Administrative Report

J.1., **File #** PWS24-1866 **Meeting Date:** 12/2/2024

To: **PUBLIC WORKS AND SUSTAINABILITY COMMISSION**

From: Department of Public Works

TITLE

DISCUSSION OF INTERSECTION ENHANCEMENTS AT BERYL STREET AND GUADALUPE AVENUE

EXECUTIVE SUMMARY

Based on discussion and recommendation by the Public Works and Sustainability Commission (PWSC), City staff is bringing forward an all-way stop engineering study and a proposed crosswalk design (mutually exclusive) for the Beryl Street & Guadalupe Avenue intersection. All analyses, resident surveys, engineering, and design were performed by City engineering staff. Notice of this meeting was provided to residents within 300 feet of the Beryl/Guadalupe intersection. Staff is seeking input and direction on this matter from the public and the PWSC.

BACKGROUND

In 2022, a resident(s) requested an all-way stop at the intersection of Beryl Street and N Guadalupe Avenue. At the time, the City performed the engineering analyses and resident surveys per the City's All-Way Stop Policy, but neither the resident support threshold nor the engineering analyses thresholds allowing advancement were met. Therefore, the all-way stop request was closed at that time. In August 2024, a resident of the area contacted the City requesting pedestrian crossing safety improvements at the same intersection, either via an all-way stop or a marked crosswalk. In consultation with the Councilmember for District 2, staff brought forward a proposal for a marked and enhanced crosswalk at this location to the PWSC on September 23, 2024 (see **Attachment 1**). At that meeting, staff was directed to re-study the potential to install an all-way stop in accordance with the City's All-Way Stop Policy. This agenda item presents both options, although staff strongly recommends against installing an all-way stop based on traffic count data and guidance from the CAMUTCD. Legal uncontrolled crosswalks already exist at this intersection and drivers are required to yield to pedestrians with an intent to cross. Directional curb ramps exist at this intersection to cross in all directions, which may encourage pedestrians to cross Beryl, despite the absence of marked crosswalks and/or intersection controls for the Beryl approaches. Marked crosswalks exist to cross Guadalupe. Streetlights are present at all four corners. Beryl Street is designated as a Secondary Arterial in the City's current Circulation Element, while Guadalupe Avenue is a local residential street.

ANALYSIS:

All-Way Stop

The City Council's All-Way Stop Policy requires both an engineering study and resident survey to be conducted prior to recommendation and approval of an all-way stop. The engineering study consists of a review of documented and correctable collisions, traffic counts, an alternatives analysis, and meeting various warrants as prescribed in the CAMUTCD. The resident survey requires a 66% supportive response rate within 150-feet of the intersection in order to move the process forward.

Resident Survey

Staff mailed a survey to the 122 residences within 300 feet of the subject intersection. The reason a 300-foot radius was used rather than the policy radius of 150 feet was due to previous public noticing when the proposed crosswalk was discussed at the PWSC in September 2024. Both the 150-foot and 300-foot criteria were considered for the purposes of this study. The letter included a QR code to allow respondents to complete the survey electronically. The City also allows survey responses via email, USPS mail, and in-person at City Hall. The responses were due by October 24, 2024.

Through this date the City received 13 valid responses within 150 feet of the subject intersection, 11 in support and two (2) opposed. Under the larger 300-foot radius, the City received 37 responses, 35 supportive and two opposed. Therefore, the overall support rate for an AWS at this intersection under the 150-foot policy radius would be 32%, with a total response rate of 38%. This is below the threshold to advance the AWS request on the merits of resident support alone. A table summarizing responses is included as **Attachment 2**. Under the 300-foot radius, the conclusions are the same. In addition, the City received two (2) supportive responses from residents located outside the 300-foot radius.

Engineering Study

The 2014 CAMUTCD provides guidance for the installation of all-way stop controls. The 2023 federal MUTCD expands upon this guidance by outlining specific warrants for proposed all-way stop intersections. Future versions of the CAMUTCD must be in substantial compliance with the federal MUTCD, but the criteria found in both the MUTCD and CAMUTCD are largely the same. For the purposes of improved clarity, this study is based on the federal MUTCD. Section 2B of the MUTCD presents the following warrants that should be met if an all-way stop is being considered:

- **AWSC Warrant A: Crash Experience** - When there are five or more reported crashes in a 12-month period (or 6+ in 36 months) that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.

- **AWSC Warrant B: Sight Distance** - Where sight distance on the minor-road approaches controlled by a STOP sign is not adequate for a vehicle to turn onto or cross the major (uncontrolled) road.

- **AWSC Warrant C: Transition to Signal Control** - Where an all-way stop may be installed at locations as an interim measure while arrangements are being made for the installation of a full traffic signal.

- **AWSC Warrant D: 8-Hour Volume** - Where the vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour. When the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants may be reduced to 70 percent of the above values.

- **AWSC Warrant E: Other Factors** - The MUTCD also provides other criteria that may be considered, including:
    - The need to control left-turn conflicts;
    - An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection;
    - Where pedestrian and/or bicyclist movements support the installation of all-way stop control.

Other sections of the MUTCD that should be considered with respect to AWS consideration include:

- **2B.06.06** - STOP signs shall not be used for speed control.
- **2B.12.02** - All-way stop controls at intersections with substantially differing approach volumes can reduce the effectiveness of these devices for all roadway users.

