Norma Triangle

Traffic Calming Study

Prepared for:
City of West Hollywood

February 2017

Prepared by:

FEHR & PEERS

LA14-2771

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1. INTRODUCTION

This traffic calming study focused on identifying solutions to reduce cut-through traffic and speeds through the Norma Triangle neighborhood area of the City of West Hollywood, bounded by:

- Sunset Boulevard to the north
- Santa Monica Boulevard to the south
- San Vicente Boulevard to the east
- Doheny Drive to the west

This study is part of a comprehensive approach to traffic calming undertaken by the City of West Hollywood across the City. In the Norma Triangle neighborhood, the community raised concerns regarding speeding and driver non-compliance to traffic rules. The City worked with the community prior to initiating this traffic calming analysis, identifying concerns and determining that a comprehensive neighborhood-wide traffic calming study should be conducted. This plan was prepared to address traffic patterns within the neighborhood while minimizing the potential for trip diversion to other neighborhood streets. The study area's land uses are primarily single family residential homes with some multifamily homes surrounded by heavily utilized commercial corridors. As a result, when congestion on the commercial corridors occurs, drivers may divert into the residential neighborhood to by-pass congestion and queues at busy intersections.

A series of steps were taken to determine community identified traffic issues, possible solutions, and recommendations. The process followed the City's traffic calming guidelines and focused on a grass-roots method for identifying solutions, as shown in **Figure 1**. Existing conditions data were collected to set the foundation for traffic conditions in the Norma Triangle area. The data were presented at initial community meeting in April 2016. Community members discussed the traffic information and learned about potential traffic calming solutions. During the workshops, participants were encouraged to identify problems and potential treatments.

Figure 1. Projects Steps Taken

Fehr & Peers developed draft traffic calming solutions for the neighborhood, which integrated the comments from the community members and the data collected. These recommendations were then presented to the community at a meeting in December 2016, where community members were encouraged to share their thoughts about the recommendations. Fehr & Peers then prepared the final recommendations for the City based on input received at both of the community meetings. Community members are responsible for circulating petitions to gain support for the recommendations before individual traffic calming recommendations can be considered by the Transportation Commission and City Council.

This report outlines each of the key steps taken in the development of the Traffic Calming recommendations for the Norma Triangle community.

2. EXISTING CONDITIONS

The Norma Triangle neighborhood is bounded to the north by Sunset Boulevard, to the south by Santa Monica Boulevard, to the east by San Vicente Boulevard, and to the west by Doheny Drive. The project study area is illustrated in Figure 3.

Daily traffic volumes taken in 2016 on streets surrounding/within the study area are reported as vehicles per day (vpd) and are provided below rounded to the nearest hundred.

Arterial streets boarding the study area have the following traffic volumes:

- Santa Monica Boulevard: 53,400 vpd
- Sunset Boulevard: 51,500 vpd
- San Vicente Boulevard: 12,800 vpd
- Doheny Drive: 9,600 vpd

Figure 2. Sample Traffic Calming Devices

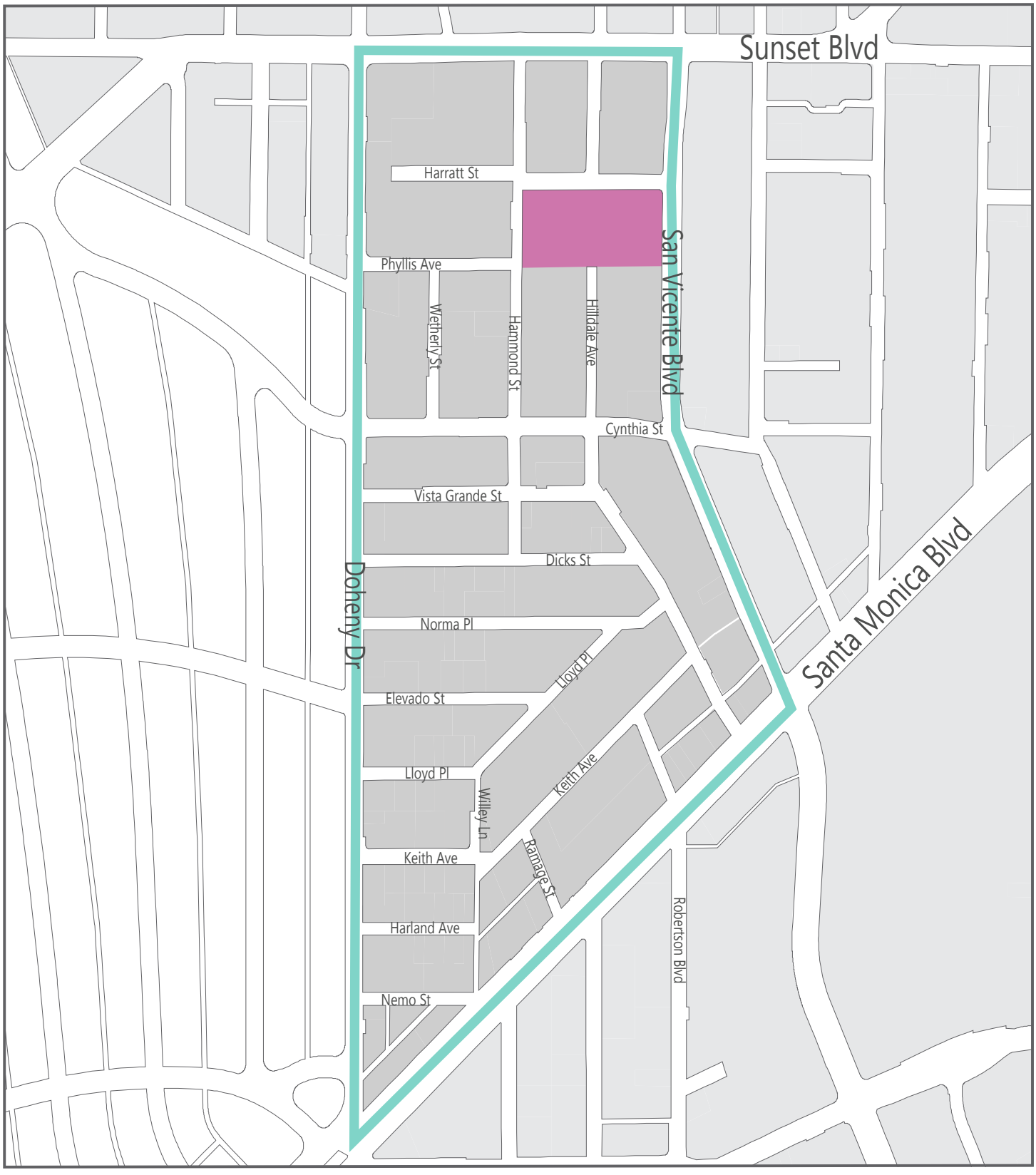
Neighborhood streets with over 2,000 vpd:

- Cynthia Street: 6,600 vpd
- Nemo Street: 2,300 vpd

Traffic volumes for streets with less than 2,000 vpd are presented in **Figure 4**.

When traffic congestion builds on arterial streets, drivers sometimes divert onto the neighborhood streets within the Norma Triangle community. A Citywide Engineering and Speed Survey was conducted in 2014 that collected daily traffic volumes and speeds for all streets within the city boundary. Based on the information collected, traffic volumes on the residential streets within the Norma Triangle neighborhood are comparable to traffic volumes and speeds on residential streets throughout the City.

As the Norma Triangle neighborhood is located within an urbanized area, some drivers sometimes use residential streets in an attempt to avoid congestion. Some trips are due to drivers who are lost, others due to direction from navigation systems, and yet others are drivers who are familiar with the local street system. The goals of the traffic calming recommendations in this report are to manage the traffic regardless of its source, reduce cut-through volumes, and maintain 25 mph (85th percentile) speeds for all residential streets in the Norma Triangle neighborhood.



Not to Scale

Norma Triangle Neighborhood Boundaries

West Hollywood Elementary School

Figure 3

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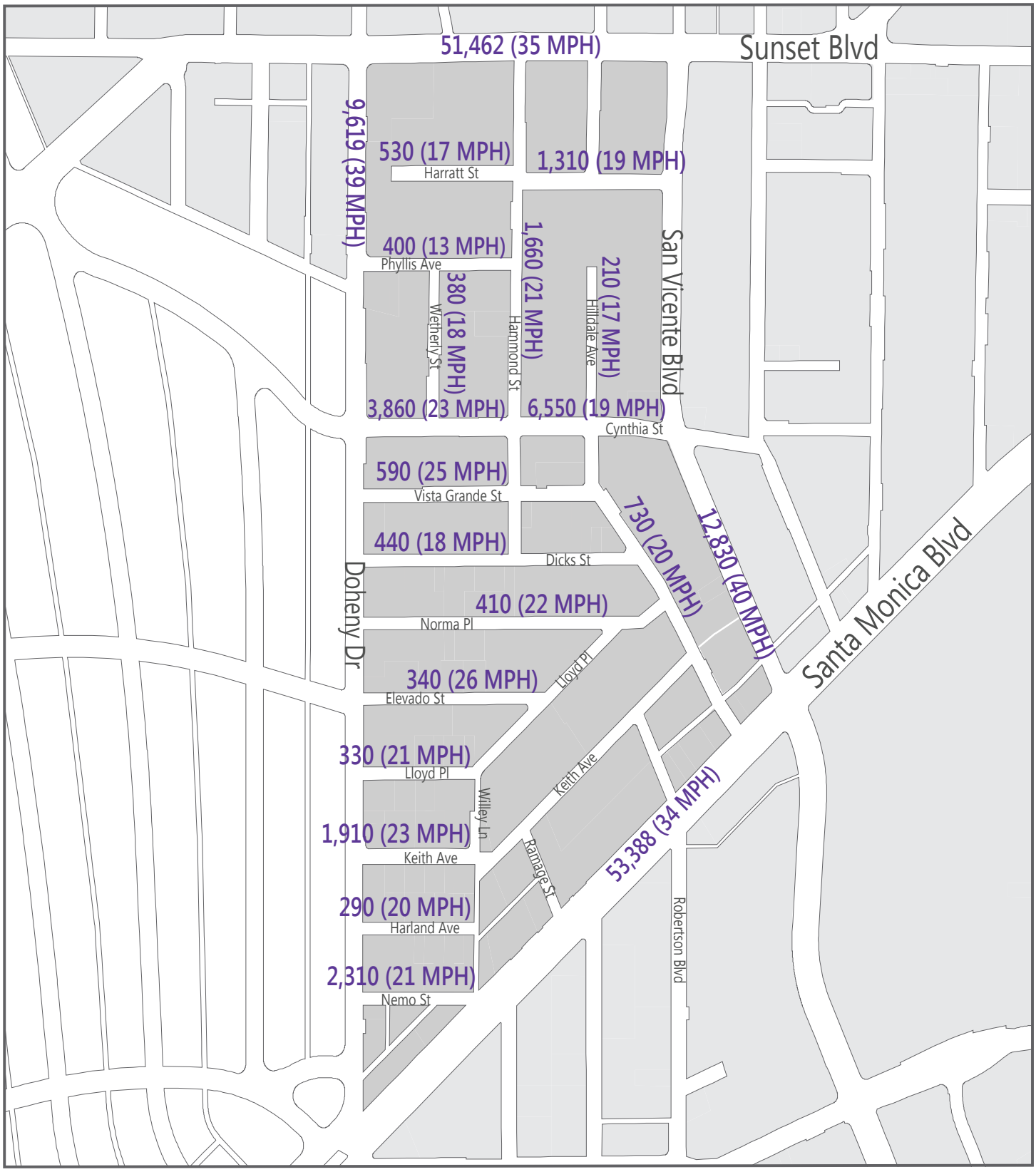
STUDY AREA BOUNDARIES
NORMA TRIANGLE NEIGHBORHOOD

