



CITY OF BEVERLY HILLS  
**TRAFFIC & PARKING COMMISSION**

July 7, 2016

**TO:** Traffic & Parking Commission  
**FROM:** Aaron Kunz, Deputy Director of Transportation  
Martha Eros, Transportation Planner  
**SUBJECT:** Pedestrian Crossing Evaluation  
**ATTACHMENTS:** A. Fehr & Peers Memorandum  
B. Continental Crosswalk Markings and Signage  
C. Public Notice

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### **Introduction**

The City retained Fehr & Peers, the City's on-call traffic engineering firm, to conduct an independent evaluation of pedestrian crossings at the City. Jaimee Bourgeois of Fehr & Peers will provide a presentation at the July 7, 2016 Traffic & Parking Commission of their recommendations resulting from their study.

### **Discussion**

Fehr & Peers presentation will include two parts:

1. Results of their evaluation and recommendations for crosswalk treatments for seven locations in the City as outlines in Attachment A. Staff seeks Commission input and recommendations regarding prioritization of these crosswalk treatments.
2. Crosswalk treatments at schools. Fehr & Peers conducted research regarding existing standards and benefits of high visibility "continental" crosswalks and policies by other local agencies. Based on this evaluation, staff is moving forward with converting "traditional" crosswalks to "continental" crosswalks beginning in July.
3. Staff is also moving forward with Fehr & Peers' recommendation to install supplemental in-street signage at El Rodeo School to remind motorists of the legal requirement to yield to pedestrians in crosswalks. Attachment B provides examples of crosswalk markings and proposed in-street signage.

Fehr & Peers is also evaluating crossings along the decomposed granite (DG) path. Staff will forward the results of this evaluation after coordinating with plans for the Beverly Gardens Master Plan and Santa Monica Boulevard Reconstruction Project.

The proposed improvements along Park Way, South Santa Monica Boulevard/Lasky Drive and Wilshire Boulevard/South Palm Drive would require preparation of plans, specifications and estimates (PS&E), which is estimated to take 8-10 months to complete after project approval. Following design, the projects would go out for bids and be constructed within roughly a six month time frame.

**Public Notice**

Notices advising of the Traffic & Parking Commission's review of pedestrian crosswalks at the July 7, 2016 meeting were mailed to the three religious institutions on North Santa Monica Boulevard; the 500 blocks of North Rodeo, Beverly, Canon and Crescent Drives; the Beverly Hills Unified School District; the General Manager of the Peninsula Hotel; and the property management companies of the buildings adjacent to the Lasky Drive and South Palm Drive crosswalks.

**Recommendation**

That the Traffic & Parking Commission provide input on the Fehr & Peers Evaluation and provide recommendations regarding prioritization of crosswalk treatments.

# **ATTACHMENT A**



## MEMORANDUM

Date: June 30, 2016

To: Aaron Kunz, City of Beverly Hills

From: Rachel Neumann and Jaimee Bourgeois

**Subject: *Pedestrian Crossing Evaluation***

*Ref: LA15-2772*

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This technical memorandum summarizes the results of crosswalk treatment evaluations conducted for several existing marked and unmarked crossings at unsignalized intersections in the City of Beverly Hills: the north-south crosswalk across South Santa Monica Boulevard at the intersection with Lasky Drive, the north-south crosswalk across Wilshire Boulevard at the intersection with South Palm Drive, the east-west stop-controlled crosswalks across North Rexford Drive in front of City Hall, and the various unmarked crosswalks along the south side of Park Way adjacent to Beverly Gardens Park at North Rodeo Drive, North Beverly Drive, North Canon Drive and North Crescent Drive.

The crosswalk evaluations were undertaken to assess the appropriateness of existing or new crossing treatments given that these crossing locations are at unsignalized intersections along busy arterial streets. All of the evaluations included a site visit, and some also included data collection of 24-hour traffic volumes, peak hour traffic volumes, pedestrian peak hour volumes, five-year pedestrian collision history. The evaluations are based on guidance provided in the California Manual on Uniform Traffic Control Devices (CA MUTCD), academic research, national best practices, professional experience, specific site conditions, and an internal crosswalk treatment identification tool. The tool combines academic research on crosswalk treatment effectiveness with national best practices and has been peer-reviewed by members of the Institute of Transportation Engineer's Pedestrian and Bicycle Council executive committee. Specific roadway conditions considered include speed limit, pedestrian volumes, crossing distance, number of travel lanes, presence of bicyclists, presence of transit, presence of a median, presence of on-street parking, and expected motorist compliance.

A description of existing conditions and recommended treatment improvements are provided below for each location separately.



## **SOUTH SANTA MONICA BOULEVARD & LASKY DRIVE**

### ***Existing Conditions***

The T-intersection of Lasky Drive with South Santa Monica Boulevard is a side-street stop-controlled intersection located in the City of Beverly Hills immediately west of the major arterial intersection of Santa Monica Boulevard, South Santa Monica Boulevard, and Wilshire Boulevard. South Santa Monica Boulevard provides two lanes for through traffic in either direction, as well as parking on both sides of the road. The curb-to-curb width is 60 feet. The speed limit is 25 miles per hour. At the intersection with Lasky Drive, South Santa Monica Boulevard is divided by a raised median and turning movements from Lasky Drive are limited to right turns only. A stop-controlled right turn lane from Santa Monica Boulevard onto South Santa Monica Boulevard is located almost directly across the raised center median from Lasky Drive, effectively creating a southbound fourth leg to the intersection.

A standard crosswalk extends diagonally north to south across South Santa Monica Boulevard immediately to the west of the intersection with Lasky Drive. The diagonal nature of the marked crosswalk extends the pedestrian crossing distance across South Santa Monica Boulevard to 85 feet. Pedestrian visibility is limited on the eastbound approach by parked cars and from the southbound approach by the alignment of the access lane from Santa Monica Boulevard. Existing red curb extends for 20 feet in advance of the eastbound approach and 15 feet in advance of the westbound approach.

