



DATE: April 28, 2016
TO: Transportation Advisory Commission
FROM: Frederick C. Dock, Director of Transportation *J.C. Dock*
RE: COLORADO BOULEVARD ROAD DIET PILOT PLAN

RECOMMENDATION:

It is recommended that the Transportation Advisory Commission (TAC) review the traffic and parking elements of the proposed road diet pilot plan along Colorado Boulevard, receive public input, and provide comment and feedback on the proposal for City Council consideration.

BACKGROUND:

On January 25, 2016, the City Council considered a staff report and presentation on the "Colorado Boulevard Initiative – Road Diet and Pilot Parklet Proposal". After receiving public testimony, the City Council directed staff to proceed with the development and analysis of the Colorado Boulevard Initiative. As part of the recommendation, the City Council directed staff to present the initiative to the Transportation Advisory Commission for input since the most significant component of the initiative involves the alteration of Colorado Boulevard to accomplish the road diet, the back-in angle parking, and pedestrian bulb-outs. TAC's review, comments and any recommendations on the traffic and parking elements of the proposed program will be included in a staff report to the City Council. The staff report to the City Council will also include the review and comments by the Design Commission on the parklet components of the initiative as requested by the City Council.

ELEMENTS OF THE PLAN

In 2012 stakeholders from within the Playhouse District working with City staff began discussions on a concept to re-envision Colorado Boulevard to improve livability and increase economic activity. The concept included changes to Colorado Boulevard through a road diet, the reorientation of on-street parking, and installation of parklets along Colorado Boulevard in order to create a stronger sense of place, and make Colorado Boulevard more hospitable to consumers, residents, and pedestrians.

The proposal seeks to enhance the stretch of Colorado Boulevard between Hudson Avenue on the east to Los Robles on the west. The means by which this proposal is achieved is through the following:

- Road Diet – a reduction from two to one in travel lanes to decrease traffic speeds to maintain the current posted limit of 25 mph;
- Back-in Angle Parking – an arrangement where drivers back-in to park, and head-out to exit, that could increase parking per block face;
- Pedestrian Bulb-Outs – a protected area that would reduce the crossing distance across Colorado Boulevard; and
- Parklet Program – one that would lace the area from one end to the other, expanding the sidewalk for the purposes of providing enhanced pedestrian amenities using platforms that would be removable annually for the Rose Parade.

Road Diet

The Road Diet as proposed for the Colorado Boulevard Initiative would seek to improve driver and pedestrian visibility, reducing traffic lanes and speeds on Colorado Boulevard and shifting some through-traffic to the parallel one-way streets of Union and Green Streets that bracket Colorado Boulevard for that purpose.

As documented in the traffic analysis part of this staff report, it was concluded that the current traffic levels could be supported on the new configuration and that drivers could also rely on Union and Green Streets that run parallel to Colorado and currently provide superior through-traffic service.

Back-in Angle Parking

Back-in angle parking is a relatively new tool that has been successfully implemented in cities to improve safety conditions in that it allows for better visibility when exiting an angled on-street parking space. As opposed to conventional angle parking which requires the driver to back-out onto oncoming traffic or rely on mirrors, or parallel parking that requires the driver to turn over one's left shoulder to ensure there is no oncoming traffic, back-in angle parking easily allows the driver a full view of oncoming traffic. The "back-in, head-out" parking action makes merging with traffic safer due to enhanced visibility. Entry to the back-in-angle stall is equivalent to the entry to a parallel parking space and, as such, does not introduce additional safety exposure to what is already in place on Colorado Boulevard.

In addition to the safety considerations, the angle configuration will accommodate additional parking per block face as opposed to parallel parking. This is an important consideration as stakeholders attempt to grow the economic activity within the District.

Pedestrian Bulb-Outs and Enhanced Pedestrian Crossing

Installation of painted pedestrian bulb-outs at intersections would help shortening the crossing distance from one side of Colorado Boulevard to another thus improving walkability and improving pedestrian connections. These elements enhance the complete street management of the various travel modes furthering Council's policy for Pasadena to become a City where one can navigate without a car.

Parklet Program

The final component is the Parklet Program, a revitalization tool that has been implemented in cities throughout the world to provide extensions of the sidewalk within the parking field adding more space and amenities for people using the street. This space can be used for a variety of purposes – programming by cultural organizations, or as passive space for people to stop, eat, and visit, as one would on a park bench.

This proposal envisions installing two parklets at the start, and would establish a procedure to accommodate future parklets along Colorado Boulevard between Hudson Avenue and Los Robles Avenue. The elements of the parklets design will be reviewed for comments by the Design Commission for City Council consideration.

TRAFFIC AND PARKING ANALYSIS

Traffic volume counts conducted during February 2016 showed the daily traffic volumes on Colorado Boulevard to be about 18,000 vehicles per day. Traffic volumes on the parallel routes of Union Street and Green Street were shown to be about 7,600 and 10,000 vehicles per day, respectively.

