

Signal at NC 73 and Norman View Lane

- October 22, 2013 letter from NCDOT (Signal not warranted)
- November, 2013 emails from NCDOT to Phillip Ball (Cornelius resident) (Danny Phillip copied)
- January 29, 2014 letter from NCDOT (Signal not warranted)
- March, 2014 emails between Greg Ferguson and Andrew Grant
- May, 2014 letter and Powerpoint from Max to Town Board
- April, 2015 emails from NCDOT regarding other possible solutions.
- August, 2015 emails between Max and NCDOT
- Signal warrant analysis and traffic count data
- Pedestrian count data
- More traffic count data
- Survey conducted by Birkdale HOA
- Crash history



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

October 22, 2013

Andrew Grant
PO Box 399
Cornelius, NC 28031

Dear Mr. Grant:

This letter is in response to your request for an investigation into the need for a traffic signal at the intersection of NC 73 and Windalene Dr/Norman View Ln. We have completed a review of this intersection. For this review we looked at a 5 year crash history and traffic volumes for the intersection. The 5 year crash history showed 4 crashes at this intersection. Of these crashes there were 2 rear end crashes and 2 run off the road crashes. None of these would be considered potentially correctable by the installation of a traffic signal. We also looked at the traffic volumes for this location which were collected in May of 2013. These volumes did not meet the required volumes as put forth in the 2009 Manual on Uniform Traffic Control Devices to warrant the installation of a traffic signal. Based on the existing crash history and traffic volumes we do not recommend the installation of a traffic signal at this time.

We did look at the overall NC 73 Corridor Study that was done in conjunction between the NCDOT and all the local municipalities along NC 73. This study shows this intersection as a potential signalized intersection. Based on this we would be agreeable to allowing a traffic signal to be installed at such a time as signal warrants are met.

If you have any questions concerning this matter, please contact Mr. Sean Epperson of this office at the telephone number below.

Sincerely,

Louis L. Mitchell, P.E.
Louis L. Mitchell, P.E.
Division Engineer

LLM:sme

CC: Brett Canipe, PE, District Engineer
Max Buchanan, PE, Town Of Huntersville
Dave Davis, Signal Tech Supervisor
file



From: Epperson, Sean M <smepperson@ncdot.gov>
Sent: Wednesday, November 20, 2013 2:08 PM
To: Phillip Ball
Cc: Boland, Timothy M; Karen Barrett; dphillips; Ricky Overcash; Max Buchanan; Justin Carroll; mikemunsch@aol.com; Anthony Roberts; Vincent Iamunno; Greg Ferguson; Mayor Swain
Subject: Re: Meeting at Hwy 73 and Birkdale/Sterling Pointe

Phillip,

We are going to do a more detailed analysis to determine what traffic would be using this intersection if the NC 73 traffic volumes were not causing long delays and safety concerns. We simply want a full day turning movement count as a baseline for analysis. Please send us the results of the survey once it is completed. I do not think we need to meet until we have completed our detailed analysis. It was my understanding that we left this meeting with the understanding that we were going to do this analysis and get back with everyone once complete.

As for blinking school lights these are only installed when a reduced speed school zone is present. As we stated at the meeting this location does not warrant a reduced speed school zone. If a reduced speed school is warranted and installed in the future it would be up to Huntersville and/or Cornelius to install and maintain the school flasher. The NCDOT does not install or maintain these flashers anymore. The reason for this is a study done which showed that these flashers did not increase driver compliance with the reduced speed zone.

All other options we presented to increase safety were options no one at the meeting was interested in pursuing. The main two of these were a directional crossover which would allow lefts off NC 73 but not allow lefts onto NC 73 or a median on NC 73 which would allow no lefts at the intersection.

Sean Epperson, PE
Division Traffic Engineer
NCDOT – Division 10
716 W Main St
Albemarle NC 28001
Office - 704-983-4400

Sent from my Verizon Wireless 4G LTE DROID

Phillip Ball <pwb007@bellsouth.net> wrote:

Sean,
I appreciate that NCDOT is willing to do a traffic count, but it seems that it would be a flawed count, because very few are willing to risk turning left out of Birkdale onto HWY 73 without a traffic signal. I believe we left it we were going to meet (the towns, NCDOT and someone from Birkdale, Sterling Pointe and Chesterbrook Academy to put our heads together and look at all options, including consideration for this corridor between Catawba Ave and Beatties Ford Rd. We need to look at options such as blinking school lights/signs or a traffic signal. Birkdale is sending a survey to all 870 homeowners and asking them if they would use the intersection if there was a traffic signal. We would like to present this data to the group before we proceed. I will be glad to pull the meeting together as Chesterbrook has offered their facility.

I look forward to hearing from you and thanks for your efforts.

Phillip Ball
704 775 2190

From: "Epperson, Sean M" <smepperson@ncdot.gov>

Date: Thursday, November 14, 2013 4:20 PM

To: Phillip Ball <pwb007@bellsouth.net>

Cc: Lynette Rinker <lrinker@cornelius.org>, Andrew Grant <agrant@cornelius.org>, "Boland, Timothy M" <tboland@ncdot.gov>, Karen Barrett <Karen.Barrett@nclinc.com>, Danny Phillips <dphillips@huntersville.org>, Ricky Overcash <rovercash@cornelius.org>, Max Buchanan <mbuchanan@huntersville.org>, Justin Carroll <jcarroll@huntersville.org>, "mikemunsch@aol.com" <mikemunsch@aol.com>, Ashley Rammacher <arammacher@amgworld.com>, Carol Turner <cvt9999@att.net>, Anthony Roberts <ARoberts@cornelius.org>, Vince Iamunno <vincent.iamunno@ineos.com>, "gferguson@huntersville.org" <gferguson@huntersville.org>, "jswain@huntersville.org" <jswain@huntersville.org>

Subject: Re: Meeting at Hwy 73 and Birkdale/Sterling Pointe

Phillip,

Thanks for the follow up email and notes. From those notes it is indicated that we will be meeting in the next couple weeks to discuss options. We have requested an all day turning movement count. This will be needed as a baseline for however we proceed forward. This count will take a few weeks to get done considering we would not want to count around Thanksgiving. Once we have that count in hand and have analyzed it I will get back with everyone.

Sean Epperson, PE
Division Traffic Engineer
NCDOT – Division 10
716 W Main St
Albemarle NC 28001
Office - 704-983-4400

Sent from my Verizon Wireless 4G LTE DROID

Phillip Ball <pwb007@bellsouth.net> wrote:

From: Phillip Ball <pwb007@bellsouth.net>

Date: Saturday, November 9, 2013 6:21 PM

To: Phillip Ball <pwb007@bellsouth.net>

Subject: FW: Meeting at Hwy 73 and Birkdale/Sterling Pointe

Thanks to everyone who came to the meeting last week to discuss the situation we face with this intersection. I believe we (the school and residents of Birkdale and SterlingPointe) came away feeling that the towns and state understood what we are up against and will truly try to solve this problem. We will stay in close communication with all parties.

Phillip Ball
704 775 2190 cell

From my notes:

First and foremost this is a dangerous intersection, caused by high traffic volume and the fact that there is no middle turn lane for both Birkdale and Sterling Pointe to use and no way to have a break in traffic. There is also a school, Chesterbrook Academy, at the intersection with buses trying to make a left turn on Hwy 73 and parents attempting to make right and left turns onto Hwy 73.

There was mention of making 3 lanes to Babe Stilwell, but this is not likely to happen in the next few years due to funding constraints.

Birkdale has 850 plus families using four exits with only one having a traffic signal.

Growth in east Lincoln county and NW Mecklenburg county and the fact that everyone wants to get to and from I77 make this road woefully inadequate to carry the volume of cars, and the speed limit of 45 is not observed in either direction on HWY 73

Need a method to slow traffic in both directions, especially when the school is open. A stoplight would be the first choice, another other option discussed briefly would be blinking school lights to slow traffic at peak times of the day and a third option was a right only turn which causes more traffic problems in its own right

NCDOT shows this as a potential signalized intersection.

There have been 4 non fatal accidents (and a fatal accident two hundred yards away at Blythe Landing) caused by high speed, traffic volume and the design of the intersection.

Lights are not synchronized between the lights at Hwy 73 /Catawba Ave and Beatties Ford/Hwy 73 to give a break in flow for Birkdale/SterlingPointe/Hwy 73 intersection.

The Towns of Cornelius and Huntersville and the NCDOT are going to meet to consider all options within 2 weeks with input from Birkdale, Sterling Pointe and Chesterbrook Academy.

Even though NCDOT regulations do not permit this in counting traffic, everyone at the meeting agreed that this entire corridor, Catawba Ave to Beatties Ford, is affected and should be considered in whatever solution is found. The high volume of cars, lack of traffic signals, lack of blinking school signs and existing traffic signals lacking synchronization all contribute to the present situation.

And lastly, Lynette had difficulty making a right turn out of Sterling Pointe after the meeting, thank goodness she did not turn left, because that is a deadly maneuver at that time of the day.

Here is a list of all who attended:

Lynette Rinker, Mayor of Cornelius
Andrew Grant, Assistant Town Manager, Cornelius
Danny Phillips, Commisioner, Town of Huntersville
Sean Epperson, Division Traffic Engineer, NCDOT
Timothy Boland, Division Operations Engineer, NCDOT
Karen Barrett, Principal, Chesterbrook Academy
Mike Munsch, President, Birkdale HOA
Vince Iamunno, resident, Sterling Pointe
Carol Turner, resident, Sterling Pointe
Phillip Ball, resident, Sterling Pointe
Ricky Overcash, Director Public Works, Town of Cornelius
Max Buchanan, Town Engineer/Public Works Director, Town of Huntersville
Justin Carroll, Transportation Engineer, Town of Huntersville

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Max Buchanan

From: Greg Ferguson
Sent: Wednesday, November 06, 2013 4:08 PM
To: Max Buchanan
Subject: FW: NCDOT Meeting at Sterling Pointe

From: Janet Pierson
Sent: Wednesday, November 06, 2013 2:22 PM
To: Greg Ferguson
Subject: FW: NCDOT Meeting at Sterling Pointe

Danny just called about this. He wants to know if you can have Max and/or Justin attend this meeting.

Janet

From: Phillip Ball [<mailto:pwb007@bellsouth.net>]
Sent: Monday, November 04, 2013 10:44 AM
To: dphillips
Cc: Vincent Iamunno
Subject: NCDOT Meeting at Sterling Pointe

Danny,

I am meeting with Sean Fearington, Division 10 engineer for stoplights/traffic signals, this thursday at the SterlingPointe subdivision, corner of Windaliere and Hwy 73 at 3PM. He mentioned he had worked with Justin in Huntersville on some projects, so please invite Justin or whomever you fell can speak for the town of Huntersville to come with you. I am also going to invite someone from Birkdale and One Norman Place. We would like a stop light but if that is not in the cards then we would at least want blinking school signs and restricted speed limits during school hours, but we will listen to what the state, Hunterville and Cornelius say and any ideas that may come up.

Thanks for helping us on this.

Phillip Ball



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

January 29, 2014

Max Buchanan
Town Engineer
PO Box 664
Huntersville, NC 28070

SUBJECT: NC 73 @ Windaleire Dr/Norman View Ln Signal Request

Dear Mr. Buchanan,

This letter is in response to our latest evaluation of the subject intersection for the installation of a traffic signal. On December 3, 2013 a 13 hour count was taken for this intersection. Based on those counts 3 of the 13 hours met the volumes provided for in the Manual of Uniform Traffic Control Devices for Signal Warrant 1 (8 hour warrant). Based on a hypothetical statement from the citizens in the subdivision that if a signal were installed here more people would use the intersection, a percentage of the traffic turning left off Birkdale Commons onto NC 73 was transferred to this intersection. Even with this additional traffic at the intersection only 5 hours would meet the volumes needed for Signal Warrant 1. Based on this a traffic signal is not warranted at this time and we therefore are not agreeable to one being installed.

I would like to state again that this location has been identified as a location for a future signal under the NC 73 Corridor Study once signal warrants have been met. Once traffic volumes have increased such that volume warrants have been met, we will be agreeable to allowing a traffic signal to be installed. At such a time that a traffic signal is warranted and is planned to be installed we will require that each of the side street approaches be marked with a thru/right lane and a left turn only lane. We will also require that any planting in the medians on the side streets that create an issue with sight distance be removed or trimmed back. We would also recommend that the sidewalk in the northwest quadrant be extended to the intersection and a pedestrian crosswalk with pedestrian phasing in the signal be installed.



If you have any questions concerning this matter, please contact Mr. Sean Epperson, Division Traffic Engineer, of this office at the telephone number below.

Sincerely,

Louis L. Mitchell
Louis L. Mitchell, P.E.
Division Engineer

LJM:sme

CC: Brett Canipe, PE, District Engineer
file

Max Buchanan

From: Greg Ferguson
Sent: Monday, March 31, 2014 6:07 PM
To: Andrew Grant
Cc: Anthony Roberts; Max Buchanan; Justin Carroll; Tyler Beardsley; Ricky Overcash
Subject: RE: Signal Request for NC 73 @ Norman View/Windaleire Intersection

No. And this does not include the costs associated with completing the project as described below (ROW and etc.).