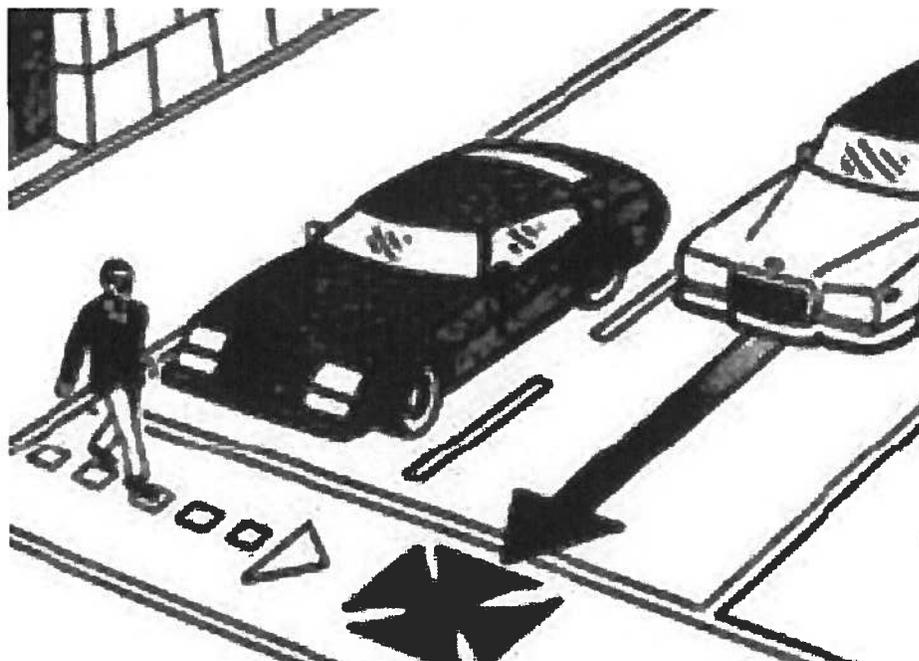
In traffic counts collected on a Tuesday in March, 2016, more than 23,000 daily vehicle trips were recorded on South Santa Monica Boulevard, including almost 1,900 vehicle trips during the morning commute peak hour. Pedestrian volumes were collected during the typical pedestrian peak hour, which occurs in the middle of the day on a Saturday. Sixty pedestrians were observed using the crosswalk on South Santa Monica Boulevard in the pedestrian peak hour, for an average of one pedestrian per minute.

A five year pedestrian- and bicycle-involved collision review revealed no collisions at or near the intersection between January 2010 and December 2014.

### ***Crosswalk Treatment Options Considered But Rejected***

A range of improvements was considered for this location but ultimately rejected as described below:

- Do Nothing – The combination of high vehicular volume and pedestrian activity results in a large number of conflicting movements. The multi-lane configuration further exacerbates the likelihood of a conflict given the potential for multiple-threat crashes. Multiple-threat crashes occur when a driver in one lane yields to a pedestrian in a crosswalk, obscuring the pedestrian from view of a driver in the adjacent lane, increasing the risk that the vehicle in the other lane will strike the pedestrian as the pedestrian clears the vehicle in the first lane and steps out in front of the second vehicle. Figure 1 illustrates a typical multiple-threat scenario. As such, maintaining the existing condition is not recommended.



**Figure 1. Illustration of multiple-threat crashes.**

- Remove Crosswalk – According to staff, this crosswalk was originally installed in 1962 with the condition that a crossing guard be provided for the high school. The crossing guard was later moved to another location but the crosswalk remained. There have been discussions dating back to the late 1960's about whether to keep the crosswalk at this location. The City's current Traffic Engineer has advocated for removal of this crosswalk in recent years, so this was examined as an option. During the weekend peak hour, there were 60 pedestrians counted using this crossing. Activity is likely higher during the peak hour on a weekday given the active, adjacent commercial land use. Legally pedestrians can cross at any location along South Santa Monica Boulevard between the signals at Charleville Boulevard and Wilshire Boulevard. This is because there is an intervening unsignalized intersection at Lasky Drive, so crossing the street anywhere between Charleville Boulevard and Wilshire Boulevard would not meet the definition of jaywalking as defined in the California Vehicle Code (Section 21955). As such, removing this crosswalk would likely result in pedestrians still crossing at this location or some other mid-block location nearby. Instead, strategies to increase vehicular-pedestrian separation and enhance motorist awareness were further explored. Technologies have advanced significantly since the crosswalk was originally installed, and these technologies have become commonplace as a way of creating more walkable communities.
- Pedestrian hybrid beacon, or HAWK - A HAWK displays flashing yellow upon pedestrian actuation, followed by steady yellow, followed by steady red, followed by flashing red. It then reverts to dark until the next actuation. At its shortest distance, the marked crosswalk is less than 150 feet to the intersection with Wilshire Boulevard. Eastbound traffic on South Santa Monica Boulevard waiting to cross Wilshire Boulevard at the signalized intersection frequently queues up past the intersection with Lasky Drive. Similarly, traffic stopped in the westbound direction by the HAWK could queue back to Wilshire Boulevard. As such, a HAWK signal was not further considered for this location.



