



A P P E A R A N C E S

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1 A No.

2 Q And you said you've been with the Town for three and a  
3 half years?

4 A Yes.

5 Q Can you give me a brief description of your duties and  
6 responsibilities mainly pertinent to the---

7 A (interposing) I work with---

8 Ms. Martineau: (interposing) To the what? I'm  
9 sorry, pertinent to what?

10 Ms. Nickel: To the issues in this case, signal  
11 timing.

12 Ms. Martineau: Signal timing? Objection to the form  
13 of the question. Go ahead and answer.

14 A As far as signal timing, I don't work much with signal  
15 timing other than helping review and design signal plans.

16 Q Back to just generally with your position, can you  
17 give me an overview of your duties and responsibilities?

18 A Well, my job is to work on site plan reviews,  
19 reviewing site plan submittals for people who want to develop  
20 in town. I also work with any citizen requests or complaints  
21 when it comes to any traffic engineering topics, which is  
22 signing or striping or traffic signals.

23 I work with our system timing group, in conjunction  
24 with them, to perform signal plan designs, also to review  
25 signal plans that are submitted to the Town for review. I

1 also work on projects involving markings and signs and I do  
2 safety reviews as well.

3 Q With regard to the signal plans that are submitted to  
4 the Town for review, who would be the entities submitting  
5 those?

6 A They would be private engineering firms.

7 Q And who would be employing those private engineering  
8 firms?

9 A They would be likely a developer.

10 Q So a developer is responsible for doing their own  
11 signal plans?

12 A Yes.

13 Q With respect to the traffic signals here, specifically  
14 the intersections that have red light camera enforcement, who  
15 is responsible for maintaining those? Is that a Town of Cary  
16 responsibility?

17 A Maintaining what?

18 Q Maintaining the timing and making sure that it's in  
19 accordance with the plan of record.

20 A The red light cameras themselves, that would be  
21 RedFlex.

22 Q I'm sorry; independent of the camera operation, just  
23 the traffic signal themselves.

24 A If it's on a North Carolina Department of  
25 Transportation roadway, they are responsible for approving

1 the signal timing.

2 Q So that would be the NCDOT?

3 A Yes.

4 Q They are responsible for maintaining it as well?

5 Ms. Martineau: We just spoke to Mike Billings, who  
6 talked about maintenance and what he did, and I think he said  
7 that his department maintained those signals.

8 Q So the Town of Cary maintains---

9 A (interposing) We maintain the equipment, the signals.  
10 But any signal that is on a North Carolina Department of  
11 Transportation roadway, we don't--it's their responsibility  
12 to approve the timing. We just enter what's on the plan into  
13 the equipment.

14 Q So you get the plan of record from NCDOT?

15 A Uh-huh.

16 Ms. Martineau: You have to say yes or no.

17 A Yes.

18 Q Meaning the Town of Cary?

19 A Yes.

20 Q And then what's the process when you say you--or how  
21 do you enter it?

22 A How do we enter the timing?

23 Q Right. Is that a Town of Cary responsibility?

24 A It can be. If the signal is being installed or is  
25 being modified by a private company, they may hire a private

1 electrical engineering construction company and they may do  
2 the work, but the Town would inspect that work.

3 Q Okay. And then would another scenario be if it came  
4 from NCDOT to the Town of Cary and it wasn't involving a  
5 private developer?

6 A If the Town of Cary had plans that we asked NCDOT to  
7 modify for us, we would go out and put the new timing into  
8 the control.

9 Q If you could, just give me broadly an example of when  
10 you would ask the DOT to modify a plan. When would that be  
11 necessary?

12 A An example would be we recently asked them to modify  
13 several signals, to add flashing yellow arrow features, so  
14 they modified the plans and we installed the equipment.

15 Q And within the engineering department the decision is  
16 made of an upgrade---

17 A (interposing) Yes.

18 Q ---like the one you just mentioned?

19 A Yes.

20 Ms. Martineau: Let her finish her question before  
21 you answer.

22 Q And then you contact NCDOT?

23 A Yes.

24 Q And then do you provide NCDOT with the new traffic  
25 signal plan or do they create it based on your request?

1 A They create it.

2 Q And so you--so at that point are you making the  
3 calculations for the signal intervals at all?

4 A No.

5 Q Does the Town of Cary ever actually prepare a traffic  
6 signal plan with regard to timing?

7 A Yes.

8 Q In what circumstance would that be?

9 A Minor modifications.

10 Q Meaning?

11 Ms. Martineau: Do you want an example?

12 Ms. Nickel: Yes.

13 Ms. Martineau: Okay.

14 A We had an intersection where we added crosswalks to  
15 the intersection, so we adjusted the signal plan.

16 Q Would changing the duration of the yellow change  
17 interval be considered a minor modification?

18 A Yes.

19 Q So the Town of Cary does have authority to change  
20 those timings?

21 Ms. Martineau: Could the Town request a change?

22 Ms. Nickel: No.

23 Q I'm asking do you actually draft the plans if it is a  
24 change to the interval duration.

25 A We could.

1 Q And then what would--you could. And then do you  
2 submit that to the NCDOT?

3 A Yes.

4 Q And then they--do they approve that plan or how does  
5 that work?

6 A Yes. They have to approve it. If it's a NCDOT owned  
7 intersection they have to approve it.

8 Q And once they approve it, how does it come back to the  
9 Town of Cary, or how is the plan actually implemented? I  
10 guess that's what I'm trying to ask.

11 A NCDOT will review the plan and if it's acceptable,  
12 they will sign off on the plan and submit it back to us, and  
13 then it's our responsibility under our agreement to provide  
14 those changes.

15 Q And when you say "our" agreement, do you mean between  
16 the Town of Cary and the NCDOT?

17 A Yes.

18 Q And then what is the procedure for implementing those  
19 changes once approved?

20 A The Town is responsible for going out and adding those  
21 in when we have funding for it.

22 Q Back to the yellow change interval, since the Town of  
23 Cary can draft a plan, what would be a reason why you would  
24 need to change the yellow duration?

25 Ms. Martineau: Are you talking about in and of

1 itself absent any other change?

2 Ms. Nickel: I'm sorry.

3 Ms. Martineau: Because I don't think they've ever  
4 done that. I mean I think hypothetically they could. I  
5 don't know if they've ever done that. Go ahead.

6 A Yeah. Typically the clearance times as well as other  
7 features of the signal plan are updated to meet the current  
8 standards whenever we do any type of change.

9 When we did the crosswalks at that one intersection,  
10 for example, we would go through and check to make sure the  
11 clearance times and the red light intervals and the  
12 pedestrian walking times were updated to the current  
13 standards as well as anything else.

14 Q Is there ever a circumstance where you're going to  
15 change those clearance intervals without adding a crosswalk  
16 or doing some sort of---

17 A (interposing) Not typically.

18 Q Not typically. Is your department responsible for  
19 ensuring that those intervals are consistent with the plan of  
20 record?

21 A Yes.

22 Q And what's your procedure for that?

23 A Our signal system timing group in our traffic manage-  
24 ment center--all of our signals are connected via fiber optic  
25 networks. And from our traffic management center they can--

1 once it's implemented, they will pull the traffic signal plan  
2 and check to make sure what's in our system and what's in the  
3 controller matches the plan.

4 Q And how often is that done?

5 A That's usually done whenever changes are made.

6 Q And then is there a follow-up to that? Once the  
7 change is made, do you have any policy where you go and  
8 physically time it with a stopwatch to make sure?

9 A No, nothing routine.

10 Q Nothing routine. You mentioned the fiber optic system  
11 with 2004 being the first date. Has that always been in  
12 place?

13 A That system was constructed beginning around that  
14 time. It was completed in 2008, I believe.

15 Q So beginning in 2008 that's when you could check it?

16 A The system was completed in 2008. It was officially  
17 turned over to the Town around 2008, but we had capabilities  
18 prior to that.

19 Q So with regard to the yellow light duration starting  
20 back in 2004 to date, you said if the standards change. Can  
21 you give me what standards the Town of Cary relies on?

22 A We will utilize NCDOT's standard sign manual for most  
23 of our timing purposes. Other--the METCD as well.

24 Ms. Nickel: I'd like to introduce Plaintiffs  
25 Deposition Exhibit Number 3. It is a document produced by

1 the Town of Cary stamped 405 labeled Determination of Yellow  
2 Change and Red Clearance Intervals.

3 (Plaintiffs Exhibit 3 was  
4 marked for identification.)

5 Q Are you familiar with this document?

6 A Yes.

7 Q And would this be--the yellow change interval, would  
8 that be the current standard that you rely on when  
9 calculating?

10 A Yes.

11 Q In the bottom left-hand corner it's dated 7/09.

12 A Yes.

13 Q Are you aware what that is in reference to?

14 A I believe that is the approval date for that manual,  
15 which would be July 2009.

16 Q Okay. When did this become the standard formula  
17 relied on?

18 Ms. Martineau: By who?

19 Q By the NCDOT and the Town of Cary.

20 Ms. Martineau: Objection to the form of the  
21 question.

22 Q As long as you've been employed with the Town of Cary,  
23 this is the formula you have used---

24 A (interposing) Yes.

25 Q ---for determining yellow---

1 A (interposing) Yes.

2 Q And then prior to that I know you said you worked for  
3 the NCDOT. Was this formula used then?

4 A I didn't work in signal design.

5 Q Okay. Back to the procedure we discussed where for  
6 example the Town of Cary changed the yellow light duration,  
7 you submit it to the NCDOT?

8 A Uh-huh.

9 Q They would approve your plan. It comes back to you,  
10 and you're responsible for setting the controllers. Beyond  
11 that is there any procedure the engineering department has  
12 for monitoring or--if the timing gets off or if a fuse is--I  
13 don't know what the terms are.

