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Raven Ridge Community Update

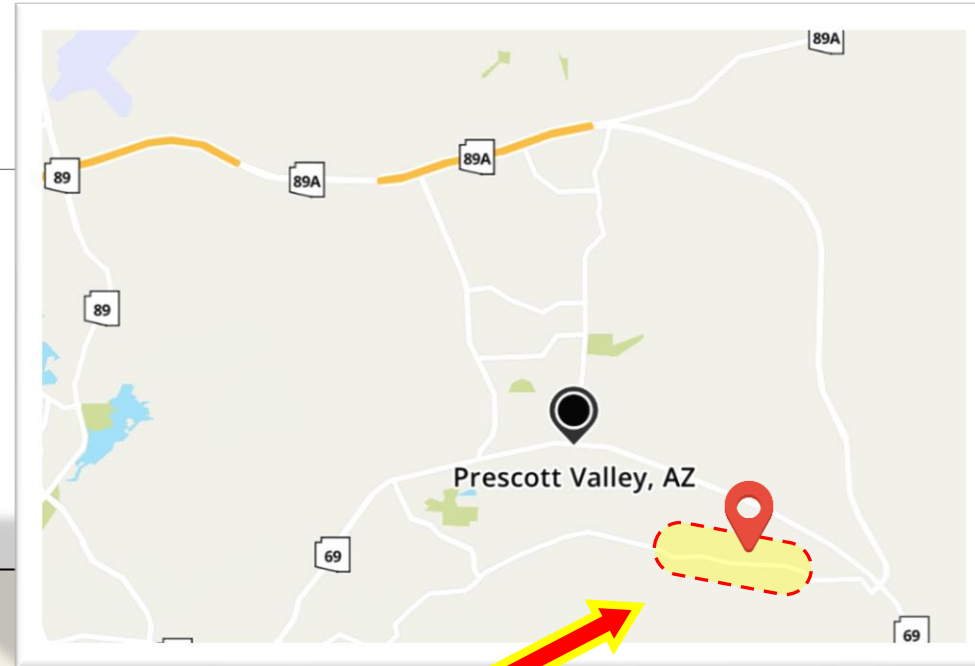
DECEMBER 12 THROUGH 31, 2024

PRESCOTT VALLEY, ARIZONA

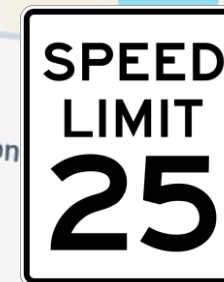


Location and Goals

- Residential section of E Old Black Canyon Hwy running from just west of Buck Haven Ct eastward to just passed High Point Dr.
- We are a very active walking and biking community, representing 70 families, and are deeply concerned about vehicle speeding.
- We wish to work with the town to monitor, document and find a long-term sustainable solution to improve neighborhood safety.



70 Families in an active community



RAVEN RIDGE COMMUNITY – Prescott Valley, AZ

Updated 14 Jan 2025 for period
13 through 31 December 2024

Update:

U.S. Department of Transportation Risk of pedestrian death vs speed

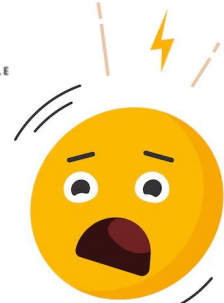


DEATH DUE TO SPEED

U.S. DEPARTMENT OF TRANSPORTATION. LITERATURE REVIEWED ON VEHICLE TRAVEL SPEEDS AND PEDESTRIAN INJURIES. MARCH 2000.
WWW.NHTSA.GOV/ABOUT-NHTSA/TRAFFIC-TECHS/
CURRENT/LITERATURE-REVIEWED-ON-VEHICLE-TRAVEL-SPEEDS-AND-PEDESTRIAN-INJURIES



WHAT ABOUT...



>45 mph?
>50 mph?
>55 mph?
>60 mph?



• Problems

- In the last 20 days of December, we recorded **120 violations of criminal speeding**
- This includes more than **735** vehicles regularly traveling at speeds **higher than 40 mph**.
- More than half of the top 20 violations were **traveling at speeds higher than 55 mph!**