**Recommended Treatment Improvements**

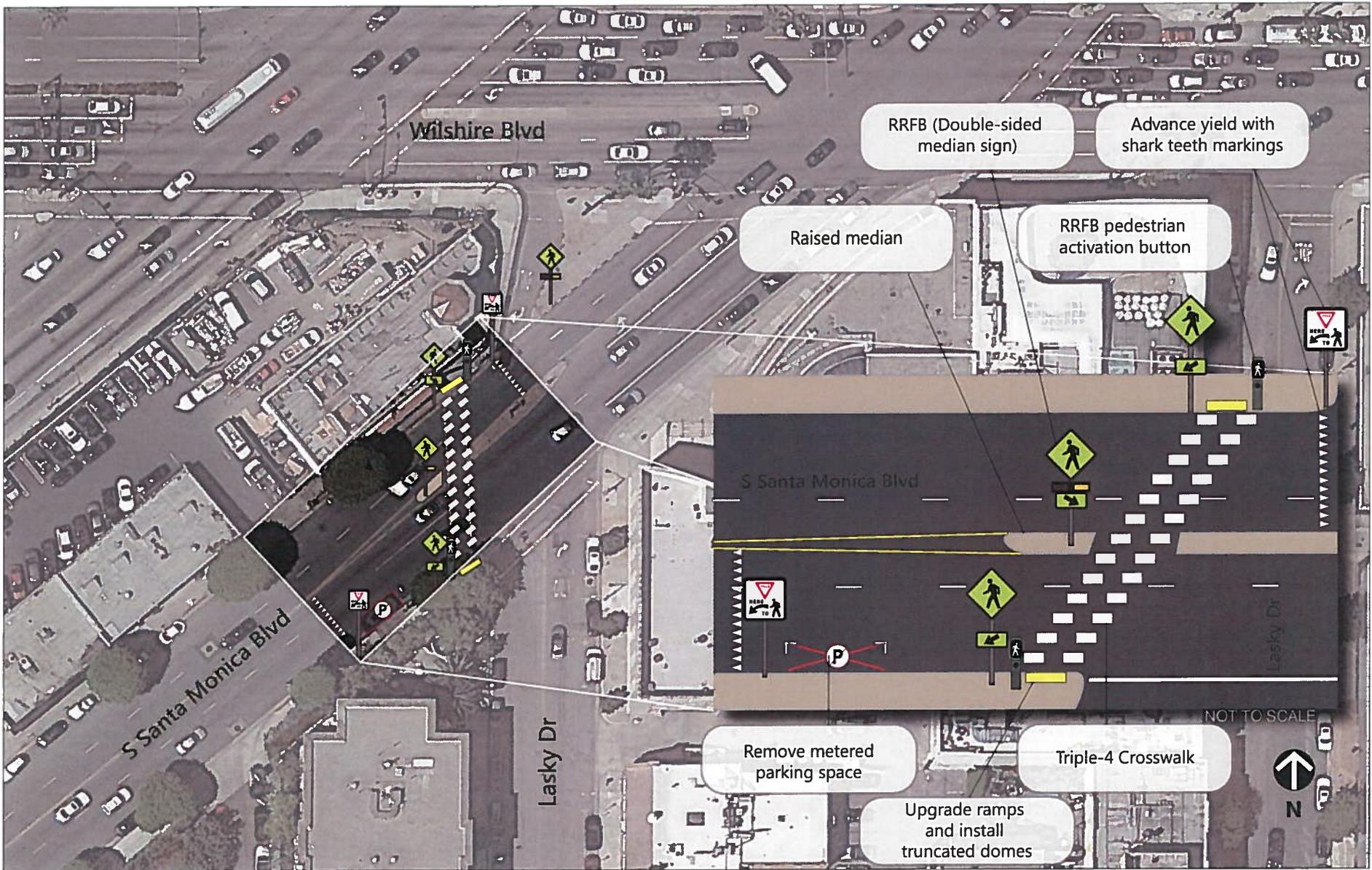
The recommended improvements for the uncontrolled crossing across South Santa Monica Boulevard at Lasky Drive, illustrated in Figure 2 (next page) will maintain existing crosswalk operations without impacting traffic operations at the signalized intersection with Wilshire Boulevard, while providing greater comfort for pedestrians utilizing the facility, more separation between vehicles and pedestrians, and enhanced warning for motorists approaching the crosswalk. The recommended improvements include the following:

*Triple-four high visibility crosswalk or continental crosswalk.* Crosswalks with the triple-four pattern are so called because an unpainted center channel is bound with high-visibility striped markings on either side, with the markings and the center channel forming three 4-foot wide zones. The center channel guides pedestrians along the safest path within the crossing and prevents pedestrians from straying outside the crossing. Reflectors placed facing on-coming traffic in each direction of travel provide an additional alert to drivers about the crosswalk. See Figure 3 for an illustration of a triple-four crosswalk. Alternatively, a continental crosswalk can be installed as it provides a similarly high level of visibility to the on-coming driver.



**Figure 3. Triple-four high visibility crosswalk.**

*Raised median.* The crosswalk is bounded on the east side by a narrow raised median. Installation of a small raised median on the west side of the crosswalk is recommended to provide a pedestrian refuge area in the event that a pedestrian is able to only cross one direction of travel at a time.





*Rectangular Rapid Flashing Beacon (RRFB).* RRFBs are user-actuated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. RRFBs use an irregular “stutter” flash pattern similar to emergency flashers on police vehicles, and have been shown to significantly increase driver yielding behavior at crosswalks when supplementing standard crossing warning signs and markings. One FHWA study showed them to also be significantly more effective than a traditional overhead beacon. We recommend installing three RRFBs at the following locations: two in the new median to the immediate west of the crosswalk facing eastbound and westbound traffic, and one in the pork chop island adjacent to and facing the southbound right turn lane from Santa Monica Boulevard. See Figure 4 for an example of RRFBs being used in conjunction with a raised median.

RRFBs can be activated by pedestrians manually by a push button or passively by a pedestrian detection system. To maximize pedestrian safety awareness, pedestrian activation push buttons are recommended for this location.



**Figure 4. RRFBs.**

*Advanced yield lines (shark teeth).* On multi-lane roadways such as South Santa Monica Boulevard, a line of painted triangles (shark teeth) are used before an uncontrolled pedestrian crossing to indicate the safest place for a driver to stop when yielding to a pedestrian to maximize pedestrian visibility for other drivers and prevent multiple-threat crashes. Advanced yield lines should be used in conjunction with “Yield Here for Pedestrians” signage. Figure 4 also illustrates advanced yield lines being used at an unsignalized crossing. Requiring vehicles to yield further from the crosswalk reduces the risk of multiple-threat crashes, as described previously. Per the CA MUTCD (Section 3B.16), advanced yield lines should be placed 20 to 50 feet in advance of the nearest crosswalk line, and parking in this area should be removed. It is recommended that the advanced yield line for eastbound traffic be placed



the maximum 50 feet in advance of the crosswalk with adjacent "Yield Here" signage, along with the removal of one metered parking space. The advanced yield line for the westbound approach should be placed at the minimum recommended 20 feet from the crosswalk in order to also capture the southbound right turn lane from Santa Monica Boulevard.

