TECHNICAL MEMORANDUM

TO: Tim Rood, CD+A
FROM: Iteris, Inc.

SUBJECT: Lincoln Boulevard Peak Period Bus-Only Lane Feasibility Analysis

Date: August 19, 2015
Job No: 17J1417C9

INTRODUCTION/BACKGROUND

Peak period, peak directional bus-only lanes on Lincoln Boulevard have been the subject of consideration in Santa Monica for nearly 10 years. In 2005 the City Council of Santa Monica approved an ordinance to restrict parking on Lincoln Boulevard for the creation of peak period, peak directional transit-only lanes. The ordinance created parking and traffic restrictions allowing for peak-period bus-only lanes along Lincoln Boulevard from 7:00-10:00 a.m. and 4:00-7:00 p.m. on weekdays, with the goal of enhancing one-way peak directional travel for buses from the Santa Monica Freeway to the southern city limit.1 The bus-only lanes would be operational in peak directions during peak periods; therefore, bus-only lanes would operate in the northbound direction during the morning peak period and in the southbound direction during the evening peak period.

City staff have indicated that a community outreach process to ensure business owners and stakeholders along the corridor were aware of the bus-only lane project was conducted in 2005. Initially, individual outreach to businesses along Lincoln Boulevard found there were no issues with the bus-only lanes. Further outreach to businesses resulted in 3% (two businesses) expressing specific concerns about parking changes.2

In approximately 2010 the City initiated efforts with Caltrans to relinquish Lincoln Boulevard within the City limits. The relinquishment was officially completed on June 4, 2012, with Lincoln Boulevard becoming a City roadway. City staff immediately began a project to repave and restripe Lincoln Boulevard. As part of the restriping, City staff developed new roadway signage and marking plans containing peak period parking restrictions and associated bus-only lanes. The new design plans were completed in the fall of 2012, and City staff then re-initiated outreach efforts to notify businesses along Lincoln Boulevard of the pending construction activities associated with repaving and restriping. During two community meetings, business owners expressed concern with the loss of parking associated with the bus-only lanes. The concerns regarded direct access to the fronts of their businesses and the overall impact of restricting traffic to buses only in the curbside lane. Further implementation of the Council-approved bus-only lanes were put on-hold, as documented in an Information Item prepared by Big Blue Bus staff in 2013.3

1Staff Report to Santa Monica City Council; Adding to Municipal Code: Bus-only Parking and Traffic restrictions; September 13, 2005; viewed at: http://www.smgov.net/departments/council/agendas/2005/20050913/s2005091307-F.htm
2Ibid
3Information Item to Santa Monica City Council; “Lincoln Boulevard Bus Only Lane;” February 7, 2013; “The implementation of the Lincoln Boulevard Bus-Only Lane will be delayed until such time that a more comprehensive regional planning approach for the entire corridor is studied with regional partners;” viewed at: http://www.smgov.net/WorkArea/DownloadAsset.aspx?id=37422
Following relinquishment of Lincoln Boulevard from Caltrans to the City of Santa Monica, some community members expressed concerns related to the walkability and overall character of Lincoln Boulevard. This was consistent with the feedback received during the extensive outreach for the Land Use and Circulation Element (LUCE). When Lincoln Boulevard was repaved and restripped in 2013, a number of residents and community groups approached City staff to inquire about additional enhancements - such as curb extensions, landscaping, medians, additional pedestrian crossings - that could be implemented now that the City is in control of Lincoln Boulevard. In 2014 the City initiated the Lincoln Boulevard Neighborhood Corridor Plan (LiNC) in an effort to investigate and develop additional enhancements for Lincoln Boulevard. As a part of the LiNC effort, the project team is again considering the provision of peak period parking restrictions with directional bus-only lanes, or other concepts with a goal of providing dedicated transit lanes, as well as improvements to walkability and the overall character of Lincoln Boulevard.

**KEY CONSIDERATIONS**

There are several key considerations associated with the feasibility of implementation of bus-only lanes along Lincoln Boulevard within the study area (and beyond). Those include the following:

1. **Physical design and operational feasibility** – What is the context of the street cross section and operational conditions, and where would it be best to locate a dedicated bus-only lane?
2. **Existing transit, traffic and parking conditions** – What is the context of existing operations on Lincoln Boulevard, and what would the impacts to parking be during peak hours of a dedicated bus-only lane on Lincoln Boulevard?
3. **Benefits and disadvantages of bus-only lanes** – What would be the benefits in terms of travel time savings of dedicated bus-only lanes and also person trip time savings for people riding the bus? It is also important to consider this not only for the portion in Santa Monica north of Los Angeles but also for a longer corridor that also includes bus-only lanes along the entire route from I-10 to Los Angeles International Airport (LAX). What are the associated disadvantages of providing bus-only lanes?

Each of these issues is discussed in the subsequent sections.
1. PHYSICAL DESIGN AND OPERATIONAL FEASIBILITY

PHYSICAL DESIGN

CENTER-RUNNING BUS LANES

The concept of bus lanes down the center of a street has been implemented in various cities around the world, and recently in the City of San Bernardino. They require a larger amount of right-of-way than do curb bus lanes because the bus stops (stations) also need to be provided in the center of the street rather than on the sidewalks. Center-running bus lanes operate in a fashion similar to a median light rail line, like the Exposition light rail line on Colorado Avenue, expected to open in 2016.

Center-running bus lanes have a greater impact on left-turn lanes, particularly near stations, and they work best if buses with doors on both sides of the bus can be employed, otherwise the buses need to cross in front of each other to stop at a station with doors only on the right side of the bus. Buses with doors on both sides are more expensive and not manufactured by many companies. The location of stations, the need to access buses from both sides, and the associated operations of a center-running bus-only lane creates challenges for left-turn lanes, similar to the prohibitions of parallel left-turns along Colorado Avenue with the new Exposition light rail line. Given the station needs, it is also not very feasible to have the center-running bus lanes operate only during peak periods and to switch to general purpose in off-peak hours.

CURBSIDE BUS LANES

Curbside bus lanes would operate in the parking lane. A signing and striping plan allowing for peak-period curbside bus-only lanes was approved by the City in 2012. In 2013, the Lincoln Boulevard Resurfacing Project\(^4\) updated the pavement striping in accordance with the City’s 2012 striping plans, except no designated bus lane was marked in the curb lane. The existing roadway cross section on Lincoln Boulevard includes 12’ curb lanes while the other travel lanes are 10’-11’, and the center turn lane is 10’ wide. These narrower lanes are common on urban arterials throughout Santa

\(^4\) Staff Report to Santa Monica City Council; Lincoln Boulevard Resurfacing Project; April 23, 2013; viewed at: http://www.smgov.net/departments/Council/agendas/2013/20130423/20130423_3E.htm
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Monica, and help to calm the speed of traffic, one of the goals of the project. The current striping on
Lincoln Boulevard would allow for the creation of curb-side bus lanes according to those plans with minor
modifications.