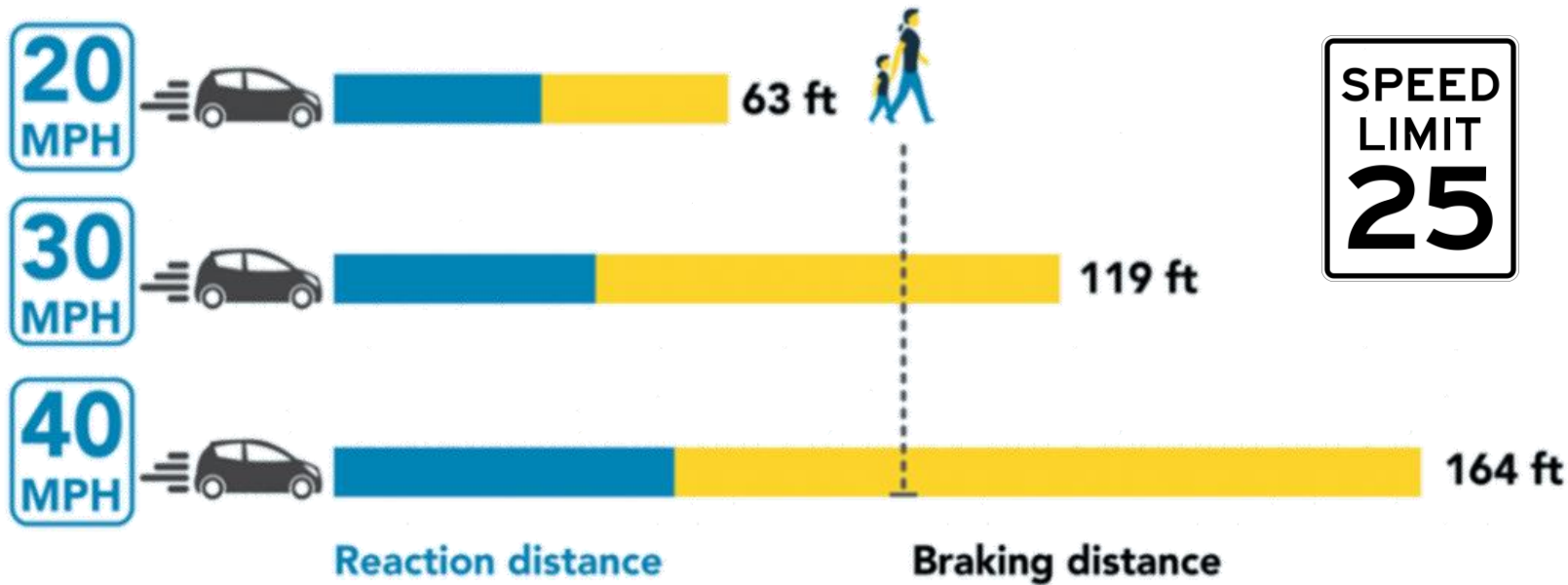
• Recommendations

- Our neighborhood 70 families who are deeply concerned.
- To try to keep emotions and opinions out of the discussion, we recording vehicle speeds 24/7.
- We ask for town review of this information, and some included recommendations, improve neighborhood safety.

• Impact

- Vehicles traveling at these excessive speeds represent a very real risk and danger to life safety.
- As such, we feel it is urgent that we find a quick solution.

Residential Speed Limits are set to 25mph for a reason



We saw almost **735** vehicles traveling **over 40** miles per hour...

What is the braking distance and risk of death for pedestrian involved accidents at speeds greater than 45, 50, 55, 60 mph?



Source: National Highway Traffic Safety Administration (2015)

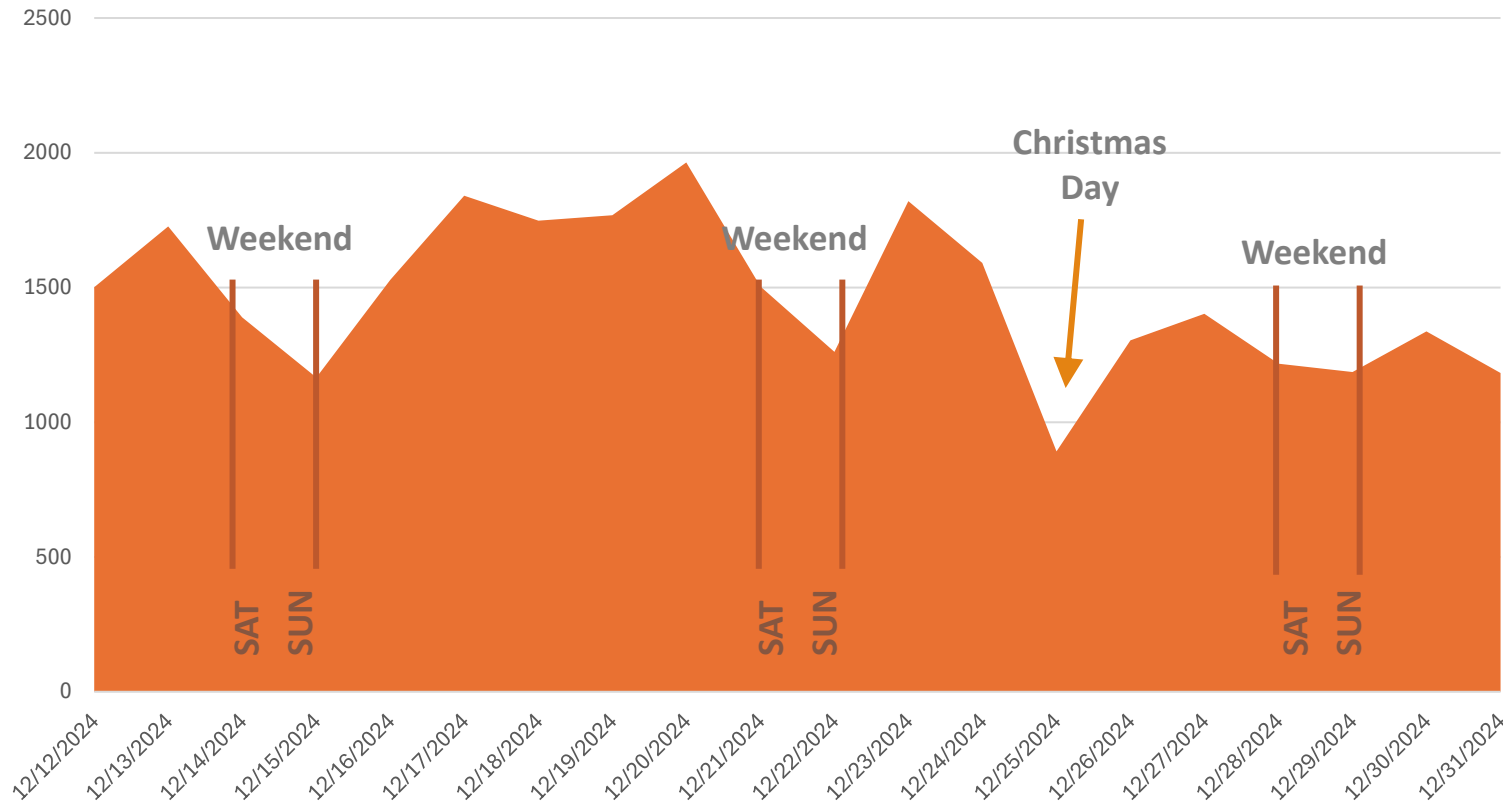
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RAVEN RIDGE COMMUNITY – Prescott Valley, AZ

