reaffirms the program's purpose and public safety value by:

- Providing clarity on how the program operates and why it exists.
- Demonstrating its impact on crash reduction and driver behavior.
- Highlighting cost efficiency and role as a staffing force multiplier.
- Addressing public questions related to privacy, fairness, and community alignment.



Program History

3

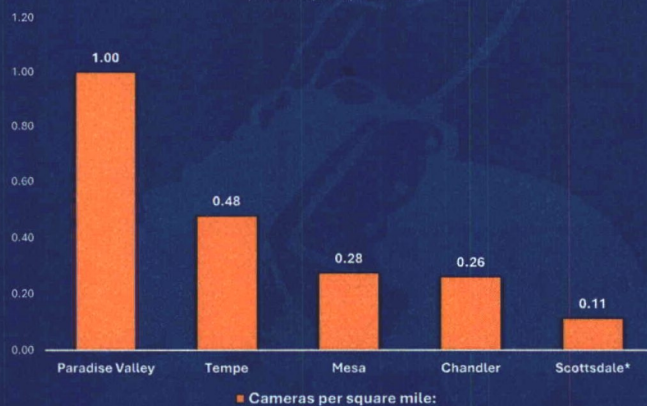


Current Deployment and Regional Trends

4

- Scottsdale operates 15 total cameras (11 intersection, 4 mobile).
- Coverage equals 0.11 cameras per sq. mile – the lowest density among Valley cities.
- Neighboring cities like Tempe and Mesa operate systems 2-4x denser.
- Demonstrates a targeted, data-driven approach.

Photo Enforcement Camera Density
(Cameras per Square Mile*)



*Scottsdale area excludes McDowell Sonoran Preserve.





Public Safety Impacts

Measured Results, Safer Streets



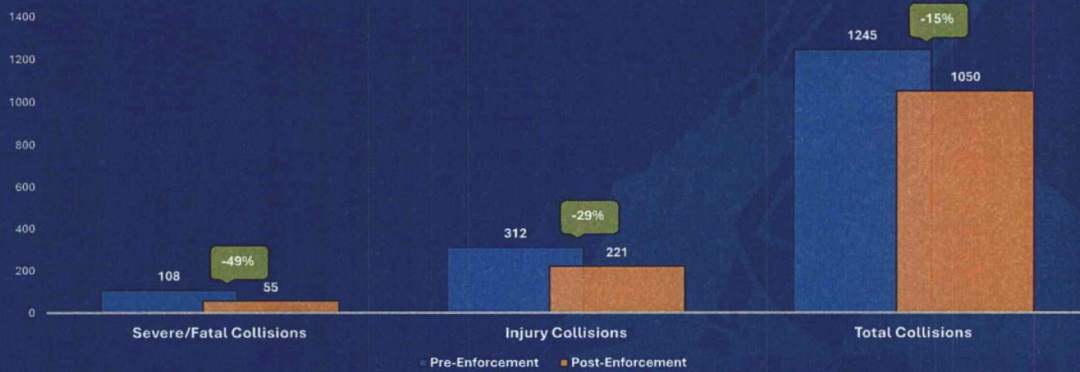
Public Safety Impacts



Source: Scottsdale PD Photo Enforcement Summary (2023), authored by Lt. DiPiazza using collision analysis provided by Sam Taylor, City of Scottsdale Traffic Engineer Principal. Recidivism data provided by ATS/Verra (City Vendor). SPD Photo Enforcement & Traffic Analysis (Oct 2025, SPD Budget & Finance).

Collision Reductions

Collision Reductions at Enforced Intersections



Source: Scottsdale PD Photo Enforcement Summary (2023), authored by Lt. DiPiazza using collision analysis provided by Sam Taylor, City of Scottsdale Traffic Engineer Principal.

Public Safety Impacts

CITYWIDE DETERRENCE

Visible enforcement and signage reduce red-light running and reckless speeds



Source: Scottsdale PD Photo Enforcement Summary (2023), authored by Lt. DiPiazza using collision analysis provided by Sam Taylor, City of Scottsdale Traffic Engineer Principal. Recidivism data provided by ATS/Verra (City Vendor), SPD Photo Enforcement & Traffic Analysis (Oct 2025, SPD Budget & Finance).

Public Safety Impacts

11

BEHAVIORAL CHANGE



93%
of violators never
reoffend after a single
citation



Source: Scottsdale PD Photo Enforcement Summary (2023), authored by Lt. DiPiazza using collision analysis provided by Sam Taylor, City of Scottsdale Traffic Engineer Principal. Recidivism data provided by ATS/Verra (City Vendor). SPD Photo Enforcement & Traffic Analysis (Oct 2025, SPD Budget & Finance).