**PEAK PERIOD versus ALL DAY**

One advantage of curbside bus lanes is that they could be used for different purposes at different times
of the day. For example, curbside bus lanes could be used as parking lanes during part of the day and
directional bus lanes during peak periods. Further analysis explained later in this memorandum shows
directional (northbound in the a.m. peak period and southbound in the p.m. peak period) high congestion,
low speeds along the corridor, and peak passenger demands, which justify the designation of bus lanes
during peak periods only, at this time. In non-peak periods, the curb lanes can continue to be used for
parking and will provide a wider parking lane with 12’ of width, rather than an eight-foot wide lane, for
drivers/passengers entering and exiting their vehicles. In Santa Monica, common practice is to provide
seven-foot parking lanes to better utilize the public right-of-way, and the City has found seven-foot
parking lanes adequate to accommodate on-street parking needs and vehicles of various sizes. The
proposal could include a seven-foot parking lane leaving five feet of space between a parked car and the
adjacent travel lane. Further, this area could be utilized for bicycles wishing to travel on Lincoln Boulevard
outside of the mixed-flow vehicle lanes (while also providing some buffer from the “door zone” adjacent
to parked vehicles).

**OPERATIONAL FEASIBILITY**

**BUSES ONLY versus BUSES AND RIGHT TURNS**

The curb lane could be designated for use by buses only, or it can be restricted to buses and right turning
vehicles only. If restricted to buses only, it could create operational challenges by requiring vehicles to
make right-turns across through bus lanes. It would be problematic for drivers to be able to see a bus
approaching from behind in the curb lane, similar to vehicles making right-turns across marked bike lanes.
Allowing right-turners to use the bus lane is common practice in other parts of Los Angeles County, and is
the current practice in the bus-only lanes on Santa Monica Boulevard and Broadway in Downtown Santa
Monica between 2nd and 5th Streets. Allowing vehicles to use the bus-only lanes for right-turns also creates
an enforcement issue, for drivers who use the bus lane with the excuse that they are going to turn right
in a few blocks. Given that the Lincoln Boulevard bus lanes may be extended into the City of Los Angeles
to the south, and the Cities of Los Angeles and Santa Monica already allow right turners on bus lanes as
described above, it makes sense to follow that approach on Lincoln Boulevard within Santa Monica.

**BUSES AND BICYCLES**

Lincoln Boulevard does not currently have any exclusive bicycle facilities and is designated as an
Auto/Transit Priority Street in the City’s 2010 Land Use Circulation Element (LUCE). On the 2007 City of
Santa Monica Bicycle Network map⁵, Lincoln Boulevard is shown as a Class III Bicycle Route with signs
along the roadway indicating it is a bicycle route, and no dedicated bicycle lanes. The 2011 Santa Monica

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⁵ City of Santa Monica Existing Bicycle Network; viewed at
http://www.smgov.net/uploadedFiles/Departments/PCD/Transportation/Bicyclists/Santa-Monica-Bike-Map.pdf
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Bicycle Action Plan’s 5- and 20-Year Implementation Plans\(^6\) also show Lincoln as an Auto/Transit Priority Street, similar to the LUCE, with no improvements identified. However, the Bicycle Action Plan does designate Lincoln Boulevard as a Priority Short-Term Bicycle Parking Corridor with plans to add bike racks and bike corrals.

Bicyclists are allowed to use Lincoln Boulevard, per State law, but parallel routes are prioritized for specific types of exclusive bicycle facilities. Currently bicyclists using Lincoln Boulevard must adhere to State Vehicle Code requirements, and may utilize mixed-flow lanes. Given the vehicle speeds and congestion issues on Lincoln Boulevard, the ability for bicycles to use the peak period bus-only lanes is desired by many community members. The concept of shared bicycle/bus lanes (SBBL) is appealing on Lincoln Boulevard to the many regular bicycle commuters and residents in Santa Monica.

The 2012 report “A Summary of Design, Policies and Operational Characteristics for Shared Bicycle/Bus Lanes” prepared for the Florida Department of Transportation\(^7\) outlines how the concept of shared bicycle/bus lanes (SBBL) is being implemented in different cities across the U.S. As of 2012, the report identified 27 SBBLs in municipalities throughout the U.S., with 12 of them established in the past ten years.

Although there are no clear SBBL policy and design guidelines in State or Federal manuals, the City of Los Angeles is using the 2010 Bicycle Plan Technical Design Handbook as a guide to implement SBBLs on multiple streets. Section 3.4 from the Technical Design Handbook states that the preferred width for SBBLs is 16’ to allow for comfortable passing of bicyclists, while 14’ may be allowed on roadways with low traffic volumes, and 12’ should “only be considered on constrained areas.”\(^8\) Since there is no standard MUTCD signage for this type of lane, Los Angeles has developed its own signage as shown in the photograph. An example of SBBLs in the City of Los Angeles is Sunset Boulevard, from Figueroa Street to Elysian Park, where a peak-period only SBBL was implemented in 2013. The project included restriping only and the removal of parking spaces during the peak-periods. Another major SBBL project that follows the City of Los Angeles 2010 Bicycle Plan standards is the 12.5 mile Wilshire Bus Rapid Transit (BRT) Project, which includes 7.7 miles of peak period bus lanes and the displacement of on-street parking.

The City of San Francisco has also developed their own guidelines as described in the City’s 2009 Bicycle Plan.\(^9\) The Bicycle Facilities on Transit Routes Section of this document calls for SBBLs to be considered on a case-by-case basis, including technical analysis and mitigation measures. The City of San Francisco interprets San Francisco Traffic Code (SFTC) Section 7.2.72\(^10\) as not prohibiting bicycles from riding in transit-only areas, since only vehicles are prohibited from using these lanes and bicycles are not classified

\(^{6}\) City of Santa Monica Bicycle Action Plan; viewed at http://www.smgov.net/uploadedFiles/Departments/PCD/Plans/Bike-Action-Plan/Bicycle-Action-Plan.pdf


\(^{10}\) San Francisco Traffic Code (SFTC) Section 7.2.72; http://transportation.sanfranciscocode.org/7/7.2/7.2.72/
as vehicles (although subject to all regulations for vehicles). The San Francisco Bicycle Plan also states that bicycle improvements should not create negative impacts to transit operations, nor have a negative effect on bicyclists’ safety. Action 1.5 from the City of San Francisco Bicycle Plan requires a before and after study on the impacts of SBBLs. It is also suggested that San Francisco Municipal Transportation Agency (SFMTA) hold workshops for transit vehicle operators to promote bicycle safety awareness and effective road sharing techniques.

According to the 2012 report prepared for the Florida Department of Transportation, mentioned above, the most common problems encountered by SBBLs are the large volumes of right-turning vehicles at intersections, enforcement of SBBL preferential treatment, safety issues due to adjacent traffic speeds and interaction between buses and bicycles. A simplified explanation of existing California law requires bicyclists to ride in the far-right side lane, close to the curb (CVC Section 21202), unless preparing for a left turn; however, the law is not clear in many areas, such as where bicyclists should ride when there is a bus-only lane on the right side of the street where bicycles would be prohibited unless specific local regulations allowed otherwise.