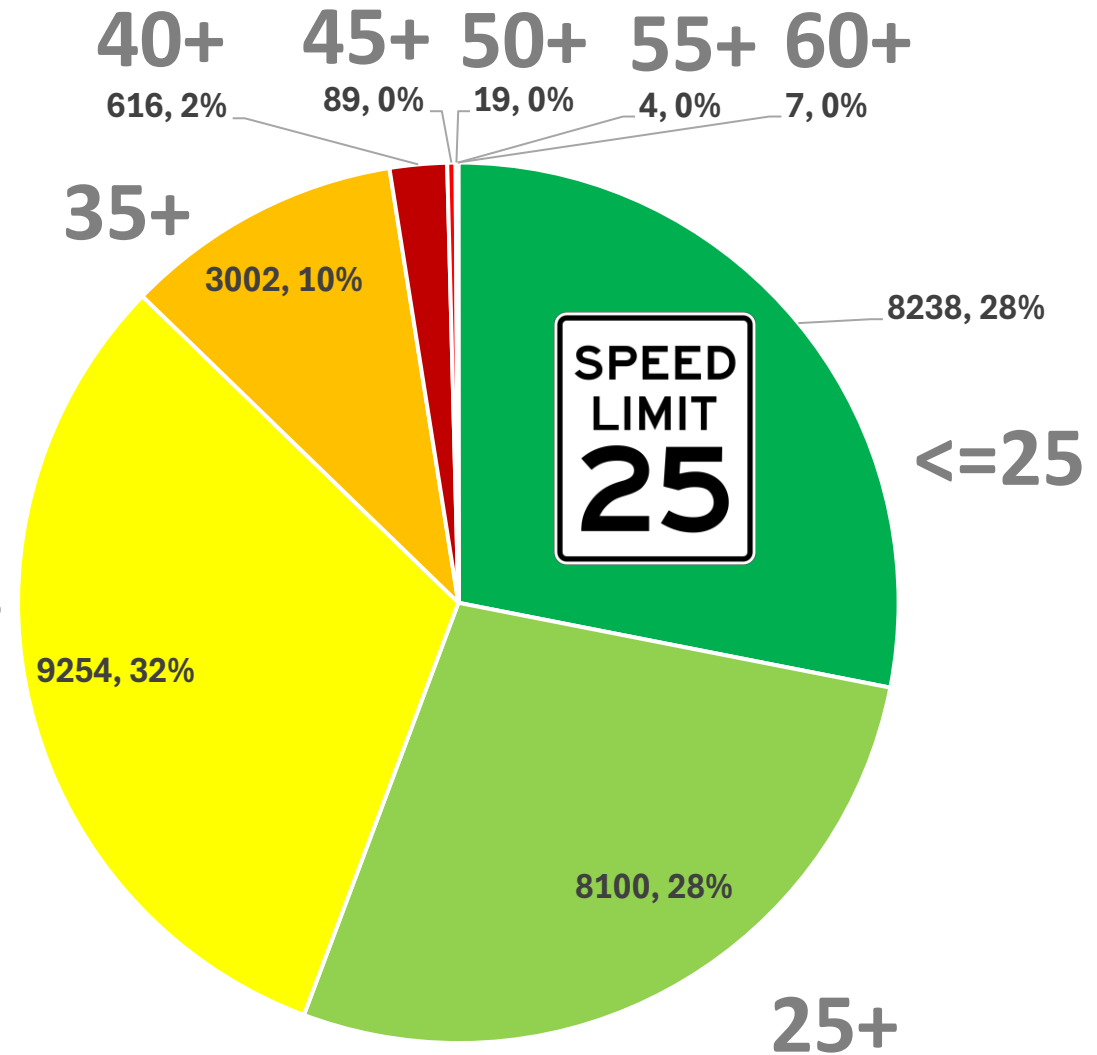
Traffic Summary



- **29,329 vehicles** detected and measured
- **Avg 1,466** vehicles per day
- As expected, weekend traffic lower, but only 30%
- Significant lower traffic on Christmas Day

