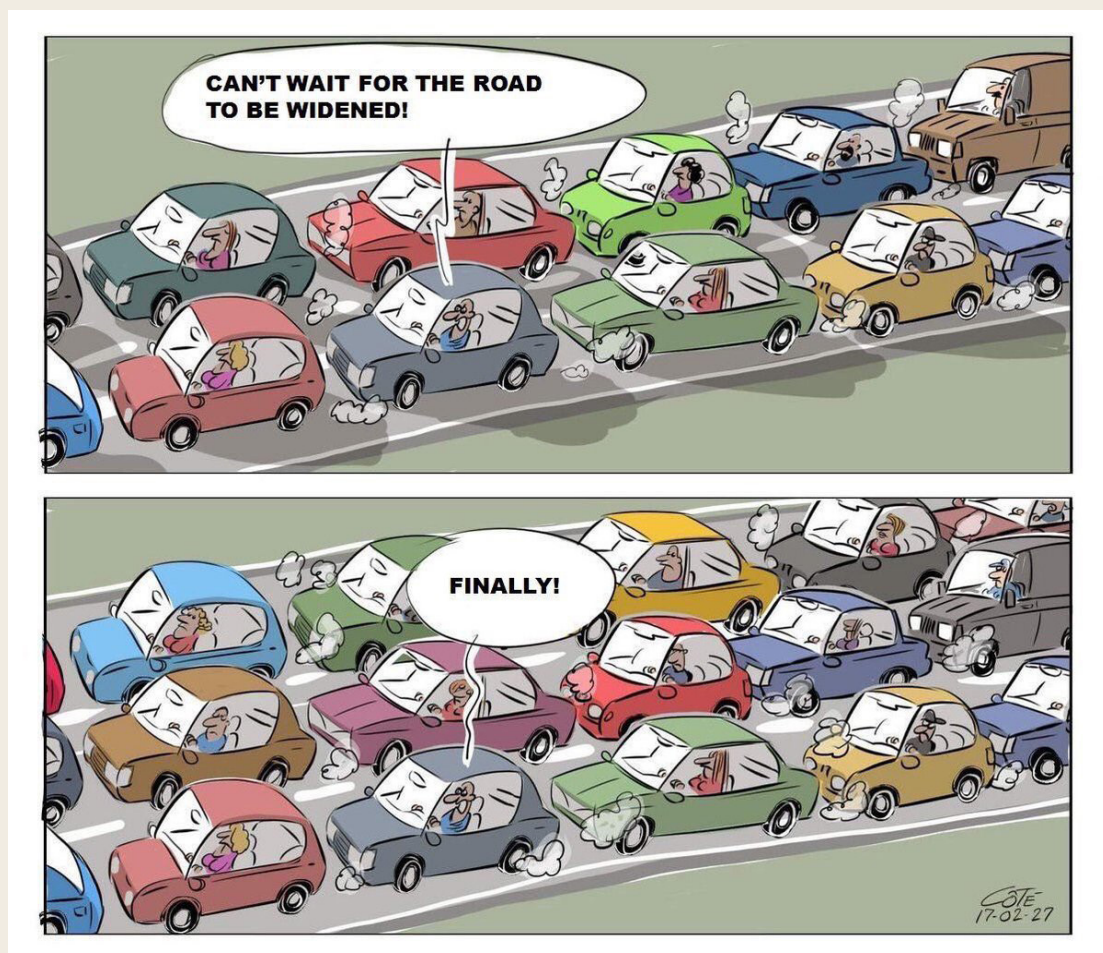


Cache

Planning News

March 2020



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Compliance Column

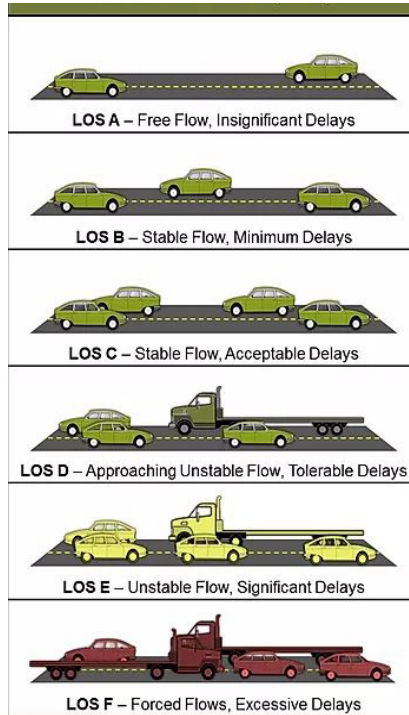
Understanding and applying Traffic Studies to the Planning Process

When I served as a Planning Commissioner, the most contentious and misunderstood evidence reviewed was the traffic study. What looks intuitive and obvious on the surface inevitably led to confusion for both the Planning Commission and the public alike. In this column we'll discuss traffic studies, what they address, and what they mean by Level of Service (LOS), and what ideal LOS actually is.