2. EXISTING TRANSIT, TRAFFIC AND PARKING CONDITIONS

EXISTING TRANSIT CONDITIONS

Figure 1 displays the existing bus routes that serve Lincoln Boulevard in the study area as well as provides an inventory of stop locations and amenities at the stops. In 2014, the Big Blue Bus (BBB) began the construction of the Bus Stop Improvement Project (BSIP) to renovate the bus stops to include additional amenities such as real time arrival information and solar-powered lighting.

Santa Monica Big Blue Bus’ top two corridors with the highest ridership in the system are 1) Pico Boulevard and 2) Lincoln Boulevard. These two corridors constitute 40% of the BBB system ridership. BBB operates one heavily-used regular bus route, Route 3, and one heavily-used rapid bus route, Rapid Route 3, along Lincoln Boulevard. Rapid bus lines travel the same course as regular bus routes but they have shorter headways and limited stops at major intersections only. Both bus lines provide regional connections between Downtown Santa Monica, LAX and the Green Line Aviation Station.

The following is a brief description of Route 3 and Rapid 3:

Route 3:
- Consists of five stops within the study area;
- Daily ridership is approximately 4,000 passengers on a regular weekday; and
- Provides services on weekdays and weekends approximately every 15 minutes during peak periods and 20 minutes during off peak.

Rapid 3:
- Consists of two stops within the study area;
- Daily ridership is approximately 2,000 passengers on a regular weekday; and
- Provides services only on weekdays approximately every 10 minutes during peak periods and 15-20 minutes during off peak.
Furthermore, the intersections of Lincoln Boulevard/Pico Boulevard and Lincoln Boulevard/Ocean Park Boulevard are designated as major bus stops in the City’s General Plan Circulation Element. These intersections provide connections to two local bus routes along Pico Boulevard and Ocean Park Boulevard and one Rapid route on Pico Boulevard. Those routes include Route 7, Rapid Route 7 and Route 8. Services are provided approximately every 20 minutes during peak periods and 30 minutes during off peak for Route 7 and Route 8. The Rapid route provides services approximately every 10 minutes during peak periods and 15-20 minutes during off peak periods.
**Figure 1: Existing Bus Routes, Bus Stops and Amenities along Lincoln Boulevard**
Transit Ridership

Transit ridership data for Fall 2013 was provided by BBB staff. The a.m. peak period (between 7:00-9:00 a.m.) and p.m. peak period (between 3:00-5:00 p.m.) with the highest ridership data are used for this analysis. The following are key findings for the peak periods on Lincoln Boulevard, for both BBB lines operating along the route:

Southbound direction

- On-board ridership, boardings and alightings are significantly higher during the p.m. peak period compared to the a.m. peak.
- The stops at Pico Boulevard and Ocean Park Boulevard show the most boarding and alighting activities compared to the other bus stops.
- Table 1 summarizes southbound transit ridership activity along the study corridor.

<table>
<thead>
<tr>
<th>Bus Stop</th>
<th>On-board</th>
<th>Boarding</th>
<th>Alighting</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Daily AM Peak Period</td>
<td>PM Peak Period</td>
<td>Daily AM Peak Period</td>
</tr>
<tr>
<td>Lincoln &amp; Pico</td>
<td>3,108 252 1018</td>
<td>805 67 280</td>
<td>-92 -10 -29</td>
</tr>
<tr>
<td>Lincoln &amp; Pearl</td>
<td>2,029 152 508</td>
<td>79 14 20</td>
<td>-7 -1 -4</td>
</tr>
<tr>
<td>Lincoln &amp; Ocean Park</td>
<td>3,245 264 1067</td>
<td>105 13 44</td>
<td>-74 -6 -25</td>
</tr>
<tr>
<td>Lincoln &amp; Ashland</td>
<td>2,086 160 523</td>
<td>47 7 11</td>
<td>-15 0 -3</td>
</tr>
<tr>
<td>Lincoln &amp; Navy</td>
<td>2,062 158 517</td>
<td>0 0 0</td>
<td>-58 -5 -18</td>
</tr>
</tbody>
</table>

Northbound direction

- On-board ridership is higher in the a.m. peak period compared to the p.m. peak. The ridership at the Ocean Park stop is approximately twice as high as the ridership at the other stops.
- Boardings are higher in the p.m. peak period compared to the a.m. peak. The station at Pico Boulevard has the highest number of boardings in the p.m. peak period.
- The Pico/Lincoln stop experiences the highest number of alightings in the a.m. peak period compared to all the other stops in the study corridor.
- Table 2 summarizes northbound transit ridership activity along the study corridor.

<table>
<thead>
<tr>
<th>Bus Stop</th>
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<tr>
<td></td>
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</tr>
<tr>
<td>Lincoln &amp; Pico</td>
<td>2,321 547 424</td>
<td>105 19 32</td>
<td>-795 -292 -105</td>
</tr>
<tr>
<td>Lincoln &amp; Pearl</td>
<td>1,928 385 298</td>
<td>6 0 3</td>
<td>-31 -4 -4</td>
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<tr>
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<tr>
<td>Lincoln &amp; Ashland</td>
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<td>7 1 0</td>
<td>-28 -6 -2</td>
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<tr>
<td>Lincoln &amp; Navy</td>
<td>2,019 407 309</td>
<td>47 7 11</td>
<td>-28 -10 -2</td>
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**EXISTING TRAFFIC CONDITIONS**

**Figure 2** illustrates the study intersection locations and existing Levels of Service (LOS) for the a.m. and p.m. peak hours. This analysis used the hour with the highest turning movement volume between 7:30-9:30 for the a.m. peak hour and 5:00-7:00 for the p.m. peak hour. The City of Santa Monica considers LOS D and above acceptable because it signifies fair operations with no long-standing traffic queues at intersections. LOS E and F signify long-standing vehicular queues and the delays may be up to several minutes.

As shown in **Figure 2**, all study intersections are operating at acceptable LOS, LOS D or above. However, the speeds on Lincoln Boulevard are slow and there is considerable congestion along the route, which contributes to slow bus speeds since the buses must travel within the flow of traffic and are delayed along with all other roadway users.
Figure 2: AM/PM Peak Hour Intersection Level of Service
Peak Hour Travel Speeds within the Corridor

Actual peak hour moving vehicle speeds were determined within the Lincoln Boulevard study corridor using the Iteris iPeMS (arterial performance measurement) system. iPeMS gathers vehicle “probe” data along arterials and then delivers real-time and predictive traffic analytics for roadways. The vehicle probe data comes from cell phones and fleet (truck/taxi/bus/other) GPS units which are observed and their position and speed are used to determine average speeds occurring throughout the day and during peak periods on the arterial system. For this analysis, vehicle probe data were assessed for the months of January through April 2013, and for the hours of 7:30-8:30 a.m. and 4:30 to 5:30 p.m., which constitute the a.m. and p.m. peak hour respectively. Similar to Caltrans freeway PeMS which measures and reports freeway speeds, the data can be used to assess points of slowing along the Lincoln Boulevard study corridor. These iPeMS speed measurements reflect peak hours when vehicles are forced to slow due to traffic congestion.