14 Ms. Martineau: Objection to the form of the  
15 question. Answer if you can.

16 A Our public works department will perform maintenance,  
17 routine maintenance, and part of that is to check the timing.  
18 The engineering department doesn't do that. That's public  
19 works.

20 Q Would traffic operations be a part of public works?

21 A Yes.

22 Q I'm going to switch now and move to the red light  
23 camera program. Are you aware of the factors before you  
24 actually were with the Town with how locations are selected?

25 A No.

1 Q What involvement does the Town have with RedFlex  
2 regard to when those camera boxes are actually installed?

3 Ms. Martineau: You're asking him what he knows about  
4 that?

5 Ms. Nickel: Yeah.

6 Ms. Martineau: Okay.

7 A I have not been involved with the installation of  
8 those, so I'm not familiar with the installation part.

9 Q And how they're interrelated?

10 A Uh-huh.

11 Q What I want to move on to next is each of the 17  
12 intersections, the traffic signal plans for each of those.  
13 I'd like to go through them with you.

14 Ms. Nickel: And for these I'm labeling them  
15 alphabetically because we'll probably use them in later  
16 depositions.

17 Ms. Martineau: That's fine.

18 Ms. Nickel: So this will be Plaintiffs Deposition  
19 Exhibit A, which is a document that was produced by the Town.

20 (Plaintiffs Exhibit A was  
21 marked for identification.)

22 Ms. Martineau: Do you have any copies of that?

23 (Document handed to counsel.)

24 Ms. Martineau: Thanks.

25 Ms. Nickel: It's a document produced by the Town

1 within Exhibit H and it was labeled number 118 under Traffic  
2 Signal Plans. I do not believe these are stamped. It is a  
3 Cary Towne Boulevard at Convention Drive/Principal Lane  
4 signal plan. This document, which was sealed on 3/19/10---

5 Ms. Martineau: (interposing) Where do you see  
6 3/19/10?

7 Ms. Nickel: Under the seal on the bottom right.

8 Ms. Martineau: Oh. I see it. Thanks.

9 By Ms. Nickel:

10 Q Is there any way you can tell from this document if it  
11 was drawn by the Town of Cary? Are you aware?

12 A Under the person who sealed it and also in the title  
13 block it has "Prepared in the Offices of North Carolina  
14 Department of Transportation."

15 Q So would this be an example of they prepared it and  
16 then the Town of Cary implemented it?

17 A Yes.

18 Q And the notation that this "This plan supersedes the  
19 plan signed and sealed on 11/4/09"---

20 A (interposing) Yes.

21 Ms. Martineau: That wasn't a question. Wait for her  
22 to ask a question.

23 The Witness: Okay.

24 Q What does that indicate, just that the old plan is no  
25 longer valid, or what does that tell you?



1 By Ms. Nickel:

2 Q What is this a chart of?

3 Ms. Martineau: He has not seen this before I don't  
4 think, so go ahead and take time to look at that. Is he a  
5 recipient of this?

6 Ms. Nickel: He is.

7 Ms. Martineau: Okay. Refresh your recollection and  
8 then just let her know when you're ready.

9 (Witness peruses document.)

10 The Witness: Okay. What was the question again?

11 Ms. Martineau: There was no question.

12 The Witness: Okay.

13 By Ms. Nickel:

14 Q So looking at this with regard to the Cary Towne  
15 Boulevard and Convention Drive eastbound intersection, Phase  
16 2, that we just referenced, on the plan of record, was 4.0  
17 seconds based on the signal plan for May 31st, 1991? Am I  
18 reading that properly?

19 A Yes.

20 Q And then on the current signal plan of record that's  
21 increased. Are you aware of why that increased?

22 A I believe the 1991 plan used a speed limit of 35 miles  
23 an hour on Cary Towne Boulevard, and the recent plan used a  
24 speed limit of 45. Also between 1991 and 2010, some of the  
25 parameters for the equations for calculating yellow and red

1 times had been modified as well.

2 Q And when you said the signal plan was made for 35  
3 miles an hour instead of 45, was that because the speed limit  
4 changed or was that an error in the signal plan?

5 A I don't know.

6 Q And then--all right. So was the original signal plan,  
7 the '91 one, done incorrectly, meaning that the yellow light  
8 duration was .5 seconds too short?

9 Ms. Martineau: Objection to the form of the  
10 question.

11 A In 1991 I'm not aware of what was on the ground and  
12 what was utilized for that signal plan, so I'm not sure if it  
13 was done incorrectly.

14 Q And then that was--this e-mail is dated 2009. And so  
15 we can assume until the 2009 plan that was superseded that  
16 the 4.0 seconds was in place that entire period?

17 Ms. Martineau: I can get you a copy of the signal  
18 plan from that time so you can see exactly what that signal  
19 plan was.

20 Ms. Nickel: Okay.

21 Ms. Martineau: We recently were able to locate it  
22 and I have it. We can give it to you so you can see exactly  
23 what it says. I don't have it with me. It's on a computer  
24 somewhere.

25 Ms. Nickel: Okay. And then next I'd like to

1 introduce Plaintiffs Deposition Exhibit Number 5.

2 (Plaintiffs Exhibit 5 was  
3 marked for identification.)

4 By Ms. Nickel:

5 Q This is a document produced by the Town stamped 1892,  
6 and it is an e-mail from David Spencer to Laura Cove dated  
7 11/30/2009. I'll allow you a moment to look over it, and  
8 just let me know when you're ready.

9 (Witness peruses document.)

10 A Okay.

11 Q So on 11/30/2009 the second sentence of this e-mail  
12 says, "I confirmed this with Ron Garrett so it's official  
13 that the signal plan was done with the incorrect speed  
14 limit," meaning that up until that point, as we discussed  
15 before, the 35 mile per hour speed limit was wrong?

16 Ms. Martineau: I'm going to object to that question.  
17 Go ahead.

18 The Witness: Okay.

19 A There was an ordinance in place at that time for 45,  
20 and I confirmed the ordinance was 45 with Ron Garrett from  
21 NCDOT. So if the ordinance was at 45, I guess it would  
22 depend on what was actually posted on that road as well  
23 because the signal plan was done with whatever speed limit  
24 the engineer that did the plan did it at the time. That was  
25 all that I knew about that, was that an ordinance was in

1 place at that time.

2 Q Okay.

3 Ms. Nickel: Next I'd like to introduce Plaintiffs  
4 Deposition Exhibit Number 6.

5 (Plaintiffs Exhibit 6 was  
6 marked for identification.)

7 Ms. Martineau: Do you have one more copy by chance?

8 Ms. Nickel: I do.

9 (Document handed to counsel.)

10 Ms. Martineau: Thanks.

11 Q This is a document produced by defendant stamped 1894  
12 through 1897. It is a series of e-mails from David Spencer  
13 to Laura Cove dated 11/30/2009. If you would, look through  
14 that document and familiarize yourself with it and let me  
15 know when you're finished.

16 (Witness peruses document.)

17 A Okay.

18 Q If you could turn to page 1896, the third page?

19 (Witness complies.)

20 Q This is an e-mail from David Spencer dated November  
21 30th, 2009. The third to the last sentence says:

22 "We based our yellow times for the red light camera on  
23 this info but since it wasn't done correctly to begin  
24 with, it leaves us in a bind. We plan on implementing  
25 the EVP plans at this intersection very soon but we

1           may change the clearance times in the interim since  
2           this seems to be a safety issue."

3           When you mention a safety issue with it being 4.0  
4 seconds yellow time duration as opposed to the now current  
5 4.5, what did you mean by that? Could you explain?

6       A    Well, clearance times are calculated to provide a safe  
7 time to allow people to make that decision when the light  
8 shows up, whether to go or to stop, and we always want to  
9 make sure that it meets--it meets those standards. So the  
10 clearance time in itself is a safety issue. We want to make  
11 sure that it's up to date and accurate, and if it's not,  
12 that's a safety issue.

13       Q    And just to clarify, the yellow change interval  
14 formula that we discussed before would be--would have been  
15 the formula--the proper formula to use for this intersection;  
16 correct?

17       A    Yes.

18       Q    And so because it was 4.0 it was too short for that  
19 formula?

20       A    The signal plan at the time had 4.0. If it was posted  
21 45, it should have been designed for 45.

22       Q    Making it 4.5 seconds?

23       A    Correct.

24       Q    Okay. These next few intersections we can go through  
25 more quickly.



1 A That's southbound.

2 Q Okay. So to determine that, it would be--you had  
3 referenced that same formula that we discussed before?

4 A Yes.

5 Q Which could be found in the--can you repeat the manual  
6 that it's found in?

7 A It's NCDOT's signal design manual.

8 Q And so the Town of Cary and NCDOT both abide by that  
9 same--use that same formula?

10 A Yes.

11 Q All right. Those are the only questions I have about  
12 that one. Next---

13 Ms. Martineau: (interposing) Did you want to ask  
14 him whose plan it was?

15 Ms. Nickel: Yes.

16 Q It's prepared by NCDOT; correct?

17 A Yes.

18 Q And again, like we just said before, NCDOT would have  
19 given this back to the Town of Cary to implement it?

20 A Yes.

21 Ms. Nickel: Next I'd like to introduce Plaintiffs  
22 Deposition Exhibit C, which is a traffic signal plan for High  
23 House Road at Prestonwood Parkway and Legault Drive.

24 (Plaintiffs Exhibit C was

25 marked for identification.)

1 By Ms. Nickel:

2 Q So again for this intersection we are concerned with  
3 westbound travel.

4 A I was actually given the Kildaire and High Meadow  
5 again.

6 Q Oh. I'm sorry.

7 (Document handed to witness.)

8 Q With this one we are concerned with westbound travel.  
9 So that would be for again Phase 6, a yellow change interval  
10 of 5 seconds; is that correct?

