CITY OF BEVERLY HILLS
STAFF REPORT

Meeting Date: May 20, 2014

To: Honorable Mayor & City Council

From: David Lightner, Director of Capital Assets
Susan Healy Keene, AICP, Director of Community Development;

Subject: North Santa Monica Boulevard Reconstruction Pre-Design Cost Estimates

Attachments:
1. Cost Estimate
2. Response to City Council Questions Regarding Costs

INTRODUCTION

This report continues the City Council's review of the Santa Monica Boulevard Reconstruction project, focusing on pre-design cost estimates and staff's proposed funding plan. Once City Council completes this discussion, staff proposes to return to the next available City Council meeting for a noticed discussion to address questions raised by the City Council regarding the conceptual design of the boulevard, including bicycle lanes and landscaped medians and to seek Council direction on roadway design.

DISCUSSION

In 2005, the State of California relinquished ownership of a 1.8 mile long section of Santa Monica Boulevard within the City of Beverly Hills to the City of Beverly Hills. Over the last several years, maintenance has been required on a regular basis to fix frequent potholes and repave areas of the pavement that have failed. Currently, the pavement quality, drainage system and other physical elements have deteriorated to the point that the Boulevard requires significant reconstruction.

As part of the conceptual design phase, a cost estimate was prepared for two scenarios of reconstructing the Boulevard. Scenario #1 is based on maintaining existing conditions (60 to 63 foot curb to curb width) and scenario #2 is based on a 3 to 6 foot widening of the roadway (66 foot curb to curb width). The cost estimates were based on several

assumptions for phasing and traffic routing and on surface and subsurface studies completed by Psomas. The studies included a geotechnical design report and a closed circuit television investigation of the underground storm drain system. The following is a breakdown of the primary component of the roadway reconstruction along with a comprehensive description of the associated necessary work and the corresponding cost estimates.

Geotechnical Studies and Associated Cost Estimates

The geotechnical report was prepared to investigate existing roadway conditions and to provide recommendations for pavement rehabilitation. The investigation included site reconnaissance, field explorations (pavement testing, pavement coring and soil borings), and laboratory testing. During the field review, areas of standing water were observed indicating roadway drainage problems. Sections of concrete curb and gutter along the edges of the roadway are deteriorated or missing. Asphalt concrete pavement along the drive lanes exhibited moderate to severe alligator (fatigue) cracking and minor longitudinal, transverse and reflective cracking. Asphalt pavement within and adjacent to intersections exhibited more distress than the drive lanes, likely due to braking and accelerating vehicles. The cracks in the pavement allow water into the roadway which weakens the pavement structure and contributes to deterioration.

Based on the field reconnaissance, a two-stage field testing/exploration program was conducted to characterize the pavement section and subsurface materials. During the first stage, borings were drilled in Beverly Gardens Park to observe and sample the subsurface materials. The second stage explored the existing pavement section and subsurface conditions using Falling Weight Deflectometer testing and cores were drilled through the pavement section layers and into the underlying subsurface materials. The Falling Weight Deflectometer is a device designed to simulate deflection of a pavement surface caused by a truck. The purpose of the testing is to obtain strength and behavioral measurements of the existing roadway pavement section. Coring of the pavement section was performed to determine the type and thickness of pavement along the roadway. The geotechnical report recommended removal of the upper two feet of the existing roadway section and reconstruction with 7 to 9 inches of asphalt concrete pavement over 10 to 15 inches of compacted aggregate base. Based on this recommendation, the cost of roadway construction, including replacement of concrete curb and gutter and sidewalks, was estimated to be $10.6 million for both scenarios.

Storm Water Surveys and Associated Costs

The closed circuit television investigation of the underground storm drain system was conducted to determine the extent of necessary drainage system replacement and to verify recommendations in the 2002 Storm Drain Master Plan. Several areas of the existing storm drain system, both along and crossing the roadway, are undersized and/or in poor condition and require replacement. Additionally, the existing shallow drainage conduits from the north/south alleys north of Beverly Gardens Park have failed and require reconstruction. The cost estimate for replacement of several thousand feet of underground drainage pipeline is $2.2 million for both scenarios.