Figure 4 illustrates the existing daily volumes within the neighborhood. As shown, daily traffic volumes range from a low of approximately 200 vpd on Hilldale Avenue to a high of 6,600 vpd on Cynthia Street, within the range of residential streets in other neighborhood streets in the City. Daily traffic counts and 85th percentile speeds[1] were provided by the City as part of the Citywide Traffic Study and are shown in **Appendix A**.

Most streets within the Norma Triangle community – with the exceptions of the arterials bounding the neighborhood – are classified as residential streets with prima facie speed limits of 25 mph. As such, speed limit signs do not need to be posted for the speed limit to be enforced. Speed survey data collected citywide demonstrates that the 85th percentile speeds on the community's residential streets are generally at or below the speed limit. Even on streets where the 85th percentile speeds are below the posted speed limit, some vehicles may travel at speeds that exceed the posted speed limit, causing concern amongst the residents. **Figure 4** illustrates the 85th percentile speeds for the Norma Triangle community.

Parking is permitted on all streets within the study area except for Robertson Boulevard. Permits are required for resident motorists to park on-street between 7:00 PM and 7:00 AM in most locations in residential areas. Parking restrictions vary by street, but for the most part, non-resident or commercial parking is restricted throughout the study areas. Figure 5 displays average street widths within the study area and Figure 6 shows the existing traffic control devices.

[1] 85th percentile speed is the speed at which 85% of the vehicles are traveling at that speed or less during an observation period. This speed is used to establish posted speed limits in accordance with the California Vehicle Code. Setting speeds lower than the 85th percentile speed can be considered a speed trap and speed limits may not be enforceable using radar speed detection.



Not to Scale

2,307 (21 MPH) Daily Vehicle Volumes (85th Percentile Speed)

Figure 4

DAILY VEHICLE VOLUMES AND 85TH PERCENTILE SPEED
NORMA TRIANGLE NEIGHBORHOOD

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Figure 5

APPROXIMATE STREET WIDTH
NORMA TRIANGLE NEIGHBORHOOD

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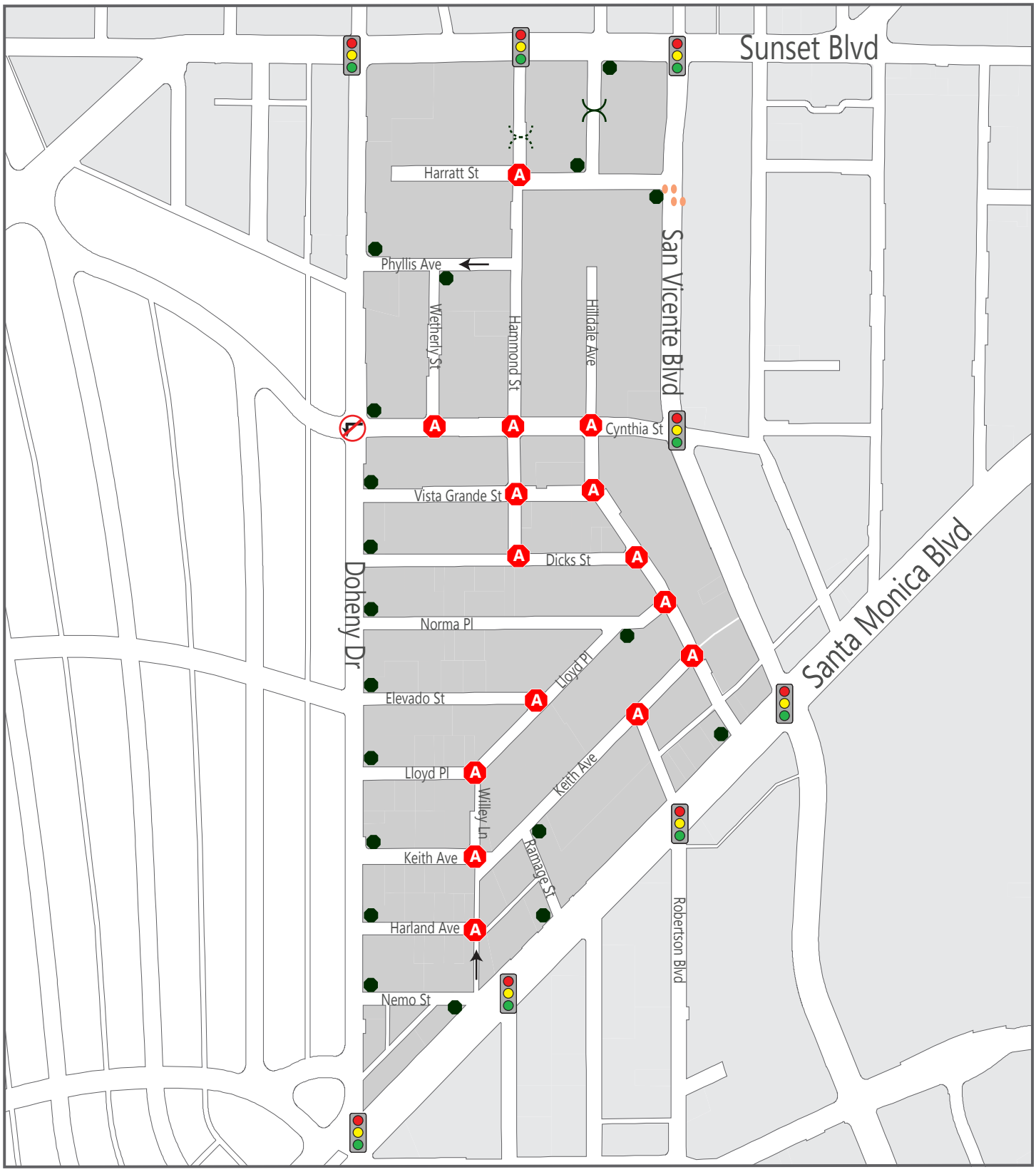

Figure 6

EXISTING TRAFFIC CONTROLS
NORMA TRIANGLE NEIGHBORHOOD

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OTHER CITY PROJECTS

The following development projects may alter the roadway or pedestrian networks in ways that work in conjunction with the recommendations included in this Traffic Calming Study:

- **Development in Norma Triangle:** The City is evaluating/considering development applications across the city, including projects in Norma Triangle. Several development projects are underway at the edges of the Norma Triangle neighborhood:

    - 702 Doheny Drive (Approved)
    - 9001 Santa Monica Blvd (Approved)
    - 837 San Vicente (Approved)
    - 9040 Sunset Boulevard (Approved)
    - 8950 Sunset Boulevard (Under Review)
    - 8920 Sunset Boulevard (Under Review)

    As part of the City review process, new developments undergo a traffic impact analysis to quantify the level of traffic that a project will produce and appropriate mitigations the City may elect to implement.

- **Pedestrian and Bicycle Mobility Plan Update:** The Plan Update will assess the City's pedestrian and bicycle network and facilities and develop recommendations to make West Hollywood a more inviting and comfortable place to walk and bike for residents and visitors alike. The plan is expected to be completed by spring 2017.

In addition to projects within the City of West Hollywood, the City of Beverly Hills is reconstructing a portion of Santa Monica Boulevard between Doheny Drive and Wilshire Boulevard. As this portion of Santa Monica Boulevard is immediately adjacent to the Norma Triangle neighborhood, it could disrupt traffic patterns within the neighborhood. West Hollywood staff will monitor the effects of the construction to determine if temporary treatments are necessary.

3. COMMUNITY OUTREACH

MEETING #1: APRIL 25, 2016

The initial community meeting for the Norma Triangle neighborhood was held on Monday, April 25, 2016 at 7:00 PM at the West Hollywood Library. The meeting was attended by approximately 25 residents. Notices for the meeting were mailed by City of West Hollywood staff to all addresses within the study area.

The workshop provided community members a venue to share their concerns about traffic speed and volume on residential streets in their community. Maps illustrating the existing traffic volumes and speeds in their neighborhood were provided for the participants to review and provide comments (**Figures 4, 5 and 6**).