11 A Yes.

12 Q And this plan was sealed on 10/5/06?

13 A Yes.

14 Q And again used the same formula as we discussed  
15 before?

16 A Yes.

17 Q So at this point--we were given documents by the Town.

18 Ms. Nickel: I want to introduce--with regard to  
19 clearance time sheets. This will be Plaintiffs Deposition  
20 Exhibit Number 7.

21 (Plaintiffs Exhibit 7 was  
22 marked for identification.)

23 By Ms. Nickel:

24 Q Exhibit Number 7 is a series of documents produced by  
25 the Town stamped 2681, 2666, 2682, 2672, 2674 and 2673. I'll

1 give you a moment to look over that.

2 (Witness peruses document.)

3 A Okay.

4 Q Starting with page 2681, the clearance time calcula-  
5 tions, is this a document that the Town of Cary has prepared?

6 Ms. Martineau: If you know.

7 A I don't know.

8 Q Are you familiar with this form at all, not what the  
9 content is, but just---

10 A (interposing) Not the---

11 Q (interposing) The actual calculations.

12 A Yeah. I'm familiar with the clearance time  
13 calculations sheet.

14 Q Okay. So under clearance time calculations where it  
15 says "Clearance Time Calculations, Rev 2004-08-31," does that  
16 indicate it was revised on 8/31/2004?

17 A Yes.

18 Q And then again we're concerned with High House Road  
19 westbound, Phase 6, and this sheet indicates that the  
20 calculated time should have been 5 seconds and it was  
21 recommended to be 5 seconds?

22 A Yes, 5 seconds.

23 Q Turning to page 2666, are you familiar with this form?

24 Ms. Martineau: She's asking you if you've seen this  
25 document before. Are you familiar with it?

1 Q If you have seen this specific document, tell me that,  
2 but if not, just the form of the document. If you're---

3 A (interposing) I'm not familiar with this spreadsheet,  
4 no.

5 Q Okay. Is this sheet one that is used by the Town of  
6 Cary?

7 A No.

8 Q You've never seen a form like this one before?

9 A I have never seen this layout before. I'm familiar  
10 with---

11 Ms. Martineau: (interposing) And when you say  
12 "this," just so the record is clear, go ahead and tell her  
13 what number that is.

14 The Witness: Sure thing.

15 A 2666. I'm not familiar with that form, that layout.  
16 2681, I am familiar with this. This is a document that's  
17 produced by NCDOT that we use.

18 Q So NCDOT produces this document, but does the Town of  
19 Cary actually do the calculations or does the NCDOT?

20 A This Excel spreadsheet is--all the formulas inside  
21 this Excel spreadsheet are implemented by NCDOT and they  
22 provide us with a copy of that Excel sheet and we use that  
23 whenever we do our calculations. NCDOT's calculations are  
24 imbedded in this, so we follow those.

25 Q All right. The page stamped 2682 I believe is the

1 same form as the last one. So you are familiar with that?

2 A Uh-huh.

3 Ms. Martineau: This is 2682?

4 Ms. Nickel: Yes.

5 Ms. Martineau: Okay.

6 Q The next document is 2672. Are you familiar with this  
7 document form?

8 A No.

9 Q All right. And then 2673 and 2674, are you familiar  
10 with this document form?

11 A No.

12 Q Is there anyone else in your department that would be  
13 or is this a form that is no longer used?

14 A We don't use this form anymore.

15 Ms. Martineau: Did you used to use it?

16 The Witness: Not since I've been there.

17 Q Do you still use clearance time sheets? Does that  
18 mean anything to you?

19 A Clearance time sheets?

20 Q I didn't know if there was an updated---

21 A (interposing) 2673?

22 Q Uh-huh.

23 A No. We don't use these. I imagine that's probably a  
24 cell that has---

25 Ms. Martineau: (interposing) When it's printed?

1 A ---an equation in there that says today. It prints  
2 out today's date.

3 Q All right. And so just to clarify, the clearance time  
4 sheets as discussed on each page of Exhibit 7 except for 2681  
5 you're not familiar with?

6 A Correct.

7 Ms. Nickel: Next I'd like to introduce Plaintiffs  
8 Deposition Exhibit Number 8.

9 (Plaintiffs Exhibit 8 was  
10 marked for identification.)

11 Ms. Nickel: This is a document produced by  
12 defendant labeled SafeLight-Cary Citation and Appeal Data (As  
13 of September 330, 2008), Kimley-Horn and Associates,  
14 Incorporated. This was a longer document and I just made  
15 copies of excerpts beginning at page 2567.

16 Ms. Martineau: I'm sorry. Can you say again? What  
17 do you mean by excerpts?

18 Ms. Nickel: This was a 60 page document and I  
19 just excerpted the specific portions that I wanted to  
20 discuss, 2567, 2572, 2595, 2576, 2603 and 2665.

21 By Ms. Nickel:

22 Q Have you seen this document before?

23 A I believe I had seen a draft of it, but I don't--I  
24 didn't really review it.

25 Q When you say you saw a draft of it, meaning from

1 Kimley-Horn and their assessment of red light citations in  
2 Cary?

3 A Yes.

4 Q Specifically with regard to this intersection on page  
5 2603 in reference to High House and Prestonwood Parkway, this  
6 report indicates the total crashes increased after the red  
7 light cameras were implemented. And then turning to 26---

8 Ms. Martineau: (interposing) Was that a question?  
9 I'm sorry.

10 Q Is that how you understand this report to read? When  
11 you said you saw a draft, were you aware of this information?

12 Ms. Martineau: That's a different question.  
13 Objection to the form.

14 A The first line says, "The data indicates the total  
15 crashes increased after the red light cameras were  
16 implemented," yes.

17 Q And then turning to 2665 under item 7, it says:  
18 "problem with eastbound right turners not coming to  
19 complete stop, crash rate has risen (4 times the  
20 number of rear ends in after period), wide  
21 intersection consider time to consider time to  
22 conflict rather than time after red?"

23 From your perspective can you tell me what that means?  
24 I didn't understand the wording of the end of that.

25 Ms. Martineau: I'm going to object to that. I guess

1 you can answer if you can.

2 A Without reading the document and really reviewing the  
3 intersection I couldn't speculate.

4 Q Are you aware of anything done by the Town of Cary  
5 engineering department from 2008 to present that changed this  
6 intersection or procedures that were implemented in response  
7 to this report?

8 Ms. Martineau: Is your question did they make any  
9 changes because of the report?

10 Ms. Nickel: Uh-huh.

11 Ms. Martineau: Okay.

12 A No, not that I know of.

13 Ms. Martineau: Can we take a quick break by any  
14 chance?

15 Ms. Nickel: Yes.

16 Mr. Stam: Five, ten minutes?

17 Ms. Martineau: Three minutes. You want longer?

18 That's fine. We can do that.

19 Mr. Stam: Let's make it five.

20 Ms. Martineau: Okay.

21 The Reporter: Off the record. 10:36 a.m.

22 (A brief recess was taken.)

23 The Reporter: On the record. 10:46 a.m.

24 Ms. Nickel: I'm introducing Plaintiffs Deposition

25 Exhibit D for the signal plan for Northwest Maynard at Chapel

1 Hill Road.

2 (Plaintiffs Exhibit D was  
3 marked for identification.)

4 Ms. Martineau: This is a different one (indicating).

5 Ms. Nickel: We'll figure it out.

6 Ms. Martineau: This one is---

7 The Witness: (interposing) High House and  
8 Prestonwood.

9 Ms. Martineau: Yes, High House and Prestonwood  
10 Parkway.

11 (Document handed to counsel.)

12 Ms. Martineau: This one is different. This one says  
13 Northwest Maynard and Chapel Hill. Is that the one you want?

14 Ms. Nickel: Yes. We just did High House and  
15 Prestonwood.

16 Ms. Martineau: Okay.

17 By Ms. Nickel:

18 Q Let me know when you're ready.

19 Ms. Martineau: What's your question? Then he'll  
20 know what he needs to look at maybe.

21 Q We are concerned here with northbound on Maynard, the  
22 phase and the yellow light duration.

23 A Okay.

24 Ms. Martineau: Are you asking him what does this  
25 signal plan show?

1 Ms. Nickel: I was waiting for him to say he had  
2 looked over it and he was ready.

3 (Witness peruses document.)

4 A Okay.

5 Q So this signal plan, as we discussed, is regarding  
6 northbound Maynard. That would mean Phase 2; correct?

7 A Correct.

8 Q And that would be a yellow light change interval of  
9 4.7 seconds?

10 A Yes.

11 Q And if you turn to the fourth--I'm sorry. This is  
12 dated 2/16/01; correct?

13 A Yes.

14 Q Okay. And then if you turn to the fourth page, could  
15 you tell me--this is dated 2/18/11.

16 A Uh-huh.

17 Ms. Martineau: Is that yes?

18 The Witness: Yes.

19 Ms. Martineau: Thank you.

20 By Ms. Nickel:

21 Q It's labeled as the plan of record. With regard to  
22 the revision seal in the opposite corner, it says "Not a  
23 certified document. This document originally issued and  
24 sealed by" a person. Could you tell me what that means?

25 A If we notice that a signal plan doesn't reflect what's

1 on the ground, we can request that a plan of record be  
2 changed.

3 Q And when a signal plan does not reflect what's  
4 actually on the ground, what does that mean?

5 A Sometimes lanes can be added or lane assignment can be  
6 changed or a crosswalk was added and for some reason a signal  
7 plan update was not done.

8 Q When that work was done in the past?

9 A When the work was done, yes.

10 Q And so this is to currently reflect the field?

11 A Yes.

12 Ms. Martineau: I'm sorry. What did you say?

13 Ms. Nickel: To currently reflect the field.

14 Ms. Martineau: Reflect the field?

15 Ms. Nickel: Current conditions in the field.

16 Ms. Martineau: Okay. I'm just trying to understand.

17 Ms. Nickel: I'm having trouble with my words.

18 By Ms. Nickel:

19 Q So can you tell comparing these two what is different  
20 or what was changed?

21 A Yes. On Chapel Hill Road in the previous plan, the  
22 2001 plan, there is one through lane heading westbound and  
23 there's also one departure lane on westbound Chapel Hill. On  
24 the 2011 plan there are two through lanes with two receiving  
25 departure lanes on Chapel Hill Road.