Our Board discussed this intersection at the Town Board retreat and it did not make our Top 10 List for Small Capital Transportation Projects. We have very limited dollars for those type projects and they are prioritized to other projects as directed by the Board.

Greg

From: Andrew Grant [<mailto:Agrant@cornelius.org>]
Sent: Monday, March 31, 2014 5:46 PM
To: Greg Ferguson
Cc: Anthony Roberts; Max Buchanan; Justin Carroll; Tyler Beardsley; Ricky Overcash; Andrew Grant
Subject: FW: Signal Request for NC 73 @ Norman View/Windaleire Intersection

Greg,

Is this something that Huntersville is interested in splitting the cost for? Thanks.

Andrew

From: Epperson, Sean M [<mailto:smepperson@ncdot.gov>]
Sent: Friday, March 28, 2014 12:46 PM
To: Andrew Grant; Greg Ferguson (gferguson@huntersville.org)
Cc: Mitchell, Louis L; Cole, Scott; Boland, Timothy M; Canipe, Brett D; pwb007@bellsouth.net; Mary.Jennings@ncleg.net; Anthony Roberts; Tyler Beardsley; Ricky Overcash
Subject: RE: Signal Request for NC 73 @ Norman View/Windaleire Intersection

Andrew,

Not including any ROW that may be needed or utility conflicts that would need to be taken care of you should be able to design and build this signal for between \$50,000 and \$60,000. This is assuming a wood pole signal.

Sean Epperson, PE
Division Traffic Engineer
NCDOT – Division 10
716 W Main St
Albemarle NC 28001
Office - 704-983-4400

From: Andrew Grant [<mailto:Agrant@cornelius.org>]
Sent: Thursday, March 27, 2014 10:32 AM
To: Epperson, Sean M; Greg Ferguson (gferguson@huntersville.org)
Cc: Mitchell, Louis L; Cole, Scott; Boland, Timothy M; Canipe, Brett D; pwb007@bellsouth.net; Mary.Jennings@ncleg.net;

Anthony Roberts; Andrew Grant; Tyler Beardsley; Ricky Overcash

Subject: RE: Signal Request for NC 73 @ Norman View/Windaleire Intersection

Sean,

Thanks for the below information. Is it possible for you/NCDOT to ballpark the approximate cost for all the improvements you mention below? Perhaps based upon recent similar improvements. Thanks.

Andrew

From: Epperson, Sean M [<mailto:smepperson@ncdot.gov>]

Sent: Thursday, March 27, 2014 6:33 AM

To: Greg Ferguson (gferguson@huntersville.org); Andrew Grant

Cc: Mitchell, Louis L; Cole, Scott; Boland, Timothy M; Canipe, Brett D; pwb007@bellsouth.net; Mary.Jennings@ncleg.net

Subject: Signal Request for NC 73 @ Norman View/Windaleire Intersection

Andrew and Greg,

This email is in response to our latest request for the installation of a traffic signal at the subject intersection. Our latest evaluation was done upon receiving Huntersville Commissioner Rob Kidwell's request for us to collect new turning movement traffic count data due to small errors in counts taken on December 3, 2013. While we did not take new counts, as we did not feel the small errors necessitated the need for new counts, we did look in more detail at how this location operates today and how it would operate in the near future with expected growth along the NC 73 corridor. While at this time we do not feel a traffic signal is needed for the safe and efficient operation of this intersection, further analysis did indicate that one would be needed for the safe and efficient operation of this intersection in the near future. Based on this we are agreeable to allowing a traffic signal to be installed at this location at this time.

At this time the Department does not have the necessary funds for the installation of this traffic signal. We typically fund the installation of traffic signals with Spot Safety funds. Because there is not a significant crash pattern at this location, it does not qualify for this funding mechanism. If the Town is able to provide the funds needed, we will work with you to get the traffic signal installed.

As stated previously when a traffic signal is installed at this location, we will require that each of the side street approaches be marked with a thru/right combination lane and a left turn only lane with the maximum storage currently possible. We will also require that any plantings in the medians on the side streets that create an issue with sight distance be removed or trimmed back. We would also recommend that the sidewalk in the northwest quadrant be extended to the intersection and a pedestrian crosswalk with pedestrian phasing in the signal be installed. We cannot allow a crosswalk or pedestrian phasing to be installed without the sidewalk being extended to the intersection and all required ADA accommodations be present.

Please share this email with your Town Commissioners/Council, Mayor and town staff. If you have any questions concerning this matter, please contact me at the telephone number below.

Sean Epperson, PE
Division Traffic Engineer
NCDOT – Division 10
716 W Main St
Albemarle NC 28001
Office - 704-983-4400

From: Max Buchanan
Sent: Sunday, May 18, 2014 7:44 PM
To: Greg Ferguson
Cc: Jill Swain; Melinda Bales; Rob Kidwell; Ron Julian; Sarah McAulay; Jeff Neely; Danny Phillips
Subject: Re: Letter from Birkdale

To Mayor and Commissioners,

Be that I will be unable to attend Monday night's Board meeting given that I am out of town until Wednesday, May 21st, I would like to take this opportunity to expand on Engineering and Public Works position on the issue of a traffic signal at NC73 and Norman View/Windaliere. Justin Carroll will be at the May 19th Board meeting and can answer any questions or provide additional insight into the comments I provide. Please accept my apologies for delivering this in an email format; however, it is the only means of communication I have from the Core Outer Banks of North Carolina.

Just as we have passionately campaigned for years about the installation of stop signs and the warranting processes that should be followed, a similar but more rigorous warranting process exists for the installation of traffic signals. This warranting process is outlined in the Manual on Uniform Traffic Control Devices (MUTCD) which is the nationally accepted standard for all things related to traffic control. It is from this warranting process that Huntersville Engineering and NCDOT have based past opinions on a proposed signal at NC73 and Norman View/Windaliere as "not meeting warrants".

A proposed signal at NC73 and Norman View/Windaliere has been analyzed thoroughly by both Huntersville Engineering and NCDOT several times over the last year and each time the analysis has shown that a signal does not meet the warrants required of the MUTCD. There have been two separate instances where NCDOT has submitted formal documentation to the Town of Huntersville, the Town of Cornelius, and/or to the representatives of the HOA's for both Sterling Point and Birkdale that the intersection of NC73 and Norman View/Windaliere does not currently meet the signal warrants required by MUTCD. But before commenting on why NCDOT has switched their position on a possible signal at this intersection, I would like to briefly comment on the signal warranting process.

There are 8 or 9 signal warrants detailed in the MUTCD. However, there are typically only two that would apply in the case of this intersection- Warrant #1 and Warrant #2. Warrant #1 is the primary warrant that NCDOT considers as required for signal installation. Warrant #1 is referred to as an "8 hour" warrant. That is that the demand to go either straight or left from a minor road through or onto a major road is so great 8 hours out of the day that a signal is necessary to efficiently process the demand. Warrant #1 is a volume based warrant and

requires minimum threshold volumes for both the major road and minor road for 8 hours out of the day. Warrant #2 is typically referred to as the "4 hour warrant" and requires even greater threshold volumes but for only 4 hours out of the day. That is that the demand to get out (straight or left) of a minor road onto a major road is even greater but for a shorter period of time than that required of Warrant #1.

Actual traffic counts were utilized in the signal warrant analysis for the intersection of NC73 and Norman View/Windaliere with results indicating that neither the "8 hour" warrant nor the "4 hour" warrant were close to meeting the minimum thresholds required of the MUTCD. It was after the initial analysis that a redistribution of traffic from the Birkdale community was taken into consideration and demand volumes adjusted, quite conservatively, to the intersection prior to a re-analysis for signal warrants. It should be noted that even after the redistribution of volumes, neither Warrant #1 nor Warrant #2, were satisfied. In short, a signal at the NC73 and Norman View/Windaliere intersection is not warranted as required by the MUTCD and is therefore not recommended by the Huntersville Engineering and Public Works Department. For comparison purposes, Justin will be able to speak to the recent Gilead Road/Wynfield signal warrant analysis and the significantly higher volumes turning left from Wynfield onto Gilead.

Now one might ask why NCDOT would reverse their position on a signal at this intersection and why would Huntersville Engineering not concur with that reversal. In short, political enquiries and pressures resulted in a "reconsideration" of the signal, not a reanalysis of the MUTCD requirements. A signal installation that does not meet signal warrants is a slippery slope indeed. Should we also consider a signal at David Kennedy Farm Road, Babe Stillwell Farm Road, Terry Lane, etc. One could easily surmise that it is just as difficult to get out onto NC 73 from these roads as it is from Norman View and Windaliere. Are we going to consider a signal at each of these intersections as well. What happens if we put a signal at each of these intersections plus every intersection that requests one. NC73 is a strategic highway corridor and its efficiency must be protected for the 25,000 - 35,000 average daily trips.

Additionally, proper treatment for an intersection that has safety issues but does not meet signal warrants is to restrict certain movements. A right-in/right-out movement or a directional cross-over is a more appropriate treatment when a signal is not warranted and safety is an issue. I am not aware of a crash history at this intersection. To be considered in the signal warranting process, crash data should be only that which could have been prevented with the installation of a signal. The recent fatality near the Blythe Landing is NOT attributed to this intersection nor would a signal have prevented said fatality.

I would submit that a signal at Babe Stillwell Farm Road/NC73 would be a more desirable location for a traffic signal. A signal at the Babe Stillwell Farm Road and NC73 with the extension of Birkdale Commons Parkway to Babe Stillwell Farm Road could be more beneficial

to a larger percentage of Huntersville residents especially if coordinated with a realignment of the Blythe Landing entrance. While an analysis has yet been performed for this potential signal location, my professional guess would be that it would be a lot closer to meeting signal warrants than the Norman View/Windaliere intersection.

Again, Justin should be able to expand on any of my comments and will definitely be able to provide more of an insight into the signal warranting processes, both in general and specific to the NC73 and Norman View/Windaliere intersection.

If it is the desire of the Town Board to participate in the installation of a signal at this location, I would ask that the Huntersville Engineering and Public Works not be tasked with its installation as it was Cornelius residents that placed the initial request for a signal installation.

One final thing to consider. . . since a signal at this location is based on administrative decision and not founded on engineering data, provisions for its installation could be attached. Given that the residents of David Kenney Farm could benefit from a signal at NC73 and Norman View/Windaliere, our hope would be that - if David Kenney Farm Road could be connected to Birkdale Commons Parkway - the Birkdale HOA would not oppose its connection.

Again, thank you for allowing me the opportunity to provide a few scattered comments on this issue.

Max Buchanan

Sent from my iPad

> On May 15, 2014, at 11:53 AM, "Janet Pierson" <jpierson@huntersville.org> wrote:

>

> The attached was received in the mail today.

>

> Janet

>

> <DOC051514.pdf>



**Town Board Meeting
May 19, 2014**

**Norman View Ln/Windaliere Dr
Traffic Signal Discussion**

History

- October 22, 2013 – NCDOT determined MUTCD signal warrants not met.
- Onsite meeting occurred to discuss issues with residents and possible redistribution of trips "if" a signal existed at this location.
- January 29, 2014 – NCDOT determined MUTCD signal warrants would not be met even with the redistributed trips.
- March 27, 2014 – NCDOT reversed decision to allow a traffic signal based off of anticipated future volumes on NC73.

Huntersville "Top 10"

- NC 115 @ Stumptown Rd
- Beatties Ford Rd @ McCoy Rd
- NC 73 @ Ramah Church Rd
- McCoy Rd @ Julian Clark Ave
- Beatties Ford Rd @ Hambright Rd
- NC 73 @ Terry Ln
- Beatties Ford Rd @ McIlwaine Rd
- Mt. Holly-Huntersville Rd @ Hambright Rd
- Vance Rd @ Gilead Rd
- Beatties Ford Rd @ Neck Rd
- Gilead Rd @ Wynfield Creek Pkwy (Warranted Signal)

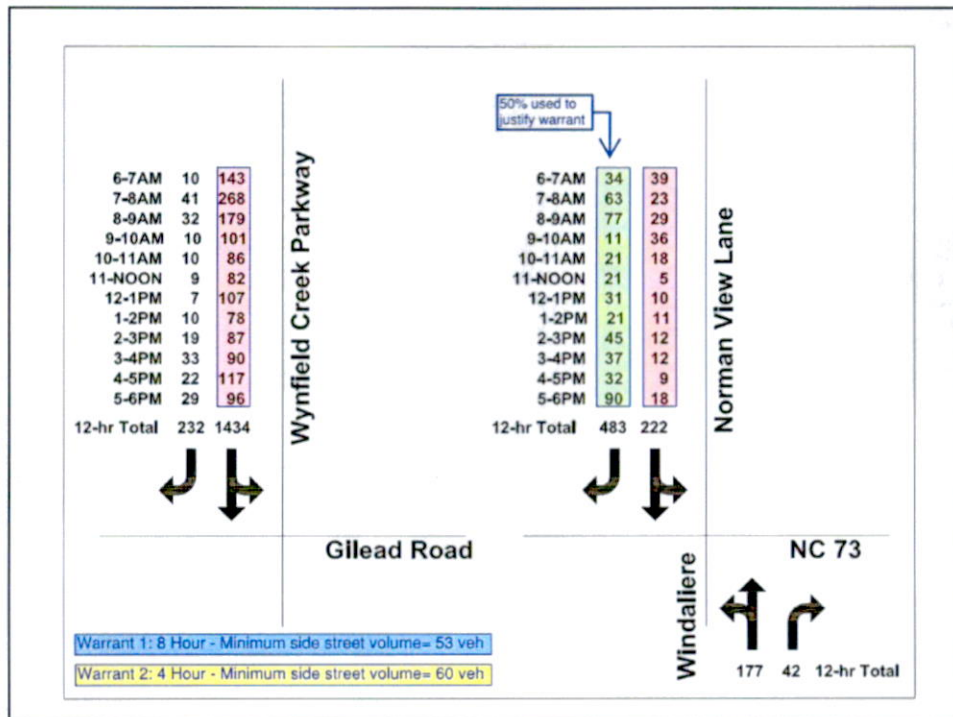
Wynfield Creek Pkwy/Gilead
vs.
Norman View/NC73

Wynfield Creek Pkwy



Norman View Ln





Staff Comments

- E&PW does not concur with the warrant analysis conducted by NCDOT.
- Propose alternative future signal location at Babe Stillwell @ NC73 when Birkdale Commons Pkwy is extended.
- Table the funding discussion to the next Town Board retreat so this project can be prioritized with other "Top 10" projects.