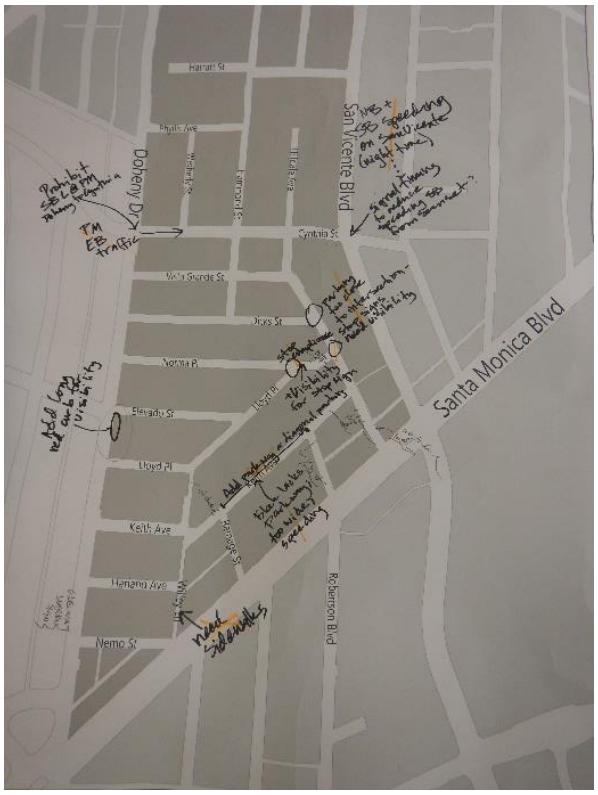


Figure 7. Area of Concern Identified at Community Meeting

The meeting began with a welcome by City staff and a brief presentation by Fehr & Peers. Residents provided feedback, identified concerns and proposed potential traffic calming solutions that could be installed in their community. The format included an open discussion amongst attendees of problems and ideas to improve conditions within the community. City staff and Fehr & Peers facilitated the discussion and documented the concerns and solutions that were raised. **Figures 7 and 8** depict feedback provided by meeting attendees.

Key issues raised by residents during the initial meeting include:

<u>Traffic & Speeding in the Neighborhood</u>

- Speeding in the neighborhood
- Poor sight lines between pedestrians and drivers at intersections
- Wrong-way driving and lack of sidewalks on Willey Lane
- High speeds on Doheny Drive, San Vicente Boulevard, and Keith Avenue
- High speeds and traffic congestion on Cynthia Street during peak hours
- School related congestion on Hammond Street near West Hollywood Elementary School
- Striping and paint markings that are not visible

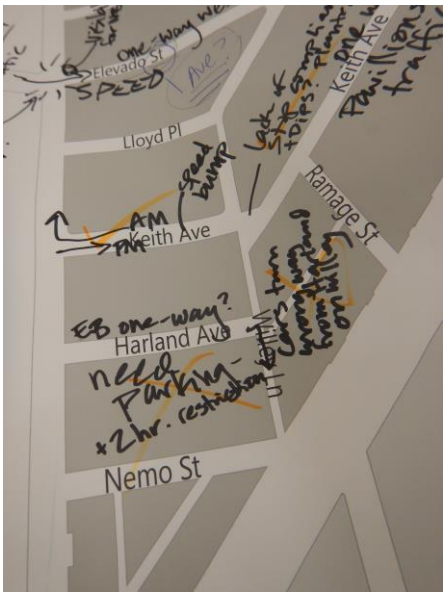


Figure 8. Areas of Concern and Potential Solutions Provided by Residents.

Driver Behavior/Enforcement

- Additional enforcement for speeding is needed on neighborhood streets
- Stop sign running at intersections throughout the neighborhood is a concern
- Drivers do not always yield to pedestrians who are crossing Hammond Avenue at Dicks Street and Keith Avenue
- Parking too close to intersections, impeding stop sign visibility
- Visibility is a concern for drivers turning left from Elevado Avenue to Doheny Drive

Participants were encouraged to share their ideas for improving the conditions in the neighborhood. Several recommendations were made that the project team considered in developing the traffic calming plan including:

Traffic Calming Ideas (within Neighborhood)

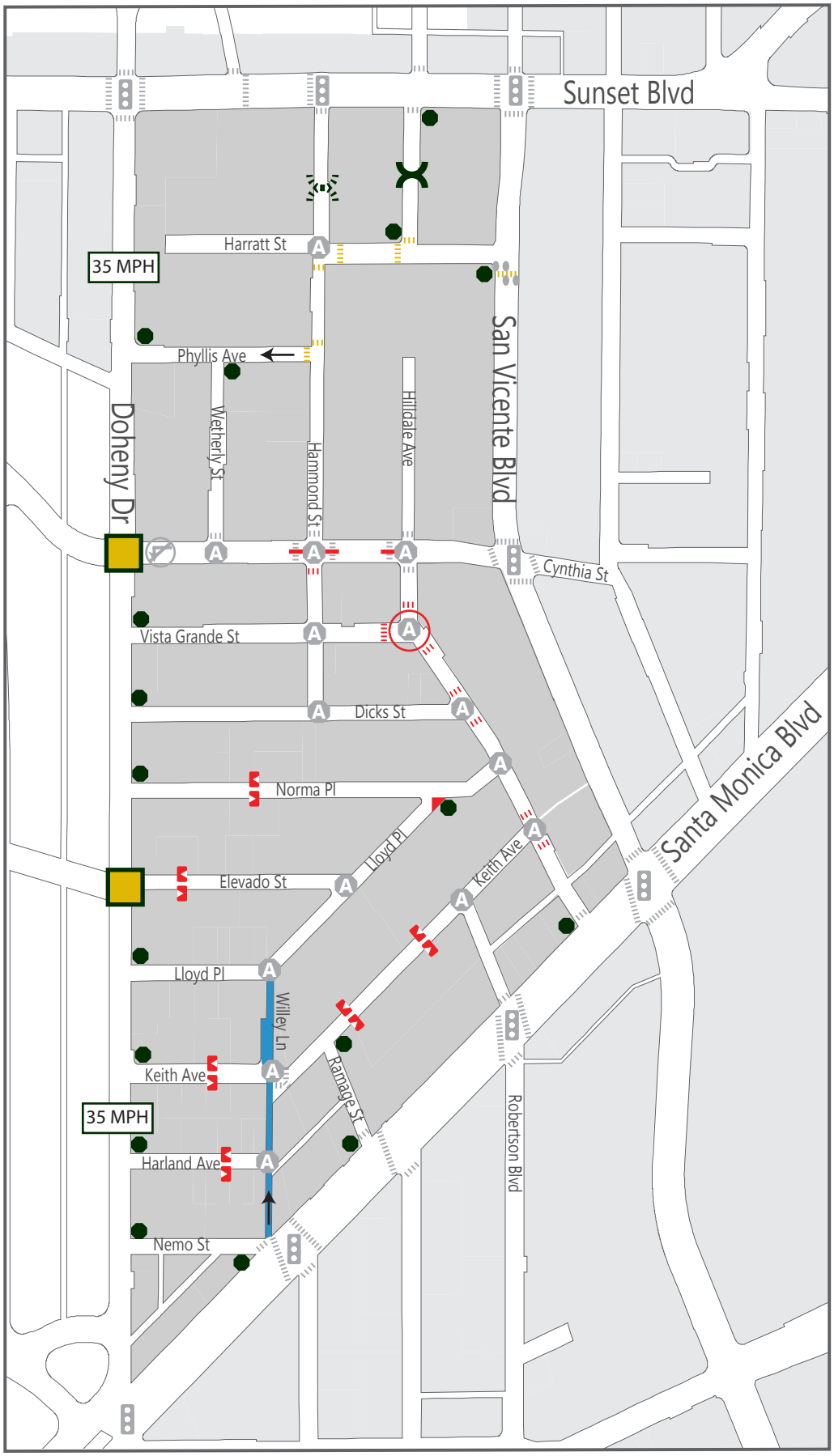
- Adding speedbumps throughout the neighborhood
- Adding or restriping high visibility crosswalks throughout the neighborhood to improve pedestrian visibility at intersections
- Adding a parkway or diagonal parking on Keith Avenue to reduce speeding
- Adding sidewalks on Willey Lane
- Adding diagonal parking on Cynthia Street to reduce speeding

MEETING #2: DECEMBER 14, 2016

A second community meeting was held on Wednesday, December 14, 2016 at 7:00 PM at the West Hollywood Library to provide residents with an overview of the potential solutions that had been developed. Notices for the meeting were mailed to all addresses within the study area.

A brief presentation was given by the City and Fehr & Peers highlighting the recommended traffic calming treatments, as shown in **Figure 9**, and discussing the petition process. Following the presentation, participants were encouraged to ask questions and share their thoughts on the recommendations. There was general support for the recommendations in **Figure 9** and residents asked that several additional solutions be analyzed that might alleviate the existing and potential traffic concerns in the Norma Triangle neighborhood:

- Signal timing at the intersection of Cynthia Street & San Vicente Boulevard to reduce queuing on the eastbound approach
- The size and design of the proposed traffic circle at Vista Grande Street & Hilldale Avenue
- The potential for adding a speed lump on Vista Grande Street between Doheny Drive and Hammond Street



Existing Traffic Controls

- Signalized Intersection
- All Way Stop Intersection
- No Left Turn (7-9 AM, 4-7 PM)
- Side Street Stop-Controlled
- Street Closure from 7 PM -7 AM
- Street Closure
- One-Way Street
- High Visibility Crosswalk
- Yellow High Visibility Crosswalk
- In-Road-Warning-Lights

Potential Treatments

- Traffic Circle with All-Way Stop
- Speed Lumps
- Textured Pavement/Shared Street* †
- Bulb-out*
- Pedestrian Island †
- High Visibility Crosswalk †
- 35 MPH Radar Feedback Sign †
- City of West Hollywood to explore intersection treatment options in coordination with City of Beverly Hills

*Contingent on further engineering review

† Crosswalks, pedestrian islands, radar feedback signs, and shared streets/textured pavement can be installed without the neighborhood petition process

Not to Scale

Figure 9

INITIAL PROPOSED TREATMENTS
PRESENTED: DECEMBER 14, 2016
NORMA TRIANGLE NEIGHBORHOOD

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- The potential for additional speed lumps on Keith Avenue and Harland Avenue between Doheny Drive and Willey Lane
- Converting streets within the neighborhood to 1-way streets to reduce speeding and cut-through volumes
- Crosswalks and parking on Hammond Avenue

SIGNAL TIMING AT THE INTERSECTION OF CYNTHIA STREET & SAN VICENTE BOULEVARD

Some meeting attendees had an opinion that the signal timing at Cynthia Street & San Vicente Boulevard creates eastbound queuing on Cynthia Street, which creates other traffic issues on Cynthia Street in the neighborhood. The City has reviewed the signal timing at this intersection recently and optimized timing to reduce delay for all approaches. Several years ago, the City removed the "No Right Turn on Red" sign for eastbound vehicles on Cynthia Street, which provided some improvement in traffic flow. Any additional changes to the signal timing at this intersection that improves vehicle throughput on Cynthia Street may encourage additional vehicles to use this route, which is counter to the goal of this plan. Therefore, the City will not include a change in signal timing as part of this plan, but may adjust signal timing in the future as needed.