*Signage upgrades.* Currently, there are roadside pedestrian crosswalk warning signs for both approaches. The signage for the westbound approach includes a W54(CA) (pedestrian symbol with crosswalk lines) with a "PED XING" plaque located beneath on a street light immediately before the crosswalk. The larger sign is bent and leaning because it extends beyond the sidewalk into the roadway and is likely hit by larger vehicles turning right from the access lane from Santa Monica Boulevard. The same two signs are in place for the eastbound approach on a street light located about 20 feet before the crosswalk. This combination of signs has been deleted from the California Manual on Uniform Traffic Control Devices (CA MUTCD) and replaced with the W11-2 (pedestrian symbol without crosswalk lines) and W16-7P (downward pointing arrow). The existing signs should be replaced and upgraded to fluorescent yellow-green for greater conspicuity.

*Ramp Upgrades and truncated domes.* Truncated domes or tactile warning strips are brightly colored ground surface indicators to assist pedestrians who are blind or visually impaired detect the transition between the sidewalk and the street. The curb is the most reliable cue pedestrians with vision impairments use to identify this transition. Curb ramps which enhance access for wheelchair users create hazards for the visually impaired. A detectable warning at the bottom of the curb ramp can provide the information pedestrians with visual impairments need to safely cross the street. A 36 inch strip of detectable warnings should be installed at the bottom of the curb ramp on either approach to the crosswalk along with curb ramp reconstruction to satisfy other ADA curb ramp requirements, such as slope limitations and clearance at the top of the ramp.

## **WILSHIRE BOULEVARD & SOUTH PALM DRIVE**

### ***Existing Conditions***

The offset intersection of Palm Drive with Wilshire Boulevard is a side-street stop-controlled intersection located in the City of Beverly Hills between the signalized intersections at Rexford Drive and Doheny Drive. Wilshire Boulevard provides three peak-hour travel lanes for through traffic in both directions, and two travel lanes with parking on both sides of the road outside of the peak periods. Traffic on Wilshire Boulevard at this location is uncontrolled, and the speed limit is 25 miles per hour. The curb-to-curb width is 68 feet. At the intersection with South Palm Drive, pavement markings create a center median island dividing Wilshire Boulevard. The north and south legs of Palm Drive, which are stop-controlled, are offset from one another by approximately 100 feet.

A ladder crosswalk extends north to south across Wilshire Boulevard immediately to the west of the intersection with South Palm Drive. The pedestrian crossing distance across Wilshire Boulevard is 68 feet. Pedestrian visibility by approaching motorists is clear due to the straight, flat nature of the roadway at this location; however, it may be limited by other moving vehicles during times of heavy traffic flow. Existing red curb extends for 65 feet in advance of the eastbound approach and 32 feet in advance of the westbound approach.



In traffic counts collected on a Tuesday in March, 2016, more than 47,000 daily vehicle trips were recorded on Wilshire Boulevard, including almost 3,400 vehicle trips during the afternoon commute peak hour. Pedestrian volumes were collected during the typical pedestrian peak hour, which occurs in the middle of the day on a Saturday. Twenty pedestrians were observed using the crosswalk on Wilshire Boulevard during that time period, for an average of one pedestrian every three minutes. Due to the office-oriented land uses near the crosswalk, a higher number of pedestrians might be observed on a weekday.

A five year pedestrian- and bicycle-involved collision review revealed one collision near the intersection between January 2010 and December 2014, when a pedestrian was struck crossing in the unmarked crossing at the intersection with North Palm Drive (located 100' from South Palm Drive).

### ***Crosswalk Treatment Options Considered But Rejected***

- Do Nothing – The combination of high vehicular volume and pedestrian activity results in a large number of conflicting movements. The multi-lane configuration further exacerbates the likelihood of a conflict given the potential for multiple-threat crashes. Multiple-threat crashes occur when a driver in one lane yields to a pedestrian in a crosswalk, obscuring the pedestrian from view of a driver in the adjacent lane, increasing the risk that the vehicle in the other lane will strike the pedestrian as the pedestrian clears the vehicle in the first lane and steps out in front of the second vehicle. Figure 1 illustrates a typical multiple-threat scenario. As such, maintaining the existing condition is not recommended.
- Remove Crosswalk – During the weekend peak hour, there were 20 pedestrians counted using this crossing. It is expected that activity is higher during the peak hour on a weekday given the adjacent office land use. Removing the marked crosswalk would likely result in pedestrians still crossing at this location or some other uncontrolled location nearby since the distance to either adjacent signalized crosswalk is about 600 feet. The additional walking distance to cross the street by using one of the adjacent controlled, marked crosswalks could be as much as one-quarter mile. It is unrealistic to expect that pedestrians would detour so far out of their way to utilize a controlled, marked crossing and legally pedestrians can cross at any location along Wilshire Boulevard between the signals at North Rexford Drive to the west and North Doheny Drive to the east. Because the crosswalk at South Palm Drive is located almost exactly halfway between the adjacent signalized intersections, it is a good location to channelize pedestrian activity. As such, strategies to increase vehicular-pedestrian separation and enhance motorist awareness were further explored for this location as well.
- Pedestrian hybrid beacon, or HAWK - A HAWK was also considered at this location but rejected as it would likely interfere with signal coordination along the heavily travelled Wilshire Boulevard.



### ***Recommended Treatment Improvements***

The recommended improvements for the uncontrolled crossing across Wilshire Boulevard at South Palm Drive, illustrated in Figure 5 (next page) will improve pedestrian comfort and enhance warning for motorists approaching the crosswalk without impacting traffic operations along Wilshire Boulevard. The recommended improvements include the following:

*Triple-four high visibility crosswalk or continental crosswalk.*

*Raised Median/Pedestrian Refuge Area.* The crosswalk is bounded on the west side by a painted median. Installation of a raised median on both sides of the crosswalk would create a pedestrian refuge area in which pedestrians could wait if they are unable to find a suitable break in traffic in which to complete the entire crossing.