Town Board Meeting
May 19, 2014

From: Max Buchanan
Sent: Wednesday, April 01, 2015 12:47 PM
To: Epperson, Sean M
Cc: Cole, Scott; Greg Ferguson; Cleveland Spruill; Boland, Timothy M
Subject: RE: NC73 @ Windaliere Drive/Norman View Ln

I agree with everything you just said.

Max L. Buchanan, PE

Director of Engineering & Public Works
Town of Huntersville, NC
PO Box 664
Huntersville, NC 28070
Office: 704-766-2220
Fax: 704-992-5528

From: Epperson, Sean M [mailto:smepperson@ncdot.gov]
Sent: Wednesday, April 01, 2015 11:56 AM
To: Max Buchanan
Cc: Cole, Scott; Greg Ferguson; Cleveland Spruill; Boland, Timothy M
Subject: RE: NC73 @ Windaliere Drive/Norman View Ln

Max,

I am not sure what signage would be appropriate. Keep in mind there was not a crash pattern at this location so there is not a specific crash type/pattern that we would be addressing with signage.

While not opposed to a directional crossover like you said the NCDOT would not have the funds to install one. And they do cost even more than a traffic signal. I do not think there is enough room out there to install one using bollards. We typically want 14' between the medians for the left turn lane at a directional. There is no way we could get even close to that here. If we even tried it would be a maintenance issue from day one. And like I stated above there is not a crash pattern here we are trying to address/correct.

Now we could go in remark the entire intersection to create a wide median area out of the left turn lanes and install bollards here. We could get far enough from the travel lanes that it would not be a maintenance issue. While this would be less expensive than a traffic signal the NCDOT still does not have the funds for even this.

I have reached out to Cornelius to see how serious they are about pursuing a traffic signal. There is no point in even entertaining any of these options if they plan to move forward with funding a traffic signal.

Sean Epperson, PE
Division Traffic Engineer
NCDOT – Division 10
716 W Main St
Albemarle NC 28001
Office - 704-983-4400

From: Max Buchanan [mailto:mbuchanan@huntersville.org]
Sent: Wednesday, April 01, 2015 8:19 AM

To: Epperson, Sean M
Cc: Cole, Scott; Greg Ferguson; Cleveland Spruill; Boland, Timothy M
Subject: RE: NC73 @ Windaliere Drive/Norman View Ln

Sean,

Do you think there is any additional signage that could be incorporated to appease the group? They continue to ask about lowering speed limit, school speed zone, etc. I did communicate the standard response to each of those enquiries but, again, did offer to run it by NCDOT once again.

Note: there was voiced support of restricting left turn movements out of each side street. I advised that the cost of directional cross-overs would be more than the signal and that, if NCDOT does not have funds to install signal, they would not have funds to construct left-over. That said, do you think there is enough width and would there be any NCDOT support for a flexible bollard left-over. What about a flexible bollard system restricting all left-turn movements (right-in/right-out) like at NC73 and Brown Mill Road?

Max L. Buchanan, PE
Director of Engineering & Public Works
Town of Huntersville, NC
PO Box 664
Huntersville, NC 28070
Office: 704-766-2220
Fax: 704-992-5528

From: Epperson, Sean M [<mailto:smepperson@ncdot.gov>]
Sent: Tuesday, March 31, 2015 2:06 PM
To: Max Buchanan
Cc: Cole, Scott; Greg Ferguson; Cleveland Spruill; Boland, Timothy M
Subject: RE: NC73 @ Windaliere Drive/Norman View Ln

Max,

I am not sure what else could be done instead of a signal that we would have the funding for. The least expensive option is a signal and we do not have the funding for that. If you have any ideas on an option that could be done here that costs less than a signal please let me know and we will consider it. While I am not against meeting when needed I don't see a benefit to meeting on this at this time.

Sean Epperson, PE
Division Traffic Engineer
NCDOT – Division 10
716 W Main St
Albemarle NC 28001
Office - 704-983-4400

From: Max Buchanan [<mailto:mbuchanan@huntersville.org>]
Sent: Tuesday, March 31, 2015 9:55 AM
To: Epperson, Sean M
Cc: Cole, Scott; Greg Ferguson; Cleveland Spruill
Subject: NC73 @ Windaliere Drive/Norman View Ln

Sean,

Long story short here...

Huntersville Police Chief Spruill and I met with a group of residents from both the Sterling Point community (Cornelius) and the Birkdale Village community (Huntersville) last week to once again discuss a signal at NC73 and Windaliere Intersection. It is my opinion that the meeting, being initiated and mediated by persons from within the Sterling Point community, turned into what I would consider a politically motivated campaign against certain Huntersville elected officials.

In the meeting, we maintained our position that a signal is not warranted by the data and that the elected body of Huntersville has indicated they are not supportive of participating in the cost of an unwarranted signal. As you have indicated, Cornelius is still considering moving forward with the project with what I assume to be 100% funding. Despite that stated fact, the residents represented at this meeting, are not convinced anything is going to happen and wanted to know if NCDOT and the 2 towns could once again revisit the intersection and possible solutions, other than a signal, that could be incorporated to alleviate some of their perceived safety concerns.

So..... would NCDOT be interested in revisiting the issue to consider and discuss other modifications?

Max L. Buchanan, PE

Director of Engineering & Public Works

Town of Huntersville, NC

PO Box 664

Huntersville, NC 28070

Office: 704-766-2220

Fax: 704-992-5528

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Max Buchanan

From: Max Buchanan
Sent: Wednesday, August 19, 2015 9:55 AM
To: Greg Ferguson
Subject: FW: Signal - NC73 @ Windaliere and Norman View

fyi

Max L. Buchanan, PE
Director of Engineering & Public Works
Town of Huntersville, NC
PO Box 664
Huntersville, NC 28070
Office: 704-766-2220
Fax: 704-992-5528

From: Epperson, Sean M [mailto:smepperson@ncdot.gov]
Sent: Wednesday, August 19, 2015 9:34 AM
To: Max Buchanan <mbuchanan@huntersville.org>
Subject: RE: Signal - NC73 @ Windaliere and Norman View

I do not. We did work with them to determine no additional ROW was needed and come up with a cost estimate. I have not heard anything from them since all that was done. We have not even started on a signal design for the intersection and will not until someone has provided funding for the project.

Sean Epperson, PE
Division Traffic Engineer
NCDOT – Division 10
716 W Main St
Albemarle NC 28001
Office - 704-983-4400

From: Max Buchanan [mailto:mbuchanan@huntersville.org]
Sent: Wednesday, August 19, 2015 9:14 AM
To: Epperson, Sean M
Subject: Signal - NC73 @ Windaliere and Norman View

Sean,

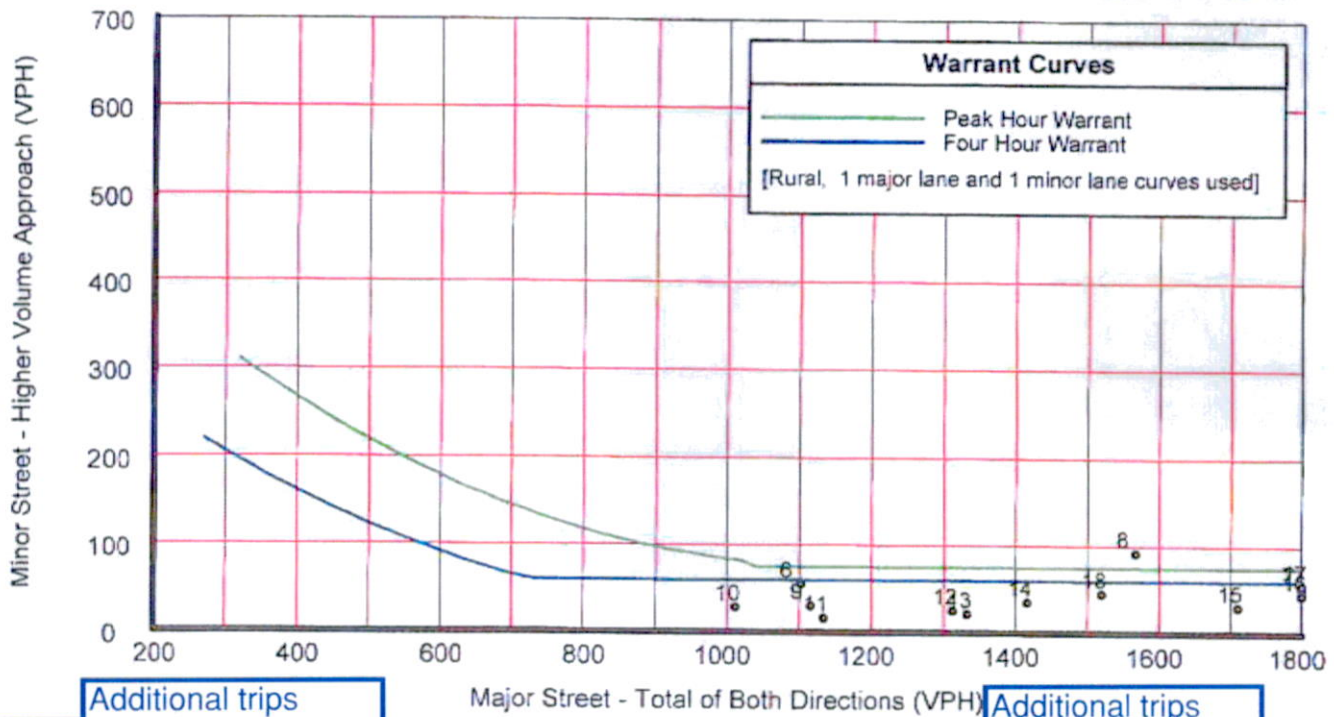
Do you know if Cornelius is moving forward with a signal installation at NC73 and Windaliere/Norman View?

Max L. Buchanan, PE
Director of Engineering & Public Works
Town of Huntersville, NC
PO Box 664
Huntersville, NC 28070
Office: 704-766-2220
Fax: 704-992-5528

NC 73 at Norman View Lane

Dec. 2013

Signal Warrants - Summary



Additional trips needed to meet 1B

Should be ~28

Additional trips needed to meet 2

NO

Analysis of 8-Hour Volume Warrants:

| Hour Begin | Major Total | Higher Minor Vol | Dir | Major Crit | Minor Crit | Meets? | Major Crit | Minor Crit | Meets? | Major Crit | Minor Crit | Meets? |
|------------|-------------|------------------|-----|------------|------------|--------|------------|------------|--------|------------|------------|--------|
| 00:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 01:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 02:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 03:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 04:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 05:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 06:00 | 1,102 | 28.55 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-Yes | Both | 420-Yes | 84-No | Major |
| 07:00 | 1,888 | 51 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-Yes | Both | 420-Yes | 84-No | Major |
| 08:00 | 1,568 | 65.92 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-Yes | Both | 420-Yes | 84-Yes | Both |
| 09:00 | 1,116 | 30 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-No | Major | 420-Yes | 84-No | Major |
| 10:00 | 1,012 | 28 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-No | Major | 420-Yes | 84-No | Major |
| 11:00 | 1,134 | 16 | SB | 350-Yes | 105-No | Major | 525-Yes | 53-No | Major | 420-Yes | 84-No | Major |
| 12:00 | 1,313 | 25 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-No | Major | 420-Yes | 84-No | Major |
| 13:00 | 1,333 | 21 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-No | Major | 420-Yes | 84-No | Major |
| 14:00 | 1,417 | 35 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-No | Major | 420-Yes | 84-No | Major |
| 15:00 | 1,710 | 30 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-No | Major | 420-Yes | 84-No | Major |
| 16:00 | 1,931 | 44 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-No | Major | 420-Yes | 84-No | Major |
| 17:00 | 2,131 | 55 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-Yes | Both | 420-Yes | 84-No | Major |
| 18:00 | 1,520 | 45 | NB | 350-Yes | 105-No | Major | 525-Yes | 53-No | Major | 420-Yes | 84-No | Major |
| 19:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 20:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 21:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 22:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |
| 23:00 | 0 | 0 | NB | 350-No | 105-No | --- | 525-No | 53-No | --- | 420-No | 84-No | --- |

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VHB Engineering NC, P.C.