TRAFFIC CIRCLE AT VISTA GRANDE STREET & HILLDALE AVENUE

A traffic circle at Vista Grande Street & Hilldale Avenue was included in the initial recommendations presented at meeting #2 to increase safety at the intersection. Traffic circles are placed in the center of intersections to reduce traffic speed and discourage cut through traffic. Community members requested additional information about the design of the proposed traffic circle to get a better understanding of the impact on parking and the size and look of the circle. The preliminary design for the circle is shown in Figure 10. The installation of the traffic circle may result in the loss of several parking spaces. However, the City cannot determine the precise extent of the impact on parking until further studies are undertaken. The design of the circle is large enough to accommodate landscaping, although the final landscaping design of the circle has not yet been determined.

Figure 10. Preliminary Design of the Traffic Circle at Hilldale Avenue & Vista Grande Street

SPEED LUMPS ON VISTA GRANDE STREET

The City received a comment that speeding is a concern on Vista Grande Street between Doheny Drive and Hammond Street. The proposed treatment on Vista Grande Street to address this concern would be to add a speed lump. In order to minimize the likelihood of vehicles and speeding diverting from Vista Grande Street to adjacent streets, the draft plan proposes installing a speed lump on Dicks Street between Doheny Drive and Hammond Street.

ADDITIONAL SPEED LUMPS ON KEITH AVENUE AND HARLAND AVENUE

The intial proposals called for one speed lump on both Keith Avenue and Harland Avenue between Doheny Drive and Willey Lane. Some meeting attendees requested additional lumps be installed on these blocks. Speed lumps are typically installed at least 100 feet from the nearest intersection, and multiple speed lumps are typically spaced at least 250 feet from each other. Due to the short length of these blocks, each less than 500 feet, they are not well suited to more than one speed lump. However, the installation of a single speed lump on these blocks should reduce speeding and collisions based on experience at other sites.

CONVERTING STREETS TO 1-WAY

Several community members were interested in altering existing travel patterns by implementing a network of one-way streets within the neighborhood. Traffic volumes on streets throughout the neighborhood are relatively evenly distributed. Converting streets to 1-way would shift traffic patterns, increasing volumes on some streets and decreasing on others. Converting streets into 1-ways will also increase speeds because there is no friction from traffic moving in the opposite direction. Furthermore, 1-way streets may make it more difficult for residents and guest to access their destinations within the neighborhood, as the most direct route may no longer be possible. In addition to reducing speeds, 2-way streets have also been found to improve safety and increase property values compared to 1-way streets[2]. For these reasons, the City does not recommend including a conversion to 1-way streets in the traffic calming plan.

CROSSWALKS AND PARKING ON HAMMOND AVENUE

Parking is permitted on the eastside of Hammond Avenue within some intersections, which can reduce visibility between pedestrians and motorist. The initial proposals called for new high-visibility crosswalks on Hammond Avenue at Dicks Street and Keith Avenue in response to comments from the community that cars do not always yield to pedestrians who are crossing Hammond Avenue. The new crosswalks will alert drivers to the presence of pedestrians at these intersections. Additionally, the City will analyze parking adjacent to, and within,

[2] "The Many Benefits of Making One-Way Streets Two-Way". Jaffe, Eric. *City Lab.* Published: July 20, 2015. Accessed; January 11, 2017. http://www.citylab.com/cityfixer/2015/07/the-many-benefits-of-making-one-way-streets-two-way/398960/

intersections along Hammond Avenue. The City will also study the position of stop signs on the street to ensure they can be easily seen by approaching drivers.

PARTIAL CLOSURE AT KEITH AVENUE & ROBERSTON BOULEVARD

At the initial meeting, residents had asked that the City evaluate the potential for a partial closure at Keith Avenue & Robertson Boulevard in order to reduce vehicles cutting through the neighborhood. This closure would have permitted vehicles to turn from Keith Avenue onto Robertson Boulevard to travel south, but would have restricted vehicles from turning onto Keith Avenue from Robertson Boulevard. Vehicle turning movement counts were taken at Keith Avenue & Roberston Boulevard and several nearby intersections in June 2016, and are included in Appendix A. A partial closure at the intersection may not reduce cut-through traffic, as vehicles may shift their travel to adjacent streets in the neighborhood. There is also the potential that the partial closure could lead to increase travel on the alley between Robertson Boulevard and Hilldale Avenue as vehicles attempt to travel north through the neighborhood. Increased use of the alley, could lead to potential safety concerns, as the alley is not designed to handle through traffic. Therefore, the City does not recommend a partial closure at Keith Avenue & Robertson Boulevard.

ADDITIONAL MEASURES ON KEITH AVENUE

Residents expressed concerns about speeding on Keith Avenue between Willey Lane and Robertson Boulevard., and asked that the City analyze if additional parking can be permitted on Keith Avenue to narrow the travel way. Currently, parallel parking is permitted on one side of the street. The City evaluated the addition of parallel parking on both sides of the street or the replacement of the existing parallel parking with angled parking. However, due to the narrow width of the street in this location, approximately 30 feet, there is not sufficient space to add parking. Widening the parkway to narrow the travel way may be feasible but would be costly. The City is recommending the installation of speed humps, to be discussed more below, as an initial treatment, and will continue monitoring the street to determine if further action is needed.

ANGLED PARKING ON CYNTHIA STREET

The City had previously studied the potential for angled parking on Cynthia Street as a means of traffic calming. At that time, the proposal did not receive sufficient support from local residents to move forward. During this process, residents did not express interest in angled parking on Cynthia Street, and the City does not recommend angled parking on Cynthia Street at this time.

4. RECOMMENDATIONS & COST ESTIMATES

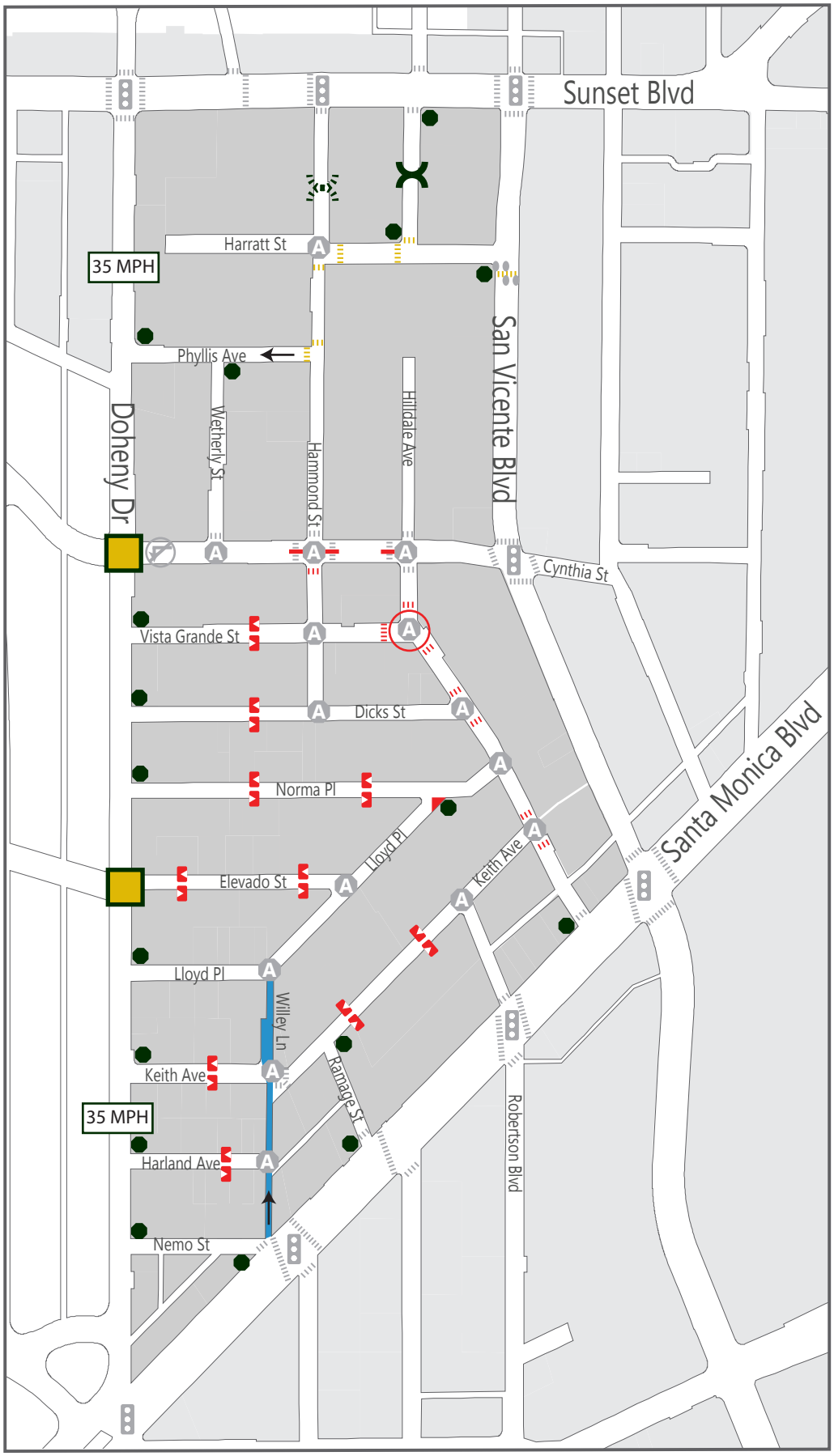
RECOMMENDATIONS

The recommendations for traffic calming in the Norma Triangle community were developed based on the assessment of existing data collected, field observations, and community input. Input from both community meetings helped the team identify the key traffic-related issues in the community.

As a robust, vibrant, and economically thriving community, West Hollywood suffers from traffic generated within and moving through the City. Concerns were raised about traffic on the major arterials surrounding this neighborhood, but because the City's Neighborhood Traffic Management Program (NTMP) aims to reduce cut-through and speed on *residential streets* and is not designed to address traffic congestion on major arterials, the following recommendations are targeted towards the residential streets. Treatments for Santa Monica Boulevard and Sunset Boulevard that may aid in reducing congestion and/or improving pedestrian safety are outside the scope of this plan and addressed in other City processes.