The posted speed limit on Lincoln Boulevard is 35 miles per hour, and during peak periods average speeds are substantially lower. The average speeds observed during peak periods using the Iteris iPeMS system were categorized into the following speed profiles:

- 0 to 10 miles per hour (mph);
- 11 to 15 mph;
- 16 to 20 mph;
- 21 to 25 mph; and
- Over 26 mph.

**Figure 3** and **Figure 4** show the results of the a.m. and p.m. peak hour speed measurements. As shown, during the a.m. peak hour, within the study area, the speeds are generally lower in the northbound direction from the City boundary up to Ocean Park Boulevard and also near I-10 where northbound the speeds are in the 11 to 15 mph range, indicating significant slowing and severe congestion at the ramps. South of I-10, the observed average speeds are in the 16 to 20 mph range northbound, indicating moderate to significant slowing, and 21 to 25 mph northbound south of Ocean Park Boulevard. During the p.m. peak hour, the most significant slowing occurs in the southbound direction, and it is throughout the entire length of the corridor. At the freeway ramps in both directions during the p.m. peak hour, the speeds are extremely low, in the 11 to 15 mph average range, due to the freeway ramp intersection congestion and trips to and from the freeway. From Pico Boulevard to Ocean Park, the p.m. peak hour speeds are 16 to 20 mph, and they are even lower from Ocean Park to the southern city boundary, at 11 to 15 mph. Interestingly, south of the City boundary, the southbound speeds on Lincoln Boulevard are slower in the PM peak within the City of Los Angeles. Thus, the city boundary and the traffic flow conditions and traffic signal timing patterns in Los Angeles create a bottleneck southbound during the p.m. peak hour for motorists that are exiting Santa Monica.
Figure 3: AM Peak Hour Speed

AM Peak Hour Speed (7:30 - 8:30 AM)
- 0 - 10 mph
- 11 - 15 mph
- 16 - 20 mph
- 21 - 25 mph
- >26 mph

Source: Iteris iPeMS Lite
Figure 4: PM Peak Hour Speed
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As shown, generally auto and bus travel speeds are higher on the portion of Lincoln Boulevard though Santa Monica, between Pico and the southern City limit. Within the City of Los Angeles, bus travel speeds along Lincoln degrade. This is most likely due to the proximity and frequency of traffic signals along Lincoln Boulevard south of Santa Monica, combined with the high east-west volumes along major corridors such as Venice and Washington. Furthermore, Lincoln Boulevard’s odd alignment (with a slight horizontal deflection at the border of Santa Monica and Venice), and slight narrowing at Washington Boulevard are known bottlenecks which could also be a factor for the low speeds in the study area.

Potential transit travel times savings with bus lanes

The 2005 Study\(^{11}\) prepared by Big Blue Bus staff indicated a potential time savings of up to 10 minutes per trip with the addition of peak period bus-only lanes. For this study, Iteris has completed another estimate of potential travel time savings using data obtained from the iPeMS system.

Based on travel speeds obtained from the iPeMS system, Iteris estimated average vehicle travel times for the 1.2-mile study corridor, from Olympic Boulevard/I-10 eastbound ramps to the south City limit. These travel times are based on the iPeMS measured congested speeds, which is the average speed over the study corridor during the peak hours. Note this calculation is an estimate for a typical vehicle, not accounting for traffic signal delays at the signalized intersections along Lincoln Boulevard, or driveway and left-turn queuing, or bus stopping for boarding/alighting. During peak periods it is typical that vehicles queue at an intersection for approximately two signal cycles (up to two minutes of delay per signal) before clearing the intersection. Within the study area, there are eight signalized intersections on Lincoln Boulevard which would add approximately 10 minutes to travel at the average speeds identified earlier in this document. This means that during the a.m. and p.m. peak periods, it can take approximately 13-15 minutes to drive from the I-10 freeway to the southern City limit (1.2 miles) and vice versa. The estimated average vehicle travel times are as follows:

- **AM Peak period northbound** – 14 minutes **average travel time** without exclusive bus lanes
  - Compared to (without taking into account congestion, bus boarding/alighting, and traffic signal delays):
    - Approximately 2 minutes at the posted speed limit of 35 mph, or a savings of approximately 12 minutes, with exclusive bus lanes.
    - Approximately 4 minutes at the measured average speed of 18 mph, or a savings of approximately 10 minutes, with exclusive bus lanes.

- **AM Peak period southbound** – 13 minutes **average travel time** without exclusive bus lanes
  - Compared to (without taking into account congestion, bus boarding/alighting, and traffic signal delays):
    - Approximately 2 minutes at the posted speed limit of 35 mph, or a savings of approximately 11 minutes, with exclusive bus lanes.
    - Approximately 3.5 minutes at the measured average speed of 20.6 mph, or a savings of approximately 9.5 minutes, with exclusive bus lanes.

- **PM Peak period northbound** – 14 minutes **average travel time** without exclusive bus lanes
  - Compared to (without taking into account congestion, bus boarding/alighting, and traffic signal delays):
    - Approximately 2 minutes at the posted speed limit of 35 mph, or a savings of approximately 12 minutes, with exclusive bus lanes.

\(^{11}\) Lincoln Bus Lane Feasibility Study; Big Blue Bus, Transit Programs; 2005.
Based therefore, rough occupancy, August the PM Bus boarding/alighting. Lincoln to assumed the congested period the speed of the period: the conditions during direction. Travel in peak 35 miles per hour, again excluding delays due to traffic signals and the time devoted to boarding/alighting.

Based on information provided by the City, BBB buses run behind schedule approximately 40-45 percent of the time, with mid-week conditions (Wednesday and Thursday) experiencing the highest occurrences of lateness during the week. Approximately 8-10 buses per direction run on Lincoln Boulevard each hour. According to the BBB schedule, buses are scheduled to travel from Lincoln Boulevard and Pico Boulevard to the southern City limit in 5 minutes. Comparing the BBB schedule to the travel time estimates above, congested conditions on Lincoln Boulevard causes bus delays of 8 to 10 minutes, depending on the time period and direction. The implementation of peak period bus lanes would improve this situation. If it is assumed that there is no congestion in a dedicated bus-only lane, then speeds for the bus may approach the speed limit of 35 miles per hour, again excluding delays due to traffic signals and the time devoted to boarding/alighting.