*Rectangular Rapid Flashing Beacon (RRFB).* It is recommended to install four RRFBs at the following locations: on the north side of the road facing westbound traffic, two on new raised medians facing both directions of traffic, and one on the south side of the road facing eastbound traffic. To maximize pedestrian safety awareness, pedestrian activation push buttons are also recommended for this location, and should be placed appropriately at the curb ramps on either approach to the crosswalk.

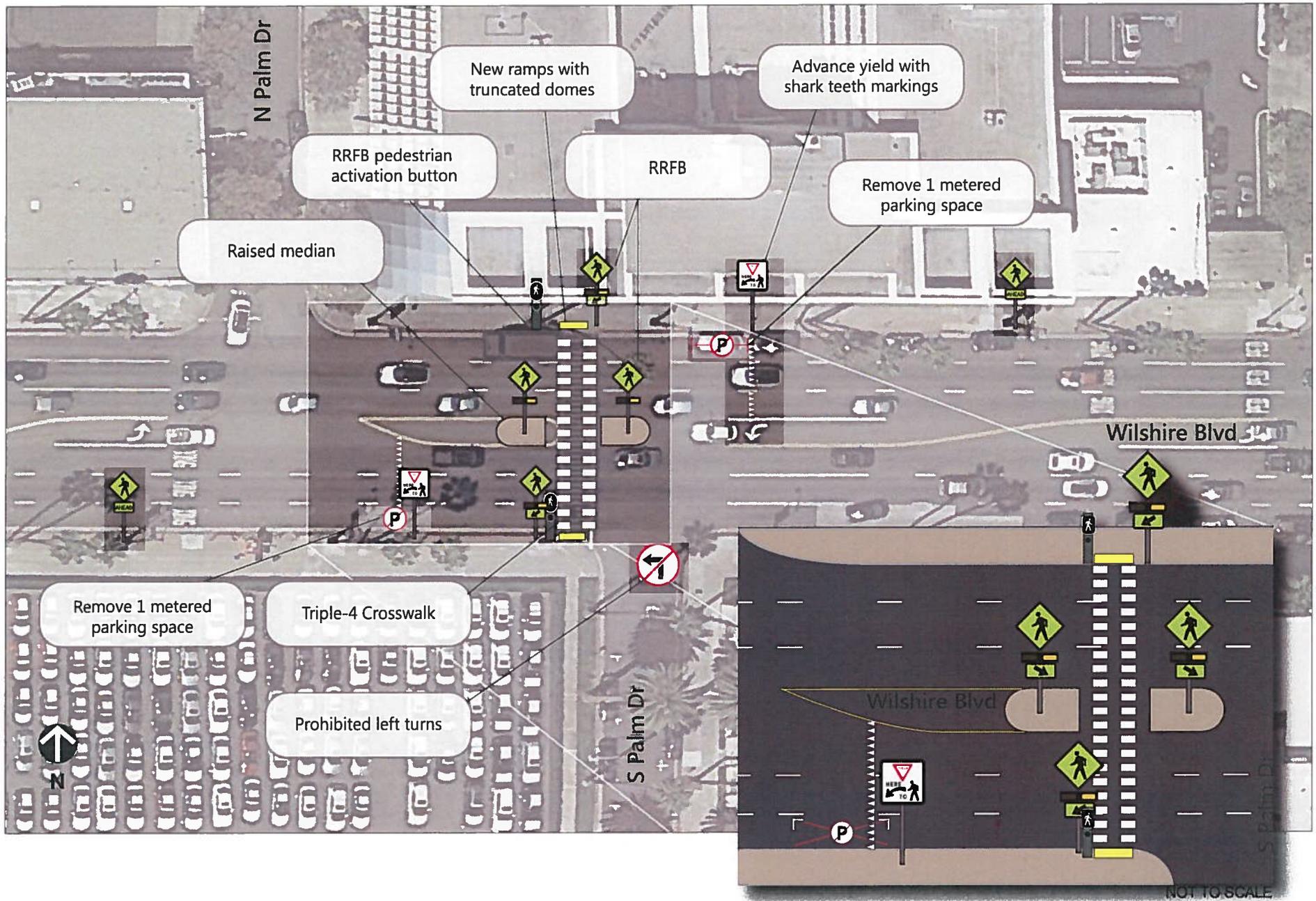
*Advanced yield lines (shark teeth).* It is recommended that advanced yield lines be placed the maximum 50 feet in advance of the crosswalk on both approaches, along with "Yield Here" signage. This will require the removal of a single metered parking space on both the eastbound and westbound approaches.

*Signage upgrades.* Currently, there are roadside pedestrian crosswalk warning signs for both approaches. The signage for the westbound approach includes a W54(CA) (pedestrian symbol with crosswalk lines) with a W16-7P (downward pointing arrow) beneath located on a street light before the crosswalk. It is recommended that the top sign is replaced with the W11-2 (pedestrian symbol without crosswalk lines) and both signs are upgraded to fluorescent yellow-green for added conspicuity. There are also two advance warning signs, a W54(CA) with a "PED XING" plaque. It is recommended that these are replaced with a W11-2 and an "AHEAD" plaque (W16-9P). The same upgrades are recommended for the eastbound direction.

*New ramps and truncated domes.* Relocation of the crosswalk to the west will require new ramps, which should be fully ADA compliant with truncated domes.

*Turn restrictions.* Left-turning vehicles from South Palm Drive must cross three travel lanes in order to complete the movement. Considering the heavy traffic volumes on Wilshire Boulevard, many drivers trying to make left turns may need to react and accelerate quickly to take advantage of small gaps in both directions of traffic. Drivers in this situation may not notice a pedestrian in the crosswalk, leading to potential conflicts. It is therefore recommended that this northbound left-turn movement from South Palm Drive onto Wilshire Boulevard be prohibited. Traffic counts on Palm Drive were not collected as part of this evaluation, but should be collected and usage analyzed prior to implementation of this recommendation.

