

April 15, 2011

Central Park Blvd & 29th Ave

Traffic Control Change Options & Recommendation:

Background: Central Park Blvd is an arterial street corridor that when fully constructed will provide a direct connection between Yosemite St south of Montview Blvd and 56th Ave north of I-70. Central Park Blvd at 29th Ave currently carries approximately 12,000 vehicles per typical weekday. The traffic volume on Central Park Blvd at 29th Ave is expected to increase to approximately 16,000 vehicles per day after the I-70 & Central Park Blvd interchange opens in late 2011. DRCOG's 2030 regional traffic model indicates that Central Park Blvd at 29th Ave will carry approximately 30,000 vehicles per typical weekday once the Stapleton master plan is fully developed.

Existing conditions: Central Park Blvd and 29th Ave are both median divided roadways with on-street parking and on-street bike lanes. Central Park Blvd has two vehicle traffic lanes in each direction and 29th Ave has one vehicle traffic lane in each direction. 29th Ave is a neighborhood collector street that provides a connection between the Quebec St Town Center and Westerly Creek (Beeler St). The medians on both Central Park Blvd and 29th Ave are 50' wide where the two streets intersect. Central Park Blvd and 29th Ave is currently controlled by four all-way stops around a 50' by 50' square in the center of the intersection. The current four all-way stop configuration is strictly an interim traffic control strategy until permanent traffic control measures can be installed at this intersection.

Traffic Control Options:

1) Existing four all-way stops. The existing four all-way stops at Central Park Blvd and 29th Ave were installed as a temporary traffic control measure until such time that the volume of traffic on Central Park Blvd increased to a point where all-way stop control could no longer effectively control the traffic volume at this intersection. All-way stops are typically only used on local and neighborhood collector streets that carry up to 7,000 vehicles per typical weekday. The volume of traffic on Central Park Blvd increased from approximately 5,000 vehicles per typical weekday in 2005 to approximately 12,000 in 2010. The current level of delay and congestion during peak travel periods associated with the existing four all-way stops is now unacceptable and will grow worse if no traffic control changes are made. One option that could be considered would be to simply remove the stop signs for Central Park Blvd and stop only 29th Ave. However, this option would increase delay and congestion for all modes of traffic on 29th Ave, would not stop vehicular traffic on Central Park Blvd to provide time for vehicles, bikes, and pedestrians on 29th Ave to cross, and would provide no traffic control on Central Park Blvd between the existing traffic signals at Verbena St/Wabash St and Martin Luther King Jr Blvd, a distance of approximately ½ mile. For these reasons, simply removing the stop signs for Central Park Blvd at 29th Ave is not considered a viable option by City of Denver officials.

2) Install a traffic signal. The intersection of Central Park Blvd and 29th Ave has been planned to be a signalized intersection as part of the Stapleton master plan. However, the 50' by 50' square in the center of the Central Park Blvd and 29th Ave intersection, while facilitating the interim condition of four all-way stops, has increased the cost associated with reconstructing the intersection to allow a traffic signal to be installed. In order to control Central Park Blvd and 29th Ave as a single point, signalized intersection, the 50' by 50' square in the center of the intersection must be removed. At one point, it was hoped that the intersection of Central Park Blvd and 29th Ave could be controlled as signalized square-about, comparable to the existing four signal square-about on Central Park Blvd at MLK Jr Blvd.

However, the minimum size of the center square for a four signal square-about is 100' by 100' which is the size of the center square at Central Park Blvd and Martin Luther King Jr Blvd. With the center square at Central Park Blvd and 29th Ave being only 50' by 50', the only way to signalize this intersection is to remove the center square and create a single point signalized intersection comparable to the existing traffic signal at Central Park Blvd and Verbena St/Wabash St. The normal cost to install a new traffic signal in Denver is around \$250,000. The additional construction costs associated with removing the center square, modifying the medians to provide left turn pockets, and adjusting the existing storm water drainage system and other public utilities that lie within the intersection have pushed the total construction cost estimate to approximately \$1,000,000. Even with this higher cost estimate, reconstructing the intersection and installing a new traffic signal is seen as the best available option for Central Park Blvd and 29th Ave by Stapleton's master developer, Forest City, and City of Denver officials.