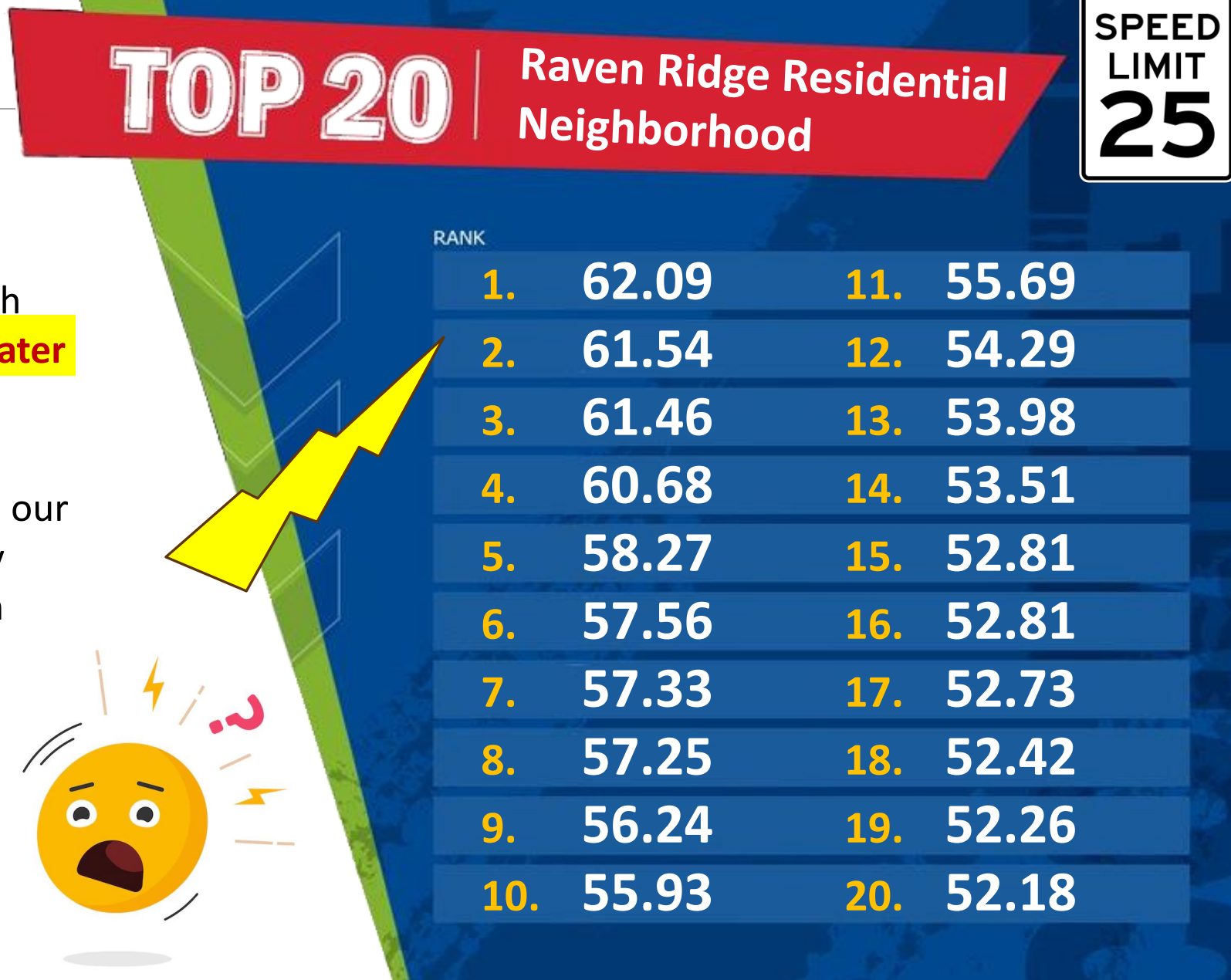
Vehicle Speed Data

- **Only 28% of vehicles** were complying with the posted speed limit
- In Arizona, criminal speeding in our neighborhood, is defined as anyone exceeding the speed limit by 20mph or more.
- **125 vehicles** were in **violation of criminal speeding.**
- **735 vehicles** were traveling **over 40** miles per hour.