Pedestrian crossing improvements for this location were included in Metro's 2015 Call for Projects. As such, some grant funding has already been secured for use during the 2017-2018 fiscal year..





## **NORTH REXFORD DRIVE AND PARKING GARAGE**

### ***Existing Conditions***

The intersection of North Rexford Drive with the City Hall parking garage is three-way stop controlled. The intersection underwent reconstruction in 2014 to narrow the garage driveway by removing a circular feature. This modification also brought the two marked crosswalks across North Rexford Drive closer together. Each approach is controlled with a STOP sign and STOP pavement legend. While North Rexford Drive provides one lane in each direction, there is an additional left-turn lane on the southbound approach for access to the garage. Advance limit (stop) lines are provided for each approach set back 4' from the crosswalk to create separation between stopped motorists and pedestrians. In both the northbound and southbound directions, signs are provided at the second crossing (far side of intersection) notifying motorists to yield to pedestrians (Caltrans R1-5 signs). A fire station is located just south of the intersection on the west side of North Rexford Drive.

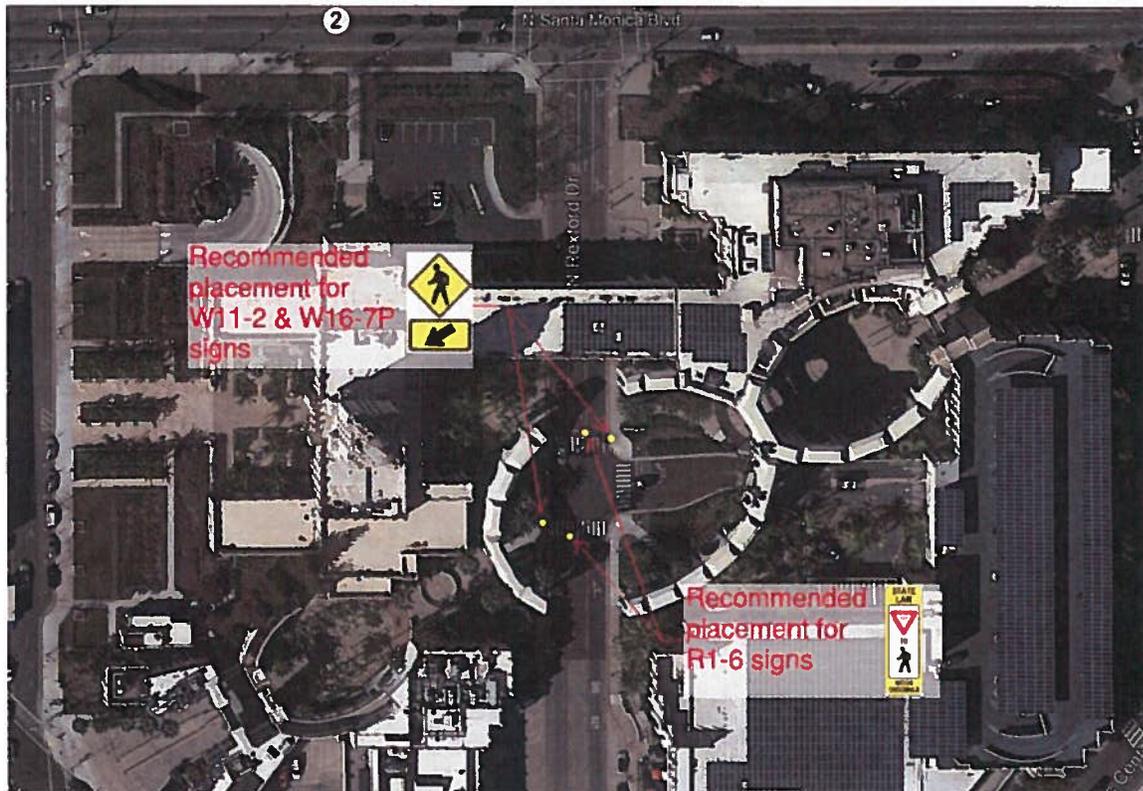
### ***Recommended Treatment Improvements***

Our evaluation of this intersection did not include data collection but rather was limited to a site visit, review of existing traffic control and identification of enhancements, if any, that could help increase motorist compliance with stopping and yielding to pedestrians. During our field investigation, it was noted that a majority of trips traveling through the intersection are not associated with City Hall. Motorists appeared to be impatient due to having to wait in the queue to pass through the intersection. While the majority of vehicles were observed coming to a complete stop and yielding to pedestrians, some were observed rolling through the stop and not properly yielding to pedestrians.

According to the CA MUTCD in Section 2B.11, the yield to pedestrians sign (R1-5) shall be used when yield lines are used in advance of a marked crosswalk that crosses an uncontrolled multi-lane approach. There are no other applications specified in the CA MUTCD for the use of this sign. Therefore, we recommend replacing existing signage with a pedestrian crossing (W11-2) warning sign, supplemented with a diagonal arrow (W16-7), post mounted with a seven foot clearance to more conspicuously warn motorists of the presence of pedestrians.

The CA MUTCD provides an option in Section 2B.12 to place In-Street Pedestrian Crossing signs (R1-6) at unsignalized pedestrian crosswalks to remind users of laws pertaining to right-of-way. When used, these signs are recommended to be placed in the roadway at the crosswalk location on the center line, on a lane line, or on a median island.

Figure 6 shows the study location and the recommended placement of the aforementioned signs. Staff has already ordered the recommended in-street signs.



**Figure 6. North Rexford Drive Signage Recommendations**

### **PARK WAY AT BEVERLY GARDENS PARK**

In response to concerns for pedestrian safety on North Rodeo Drive communicated by representatives of the Beverly Hills Presbyterian Church, City staff asked for an evaluation of whether a marked crosswalk would be appropriate across North Rodeo Drive at Park Way. Based on initial field observations and the level of pedestrian activity at this location as well as the intersections to the east along Beverly Gardens Park, it was recommended that the review be expanded to include North Beverly Drive, North Canon Drive and North Crescent Drive.