1 Q Does that difference in lane structure affect the  
2 signal timing at all?

3 A In this situation it likely did not. Clearance times  
4 would be based on the stop bar in a crosswalk that was  
5 present, and it is on both of these plans.

6 Q Okay. Thank you. And again, just to go back to it,  
7 since the yellow light duration is the same on the 2001 plan  
8 as the 2011 plan of record, we're still referring to that  
9 same formula that we discussed before from the NCDOT---

10 Ms. Martineau: (interposing) Objection to the form.

11 Q ---identified in Exhibit 3?

12 A I don't know.

13 Q You don't know.

14 A I don't know.

15 Ms. Nickel: All right. I'd like to introduce  
16 Plaintiffs Deposition Exhibit E. It's the intersection at  
17 Maynard Road at Walnut Street.

18 (Plaintiffs Exhibit E was  
19 marked for identification.)

20 Ms. Martineau: Do you have another copy? If you do  
21 that would be great. If you don't that's fine.

22 (Document handed to counsel.)

23 By Ms. Nickel:

24 Q Let me know when you've had a chance to look at this.

25 (Witness peruses document.)

1 A Okay.

2 Q This is a traffic signal plan for Walnut Street at  
3 Southeast Maynard Road. And for this intersection I'm  
4 concerned with southbound Maynard Road, and that would  
5 indicate Phase 4 for the through signal?

6 A Yes.

7 Q And that would be a yellow change interval of 5.1  
8 seconds?

9 A The 2004 plan, Phase 4, has 5.1 seconds.

10 Q The 2004 plan. Okay. So what is the difference  
11 between a revision seal and then to the right it says "This  
12 document originally issued and"?

13 A That's a NCDOT standard title block.

14 Q So this is saying it's only sealed for things with  
15 number 2 in the triangle; is that correct?

16 A I believe so. That's the NCDOT standard. I'm not  
17 completely familiar with their title block.

18 Q All right. So for the last document here for  
19 southbound Maynard---

20 Ms. Martineau: (interposing) Which document? Is  
21 there an identifier?

22 The Witness: There are sheet numbers in the top  
23 right corner. Do you want to use that?

24 Ms. Martineau: I think the sheet number is--is it  
25 cut off?

1           The Witness:        On the 2001 plan it is, yes.

2           By Ms. Nickel:

3       Q     Correct, but we were just discussing the 2004 plan,  
4 though.

5       A     Correct.

6       Q     And then let's switch to the 2001 plan, which we'll  
7 identify as being the only one with the sheet numbers being  
8 not apparent.

9       A     Okay.

10      Q     So the 2001 plan, looking at again southbound Maynard,  
11 we're still talking about Phase 4 for the through, and the  
12 yellow change interval there is 5.3; is that correct?

13      A     Yes, that's correct.

14      Q     Is there a reason that it went from 5.3 to 5.1?

15           Ms. Martineau:        Are you asking if he knows why the  
16 NCDOT plan went from 5.3 to 5.1?

17      Q     With regard to industry standards.

18           Ms. Martineau:        I'm going to object to the form of  
19 the question. That's a different question.

20      A     I don't know.

21      Q     Is there anything that you can tell from looking at  
22 this plan that changed to make the timing shorter?

23           Ms. Martineau:        This is a pretty big plan. Do you  
24 want him to study it? I don't think that's a fair question.

25           Mr. Stam:               Yes. Study it as long as he needs

1 to.

2 (Witness peruses document.)

3 A The only thing that I could--just from reviewing it,  
4 it looks like the grade changed on the southbound. It went  
5 from--in the 2001 plan it was negative 3 percent and it went  
6 to 1 percent in the 2004 plan, which could indicate a shorter  
7 yellow interval.

8 Q Because you're decelerating at a slower rate; correct?

9 A Yes.

10 Q Okay. Thank you. And again, we're still referencing  
11 that same formula that is on Exhibit 3 and it's a DOT formula  
12 for yellow change intervals; correct?

13 Ms. Martineau: Objection to the form. What do you  
14 mean by "we're still referencing"?

15 Ms. Nickel: On each plan I'm trying to confirm  
16 the formula used for yellow change duration.

17 Ms. Martineau: You want to know if he knows what  
18 formula the engineer of record used to create this plan? Is  
19 that the question?

20 By Ms. Nickel:

21 Q Or when you---

22 Ms. Martineau: (interposing) Because he didn't  
23 create this plan.

24 A Yeah. I can't verify that they used that.

25 Q Would those have been the standards in place at the

1 time?

2 Ms. Martineau: For what?

3 Q For yellow change interval duration.

4 Ms. Martineau: Objection to the form of the  
5 question. I don't think he can really say for sure what the  
6 engineer used.

7 Q Would you know what you as an engineer would have--the  
8 formula that the NCDOT or the Town of Cary would have used at  
9 that time?

10 A In 2001 and in 2004 I don't.

11 Q When did you start? I'm sorry.

12 A With the Town of Cary?

13 Q Yeah.

14 A That would be October 2007.

15 Q And at that point in time you can---

16 A (interposing) I can confirm what the Town would have  
17 used.

18 Q What the Town would have used, right.

19 A The Town would have used that if we were to design it.

20 Ms. Martineau: And what would the Town have used?

21 The Witness: We would have used the yellow  
22 clearance interval calculation found in the NCDOT signal  
23 design manual.

24 Q And that is what we identified in Exhibit 3?

25 A Yes.

1 Q Just to follow up on that point, if the NCDOT created  
2 the plan, does the Town of Cary have any procedure where they  
3 check the calculations or---

4 Ms. Martineau: (interposing) Does the Town of Cary  
5 go back and recheck calculations?

6 Ms. Nickel: Uh-huh.

7 Ms. Martineau: Okay.

8 A No. If it's an intersection that is a NCDOT  
9 intersection, no, we would not.

10 Q And then is there any way to identify whether the Town  
11 of Cary created the plan versus NCDOT? Would it be by that  
12 symbol?

13 A It would be whoever sealed it, whatever engineer  
14 sealed it, and then--yeah. The main way to be whoever has  
15 sealed the document.

16 Ms. Nickel: All right. I'm going to introduce  
17 Plaintiffs Deposition Exhibit F, the signal plan for Tryon  
18 Road at Crescent Green regarding eastbound travel.

19 (Plaintiffs Exhibit F was  
20 marked for identification.)

21 Q Okay. This is a traffic signal up upgrade for Tryon  
22 Road at Crescent Green dated--I can't find the date.

23 A I believe it's March 1st, 2002.

24 Q Dated March 1st, 2002. And here we're concerned with  
25 eastbound travel on Tryon Road. Would that be Phase 2?

1 A Yes.

2 Q And that would indicate that the yellow change  
3 interval is 4.7 seconds?

4 A Yes.

5 Q You are not familiar with the clearance time sheets?

6 A Correct.

7 Q And then since this plan is dated in 2002, do you know  
8 who in your department could verify this, or do you know who  
9 in your department was still here at that time--or with the  
10 Town of Cary at that time?

11 A Who currently works here now?

12 Q Yeah.

13 A Not involving signals.

14 Ms. Nickel: Next I'd like to introduce Plaintiffs  
15 Deposition Exhibit G for Tryon Road at Regency Parkway  
16 regarding westbound travel.

17 (Plaintiffs Exhibit G was  
18 marked for identification.)

19 Q This is a traffic signal plan dated 9/17/2009 for  
20 Tryon Road at Regency Parkway; correct?

21 A Yes.

22 Q And we are concerned with westbound travel, meaning--  
23 that would be for through traffic being Phase 6?

24 A Yes.

25 Q And the yellow change interval at this intersection is

1 4.7 seconds?

2 A Yes.

3 Q In 2009 what were the standards used by NCDOT?

4 Ms. Martineau: For what?

5 Q Yellow change interval durations.

6 Ms. Martineau: Object to the form of the question.

7 A The signal design manual at the time utilized that  
8 existing formula.

9 Q In Exhibit 3, the formula we discussed before?

10 A Yes.

11 Ms. Nickel: Next is Exhibit H for Walnut Street  
12 at Dillard Drive northbound.

13 (Plaintiffs Exhibit H was  
14 marked for identification.)

15 Q This is a traffic signal upgrade plan for Walnut  
16 Street at Dillard Drive--it looks like the date is cut off--  
17 labeled Signal 13. The next page is dated 7/20/2007?

18 A Yes.

19 Q And we are concerned with northbound travel on Walnut  
20 Street, so this would be Phase 6?

21 A Northbound, yes.

22 Q And the yellow change interval duration there is 4.4  
23 seconds; correct?

24 A 4.4 seconds, yes.

25 Ms. Nickel: Next I'd like to introduce Plaintiffs

1 Deposition Exhibit I for southwest Maynard Road at Kildaire  
2 Farm.

3 (Plaintiffs Exhibit I was  
4 marked for identification.)

5 Q Here my question is about westbound travel on Maynard  
6 Road for through traffic and for turning left. This signal  
7 plan is dated 6/7/2006; correct?

8 A Yes.

9 Q And then for westbound travel on Maynard for through  
10 traffic, Phase 4, there's a yellow change interval of 3.8  
11 seconds?