Traffic studies look into the future, they attempt to quantify current traffic situations, and evaluate the long term impacts of a proposed development, with the stated goal of mitigating future "new" traffic to ensure that roadways continue to function as well in 20-30 years, as they are now. Traffic study recommendations we review with new developments DO NOT seek to solve current traffic problems. and similarly many of the problems they describe won't actually be felt for years, potentially decades.

Level of Service (LOS) evaluates a roadway (and intersections) and gives them a grade between A and F based on the flow of traffic and anticipated delays during "PEAK" hour traffic (busiest hour of the day). a LOS A is free flowing traffic with few if any delays, while a LOS F means forced flows, excessive delays (potentially even gridlock).

Unlike school the goal most of the time isn't, and shouldn't be a LOS A. In fact ideal LOS is probably in the C-D range. There are a number of reasons for this. First, as discussed elsewhere in this issue, roads are expensive, a LOS A roadway represents an overbuilt piece of infrastructure, the money that went to building (and maintaining a LOS A) roadway can and should have been spent improving a failing roadway somewhere else. LOS looks at traffic at the busiest time of the day, in many cases a LOS F road may perform exceedingly well 22 hours



a day, a traffic study may have us spend significant dollars to make changes that are only felt for a few minutes each day.

Traffic studies have a tendency to over engineer roadways and to make assumptions and recommendations that increase the size of road facilities, creating roadways and environments that are dangerous and unpleasant to navigate outside of automobiles. By pushing to maintain our roads at A or B LOS we are over spending on infrastructure in ways we can't justify with our tight budgets. Evidence also suggests that it's impossible to build our way out of traffic, just as the cartoon on the front of this issue illustrates, there is frequently latent demand, as road capacity is increased additional vehicles begin to drive.

Traffic studies are important tools and are helpful when evaluating projects, but they can also lead to undesired consequences if we take them wholesale, and don't evaluate the effects.

RAPZ TAX



In November 2002, Cache County voters approved a 1/10th of 1% sales tax, known as the RAPZ Tax. these funds can be used to support capital projects and operating expenses for publicly owned or operated recreation or park facilities and the Willow Park Zoo. They can also be used to fund operating expenses of private nonprofit organizations with the primary purpose of operating as a botanical or cultural organization.

The next deadline for funding is quickly approaching with **applications being due by Friday March 6th at 5:00 PM.** Complete applications shall include a completed application and Financial Disclosure statement. Materials shall be submitted to:

Cache County Finance Dept.
Attn: Betty Weeks
179 N Main St, Suite 202
Logan, UT 84321

Please direct any questions or concerns to BettyWeeks@CacheCounty.org

For details visit:

<https://www.cachecounty.org/rapz/>

True cost of Roads

A look at the cost of roadways evaluated over their lifecycle

One of the “meat and potatoes” functions of local governments is to keep the roads maintained, plowed in the winter, smooth and drivable in the summer. Joel Merritt, Superintendent with the County Roads department illuminates some of the true costs of roadways.

Roads are expensive, how expensive? The cost of building a two lane (One lane in each direction), undivided rural road is estimated to fall in the range of \$2 - \$3 Million per mile (\$1 Million - \$1.5 Million, per lane mile) (the cost of materials alone \$1+ Million). That's more than most communities can afford, so it might seem like a slam dunk when a developer of a new project offers to construct a roadway to service his or her project in your community as part of their development, all that they ask is that it be deeded over to the municipality, and that the community take on the long term maintenance of the roadway, this is an offer we've all accepted before, and likely will again.

The council has voted, the project was approved, and CONGRATUALIONS, it's a Right-of-way, your community is the owner of a brand new roadway, what does that mean long term? To maintain a roadway in good condition it requires regular chip and fog seal, doing so regularly can extend a roadways life to 20-30 years, but what is the cost?

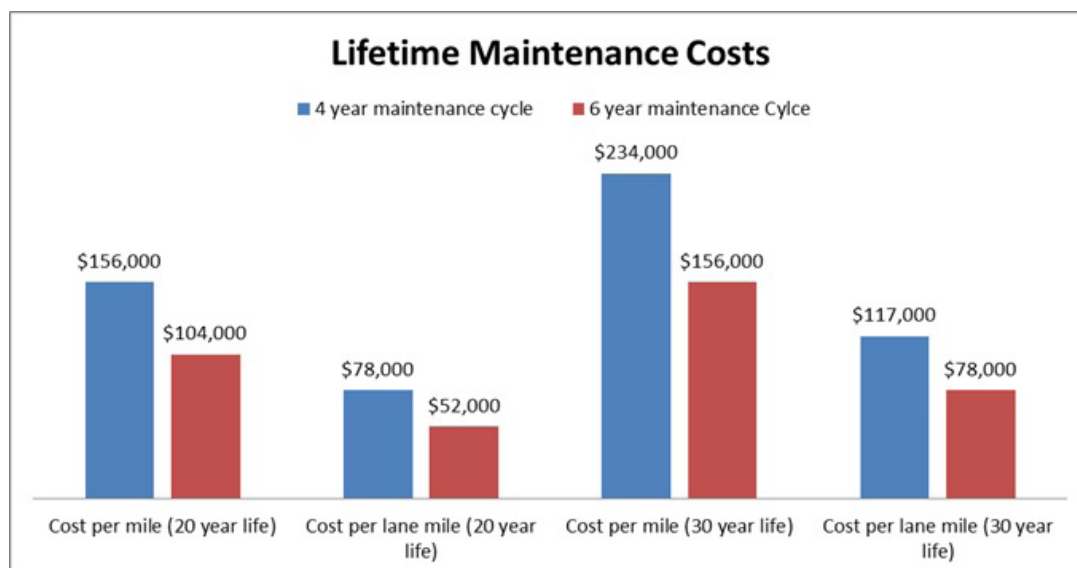
Proper maintenance requires a Chip and Fog Seal (every 4 to 6 years), Joel estimates the county is able to complete a chip and fog seal for about \$31,000 per mile (two lane miles) that breaks down to between \$5,200 and \$7,800 per mile per year, (\$2,600 - \$3,900 per lane mile per year) What does that cost look like over the lifecycle of a road?

As seen in the chart below, depending on the life of the

roadway (20 - 30 years) and the frequency of maintenance (every 4 - 6 years) the lifetime maintenance costs of a lane mile of roadway varies between \$52,000 and \$117,000. At the end of this period of time the roadway will need to be re-built (between \$1 and \$1.5 Million dollars per lane mile) and the maintenance cycle begins anew. Taking a best case scenario the community is accepting a yearly liability of \$35,067 per lane mile over the course of 30 years (\$70,133/ mile). It's important to remember that the above estimate doesn't include snow removal maintenance, crack seal, and other maintenance activities.

For illustrative purposes, let's assume we have a 5 bedroom, 3 bathroom house on 1.24 acres of land in Hyde Park, the assessed value of the home is \$359,000. Based on 2019 tax rates the home would pay yearly property taxes of ~\$3,900, of that, approximately \$395 would go to the city, over 30 years the city is collecting \$11,850 in property taxes from the home. Meaning the community needs a minimum of 89 equivalent homes per mile of roadway just to collect enough tax revenue to maintain and replace the roadway over its 30 year life. This doesn't account for providing other services to the property such as fire and police (among others). That 'free' road is starting to look like a much worse deal.

This means is we need to closely evaluate the costs and benefits for expansion, does it make fiscal sense for a community to expand infrastructure to permit new development? What type of development patterns pay their own way and what type of development patterns need to be subsidized by other development or future generations? Naturally not all development is going to pay its own way, but a community should consider just how many liabilities they are assuming when permitting new growth.



Roundabout-Ville

Why one community is replacing signalized intersections with roundabouts.



The city of Carmel Indiana (Population ~86,000) has built more than 125 roundabouts since the 1990s, and is actively replacing signalized intersections with the road form more associated with Europe than the United States. While roundabouts provide significantly more landscaping than typical intersections the reason for making the change goes far beyond aesthetics.

Safety

According to the Federal Highway Administration, roughly 25% of all traffic fatalities occur at intersections. Because vehicles need to slow down to between 15 and 35 MPH to take a roundabout they increase safety (Speed is the number one factor in traffic fatalities, for pedestrians and motorists). Roundabouts also remove the possibility for the most dangerous types of accidents (head-on, and T-Bone) accidents that occur in roundabouts are typically glancing blows. Not only are they safer for drivers but some studies have shown that pedestrians accidents have been decreased by as much as 75%, due largely to the reduction in speed, and pedestrians only needing to cross one lane of traffic at a time (ability to stop in pedestrian islands as they cross the road). Carmel has seen an 80% reduction in injuries from traffic accidents, and seen an overall decrease in accidents of about 40% as a result drivers in Carmel Indiana have some of the lowest insurance rates.

Traffic Flow

The Insurance Institute for Highway Safety (IIHS) has studied intersections where roundabouts replace stop signs, and they show a reduction in delays ranging from 13 to 89 percent, vehicles forced to come to a stop decreased between 14 and 56 percent. More continuous traffic flow has knock on effects such as fuel consumption, which has been shown to decrease by about 1/3 compared to intersections and a 44% reduction in emissions.

Economical

Roundabouts don't require expensive signals and are estimated to reduce a municipalities electric and maintenance costs by about \$5,000 per roundabout per year. Roundabouts also have a service year of 25+ years compared to a traffic signal which has a service life of about 10 years. For a community like Carmel Indiana that accounts to a yearly saving of over \$625,000 in just electrical and maintenance costs.

Other benefits

Large center islands are left in roundabouts these areas are ideal locations for landscaping and monuments. Roundabouts provide a valuable traffic calming function, as vehicles must reduce their speed to travel through them, making, them beneficial in residential and commercial areas alike, and unlike stop signs they cannot be ignored. A study on roundabout implementation in Nevada showed approximately 55% of people opposed roundabout construction before they were built, after being completed, over 63% were in support of roundabouts with less than 28% remaining opposed.

While not perfect for every situation roundabouts when properly constructed reduce traffic congestion, decrease speeds (but reduce stopping) increase safety, and are more pleasant than traditional intersections, and should be considered for your next intersection project.