4000 WestChase Boulevard, Suite 530

Raleigh, NC 27607

p: 919-829-0328 f: 919-829-0329

TRAFFIC COUNTS

File Name : 13-0518:
Site Code : 0000000
Start Date : 12/3/2013
Page No : 1

Groups Printed- All Traffic

| Start Time | Windaliere Drive Southbound | | | | NC 73 Westbound | | | | Norman View Lane Northbound | | | | NC 73 Eastbound | | | | Exclu. Total | Inclu. Total | Int. Total |
|------------|-----------------------------|------|-------|------|-----------------|------|-------|------|-----------------------------|------|-------|------|-----------------|------|-------|------|--------------|--------------|------------|
| | Left | Thru | Right | Trks | Left | Thru | Right | Trks | Left | Thru | Right | Trks | Left | Thru | Right | Trks | | | |
| 06:00 AM | 5 | 0 | 0 | 0 | 1 | 111 | 1 | 2 | 2 | 0 | 9 | 0 | 0 | 104 | 2 | 3 | 5 | 235 | 240 |
| 06:15 AM | 2 | 0 | 1 | 0 | 4 | 136 | 0 | 1 | 3 | 0 | 4 | 0 | 0 | 124 | 2 | 1 | 2 | 276 | 278 |
| 06:30 AM | 5 | 0 | 0 | 0 | 1 | 165 | 1 | 0 | 2 | 0 | 9 | 0 | 0 | 134 | 0 | 1 | 1 | 317 | 318 |
| 06:45 AM | 3 | 1 | 4 | 0 | 8 | 162 | 3 | 5 | 31 | 3 | 12 | 1 | 0 | 146 | 4 | 4 | 10 | 375 | 385 |
| Total | 15 | 1 | 5 | 0 | 14 | 574 | 5 | 8 | 38 | 10 | 34 | 1 | 0 | 508 | 8 | 9 | 18 | 1203 | 1221 |
| 07:00 AM | 10 | 1 | 1 | 0 | 5 | 217 | 5 | 2 | 4 | 0 | 8 | 0 | 0 | 203 | 0 | 1 | 3 | 454 | 457 |
| 07:15 AM | 7 | 0 | 3 | 0 | 9 | 240 | 2 | 3 | 7 | 1 | 17 | 0 | 1 | 222 | 5 | 0 | 3 | 514 | 517 |
| 07:30 AM | 2 | 0 | 1 | 0 | 6 | 295 | 2 | 2 | 5 | 2 | 21 | 0 | 1 | 207 | 6 | 4 | 6 | 548 | 554 |
| 07:45 AM | 1 | 1 | 1 | 0 | 7 | 191 | 4 | 2 | 4 | 0 | 17 | 0 | 0 | 269 | 7 | 2 | 4 | 502 | 506 |
| Total | 20 | 2 | 6 | 0 | 27 | 943 | 13 | 9 | 20 | 3 | 63 | 0 | 2 | 901 | 18 | 7 | 16 | 2018 | 2034 |
| 08:00 AM | 5 | 0 | 2 | 0 | 13 | 189 | 2 | 3 | 4 | 0 | 12 | 0 | 0 | 239 | 14 | 1 | 4 | 480 | 484 |
| 08:15 AM | 7 | 0 | 0 | 0 | 17 | 170 | 0 | 5 | 5 | 4 | 21 | 0 | 0 | 257 | 4 | 2 | 7 | 485 | 492 |
| 08:30 AM | 7 | 0 | 0 | 0 | 10 | 161 | 2 | 3 | 4 | 0 | 23 | 0 | 1 | 184 | 11 | 4 | 7 | 403 | 410 |
| 08:45 AM | 3 | 0 | 1 | 0 | 7 | 140 | 4 | 1 | 9 | 31 | 21 | 0 | 0 | 159 | 3 | 3 | 4 | 378 | 382 |
| Total | 22 | 0 | 3 | 0 | 47 | 660 | 8 | 12 | 22 | 35 | 77 | 0 | 1 | 839 | 32 | 10 | 22 | 1746 | 1768 |
| 09:00 AM | 8 | 0 | 0 | 0 | 7 | 138 | 10 | 5 | 5 | 1 | 7 | 1 | 0 | 194 | 2 | 6 | 12 | 372 | 384 |
| 09:15 AM | 5 | 0 | 1 | 0 | 4 | 132 | 3 | 8 | 3 | 0 | 7 | 0 | 1 | 153 | 2 | 2 | 10 | 311 | 321 |
| 09:30 AM | 5 | 0 | 0 | 1 | 15 | 126 | 3 | 4 | 1 | 0 | 10 | 0 | 1 | 151 | 3 | 5 | 10 | 315 | 325 |
| 09:45 AM | 7 | 0 | 0 | 1 | 6 | 111 | 3 | 3 | 1 | 0 | 12 | 0 | 0 | 159 | 5 | 0 | 4 | 304 | 308 |
| Total | 25 | 0 | 1 | 2 | 32 | 507 | 19 | 20 | 10 | 1 | 36 | 1 | 2 | 657 | 12 | 13 | 36 | 1302 | 1338 |
| 10:00 AM | 3 | 0 | 0 | 0 | 2 | 126 | 2 | 5 | 1 | 11 | 4 | 1 | 1 | 147 | 1 | 2 | 8 | 298 | 306 |
| 10:15 AM | 2 | 0 | 1 | 0 | 5 | 118 | 5 | 1 | 2 | 0 | 8 | 0 | 0 | 120 | 2 | 2 | 3 | 263 | 266 |
| 10:30 AM | 3 | 0 | 1 | 0 | 2 | 126 | 1 | 5 | 3 | 0 | 5 | 0 | 1 | 131 | 0 | 2 | 7 | 273 | 280 |
| 10:45 AM | 5 | 0 | 0 | 0 | 4 | 106 | 3 | 3 | 0 | 1 | 4 | 0 | 1 | 116 | 3 | 2 | 5 | 243 | 248 |
| Total | 13 | 0 | 2 | 0 | 13 | 476 | 11 | 14 | 6 | 12 | 21 | 1 | 3 | 514 | 6 | 8 | 23 | 1077 | 1100 |
| 11:00 AM | 3 | 0 | 0 | 0 | 3 | 121 | 1 | 1 | 1 | 0 | 3 | 0 | 0 | 135 | 2 | 5 | 6 | 269 | 275 |
| 11:15 AM | 3 | 0 | 1 | 0 | 4 | 117 | 3 | 6 | 2 | 0 | 1 | 0 | 0 | 167 | 1 | 2 | 8 | 299 | 307 |
| 11:30 AM | 6 | 0 | 1 | 0 | 4 | 163 | 2 | 4 | 2 | 0 | 8 | 0 | 1 | 133 | 2 | 5 | 9 | 322 | 331 |
| 11:45 AM | 4 | 0 | 0 | 0 | 4 | 139 | 5 | 2 | 0 | 0 | 9 | 0 | 0 | 135 | 3 | 4 | 6 | 299 | 305 |
| Total | 16 | 0 | 2 | 0 | 15 | 540 | 11 | 13 | 5 | 0 | 21 | 0 | 1 | 570 | 8 | 16 | 29 | 1189 | 1218 |
| 12:00 PM | 1 | 0 | 0 | 0 | 11 | 166 | 1 | 3 | 2 | 0 | 4 | 1 | 0 | 134 | 3 | 3 | 7 | 322 | 329 |
| 12:15 PM | 1 | 0 | 0 | 0 | 7 | 151 | 4 | 4 | 2 | 0 | 6 | 0 | 0 | 150 | 3 | 7 | 11 | 324 | 335 |
| 12:30 PM | 6 | 0 | 3 | 0 | 4 | 141 | 5 | 2 | 3 | 1 | 8 | 0 | 0 | 172 | 2 | 6 | 8 | 345 | 353 |
| 12:45 PM | 1 | 0 | 1 | 0 | 3 | 188 | 3 | 1 | 2 | 0 | 13 | 0 | 0 | 174 | 2 | 3 | 4 | 387 | 391 |
| Total | 9 | 0 | 4 | 0 | 25 | 646 | 13 | 10 | 9 | 1 | 31 | 1 | 0 | 630 | 10 | 19 | 30 | 1378 | 1408 |
| 01:00 PM | 2 | 0 | 0 | 0 | 22 | 199 | 3 | 1 | 3 | 1 | 9 | 0 | 0 | 143 | 3 | 4 | 5 | 385 | 390 |
| 01:15 PM | 4 | 1 | 1 | 0 | 7 | 162 | 6 | 6 | 2 | 0 | 3 | 0 | 0 | 146 | 4 | 3 | 9 | 336 | 345 |
| 01:30 PM | 3 | 1 | 1 | 0 | 6 | 168 | 6 | 5 | 2 | 0 | 4 | 0 | 0 | 142 | 6 | 3 | 8 | 339 | 347 |
| 01:45 PM | 2 | 0 | 1 | 0 | 6 | 174 | 5 | 5 | 3 | 0 | 5 | 0 | 0 | 137 | 7 | 4 | 9 | 340 | 349 |
| Total | 11 | 2 | 3 | 0 | 41 | 703 | 20 | 17 | 10 | 1 | 21 | 0 | 0 | 568 | 20 | 14 | 31 | 1400 | 1431 |
| 02:00 PM | 1 | 0 | 1 | 0 | 5 | 180 | 5 | 4 | 3 | 0 | 6 | 0 | 0 | 133 | 9 | 4 | 8 | 343 | 351 |
| 02:15 PM | 1 | 0 | 2 | 0 | 9 | 195 | 7 | 4 | 4 | 0 | 15 | 0 | 0 | 154 | 5 | 7 | 11 | 392 | 403 |
| 02:30 PM | 3 | 0 | 0 | 0 | 11 | 178 | 2 | 1 | 4 | 0 | 17 | 0 | 1 | 177 | 5 | 2 | 3 | 398 | 401 |
| 02:45 PM | 3 | 0 | 1 | 0 | 8 | 199 | 3 | 1 | 1 | 0 | 7 | 0 | 0 | 149 | 2 | 2 | 3 | 373 | 376 |
| Total | 8 | 0 | 4 | 0 | 33 | 752 | 17 | 10 | 12 | 0 | 45 | 0 | 1 | 613 | 21 | 15 | 25 | 1506 | 1531 |
| 03:00 PM | 0 | 0 | 1 | 0 | 12 | 208 | 5 | 2 | 1 | 0 | 8 | 0 | 0 | 155 | 8 | 4 | 6 | 398 | 404 |
| 03:15 PM | 4 | 1 | 2 | 0 | 16 | 212 | 6 | 0 | 0 | 0 | 5 | 0 | 2 | 208 | 4 | 2 | 2 | 460 | 462 |
| 03:30 PM | 6 | 0 | 1 | 0 | 10 | 256 | 4 | 1 | 4 | 0 | 15 | 0 | 16 | 215 | 3 | 4 | 5 | 530 | 535 |
| 03:45 PM | 3 | 0 | 1 | 0 | 11 | 207 | 2 | 2 | 7 | 0 | 9 | 0 | 0 | 165 | 2 | 2 | 4 | 407 | 411 |
| Total | 13 | 1 | 5 | 0 | 49 | 883 | 17 | 5 | 12 | 0 | 37 | 0 | 18 | 743 | 17 | 12 | 17 | 1795 | 1812 |

VHB Engineering NC, P.C.