Traffic Signals Relocation Cost

The cost estimates included the cost of relocating traffic signal poles on the north side of the Boulevard at every intersection. The estimates assumed that either a temporary or permanent widening of the Boulevard would occur. Widening may be necessary, at least temporarily, if we are to maintain two lanes of traffic in each direction for every phase of construction. The estimated cost to relocate traffic signals for a temporary widening is $2.1 million (relocated twice) and for a permanent widening is $1.2 million. Additionally, the overall duration of construction is estimated to be approximately six months longer for scenario #1 due to the extra work associated with restoring temporary widening conditions. For these reasons, permanent widening of the Boulevard is estimated to cost slightly less than maintaining the existing width.

Other Improvements Costs

Several improvements such as street lighting, landscaping (restoration), utility relocations and temporary traffic control are included in the base project. The existing street lights are an obsolete high-voltage, series circuit system and require complete replacement. Replacement of landscaping along the edge of Beverly Gardens Park will be required at the completion of the project to restore the turf and irrigation system that is disturbed during construction of the curb and gutter and street lights. Temporary traffic control includes the cost of materials such as cones, signs and arrow boards and labor to install and remove these traffic control devices throughout the duration of the construction project. The estimated cost of these improvements is $3.1 million for scenario #1 and $3.0 million for scenario #2.

General Conditions Cost

The cost associated with Contractor's overhead is called General Conditions. General Conditions include project supervision, equipment mobilization, temporary facilities for construction personnel, regulatory compliance items such as preparation and maintenance of a storm water pollution prevention plan, bonding and insurance. The cost estimates for general conditions assuming a construction duration estimated to be 30 months (scenario #1) is $3.6 million and 24 months (scenario #2) is $3.1.

Contingencies

A significant component of the preliminary budget estimate is the cost associated with escalation and contingency. Construction costs may rise as the cost of raw materials and labor increase over time. The estimates assumed cost escalation at 3% per year to the midpoint of the construction period/schedule. This results in a 7.5% cost increase above current construction costs. Additionally, the estimate used a contingency amount equal to 25% of the estimated construction cost. The accuracy of construction cost estimates vary at different stages of project development, ranging from ball park figures in the early stage to fairly reliable figures prior to construction. Generally, the accuracy of a cost estimate will reflect the information available at the time of estimation. Contingency is applied to the preliminary estimates to account for uncertainty in the scope of the project.

Overall Project Cost estimate

The following is a summary of estimated project costs:

ESTIMATED COST (Millions)

DESCRIPTION	Scenario #1*	Scenario #2**
Roadway Construction	$10.6	$10.6
Storm Drains	$ 2.2	$ 2.2
Traffic Signals	$ 2.1	$ 1.2
Street Lights, Landscaping, Traffic Control	$ 3.1	$ 3.0
General Conditions	$ 3.6	$ 3.1
Escalation/Contingency	$ 7.4	$ 6.9
Sub-Total (Construction):	**$ 29.0**	**$ 27.0**
Design/Construction Mgmt.	$ 4.8	$ 4.6
Total Project Budget:	**$ 33.8**	**$ 31.6**
Defer (Wilshire Blvd. to West City Limit):	($ 5.2)	($ 5.2)
RECOMMENDED PHASE I PROJECT BUDGET:	**$ 28.6**	**$ 26.4**

*Existing Roadway Width

**Widened Roadway Width

RECOMMENDED PROJECT FUNDING PLAN

At this time, staff recommends a funding plan based on a pre-design cost estimate for scenario #1 that includes the assumption that four lanes of travel in each direction will be maintained. Efforts will continue through design and development of mitigation measures to reduce the costs associated with this assumption, potentially further reducing the number of travel lanes for limited periods.

Staff has identified $29 million to fund Phase I of reconstruction of the Boulevard between Doheny Drive and Wilshire Boulevard, including $22 million in the FY 2015/16 Capital Improvement Program (CIP) and $7 million in savings from the Crescent Garage construction. The $22 million identified in the FY 2015/16 CIP includes $2.8 million of the City's share of State gas tax and Proposition C and Measure R Local Return funds. Staff is recommending this funding plan as it will not require issuing of bonds or use of the City reserves.