By installing traffic calming devices in the Norma Triangle neighborhood, the attractiveness of cutting through would be reduced; and therefore, more vehicles would remain on the major arterials. The traffic calming tools identified will both slow traffic speeds and reduce the traffic volumes on the streets identified during both community workshops. The NTMP proscribes that certain treatments can be installed by the City without requiring residents to circulate a petition. Of the recommended treatments for Norma Triangle, the following items do not require a petition: pedestrian islands, textured pavement to reduce speeds and create a shared street, radar feedback signs, and high visibility crosswalks, while all other proposals can only be installed after the neighborhood petition process.

Figure 11 shows the final traffic calming plan elements for Norma Triangle. **Figures 12 through 18** show examples of the devices being recommended. Detailed descriptions of the recommendations and estimated costs to construct these devices are provided in in the next section of this report.



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Potential Treatments

- Traffic Circle with All-Way Stop
- Speed Lumps
- Textured Pavement/Shared Street* †
- Bulb-out*
- Pedestrian Island †
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- 35 MPH Radar Feedback Sign †
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† Crosswalks, pedestrian islands, radar feedback signs, and textured pavement can be installed without the neighborhood petition process

Not to Scale

Figure 11
FINAL PROPOSED TREATMENTS
NORMA TRIANGLE NEIGHBORHOOD

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Willey Lane: Willey Lane is a 1-way northbound street between Santa Monica Boulevard and Lloyd Place. Average vehicular volumes and speed are not available for Willey Lane. Community members expressed concerns about the lack of sidewalks on Willey Lane. Currently, Willey Lane is not wide enough to accommodate sidewalks, with portions as narrow as 15 feet. Textured pavement on Willey Lane could be used to alert vehicles of the potential presence of pedestrians in the street and reduce vehicular speed, thus creating a shared-street designed to be used by vehicles and pedestrians. **To reduce speeding and create a shared-street environment, the installation of textured pavement is recommended on Willey Lane, pending engineering review and maintenance considerations.**

Figure 12. Example of Textured Pavement

Harland Avenue: Harland Avenue is an east/west street and carries approximately 300 vpd between Doheny Drive and Willey Lane. The 85th percentile speed along Harland Avenue is 20 mph. Community members expressed concerns about speeding on this street. **To reduce speeding, one set of speed lumps are recommended between Doheny Drive and Willey Lane.**

Keith Avenue: Keith Avenue is an east/west street. The street currently carries approximately 1,900 vpd between Doheny Drive and Willey Lane. The 85th percentile speed along Keith Avenue in this area is 23 mph. Community members expressed concerns about traffic volumes and speeding on this street. **To reduce speeding, one set of speed lumps is recommended between Doheny Drive and Willey Lane and two sets of speed lumps are recommended between Willey Lane and Robertson Avenue.**


Figure 13. Example of a Speed Lump

Elevado Avenue: Elevado Avenue is an east/west street and carries approximately 300 vpd between Doheny Drive and Hilldale Avenue. The 85th percentile speed along Elevado Avenue in this area is 26 mph, which is just above the prima facie speed limit of 25 mph. Community members expressed concerns about speeding on this street. **To reduce speeding, two sets of speed lumps are recommended on Elevado Avenue between Doheny Drive and Hilldale Avenue.**

Lloyd Place: Lloyd Place is an east/west street between Willey Lane and Norma Place. Average vehicular volumes and speed are not available for Lloyd Place. Community members expressed concerns about speeding, stop compliance, and stop sign visibility at the intersection of Lloyd Place and Norma Place. **To decrease speeding and improve stop compliance, a bulb-out is recommended at the intersection of Lloyd Place & Norma Place, pending engineering review.**

Figure 14. Example of a Bulb-Out

Norma Place: Norma Place is an east/west street and carries 400 vpd between Doheny Drive and Lloyd Place. The 85th percentile speed along Norma Place in this area is 22 mph. Community members expressed concerns about high speeds on this street. **To reduce speeding, two sets of speed lumps are recommended on Norma Place between Doheny Drive and Lloyd Place.**

Hilldale Ave: Hilldale Avenue is a north/south street and carries 700 vpd between Cynthia Street and Santa Monica Blvd. The 85th percentile speed along Hilldale Avenue is 20 mph. Community members highlighted the intersections between Cynthia Street and Keith Avenue as an area of concern. **Therefore, high visibility crosswalks are recommended at the intersections of Hilldale Avenue & Vista Grande Street, Hilldale Avenue & Dicks Street, and Hilldale Avenue & Keith Avenue. A traffic circle is recommended at the intersection of Hilldale Avenue & Vista Grande Street.**

Figure 15. Example of a High Visibility Crosswalk

Vista Grande Street: Vista Grande Street is an east/west street in the Norma Triangle neighborhood and carries 600 vpd. The 85th percentile speed along Vista Grande Street is 25 mph. Community members expressed concerns about speeding. **To reduce speeding, one sets of speed lumps is recommended on Vista Grande Street between Doheny Drive. In addition, to minimize the likelihood of increasing speeding on Dicks Street, located one block south of Vista Grande Street, one set of speed lumps is recommended on Dicks Street.**

Figure 16. Example of a Traffic Circle

Cynthia Street: Cynthia Street is an east/west street in the Norma Triangle neighborhood and carries 3,900 vpd between Doheny Drive and Hammond Street and 6,500 vpd between Hammond Street and San Vicente Boulevard, the highest of any residential street in the study area. The 85th percentile speeds along Cynthia Street range from 23 mph to 19 mph. Community members highlighted the intersections with Hammond Street and Hilldale Avenue as areas of concern for crossing pedestrians. **Therefore, pedestrian islands at Cynthia Street & Hilldale Avenue and Cynthia Street & Hammond Street are recommended. In addition, a high visibility crosswalk is recommended at the intersection of Cynthia Street & Hammond Street**.

Figure 17. Example of a Pedestrian Island

Doheny Drive: Doheny Drive is a north/south street and carries 9,600 vpd between Santa Monica Boulevard and Sunset Boulevard. The 85th percentile speed along Doheny Drive is 39 mph, which is above the speed limit of 35 mph, and community members expressed concerns about speeding on this street. Portions of Doheny Drive are shared with the City of Beverly Hills, and any treatment on the street itself will require further coordination with the City of Beverly Hills. The City of West Hollywood and the City of Beverly Hills will consider additional treatments that can be implemented to reduce speeding, with particular focus on the intersections between Doheny Drive and Elevado Street and between Doheny Drive and Cynthia Street. **In the interim period, two radar speed feedback signs are recommended on Doheny Drive.**

Figure 18. Example of a Radar Speed Feedback Sign

WEST HOLLYWOOD ELEMENTARY SCHOOL ACCESS

The recommended treatments on Cynthia Street were installed in part to address concerns for children crossing at Hammond Street and Hilldale Avenue on their way to and from West Hollywood Elementary School. The recommended pedestrian islands on Cynthia Street provide a refuge for crossing children and will narrow the travel way to reduce speeds at the intersection, thereby improving safety.

Table 1 summarizes the street segments where traffic calming treatments are being proposed.

TABLE 1: STREET SEGMENT VPD, 85TH PERCENTILE SPEED AND PROPOSED TREATMENTS

Street	Segment	Vehicles per Day	85th Percentile Speed (mph)	Proposed Treatment
Willey Lane	Santa Monica Boulevard to Lloyd Place	Not Available	Not Available	Textured pavement
Harland Avenue	Doheny Drive to Willey Lane	300	20	One set of speed lumps
Keith Avenue	Doheny Drive to Robertson Boulevard	1,900	23	Three sets of speed lumps
Norma Place	Doheny Drive to Lloyd Place	400	22	One set of speed lumps
Cynthia Street	Doheny Drive to Hammond Street	3,900	23	Pedestrian islands at Hilldale Avenue and Hammond Street
Hilldale Avenue	Vista Grande Street to Santa Monica Boulevard	700	20	High visibility crosswalks at Dicks Street and Keith Avenue, and traffic circle at Vista Grande Street
Elevado Avenue	Doheny Drive to Lloyd Place	300	26	Two sets of speed lumps
Lloyd Place	Elevado Avenue to Norma Place	Not Available	Not Available	Bulb-out at Lloyd Place and Norma Place
Vista Grande	Doheny Drive to Hilldale Avenue	600	25	One set of speed lumps
Dicks Street	Doheny Drive to Hilldale Avenue	400	18	One set of speed lumps

IMPLEMENTATION AND TESTING

Following the collection of petitions that demonstrate a majority community support, Transportation Commission review, and approval by City Council, elements of the traffic calming plan may be temporarily implemented in the community. These temporary measures will allow for evaluation of the effectiveness of the traffic calming measures, changes in traffic patterns as a result of implementation, and assessment of community support or concerns about the installed devices. The temporary traffic calming devices may be tested for a period of two to six months, followed by potential modification or relocation during the testing period as necessary in order to fully vet the impacts and benefits of each device.

During the testing period, the City will collect speed and traffic volume data near the location of the temporary installations. Should the implementation of the temporary traffic calming devices result in diversion on parallel or adjoining streets, the City will review the overall traffic calming plan and adjacent plans to determine if measures are planned for the community as a whole to offset those impacts. If diversion is occurring on routes where traffic calming is not planned, then additional traffic calming measures may be recommended and tested to reduce potential increases in traffic or speed on these local streets. The City will work with the community to resolve potential issues prior to installing permanent devices in the Norma Triangle neighborhood.

COST ESTIMATES

Based on the final traffic calming recommendations outlined in this section, cost estimates were prepared for the study area. **Table 2** summarizes the estimated costs to construct the recommendations. The traffic calming elements identified in **Figure 10** have a collective construction cost of approximately **$521,000** to install, which does not include costs to relocate utilities, acquire right-of-way, landscape or irrigate, or provide for long-term maintenance.

None of the devices recommended will likely need additional environmental review. Therefore, the estimated cost does not include environmental studies or final design costs. It is assumed that typical design drawings can be used to design and construct most of these elements.