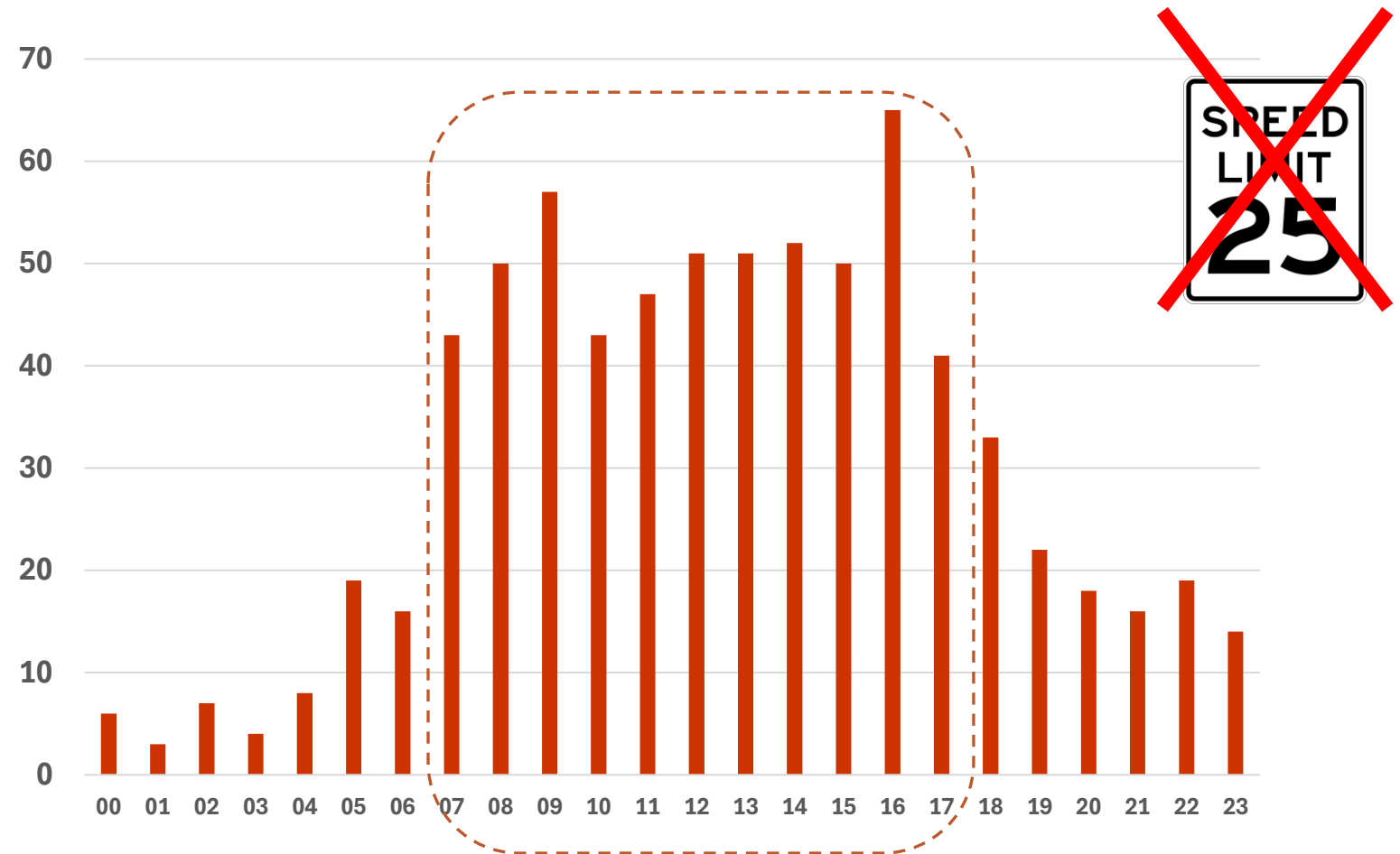
Top 20 Violations

- We have vehicles traveling more than three times the speed limit.
- The top 20 speeds recorded this month are truly shocking. This average is **greater than 56 miles per hour**
- Its not unusual for vehicles to travel in our neighborhood at speeds that regularly exceed Arizona's recommended urban highway speeds (55 mph).



