

TRANSPORTATION EDUCATION

SUMMER 2007

A BRIGHT FUTURE FOR TRAFFIC SIGNALS

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How many City employees does it take to change a traffic signal light bulb? Generally two; one for traffic control and one to operate the bucket truck and replace the burned out bulb. That's one reason a City program started in 2005 to swap incandescent light bulbs for longer-lasting Light Emitting Diode (LED) light bulbs will save money.

Though LED light bulb retrofits cost more initially (the cost continues to come down) \$35 to \$45 as compared to \$3 for traditional bulbs, they use less energy and burn five times longer.

Incandescent bulbs last one or

two years while LED bulbs last five to 10 years. The longer life means City staff have to change out fewer bulbs and respond to fewer outages. In 2004, the City received approximately 3,000 signal malfunction calls related to bulb outages. Since then, the



When City crews replace the overhead hanging signals they also replace the lights on the side poles and pedestrian crossing signs with brighter LED lights.

City is realizing a 73 percent reduction in calls – just 402 as of mid-July.

City staff also expect to save about \$333,000 annually in reduced energy expenses once all of the bulbs have been replaced. In a test of 10 retrofitted traffic signals average daily use went from about 261 kilowatts per signal per day down to about 51 kilowatts, with an annual cost savings at those location of 73 percent. Not only is this good for City finances, but it's also important for energy conservation.

Regardless of the numbers, the new LED bulbs are an asset to the community because they are safer—they emanate a much brighter light which is more easily seen.

City staff started replacing the traffic signal bulbs in 2005 and anticipate having approximately 26,000 bulbs replaced by the end of 2007 with total completion in 2008.



DID YOU KNOW?

The City is responsible for about 30,000 traffic signal light bulbs at 520 signal-controlled intersections.



Green LED traffic signal bulbs cost more, \$45 compared to \$35 for red or yellow bulbs because they use more expensive gases, even though they're all 12 inches across.



CITY/PPRTA CAPITAL PROJECT UPDATES

The Pikes Peak Rural Transportation Authority (PPRTA) is the result of the region’s need for revenue to fund transportation capital projects, maintenance and transit. In November of 2004, voters approved a county-wide one-cent sales and use tax increase to fund these needs. Since collection began on Jan. 1, 2005, the City of Colorado Springs has used this revenue to make transportation and maintenance improvements throughout the community.

Information on Colorado Springs transportation projects can be found on the City’s Web site, SpringsGov.com. Click on “Transportation Education.” Here’s an update on two of the City’s PPRTA projects:

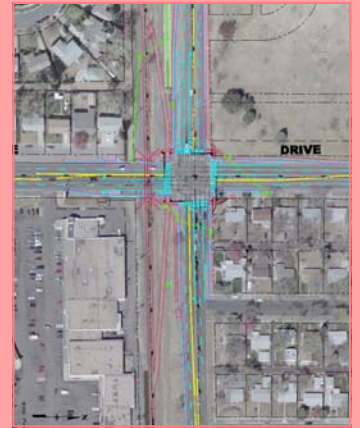
CONSTITUTION & CIRCLE PROJECT PROGRESS

Improvements to the Constitution Avenue and Circle Drive intersection were scheduled to begin construction in spring of 2007, but needs identified during the design process and an increase in construction costs resulted in cost estimates over the \$1.8 million budget. City Engineering staff took another look and the project team identified potential work that could be completed by City forces to reduce project costs. TOPS and bicycle tax funds will provide for various trail improvements including construction of a trail tunnel, called a “trunnel,” for \$200,000. (This tunnel could serve as a model for additional tunnels along Rock Island Trail with future intersection improvements.) The PPRTA also agreed to reallocate \$112,822 in funding from another City project that finished under budget.

City staff are now in the final stages of purchasing right-of-way and relocating utilities for the project. Staff will proceed with bidding this fall with alternative options included so adjustments can be made if the cost of the project is still higher than the budget.