4000 WestChase Boulevard, Suite 530

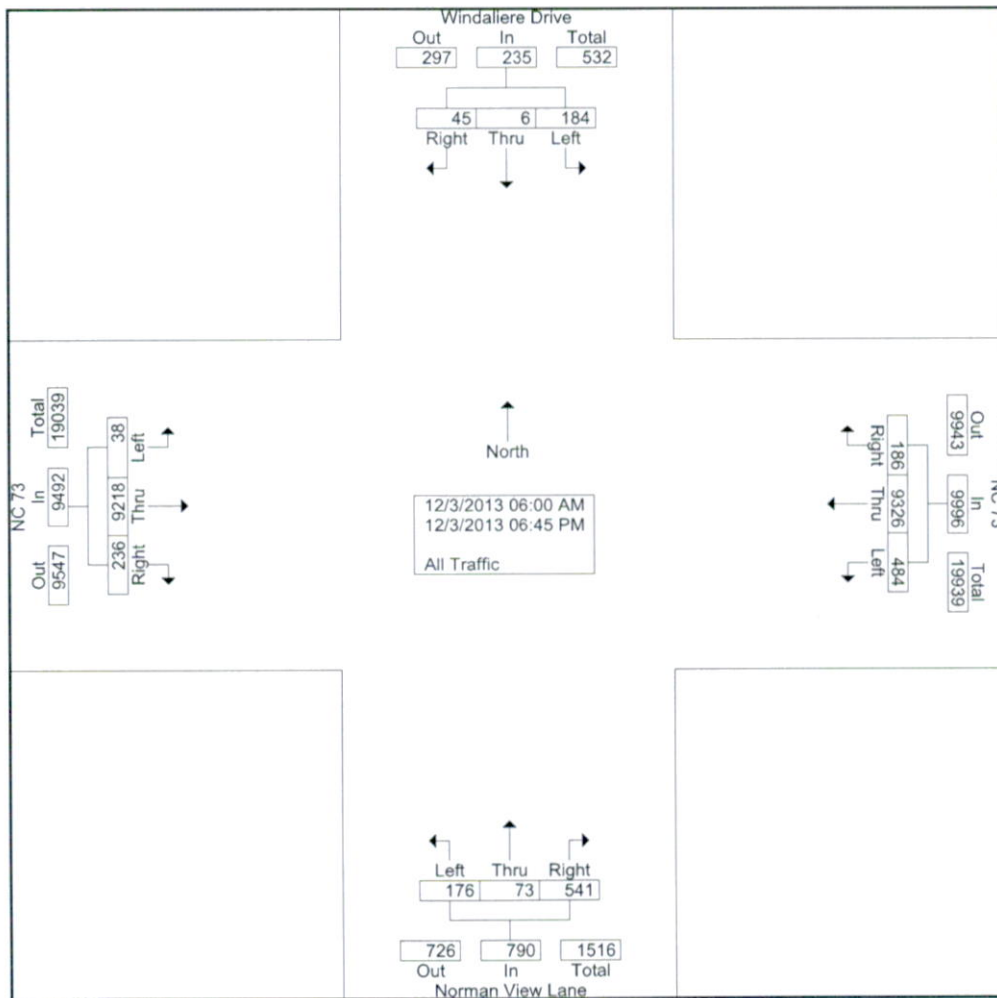
Raleigh, NC 27607

p: 919-829-0328 f: 919-829-0329

File Name : 13-0518:
Site Code : 0000000
Start Date : 12/3/2013
Page No : 2

Groups Printed- All Traffic

| Start Time | Windaliere Drive Southbound | | | | NC 73 Westbound | | | | Norman View Lane Northbound | | | | NC 73 Eastbound | | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-----------------------------|------|-------|------|-----------------|------|-------|------|-----------------------------|------|-------|------|-----------------|------|-------|------|--------------|--------------|------------|
| | Left | Thru | Right | Trks | Left | Thru | Right | Trks | Left | Thru | Right | Trks | Left | Thru | Right | Trks | | | |
| 04:00 PM | 3 | 0 | 0 | 0 | 14 | 223 | 1 | 0 | 4 | 0 | 9 | 0 | 1 | 180 | 2 | 0 | 0 | 437 | 437 |
| 04:15 PM | 2 | 0 | 1 | 0 | 15 | 221 | 7 | 0 | 0 | 0 | 7 | 0 | 1 | 242 | 6 | 2 | 2 | 502 | 504 |
| 04:30 PM | 3 | 0 | 0 | 0 | 13 | 231 | 10 | 1 | 1 | 0 | 9 | 0 | 0 | 250 | 8 | 0 | 1 | 525 | 526 |
| 04:45 PM | 4 | 0 | 1 | 0 | 17 | 250 | 4 | 1 | 4 | 0 | 7 | 0 | 0 | 252 | 5 | 3 | 4 | 544 | 548 |
| Total | 12 | 0 | 2 | 0 | 59 | 925 | 22 | 2 | 9 | 0 | 32 | 0 | 2 | 924 | 21 | 5 | 7 | 2008 | 2015 |
| 05:00 PM | 1 | 0 | 1 | 0 | 24 | 277 | 4 | 1 | 4 | 0 | 22 | 0 | 2 | 256 | 14 | 0 | 1 | 605 | 606 |
| 05:15 PM | 2 | 0 | 2 | 0 | 19 | 246 | 4 | 3 | 2 | 3 | 19 | 0 | 1 | 246 | 9 | 1 | 4 | 553 | 557 |
| 05:30 PM | 3 | 0 | 2 | 0 | 26 | 261 | 2 | 1 | 5 | 0 | 25 | 0 | 3 | 251 | 16 | 2 | 3 | 594 | 597 |
| 05:45 PM | 1 | 0 | 0 | 0 | 21 | 214 | 2 | 2 | 4 | 0 | 24 | 0 | 0 | 257 | 5 | 0 | 2 | 528 | 530 |
| Total | 7 | 0 | 5 | 0 | 90 | 998 | 12 | 7 | 15 | 3 | 90 | 0 | 6 | 1010 | 44 | 3 | 10 | 2280 | 2290 |
| 06:00 PM | 5 | 0 | 1 | 0 | 10 | 215 | 7 | 1 | 1 | 0 | 8 | 0 | 1 | 262 | 4 | 1 | 2 | 514 | 516 |
| 06:15 PM | 5 | 0 | 0 | 0 | 15 | 201 | 3 | 2 | 0 | 0 | 12 | 0 | 1 | 191 | 2 | 1 | 3 | 430 | 433 |
| 06:30 PM | 0 | 0 | 2 | 0 | 9 | 155 | 5 | 0 | 5 | 0 | 9 | 0 | 0 | 174 | 5 | 2 | 2 | 364 | 366 |
| 06:45 PM | 3 | 0 | 0 | 0 | 5 | 148 | 3 | 0 | 2 | 16 | 4 | 0 | 0 | 114 | 8 | 0 | 0 | 303 | 303 |
| Total | 13 | 0 | 3 | 0 | 39 | 719 | 18 | 3 | 8 | 16 | 33 | 0 | 2 | 741 | 19 | 4 | 7 | 1611 | 1618 |
| Grand Total | 184 | 6 | 45 | 2 | 484 | 9326 | 186 | 130 | 176 | 73 | 541 | 4 | 38 | 9218 | 236 | 135 | 271 | 20513 | 20784 |
| Apprch % | 78.3 | 2.6 | 19.1 | | 4.8 | 93.3 | 1.9 | | 22.3 | 9.2 | 68.5 | | 0.4 | 97.1 | 2.5 | | | | |
| Total % | 0.9 | 0 | 0.2 | | 2.4 | 45.5 | 0.9 | | 0.9 | 0.4 | 2.6 | | 0.2 | 44.9 | 1.2 | | 1.3 | 98.7 | |



2013 Summary

12/3/2015

15-Min

Count Period

Beginning At

NC 73

Northbound

Through

Right

Left

NC 73

Southbound

Through

Right

Left

NC 73

Westbound

Through

Right

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NC 73

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Through

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NC 73

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p: 919-829-0328 f: 919-829-0329

File Name : 13-0518:
Site Code : 0000000
Start Date : 12/3/2013
Page No : 1

| | Windaliere Drive Southbound | | | | NC 73 Westbound | | | | Norman View Lane Northbound | | | | NC 73 Eastbound | | | | | | |
|------------|--------------------------------|------|-------|------|--------------------|------|-------|------|--------------------------------|------|-------|------|--------------------|------|-------|------|--------------|--------------|------------|
| Start Time | Left | Thru | Right | Trks | Left | Thru | Right | Trks | Left | Thru | Right | Trks | Left | Thru | Right | Trks | Exclu. Total | Inclu. Total | Int. Total |
| 06:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 09:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 10:00 AM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 10:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0</ | | | | | | | | | | | | | | |

VHB Engineering NC, P.C.

4000 WestChase Boulevard, Suite 530

Raleigh, NC 27607

p: 919-829-0328 f: 919-829-0329

File Name : 13-0518:

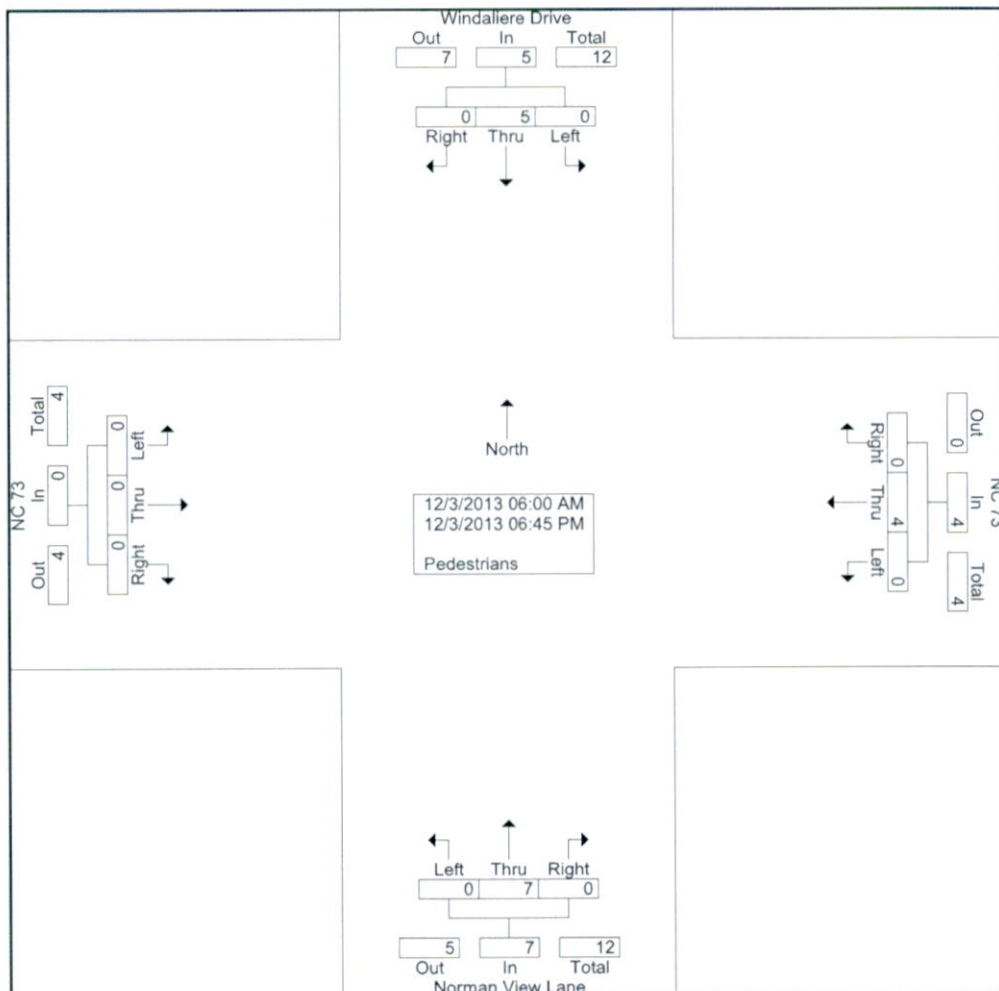
Site Code : 0000000

Start Date : 12/3/2013

Page No : 2

Groups Printed- Pedestrians

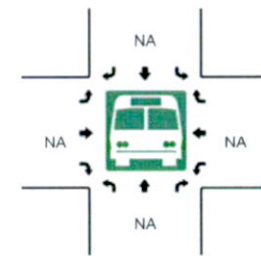
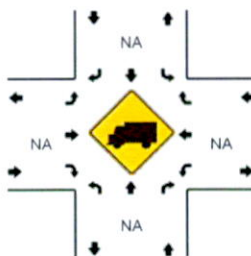
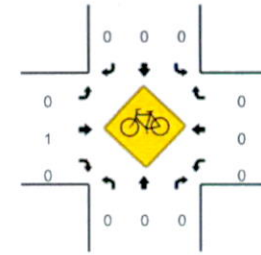
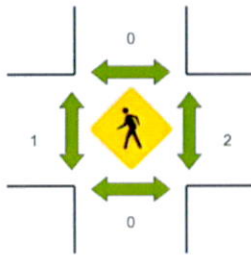
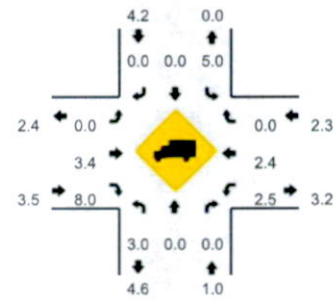
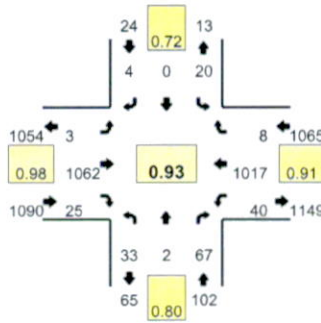
| Start Time | Windaliere Drive Southbound | | | | NC 73 Westbound | | | | Norman View Lane Northbound | | | | NC 73 Eastbound | | | | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-----------------------------|------|-------|------|-----------------|------|-------|------|-----------------------------|------|-------|------|-----------------|------|-------|------|--------------|--------------|------------|
| | Left | Thru | Right | Trks | Left | Thru | Right | Trks | Left | Thru | Right | Trks | Left | Thru | Right | Trks | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 06:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:15 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 06:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Grand Total | 0 | 5 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 16 |
| Apprch % | 0 | 100 | 0 | | 0 | 100 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | | |
| Total % | 0 | 31.2 | 0 | | 0 | 25 | 0 | | 0 | 43.8 | 0 | | 0 | 0 | 0 | | 0 | 100 | |