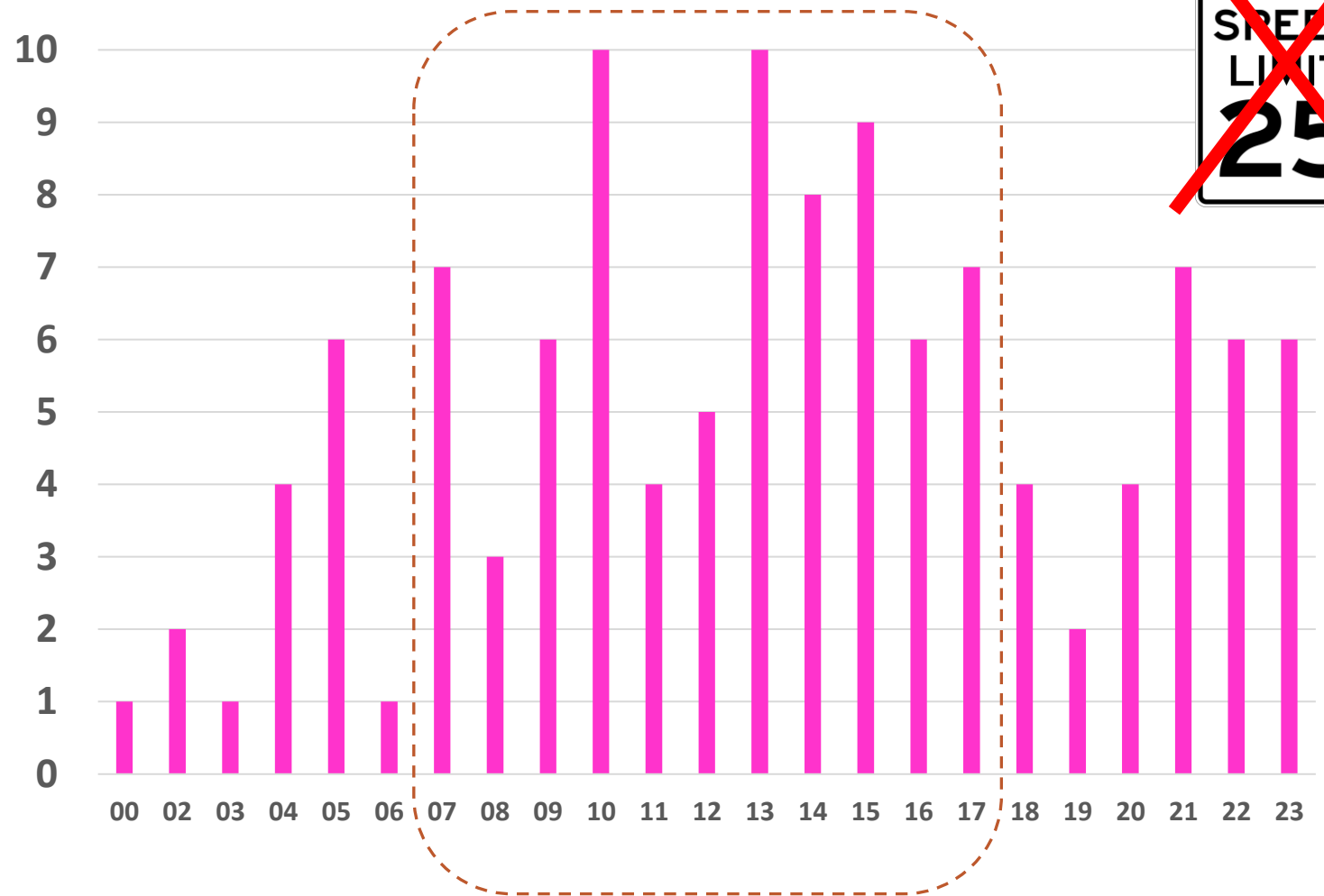
Vehicles Traveling over 40mph by Time of Day

- **735 Vehicles** traveling over **40 mph** in our 25mph zone.
- Majority of these violations are between the hours of 07:00am to 6:00pm
- The data shows the number of violations are high at the beginning and end of a normal day's business hours..



Criminal Speeding by Time of Day

- **119 vehicles** traveling greater than **45mph** in our 25mph neighborhood.
- Majority of Criminal Speeding Violations between the hours of 07:00am to 6:00pm
- Criminal Speeding violations stay high throughout those times.



Recommendations

- We will continue measuring and recording vehicle traffic and speeding data 24/7 and will provide monthly updates.
- We will continue live-streaming speeding activity in the neighborhood along with reports and raw data to document the problem and measure progress at:

www.RavenRidge.Live

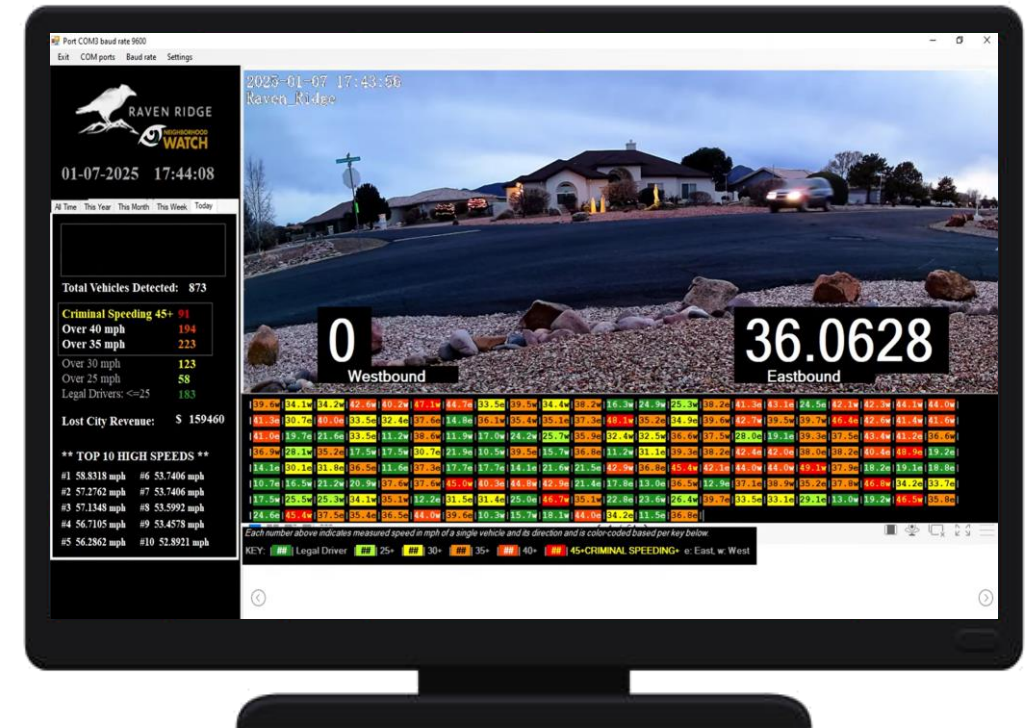
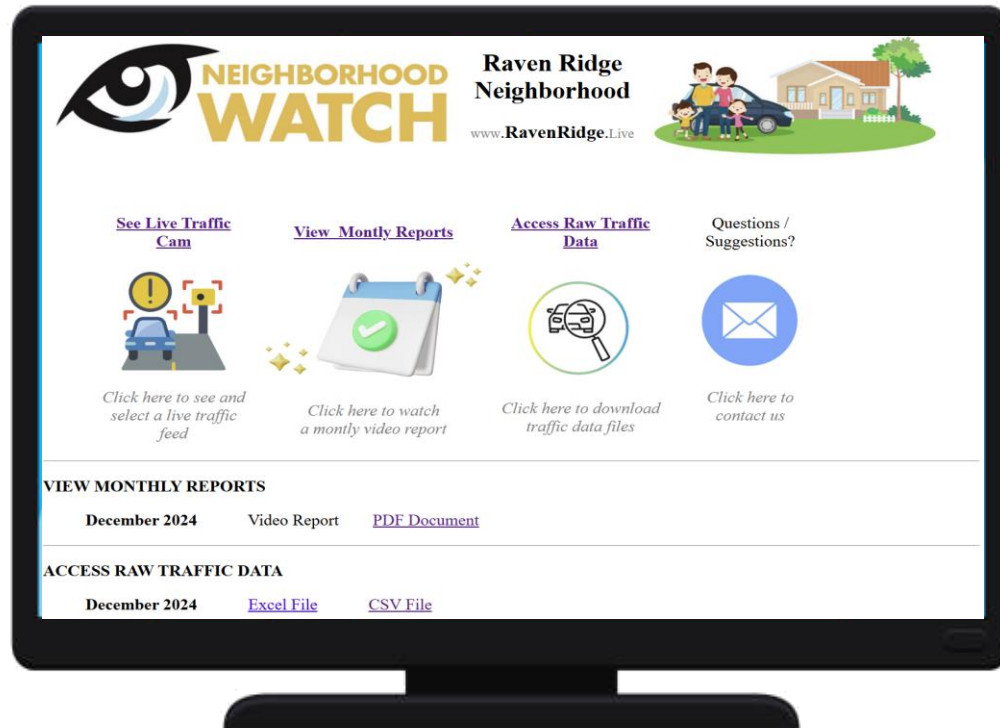
- We would like to discuss how the town could help increase enforcement of neighborhood speed limits focusing on the greatest times and days of “Extreme” speeding violations.

Is this possible?



Live Streams and Reporting can be Monitored at

www.RavenRidge.Live



Speed and Traffic Monitoring System Specifications

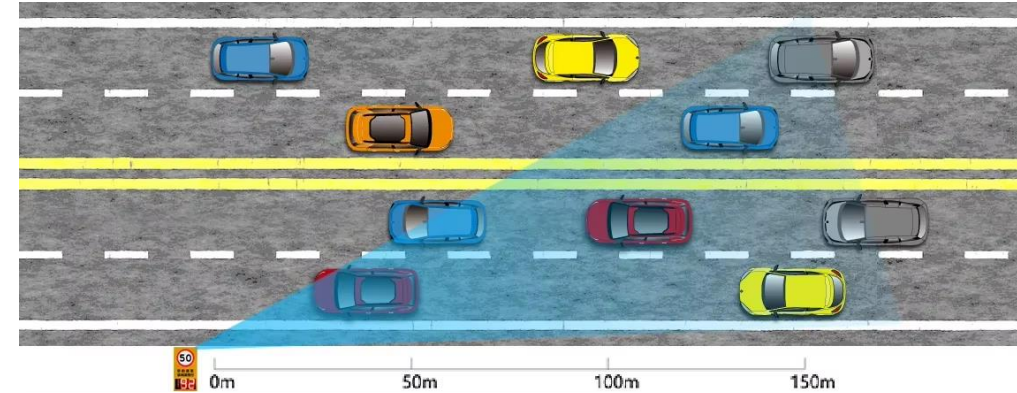
Our Monitoring System Detects:

- Number of vehicles traveling
- Direction of vehicles travel
- Vehicle Speed

In addition, the system:

- Transmits and stores all data
- Transmits real-time video
- Live-Streams the video at:

www.RavenRidge.Live



The heart of the monitoring system is a certified and proven millimeter wave radar system and antenna operating at 24.125 GHz.



Specifications on following page

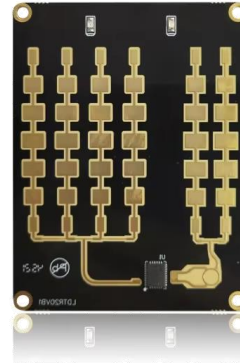


RAVEN RIDGE COMMUNITY – Prescott Valley, AZ

Speed and Traffic Monitoring System Specifications

24 GHz Millimeter Wave Radar:

- Millimeter wave radar module
- Integrated antenna, rf and processing
- Range from 0 to 180 meters
- Accuracy of up to 0.62 mph



System operates within all regulations and requirements issue issued by the



Federal
Communications
Commission

Through Part 97 through Title 47 of the
Code of Federal Regulations.



