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October 4, 2023

Mr. Andrew Simmons
City Engineer
City of Coachella
53990 Enterprise Way
Coachella, CA 92236

Subject: Traffic Memorandum for Stop Warrant Analysis along Avenue 51 at Mecca Street

Dear Mr. Simmons:

This Memorandum has been prepared to provide justification for the installation of the three-way stop condition at the intersection of Avenue 51 and Mecca Street (Subject Location). The use of Stop signs to control speed is expressly prohibited in the CaMUTCD. Research has shown that (a) the installation of Stop signs, while reducing roadway speeds immediately adjacent to the Stop sign, has no effect on overall neighborhood speed limit compliance, and, (b) unwarranted Stop signs tend to have a lower driver compliance rate. However, since the existing posted speed along Avenue 51 is 40 MPH, the intent behind the request to install a multi-way stop condition at the Subject Location is driven by safety for both pedestrian movements along with the potential protection of an adjacent daycare facility.

EXISTING CONDITION

Mecca Street is a two-lane suburban street, per the City's General Plan, with a stop condition with the intersection of Avenue 51. Avenue 51 is classified as a collector with enhanced bicycle facilities per the City's General Plan, however the current configuration of the street has two through lanes, center painted median, Class II bike lane, and on street parking. At the west leg of Avenue 51 at the intersection with Mecca Street, the City has installed a raised median refuge island. Crosswalks at the Subject Location are located across Mecca Street and at the west leg of Avenue 51. The Subject Location has street lighting at the far sides of the intersection. The posted speed limit along Avenue 51 is 40 MPH.

The Subject Location is a three-legged intersection with Mecca Street intersecting Avenue 51 from the south. Approximately 240 feet west of Mecca Street is Avenida Adobe, which intersects Avenue 51 from the north. The current intersection traffic control consists of a stop condition for Mecca Street and a through condition along Avenue 51, with the exception for when pedestrians are present, then traffic is required to yield.

To the south of Avenue 51, Bagdouma Park is located to the west and four apartment complexes along with a daycare facility are located east of Mecca Street. The daycare facility, which is adjacent to the intersection at the southeast corner, has a 5-foot-tall metal fence encircling the site, with the outdoor play area immediately adjacent to Mecca Street and Avenue 51. North of Avenue 51 is a residential neighborhood with single family homes.

BACKGROUND

Over the past year, the Subject Location has had three documented traffic incidents, with the latest being on September 7, 2023, involving a motorcycle and car. The other two traffic incidents (August 21, 2022 and August 18, 2023) involved damage to vehicles as well as the metal fencing for the daycare.

The City has received a petition with 126 signatures on it from the residents of the area requesting stop signs be placed along Avenue 51, due to the recent uptick in vehicle incidents at this intersection, along with the daycare located on the southeast corner of the Subject Location.

As previously noted herein, Mecca Street is the south leg of an “left-right” offset or staggered intersection with Avenue 51, with Avenida Adobe, approximately 240 feet west, being the north leg of the intersection. A “left-right” staggered intersection eliminates all left turn movement conflicts along Avenue 51. In addition, both the north and south intersecting leg are 90 degrees to Avenue 51. Therefore, the intersection does not have any geometric deficiencies.

The City has recently completed a pedestrian safety enhancement project at the Mecca Street and Avenue 51 leg, consisting of a raised median pedestrian refuge island along with flashing pedestrian crossing sign and required signing.

CONSIDERED CRITERIA

The Ca MUTCD suggests the following criteria be considered for installation of a stop condition.

1. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

No traffic signal is planned at this location.

2. A crash problem, as indicated by five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation.

Data provided by the City revealed three (3) incidents over the past 12 months, with the most recent one occurring in early September 2023. Although, the number of incidents does not meet the noted criteria. However, due to the lower traffic volumes on the subject streets, this intersection is becoming an area of concern within this residential setting. It is believed that a multi-way stop at the Subject Location would correct the recent vehicle incidents.

3. Minimum volumes warranting a multi-way stop.
 - a. 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
 - b. The 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.

This analysis did not have any available traffic volumes, however from review of old traffic counts (2015) and general field observations, the intersection would meet a minimum of 300 vehicles entering the intersection along Avenue 51. In addition, in combining the staggered intersection, and through general field observations, the minor street approaches should also meet 200 units per hour.

4. Where no single criterion is satisfied, but where Criteria 2, 3a and 3b are all satisfied to 80 percent of the minimum values.

Criteria 2 would not be met at 80% (4 incidents) of the minimum value.

The CaMUTCD further suggests the following additional criteria be considered for evaluating a multi-way stop intersection.

1. The need to control left-turn conflicts.

Left turn conflicts are not a factor of concern at this intersection.

2. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes.

The intersection does have high pedestrian volumes from north to south between the residential neighborhood and Bagdouma Park. A stop condition on Avenue 51 will further enhance a safer crossing at the Subject Location.

3. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop.

Intersection sight distance or existing intersection geometry is not a factor at this location.

4. An intersection of two residential neighborhood collector streets of similar design and operating characteristics where multiway stop control would improve traffic operational characteristics of the intersection.

There are not significant operations issues at this intersection.

CONCLUSIONS AND RECOMMENDATIONS

Based on our intersection review and information provided to us by the City, the following observations and recommendations have been made:

- Based on the assessment of the existing conditions at the intersection of Avenue 51 and Mecca Street, it is noted there are no existing geometric, signing, or striping deficiencies with the intersection, except for a missing two direction large arrow sign (W1-7) on the north of the Avenue 51. Furthermore, a W1-7 sign is also missing at the south side of Avenue 51 at Avenida Adobe intersection. In addition, the City should perform a night review of the Subject Location to ensure the existing street lighting provides sufficient lighting levels for the west side crosswalk.
- Based on the above noted criteria and intersection conditions, Avenue 51 and Mecca Street should be converted to a three-way stopped controlled intersection to facilitate safer north/south pedestrian movements between the residential developments on the north and Bagdouma Park on the south side of Avenue 51. In addition, the conversion to a stop condition along Avenue 51 will potentially reduce future collisions and damage to the daycare facilities and/or injuries to the outdoor play area.
- Installation of a stop condition along Avenue 51 should be established in accordance with the CaMUTCD along with placement of advance warning signs and/or changeable message signs noting the change in traffic control at the Subject Location.

Let me know if you have any comments, questions, or concerns with the above intersection assessment.