To establish the costs of the traffic calming concept plan, typical costs were used for each of the devices recommended based on the following:

- Neighborhood Traffic Circles: $40,000 per intersection/$50,000 including contingency
- Speed Lumps: $5,000 per lump/$6,250 including contingency
- Bulb-out: $15,000 per corner/$18,750 including contingency
- Pedestrian Island: $15,000 per approach/$18,750 including contingency
- Textured Pavement: $275 per square yard/$375 including contingency
- High Visibility Crosswalk: $3,000 per crosswalk/$3,750 including contingency
- Radar Feedback Sign: $3,000 per sign/$3,750 including contingency

TABLE 2: FINAL TRAFFIC CALMING RECOMMENDATIONS AND ESTIMATED CONSTRUCTION COSTS

	Recommendation	Purpose	Anticipated Benefit	Estimated Base Cost	Estimated Cost with 25% Contingency
1.	Install high visibility crosswalks on Hammond Avenue at Cynthia Street; Hilldale Avenue at Dicks Street, and Keith Avenue.	Increase driver awareness of pedestrians at crossings.	Improves crosswalk visibility and improve driver yielding to pedestrians.	$15,000	$18,750
2.	Install speed lumps on Harland Avenue, Keith Avenue, Elevado Avenue, Norma Place, Dicks Street, and Vista Grande Street.	Reduce traffic speed and discourage cut-through traffic.	Reduces speed, which will also discourage cut-through traffic. Speed lumps are more favorable than humps for emergency vehicles.	$50,000	$62,500
3.	Install a traffic-circle with all-way stop and high visibility crosswalks at Hilldale Avenue & Vista Grande Street.	Narrow intersections and reduce traffic speeds through intersections. Existing stop signs will remain in place with circles.	Shown to improve safety while reducing speeds at intersections and between circles. Visual impedance helps discourage cut-through traffic.	$40,000	$50,000
4..	Install pedestrian islands on Cynthia Street at the intersections with Hammond Street (east and west approaches) Hilldale Avenue (west approach).	Improve safety for crossing pedestrians at intersections.	Narrows the travel way to reduce speeds and provide a refuge area for pedestrians crossing the street.	$45,000	$56,250
5.	Install bulb-out at intersection of Lloyd Place & Norma Place.	Visually and physically narrow the intersection approach.	Narrows the travel way to discourage cut-through traffic, reduce turning speeds at intersections, and reduce the crossing distance for pedestrians.	$15,000	$18,750

TABLE 2: FINAL TRAFFIC CALMING RECOMMENDATIONS AND ESTIMATED CONSTRUCTION COSTS

	Recommendation	Purpose	Anticipated Benefit	Estimated Base Cost	Estimated Cost with 25% Contingency
6.	Create a shared street on Willey lane, including the installation of textured pavement.	Reduce speed and alert vehicles of the potential presence of pedestrians.	Lower traffic speeds, improve safety, and improve roadway aesthetic.	$350,000	$437,500
7.	Install two radar feedback signs on Doheny Drive.	Increase driver awareness of speed.	Lower traffic speeds.	$6,000	$7,500
			TOTAL ESTIMATED RELATED COSTS	**$521,000**	**$651,250**

OTHER MEASURES

In addition to the specific recommendations included in **Figure 11** several supporting improvements could be installed, without a community survey or additional analysis, to address speeding and cut-through issues:

- **Install Speed Limit Signs and Pavement Markings:** Although the majority of the reported speeds within the community were within the 25 mph prima facie speed limit, installation of speed limit signs at key entry points would enforce the residential neighborhood speeds.

- **Traffic Calmed Area Signs:** In lieu of or in conjunction with speed limit signs, it is also feasible to install "Traffic Calming Devices Ahead" or "Traffic Calming Area" signs at key entry points to enforce the slower residential speeds desirable within the community.

Figure 19. Traffic Calming Sign

- **Improve Traffic Signal Timing and Operations Surrounding the Study Area:** The City of West Hollywood and City of Beverly Hills maintain the traffic signals surrounding the Norma Triangle community, and continually monitor performance to improve traffic flow. Continued monitoring is recommended to reduce the potential for cut-through traffic through Norma Triangle.

- **Improve Pedestrian and Bicycle Access within the Norma Triangle neighborhood:** An additional way to decrease the traffic congestion surrounding the Norma Triangle community is to reduce the reliance on autos and encourage more pedestrian and bicycle trips. The City is currently updating the Pedestrian & Bicycle Mobility Plan, which will provide specific recommendations for the Norma Triangle neighborhood.

Some of these improvements may be implemented as part of other City projects. Traffic signal improvements, timing and pedestrian treatments are not included in the Traffic Calming program and would therefore be funded through other City resources.

5. NEXT STEPS

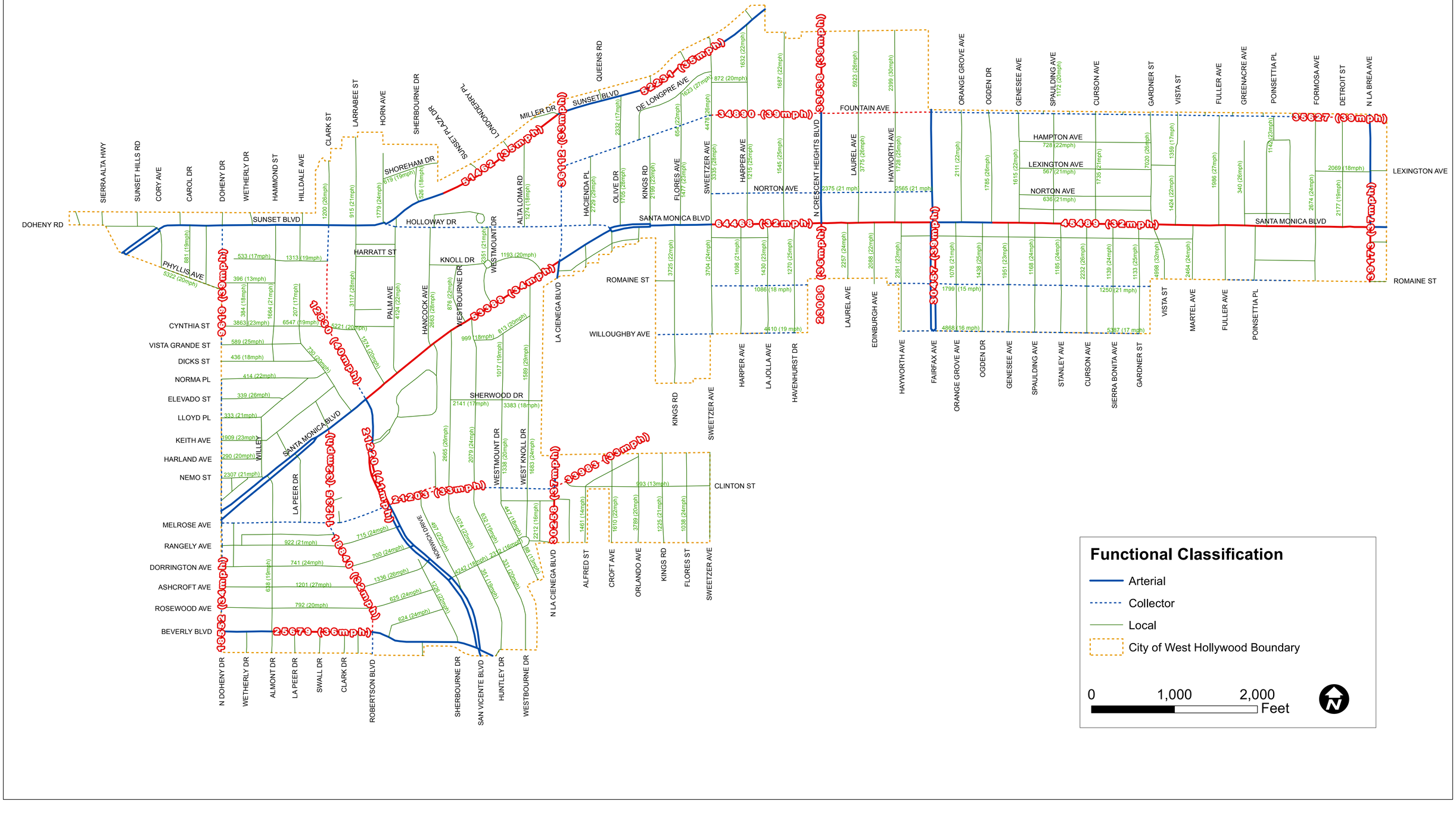
This report summarizes the traffic calming recommendations for the Norma Triangle community. Approval of the plan, funding and implementation of the improvements are the subsequent steps of this project. As the planning process concludes with this report, City of West Hollywood staff will present the report to the Transportation Commission and City Council as an informational item.

Following the presentation to Transportation Commission and City Council, community members will be tasked with circulating petitions within their community for the recommended traffic calming devices. The majority of the residents within the sphere of influence of the traffic calmed area (51% or more) will need to sign the petition in order for the City Council to consider implementation of the devices within that area.

