



Department Source: Public Works

To: City Council

From: City Manager & Staff

Council Meeting Date: January 17, 2017

Re: Report-Forum and Green Meadows Intersection Improvement Project

Executive Summary

A public hearing was held on September 6, 2016 for the Forum and Green Meadows Intersection Improvement project. Following the public hearing, Council directed staff to provide additional intersection improvement options, and also directed the Bike/Pedestrian Commission to review the data that staff had provided and to make a recommendation. This report summarizes the additional intersection improvement options that have been developed and the Bike/Pedestrian Commission recommendations.

Discussion

The Forum and Green Meadows intersection improvement project was identified in the 10-year plan for the 2015 quarter percent Capital Improvement Sales Tax ballot. This intersection was identified for improvement due to both safety and traffic congestion concerns. For example, the existing layout of the intersection which is an all-way stop with multiple lanes can be confusing for drivers. It is difficult to know which vehicle has the right of way to enter the intersection when multiple vehicles stop at the same time, causing confusion, delay, and increasing the potential for collisions. Staff has also received many complaints that drivers do not come to a complete stop at the intersection. In addition, when there are six vehicles at the intersection at the same time, it's difficult and dangerous for pedestrians to cross. Finally, during daytime peak traffic, the intersection becomes a bottleneck as vehicles queue behind the stop signs. This situation is expected to worsen as improvement projects along Nifong are under construction and as the City's traffic volume continues to grow to the south and southwest.

An Interested Parties (IP) meeting for the intersection improvement project was held April 28, 2016, and a public hearing was held on September 6, 2016. Staff's recommendation for the intersection improvement was to construct a 150-foot diameter partial double-lane roundabout. At the public hearing there was opposition to the proposed roundabout by residents of the Country Club Villas; thus, Council directed staff to evaluate additional options to improve the intersection, and directed the Bicycle/Pedestrian Commission to review the information and make a recommendation.

Additional Options to Improvement the Intersection

Staff has been working with Bartlett and West Consulting Engineers on both the initial design of the roundabout and on the additional options to improve the intersection. Three additional intersection improvement concepts have been developed. The options include another signalized intersection configuration and two different J-turn intersection configurations. The following summarizes each of the intersection improvement concepts



including the full signalized option that was discussed at the public hearing. A layout of each option is attached. Each of the total concept project cost estimates includes construction, utility relocation, easement acquisition, and design.

1. Full Signal (as presented at the public hearing)
 - Full length right turn and left turn lanes for vehicle storage at each leg of the intersection.
 - Dual through lanes on Forum.
 - Bike lanes at each leg of the intersection.
 - Islands at each leg of the intersection for pedestrian crossing havens.
 - Total estimated concept project cost is \$914,700.
2. Reduced Signal
 - Right turn lane storage on the east leg of Green Meadows was reduced in length.
 - Right turn lane and pedestrian island at the preschool were removed.
 - Pedestrian islands remain on the northeast, southeast, and northwest corners.
 - Bike lanes remain on each leg.
 - Total estimated concept project cost is \$868,900.
3. J Turn
 - Eliminates the Green Meadows left turn movements at the intersection.
 - Left turns are still allowed off of Forum Blvd.
 - U-turn areas are located farther down Forum for the Green Meadows left turn movements.
 - Scottson Way will be made into a cul-de-sac.
 - Bike lanes are included on Forum.
 - No pedestrian crossing facilities are included with this option.
 - Total estimated concept project cost is \$1,208,200.
4. J Turn with Ped Signal
 - Left turn movement for both Forum and Green Meadows have been removed.
 - Crosswalk and pedestrian actuated signal have been included at the intersection.
 - Left turn movements for both Forum and Green Meadows will need to utilize the U-turn movement farther down on Forum.
 - Bike lanes are included along Forum.
 - Scottson Way will be made into a cul-de-sac.
 - Total estimated concept project cost is \$1,248,700.

For these options the following should be noted.

- Vehicles currently need to slow to a stop at the intersection, but with each option vehicles on Forum will not need to stop or slow down at the intersection



unless making a left turn or stopping for a red light; thus, resulting in higher vehicle speeds at the intersection for the through traffic.

- The J-Turn options are a restricted crossing/U-turn movement. The J-Turn reduces the conflicts at the intersection by removing the left-turn movement and replacing it with a right-turn plus a U-turn. By removing the left-turn movement, the vehicle conflicts at the intersection are reduced, which increases the efficiency and the safety of the intersection. The left-turn collision is considered a severe type crash.

Bike/Pedestrian Commission Recommendations

Staff provided the Bicycle/Pedestrian Commission a copy of the council memo from the September 6th public hearing and the additional improvement options that were designed by Bartlett and West. The commission discussed the project in general and the different intersection improvement options at their November 16, 2016 meeting. Two motions were made to 1) support a roundabout concept, and 2) staff should consider a road diet (lane reduction) along Forum using the concept of a roundabout. The minutes from the Commission meeting are attached.

The four-lane section of Forum where the Bike/Pedestrian Commission requested staff consider the road diet is located in between two sections of Forum that are currently two-lanes. However, both of these sections of Forum are planned for improvements within the next eight years. The widening of Forum to four lanes between Green Meadows and Nifong is currently under design and is planned to be included in the construction of the Nifong Improvement project in the year 2020. The widening of Forum to four lanes between Chapel Hill and Woodrail is also included in the 10-year plan with the design of the improvement starting in 2022 and construction in 2025. These improvements were included as projects in the 2015 quarter percent Capital Improvement Sales Tax ballot.

In conclusion, the Forum and Green Meadows intersection was identified for improvement due to both safety and traffic congestion concerns. Based on the analysis of the additional intersection improvement options, the recommendation of the Bike/Pedestrian Commission, and the recent adoption of Vision Zero by Council, staff recommends a roundabout, as presented at the public hearing, as the best improvement for this intersection. Another option that Council may wish to consider is to leave the intersection as it is and re-evaluate in five years.

Fiscal Impact

Short-Term Impact: The intersection improvement will be funded from 0.25% Capital Improvement Sales Tax, and cost will be dependent on the option chosen.

Long-Term Impact: Yearly routine maintenance is dependent on the type of intersection improvement.



Vision & Strategic Plan Impact

Vision Impacts:

Primary Impact: Transportation, Secondary Impact: Environment, Tertiary Impact: Tertiary

Strategic Plan Impacts:

Primary Impact: Infrastructure, Secondary Impact: Public Safety, Tertiary Impact: Tertiary

Comprehensive Plan Impacts:

Primary Impact: Infrastructure, Secondary Impact: Mobility, Connectivity, and Accessibility, Tertiary Impact: Tertiary

Legislative History

Date	Action
01/28/2016	Interest Parties meeting held
08/01/2016	R106-16 Setting a public hearing for 9/6/16
09/06/2016	PH30-16 Public Hearing held

Suggested Council Action

Following Council discussion, Council should direct staff as to how to proceed with the Forum and Green Meadows Intersection Improvement project.