12 A Yes.

13 Q And westbound travel on Maynard for left turns is  
14 Phase 7 with a yellow change interval of 3.0 seconds?

15 A Yes.

16 Q And then for this design, what does the stamp--I think  
17 that's a Town of Cary stamp to the left.

18 A To the left of the title block?

19 Q Uh-huh. Is that a Town of Cary stamp?

20 A Yes. That is a Town of Cary seal. It was likely just  
21 applied since it's in the Town of Cary.

22 Q I'm sorry. What does that indicate?

23 A That's--it's not a standard treatment. I'm assuming  
24 this was done by a private engineering firm, Stantec, and it  
25 was likely just placed on the plan since it's in the Town of

1 Cary on the Town of Cary signal system.

2 Q Would this indicate that the Town of Cary has approved  
3 this plan?

4 A No.

5 Q Or reviewed it?

6 A No.

7 Q So that only means---

8 A (interposing) It's ornamental.

9 Q Ornamental. Under note 10 it says, "Existing Yellow  
10 Change Intervals and Red Clearance Times for phases 4 and 7  
11 shall be decreased by a maximum of 0.2 seconds per week until  
12 the required value is reached." What does that indicate?

13 A I wasn't part of the decision making for that. But  
14 what we have done in the past is if there is a change in the  
15 yellow time that is significant, it's typical practice to  
16 step that down slowly so you don't change the--don't decrease  
17 a yellow light length by a large gap because then it would  
18 result in a safety issue.

19 Q Okay. And I see it's on the signal plan. Is there a  
20 record kept of the decrease, or how is it confirmed that that  
21 was actually adhered to?

22 A I don't know.

23 Q Turning to the second page, again there is the seal  
24 from the Town of Cary. What does that indicate to you?

25 A I believe it's the same as on the first page.

1 Q And then the third page?

2 A The same.

3 Q We're going to look at the original page that we  
4 discussed, the notation regarding the---

5 Ms. Martineau: (interposing) The first page, Signal  
6 15?

7 Ms. Nickel: Yes.

8 Q ---regarding note 10, you said that's typically when  
9 there's a large decrease in the yellow change interval?

10 A Uh-huh.

11 Q Is there anything on this that indicates what the  
12 decrease was?

13 A No.

14 Q Okay. Still on the same point, with regard to the  
15 decrease in the yellow change interval, you said a  
16 significant decrease in time. Is there a standard number  
17 that means significant? So if .2 is not, is a whole second  
18 significant?

19 A There's no standard.

20 Q There's no standard?

21 A When to apply that, no.

22 Q Okay. And you mentioned that it affected safety if  
23 you decreased it too quickly, the yellow light duration, it  
24 will cause crashes more likely?

25 Ms. Martineau: Objection to the form of the

1 question. You can answer.

2 A People become accustomed to--people that typically  
3 travel the road over and over again become accustomed to that  
4 yellow light, so changing it would adversely affect them.

5 Ms. Nickel: Next I'd like to introduce Plaintiffs  
6 Deposition Exhibit J. This is actually the same signal plan  
7 that we just went over in Exhibit I, but I thought it would  
8 make it be more clear because we're talking about another  
9 aspect of the intersection.

10 (Plaintiffs Exhibit J was  
11 marked for identification.)

12 By Ms. Nickel:

13 Q All right. Here we're concerned with southbound  
14 travel on Kildaire Farm Road, through. Does that mean Phase  
15 6?

16 A Yes.

17 Q And the yellow light duration there is 4.0 seconds?

18 A Yes.

19 Ms. Nickel: Next I'd like to introduce Plaintiffs  
20 Deposition K, a traffic signal plan for Kildaire Farm Road at  
21 Cary Parkway.

22 (Plaintiffs Exhibit K was  
23 marked for identification.)

24 Q On this plan I'm concerned with westbound travel on  
25 Cary Parkway for through traffic and for the left turn lane.

1 This plan is dated 4/28/2009; correct?

2 A Yes.

3 Q And for through traffic westbound on Cary Parkway for  
4 Phase 4, the yellow change interval is 4.4 seconds?

5 A Yes.

6 Q And for westbound travel, left turn on Cary Parkway,  
7 the yellow change interval is 3.0 seconds?

8 A For Phase 7? Yes.

9 Q Phase 7. So if we go back to Exhibit Number 4, which  
10 was the table that we looked at with the old signal plan in  
11 place, where we talked about 1991 plan, for Cary Parkway and  
12 Kildaire Farm Road westbound and westbound left, the plan in  
13 '03, March 6, 2003, indicated that for Phase 7, which would  
14 be the left turn lane, the yellow light duration was 4.0  
15 seconds?

16 Ms. Martineau: Do you mean according to Exhibit 4?

17 Ms. Nickel: According to Exhibit 4, yes.

18 Ms. Martineau: Okay.

19 A Yes.

20 Q And then for Phase 2, which would be the through  
21 traffic---

22 A (interposing) It would be Phase 4.

23 Q Phase 4--I'm sorry--for through traffic it would be  
24 4.7 seconds?

25 A Yes.

1 Ms. Martineau: According to Exhibit 4?

2 Ms. Nickel: According to Exhibit 4.

3 Q So in 2009 this plan was implemented. Would you  
4 consider that difference in time as a significant decrease  
5 that you mentioned before, a significant decrease in the  
6 yellow change interval duration?

7 A For the through traffic, there's a difference of .03  
8 seconds. I wouldn't consider that significant. For the left  
9 turn, it goes from 4 seconds to 3 seconds, which would be  
10 considered significant.

11 Q Does your department, when there's a significant  
12 decrease in the yellow change interval, have any process of  
13 monitoring that intersection for safety reasons, or is there  
14 a procedure in place where you would analyze that  
15 intersection?

16 Ms. Martineau: Objection to the form. You can  
17 answer if you can.

18 Q For safety purposes.

19 Ms. Martineau: Same objection.

20 A We have the ability to review it.

21 Q Is that a policy in place?

22 A It's not a policy to consistently review them for  
23 safety at any routine amount of time, no.

24 Q In looking just at the plan, does it indicate to you  
25 why that duration was shortened in a significant way?

1 A I couldn't tell. It's not---

2 Q (interposing) Written on the plan?

3 A No.

4 Q Since this is 2009, the same formula identified in  
5 Exhibit 3 for the yellow change duration would have been  
6 used?

7 Ms. Martineau: Objection to the form. He doesn't  
8 know what they used. He can only say what he would have  
9 used.

10 Q What would the Town of Cary used?

11 Ms. Martineau: I'm sorry. What was the question?

12 Q What would the Town of Cary used, what formula?

13 Ms. Martineau: She wants to know if you know what  
14 the Town would have used if the Town was designing that  
15 yellow light interval.

16 A If we were to design this signal in 2009, we would  
17 have used the equation on Exhibit 3.

18 Ms. Nickel: Okay. Next I'd like to introduce  
19 Plaintiffs Exhibit L, and this is for--this is just like the  
20 other one. It's the same intersection, Kildaire Farm and  
21 Cary Parkway. I just separated them for reference's sake.  
22 And we're interested here with northbound and northbound left  
23 travel on Kildaire Farm Road.

24 (Plaintiffs Exhibit L was  
25 marked for identification.)

1 By Ms. Nickel:

2 Q This is dated 4--it's the same map. What we're  
3 concerned with is northbound travel--dated 4/28/2009.  
4 Northbound travel on Kildaire for through traffic would be  
5 Phase 2; correct?

6 A Yes.

7 Q And it would be a yellow change interval of 4.5  
8 seconds?

9 A Yes.

10 Q And then northbound left bound turn travel would be  
11 Phase 5?

12 A Yes.

13 Q And that would be 3 seconds?

14 A Yes.

15 Q Then again looking back at Exhibit 4, the table we  
16 discussed, the plan according to this table in Exhibit 4 was  
17 previously dated March 6, 2003?

18 A Uh-huh.

19 Q And so for northbound through traffic, the interval  
20 would have been 4.7 seconds?

21 A Uh-huh.

22 Q For Phase 5, northbound left turn, it would have been  
23 4.0 seconds?

24 A Yes.

25 Q Would that be considered a significant decrease in

1 time?

2 A For Phase 2 with it being 0.2 seconds, no, it would  
3 not be considered significant. For Phase 5, reducing by one  
4 second, likely would be.

5 Q And then do you see--am I missing any notation where  
6 they do the procedure where you decrease the interval by .2  
7 seconds?

8 Ms. Martineau: Are you asking is it noted on the  
9 plan?

10 Ms. Nickel: Yeah.

11 Ms. Martineau: Okay.

12 A I don't see any notes on the plan that indicate that,  
13 no.

14 Q And then again without you seeing the prior plan, you  
15 can't tell me what--or can you tell what the---

16 A (interposing) I could not. Without having the  
17 previous plan I couldn't tell you.

18 Ms. Martineau: Make sure she gets her question out.  
19 You're assuming what she's asking. Let her ask her  
20 question, and it's also easier for the court reporter.

21 Q I'd also like to refer back to Exhibit 8, the Kimley-  
22 Horn accident report. I'm concerned with the page stamped  
23 2595 regarding Kildaire Farm Road and Cary Parkway, the  
24 intersection we just discussed.

25 Ms. Martineau: Hold on a second.

1 (Pause.)

2 Ms. Martineau: Okay.

3 Q And there, according to this report, it states, "The  
4 data show an increase in total crashes after the red light  
5 cameras were implemented." Would you agree that that's what  
6 it states?

7 A Yes.

8 Q All right. And then turning to the last page, stamped  
9 2665, under item number 3 for Kildaire Farm Road and Cary  
10 Parkway, under Comments it says, "2 approaches monitored,  
11 crash rate has risen, full protection of lefts in Kildaire  
12 Farm Road removed." What does that comment indicate?

13 Ms. Martineau: Objection to the form. You can  
14 answer if you know or if you have an opinion.

15 A As I read this, "full protection of lefts in Kildaire  
16 Farm Road removed," to me that would say that the fully  
17 protected left turn phase was taken off of Kildaire Farm and  
18 a protected permitted left turn phasing was used.

19 Q Can you explain what that means?

20 A A fully protected left would be you can only make a  
21 left turn with a green arrow. Your choices are a red arrow,  
22 a yellow arrow, and a green arrow. You would only be able to  
23 make a left on a green arrow.