LOCATION: Norman View Ln -- N C 73 Hwy
CITY/STATE: Cornelius, NC

QC JOB #: 10943201
DATE: Thu, May 09 2013

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



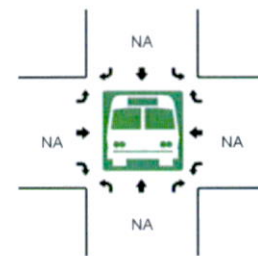
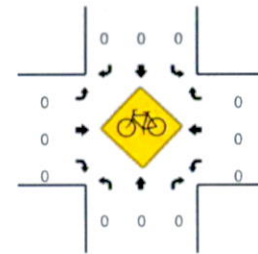
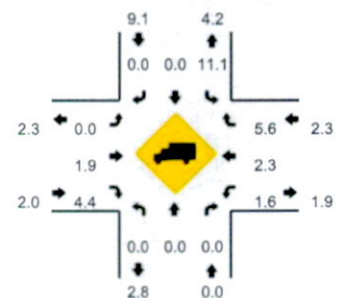
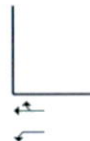
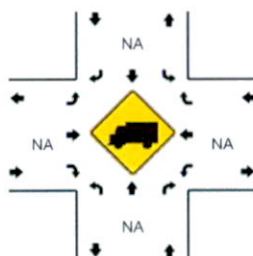
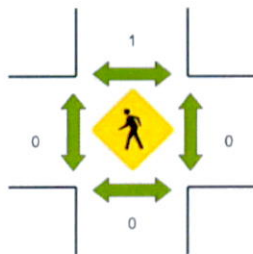
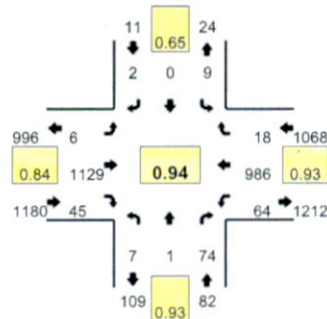
| 15-Min Count Period Beginning At | Norman View Ln (Northbound) | | | | Norman View Ln (Southbound) | | | | N C 73 Hwy (Eastbound) | | | | N C 73 Hwy (Westbound) | | | | Total | Hourly Totals |
|----------------------------------|-----------------------------|------|-------|---|-----------------------------|------|-------|---|------------------------|------|-------|---|------------------------|------|-------|---|--------------|---------------|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 6:00 AM | 0 | 0 | 4 | 0 | 2 | 0 | 1 | 0 | 0 | 60 | 1 | 0 | 0 | 100 | 1 | 0 | 169 | |
| 6:15 AM | 2 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 105 | 0 | 0 | 2 | 111 | 0 | 0 | 230 | |
| 6:30 AM | 2 | 0 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 146 | 0 | 0 | 1 | 115 | 0 | 0 | 275 | |
| 6:45 AM | 3 | 0 | 12 | 0 | 2 | 0 | 2 | 0 | 0 | 168 | 1 | 0 | 10 | 158 | 2 | 0 | 358 | 1032 |
| 7:00 AM | 6 | 0 | 14 | 0 | 7 | 0 | 1 | 0 | 0 | 202 | 2 | 0 | 6 | 204 | 3 | 0 | 445 | 1308 |
| 7:15 AM | 9 | 0 | 11 | 0 | 4 | 0 | 1 | 0 | 0 | 210 | 2 | 0 | 4 | 291 | 1 | 0 | 533 | 1611 |
| 7:30 AM | 9 | 1 | 24 | 0 | 8 | 0 | 1 | 0 | 1 | 279 | 8 | 0 | 11 | 267 | 4 | 0 | 613 | 1949 |
| 7:45 AM | 7 | 0 | 15 | 0 | 2 | 0 | 1 | 0 | 1 | 291 | 4 | 0 | 11 | 267 | 3 | 0 | 602 | 2193 |
| 8:00 AM | 8 | 1 | 17 | 0 | 6 | 0 | 1 | 0 | 1 | 282 | 11 | 0 | 14 | 192 | 0 | 0 | 533 | 2281 |
| 8:15 AM | 7 | 0 | 20 | 0 | 4 | 1 | 0 | 0 | 1 | 266 | 11 | 0 | 12 | 164 | 1 | 0 | 487 | 2235 |
| 8:30 AM | 8 | 0 | 21 | 0 | 5 | 0 | 0 | 0 | 0 | 196 | 2 | 0 | 10 | 173 | 2 | 0 | 417 | 2039 |
| 8:45 AM | 4 | 0 | 18 | 0 | 6 | 0 | 0 | 0 | 1 | 236 | 3 | 0 | 14 | 162 | 2 | 0 | 446 | 1883 |
| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total | |
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| All Vehicles | 36 | 4 | 96 | 0 | 32 | 0 | 4 | 0 | 4 | 1116 | 32 | 0 | 44 | 1068 | 16 | 0 | 2452 | |
| Heavy Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 4 | 36 | 0 | 0 | 80 | |
| Pedestrians | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Bicycles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Railroad | | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | | |

Comments:

LOCATION: Norman View Ln -- N C 73 Hwy
CITY/STATE: Cornelius, NC

QC JOB #: 10943202
DATE: Wed, May 08 2013

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



| 15-Min Count Period Beginning At | Norman View Ln (Northbound) | | | | Norman View Ln (Southbound) | | | | N C 73 Hwy (Eastbound) | | | | N C 73 Hwy (Westbound) | | | | Total | Hourly Totals |
|-------------------------------------|-----------------------------|------|-------|---|-----------------------------|------|-------|---|------------------------|------|-------|---|------------------------|------|-------|---|-------|---------------|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 7 | 1 | 13 | 0 | 4 | 0 | 1 | 0 | 1 | 224 | 1 | 0 | 10 | 197 | 5 | 0 | 464 | |
| 4:15 PM | 3 | 0 | 5 | 0 | 2 | 0 | 1 | 0 | 0 | 221 | 3 | 0 | 17 | 238 | 5 | 0 | 495 | |
| 4:30 PM | 1 | 0 | 17 | 0 | 3 | 0 | 1 | 0 | 0 | 280 | 4 | 0 | 16 | 233 | 1 | 0 | 556 | |
| 4:45 PM | 4 | 0 | 16 | 1 | 1 | 0 | 0 | 0 | 0 | 267 | 8 | 0 | 10 | 252 | 5 | 0 | 564 | 2079 |
| 5:00 PM | 3 | 0 | 21 | 0 | 3 | 0 | 1 | 0 | 2 | 286 | 7 | 0 | 16 | 281 | 5 | 0 | 625 | 2240 |
| 5:15 PM | 3 | 1 | 20 | 0 | 1 | 0 | 1 | 0 | 0 | 260 | 9 | 0 | 20 | 270 | 5 | 0 | 590 | 2335 |
| 5:30 PM | 1 | 0 | 19 | 0 | 2 | 0 | 0 | 0 | 1 | 252 | 11 | 0 | 16 | 234 | 6 | 0 | 542 | 2321 |
| 5:45 PM | 0 | 0 | 14 | 0 | 3 | 0 | 0 | 0 | 2 | 331 | 18 | 1 | 12 | 201 | 2 | 0 | 584 | 2341 |
| 6:00 PM | 3 | 0 | 11 | 0 | 2 | 0 | 0 | 0 | 3 | 254 | 5 | 0 | 15 | 202 | 2 | 0 | 497 | 2213 |
| 6:15 PM | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 1 | 228 | 4 | 0 | 9 | 212 | 4 | 0 | 477 | 2100 |
| 6:30 PM | 1 | 0 | 5 | 0 | 7 | 0 | 1 | 0 | 0 | 224 | 5 | 0 | 12 | 199 | 4 | 0 | 458 | 2016 |
| 6:45 PM | 2 | 0 | 15 | 0 | 1 | 1 | 1 | 0 | 0 | 171 | 5 | 0 | 14 | 172 | 4 | 0 | 386 | 1818 |
| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total | |
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| All Vehicles | 12 | 0 | 84 | 0 | 12 | 0 | 4 | 0 | 8 | 1144 | 28 | 0 | 64 | 1124 | 20 | 0 | 2500 | |
| Heavy Trucks | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 24 | 0 | | 0 | 20 | 4 | | 48 | |
| Pedestrians | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | |
| Railroad | | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | | |

Comments:

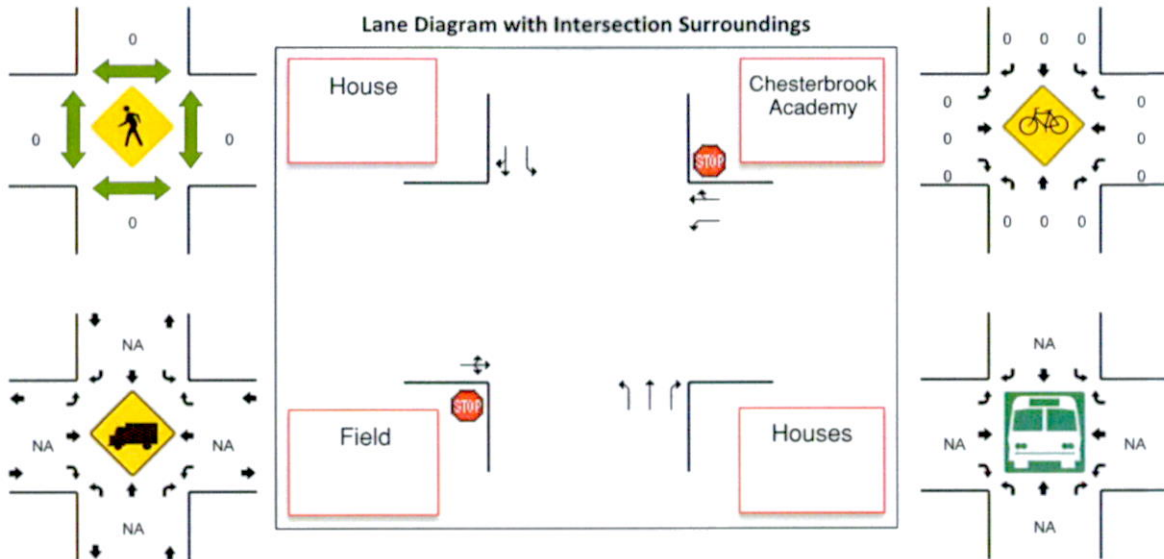
LOCATION: NC 73 -- Norman View Ln/Windaliere Dr
CITY/STATE: Huntersville, NC

QC JOB #: 13374905
DATE: Tue, May 05 2015

Peak-Hour: 7:15 AM -- 8:15 AM
 Peak 15-Min: 7:15 AM -- 7:30 AM



Lane Diagram with Intersection Surroundings



| 15-Min Count Period Beginning At | NC 73 (Northbound) | | | | NC 73 (Southbound) | | | | Norman View Ln/Windaliere Dr (Eastbound) | | | | Norman View Ln/Windaliere Dr (Westbound) | | | | Total | Hourly Totals |
|----------------------------------|--------------------|------|-------|---|--------------------|------|-------|---|--|------|-------|---|--|------|-------|---|--------------|---------------|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 6:00 AM | 0 | 90 | 1 | 0 | 0 | 95 | 1 | 0 | 2 | 0 | 1 | 0 | 3 | 1 | 4 | 0 | 198 | |
| 6:15 AM | 0 | 127 | 1 | 0 | 2 | 118 | 2 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 260 | |
| 6:30 AM | 0 | 179 | 0 | 0 | 3 | 154 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 8 | 0 | 349 | |
| 6:45 AM | 0 | 189 | 4 | 0 | 4 | 172 | 0 | 0 | 3 | 1 | 2 | 0 | 3 | 0 | 15 | 0 | 393 | 1200 |
| 7:00 AM | 0 | 211 | 2 | 0 | 9 | 202 | 3 | 0 | 5 | 0 | 0 | 0 | 4 | 1 | 11 | 0 | 448 | 1450 |
| 7:15 AM | 1 | 275 | 4 | 0 | 11 | 260 | 1 | 0 | 7 | 0 | 3 | 0 | 6 | 0 | 13 | 0 | 581 | 1771 |
| 7:30 AM | 1 | 218 | 6 | 0 | 6 | 261 | 1 | 0 | 8 | 0 | 2 | 0 | 6 | 0 | 14 | 0 | 523 | 1945 |
| 7:45 AM | 0 | 233 | 6 | 0 | 11 | 260 | 3 | 0 | 4 | 1 | 2 | 0 | 6 | 0 | 8 | 0 | 534 | 2086 |
| 8:00 AM | 2 | 264 | 9 | 0 | 13 | 207 | 2 | 0 | 1 | 0 | 3 | 0 | 2 | 0 | 16 | 1 | 520 | 2158 |
| 8:15 AM | 2 | 269 | 7 | 0 | 15 | 202 | 4 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 25 | 1 | 532 | 2109 |
| 8:30 AM | 0 | 271 | 10 | 0 | 16 | 164 | 4 | 0 | 4 | 0 | 2 | 0 | 5 | 0 | 24 | 0 | 500 | 2086 |
| 8:45 AM | 1 | 292 | 4 | 0 | 6 | 167 | 4 | 0 | 8 | 0 | 0 | 0 | 2 | 0 | 21 | 0 | 505 | 2057 |
| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total | |
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| All Vehicles | 4 | 1100 | 16 | 0 | 44 | 1040 | 4 | 0 | 28 | 0 | 12 | 0 | 24 | 0 | 52 | 0 | 2324 | |
| Heavy Trucks | 0 | 60 | 0 | | 8 | 64 | 0 | | 4 | 0 | 0 | | 0 | 0 | 0 | | 136 | |
| Pedestrians | 0 | | | | 0 | | | | 0 | | | | 0 | | | | 0 | |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | |
| Railroad | | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | | |

Comments: ID 1004

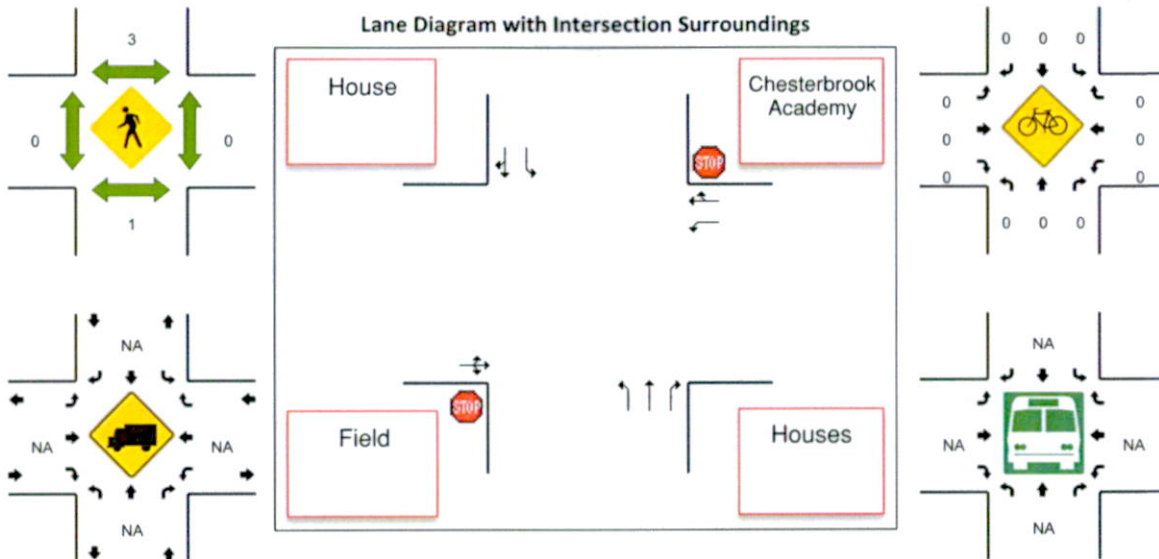
LOCATION: NC 73 -- Norman View Ln/Windaliere Dr
CITY/STATE: Huntersville, NC

QC JOB #: 13374906
DATE: Tue, May 05 2015

Peak-Hour: 5:15 PM -- 6:15 PM
Peak 15-Min: 5:30 PM -- 5:45 PM



Lane Diagram with Intersection Surroundings

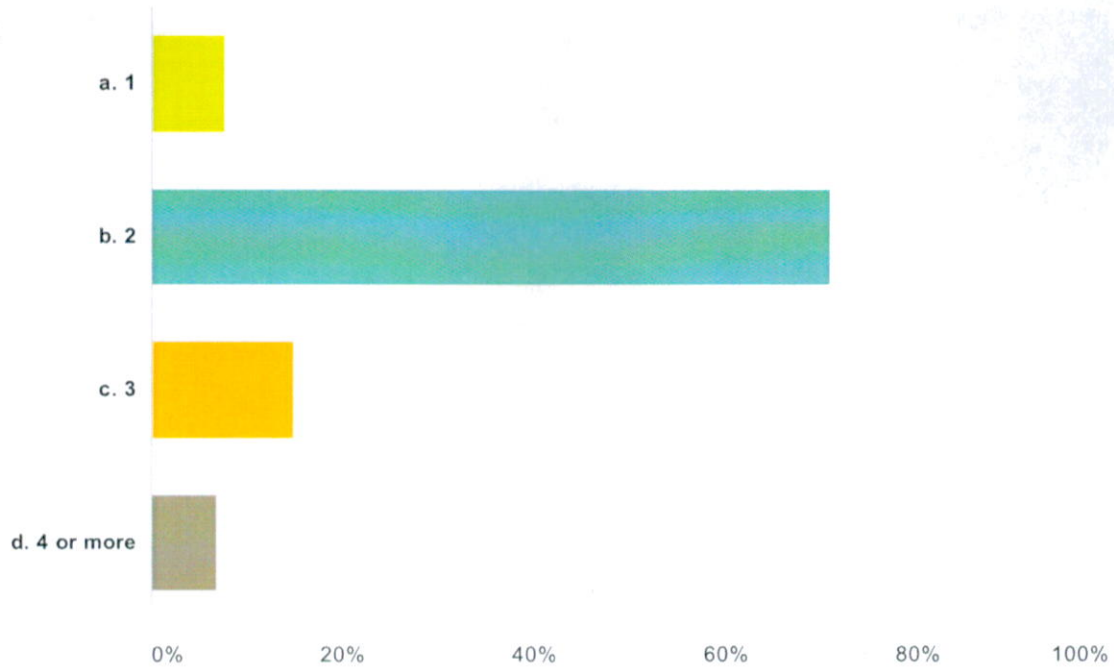


| 15-Min Count Period Beginning At | NC 73 (Northbound) | | | | NC 73 (Southbound) | | | | Norman View Ln/Windaliere Dr (Eastbound) | | | | Norman View Ln/Windaliere Dr (Westbound) | | | | Total | Hourly Totals |
|--|-----------------------|------|-------|---|-----------------------|------|-------|---|---|------|-------|---|---|------|-------|---|-------|------------------|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 0 | 241 | 6 | 0 | 11 | 223 | 3 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 9 | 0 | 497 | |
| 4:15 PM | 1 | 223 | 7 | 0 | 6 | 270 | 7 | 0 | 2 | 0 | 0 | 0 | 5 | 0 | 14 | 0 | 535 | |
| 4:30 PM | 1 | 253 | 5 | 0 | 4 | 264 | 13 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 10 | 0 | 556 | |
| 4:45 PM | 0 | 250 | 5 | 0 | 11 | 246 | 1 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 15 | 0 | 532 | 2120 |
| 5:00 PM | 0 | 247 | 8 | 0 | 17 | 252 | 5 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 15 | 0 | 551 | 2174 |
| 5:15 PM | 2 | 240 | 9 | 0 | 11 | 291 | 4 | 0 | 4 | 0 | 2 | 0 | 4 | 0 | 16 | 0 | 583 | 2222 |
| 5:30 PM | 0 | 278 | 9 | 0 | 18 | 290 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 15 | 0 | 616 | 2282 |
| 5:45 PM | 1 | 245 | 8 | 0 | 19 | 234 | 8 | 0 | 4 | 0 | 2 | 0 | 3 | 0 | 14 | 0 | 538 | 2288 |
| 6:00 PM | 1 | 261 | 7 | 0 | 12 | 272 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 12 | 0 | 572 | 2309 |
| 6:15 PM | 2 | 290 | 4 | 0 | 8 | 240 | 5 | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 13 | 0 | 568 | 2294 |
| 6:30 PM | 0 | 285 | 6 | 0 | 10 | 226 | 5 | 0 | 4 | 0 | 1 | 0 | 3 | 0 | 16 | 0 | 556 | 2234 |
| 6:45 PM | 3 | 196 | 8 | 0 | 13 | 174 | 1 | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 12 | 0 | 413 | 2109 |
| | | | | | | | | | | | | | | | | | | |
| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total | |
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| All Vehicles | 0 | 1112 | 36 | 0 | 72 | 1160 | 16 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 60 | 0 | 2464 | |
| Heavy Trucks | 0 | 12 | 0 | | 4 | 16 | 0 | | 0 | 0 | 0 | | 0 | 0 | 4 | | 36 | |
| Pedestrians | 0 | | | | 0 | | | | 0 | | | | 0 | | | | 0 | |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | |
| Railroad | | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | | |

Comments: ID 1004

Q1 How many daily drivers are in your home?

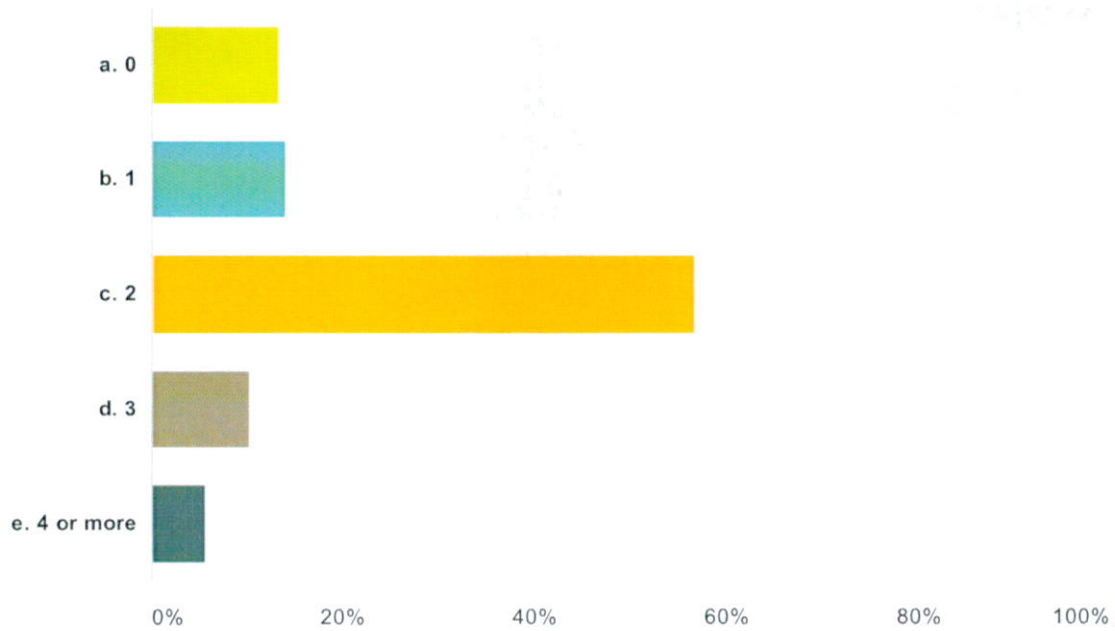
Answered: 337 Skipped: 0



| Answer Choices | Responses | |
|------------------------|-----------|-----|
| a. 1 | 7.72% | 26 |
| b. 2 | 70.92% | 239 |
| c. 3 | 14.84% | 50 |
| d. 4 or more | 6.82% | 23 |
| Total Respondents: 337 | | |

Q2 How many of the drivers in your house use the entrance/exit at Norman View and Highway 73?

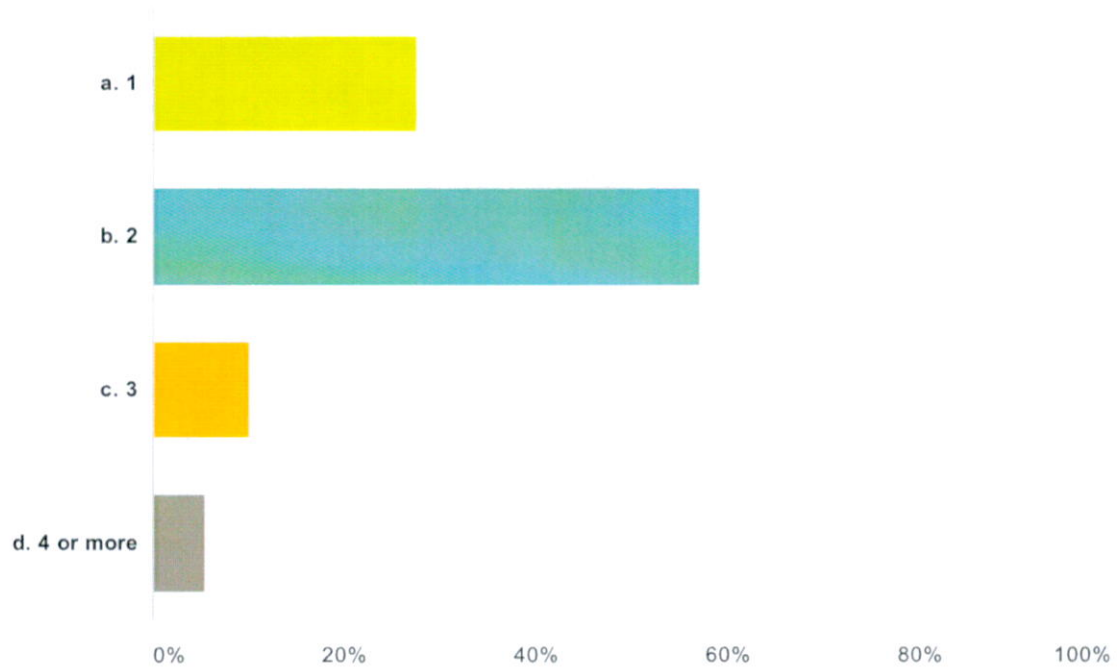
Answered: 333 Skipped: 4



| Answer Choices | Responses | |
|------------------------|-----------|-----|
| a. 0 | 13.21% | 44 |
| b. 1 | 14.11% | 47 |
| c. 2 | 56.76% | 189 |
| d. 3 | 10.21% | 34 |
| e. 4 or more | 5.71% | 19 |
| Total Respondents: 333 | | |

Q3 How many of the drivers in your home make a left turn onto Highway 73 to head westbound toward Beatties Ford Rd?