The operators hold the necessary FCC licenses and classes to operate on these frequencies are doing so with all legal limits and requirements..

Module functions:

- K band RF integrated circuit design;
- **Frequency range: 24.125GHz (customizable frequency)**
- Modulation mode: CW detection of moving vehicles, detection distance 180 meters
- support RS485 interface and TTL serial port (baud rate 9600bps)
- Speed measuring range: 1KM/H~250KM/H
- Speed measurement error less than 1KM/H(motion direction and radar beam azimuth Angle is zero)
- Voltage: 9~24V, current 92mA@12V
- Output power (EIRP) : 20dBm
- Antenna Angle: horizontal 30, pitch 16 (3dB beam width, actual detection Angle is greater than 4 lanes)
- Sensor size: 69*53*5mm



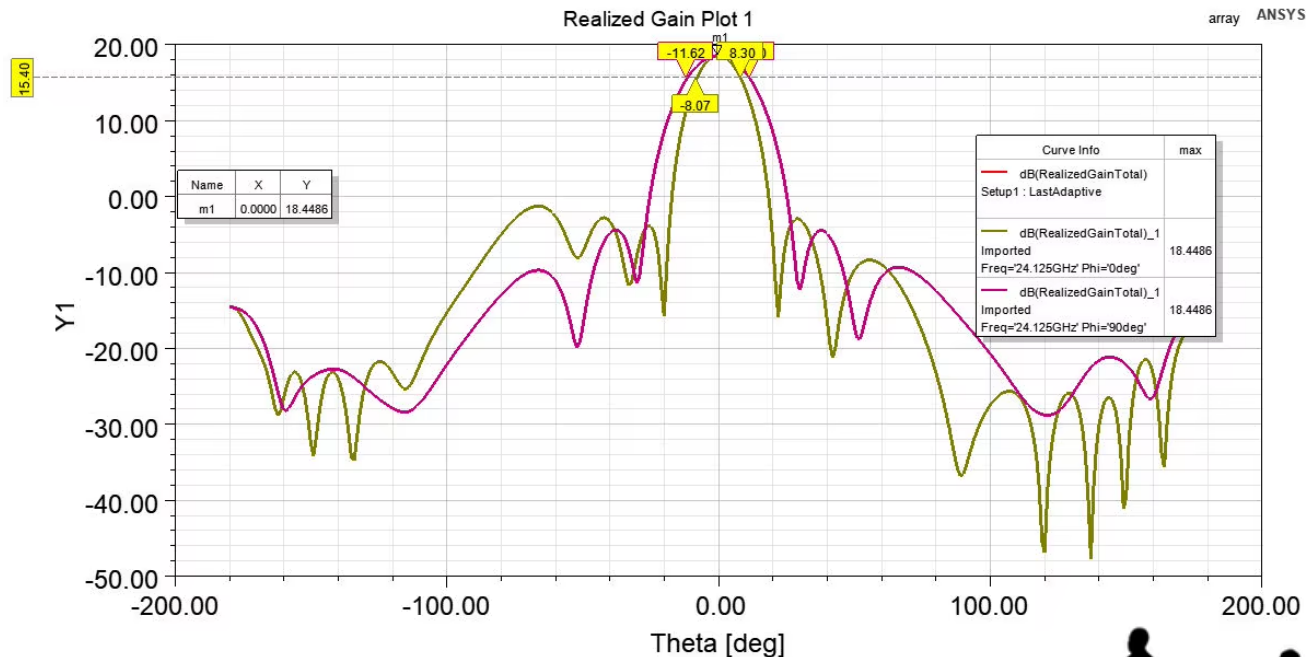
RAVEN RIDGE COMMUNITY – Prescott Valley, AZ

Speed and Traffic Monitoring System Specifications



Additional System Specs

- Antenna Definition / Performance
- System Operating Parameters



Parameters	Symbol	Minimum value	Typical value	Maximum value	Unit	Description
Transmitter						
Transmitting frequency	f	24.075	24.125	24.175	GHz	Customizable
Output power (EIRP)	P_{out}		18	20	dBm	Customizable
Antenna angle						
Transmit antenna gain			16		dBi	
Receiving antenna gain			18.4		dBi	
Radiation angle of transmitting antenna (3dB)			± 15		deg	Horizontal
			± 8		deg	Vertical
Radiation angle of receiving antenna (3dB)			± 10		deg	Horizontal
			± 8		deg	Vertical
Power source						
Working voltage	V_{CC}	9	12	24	V	
Working current	I_{CC}		92		mA	
Interface parameters						
Pulse interface	V_{CC}	9	12	24	V	
Environment						
Operating temperature	T_{OP}	- 20		+ 85	$^{\circ}C$	
Storage temperature	T_{OP}	- 40		+ 125	$^{\circ}C$	
External dimension	L69 x W53 x H5				mm	