24 A protected permitted would allow a green arrow but it  
25 would also allow a permitted phase, which is you would have a

1 green ball. So you could make the left without the green  
2 arrow, but you have to make it with oncoming traffic coming  
3 at you. So you have to find an acceptable gap.

4 Q I see. And so what that comment indicates is you went  
5 from only the green arrow?

6 A Yes. At the some point the intersection was modified.  
7 Based on just on that note, at some point the left turn arrow  
8 was--full protection was removed and replaced with protected  
9 permitted.

10 Q To your knowledge is that a standard procedure to  
11 improve safety?

12 Ms. Martineau: Objection to the form of the  
13 question.

14 Q Is that a policy that you would follow?

15 Ms. Martineau: Is what a policy?

16 Q The increase in crashes, does removing the full  
17 protection of left remedy that?

18 Ms. Martineau: Objection to the form of the  
19 question. You can answer if you know.

20 A Typically full protection would be--would result in  
21 fewer crashes, and protected permitted would--typically you  
22 would see a higher crash rate with protected permitted  
23 phasing for left turns.

24 Q So just to reiterate, with protected permitted you  
25 would see more crashes?

1 A Usually, yes.

2 Q So they went to that even though they had a high crash  
3 rate?

4 A I don't know what was done. I don't have the history  
5 of what the phasing was in that intersection, when this was  
6 done or from the time the red light camera was put in to when  
7 the study was done. I don't have the history of what that  
8 left turn phasing was.

9 Ms. Nickel: Okay. Next is Plaintiffs Deposition  
10 Exhibit M for High House Road at Cary Parkway.

11 (Plaintiffs Exhibit M was  
12 marked for identification.)

13 Q My questions for this traffic signal plan are  
14 regarding northbound and northbound left traffic on Cary  
15 Parkway. For northbound through, it would be Phase 8,  
16 correct, at 4.3 seconds?

17 Ms. Martineau: Is that north?

18 A This intersection is actually an X, so it's difficult  
19 to designate what's north. But according to the plan, Phase  
20 8 on Cary Parkway would really be westbound.

21 Mr. Stam: This is Cary Parkway (indicating) and  
22 this High House (indicating)?

23 The Witness: Uh-huh.

24 Mr. Stam: This is High House (indicating). I  
25 think what you're saying is it's sort of at an angle, so it's

1 hard to say which is north and which is west.

2           The Witness:        Yeah.

3           Mr. Stam:            So why don't you--instead of asking  
4 him about north and west, the top of the page or the bottom  
5 of the page?

6           By Ms. Nickel:

7       Q    Is there any indication where the camera is on this?

8       A    Not on this signal plan.

9       Q    So for Phase 8, travelling towards the top of the  
10 page, for through traffic the interval is 4.3 seconds;  
11 correct?

12      A    Yes.

13      Q    And then for the left turn lane, that would be Phase  
14 3, and that is 3.0 seconds; correct?

15      A    Yes.

16      Q    And this is a plan dated 10/5/2006?

17      A    Yes.

18      Q    Is there any indication on here as to what this  
19 signal--what was changed? Why is there a signal plan here?

20           Ms. Martineau:    I'm sorry?

21      Q    Why was a signal plan submitted here? Is there any  
22 indication that there was something changed or added?

23      A    Not that I can see on this plan.

24      Q    So is this one where again you would need the older  
25 signal plan to distinguish what was different than the

1 previous two years?

2 A Yes.

3 Ms. Nickel: I'd like to introduce Plaintiffs  
4 Deposition Exhibit N. This is for the Harrison Avenue at  
5 Maynard Road intersection.

6 (Plaintiffs Exhibit N was  
7 marked for identification.)

8 Q This signal plan is dated 9/5/2006 and it's for  
9 southbound traffic on Harrison Avenue for through. That  
10 would be Phase 6?

11 A Yes.

12 Q With a yellow change interval of 4.2 seconds?

13 A Yes.

14 Q If you could turn to Signal 3, this exhibit  
15 (indicating).

16 Ms. Martineau: Is there a page number at the top?

17 Ms. Nickel: It's Signal 3.

18 Q Can you tell me what this is a plan of?

19 A Yeah. This is a design for the loading for the mast  
20 arms underneath the intersection.

21 Ms. Nickel: All right. I would like to introduce  
22 Plaintiffs Deposition Exhibit O, and this is for North  
23 Harrison Avenue at Weston Parkway.

24 (Plaintiffs Exhibit O was  
25 marked for identification.)

1 By Ms. Nickel:

2 Q This is a traffic signal plan for Harrison Avenue at  
3 Weston Parkway traveling southbound on Harrison, and it was  
4 sealed on 1/29/09 by you; correct?

5 A Yes.

6 Q And so this is an example of something that the Town  
7 of Cary prepared; correct?

8 A Yes.

9 Q And we talked about the ornamental stamp before. This  
10 is distinguished because it says "Prepared in the Offices  
11 of"?

12 A For this situation this is a title block that was  
13 provided to us by DOT, and that "Prepared in the Offices of"  
14 is to denote where it was prepared.

15 Q Okay. For southbound travel on Harrison Avenue for  
16 through traffic would be Phase 6; correct?

17 A Yes.

18 Q At 4.5 seconds?

19 A Yes.

20 Q Also included under this traffic signal plan from the  
21 documents produced by the Town was a clearance time  
22 calculations sheet, which indicates it was--I believe that  
23 indicates it was revised on 6/17/2008?

24 A Yes. This was at the time of occurrence, the  
25 clearance time sheet provided to us by DOT.

1 Q And when you say provided to you by DOT, they gave you  
2 this form with the numbers filled out?

3 A No. They provide us with a blank spreadsheet that has  
4 the formulas and the calculations--the formulas embedded in  
5 it.

6 Q Okay. This says it was checked by D. Spencer, which I  
7 assume is you.

8 (Witness nods affirmatively.)

9 Q When you say the formulas are embedded, does that mean  
10 you just enter the numbers, or do you actually create the  
11 calculation?

12 A There are cells that are marked in the spreadsheet  
13 that denote where you are to put your information and you  
14 input that information and it calculates it for you.

15 Q And this formula would have been the same formula that  
16 we discussed in Exhibit 3 from the NCDOT handbook with regard  
17 to yellow light duration?

18 Ms. Martineau: Objection to NCDOT handbook. Go  
19 ahead and answer.

20 A For the yellow light duration that equation should be  
21 the same.

22 Q And just to verify, here it calculated that the  
23 intersection should have--the calculated--or the recommended  
24 yellow light duration is 4.5 seconds?

25 A For Phase 6?

1 Q For Phase 6.

2 A Yes.

3 Q And then when it says "Checked by," does that mean you  
4 just check these calculations or do you physically check the  
5 intersection to see if that's the actual time that it's run?

6 A We'll check what information is inputted, input into  
7 the spreadsheet, and I'll also verify that the numbers that  
8 are inputted are correct.

9 Q And then does that mean you do any field  
10 investigation?

11 A Usually no. Usually we'll utilize the existing  
12 traffic signal plan.

13 Q All right. So when it says "Checked by," that just  
14 means the calculations, not the actual implementation of the  
15 plan, correct, on this document?

16 A Whoever puts the inputs in will measure the clearance  
17 distances used for the red light time using an auto CAD  
18 software to give us that distance, and we'll utilize the  
19 speed limit that is on the ground that we have access to,  
20 our ordinances. So we'll use that for the speed limit  
21 portion of it to input it into the spreadsheet.

22 Q What is an auto CAD?

23 A It's a computer aided drafting software.

24 Q All right. Is there any process for what that  
25 software tells you that verifies that's the actual distance

1 on the ground? Do you have a process for determining that?

2 A Usually auto CAD is the software that is used to draw  
3 up these plans, and whenever we do these, we receive the  
4 previous file. There's always a file kept somewhere.

5 Usually NCDOT provides them to us since these are NCDOT  
6 intersections.

7 So they have auto CAD files for these, and those plans  
8 are done based on survey. A survey crew will go out and  
9 physically locate all of the features in the intersection and  
10 then an auto CAD plan is done based on that.

11 Ms. Nickel: Okay. I'd like to introduce  
12 Plaintiffs Deposition Exhibit P for Walnut Street and Meeting  
13 Street.

14 (Plaintiffs Exhibit P was  
15 marked for identification.)

16 Q This is Plaintiffs Exhibit P for Walnut Street and  
17 Meeting Street, and we're concerned with southbound traffic  
18 on Walnut Street for the through phase interval and left turn  
19 phase on Meeting Street. This plan is dated 10/26/09. And  
20 for the through traffic, that would be Phase 2 at 4.5  
21 seconds; correct?

22 A Yes.

23 Q And for Phase 5, that would be for left turn traffic,  
24 it would be 3.2 seconds?

25 A Yes.

1 Q In 2009 the formula for the Town of Cary at that time  
2 was the one marked in Exhibit 3 for yellow light duration;  
3 correct?

4 A Are you asking if that's the one that we would have  
5 used?

6 Q Yes.

7 A Yes.

8 Q And then I see it notes here that this was prepared by  
9 Ramey Kemp Associates?

10 A Yes.

11 Q Do you know who that company is, or is that a company?

12 A Yes. They are a traffic engineering consulting firm.

13 Q Okay. And so they would have prepared that for--at  
14 whose direction?

15 Ms. Martineau: What was your question? Who would  
16 they have prepared it for or at whose direction did they  
17 prepare it?

18 Ms. Nickel: Uh-huh.

19 Ms. Martineau: Which one was it?

20 Ms. Nickel: Who they prepared it for.

21 A A private developer. A requirement of them was to  
22 make modifications to the signal plan, so they performed the  
23 signal plan changes for the private developer.