#### ***Existing Conditions***

Park Way functions as an alley west of North Rodeo Drive and east of North Crescent Drive. Between North Rodeo Drive and North Crescent Drive, including intersections with North Beverly Drive and North Canon Drive, it is a two lane roadway adjacent to and north of Beverly Gardens Park with angled, metered parking on the south side and parallel parking on the north side. Park Way is considered the side street and is stop controlled at each of these four intersections. All four of the major streets are uncontrolled. Although there are no marked crosswalks along Park Way to cross the major streets at these four intersections, pedestrians can legally cross the street at any intersection per the California Vehicle Code unless posted otherwise. The only location with crossing prohibition signage is on the south side of Park Way at North Rodeo Drive. The signs direct pedestrians to use the signalized crossing at the Santa



Monica Boulevard traffic signal. Despite this signage, there are many pedestrians observed crossing at this location.

Vehicle and pedestrian counts were collected to quantify the level of activity at these locations. Data on pedestrian activity was collected across multiple high-activity periods, including the pedestrian peak hour as identified in the Southern California Council of Governments Bicycle Count Training Manual (Saturdays from 12:00 – 2:00 PM), on Sunday mornings between services at the adjacent Beverly Hills Presbyterian Church (Sundays from 9:30 – 11:30 AM), and on weekday mornings during the church's preschool drop-off time (Tuesdays from 8:00 – 10:00 AM). Following data collection, we then applied our internal crosswalk tool and completed a site visit to conduct a context sensitive analysis.

The peak hour north/south vehicle volume on Rodeo Drive was identified as 673 vehicles. Pedestrian counts were collected across a range of high-level pedestrian activity times on a weekday morning, a Saturday afternoon, and a Sunday mid-morning. During the heaviest one-hour peak (occurring Sunday morning), 85 pedestrians crossed in the east/west direction. Of the 85 pedestrians who crossed east/west, 25 – almost 30% – crossed away from the intersection, mid-block between Park Way and Santa Monica Boulevard. The remaining 60 pedestrians crossed at the intersection. Interestingly, 23 of those crossings occurred on the south side of the intersection where crossings are prohibited. There were only four bicycles counted during the entire period, one traveling east along Park Way, and three traveling south on Rodeo Drive.

The peak hour north/south vehicle volume on Beverly Drive was identified as 1,121 vehicles. Pedestrian counts were collected on a Saturday afternoon and a Sunday mid-morning. During the heaviest one-hour peak (occurring Sunday morning), 49 pedestrians crossed in the east/west direction. Of the 49 pedestrians who crossed east/west, five crossed away from the intersection, mid-block between Park Way and Santa Monica Boulevard. The remaining 44 pedestrians crossed at the intersection. There were only nine bicycles counted during the entire period, one traveling east along Park Way, and eight traveling north or south on Beverly Drive.

The peak hour north/south vehicle volume on Canon Drive was identified as 960 vehicles. Pedestrian counts were collected on a Saturday afternoon and a Sunday mid-morning. During the heaviest one-hour peak (occurring Saturday afternoon), 124 pedestrians crossed in the east/west direction. Of the 124 pedestrians who crossed east/west, 33 – more than a quarter – crossed away from the intersection, mid-block between Park Way and Santa Monica Boulevard. The remaining 91 pedestrians crossed at the intersection. There were only six bicycles counted during the entire period, five traveling east or west along Park Way, and one traveling north on Canon Drive.

The peak hour north/south vehicle volume on Crescent Drive was identified as 903 vehicles. Pedestrian counts were collected on a Saturday afternoon and a Sunday mid-morning. During the heaviest one-hour peak (occurring Sunday morning), 22 pedestrians crossed in the east/west direction. Of the 22 pedestrians who crossed east/west, 12 – more than half – crossed away from the intersection, mid-block between Park Way and Santa Monica Boulevard. The remaining 11 pedestrians crossed at the intersection. There were only 11 bicycles counted during the entire period, five traveling east or west along Park Way, and six traveling north or south on Crescent Drive.



Wallis Annenberg Center for the Performing Arts was contacted to determine whether some of the pedestrian activity could be related to patrons parking in the area and walking to the Center. There were shows on the Saturday and Sunday of data collection, and the first show time was noon each day. The peak hour of pedestrian activity occurred Sunday morning at Rodeo Drive, Beverly Drive and Crescent Drive and was likely more influenced by activity associated with the Presbyterian Church and Beverly Gardens Park visitors. The peak hour of pedestrian activity at Canon Drive occurred Saturday afternoon at 12:45-1:45 PM. Due to its close proximity to the Center and higher pedestrian volume in comparison to the other locations, this peak may reflect more activity associated with the Center; however, the Sunday morning volume at this location was also higher than the other locations.

### ***Recommended Treatment Improvements***

Along each of the four major streets, the side-street stop-controlled intersection with Park Way is approximately 250 feet north of each signalized intersection with Santa Monica Boulevard. A marked crosswalk is recommended at a location near a pedestrian generator and within 300 feet of an existing crosswalk only if over 40 pedestrians use the crossing per hour. While the intersection with Park Way is less than 300 feet from the intersection with Santa Monica Boulevard, pedestrian volumes are high enough to warrant marked pedestrian crossings at Rodeo Drive, Beverly Drive and Canon Drive. The pedestrians observed crossing east to west, whether at Park Way or mid-block, were likely park-goers utilizing the grounds and sights within Beverly Gardens Park and crossing east/west to continue their park sojourn along pre-established park paths, or were congregants of Beverly Hills Presbyterian Church seeking the shortest route to the public parking spaces along Park Way north of Beverly Gardens Park. Some may also be associated with the Center for Performing Arts when shows are happening.

Given the high pedestrian activity at Rodeo Drive, Beverly Drive, and Canon Drive, a marked crosswalk with high level safety enhancements are recommended, including a pedestrian hybrid beacon and a continental crosswalk along the south leg of each intersection. The fact that a large number of crossings take place across Rodeo Drive where there is currently crossing prohibition signagedemonstrates the demand for crossing at this location. An additional feature recommended at Rodeo Drive is a curb extension (or bulb-out) on the west side of the street to improve visibility associated with the curvature in the roadway, on-street parking and a large tree immediately north of where the crosswalk would be located. Removal or relocation of one accessible parking stall would also be needed.

