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# Administrative Report

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Date: February 24, 2020

**To: Public Works Commission**

**From: Department of Public Works**

**Subject: BERYL STREET CORRIDOR TRAFFIC CALMING ENHANCEMENTS**

**RECOMMENDATION:**

1. Review the engineering report, receive public input, and provide direction to Staff regarding proceeding with roadway modifications to Beryl Street.

**SUMMARY:**

In an ongoing effort to address resident concerns about vehicle speeds, traffic signal operations, and pedestrian and bicycle safety, Staff has evaluated the Beryl Street corridor, from Catalina Avenue to Prospect Avenue, to proactively determine appropriate traffic calming alternatives to enhance safety along the corridor. Beryl Street is heavily used by school-aged pedestrians traveling to and from Beryl Heights Elementary School and vehicle volumes are significant during arrival and dismissal periods. Field observations revealed various conflicts during these periods as pedestrians crossed Beryl Street on both the east and west legs, which are generally uncontrolled.

Installing additional traffic controls would increase pedestrian safety, help reduce the occurrence of undesirable motorist and pedestrian behaviors, and provide an enhanced travel route to school. Staff has identified the following alternatives for consideration by the Commission:

- Install and evaluate temporary bulb-outs at the intersections of Beryl Street at:
  - Juanita Avenue
  - Lucia Avenue
  - Maria Avenue
- Install and evaluate temporary traffic circles at the intersections of Beryl Street at:
  - Broadway
  - Elena Avenue
  - Guadalupe Avenue
  - Irena Avenue
  - Paulina Avenue
- Install radar feedback signs along the Beryl Street corridor
- Install high visibility crosswalks at the intersections of Beryl street at:
  - Irena Avenue
  - Guadalupe Avenue
  - Francisca Avenue
  - Elena Avenue

- Broadway
  - Catalina Avenue
- Install Class II bike lanes along on both sides of Beryl Street between:
  - Broadway and PCH
  - PCH and Prospect Avenue
- Install pedestrian countdown signals at the signalized intersections of Beryl Street at:
  - Catalina Avenue
  - Maria Avenue
  - Prospect Avenue
- Perform an assessment to determine the feasibility of installing pedestrian crossing enhancements at the uncontrolled intersection of Beryl Street at Francisca Avenue
- Perform a traffic signal warrant analysis to study the feasibility of modifying the traffic controls at the intersection of Beryl street at Maria Avenue from signalized to all-way stop controls

A map of the study area with proposed traffic controls is illustrated in Attachment 1.

#### **HISTORY:**

Staff presented the proposed traffic calming alternatives on November 18, 2019 at the District 2 community outreach meeting. In addition, Staff conferred with Councilmember Loewenstein of District 2 who echoed his resident's concerns for traffic safety enhancements and requested a review of additional traffic controls at the intersections along the corridor. The result of the community meeting and discussions with District 2 councilmember has led to the recommendations presented herein.

As a result of the school area traffic control modifications for Beryl Heights Elementary School previously approved by City Council, most of the previous traffic control enhancements including LED stop signs and high visibility crosswalks have already been installed within a two-block radius of the school.

#### **BACKGROUND:**

Beryl Street is classified as a minor arterial roadway on the current California Road System Functional Classification System maps submitted to the Federal Highway Administration. It runs northeast-southwest and the speed limit is 30 mph. It is approximately 56 feet wide with one travel lane in each direction, a center two-way left turn lane, and parallel parking allowed on both sides. Along the study area roadway segment, from south to north, are the intersections of Catalina Avenue, Broadway, Elena Avenue, Francisca Avenue, Pacific Coast Highway (PCH), Guadalupe Avenue, Irena Avenue, Juanita Avenue, Lucia Avenue, Maria Avenue, Paulina Avenue, and Prospect Avenue. Each of the intersections is two-way stop controlled where Beryl Street is uncontrolled except for Juanita Avenue and Lucia Avenue which are all-way stops and Catalina Avenue, PCH, Maria Avenue, and Prospect Avenue which are all signalized intersections.

There is a downward vertical grade along Beryl Street from Maria Avenue to Prospect Avenue, from Maria Avenue to PCH, and from PCH to Catalina Avenue. Fronting development along the corridor is primarily residential. Driveway access to the Redondo Shores Shopping Center is located on Beryl Street, west of PCH. Beryl Heights Elementary

School is located on Beryl Street between Maria Avenue and Lucia Avenue. Also, as described in the South Bay Bicycle Master Plan, Beryl Street is a proposed Class III bicycle facility.

