



# Administrative Report

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N.1., File # 22-4499

Meeting Date: 8/2/2022

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**To:** MAYOR AND CITY COUNCIL  
**From:** TED SEMAAN, PUBLIC WORKS DIRECTOR

## **TITLE**

DISCUSSION AND POSSIBLE ACTION REGARDING INTERSECTION MODIFICATIONS AT SIGNALIZED INTERSECTIONS ALONG ARTESIA BOULEVARD

APPROVE THE RECOMMENDED SIGNALIZED INTERSECTION IMPROVEMENT OPTION AND AUTHORIZE THE DESIGN AND COMPLETION OF CONSRUCTION DOCUMENTS FOR IMPLEMTATION OF THE PROPOSED MODIFICATIONS ALONG ARTESIA BOULEVARD

## **EXECUTIVE SUMMARY**

In response to the concerns of residents, the City Council approved a project as part of the Fiscal Year 2021-22 Capital Improvement Program Budget to address left turn safety at certain signalized intersections along Artesia Blvd., between Inglewood Avenue and Aviation Blvd. Additionally, the Council approved a strategic plan objective to complete design of improvements that would increase safety of left turning movements at these intersections. To that end, staff engaged an on-call Traffic Engineering consultant, AGA Engineers, Inc., to advance conceptual designs and determine probable costs to make the most economical improvements. AGA has completed its report on the proposed improvements and provided cost estimates for two options.

The report considered options to improve safety for drivers making the east-bound and west-bound left turn movements at several signalized intersections along Artesia Blvd. One identified option is to improve line of sight for left turning motorists by reducing the medians and adjusting the alignment of the respective left turn pockets. The intersections that would benefit under this approach include those at Aviation Way, Green Lane, Rindge Lane, MacKay Lane and Felton Lane. Improvements at these intersections include reducing the width of the raised medians for eastbound and westbound approaches, realignment of east-west left turn lanes, and minor signing, striping and traffic signal equipment improvements. The option however is expensive and greatly exceeds the project budget of \$200,000.

The second, and recommended, option is to reduce potential left turn conflicts with oncoming vehicles by total or partial elimination of permissive left turn movements through improved technology utilizing new protected permissive left turn flashing yellow arrow (FYA) signal heads. These FYA signal heads are proposed and in design for the intersection of Inglewood and 152<sup>nd</sup> and are programmable to eliminate permissive left turns at all or certain parts of the day. The intersections that would benefit from this approach include those at Green Lane, Rindge Lane, Slauson Lane, Vail Avenue, MacKay Lane and Felton Lane.

The order of magnitude cost presented in the report from AGA to implement option one, the median and lane realignment improvements, is \$776,000. The second (recommended) option, which would

replace the signal heads with the newer technology equipment described above, has an order of magnitude cost of about \$198,000 for six intersections, or approximately \$33,000 per intersection. This estimate includes projected design costs of \$7,000 per intersection and construction. The advantage of this approach is that signal heads could be replaced independently of the others to accommodate a smaller budget if needed.

It is recommended that the City Council authorize the design and completion of construction documents to replace the signal heads as described in option two. Approximately 95% of the initial \$200,000 project budget remains, which is sufficient to cover the estimated \$42,000 cost of final design. If the construction bid results exceed the then remaining project funds, the City Council can elect to add funding to cover all six intersections, or reduce the number of intersections being upgraded at the time of contract award.

Separately, staff would recommend considering funding for the left turn pocket realignment improvements discussed in option one as part of a future capital budget item or that they be included as part of the eventual Artesia Boulevard Resurfacing Project.