Reconstruction of the section of the Boulevard from Wilshire Boulevard to the western City limits (Phase II) is estimated at $5.7 ($5.2 million escalated by 10% with the assumption that the project will be deferred by approximately 3 years). It is recommended that Phase II should be funded from $4.7 million in Crescent Garage savings and $1 million from the City's share of State gas tax, Proposition C and Measure R Local Return funds to be accrued over the 3-year deferral. Savings from this estimate are expected through negotiated contributions from private development projects with shared responsibility for modifications to this section of the Boulevard.

CONSTRUCTION MITIGATION PLAN

With construction mitigation potentially a significant factor of project costs, the Psomas agreement includes an emphasis on developing a construction mitigation plan that minimizes intrusion into residential areas and maintains access to the City's business community to the extent possible. The best method to accomplish these goals is to keep traffic flowing to the extent possible during peak hours. Santa Monica Boulevard is particularly challenging as the roadway is:

- At or close to capacity from 7 am to 7or 8 pm during the workweek.
- Has close proximity to residential areas, making noise impacts a serious consideration at night-time.
- Is heavily used on weekends to access the City's shopping areas and churches on the north side of the Boulevard.

Given these considerations, as part of the development of pre-design cost estimates, the Psomas team developed construction scenarios that assumed two lanes would be open in each direction for the duration of the project, similar to the method used to construct the Santa Monica Parkway project in Los Angeles, west of the City.

During the design phase of the project, when the width of the roadway is determined, a construction mitigation plan will be developed in coordination with the Traffic & Parking Commission, including an evaluation of the assumption that two travel lanes be maintained in each direction for the duration of the project. Examples of what will be included in the construction mitigation plan follow:

- Work hours
- Working and non-working days
- Circumstances where street and lane closures can occur (for example, it may be determined that street closures are beneficial on weekends between Doheny and Beverly Boulevard but not in areas adjacent to shopping areas and the churches)
- Construction notification (both residents and commuters)
- Circumstances when residential streets may be closed
- Community outreach program (including outreach meetings and public information programs through local newspapers, City website and social media)
- Staffing of a construction customer service phone line

Conditions developed as part of the construction mitigation plan will be incorporated into the construction bidding documents. The selected contractor will ultimately develop a method of construction that meets the conditions set forth in the construction bidding documents.

PROJECT SCHEDULE IN RELATION TO LA CIENEGA STATION CONSTRUCTION

The Los Angeles County Metropolitan Transportation Authority's currently plans for advanced utility location to take place through the end of 2016. Metro plans to request that most advanced utility locations take place at night and weekends to minimize weekday traffic impacts. Following advanced utility locations, actual construction of the station would take place which would require lane closures at all times. It should be noted that Metro's schedule has been extended several times.

It will take approximately 14 months to complete final design and conduct the construction bidding process for the Santa Monica Boulevard Reconstruction project and 18-24 months for construction of the segment to Doheny to Wilshire. Starting project design in summer 2014 would minimize the overlap of project impacts between the La Cienega station and the Santa Monica Boulevard Reconstruction Project.

NEXT STEPS

Staff has identified the following steps to proceed with the Santa Monica Boulevard Reconstruction project.

- City Council completion of review of pre-design cost estimates, proposed funding plan, and conceptual design alternatives
- City Council direction to proceed with project design, including:
  - Decision on roadway width
  - Direction if landscaped medians should be included in design phase
- City Council review of "thirty percent" project design, draft construction mitigation plan, and revised cost estimates (approximately 4 months after City Council direction to proceed with project design).
- City Council review of completed project design "engineering" cost estimates; and direction to proceed with bidding process (approximately 10 months after City Council direction to proceed with project design).

FISCAL IMPACT

This report provides cost and funding information for the Santa Monica Boulevard Project.

RECOMMENDATION

Staff seeks City Council direction on how to proceed with the Santa Monica Boulevard reconstruction project.