### **ANALYSIS:**

The latest Engineering and Traffic (E&T) Survey for Beryl Street between Harbor Drive and Flagler Avenue was completed and adopted in November 2012. The E&T shows that the recommended posted speed limit on Beryl Street is 30 mph.

In November 2017, a two-year time period extension letter was submitted to the courts to extend the enforcement period of the E&T from five to seven years. Subsequently in November 2019, a three-year time period extension letter was submitted to the courts to extend the enforcement period of the E&T from seven to ten years. Per California Vehicle Code 40802, as this segment has not undergone significant changes in roadway or traffic conditions (adjoining property/land use, roadway width, traffic volume etc.), an extension was granted for continued radar enforcement of the speed limit until November 2022.

Speed data on Beryl Street was collected at five separate intersection locations including Broadway, Elena Avenue, Guadalupe Avenue, Irena Avenue, and Paulina Avenue. A breakdown of the data is provided in a table below:

Beryl Street Corridor Speed Data

<b>Intersection</b>	<b>Date</b>	<b>Average Speed</b>	<b>85th Percentile Speed</b>
Broadway	1/7/2020	28.5	33
Elena Avenue	1/8/2020	32.4	37
Guadalupe Avenue	1/8/2020	30.2	33
Irena Avenue	1/8/2020	32.3	36
Paulina Avenue	1/8/2020	30.3	33

All reported accidents on Beryl Street during a two-year span (2017–2019) were also reviewed. The following accident types were identified at each respective location:

Collisions involving pedestrian or bicycle

- None

Collisions involving vehicles

- Beryl Street at Broadway – Broadside – ROW (2017)
- Beryl Street at Broadway – Broadside – ROW (2019)
- Beryl Street at Elena Avenue – Broadside – ROW (2017)
- Beryl Street at Elena Avenue – Broadside – ROW (2017)
- Beryl Street at Elena Avenue – Broadside – ROW (2017)
- Beryl Street at Guadalupe Avenue – Broadside – ROW (2017)
- Beryl Street at Guadalupe Avenue – Broadside – ROW (2017)
- Beryl Street at Paulina Avenue – Broadside – ROW (2017)

Based on a review of reported accidents, field observations, evaluation of vehicle and pedestrian conflicts, and speed assessments, the following modifications are recommended:

### **Bulb-Outs on Beryl Street**

One of Staff's recommendations to enhance pedestrian safety is the construction of temporary bulb-outs on both sides of Beryl Street at uncontrolled intersections with an identifiable need for pedestrian crossing enhancements. The bulb-outs would extend the sidewalk into the parking lane to physically and visually narrow the roadway and provide additional pedestrian space at key locations. They can have the following benefits:

- Increased pedestrian visibility at intersections through improved sight lines
- Decreased pedestrian exposure to vehicles by shortening the crossing distance
- Reduced vehicle turn speeds by physically and visually narrowing the roadway
- Increased pedestrian waiting space
- Additional space for street furnishings, plantings and other amenities
- Facilitates the ability to provide two curb ramps per corner, which is desired

The temporary bulb-outs, in conjunction with the previous approved bike lanes, would reduce the crossing width of Beryl Street from 56 feet to 42 feet, reducing pedestrian exposure to vehicles. All-way stop controls at Juanita Avenue, Lucia Avenue, and Maria Avenue, in conjunction with the reduced pedestrian crossing width, would provide pedestrians with an additional traffic control measure when crossing Beryl Street. High-visibility crosswalks would be installed on all legs with appropriate pedestrian crossing, advanced pedestrian crossing, school pedestrian crossing or advance school warning signs where necessary. This recommendation should be installed along the corridor from Catalina Avenue to Prospect Avenue as listed below to increase pedestrian safety, enhance the mobility and enhance livability of the residents along the Beryl Street corridor.

### **Traffic Circles on Beryl Street**

Based on the information discussed previously and field observations, Staff believes that the installation of a mini traffic circle at the intersections of Beryl Street at Broadway, Elena Avenue, Guadalupe Avenue, Irena Avenue, and Paulina Avenue would enhance traffic safety. Traffic circles provide safe controls at appropriate residential intersections and are effective at significantly reducing speeds while reducing the overuse of all-way stops along certain corridors. Mini-traffic circles can provide a level of speed control and safety enhancement. Installation of a temporary mini-traffic circle can be accomplished inexpensively through changes and additions to existing roadway features including signage and pavement markings.