An analysis was performed using a traffic simulation model to assess the impacts of removing two traffic lanes from Colorado Boulevard and the likelihood of potentially diverting some traffic to the adjacent parallel routes of Union Street and Green Street to achieve nominally the same traffic operations under the existing roadway conditions. The following are brief findings of this analysis:

Traffic Volumes

The analysis showed that the directional traffic volumes on Colorado Boulevard during the highest peak hour of the day (evening peak) are operating within the capacity of the street under a two-lane configuration and far below the capacity of a four-lane configuration. Such a condition indicates that the removal of one lane of the street in each direction would have only a nominal effect on traffic operations. The nominal effect would be an increase in delay under the two-lane configuration as there would be longer traffic signal queues and more potential interaction between parking cars and the travel lane than under the four-lane configuration.

As a conservative assumption, it was estimated that about 10 percent of the eastbound and westbound traffic volumes using Colorado Boulevard would divert to Union Street and Green Street. The diverted traffic to those streets was then compared to the

operating capacity of Union Street (under existing 3-lane roadway and future 2-lane roadway with the proposed Union Street Cycle Track which will remove one travel lane from Union Street) and Green Street (3-lane roadway). The results showed that the capacity of Union Street and Green Street is far above the traffic volumes on those streets even with the addition of the traffic diverted from Colorado Boulevard, which means that traffic operations on Union Street and Green Street would be much the same as currently exist.

Travel Times

The traffic simulation model was used to estimate peak-hour travel times under existing and proposed conditions along Colorado Boulevard.

The analysis showed that the existing average travel time on Colorado Boulevard between Los Robles Avenue and Hudson Avenue is about 112 seconds. With the proposed removal of two traffic lanes, the average travel time between the same blocks was shown to be about 130 seconds. On average, a motorist may experience an 18 second delay when travelling through this corridor under proposed conditions.

Similar analysis was performed to estimate the travel time impacts on Union Street and Green Street. The table below summarizes the results:

Peak-Hour Average Travel Times (Seconds)		
	Existing Conditions	Proposed Conditions
Colorado Boulevard	112	130
Union Street	98	104
Green Street	98	130

Traffic Speeds

The analysis showed very little impact on the operating speeds through the corridor when comparing proposed conditions with existing conditions. The average speed through these five blocks is estimated to be about 14 miles per hour, which is consistent with the number of traffic signals and the block length on Colorado Boulevard. With the road diet proposal, the average speeds were estimated to be about 12 miles per hour.

Similar analysis was performed to assess the speed impacts on Union Street and Green Street with the diversion of traffic to those streets during the PM peak hour. The table below summarizes the results:

Peak-Hour Average Operating Speeds (miles/hour)		
	Existing Conditions	Proposed Conditions
Colorado Boulevard	14	12
Union Street	16	12
Green Street	16	15

Intersection Operations

Peak-hour intersection operations were analyzed for Level of Service (LOS) under both the existing and proposed conditions. Intersections along Colorado Boulevard and Union and Green Streets were shown to be currently operating in LOS B or better. Under the proposed conditions, the same intersections were shown to function at LOS D or better. These findings are consistent with the travel time and travel speed findings.

Parking

The proposed reconfiguration of existing parallel parking to angle parking would result in a net gain of about 30 parking spaces within the five blocks between Los Robles Avenue and Hudson Avenue. It is estimated that each of the parklets anticipated to be installed in the future, would occupy two angle parking spaces. Once the pilot duration is terminated, if the road diet and parklet plan are approved to continue as a permanent plan, the American with Disabilities Act (ADA) provisions will need to be assessed and if accessible spaces need to be provided along Colorado Boulevard, there will be up to three angle parking spaces per block reserved for accessible parking within the project limits. The table below summarizes an estimate of the existing and proposed parking spaces per block:

Parking Inventory			
Colorado Boulevard Block	Street Side	Existing # Spaces	Proposed # Spaces
Los Robles to Oakland Ave	North	10	17
	South	11	15
Oakland to Madison Ave	North	8	11
	South	8	10
Madison to El Molino Ave	North	10	14
	South	9	11
El Molino to Oak Knoll Ave	North	10	15
	South	12	12
Oak Knoll to Hudson Ave	North	8	11
	South	9	9
Total		95	125

CONSTRUCTION COST ESTIMATES

The costs associated with the construction of the road diet have yet to be finalized based on engineering estimates for sandblasting, roadway restriping, addition of needed signs, and addition of bollard types and paint materials to be used in the bulb-out areas. It is expected that the costs for the proposed pilot roadway restriping plan would return to City Council for formal approval along with any Capital Improvement Program (CIP) amendment necessary to accomplish the installation of the road diet pilot plan.

NEXT STEPS

Following are the steps necessary to address the full extent of the City Council's charge of January 2016:

- Parklet elements
 - Review by the Design Commission tentatively scheduled in May 2016
- Finalize license agreement for parklet placement
- Road Diet Components
 - ADA – specific requirements to be addressed at the end of pilot period
 - Identify cost of long-term improvements
 - Environmental clearance
 - Project is exempt from CEQA
 - Corner Curb Extension Treatments
 - Finalize type of bollards, bulb-out color and materials
 - Finalize cost estimates for pilot
- Return to City Council with findings and recommendations, tentatively in June 2016.