Approved By
Susan Healy Keene, AICP

Approved By
David Lightner

ATTACHMENT 1

Project	**North Santa Monica Blvd Reconstruction - Doheny to Moreno (Entire Blvd.)**	
Description	Full asphalt concrete section removal and replacement. New concrete curb, gutter, curb ramps, and replace existing sidewalk along North Santa Monica Blvd. Storm drain improvements identified in the Storm Drain Master Plan and videography study. New street lighting.	
Scenario	1. Maintain existing curb to curb width. Project utilities constructed via trench/plate method followed by paving constructed in 3 major longitudinal segments. 4- 10' Lanes (2 in each direction) shall be maintained during construction. Temporary widening 3' to 6' to allow for temporary relocation of traffic lanes. Temporary widening area shall be restored to original condition at end of construction.	2. Widen Roadway to 66' - Relocate north curb 3' north of existing location. Project utilities constructed via trench/plate method followed by paving constructed in 3 major longitudinal segments. 4- 10' Lanes (2 in each direction) shall be maintained during construction. Temporary relocation of traffic lanes shall occur within the new 66' roadway width.
Duration	30 Months	24 Months
Project Cost	$33,880,000	$31,600,000
Additive Alternate 1 (recommended)	Median Islands	Median Islands
Cost	$310,000	$310,000
Deductive Alternate 1 (recommended)	Wilshire to Moreno (deferred)	Wilshire to Moreno (deferred)
Cost	-$5,200,000	-$5,200,000
Recommended Project Cost	**$28,990,000**	**$26,710,000**
Additive Alternate 2 (optional)	Widen Roadway between Canon and Wilshire to 63'	--
Cost	$350,000	--
Deductive Alternate 2 (optional)	--	Widen Roadway to 64' (in lieu of 66')
Cost	--	-$365,000

ITEMS			REVISED (PSOMAS)		ORIGINAL (STAFF)
			Scenario #1	Scenario #2	
CONSTRUCTION ITEM COSTS	1	General Conditions	$3,597,500	$3,075,500	included in items
	2	Utility Relocations	$426,900	$426,900	$3,500,000
	3	Storm Drain	$2,163,750	$2,163,750	
	4	Removals	$3,011,038	$3,019,410	$8,000,000
	5	Adjustments	$331,475	$331,475	
	6	Grading and Site Prep	$1,034,335	$1,154,949	
	7	Street Improvements	$5,995,192	$5,799,040	
	8	Signing and Striping	$269,800	$269,800	
	9	Temporary Traffic Control	$875,000	$710,000	$0
	10	Landscaping	$953,710	$1,005,910	$0
	11	Traffic Signal Modification	$2,080,000	$1,240,000	$0
	12	Street Lighting	$870,000	$870,000	$1,140,000
	Construction Sub-Total:		**$21,608,699**	**$20,066,733**	**$12,640,000**
CONTIN-GENCY	Escalation - 3% annually to 8/19/2016 (7.5%)		$1,620,652	$1,505,005	$1,000,000
	Construction Contingency (25%)		$5,807,338	$5,392,934	$1,360,000
CONSTRUCTION TOTAL:			**$29,036,689**	**$26,964,672**	**$15,000,000**
PROJECT/CONSTRUCTION MANAGEMENT (10%):			**$2,903,669**	**$2,696,467**	**$200,000**
PLANNING & DESIGN:			**$1,940,730**	**$1,940,730**	**$2,000,000**
TOTAL PROJECT ESTIMATE:			**$33,881,088**	**$31,601,869**	**$17,200,000**

ATTACHMENT 2

Response to City Council Questions Regarding Costs

1. **What if we closed down the boulevard during construction?**

Answer: Completely closing the Boulevard during construction could reduce the length of construction by 50%. The benefits would be offset by the diversion of 35,000 to 55,000 vehicle trips per day (depending on boulevard segment) to adjacent streets, including Sunset, South Santa Monica, Wilshire and Beverly Boulevards, Doheny Drive and Burton Way, creating significant impacts that likely could not be mitigated. For example, a preliminary analysis shows traffic on South Santa Monica Boulevard to increase between 24% and 71% (variance based on segment of the Boulevard closed). Closures would likely also increase traffic on residential streets and would require a much more significant environmental assessment, likely an Environmental Impact Report (EIR), than alternatives being considered for the reconstruction project with traffic lanes maintained during construction. With the cost of preparing an EIR and the traffic mitigation required for street closures, it is unlikely significant cost savings would result from street closures. Further, street closures would impact access to the City's business center and likely have an economic impact to the City.