3) Install a modern roundabout. City officials briefly looked at the possibility of reconstructing the intersection of Central Park Blvd and 29th Ave as a two lane modern roundabout similar to those along Lowry Blvd in East Denver. A footprint of the existing two lane roundabout at Lowry Blvd and Fairmount Drive was superimposed on the intersection of Central Park Blvd and 29th Ave to determine if the concept was feasible. It was determined that a two lane modern roundabout could not be constructed at Central Park Blvd and 29th Ave without removing a significant amount of existing on-street parking and eliminating the on-street bike lanes for each intersection approach. The required footprint for a two lane modern roundabout would require moving sidewalks on each corner of the intersection closer to the existing buildings. Modern roundabouts are generally not considered pedestrian or bike friendly because of the significant amount of out of direction travel required. It should also be noted that modern roundabouts work best when the approach volume of each street entering the roundabout is similar. Roundabouts where one street has a significantly higher volume of through traffic than the other street, which is the case at Central Park Blvd and 29th Ave, tend to favor traffic on the primary street while delaying traffic on the minor side street because during peak travel periods there are relatively few gaps for the minor side street traffic to enter the circle. Lastly, the cost to reconstruct the intersection of Central Park Blvd and 29th Ave into a two lane modern roundabout while keeping the intersection open to traffic would be 2 to 3 times higher than the cost to remove the existing square in the center of the intersection, add left turn pockets in the median area, and install a traffic signal. Therefore, based on all of the arguments presented above, a two lane modern roundabout is not considered a viable option for Central Park Blvd by City of Denver officials.

4) Close the median on Central Park Blvd across 29th Ave. City officials also briefly considered the option of closing the existing median on Central Park Blvd across 29th Ave and installing a pedestrian/bicycle activated signal to allow pedestrians and bicycles to cross Central Park Blvd going east-west while limiting vehicular traffic on 29th Ave to make right turns only onto Central Park Blvd. This option, while attractive at first, was subsequently determined to be not viable because it would redirect a significant amount of east-west vehicular traffic wishing to cross or turn left onto Central Park Blvd from 29th Ave to 28th Ave. Since the closure of the median on Central Park Blvd across 26th Ave, there has been concern expressed by residents about the volume and speed of traffic on 28th Ave. Traffic volume sensitivity on 28th Ave is largely due to a desire to control the speed and limit the volume of vehicular traffic past the public park and swimming pool complex on 28th Ave west of Central Park Blvd and the elementary school campus on 28th Ave east of Central Park Blvd. Therefore, closing the median on Central Park Blvd across 29th Ave in a manner similar to what was done at 26th Ave was determined to not be a viable option by City of Denver officials because of the increase in vehicular traffic this alternative would cause on 28th Ave.

Summary / Recommendation: Stapleton is a master planned community that was created by the citizens of Denver and the mutual desire of the City and County of Denver and Forest City to provide multi-modal travel options for area residents. Denver Traffic Engineering Services has not required or initiated any changes to the original Stapleton master plan's transportation infrastructure. A primary goal of the infrastructure plan for Stapleton was for the street network to be integrated with and connected to adjacent Denver neighborhoods and to provide a street network that would serve internally generated traffic, compliment other nearby neighborhoods, and not force through traffic to divert away from or around the Stapleton area.

Central Park Blvd has always been planned to be a signalized four lane arterial street connecting Montview Blvd to the south of I-70 and 56th Ave to the north of I-70. Central Park Blvd has been designed with on-street bike lanes, wide setback sidewalks, on-street parking, alley loaded garages, minimal private driveways, and a parallel connected street grid to provide multi-modal transportation opportunities along the Central Park Blvd corridor. With the planned opening of the new Central Park Blvd interchange at I-70 in October, 2011, it has now become necessary to remove the interim stop signs and implement a permanent traffic control change at Central Park Blvd and 29th Ave. From the list of traffic control options outlined above, the best available option, in terms of construction cost and the ability to complete in conjunction with the opening of the new interchange on I-70, is to proceed with plans to add left turn pockets in the medians and signalize the intersection of Central Park Blvd and 29th Ave.