3-10-2016

Fact Sheet - Colville Main Street Traffic Signals

History

The Main Street traffic signals were installed in Colville in the mid to late 1970s to accommodate increased traffic flows. This changed the angle parking to a four lane parallel parking configuration. In 2000, Colville business owners and the City implemented a plan known as Colville 2000 to reinvent downtown Colville. One of the goals at that time was to create a truck bypass route to reduce traffic volumes and unwanted heavy truck traffic on Main Street and make a friendlier shopping environment. In the fall of 2010, the City of Colville, Chamber of Commerce, Parking Commission, and the Washington Department of Transportation (WSDOT) began to investigate the feasibility of modifying the parking configuration in the downtown area from parallel back to diagonal. The trigger of the investigation was the partial completion of the decade-long effort to transform Colville, known as Colville 2000.

The result of two years of close coordination with WSDOT, public involvement, and design, the City produced and implemented a diagonal parking plan on Main Street between Birch Avenue and 2nd Avenue.

Current Status

Since implementation, we understand the new parking layout is functioning well with a couple of exceptions. While there is more available and convenient parking, there is some concern about pedestrian and traffic safety caused by reduced sight distance for both vehicles and pedestrians. More specifically, diagonally parked vehicles are making it difficult for pedestrians and vehicles to see one another at the intersections.

We understand there is also concern that removing traffic signals at Birch Avenue and 1st Avenue has made it difficult for pedestrians to cross Main Street and for vehicles on the side streets to enter traffic flow on Main Street.

Traffic signals

During the original analysis and coordination with WSDOT, a detailed analysis, known as *Traffic Signal Warrant* analyses, was conducted at Birch Avenue and 1st Avenue signal locations. The analysis is based on a series of justifications that uses traffic volumes and delay to determine if a signal is *warranted*. If one or more of the warrants are met, you have some justification to install a signal. However, based on the traffic volume analysis conducted, both pre and post project in 2012, and the Signal Warrant Analysis by WSDOT, neither the signal at Birch Ave or 1st Ave is warranted. There just isn't enough pedestrian or vehicular traffic.

A reasonable question is "Why did we conduct the analysis in the first place that resulted in removal?" The answer is two-part.

First, WSDOT had been concerned about these traffic signals being warranted for a long time. In fact, they suspected both signals would not meet warrants after the final phase of the truck route was completed around 2008. As part of their conditions in analyzing diagonal parking, WSDOT required a warrant analysis. When it was determined warrants were not achieved, WSDOT had little choice but to require the signal removal. In the extreme case, not doing so could make them liable for any accident that occurs *because* of the signals.

Secondly, modifying the parking and lane configurations would have required changes to both traffic signals, which comes at a cost. But there's a catch. We wouldn't be allowed to change only what we needed to, which includes new magnetic traffic loops and realignment of the signal heads. If we made any changes to the traffic signal, everything in and around the signal must be brought up to current ADA standards. In our case, that meant demolishing existing and installing new pedestrian ramps, pedestrian push buttons, and a few other ancillary signal items. This would have been very costly, and Colville had a very small budget for this work. We estimate the signal revision costs would have been upwards of $168,000 to update the traffic signals at Birch and 1st ave. We were looking for ways to minimize our costs and make the project possible; however, this point is moot, because neither of the locations met signal warrants, and WSDOT wouldn't have allowed the signals.

Other Options

The reduction in sight distance seems to be the root cause of the issues on Main Street. Improving it may alleviate most problems. However a full planning effort (update of the Colville 2000 plan) might identify other issues or solutions. Reconstructing the existing curb bulbs at each intersection is probably the best option because it would:

- Shorten cross walk distances for pedestrians.
- Create a tighter feel and more "friction" on Main Street, thus slowing travel speeds.
- Move the north-south crosswalks further east and west, which would allow vehicles to see past the diagonal parking without parking on the cross walks. Better sight distance would allow easy entry onto Main St.

The existing/current pedestrian bulbs were designed for a parallel parking configuration. Reconstruction of the bulb outs would consist of enlarging them approximately 8' to the east and west. (see attached schematic) Current estimates for these revisions at the intersections of Birch, Astor and 1st Ave is approximately $700,000. This type of pedestrian safety improvements may qualify for some state and federal grants especially if the City can document a pedestrian safety issue.

Other options are pedestrian activated beacons. The Rectangular Rapid Flashing Beacon (RRFB) is used as a warning device, letting motorists know when a pedestrian is planning to enter or is in a crosswalk. These are not traffic control devices, so the rules of the road for crosswalks apply. Cost could be from $10 to $20 thousand per crosswalk.

A Pedestrian Hybrid Beacon or "HAWK" is also a device that is used at crosswalks. This is a traffic control device and has its own warrants in the MUTCD. An engineering analysis would be required. FHWA describes the operation of the beacon as follows:

> The pedestrian hybrid beacon (also known as the High Intensity Activated Crosswalk (or HAWK)) is a pedestrian-activated warning device located on the roadside, or on mast arms, over

midblock pedestrian crossings. The beacon head consists of two red lenses above a single yellow lens. The beacon head is "dark" until the pedestrian desires to cross the street. At this point, the pedestrian will push an easy to reach button that activates the beacon. After displaying brief flashing and steady yellow intervals, the device displays a steady red indication to drivers and a "WALK" indication to pedestrians, allowing them to cross a major roadway while traffic is stopped. After the pedestrian phase ends, the "WALK" indication changes to a flashing orange hand to notify pedestrians that their clearance time is ending. The hybrid beacon displays alternating flashing red lights to drivers while pedestrians finish their crossings before once again going dark at the conclusion of the cycle.

The cost for a HAWK signal is normally considerably higher than a RRFB. The cost would be offset by possibly using the existing mast arms. Additional work would need to be done to determine actual cost.

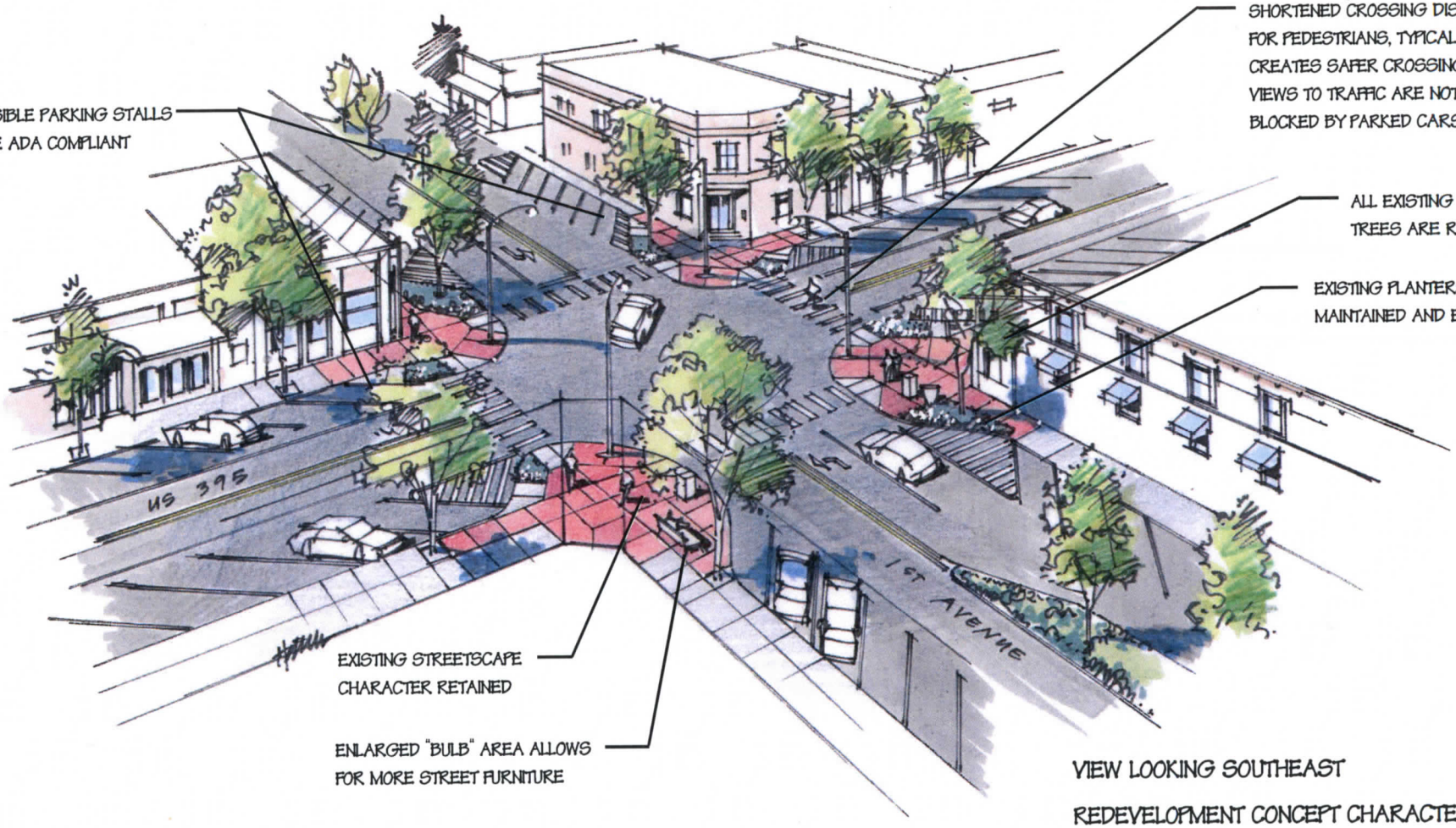
While installing reconfigured traffic signals would be very difficult to justify, here is some background. Per the Manual on Uniform Traffic Control Devices (MUTCD), which the State of Washington has adopted, any location where a signal is to be installed must meet a signal warrant. At the time the angled parking was studied, signal warrants were also reviewed and neither of the intersections of Birch or 1st and Main met warrants. It is unlikely this has changed in the few years since the study was completed.

Reinstalling the signals with only two lanes in each direction would likely have an unintended consequence during peak flow due to lack of a left turn lane. Vehicles would queue at the signal and, when released, the queue could totally block opposing left turns. This could be more frustrating for drivers than the current configuration.

Cost for any of these improvements would generally fall on the City; however, some grants may apply. With some additional study and public input, there could be other methods to address crossing concerns.

MAIN STREET PEDESTRIAN ENHANCEMENTS

CITY OF COLVILLE



ACCESSIBLE PARKING STALLS BECOME ADA COMPLIANT

SHORTENED CROSSING DISTANCE FOR PEDESTRIANS, TYPICAL. CREATES SAFER CROSSINGS AS VIEWS TO TRAFFIC ARE NOT BLOCKED BY PARKED CARS.

ALL EXISTING STREET TREES ARE RETAINED

EXISTING PLANTERS ARE MAINTAINED AND ENHANCED

EXISTING STREETSCAPE CHARACTER RETAINED

ENLARGED "BULB" AREA ALLOWS FOR MORE STREET FURNITURE

VIEW LOOKING SOUTHEAST

REDEVELOPMENT CONCEPT CHARACTER

WELCH-COMER
ENGINEERS | SURVEYORS