2. **What if the roadway was expanded to the south of the Boulevard?**

Answer: Psomas provided the following evaluation of widening the Boulevard to the south side:

Psomas reviewed widening the south side of North Santa Monica Blvd. in the areas fronting private properties and reported the following to the Blue Ribbon Committee:

"On the eastern side of the project, private undeveloped (former railroad, Alpine to Sierra) property currently has a chain link fence on the property line which is 2' behind the existing curb, eucalyptus trees along the street, some overgrown and encroaching onto the right-of-way. Widening within existing right-of-way would yield an additional 12" to 18" at best and would worsen an existing condition (i.e. no parkway, street lights or roadway signs) and is not recommended.

On the western side of the project, are five blocks of city parking structures buffered from the boulevard by London Plane trees and other landscaping in a very tight space. Gruen Associates designed the five parking structures along Santa Monica Boulevard and, at that time, had discussions with the City Council and surrounding neighborhoods about not only the importance of the structures' location but it's seamless integration into the fabric of the City. As the structures are opposite the Beverly Garden Park and extend five blocks of Santa Monica Boulevard along a prominent gateway into the center of Beverly Hills, the London Plane trees, the Floss Silk trees, and landscaping were considered essential to the design of the structures and their significant location in

the City. Any widening of the south side would remove these trees and would not leave space for tree replacement. This would remove landscape buffer from the parking structures and severely impact the aesthetic character of the boulevard

Widening to the south also presents engineering challenges including regrading to join the elevations and design of longitudinal transitions in the roadway geometry. Further, all existing surface infrastructure including storm drain inlets, fire hydrants, signal equipment, etc. would require relocation.

In reviewing the impact associated with widening to the south, additional cost of approximately$1,680,000 would be incurred. A major component of this cost includes structural retrofit of the parking structure retaining walls which is required to resist surcharge loading from vehicles. This cost also includes work to remove and/or relocate landscaping, lighting, signage, sidewalk, and miscellaneous structures.

3. How much would it cost to build a similar road from scratch?

Answer: There is no single answer to this question. Construction costs per mile of road depend on location, terrain, type of construction, number of lanes, lane width, durability, number of bridges, etc. It costs more to build a new road than to rehabilitate a road or add lanes. Roads cost more to build in urban areas than in rural areas. Roads in mountainous terrain are more expensive to build than roads on flat land.

Nonetheless, some states have developed cost models to guide planning for their highway construction programs. These models give a ballpark figure for various kinds of highway improvements. The following are some examples:

- Construct a new 2-lane undivided road – about $2-$3 million per mile in rural areas, about $3-5 million in urban areas.
- Construct a new 4-lane highway — $4-$6 million per mile in rural and suburban areas, $8-$10 million per mile in urban areas.
- Construct a new 6-lane Interstate highway – about $7 million per mile in rural areas, $11 million or more per mile in urban areas.
- Mill and resurface a 4-lane road – about $1.25 million per mile.
- Expand an Interstate Highway from 4 lanes to 6 lanes – about $4 million per mile.

4. **What if only two lanes or three lanes were left open?**

Answer: The pre-design cost estimate assumes four lanes would be left open. Lane closures will be evaluated as part of the construction mitigation plan prepared during the project design phase and with the selected construction contractor.

5. **Are there lower cost alternatives?**

Answer: Full section pavement replacement is a major driver in the project construction cost. Alternatives may include mill and overlay in lieu of full section replacement in some areas of the roadway. This would yield savings in base material, soil export/import, disposal, utility conflict, and overall project duration. The recommendation of the Geotechnical study currently only offers full pavement section replacement. It is recommended to perform additional Geotechnical investigation(s), during the design phase, to evaluate to feasibility of mill and overlay alternatives.

6. **What happens if you just patch the street? What is the life expectancy of the road before you would have to patch again?**

Answer: Patching the roadway would not significantly extend the life expectancy of the roadway. Patching would not solve the drainage and damaged subsurface and the roadway would be susceptible to significant damage during heavy rain events.