Attachment 3 shows City engineering staff's analysis of the AWS warrants based on visibility analyses, available crash data, and traffic counts collected at the intersection in October 2024.

As outlined in Attachment 3, none of the AWS warrants were met. One reported crash occurred at the intersection per Warrant A, no sight distance issues were identified by multiple City engineers per Warrant B, signal and volume warrants were not met per Warrants C and D, and most of Warrant E was not met based on traffic data. Of particular note, Beryl is a busier street that has a higher functional classification compared to Guadalupe. At this intersection, only 13% of vehicular traffic originates from Guadalupe. An AWS would require 87% of traffic to stop for just the remaining 13% of traffic, which violates guidance from the MUTCD.

Because almost every AWS warrant was not met, and the City's resident support thresholds were also not met, staff strongly recommends against installing an AWS at this location. While an AWS could improve pedestrian crossing safety by providing a controlled crossing, other alternatives are available and should be considered. The existence of an all-way stop does not necessarily mean that drivers would yield to pedestrians, especially at locations that do not meet warrants from the MUTCD.

Marked and Enhanced Crosswalk

Other tools besides an all-way stop are available and used widely in our society to achieve the same goals of improving pedestrian safety and lowering speeds at intersections. Because neither the resident support threshold nor the MUTCD AWS warrants were met, engineering staff's recommendation remains that a marked and enhanced crosswalk be installed at this location. **Attachment 1** provides the prior analysis of the proposed crosswalk. **Attachment 4** provides a clear description of the process to staff's recommendation, the proposed crosswalk design and countermeasures, and additional traffic analyses that addresses community concerns.

The FHWA published the *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*, which assists local agencies in determining the most appropriate pedestrian crossing treatments at an intersection based on traffic volumes, number of lanes, and speed limits. The guide outlines the various steps to arrive at potential countermeasures, such as collecting data, engaging the public, analyzing crashes, and drafting design. As shown in Attachment 4 and as shown in the collected traffic data, Beryl Street has an average daily traffic (ADT) below 9,000 vehicles per day, has a speed limit of 30 mph, and contains three (3) lanes without a raised median. The matrix shown in Table 1 of Attachment 4 show the appropriate countermeasures that could be compatible for this location. These are:

1. High-visibility crosswalk markings
2. Raised crosswalk
3. Advance yield markings and signage
4. In-street crossing signage
5. Curb extensions
6. Pedestrian refuge island
7. Rectangular Rapid Flashing Beacon (RRFB)
9. Pedestrian Hybrid Beacon (PHB)

Each of these suggested countermeasures are technically compatible at this intersection, however not every one of them is required to be installed to address safety concerns. Agencies have wide leverage to choose

which countermeasures are appropriate based on engineering judgement and available funds. As previously presented to the PWSC, staff proposes an enhanced crosswalk at this intersection with countermeasures 1, 3, 4, 5, and 6. Staff does not recommend a raised crosswalk (#2) at this time due to cost. Staff does not recommend a PHB (#9) due to cost and general confusion surrounding the installation of PHBs at intersections. PHBs can cost as much as a full traffic signal and visually look like a traffic signal, despite not providing signalized approaches to the minor street. Staff is neutral on installing an RRFB (#7) at this location. RRFBs, which are pedestrian activated flashing lights, as shown in Attachment 4, have been proven to improve driver yielding. The City recently installed its most recent RRFB on Avenue I in the Riviera Village. Although considered low cost and easy to install, staff have heard complaints about the intensity and effects of rapid flashing yellow lights on adjacent homes, and the volume of required accessible voice messages when the buttons are pushed. Time of day programming and shields can somewhat mitigate the effects of flashing lights and speech messages. The combination of the other countermeasures can be considered sufficient to improve pedestrian safety at this intersection without adding an RRFB, but an RRFB can also be installed as a sixth measure, costing an additional $20,000.

It should also be noted that the installation of a curb extension here is not absolutely critical to providing a safer crosswalk with the addition of the median refuge island. This is important in that street sweeping is a conflicting concern. Excluding installation of a curb extension would mean only one parking space would be preserved and visibility between drivers and pedestrians would remain as is at that particular corner.

Staff also heard concerns regarding repurposing the center turn lane along Beryl at this intersection to provide a pedestrian refuge island, which would require left-turns from westbound Beryl to be performed in the through lane. Staff performed a level of service (LOS) and delay analysis of this intersection during the AM and PM peak hours using existing data and if the center turn lane were repurposed to provide a pedestrian refuge island. Attachment 4 shows that the center turn lane does not have a material effect on intersection operations, and that queuing and delay would not substantially increase if southwest bound left-turns were performed in the through lane.

In the future, if funds and engineering analyses allow, the City may choose to install permanent curb extensions and a median refuge island.

If the PWSC recommends installation of the marked crosswalk, modular median and modular curb extension, construction can start when the modular equipment arrives, the striping contractor is scheduled, and crew availability is confirmed. The estimated cost of materials and to perform this work is approximately $15,000 and can be accommodated by the City's Traffic Calming budget. This cost is similar to installing a set of speed cushions.

COORDINATION

Coordination of this evaluation and report took place within the Public Works Department and with the Councilmember for District 2.

ATTACHMENTS

1 - PWSC Administrative Report and Attachments (September 2024)
2 - AWS Resident Survey Results
3 - AWS Engineering Study
4 - Crosswalk Countermeasure Selection