Improvements to this intersection, to begin in spring 2008, will reduce congestion, address bicycle and pedestrian needs, reduce existing potential for rear-end collisions, decrease air pollution, and improve Rock Island Trail by:

- Widening both Constitution and Circle intersection lanes to standard widths
- Extending westbound, eastbound and southbound right-turn lanes for additional lane capacity
- Improving curb radiuses on all four corners
- Replacing traffic signal and retiming phases
- Installing sidewalk and ADA-compliant curb ramps
- Building a Rock Island Trail “trunnel”
- Minimizing the dip in the roadway to improve safety.



ACADEMY IMPROVEMENTS AT FOUNTAIN AND PIKES PEAK ARE FINISHED



Before



During



After

Academy Boulevard is traveled by approximately 50,000 vehicles per day. Two intersections along the Academy Corridor, Fountain Boulevard and Pikes Peak Avenue, had long been locations where a high number of accidents and frequent traffic delays occurred. To leverage economies of scale, City/PPRTA staff combined safety improvements at these two locations into single design and construction contracts. The \$1.86 million project came in within budget. Construction started in November 2006 and finished in June 2007.

Improvements to the Fountain intersection included: widening of Academy north and south of Fountain for improvements associated with left-turn lanes for both northbound and southbound traffic, minor widening of Fountain west of Academy to provide an additional eastbound right-turn lane, signal retiming, and pedestrian ramp and sidewalk improvements to meet ADA standards.

Improvements to the Pikes Peak intersection included: widening Pikes Peak to accommodate dual left turn lanes from eastbound Pikes Peak to northbound Academy, signal retiming, bus pull-outs for Mountain Metro, improved curb radiuses, and pedestrian ramp improvements to meet ADA standards.



Before



During



After

NIGHT CREWS LESSEN DRIVER INCONVENIENCE FOR ROUTINE MARKING MAINTENANCE

For the first time this summer the City has had dedicated night crews working from 7 p.m. to 5 a.m. striping and marking roadways. Pikes Peak Rural Transportation Authority (PPRTA) funding for additional Traffic Engineering crews have created the opportunity for the City to try this kind of flexible scheduling.

Throughout the summer the night work has allowed up to two, four-person crews to tackle the City's busiest intersections when most people are home in bed and off the



While working at night crews keep an extra eye out for drivers who are tired or driving under the influence.

roads. This means less congestion and better safety for drivers and workers.

The City's nighttime Traffic Engineering crews stripe road lanes, extrude thermoplastic crosswalk markings, spray down thermoplastic legends (generally the word "school" for school zones and a bicyclist symbol for bicycle lanes) and mark the stop bars at signalized intersections.

Traffic Engineering crews have a limited time period to get their work done because it requires temperatures of 50 degrees or warmer. The night work began in May and will continue through August.

BIKE TAX HAS HIDDEN BENEFITS

Colorado Springs is a great city for people who like to bicycle.

Currently more than 50 miles of on-street bicycle lanes are available with about seven miles of additional bike lanes planned this year. Combine that with more than 100 miles of urban bicycle trails and about 65 miles of un-paved mountain bike trails and it's clear why Colorado Springs is consistently ranked one of the fittest cities in the nation by Men's Fitness Magazine.

In 1988, Colorado Springs voters approved a \$4 bicycle excise tax on every new bicycle sold in Colorado Springs. Last year, Colorado Springs riders purchased almost 28,000 bicycles and generated \$111,464 in Bicycle Tax to fund projects included in the City's Bicycle Plan.

Because the funds generated by the tax are earmarked by City ordinance, they can't be used for non-bicycling projects. So no matter how tight the City budget gets, some funding for bicycling improvements is still available as long as people are still buying bicycles. However, being sales tax dependent does leave the

funding, and improvements, susceptible to decreases in times of economic downturns.

The funds generated by the Bicycle Tax also help the City apply for grants that require matching contributions. For example, the City received \$26,000 in federal grant funding to develop a bicycle map with a matching contribution of \$15,000 in Bike Tax funds. An earmark of \$20,000 in Bike Tax and other City funds has ensured the City will secure \$155,000 in federal funding for bicycle lanes and new sidewalks along Airport Road. Bicycle Tax funding is also paying for more downtown bicycle parking that will be installed with labor provided by the Downtown Business Improvement District and Parking Enterprise.