Assuming the increase in average bus speeds that could result from bus-only lanes, Iteris has prepared a rough calculation of potential increases in person throughput along Lincoln Boulevard. To factor in vehicle occupancy, the following analysis was done for the peak direction during the peak period:

**AM Peak Period – 7:30AM-9:30AM Northbound**
- Peak period direction of travel vehicles – 2,720 vehicles in two lanes during the a.m. peak period
- Assuming an average of 1.2 persons per vehicle, autos carry 3,260 persons during the a.m. peak period, in the peak direction
- Buses currently carry 870 persons during the a.m. peak period
- Current delay to bus passengers during the a.m. peak period is approximately 9 minutes
- Person Travel Time saved with a dedicated bus lane in the peak direction - 130 person hours cumulative daily savings for the a.m. peak period, at nine minutes per person per trip times 870 passengers

**PM Peak Period – 5:00PM-7:00PM Southbound**
- Peak period direction of travel vehicles – 3,280 vehicles in two lanes during the p.m. peak period
- Assuming an average of 1.2 persons per vehicle, autos carry 3,940 persons during the p.m. peak period, in the peak direction
- Buses currently carry 1,020 persons during the p.m. peak period
- Current delay to bus passengers during the p.m. peak period is approximately 10 minutes
- Person Travel Time saved with a dedicated bus lane in the peak direction - 170 person hours of cumulative daily savings for the p.m. peak period, at 10 minutes per person per trip times 1,020 passengers

Bus-only lanes would operate only during peak hours for the peak direction on the existing parking lane; therefore, there would be no reduction in travel lanes and minimal to no impact to vehicle flow. Since the bus-only lanes would be created by removing parking during peak periods, the addition of bus-only
lanes does not require an associated reduction in travel lanes for vehicles – the same number of vehicle through lanes would be maintained as currently exist on Lincoln Boulevard.

The analysis above is shown in Figure 5 and it illustrates the AM and PM peak period people throughput at the two major intersections in the study corridor.

The potential transit travel time savings would also provide a financial benefit to Big Blue Bus operating costs, which could then be used to reinvest in new services. Big Blue Bus staff estimate, that after taking into account bus boarding/alighting in the travel time savings calculations, buses would save approximately four minutes per trip. BBB staff provided existing hourly costs and concluded that bus-only lanes would potentially result in roughly $300,000 savings per year from the lost service hours of buses sitting in traffic. BBB staff cost calculations, without taking into account fuel costs, are as follow:

- Maintenance and operating costs total $56.86 per hour
  - Maintenance costs per revenue hour - $21.46
  - Average operator pay per revenue hour - $26.20
  - Average operator benefits cost per revenue hour - $9.20
- Weekday hour saving calculation
  - 254 trips/weekday times 4 minutes savings = 1,016 minutes/weekday or 16.93 hours/weekday
  - 255 weekdays per year times 16.93 hours/weekday = 4,317 hour savings per year
- Saturday hour saving calculation
  - 159 trips/Saturday times 4 minutes savings = 636 minutes/Saturday or 10.60 hours/Saturday
  - 52 Saturdays per year times 10.60 hours/Saturday = 551 hour savings per year
- Sunday and holiday hour saving calculation
  - 114 trips/Sunday-holiday times 4 minutes savings = 456 minutes/Sunday-holiday or 7.63 hours/Sunday-holiday
  - 58 Sunday-holiday per year times 7.63 hours/Sunday-holiday = 443 hour savings per year
- A total of 5,311 hours of service per year at $56.86 per hour, without taking into consideration fuel costs, results in $301,983 savings per year.

Transit signal priority (TSP) treatments could further enhance bus speeds by reducing or eliminating delays due to traffic signals. The capabilities allow for communication between transit vehicles and the traffic signals; if a transit vehicle is running behind schedule, it can automatically alert the traffic signal it is approaching, and the traffic signal will hold the green light to ensure no additional delay to the transit vehicle. TSP has been shown to reduce bus travel times (and increase bus speeds) along other corridors. The implementation of bus-only lanes and TSP treatments, from Lincoln Boulevard and Pico Boulevard to the southern City limit, would reduce bus travel time from the existing 13-15 minutes down to approximately two minutes. TSP treatments could enhance bus speeds and operations, and would be beneficial to any future bus-only lanes. Vehicles would also benefit from additional green time set by TSP treatments, and would receive increased green time to move through the corridor. As a part of the City’s multi-phased Advanced Traffic Management System (ATMS) project, TSP capabilities have been installed at all signalized intersections along Lincoln Boulevard. As of the date of this memo, Iteris staff understands that the City has not yet implemented the TSP capabilities for BBB vehicles.
Figure 5 Existing AM/PM Peak Period People Throughput

PEOPLE THROUGHPUT - AM PEAK PERIOD

AM Peak:
Transit: 830 (20%)  
Cars: 3280 (80%)

AM Peak:
Transit: 870 (21%)  
Cars: 3260 (79%)

AM Peak:
Transit: 250 (8%)  
Cars: 2790 (92%)

PEOPLE THROUGHPUT - PM PEAK PERIOD

PM Peak:
Transit: 500 (15%)  
Cars: 2740 (85%)

PM Peak:
Transit: 520 (15%)  
Cars: 2990 (85%)

PM Peak:
Transit: 1020 (21%)  
Cars: 3840 (79%)

PM Peak:
Transit: 1070 (25%)  
Cars: 3180 (75%)

Major Bus Stop used for people throughput calculations
On-Street Parking on Lincoln Boulevard

Parking inventory and utilization data were provided by the City of Santa Monica staff for all metered spaces along Lincoln Boulevard. **Figure 6** and **Figure 7** illustrate the parking meter utilization findings for a.m. and p.m. peak hours along Lincoln Boulevard (including only those parking spaces on Lincoln Boulevard and not on the side streets).

The on-street parking utilization along Lincoln Boulevard does not reach 100% occupancy during the a.m. and p.m. peak periods. In fact, the highest occupancy happens on the 3000 block during the a.m. peak period with 54% utilization, and on the 2200 block during the p.m. peak period with 45% utilization. Hence, for every two on-street parking spaces available on Lincoln Boulevard, the data collected shows that at least one parking space would be available during the a.m. and p.m. peak periods. Furthermore, parking utilization rates are generally low along both sides of Lincoln Blvd., with occupancy levels between 10% and 20%, typically.

The following are key findings from the parking meter data analysis:

- **Supply**: Along Lincoln Boulevard, there are 84 metered parking spaces on the southbound (west) side and 73 on the northbound (east) side. These are for the spaces along Lincoln only.
  
