Jennifer Burdick - Re: Quick traffic study - response

From: Jennifer Burdick
To: Jon Howe; Nanci Beizer
Date: 12/7/2012 2:27 PM
Subject: Re: Quick traffic study - response
CC: Broadway; Jim Schoen; Joan Beckim; Josh Weaver; Michael (Tucson) Johnson; Nanci Beizer; phil@community-design.com

Hi, Jon -

Thank you for forwarding your traffic study analysis. I asked Jim Schoen from Kittelson & Associates to also review it and provide a response, which he did (and I've been sitting on).

I am opting to provide it to through this informal email. I hope it is OK with you (and all of you, project team members!).

Please let us know if you have any follow-up questions. Please note, I will include here also links we identified for you, based on a request at the Nov. 15 CTF meeting for resources that provide more information about intersection design considerations:

The Urban Intersection Design Guide
http://safety.fhwa.dot.gov/intersection/resources/fhwasa09027/119.htm

Designing Walkable Urban Thoroughfares
http://www.ite.org/css/online/DWUT10.html

We really value your research, time, and thought, Jon!
~Jenn

>>>>>>>>>>>>>>>>>>>
Thank you Mr. Howe for taking a substantial amount of your time to collect and analyze traffic data along Broadway Blvd to assess traffic flow variability and distribution among modes, and to evaluate several potential traffic flow relationships. Your results and conclusions are consistent with the methodologies and approach utilized by traffic engineers to evaluate and design roadway capacity.

As you noted, traffic flow on an arterial is primarily influenced by the capacity at signalized intersections. This capacity is primarily determined by the number of lanes for each movement, the amount of "green" time available to a movement, available storage in turning lanes, pedestrian activity, proximity of driveways to the intersection, and availability of bus pullouts. On arterials with signalized intersections spaced ? mile or less, coordination of the signal timing to allow platoons of vehicles to progress through a series of signals is important to optimize the capacity available on a roadway. Along Broadway Blvd, the City of Tucson maintains fairly good signal coordination and traffic progression, particularly during commute periods. The pedestrian HAWK signals have a detrimental effect on traffic progression, due to the randomness of when pedestrians will push the button to cross.

While signalized intersections have the greatest influence, arterial traffic flow can also be significantly impacted by activity at driveways and side streets (i.e. vehicles slowing to turn right into a business or turning onto the arterial), buses stopping in a through lane, and pedestrians crossing at HAWK signals. Determining

these impacts is difficult and often require the application of a detailed microscopic traffic simulation model.

In evaluating the traffic conditions along Broadway to determine an appropriate design for the signalized intersections to serve the projected future traffic demand, we have optimized the timing and phasing at each signal in order minimize overall intersection delay and queuing, while providing coordination between signals.
>>>>>>>>>>>>>>>>>>>

>>> On 10/23/2012 at 9:06 AM, Jon Howe <jonhowe21@gmail.com> wrote:

> Nanci and Jennifer,
> I hope your week is off to a good start.
> I decided to do a short traffic study on Broadway between Euclid and Countery Club myself.
> The results of which I think turned out to be somewhat interesting and helpful. Please feel free to forward these results to people on the project who might be interested. I am also happy to present a summary to the CTF if you think it would enrich our conversation.
> I have attached the information and analysis to this email. If you have any questions about what I have done, please feel free to ask.
> Thanks,
> Jon