Finally, the tax is perceived as a fair way for those who bicycle to contribute toward improvements for bicycling in Colorado Springs.

To help the funding go further,



Crews mark a bike lane on a newly resurfaced City road.

bicycle lanes are often added after a road is resurfaced and needs repainting anyway. Inclusion of bicycling facilities in the design of capital improvements and development projects has also become a City standard as has combining funding when the economies of scale for dual projects make sense. And, as mentioned above, City staff pursue grants designed to advance the benefits of bicycling such as better public health, cleaner air, and reduced vehicle congestion.

With Bicycle Tax assistance, residents can expect Colorado Springs to continue as a great city for people who like to bicycle.

DO SPEED LIMITS CONTROL SPEED? YES, BUT NOT LIKE YOU THINK

In 2003, the City implemented a CITYWIDE 25 program that reduced the speed limits from 30 miles per hour to 25 miles per hour throughout the City's neighborhoods on over 1,000 un-posted local, residential streets. At the same time, staff reviewed all posted speed limits based on national standards in an effort to determine where changes could help City's roads have safe and efficient traffic flow.

Poorly set speed limits can lead to a wide range of vehicle speeds and contribute to vehicle accidents. Speeds set too low can lead to cut-through traffic, promote disregard for speed limits in general, and create a "speed trap" environment where a majority of motorists commonly violate the law making enforcement difficult and sometimes resulting in higher driver speeds. Yet, speed limits set too high can lead to unnecessary risks.

In a subconscious reaction to the driving environment, about 85 percent of drivers travel at safe and prudent speeds, regardless of posted speed limits, based on conditions such as traffic congestion, weather, pedestrians, and area. This driver-perceived prudent speed is the speed study data that Traffic Engineering staff primarily use to determine speed limits. Though, studies do also consider roadside development, shoulder surfaces, pedestrians, bicyclists, driveways, sight distance and accident history.

However, some motorists just drive fast. It's these not-so-prudent drivers that speed limits are designed to influence... through the use of law enforcement and speeding tickets.

Since the 2003 standards were

approved, City staff have performed more than 1,200 speed studies and though 83 percent of speed limits remained the same, speed limit changes have been made to over 200 speed zones throughout Colorado Springs. Ninety-two percent of those changes increased speed limits while eight percent decreased them. During a 2006 public process some residents expressed concern that raising speed limits would increase driver speeds. Yet, based on 62 follow-up speed studies so far, nearly 85 percent of the locations where speed limits were increased resulted in driver speeds decreasing or remaining the same. Contrary to common sense, raising speed limits to accurately reflect conditions has generally led to the driver speeds staying the same or going down.

Of the few locations where raising the speed limit has resulted in increased driver speeds, just one location showed an increase in speed-related accidents. That location's speed limit has since been reduced to its original limit from 35 miles per hour back down to 30 miles per hour. As a part of the City's speed limit-setting policy, speed zones are reviewed on a three to five year rotation to determine the effect and if the speed limit is still appropriate. When follow-up studies do

reveal an increase in speeds and speed-related accidents, City staff reevaluate the speed posting.

Police observations and citizen requests sometimes indicated additional roads where speed limit changes may be appropriate. City staff will complete speed studies for two of these locations, Platte Avenue and South Carefree Drive, including a field review, an accident analysis, and collection of traveling vehicle data before making any changes.

Though no overall modifications to the system are expected in the near future, evaluating speed limits is an on-going, though time-consuming, service and residents may request an evaluation by calling the City's Traffic Engineering Division, (719) 385-5433.



Driver speeds decreased or remained the same in nearly 85 percent of the tested locations where speed limits were raised to accurately reflect current conditions. The speed changes should lead to safer traffic flow, due to less variation in driver speeds, and better ability for police officers to ticket violators.