  **Southbound side**
  - **Supply**: The 2500 block of Lincoln (from Pine Street to Ocean Park Boulevard) has the highest parking supply on the southbound side with 17 parking spaces.
  - **AM Utilization**: In the a.m. peak hour, the 2200 block of Lincoln (from Pacific Street to Strand Street), the 3000 block of Lincoln (from Pier Avenue to Marine Street), the 3100 block of Lincoln (from Marine Street to Navy Street) and the 3300 block of Lincoln (from Ozone Avenue to Dewey Street) have the highest occupancy rate between 30% and 54%. These blocks contain only 3, 7, 2 and 1 parking spaces respectively.
  - **PM Utilization**: In the p.m. peak hour, the 1800 (from Michigan Avenue to Pico Boulevard), 2200 (from Pacific Street to Strand Street) and 3300 blocks of Lincoln (from Ozone Avenue to Dewey Street) have the highest occupancy rate between 30% and 45%. These blocks contain 16, 3 and 1 parking spaces respectively.
  - **Blocks with 10 or more parking spaces**, such as the 1800 (from Michigan Avenue to Pico Boulevard), 2400 (from Kensington Road to Pine Street) and 2500 blocks of Lincoln (from Pine Street to Ocean Park Boulevard), have an occupancy rate of less than 35% in both, the a.m. and p.m. peak hours.

**Northbound side**

- **Supply**: The 1800 block of Lincoln (from Michigan Avenue to Pico Boulevard) has the highest parking supply on the northbound side with 17 parking spaces.
- **AM Utilization**: The 3000 block of Lincoln (from Pier Avenue to Marine Street) has the highest occupancy rate at 36% for the a.m. peak hour and 22% in the p.m. peak hour. The 3000 block of Lincoln contains 7 parking spaces.
- **PM Utilization**: Blocks with 10 or more parking spaces, such as the 1800 (from Michigan Avenue to Pico Boulevard) and 2900 blocks of Lincoln (from Ashland Avenue to Per Avenue), have an occupancy rate of less than 20% in both, the a.m. and p.m. peak hours.
Figure 6: AM Peak Hour Metered Parking Utilization per Block per Direction on Lincoln

Legend

<table>
<thead>
<tr>
<th>AM Peak Hour On-Street Parking Occupancy (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>1% - 20%</td>
</tr>
<tr>
<td>21% - 40%</td>
</tr>
<tr>
<td>61% - 80%</td>
</tr>
<tr>
<td>81% - 100%</td>
</tr>
</tbody>
</table>

Parking Meter Location

AM Peak Hour (9-10 AM)
Metered Parking Spaces Occupied Along Lincoln Blvd

Southbound
Northbound
Figure 7: PM Peak Hour Metered Parking Utilization per Block per Direction on Lincoln
On-Street Parking on Lincoln Boulevard and Side Streets

In addition, an on-street parking inventory and utilization survey took place in October 2014 for all metered and non-metered parking spaces on Lincoln as well as the parking spaces on the adjacent side streets. Figure 8 illustrates the total on-street parking utilization findings for a.m. and p.m. peak hours for Lincoln Boulevard and the side streets (generally defined as the block face from Lincoln Boulevard to 10th Street on the east side, and Lincoln Boulevard to 7th Street on the west side).

The on-street parking utilization for any block facing Lincoln Boulevard does not reach 100% occupancy during the a.m. and p.m. peak periods. In fact, the highest occupancy happens on the 1700 block during the a.m. peak period with 38% utilization, and on the 1700 and 1800 blocks during the p.m. peak period with 27% utilization. Hence, for every three on-street parking spaces available on Lincoln Boulevard, the data collected shows that at least two parking space would be available during the a.m. and p.m. peak periods. Furthermore, parking utilization rates are generally low along both sides of Lincoln Blvd., with occupancy levels at or below 10%, typically.

The following are key findings from the total on-street parking analysis:

**Southbound side**
- Supply: The 3100 block of Lincoln (from Marine Street to Dewey Street) has the highest parking supply in the southbound side with 57 parking spaces available, 4 meter spaces and 53 non-meter spaces. The overall parking occupancy rate for this block is 6% in the a.m. peak hour and 3% in the p.m. peak hour.
- AM Utilization: The 1700 block of Lincoln (from Olympic Boulevard to Michigan Avenue) has a higher parking occupancy at 38% for the a.m. peak hour and 27% for the p.m. peak hour. The total on-street parking supply for block 1700 Lincoln is 9 spaces, all of which are non-meter.
- The 1800 block of Lincoln (from Michigan Avenue to Pico Boulevard) also has a higher parking occupancy at 30% for the a.m. peak hour and 26% for the p.m. peak hour. The total on-street parking supply for block 1800 Lincoln is 51, 19 meter spaces and 25 non-meter spaces.
- All other blocks in the southbound direction have an occupancy rate of less than 15% during the a.m. Peak Hour.

**Northbound side**
- Supply: The 2800 block of Lincoln (from Hill Street to Ashland Avenue) has the highest parking supply in the northbound side with 55 parking spaces, all of which are non-meter. The overall parking occupancy rate for this block is 2% in both a.m. peak hour and p.m. peak hour.
- AM Utilization: The 1700 block of Lincoln (from Olympic Boulevard to Michigan Avenue) has a higher parking occupancy at 12% for the a.m. peak hour and 4% for the p.m. peak hour. The total on-street parking supply for block 1700 Lincoln is 5 spaces, all of which are non-meter.
- The 1800 block of Lincoln (from Michigan Avenue to Pico Boulevard) also has a higher parking occupancy at 14% for the a.m. peak hour and 9% for the p.m. peak hour. The total on-street parking supply for block 1800 Lincoln is 25 spaces, 19 meter spaces and 6 non-meter spaces.
- All other blocks in the northbound direction have a total on-street occupancy rate of less than 10%.
Figure 8: AM/PM Peak Hour On-Street Parking Utilization per Block per Direction

Legend
- Parking Meter Location
- Study Corridor

AM Peak Hour
On-Street (Meter & Non-Meter) Parking Spaces Occupied Per Block

PM Peak Hour
On-Street (Meter & Non-Meter) Parking Spaces Occupied Per Block

Source: City of Santa Monica
In summary, the on-street parking supply surveys indicate that when measuring parking usage on Lincoln Boulevard and the adjoining side streets, parking is not highly utilized along the corridor, even during peak traffic hours. The total amount of utilized parking that would be displaced by a potential bus-only lane would be as follows:

- **AM peak northbound [Potential Dedicated Bus Lane]** - 10 utilized spaces and 63 available spaces. The parking survey shows that approximately 14% of the total parking spaces are utilized during the a.m. peak hours in the northbound direction.
- **PM Peak southbound [Potential Dedicated Bus Lane]** - 12 utilized spaces and 72 available spaces. The parking survey shows that approximately 16% of the total parking spaces are utilized during the p.m. peak hours in the southbound direction.

This represents the parking used only along Lincoln Boulevard that would be displaced by a bus-only lane. This would differ slightly day-to-day based on patterns of usage and activity at the businesses. However, on-street parking would still be available on the side of Lincoln Boulevard with non-operational bus-only lanes, as follows:

- **PM peak northbound** - 7 utilized spaces and 66 available spaces. The parking survey shows that approximately 10% of the total parking spaces are utilized during the p.m. peak hours in the northbound direction.
- **AM Peak southbound** – 12 utilized spaces and 72 available spaces. The parking survey shows that approximately 16% of the total parking spaces are utilized during the a.m. peak hours in the northbound direction.