24 Ms. Nickel: Okay. Next I would like to introduce  
25 Exhibit Number 9. This is a traffic signal plan for Walnut

1 Street at Meeting Street dated 4/17/03 for a signal upgrade.

2 (Plaintiffs Exhibit 9 was

3 marked for identification.)

4 Ms. Nickel: At the same time, if we can kind of  
5 go back and forth, I'd also like to introduce---

6 Ms. Martineau: (interposing) Is this Q right here  
7 (indicating)?

8 Ms. Nickel: 9.

9 Ms. Martineau: Okay.

10 Ms. Nickel: The letters are for the current  
11 traffic signal plan. These are documents produced for the  
12 previous signal plan.

13 Ms. Martineau: That's fine.

14 Ms. Nickel: And then I'd also like to introduce  
15 Plaintiffs Deposition Exhibit Number 10 for Walnut Street at  
16 Meeting Street, and this is dated 2006 and actually has a  
17 stamp by the defendant, 1422.

18 (Plaintiffs Exhibit 10 was

19 marked for identification.)

20 Ms. Martineau: Do you have an extra copy of 9 and  
21 10?

22 Ms. Nickel: I think I only have one. Do you mind  
23 sharing?

24 Ms. Martineau: I can give it back.

25 (Document handed to counsel.)

1 By Ms. Nickel:

2 Q Starting with Exhibit Number 9, stamped 1414 and 1415,  
3 dated 4/17/2003, for straight through for interval 2 is 4.7  
4 seconds; correct?

5 A Yeah. Phase 2 is 4.7, yes.

6 Q And then for a left turn it's 4.0 seconds?

7 Ms. Martineau: And we're talking about yellow---

8 Ms. Nickel: (interposing) Change interval.

9 A The yellow change interval for Phase 5 is 4 seconds.

10 Q 4 seconds. And again, when you compare this to the  
11 2009 plan we just looked at for the left turn, would that be  
12 considered a significant decrease?

13 A Going from 4 seconds to 3.2 seconds is a difference of  
14 0.8 seconds. It could be considered significant.

15 Q And again from a procedural perspective, when you  
16 decrease the time are there any procedures in place at the  
17 engineering department of Cary to monitor this?

18 A No.

19 Q All right. Then if we could look at Exhibit 10, which  
20 is identified by the stamp 1422. It is dated 6/1/04.

21 Ms. Martineau: I'm sorry. What?

22 Ms. Nickel: It's dated 6/1/04.

23 Ms. Martineau: Okay.

24 Q What does this signal upgrade mean to you compared to  
25 the 2003 plan which is discussed in Exhibit 9?

1 Ms. Martineau: Objection to the form.

2 A Based on the plan, in the revision block it states the  
3 installation of red light enforcement loops.

4 Q And then on this plan there's a notation---

5 Ms. Martineau: (interposing) On what plan?

6 Q Exhibit 10 stamped 1422, so the 2004 plan. There's  
7 the Town of Cary seal and it says "Prepared in the Offices  
8 of." So is this a plan prepared by the Town of Cary?

9 A Yes.

10 Q And then at that point there is still--the yellow  
11 change interval duration for Phases 2 and 5 were the same as  
12 2003; correct?

13 A Yes.

14 Q So when you compare this 2004 document to the 2009  
15 plan, can you tell me what changed between 2004 and 2009 that  
16 necessitated the yellow change interval to decrease?

17 Ms. Martineau: Objection to the form of the  
18 question. Answer if you know.

19 The Reporter: Off the record. 11:58 a.m.

20 (A brief recess was taken.)

21 The Reporter: On the record. 11:59 a.m.

22 By Ms. Nickel:

23 Q I think the point where we left off was I asked you  
24 study the difference between the 2004 plan prepared by the  
25 Town of Cary and the 2009 plan and what had changed to

1 necessitate the decrease in the yellow change interval.

2 Ms. Martineau: Objection to the form. Answer if you  
3 can.

4 A Just based on looking at the plan I can't answer that.

5 Q So based on this plan there is no indication on this  
6 plan as to why that would have been decreased?

7 Ms. Martineau: Objection; mischaracterization of his  
8 testimony.

9 Q With regard to the characteristics of the 2004 plan  
10 compared to the characteristics of the 2009 plan, is there a  
11 difference?

12 Ms. Martineau: Same objection; asked and answered.  
13 Go ahead and tell her if you know.

14 A Geometrically the difference in the plans is on the  
15 2009 plan there was an additional northbound through lane.  
16 Also the lanes were reassigned on Meeting Street coming  
17 westbound. And for the 2009 plan a median pedestrian refuge  
18 was installed and the pedestrian crossing don't walk times  
19 were adjusted accordingly.

20 Q With regard to the--you called them geometric  
21 differences?

22 A Uh-huh.

23 Q Are any of those factors that would affect or cause  
24 the yellow change interval to need to be shortened?

25 Ms. Martineau: If he was designing the plan are you

1 asking?

2 Ms. Nickel: Yeah.

3 Ms. Martineau: Objection. Go ahead and answer if  
4 you know.

5 A Of those for the yellow light interval, no.

6 Q Are you aware of any procedures by the Town of Cary  
7 engineering department to monitor the safety of this  
8 intersection when the yellow light duration was decreased by  
9 .8 seconds for a left turn?

10 Ms. Martineau: Objection to the form. You can  
11 answer.

12 A No.

13 Q Back to Exhibit P, included was a clearance time  
14 calculation in the document the Town produced for us. Are  
15 you familiar with this form?

16 A This form, this spreadsheet, yes.

17 Q It indicates it was revised on 6/17/2008?

18 A Correct.

19 Q And it's marked "Checked by: DJD" and dated 7/21/2009?

20 A Yes.

21 Q We discussed before when you had checked this same  
22 form, you only checked the--you checked calculations portion;  
23 correct?

24 A Yes.

25 Q Then the follow page is not stamped, but it's labeled

1 Ramey Kemp & Associates. Can you identify what this document  
2 is?

3 A This document is the calculated clearance distance for  
4 each of the movements at the intersection.

5 Ms. Nickel: I'd like to introduce Plaintiffs  
6 Deposition Exhibit Q for the intersection of Cary Parkway at  
7 High Meadow.

8 (Plaintiffs Exhibit Q was  
9 marked for identification.)

10 Q This is dated 5/9/2005 for a signal upgrade, and we  
11 are concerned here with westbound traffic on Cary Parkway,  
12 which would be Phase 6, and that has a yellow change interval  
13 of 4.5 seconds; correct?

14 A Yes.

15 Mr. Stam: If we could step outside for five  
16 minutes and then we'll come back and finish up.

17 Ms. Martineau: Okay.

18 The Reporter: Off the record. 12:09 p.m.

19 (A brief recess was taken.)

20 The Reporter: On the record. 12:16 p.m.

21 By Ms. Nickel:

22 Q To follow up with Exhibits A through Q, can you  
23 identify each of those as a business record of the Town of  
24 Cary?

25 Ms. Martineau: I don't know if he's the right

1 person. I certainly can. I mean they came from our---

2 Mr. Stam: (interposing) If you'll stipulate  
3 that they are business records of the Town of Cary, that's  
4 really what we're looking for.

5 Ms. Martineau: I mean we didn't create them, but do  
6 we maintain them? Are they part of Cary's records? I mean I  
7 think clearly they are. But if you're looking to see if  
8 these are our plans versus these are DOT plans, that's a  
9 different question.

10 Mr. Stam: Are A through Q business records of  
11 the Town of Cary? If you'll stipulate to that, that's fine.  
12 And then the same question on 1 through---

13 Ms. Martineau: (interposing) I would just ask--it  
14 probably would be best just to--if you'd send me a written  
15 interrogatory, I'll answer it next week.

16 Mr. Stam: How about 1 through--whatever it was.  
17 There were some that---

18 Ms. Nickel: (interposing) 10.

19 Mr. Stam: 1 through 10. There were some he had  
20 not seen. If you could just tell us who would be able to  
21 identify them as best you know.

22 Ms. Martineau: The purpose being whether they are a  
23 Cary record?

24 Mr. Stam: No, just to see who could talk about  
25 them later day.

1 Ms. Nickel: It actually begins with 3.

2 By Ms. Nickel:

3 Q 3 was the standard, which we identified, and 4 is the  
4 chart that was e-mailed to you.

5 A Yes.

6 Q 5 and 6 were your e-mails. Exhibit 7 was the  
7 clearance time calculations from 2004.

8 Ms. Martineau: And what's the question about that?

9 Ms. Nickel: If he can identify someone with the  
10 Town of Cary--if he knows someone that was in the engineering  
11 department at that time.

12 Mr. Stam: In other words, if you can't identify  
13 it, who do you think could?

14 The Witness: I couldn't identify it now. That's a  
15 record we have. I'm not sure who could.

16 Mr. Stam: Maybe that could be--if he's going to  
17 read and sign his deposition---

18 Ms. Martineau: (interposing) We might have thought  
19 it was responsive to a discovery request. If you want us to  
20 answer an interrogatory about that we can. I don't know of  
21 anyone that we're prepared to bring today who can talk about  
22 that document.

23 Mr. Stam: All right. We'll do that with a  
24 follow-up interrogatory.

25 Ms. Martineau: Okay.

1 Ms. Nickel: 8 is the Kimley-Horn---

2 Ms. Martineau: (interposing) And I can tell you the  
3 Town did not author that document. The Town got a copy of  
4 it. I mean I guess it's a record that the Town keeps. If  
5 you want to send an interrogatory asking that, but if you  
6 want anyone to interpret that document, that is not anything  
7 that the Town I think can do. They didn't author it.

8 Ms. Nickel: Did the Town request--did they pay  
9 Kimley-Horn to have this done?

10 Ms. Martineau: That would be best for an  
11 interrogatory. Tim Bailey might know that answer.

12 Ms. Nickel: I think Lori Cove said they might  
13 have been involved in selecting Kimley-Horn to analyze the  
14 system. And then 9 and 10, those are the business records of  
15 Cary?