Public Safety Impacts

12

FORCE MULTIPLIER



One camera operates
continuously,
unaffected by weather
or staffing limits



Source: Scottsdale PD Photo Enforcement Summary (2023), authored by Lt. DiPiazza using collision analysis provided by Sam Taylor, City of Scottsdale Traffic Engineer Principal. Recidivism data provided by ATS/Verra (City Vendor). SPD Photo Enforcement & Traffic Analysis (Oct 2025, SPD Budget & Finance).

Public Safety Impacts

13

SCHOOL ZONE SAFETY



Portable towers and mobile vans calm traffic and reduce speeding in school zones



Source: Scottsdale PD Photo Enforcement Summary (2023), authored by Lt. DiPiazza using collision analysis provided by Sam Taylor, City of Scottsdale Traffic Engineer Principal. Recidivism data provided by ATS/Verra (City Vendor). SPD Photo Enforcement & Traffic Analysis (Oct 2025, SPD Budget & Finance).

Public Safety Impacts

14

7

SCOTTSDALE

safest city for drivers No. 7 nationwide and safest city in Arizona



2025 ALLSTATE
AMERICA'S BEST
DRIVERS REPORT



Source: City of Scottsdale Press Release, "Scottsdale named one of the safest U.S. cities for drivers" (Oct 2025); Allstate America's Best Drivers Report (2025); Scottsdale 2022 Traffic Volume & Collision Report (Sept 2023).

Process for Issuance of Citation

15

STEP 1

VIOLATION PROCESSORS (VENDOR) REVIEW



Each potential violation is independently reviewed by certified processors.



The system confirms the vehicle's speed or red-light infraction through a secondary validation check.



Photos are securely reviewed to crop the license plate and driver.



Records are sent to Motor Vehicle Division (MVD) data to verify ownership.



A quality-control review is completed by a separate processor before any case is sent to Scottsdale PD.



STEP 2

SCOTTSDALE POLICE DEPARTMENT REVIEW

Police Staff review every violation before a citation is issued.

Staff confirm the driver's identity and ensure all legal elements are met.

If the driver can be verified, a citation is issued.

If the driver cannot be verified, a Notice of Violation (NOV) is sent to the registered owner.

All citations are mailed following police approval to ensure due process and accuracy.



Mobile Units

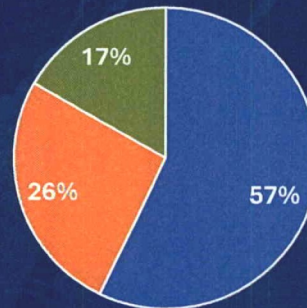
A Response to Community

- Majority of mobile deployments (57%) are based on community complaints and requests.
- Mobile units are also deployed in school zones, neighborhoods, and during special events.
- This ensures enforcement aligns with resident concerns and supports public-safety priorities.



Mobile Photo Enforcement Deployments Nov 24 - Oct 25

16

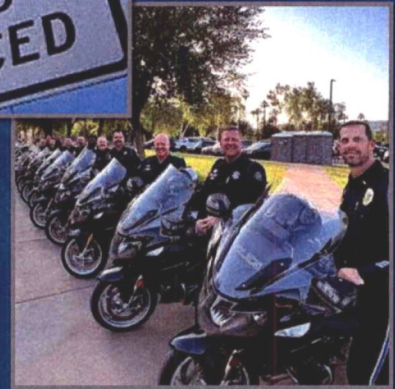


□ Complaint-Based □ School Zone □ Proactive Safety

Deployments are guided by complaints, data, and school safety priorities.

Efficiency & Cost Benefit

- Each photo enforcement camera provides approximately **8,700** hours of traffic monitoring, compared to the average Motor Unit Officer completing approximately **900** hours of traffic monitoring annually.



Efficiency & Cost Benefit

- **Operating Costs**
 - One Photo Enforcement Camera: \$123,000
 - One Motor Unit Officer (all-in): \$193,000
(Includes salary, benefits, fleet, equipment, and overtime)
- **Efficiency Impact**
 - **Equivalent Coverage:** 1 camera = work output of **12 officers**
 - **Total Cost for 12 Officers: \$2,314,403**
 - **Result:** A single camera delivers comparable monitoring at **~5%** of the cost



Addressing Concerns



PRIVACY & DATA STORAGE

- Cloud, secure, only accessible to SPD and vendor.
- Violations resulting in citation or NOV are purged in 5 years.
- Violations not resulting in a citation or NOV purged in 1 year.



Looking Ahead

- Continuous evaluation of fixed sites
- Exploring a partnership with ASU for an independent study
- Ongoing adaptation to public safety needs



PHOTO ENFORCEMENT



- Cost-effective
- Data-driven
- Community-aligned



We believe leveraging photo enforcement technology not only enhances public safety but also reaffirms our unwavering commitment to *ensuring a safe Scottsdale.*



Thank you
Questions?

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