Based on the parking utilization survey, it appears that in general the level of parking loss could be offset by available parking on the side of Lincoln Boulevard without the bus-only lanes, and by utilizing available parking on adjacent streets fronting commercial properties, as they also are not highly utilized during the same peak hours. In order to balance the need for resident parking with some limited shorter-term general parking, most side streets in the corridor have residential permit parking that restricts non-resident parking access to no more than two hours.

It is important to note, however, that parking loss is also a very site specific issue. One or two directly adjacent on-street spaces can be perceived by particular businesses as very important to their operation and providing parking a block away may be an issue for selected business owners.

The concept of shared parking facilities could serve some demand from the displaced metered-parking spaces numbered above; the feasibility of shared parking needs to consider lot size, accessibility, and occupancy. As shown in **Figure 9**, and described below in the off-street parking section, many of the smaller off-street parking lots are operating at near capacity. There are already a few shared parking lots in the study area, such as the lot located on the southwest side of the 2600 block of Lincoln. This shared lot has retail and restaurant uses. Other large parking lots along Lincoln Boulevard feasible for shared parking are occupied by Olympic High School, McDonald’s and Albertsons. Shared parking will be addressed in more detail as part of Task 3.
Off-Street Parking

Off-street parking inventory and utilization surveys took place in October 2014 for all lots immediately adjacent to businesses along Lincoln Boulevard. Figure 9 illustrates the total off-street parking utilization finding for a.m. and p.m. peak hours.

The following are key findings from the off-street parking analysis:

Southbound side
- Supply: There are approximately 766 total off-street parking spaces available on the southbound (west) side of Lincoln Boulevard.
- The 2500, 2600 and 2700 blocks of Lincoln (from Pine Street to Raymond Avenue) have the highest off-street parking supply on the southbound side with 103, 94 and 92 parking spaces respectively. The 2500 block of Lincoln (from Pine Street to Ocean Park Boulevard) is Olympic High School with parking utilization of 49% in the a.m. peak hour and 11% in the p.m. peak hour.
- The 2700, 3100, 3200 and 3300 blocks of Lincoln (from Hill Street to Dewey Street) have off-street parking occupancy rates of 80% or higher in the a.m. and p.m. peak hours. In addition, the 1900 block of Lincoln (from Pico Boulevard to Bay Street) has an occupancy rate of 96% in the PM peak hour.

Northbound side
- Supply: There are 845 total off-street parking spaces available on the northbound (east) side of Lincoln Boulevard.
- The 1800 (from Michigan Avenue to Pico Boulevard) and 2600 (from Ocean Park Boulevard to Hill Place) blocks of Lincoln have the highest off-street parking supply on the northbound side with 101 and 187 parking spaces respectively.
- AM Utilization: In the a.m. peak hour, the 1700 (from Olympic Boulevard to Michigan Avenue), 2100 (from Grant Street to Pacific Street), 2300 (from Pearl Street to Cedar Street), 2400 (from Cedar Street to Pine Street), 2500 (from Pine Street to Ocean Park Boulevard) and 2700 (from Hill Place to Hill Street) blocks of Lincoln have off-street parking occupancy rates of 80% and higher.
- PM Utilization: In the p.m. peak hour, the 2100 (from Grant Street to Pacific Street), 2300 (from Pearl Street to Cedar Street), 2500 (from Pine Street to Ocean Park Boulevard) and 2700 (from Hill Place to Hill Street) blocks of Lincoln have off-street parking occupancy rates of 80% and higher.

The off-street parking is much better utilized than the on-street parking, but still is not fully utilized even during peak hours, except for the 3300 (from Ozone Avenue to City limit) block of Lincoln in the southbound direction and the 2700 (from Hill Place to Hill Street) block of Lincoln in the northbound which were found to be fully occupied during the p.m. peak. The 3300 (from Ozone Avenue to City limit) block of Lincoln in the southbound direction has car repair shops and only one metered parking space. The 2700 (from Hill Place to Hill Street) block of Lincoln in the northbound direction has an auto repair shop and an appliance store that share the existing parking lot.
Figure 9: AM/PM Peak Hour Off-Street Parking Utilization per Block per Direction

AM Peak Hour
Off-Street Parking Spaces Occupied Per Block

PM Peak Hour
Off-Street Parking Spaces Occupied Per Block
3. BENEFITS AND DISADVANTAGES OF BUS-ONLY LANES

This memorandum presents analysis of current conditions in the corridor along with information related to key issues associated with dedicated bus-only lanes within the study area. A summary of noted advantages and disadvantages is provided below:

- Benefits to transit riders (estimated time savings)
  - Bus-only lanes, without TSP treatment, would provide an estimated 8-10 minutes per transit passenger of travel time savings, or up to 170 total person hours of travel time savings.
  - Bus-only lanes plus TSP treatment would provide an estimated 11-13 minute travel time savings (an additional 35% travel time savings compared to the travel time savings without TSP treatment).
  - BBB staff estimate that a four minute travel time savings to buses per trip at a total of $56.86 hourly operating cost would result in approximately $300,000 in savings from lost service hours due to traffic congestion.
  - If bus-only lanes, without TSP treatment, could be implemented on Lincoln Boulevard from Pico Boulevard to LAX, the savings would be much greater, perhaps up to 25 minutes savings per passenger or more.
  - Travel time savings may in turn provide incentive for more people to use the bus, thereby increasing ridership and reducing auto volumes and congestion somewhat.
  - Bus-only lanes would operate on the existing parking lane during the peak hour for the peak direction; thus, there would be no reduction in travel lanes. Removing the buses from the flow of travel in the existing two travel lanes would have a beneficial impact on flow, as buses are larger and slower than passenger vehicles and take up more capacity of the roadway.

- Parking impacts (loss of parking during peak hour)
  - By creating bus-only lanes in existing parking lanes, up to 12 parked vehicles would be displaced during each peak hour, on average within the study corridor.
  - The availability of off-street parking, or available on-street parking, may partially offset this, to be reviewed in more detail as part of Task 3.
  - Localized parking mitigation strategies, to be addressed in Task 3, for key blocks with highest parking demand or perceived issues by land owners/tenants, must be identified.

4. FEASIBILITY OF REGIONAL FACILITY

In December 2012, City staff met with representatives of the Los Angeles County Metropolitan Transportation Authority (Metro), Los Angeles City Council District 11, and the Los Angeles Department of Transportation (LADOT) to discuss a project to widen Lincoln Boulevard within the City of Los Angeles. At that time, City of Los Angeles staff indicated a desire to provide bus-only lanes on Lincoln Boulevard within the City of Los Angeles. As a complete network from Pico Boulevard to LAX, this would represent a regional bus-only lane serving many users. However, no progress has been made to-date by the City of Los Angeles to implement a bus-only lane on Lincoln Boulevard within the City of Los Angeles. In February 2015 Iteris staff contacted City of Los Angeles staff to inquire on the status of this project.
Boulevard in the City of Los Angeles remains a Caltrans facility, and the City has not initiated any efforts to relinquish Lincoln.

