



MEMORANDUM

Date: October 31, 2022

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: Jan Leshner 
County Administrator

Re: **Initial Information for Addendum Item #7 on the November 1, 2022 Board of Supervisors Addendum Related to Traffic Signals**

This memorandum is an initial response to Supervisor Scott's request regarding warranted traffic signals, prioritization and funding options for installation of traffic signals.

Warranted Traffic Signals and Prioritization

Historically, the Department of Transportation (DOT) performed a traffic signal warrant analysis (TSWA) in response to constituent requests for intersection signalization. The requests were related to the traffic operations at an intersection, typically safety and delay. DOT uses the Manual on Uniform Traffic Control Devices (MUTCD) warrant criteria for a TSWA, as well and considers site-specific factors that will also influence whether a traffic signal is appropriate.

Based on a review of the TSWAs conducted from 2012-2022, traffic signals were warranted at the following intersections, but traffic signals have not been installed at these locations:

- Bush Hill Place / Harrison Road and Catalina Highway
- Camino de Oeste and Linda Vista Boulevard
- Camino Loma Alta and Old Spanish Trail
- Catalina Highway and Houghton Road
- Lambert Lane and Shannon Road (Multi-jurisdictional)
- Linda Vista Boulevard and Shannon Road
- Los Reales Road and Swan Road (Multi-jurisdictional)
- River Road and Tanuri Drive
- Skyline Road and Swan Road

This list has not been prioritized and it is important to note that per the MUTCD "The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal" (MUTCD 2009, Section 4C.01). A traffic signal was recommended for consideration at these intersections merely based on the prescriptive federal guidelines in the MUTCD being met for signalization at the isolated intersection.

The Department's [Technology-Based Transportation Vision](#) highlights the need for a network-wide benefit-cost approach via data analysis to determine if a traffic signal is

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recommended for installation. This broader method allows for the use of the appropriate demand or supply-side strategies that provide the greatest return, which could result in no recommended changes to an intersection or roadway location by optimizing the existing system operations.

In alignment with the Technology-Based Transportation Vision, and in consideration that some of the TSWAs were conducted nearly 10 years ago, further data-driven analysis is recommended at each location to determine if a traffic signal is appropriate based on current network-wide conditions. This analysis of the noted intersections is anticipated to be completed by February 2023.

Based on the analysis results, the intersections will be ranked by factors that include the five-year crash history, roadway classification, intersection approach volumes, and intersection level of service (LOS).

Funding Options

Funding for Transportation is a persistent challenge that traces back to the Statewide gas tax that has not been raised since 1991. With the continuous improvements in the fuel efficiency of automobiles and the current shift to electric vehicles coupled with inflation and cost escalation, the Highway User Revenue Fund (HURF) and Vehicle License Tax (VLT) revenues that fund the DOT simply do not go as far.

DOT also pursues funding from a variety of other sources, each with its own set of requirements. Listed below are the funding sources initially considered for advancement of these traffic signal projects:

- **Federal Funding:** The PAG Region receives approximately \$25 million in Surface Transportation Block Grant Program (STBGP) funding annually. Since Fiscal Year (FY) 2019, this funding has gone to fill the funding gap in the Regional Transportation Authority (RTA) program and may continue to be used for this purpose through FY 2028.
- **Federal Grant Funding:** DOT has been successful in receiving federal grants from a variety of programs including Highway Safety Improvement Program (HSIP) and the Off System Bridge Program (OSB). One of the main criteria used in the evaluation of HSIP projects is the Benefit/Cost Ratio, which heavily weighs project areas that have seen fatal and serious injury crashes. The intersections listed above would not likely be competitive for HSIP funding.
- **Regional HURF Distribution (HURF 12.6%):** The PAG Region receives approximately \$25 million in HURF 12.6% funding annually. Since FY 2019, this funding has gone to fill the funding gap in the Regional Transportation Authority (RTA) program and may continue to be used for this purpose through FY 2028.

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- RTA Intersection Safety Funding: Category 36 of the RTA plan is for Intersection Safety and Capacity Improvements. There has not been a call for funding from this category since before 2017.
- HURF & VLT Funding: DOT is primarily funded by our direct allocation of HURF and VLT. In FY 2022 this totaled \$73.7 million. This revenue funds all functions of the department including, but not limited to, personnel, HURF Bond debt service, RTA Transit maintenance of effort, and maintenance of the roadway network in unincorporated county. Since FY 2020 the department has made a major investment in the Road Pavement Repair and Preservation Program, including \$91.8 million in HURF. This program continues to invest through FY 2030 with an additional \$213.8 million of HURF spending planned.
- Impact Fees: The County collects developer impact fees in seven different benefit areas. These fees are assessed to new residential and commercial construction. The use of these fees is restricted to projects identified in the Infrastructure Improvements Plan (IIP), and further restricted to the portion of the project attributable to new construction. Some of these locations are included in the current IIP, but since the new impact fee program has only been in place since January 2021 there are currently insufficient funds to advance a project.
- General Fund (PAYGO): The Board of Supervisors has provided significant funding to Road Pavement Repair and Preservation Program over the last four years. Over \$150 million has been spent so far on roadways across the unincorporated area. This program continues through FY 2030 with an additional \$47.2 million of PAYGO spending planned. This amount could be higher based on inflationary pressures on the program, as well as the previous advancing of PAYGO funding to accelerate repairs.

Funding the design and construction of new signalized intersections will require trade-offs. As such, further evaluation of Transportation expenditures and revenues take place as part of the overall FY 2024 budget process to determine how to best balance available revenues to best meet transportation network needs. An average cost for a new signalized intersection is between \$2 million to \$2.8 million, with a great amount of variability based on the site topography, drainage, ADA accessibility and right-of-way needs.

JKL/anc

c: Carmine DeBonis, Jr., Deputy County Administrator for Public Works
Kathryn Skinner, Director, Department of Transportation