A pedestrian hybrid beacon provides for a protected crossing similar to a traditional traffic signal. The vehicle indications are dark when no pedestrians are present. Upon arrival, the pedestrian would see an Upraised Hand (symbolizing don't walk) pedestrian indication. The pedestrian would press a push button similar to a traditional traffic signal to alert the signal control equipment that there is demand for a crossing. The vehicle signal would then display flashing yellow, followed by steady yellow, followed by steady red. Concurrent with the steady red vehicular indication, the pedestrian indication would change to a Walking Person (symbolizing walk). After a pre-determined number of seconds, the pedestrian indication would change to a flashing Upraised Hand (symbolizing do not start crossing) and the vehicle indication would change to flashing red, which means that after coming to a stop vehicles may proceed with caution. The signal indication then reverts back to dark until the next actuation. A benefit of this type of control is that pedestrians cannot cross at any time resulting in a continuous interruption to traffic flow as they can do today but rather are grouped together. Furthermore, the system can be designed to communicate and coordinate with the adjacent signal to stop traffic at preferred times.



The CA MUTCD Section 4F.02 – Guidance, Part A recommends that pedestrian hybrid beacons be installed at least 100 feet from side streets or driveways controlled by stop or yield signage. However, recent studies conducted by TTI and the City of Tucson, Arizona determined that pedestrian hybrid beacons placed at minor intersections or major driveways were successful at reducing pedestrian-involved collisions. The CA MUTCD guidance was developed prior to publication of these studies. Additionally, the CA MUTCD statement regarding pedestrian hybrid beacon placement is guidance (“should”) and not a requirement (“shall”). Thus, engineering judgment is permitted for interpretation and, at these locations, a pedestrian hybrid beacon is most appropriate.

Due to the lower volumes observed on Crescent Drive (22 during the peak hour) as well as its location at the terminus of Beverly Gardens Park with no path continuation on the east side, a marked crosswalk is not recommended at this location. Instead, crossing prohibition signage is recommended directing pedestrians to the signalized crossing at Santa Monica Boulevard.

All of the recommended improvements along Park Way are illustrated on Figure 7.

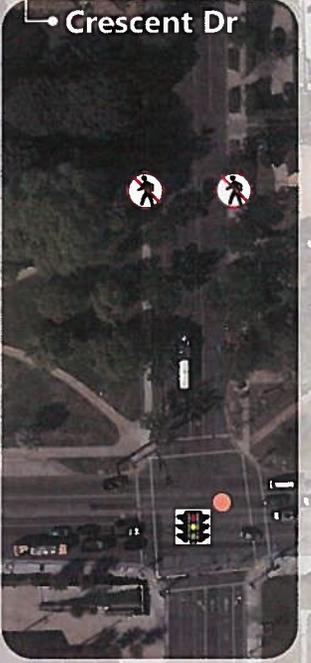


**Recommendation**  
 - Add continental crosswalk, curb extension, and pedestrian hybrid beacon

**Recommendation**  
 - Add continental crosswalk and pedestrian hybrid beacon

**Recommendation**  
 - Add continental crosswalk and pedestrian hybrid beacon

**Recommendation**  
 - Add Do Not Cross Signage



- Bike Collision
- Pedestrian Collision
- Bus Stop
- Signalized Intersection
- Add Do Not Cross Signage
- Continental Crosswalk
- Add Curb Extension
- Pedestrian Hybrid Beacon (with signage)



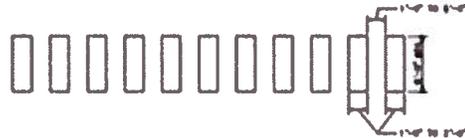
Figure 7  
 Rodeo Drive to Crescent Drive

# **ATTACHMENT B**

**BASIC AND CONTINENTAL CROSSWALK MARKINGS**



Basic



Continental

Source: Caltrans Standard Plans, Sheet A24F, 2015.

**PROPOSED IN-ROADWAY SIGNAGE FOR EL RODEO SCHOOL**



# **ATTACHMENT C**

## NOTICE OF PUBLIC MEETING PEDESTRIAN CROSSWALKS



The Traffic & Parking Commission will review existing mid-block pedestrian crosswalks and evaluate potential crosswalk treatments at unmarked crossings adjacent to Beverly Gardens Park.

**MEETING:** Traffic & Parking Commission

**DATE:** Thursday, July 7, 2016

**TIME:** 9:30 a.m., or as soon thereafter as the matter may be heard

**LOCATION:** City Hall, Room 280-A, 455 N. Rexford Drive, Beverly Hills, CA 90210

The Traffic & Parking Commission will review an independent traffic engineering evaluation of the following pedestrian crossings:

- Marked crosswalk on South Santa Monica Boulevard at Lasky Drive
- Marked crosswalk on Wilshire Boulevard at South Palm Drive
- Marked crosswalks at 455 North Rexford Drive (City Hall)
- Unmarked crossings between North Santa Monica Boulevard and Park Way at North Rodeo, Beverly, Canon and Crescent Drives

### **PUBLIC COMMENT:**

Persons wishing to comment on this item are invited to attend the July 7, 2016 Traffic & Parking Commission meeting and/or submit written comments. Any communication received by the City becomes part of the public record. Please submit correspondence a minimum of one day in advance of the meeting date to allow for routing.

By Email: [transportation@beverlyhills.org](mailto:transportation@beverlyhills.org)

By Mail: City of Beverly Hills  
Community Development - Transportation Planning  
455 North Rexford Drive, Beverly Hills, CA 90210

The Traffic & Parking Commission is an advisory board to the City Council. The Commission's recommendation will be forwarded to the City Council for consideration at a future date. The City Council may approve, deny, or modify the Commission's recommendation.

If you would like additional information regarding this proposal, please contact the Transportation Planning Division at (310) 285-1128.