Travel around a mini-traffic circle is always in a counterclockwise direction with vehicles required to travel around the circle. They require vehicles to slow down to 10-15 mph as they traverse the circle, but vehicles are not required to come to a complete stop unless there is already moving traffic within the circle. The speed reduction is caused by designing the circle such that vehicles cannot continue in a straight path and must instead maneuver around the circle.

Mini-traffic circles have been shown to reduce vehicle crashes by a substantial amount. The Federal Highway Administration (FHWA) noted in their NCHRP Report 672 "Roundabouts: An Informational Guide" that roundabouts have been demonstrated to be safer than other forms of at-grade intersections. This is due to the elimination of right-angle and left-turn collisions, as well as speed reduction. Documentation from BIKESAFE and PEDSAFE indicate that Seattle (which has over 1,000 mini-traffic circles) has experienced a vehicle crash reduction of approximately 90% where the devices were installed. The Institute of Transportation Engineers (ITE) identifies mini-traffic circles (referenced as neighborhood traffic circles) as an effective traffic calming device that reduce intersection collision by an average of 70% and overall collisions by 28%. The National Association of City Transportation Officials (NACTO) also supports the use of mini-traffic circles to enhance safety in their Urban Street Design Guide.

On April 18, 2017, The City Council approved the Commission and staff recommendation to install a traffic circle at the intersection of Blossom Lane and Plant Avenue for a trial period of six months as a pilot project for the implementation of traffic circles. As part of the trial, staff conducted field observations and collected speed data to assess the effectiveness of the traffic circle. In comparison to the two-way speed data that was collected previously, the installation of the traffic circle revealed the following speed reductions:

- 85th percentile speed was reduced at least 8 mph.
- Average speed was reduced nearly 9 mph.
- Max speed was reduced at least 8 mph.

Per the City Council's approval, temporary traffic circles can be constructed and evaluated for a period of six months following approval by the Public Works Commission. After the evaluation period, the study outcome will be presented to the City Council for their consideration in a final decision for the Beryl Street corridor.

### **Radar Feedback Signs**

Radar feedback signs can be considered as an effective tool in addressing vehicle speeding concerns. Staff is recommending these signs be placed along the corridor to be used as an effective tool in addressing vehicle speeding concerns.

### **RECOMMENDATION:**

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  - Lucia Avenue
  - Maria Avenue
- Install and evaluate temporary traffic circles at the intersections of Beryl Street at:
  - Broadway
  - Elena Avenue
  - Guadalupe Avenue
  - Irena Avenue
  - Paulina Avenue
- Install radar feedback signs along the Beryl Street corridor
- Install high visibility crosswalks at the intersections of Beryl street at:

- Irena Avenue
  - Guadalupe Avenue
  - Francisca Avenue
  - Elena Avenue
  - Broadway
  - Catalina Avenue
- Install Class II bike lanes along on both sides of Beryl Street between:
  - Broadway and PCH
  - PCH and Prospect Avenue
- Install pedestrian countdown signals at the signalized intersections of Beryl Street at:
  - Catalina Avenue
  - Maria Avenue
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- Perform an assessment to determine the feasibility of installing pedestrian crossing enhancements at the uncontrolled intersection of Beryl Street at Francisca Avenue
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Based on the City Council's previous approval regarding the installation and evaluation of temporary traffic circles, the construction/installation of all the proposed traffic calming alternatives will be forwarded to the City Council for their approval prior to implementation while installation and evaluation of temporary traffic circles can move forward following the Commission's decision.

#### **ALTERNATIVES:**

- Other actions as determined by the Commission.

#### **COORDINATION:**

A meeting notification letter was sent to Council Member Loewenstein for district 2 distribution and Council Member Horvath for district 3 distribution. A copy of the notification letter is provided in Attachment 2. Additional correspondences received from residents is provided in Attachment 3.

#### **BUDGET AND COSTS:**

A breakdown of costs to install the proposed traffic calming alternatives, including all necessary signs and pavement markings, are as follows:

- Temporary bulb-outs (12) - \$27,000
- Temporary traffic circles (5) - \$20,000
- Radar feedback signs (4) - \$26,000
- High visibility crosswalks (13 legs) - \$2,500
- Class II bike lane (2500' x 4) - \$5,000
- Pedestrian countdown signals (12) - \$10,000

**Prepared by:**

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**Submitted by:**

*Ted Semaan, Public Works Director*

Attachment 1 – Proposed Traffic Calming Alternatives

Attachment 2 – Notification Letter

Attachment 3 – Correspondence