APPENDIX A:

TRAFFIC COUNTS

City of West Hollywood Daily Traffic Volumes and 85th Percentile Speeds



ITM Peak Hour Summary

Prepared by:

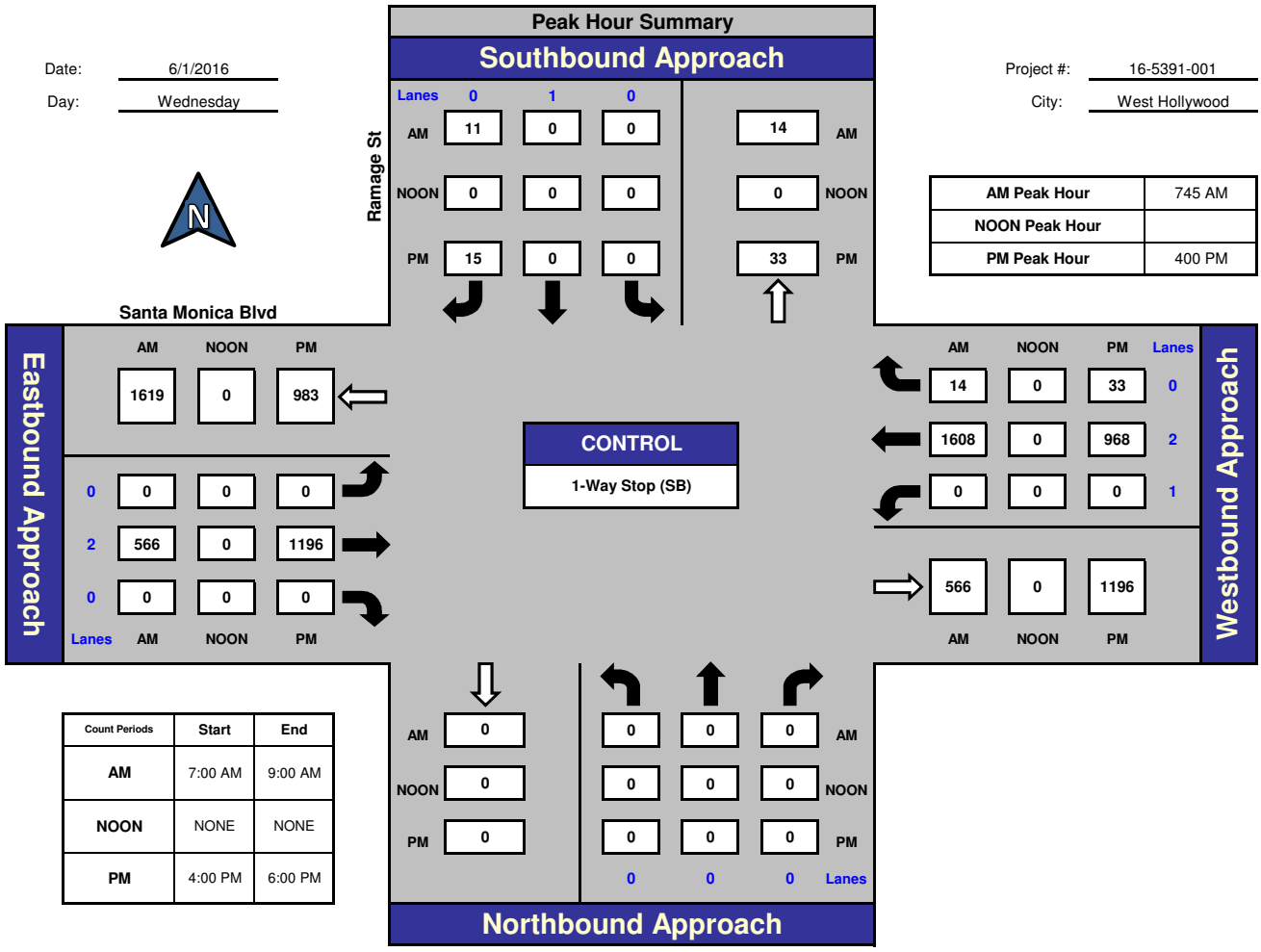
National Data & Surveying Services

Ramage St and Santa Monica Blvd , West Hollywood

Date: 6/1/2016
Day: Wednesday

Project #: 16-5391-001
City: West Hollywood

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	400 PM



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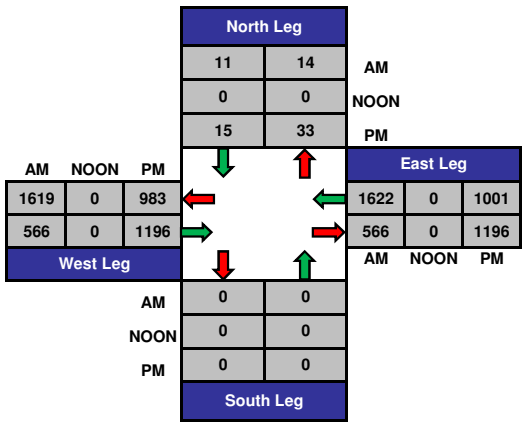
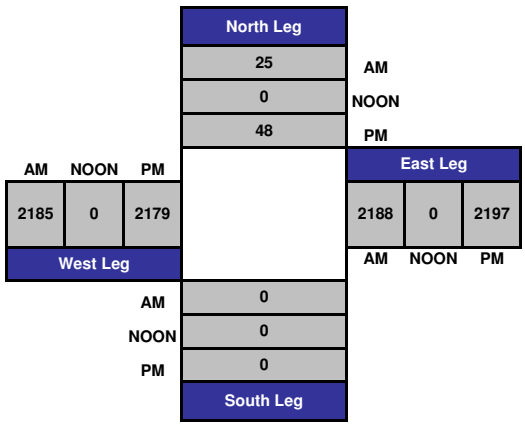
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

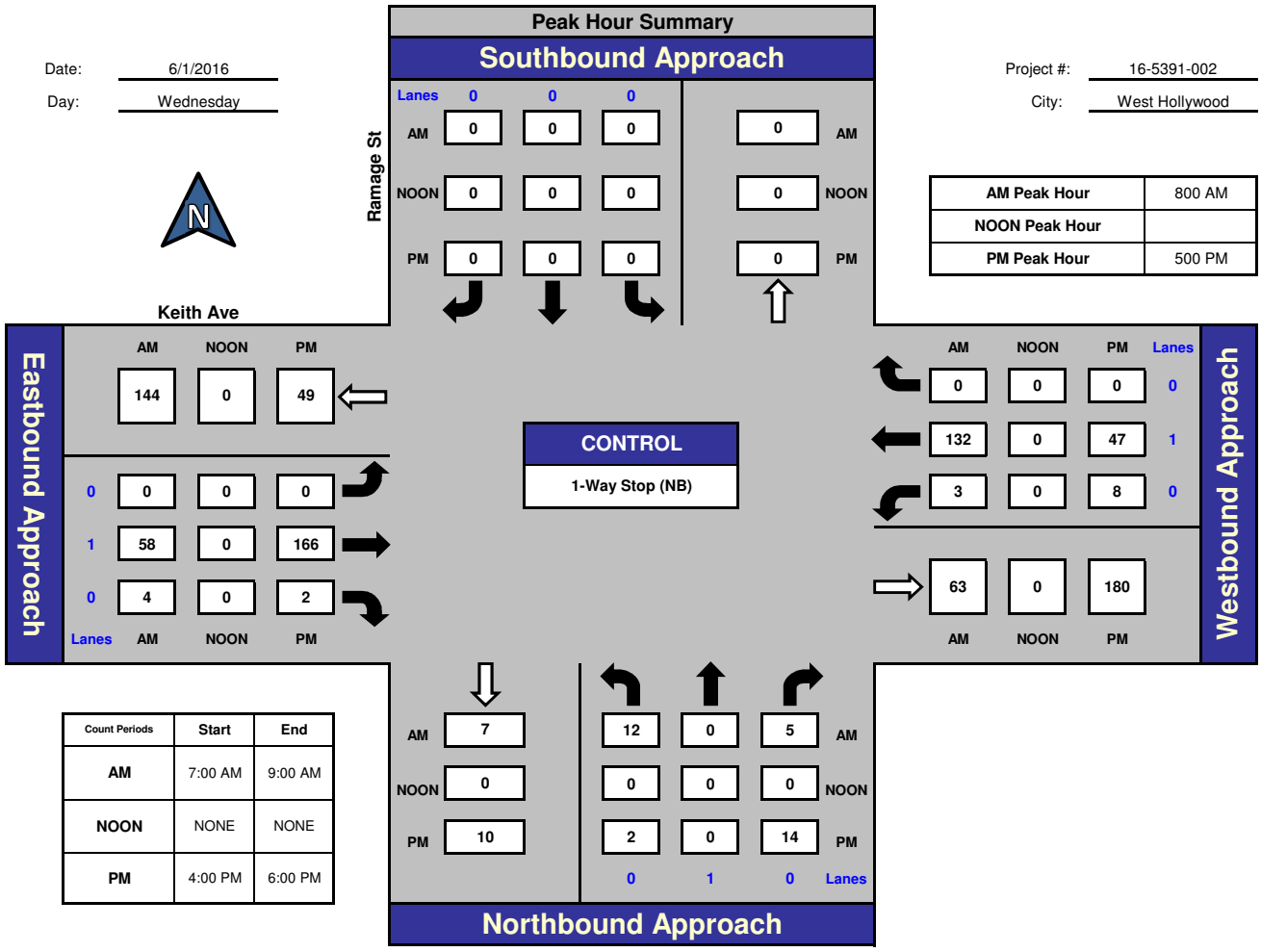
National Data & Surveying Services

Ramage St and Keith Ave , West Hollywood

Date: 6/1/2016
Day: Wednesday

Project #: 16-5391-002
City: West Hollywood

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM



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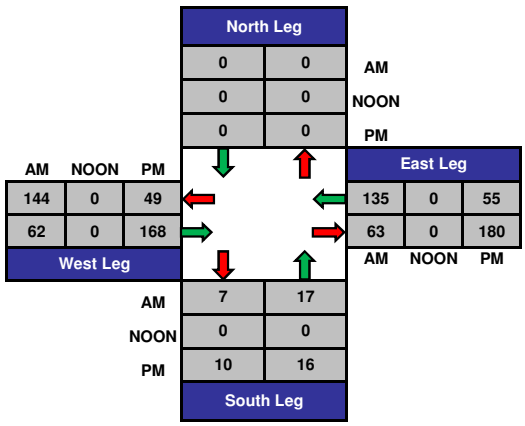
PM	4:00 PM	6:00 PM

Total Ins & Outs



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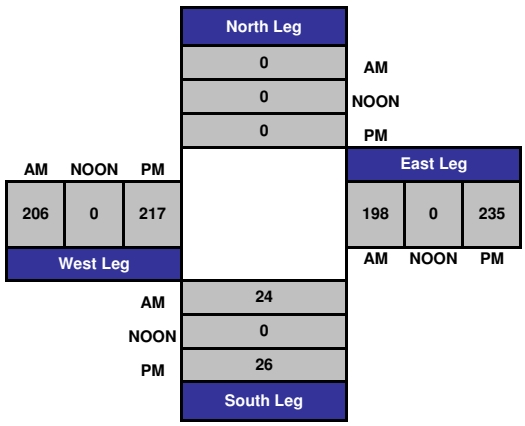


ITM Peak Hour Summary

Prepared by:

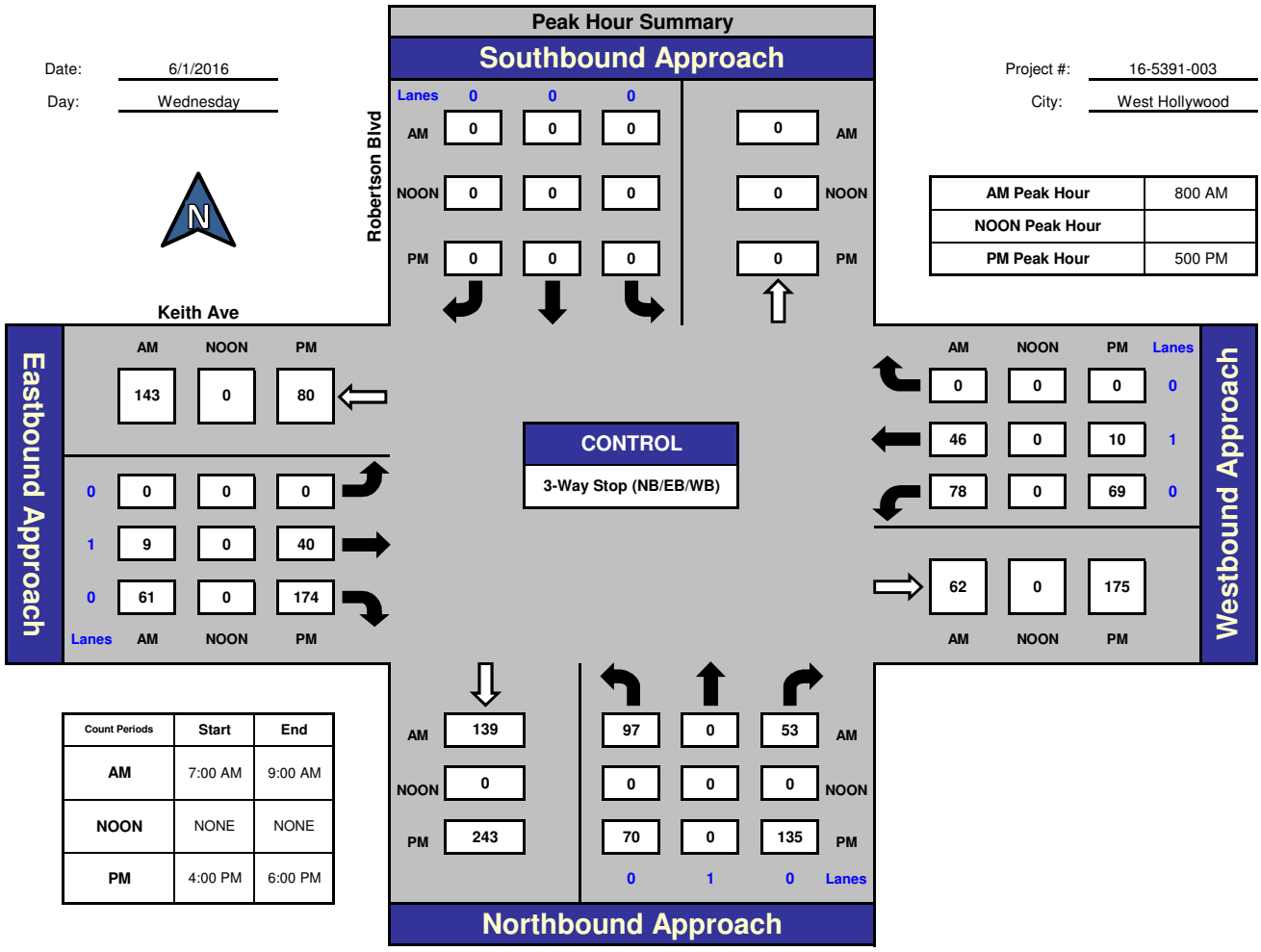
National Data & Surveying Services

Robertson Blvd and Keith Ave , West Hollywood

Date: 6/1/2016
Day: Wednesday

Project #: 16-5391-003
City: West Hollywood

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM



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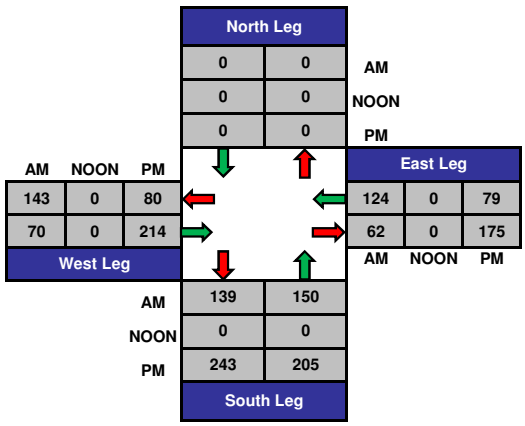
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



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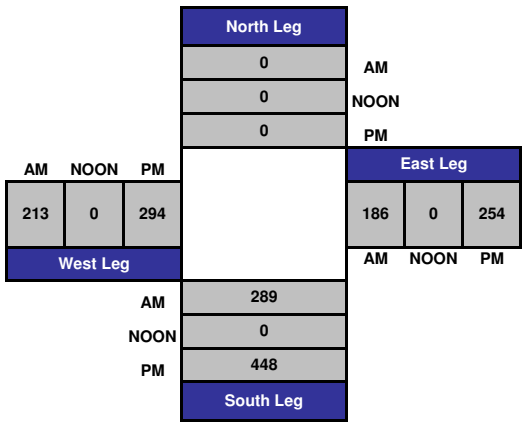


ITM Peak Hour Summary

Prepared by:

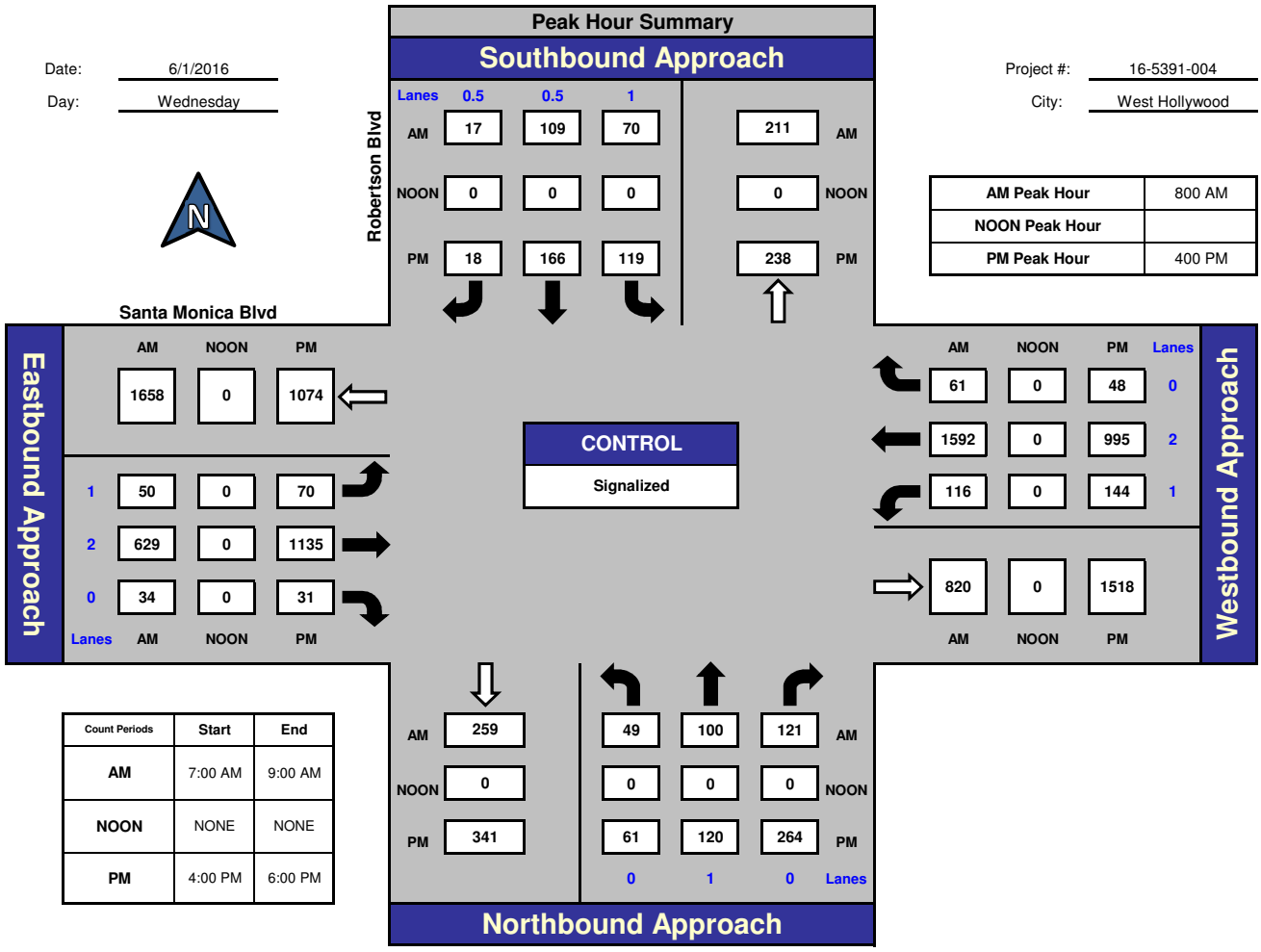
National Data & Surveying Services

Robertson Blvd and Santa Monica Blvd , West Hollywood

Date: 6/1/2016
Day: Wednesday

Project #: 16-5391-004
City: West Hollywood

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	400 PM



Count Periods	Start	End
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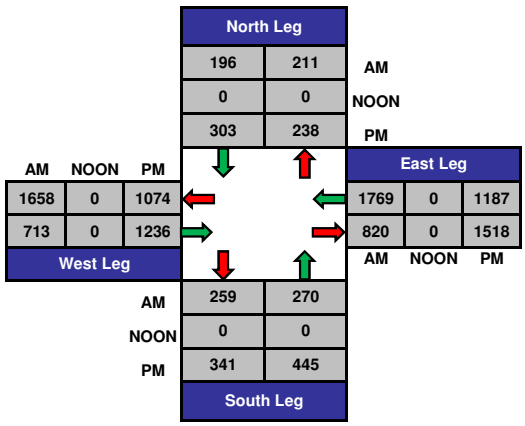
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg