

Nov. 5, 2013 Talking Notes Rev. 0

Northbound SW Lombard 35 MPH approach speed yellow light change interval error

First I would like to address the timing error and the email response I got from Peter Arellano prior the last city council meeting. Here's what Peter wrote:

We have confirmed that the yellow phase of the northbound approach to the Lombard Ave. and Allen Blvd intersection is currently programmed for 3.5 seconds which is 0.5 seconds less than the ODOT recommendation that we generally follow. Since changing the speed limit is a timely process that ultimately has to be approved by ODOT, we have decided to increase the programmed value to 4.0 seconds so that it is consistent with this recommendation. We are currently reviewing safety data at this location and may also do a speed study to determine whether a speed limit reduction on Lombard Ave. south of Allen Blvd. is appropriate.

I would like to provid my first Public Request to investigate the accidents with injuries in the SW Allen Blvd and SW Lombard Ave intersection to see if specifically the confirmed and now modified northbound short yellow light interval caused any of the accidents. I have been told repeatable that the traffic light timing in this intersection has not changed since 2001 until now due to my report showing the northbound yellow light timing error. My next question and request will be who had the jurisdiction over this intersection during the 2001 to current time period, ODOT and/or Beaverton?

Next I would like to address the email from Peter Arellano from last night:

Mats,

One item that appears to be confusing you is that ODOT's "Minimum Yellow Change Intervals" as shown in Table 1 of the attached document are the minimum values that they program into their controllers and are not guaranteed minimum durations of visible yellow light. I have confirmed this fact with ODOT at both the Region 1 and State levels and have been told that this information has been shared with you. This is the same policy that the City of Beaverton uses when programming its intersection controllers so variations in the duration of the yellow phase are expected provided that they are within the tolerances established for the signal equipment that is available. There is nothing in the information that you have provided nor in the video that I have viewed from Redflex that is outside of the cumulative tolerances of the equipment. This is the policy that the city intends to follow at all city maintained signals until such point there is a region wide change in policy or, in the opinion of the City Traffic Engineer, there are safety concerns that warrant longer yellow or red phases.

I'm not confused. The ODOT document does not reference any errors or tolerances. In fact no ODOT document does this. Who did you talk to at ODOT? I have already told you that Rebecca Thoreson at ODOT informed me that ODOT would re-time the traffic light controllers so the visible yellow light would be the MINIMUM recommended time or more. Again, this is basic engineering. Why are you not willing to fix this safety issue?

Also, the ITE formula calculates 3.2 seconds for the (ALLO 1 & 3) Yellow change interval and 1.8 seconds for the All-Red clearance time. On what do you base your decision to pick ODOT's minimum 3.5 seconds and 0.5 seconds when it should be 3.5 seconds for the Yellow and 1.8 seconds for the All-Red?

That said, when viewing video of the cameras at the Lombard and Allen, I noticed that there were short gaps between the visible green and yellow light which I attributed to delays in the yellow lamps becoming visible. To address this issue, I had our crews replace the yellow lamps and then viewed video of the intersection after they were replaced. I have attached the results of this change which covers a one hour period for both cameras located at this intersection. As you can see from the data, the shortest duration of the yellow light was 3.4 seconds and the average duration of the light was 3.48 seconds. This is

compared to a minimum of 3.36 seconds and an average of 3.44 seconds before the lamps were replaced which addresses two thirds of the error in the average visible yellow light time.

I review your spread sheet data but I do not know how you got your numbers and what tools you used. The provided data looks strange since all recorded visible yellow and visible red timing data pairs end with the same decimal. I would like to do a public request to get copies of the two video's Peter Arellano has used for this data.

You have asked about the city's efforts quality control of the citation process. The police department does verify that a violation occurred and the information presented to them from Redflex in still photos, vehicle make, driver photo, license plate, and violation are clear and accurate. Once the photo red-light officer verifies the information is accurate she watches the entire video of the light being run, to make sure the person did not come to a stop after hitting the inductive loops. The city signal staff verifies that the program values in the signal controller match the values that the traffic engineer has posted in the controller box at least once a year. These values are also verified when requested by a citizen that has received a citation. The city does not inspect or maintain any of the Redflex equipment, just the end product that they provide.

The above information says that Beaverton takes the data from Redflex at face value with no checks and verifications. How do you know the timing data is accurate? How do you know that the video is recorded and played back at correct speed?

I have added some responses in red below in an attempt to make sure that all your questions have been addressed. Please let me know if I have missed anything.

Peter

Thanks for your response. Why don't you program the northbound SW Lombard Ave to 4.2 seconds to compensate for errors we have measured in the yellow phase actual outputs and at the same time adjust or program the remaining east, west and south yellow phase times to 3.7 seconds? If you and Beaverton will do this you will comply with the standards in our area which is ODOT's minimum recommended yellow change interval times and actually stay within the recommended range by using error correction. ***I address this in the first paragraph above.*** This is the right thing to do and if you would like to make it perfect we should add the red light camera citation grace period of 0.5 seconds before a citation can be issued. ***As I have stated previously, I cannot recommend that the city not cite people who run red lights when they are in possession of evidence that a vehicle entered the intersection on red.***

The grace period is to compensate for the errors in the overall traffic light and red light camera system. We already know that traffic lights have timing errors but we do not yet know the error is the Redflex system. Do you know the errors Redflex have in their system? My wife's citation speed has a 40% error compared to the Redflex video information.

When all these steps are in place you will have elevated the red light camera intersection and system to become safe, fair and ethical. ***In my opinion we have reached this milestone since the only people who receive a citation are ones who clearly enter the intersection after the light turns red as shown on the still photo and video evidence but I respect that you disagree.***

Again we are back to the yellow light timing which is not documented in the citation process...

You can also present this updated information and compliance on your website and the public will respect the City of Beaverton and they way the red light cameras are used. And so will I.

One last major missing piece of information is the yellow lights on-time in the citation process. This information should be documented with each citation but it is not. As you know this is the key critical information that show if the lights were working properly at the time of the citation. The red light is just a matter of fact - the yellow is the MOST important information we drivers have go by in the traffic light intersections. It is not possible for the Redflex equipment to report the length of the yellow light since the city does not share that signal with Redflex. Anyone who has been cited can request that the city verify the programming in the controller, something that we periodically do.

One simple answer to adding the yellow timing to the citation documentation is the Redflex video which you yourself used to check the yellow light timing... It NEEDS to be checked for every citation and if the visible yellow light is less than 3.50 seconds no citation should be issued.

Redflex sees it all, at all time and have total control of the citation process since Beaverton is not checking and verifying the data that Redflex is providing...