16 Ms. Martineau: Put it in an interrogatory. I think  
17 those are records that we keep. I'm pretty sure, but I would  
18 feel safer doing it that way.

19 By Ms. Nickel:

20 Q And then back to Exhibit A for Cary Towne Boulevard at  
21 Convention Drive, you said---

22 Ms. Martineau: (interposing) Hold on a second. Let  
23 us find it.

24 (Pause.)

25 Ms. Martineau: Okay.

1 Q You noted in an e-mail, and we discussed it, that at  
2 that point in time, November 30th, 2009, that it was an issue  
3 of safety; that the yellow light duration was too short for  
4 the speed limit.

5 Ms. Martineau: Objection to the form of the  
6 question. Go ahead.

7 Q And my question is starting in 2004 when the lights  
8 were--or the camera was--the red light camera program was  
9 implemented, would that mean it was unsafe from 2004 to 2009?

10 Ms. Martineau: I'm going to object to that question.  
11 You're asking his opinion?

12 Ms. Nickel: Uh-huh.

13 Ms. Martineau: Okay.

14 A I couldn't say if it was unsafe because of that.

15 Q But it was noted in that e-mail that it was unsafe in  
16 2009 when it was found that the duration was---

17 Ms. Martineau: (interposing) Do you have that e-  
18 mail?

19 Ms. Nickel: Yeah. It's Exhibit Number 6, page  
20 1896, the second to the last sentence, from David Spencer.

21 Ms. Martineau: I don't think it says "unsafe." It  
22 just says it's a safety issue.

23 By Ms. Nickel:

24 Q I believe it was your testimony that it was unsafe  
25 because it was not up to the correct---

1 Ms. Martineau: (interposing) I'm going to object.  
2 The record will reflect what his testimony was. If you have  
3 a question, ask a question.

4 Q Would there be any difference with regard to the  
5 safety question between 2004 and 2009 to your knowledge, if  
6 the signal plan was---

7 A (interposing) I would say that with the updated  
8 yellow change interval, that intersection would be safer.

9 Q At one point you mentioned that the standards in the  
10 parameters of the DOT had changed from 1991 to 2010 with  
11 regard to the yellow light duration.

12 A Not---

13 Ms. Martineau: (interposing) Wait. I'm sorry. Did  
14 you finish your question?

15 Ms. Nickel: Yeah.

16 Ms. Martineau: Okay. Objection to the form of the  
17 question.

18 A Not wholly, but I do know based on information that I  
19 was given from NCDOT in that time period, the perception and  
20 reaction time was changed from 1 second to **12** seconds, and  
21 the deceleration rate was changed from--in 1991 it was 10  
22 feet per second squared and currently it's 11.2 feet per  
23 second squared.

24 Q And then--is it squared or times two?

25 A Squared.

1 Q If in 1991 that was a different formula, do you know  
2 when it changed to the current formula?

3 A I don't.

4 Ms. Nickel: Okay.

5 Mr. Stam: I think this is the last question.

6 Ms. Martineau: Okay. Why don't you ask it? It's  
7 your question. Why don't you ask it?

8 Mr. Stam: I'll ask it, if you don't mind.

9 Ms. Martineau: That's fine.

10 Mr. Stam: We're supposed to only get one  
11 attorney.

12 By Mr. Stam:

13 Q At some point the Town of Cary knew the speed limit  
14 was wrong for the plan of record for Convention Center Drive  
15 and Cary Towne Boulevard, and that was at least no later than  
16 our client, Brian Ceccarelli, told the Town at a hearing  
17 before the Town.

18 So my question is this: did anybody ever notify  
19 RedFlex or SafeLight that there was a problem between that  
20 time and the time the yellow light duration was fixed,  
21 corrected, to be 4.5 seconds at that intersection?

22 Ms. Martineau: Answer if you know.

23 A I don't know.

24 Q Who would be the person who would have notified them,  
25 "them" being RedFlex or SafeLight?

1 A Someone from the engineering department.

2 Mr. Stam: Thank you.

3 Ms. Nickel: And this is our last question.

4 Ms. Martineau: You never say this is your last  
5 question.

6 Ms. Nickel: I know.

7 By Ms. Nickel:

8 Q Just on you as an engineer, going back to the Walnut  
9 and Meeting Street issue where the duration--the yellow light  
10 duration decreased---

11 Ms. Martineau: (interposing) Do you need to look at  
12 the document?

13 The Witness: Yes.

14 Ms. Martineau: Which one is that, Caroline?

15 Ms. Nickel: That would be comparing Exhibit 10 to  
16 Exhibit---

17 Ms. Martineau: (interposing) I'm going to need to  
18 borrow yours.

19 Ms. Nickel: ---P.

20 The Witness: I've got 9 here.

21 Ms. Nickel: I think 9 was 2003 and 10 was the one  
22 Cary did.

23 Ms. Martineau: To Q. Do you have Q?

24 Ms. Glover: P.

25 Ms. Martineau: Oh, P. Sorry.

1           The Witness:       Walnut at Meeting?   Yes.

2           By Ms. Nickel:

3       Q     So that was where the duration specifically with the  
4 left turn changed from 4.0 to 3.---

5           Ms. Martineau:   (interposing)   Take a look and make  
6 sure you know where you are.

7           The Witness:       Uh-huh.

8           Ms. Martineau:   Okay.

9       Q     Is there any basis, you personally as an engineer, for  
10 why that time would be decreased and why a left turn lane  
11 requires less time than a through?

12          Ms. Martineau:   Objection to the form of the  
13 question.   Based on your brief looking at this, go ahead and  
14 answer if you can.

15       A     The inputs for a yellow change interval is speed and  
16 grade as well as acceleration, which is a constant, and  
17 perception/reaction time, which is a constant.   So the two  
18 variables we have are speed and grade, and according to these  
19 two plans they're the same.   The grade is the same, 0  
20 percent.   It's showing 45 miles an hour on both plans but  
21 that's for the through movement.

22          There is discretion in the NCDOT signal design manual  
23 for the speed limit chosen for a left turn movement.   That to  
24 me would be the only place where an input would change with  
25 the yellow time, or the yellow change interval would be.

1 By Mr. Stam:

2 Q Isn't the speed limit for the left turn lane also 45  
3 miles per hour?

4 Ms. Martineau: On Exhibit 10 and Exhibit P?

5 Q Yes, the same intersection, for the left turn lane.  
6 So although some people may be going slower, some may be  
7 going 45?

8 A Well, what's used is not the speed limit as much as it  
9 is the speed traveled in the lane. Typically the speed limit  
10 is used for the through lane simply because that's the speed  
11 that people should be going.

12 And also our typical design speed on roadways is 5  
13 miles an hour over the speed limit, but at intersections  
14 people tend to drive a little bit slower than they would on a  
15 straight roadway. So we use the posted speed limit as a  
16 default input.

17 And as people are making a turn as they approach a  
18 left turn they go significantly slower, particularly if  
19 there's traffic in front of them that is stacked up, so  
20 sometimes people could be going zero miles an hour in that  
21 lane as well.

22 So we try to use a--as engineers, traffic engineers,  
23 we try to use a speed that we feel is appropriate for that  
24 left turn movement, and that's why there's a range.

25 Mr. Stam: Okay.

1           Ms. Martineau:    No questions.  
2           Mr. Stam:            Thank you.   That's it.  
3           Ms. Nickel:            Thank you.  
4           (The deposition was closed at 12:29 p.m.)

STATE OF NORTH CAROLINA

COUNTY OF WAKE

**C E R T I F I C A T E**

I, Alexandra Hatcher, Notary Public-Reporter, do hereby certify that **David Howard Spencer, Jr., P.E.** was duly sworn or affirmed by me prior to the taking of the foregoing deposition, that said deposition was taken by me and transcribed by me, and that the foregoing pages 6 through 79 constitute a true and correct transcript of the testimony of the witness and the statements of counsel to the best of my ability, and that the witness reserved the right to review his testimony.

I do further certify that I am not counsel for or in the employment of either of the parties to this action, nor am I interested in the results of this action.

In witness whereof, I have hereunto set my hand, this 15th day of July, 2011.

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Alexandra Hatcher, CVR  
Notary No. 19931480077

S I G N A T U R E

I have read the foregoing pages 6 through 79, which contain a correct transcript of the answers made by me to the questions herein recorded. My signature is subject to corrections on the attached errata sheet, if any.

(Signature of David Howard Spencer, Jr., P.E.) \_\_\_\_\_

State of \_\_\_\_\_  
County of \_\_\_\_\_

I certify that the following person personally appeared before me this day and I have personal knowledge of the identity of the principal or have seen satisfactory evidence of the principal's identity in the form of a \_\_\_\_\_ or a credible witness has sworn to the identity of the principal, acknowledging to me that he or she voluntarily signed the foregoing document for the purpose stated herein and in the capacity indicated: \_\_\_\_\_.  
(Name of Principal)

Date \_\_\_\_\_  
(Official signature of Notary) \_\_\_\_\_

(Official Seal) \_\_\_\_\_, Notary Public  
(Notary's printed or typed name)

My commission expires \_\_\_\_\_.

\*\*\*\*\*

I, Alexandra Hatcher, the officer before whom the foregoing deposition was taken on June 24, 2011, certify that the foregoing transcript was delivered to the witness either directly or through the witness' attorney or through the attorney retaining the witness on \_\_\_\_\_ and that as of this date I have not received the executed signature page.

Therefore, more than 30 days having elapsed since receipt of the transcript by the witness, the sealed original transcript was filed with attorney for Plaintiffs on \_\_\_\_\_ by means of US Priority Mail, in accordance with Rule 30(e) of the North Carolina Rules of Civil Procedure.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Alexandra Hatcher, CVR  
Court Reporter