## **BACKGROUND**

Staff began to receive concerns regarding safety of certain intersections along Artesia Blvd. in the first half of 2021. At the end of budget deliberations for FY 2021-22, the Council approved a \$200,000 appropriation for a project to address these safety concerns. Following the budget approval, staff reviewed the Blvd's accident history but it did not point to any specific pattern of collisions that could be corrected with isolated infrastructure changes alone. Staff also performed a line-of-sight analysis at several of the intersections and found that there was potential to improve conditions along the Blvd. if the left turn pockets could be realigned to improve the visibility of on-coming traffic for drivers making a left turn. Staff also evaluated existing traffic signal hardware to see if improvements to intersection operations might achieve the desired effects without creating undue delays in traffic flow along the corridor. Staff later engaged AGA Engineers, one of its on-call consulting firms, to evaluate these concepts and, upon approval of the approach by City Council, to produce procurement and construction documents for the improvements.

AGA's conceptual design report is attached. It provides the line of sight analysis for the intersections where median reduction and left turn lane realignment is proposed. The analysis shows a comparison of existing conditions with proposed future condition. In each case, the appropriate sight distance is achieved by left turn lane realignment for the speed limit along the roadway. A detailed list and description of needed improvements at each of the seven intersections is provided in the report. A reduction in width of the raised concrete medians for both the westbound and eastbound dedicated left turn lane approaches to offset their alignment is recommended for five of the intersections. The other two intersections, at Slauson Lane and Vail Avenue, do not have an opposing left turn lane and so sight lines are not impaired by opposing left turning vehicles. These intersections will also require restriping, pavement repairs and lowering of existing utility boxes. There are also recommendations to replace worn signs, and/or upgrade signal head and pedestrian push button equipment at each of the intersections. U-turn restriction signs would be added to each east or west bound approach for five of the seven intersections. This is due to the reduced width for a turning radius as a result of moving the left turn lane closer to the opposing curb, which may prohibit most vehicles from making U-turns in a single maneuver. Finally, the report includes a detailed cost estimate for the proposed improvements at each intersection, which totals \$776,000 as

an order of magnitude planning budget for the project's construction. The cost to construct the improvements at all seven intersections is considerably beyond what has been budgeted to date (the intersections requiring the median improvements - five of the seven - are estimated to cost an average of \$150,000) and therefor is recommended to be considered as part of future capital budgets or be included and designed as part of the Artesia Blvd Resurfacing Project.

Due to the high cost of median realignment improvements, staff also asked AGA to evaluate the potential of and provide costs for replacement of current protective/permissive "doghouse" style left turn signal heads with programmable protected permissive FYA left turn signal heads. Replacement of the signal heads and needed upgrades to the intersection controllers were expected to be much less expensive as staff review indicates that upgrades to the poles and mast arms do not appear to be required at this time. There is also the potential for operational changes to the left turn movements, going from protected/permissive to protected only, to negatively impact traffic operation along the corridor. However, staff has discussed this with staff from Los Angeles County who maintain the corridor and has learned that this is very unlikely given the vehicle counts making those movements.

Therefore, staff is recommending a two-phase approach. The first phase includes directing AGA to finalize design and construction documents to improve the left turn signal heads to FYA style heads at six locations. This can be accomplished with the existing budget. After bids are received, actual costs will be known and staff will present a recommendation to award a construction contract that is based on the remaining project budget or completed in its entirety with a modest additional appropriation.

The second phase would entail the completion of design and construction documents for the identified median and left turn lane realignments and appropriate the additional funding needed to complete construction during future budget considerations or as part of the Artesia Blvd. Resurfacing Project.

### **COORDINATION**

Coordination of the safety evaluation and the conceptual design work took place within the Public Works Department, with input from the Los Angeles County Public Works Department and AGA.

### **FISCAL IMPACT**

Funding for the cost to complete the design and construction documents for the recommended improvement concept is available in the \$200,000 project budget for the Artesia Blvd. Intersection Safety Improvements project, Job No. 41330.

### **APPROVED BY:**

*Mike Witzansky, City Manager*

### **ATTACHMENTS**

- Conceptual Design Memorandum by AGA Engineers

- Preliminary Cost Estimate for Left Turn Lane Signal Head Improvements