The most recent efforts for improvements on Lincoln Boulevard are documented in the 2015 Subregional Mobility Matrix Study prepared for the Los Angeles County Metropolitan Transportation Authority (Metro). This study prioritized and evaluated projects for the Westside Cities Subregion based on six criteria: mobility, safety, sustainability, economy, accessibility and state of good repair. Further analysis included qualitative scoring of the estimated level of benefit under each criteria: high, medium, low, neutral, and negative impact. The Lincoln Boulevard BRT/LRT project scored from medium to highly beneficial for all criteria, except the state of good repair which deals with funds for facility maintenance, rehabilitation and replacement. Lincoln Boulevard BRT/LRT project’s score is “neutral benefit” under the state of good repair criteria. The Mobility Matrix Study envisions the implementation of a BRT/LRT project on Lincoln Boulevard as a mid-term (20 years) project. In the meantime, funding available for the widening of Lincoln Boulevard at Washington Boulevard, which spurred the discussions in 2012, has been de-obligated and is no longer available.

Significant progress in discussions and programming must be made between the City of Santa Monica, the City of Los Angeles, Caltrans, and other corridor stakeholders, before bus-only lanes can be implemented the entire length of the corridor from I-10 to LAX. There was Metro Call for Projects money available for widening Lincoln at Washington, which was identified by LADOT as a critical component for the provision of bus-only lanes. Since 2012, LADOT has not made significant progress and has since de-obligated the funds. However, the 2015 Subregional Mobility Matrix Study included an evaluation of a BRT/LRT project on Lincoln Boulevard which could serve as a catalyst to restart conversations between the City of Santa Monica, the City of Los Angeles, Caltrans, and other stakeholders to pursue the widening at Washington Boulevard and/or other alternatives to ensure bus-only lanes can be implemented from I-10 to LAX. This project is also a potential project to be included in future a future tax measure, which, if-approved, would provide a funding source.

In the City of Los Angeles, Lincoln Boulevard is a state highway, owned and maintained by Caltrans. Santa Monica was in a similar position when the bus-only lanes were initially approved by Council in 2005, and discovered that Caltrans was less-than amenable to the concept at the time. In recent discussions with LADOT and City of Los Angeles staff, they noted that Caltrans absolutely will not support bus-only lanes that require (in their words) "substandard" lane widths - less than 12 feet. Since the City of Los Angeles hasn't even initiated a relinquishment process to take control of Lincoln Boulevard from the state, even in an optimistic scenario Lincoln Boulevard will remain a state highway for at least 5-7 years.

Recent discussions with staff from Los Angeles Council District 11 indicate that the current top priority of the City of Los Angeles is the Great Streets program. The Mayor’s proposed budget\(^\text{12}\) includes a multi-departmental funding plan to implement the Great Streets program. Lincoln Boulevard is not a part of the Great Streets program, while Venice Boulevard is. Therefore, new funding sources will be required for any future improvements on Lincoln Boulevard.

The City of Los Angeles and Council District 11 support bus-only lanes; however, at this time there are no efforts to secure funding for facilities outside of the Great Streets program. Given the points listed above,

\(^{12}\) City of Los Angeles Fiscal Year 2015-16 Budget Summary; viewed at: https://d3n8a8pro7vhmx.cloudfront.net/mayorofla/pages/15557/attachments/original/1429512273/FY2015-16_Budget_Proposal.pdf?1429512273
The City of Santa Monica has initiated conversations with City of Los Angeles Council District 11 and LADOT staff to further explore the possibility of extending bus-only lanes along Lincoln Boulevard between the City of Santa Monica and LAX. Although there are funding and implementation challenges, the long-term benefits of bus-only lanes along Lincoln Boulevard cannot be denied.

Implementation of a short bus-only lane that is only within the City of Santa Monica would provide real benefits to transit riders, but those benefits in terms of travel time savings would be much less than if a bus-only lane was implemented for the entire route or even much of the route. Since Santa Monica has no control over the portion of the route that is within the City of Los Angeles, the eventual travel time savings benefits are speculative only. However, it is also important to note that the implementation of bus lanes, even if only within Santa Monica, sends a message regarding the importance of transit services to Los Angeles decision makers.

The advantages and disadvantages of implementing bus-only lanes within the City of Santa Monica are listed below:

- **Advantages** – Some time savings will result to bus riders, possible increase in bus ridership, action is consistent with City’s Street Network classification of Lincoln Boulevard as a “Boulevard” which is defined as “regional transportation corridor...provides access for all forms of transportation, but emphasizes transit and walking...regional auto traffic is accommodated in order to minimize regional traffic on parallel streets,” 13 relatively easy to implement based on prior work accomplished to date, which includes the 2012 design drawings, may provide incentive to City of Los Angeles to consider extending bus-only lanes within Los Angeles.
- **Disadvantages** – Loss of peak hour parking, would preclude possible curb extensions for pedestrian enhancements, much less time savings than a bus-only lane that extends into Los Angeles along the entire route (or much of the route).

5. **SUMMARY AND CONCLUSIONS**

This memorandum has presented a technical analysis of potential dedicated bus-only lanes along Lincoln Boulevard within the project study area, from the southern Santa Monica/Los Angeles boundary up to Pico Boulevard. There are advantages of a dedicated bus-only lane as well as some possible negative implications of implementing bus lanes within the study corridor. The advantages and disadvantages of each option are enumerated below. Each option would affect various stakeholders in different ways. Key stakeholders include local residents, businesses that front Lincoln Boulevard within the study area, bus riders who use the services along Lincoln Boulevard, BBB and elected officials.

Next Steps
- In terms of ease of implementation based on physical and operational improvements, adding new peak period peak directional bus-only lanes on Lincoln Boulevard north of the Santa Monica City boundary would be relatively simple. As noted previously in this document, the City completed new design plans in 2012 in order to construct new bus-only lanes following the relinquishment of Lincoln Boulevard. After relinquishment, the City repaved and restriped Lincoln Boulevard according to the completed plans, and held off on including the bus-only lane markings and

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13 Santa Monica Land Use & Circulation Element; July 6, 2010; pg. 4.0-17-18.
associated signage. At this point, the lane configurations of Lincoln Boulevard are such that creating new bus-only lanes would be as easy as adding signage and a few new markings to the roadway; rather than undertaking a complete redesign and all new striping. Implementation of the approved striping plan providing peak period bus-only lanes could be an immediate first phase of a more comprehensive bus-only lane project.

- On February 23, 2015, the City held a public workshop to discuss a broad range of improvements on Lincoln Boulevard. The workshop attendees expressed support for peak period bus-only lanes, and expressed a desire for the lanes to continue into the City of Los Angeles to LAX. The workshop attendees also expressed support for a modified cross section on Lincoln Boulevard, which would require further changes to existing roadway striping.