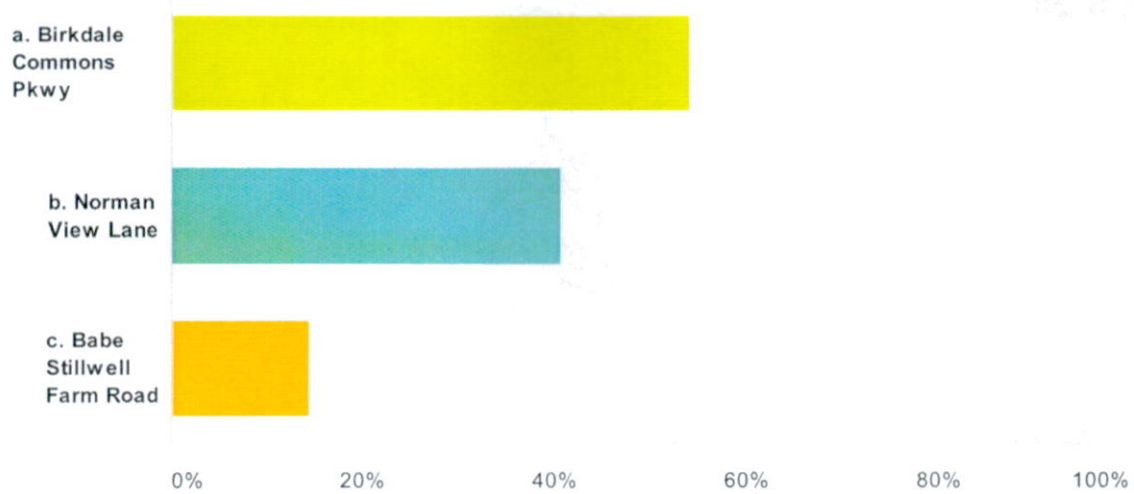
Answered: 299 Skipped: 38



| Answer Choices | Responses | |
|------------------------|-----------|-----|
| a. 1 | 27.42% | 82 |
| b. 2 | 57.19% | 171 |
| c. 3 | 10.03% | 30 |
| d. 4 or more | 5.35% | 16 |
| Total Respondents: 299 | | |

**Q4 If you make a left turn onto Highway 73,
which intersection are you likely to use?**

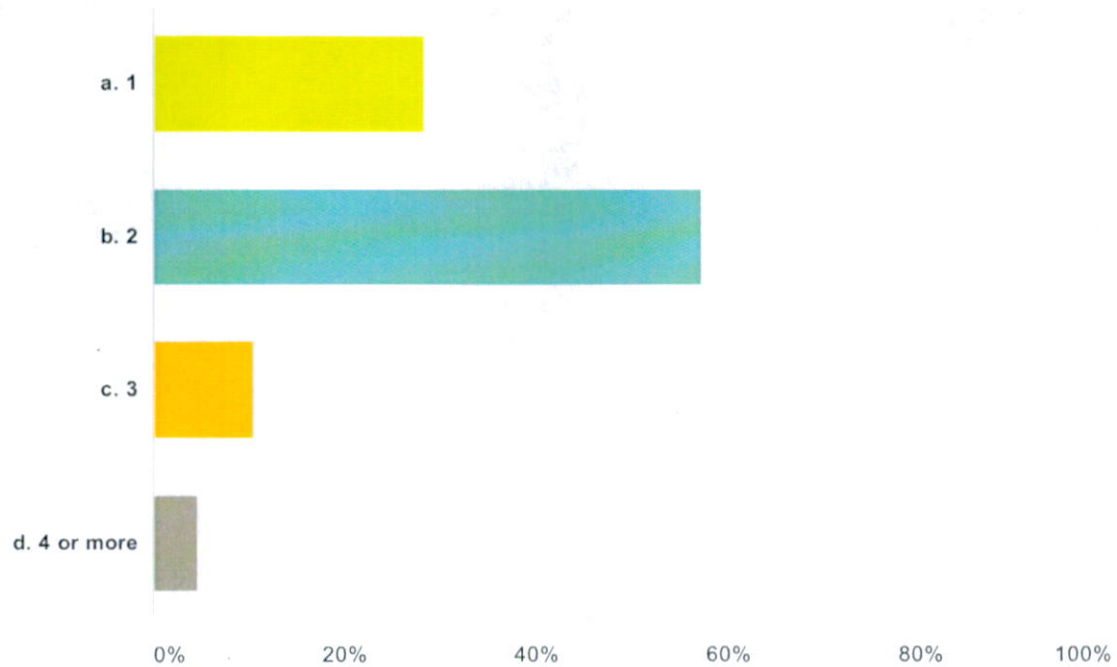
Answered: 324 Skipped: 13



| Answer Choices | Responses | |
|-----------------------------|-----------|-----|
| a. Birkdale Commons Pkwy | 54.01% | 175 |
| b. Norman View Lane | 40.74% | 132 |
| c. Babe Stillwell Farm Road | 14.51% | 47 |
| Total Respondents: 324 | | |

Q5 How many of the drivers in your home avoid turning left onto Highway 73 at unsignalized intersections?

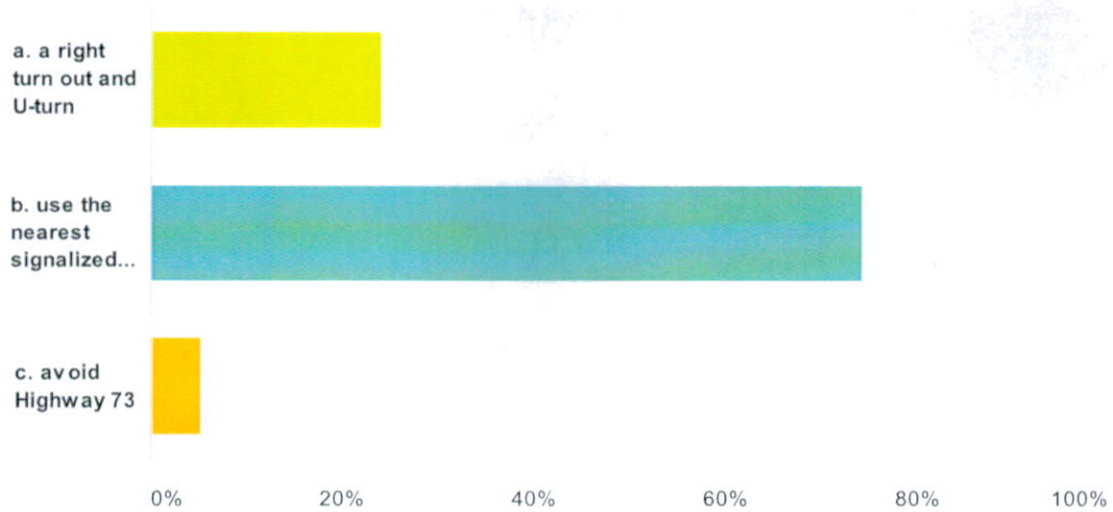
Answered: 279 Skipped: 58



| Answer Choices | Responses | |
|------------------------|-----------|-----|
| a. 1 | 28.32% | 79 |
| b. 2 | 57.35% | 160 |
| c. 3 | 10.39% | 29 |
| d. 4 or more | 4.66% | 13 |
| Total Respondents: 279 | | |

Q6 If you avoid turning left, what technique do you use to eventually head westbound?

Answered: 288 Skipped: 49



| Answer Choices | Responses | |
|--|-----------|-----|
| a. a right tum out and U-turn | 23.96% | 69 |
| b. use the nearest signalized intersection | 74.31% | 214 |
| c. avoid Highway 73 | 5.21% | 15 |
| Total Respondents: 288 | | |

5 year crash history - 1/26/2010 to 1/26/2015

| Crash Number | Date | Reason |
|--------------|------------|--|
| 102849892 | 4/17/2010 | Rear-end, both vehicles on NC 73 |
| 102874660 | 5/17/2010 | ran off the road and struck utility pole |
| 102953492 | 8/13/2010 | swerved to avoid deer and ran off road |
| 103379107 | 1/23/2012 | Rear-end, both vehicles on NC 73 |
| 103628799 | 11/21/2012 | Driver fell asleep and crossed centerline |
| 103651969 | 12/21/2012 | Rear-end, both vehicles on NC 73 |
| 103854407 | 9/21/2013 | ran off the road |
| 103919444 | 12/4/2013 | ran off the road |
| 103950920 | 1/13/2014 | Car stopped for school bus with flashers on and was rear ended |
| 104004350 | 3/14/2014 | Rear-end, both vehicles on NC 73 |
| 104241890 | 12/14/2014 | DUI, rolled over on NC 73 |

Current/Active Projects (Top 10 list)

- NC 115 @ Stumptown – '13
- Beatties Ford Road @ McCoy Road – '18
- Hambright Road Roundabout @ North Meck High School – TBD
- NC 73 @ Ramah Church Road (left-turn lane) – '15
- McCoy Road at Julian Clark Avenue (left-turn lane and/or grading to increase sight distance)
- Gilead Road at Wynfield Creek Parkway (left-turn lanes) – '13
- Beatties Ford Road at Hambright Road (left-turn lane on Hambright) – '16
- NC 73 at Terry Lane (left-turn lane on NC 73) – '14
- Beatties Ford Road at McIlwaine Road (left-turn lanes on Mt. Holly Huntersville) – '15
- Mt. Holly Huntersville Road at Hambright Road (left-turn lanes on Mt. Holly Huntersville) – '15
- Vance Road at Gilead Road (extend Vance Road to Gilead Road) – '18
- Widen well-travelled downtown streets to Town minimum standard – 20' (Gibson Park, Dellwood, Seigle)
- Turn Lanes @ Beatties Ford Road and Neck Road.

Commissioner Phillips suggested adding Highway 73 at Sterling Point to the list. Mr. Buchanan explained that NCDOT has determined a signal is not warranted at that location. NCDOT will not recommend installation of a signal, even if someone else pays for it.

Commissioner Phillips requested information be provided concerning the number of accidents in that area.

Commissioner McAulay requested staff look at major subdivisions to see if the ingress and egress is adequate.

Closed Session

Commissioner McAulay made a motion to go into closed session for property acquisition. Commissioner Julian seconded motion. Motion carried unanimously.

The Board returned from closed session.

Powell Bill Update

Mr. Buchanan updated the Board on the Powell Bill Program. *Refer to PowerPoint attached hereto as Exhibit No. 2.*

Mr. Buchanan reviewed Pavement Condition Survey Comparison of Results. *Refer to Exhibit No. 3.* The comparison shows the percentage of good streets is going down and the percentage of bad streets is going up. The Board will consider having future discussions to establish visionary policy for repaving streets.

Mr. Peete said that's correct.

Commissioner Kidwell made a motion to approve.

Commissioner Neely seconded motion.

Commissioner Kidwell said for the motion of approval of the 77 Huntersville Professional subdivision sketch plan, it complies with all applicable requirements including multiple policies in the 2030 Plan and adding more diverse business base to the Town of Huntersville.

Commissioner Neely seconded motion.

Mayor Swain said Ms. Irvin I just want to say your comment earlier about you were a little nervous going into a public meeting, I don't think you should be anymore. We have really good residents and I was looking at their questions and they are very good questions. They had very good questions so thank you all for working together. I appreciate the neighbors or the residents working with the petitioner.

Mayor Swain called for the vote to approve 77 Huntersville Professional subdivision sketch plan.

Motion carried unanimously.

Traffic Signal Discussion. Consider directing the Town Manager to match equal funds with the Town of Cornelius for a traffic signal and road improvements at the Intersection of Norman View and Windaliere on NC Highway 73.

Commissioner Kidwell said I was approached by the Town of Cornelius and they said they had spoken with some concerned residents on their part and the DOT and their Town Manager and had said if that light is warranted and it's a safety issue, which I believe it is, that they would be willing to pay half of the installation. There's my motion for that. In that area over the past couple of years we've had about seven accidents and a couple of fatalities and we've got people zooming in and out of there. We have a school right there, various ages, parents getting in and out to get children. I asked for the traffic counts from the DOT and from Max. The counts are very high. And I think this would be literally a great point in regionalism working with a town who is willing to cover half of the cost of this light for the safety of their residents. It should be something that we need to pursue to continue safety of our own residents.

Commissioner Phillips seconded motion.

Commissioner McAulay said I would like to ask Commissioner Kidwell if he has a letter of request from the Town of Cornelius or can you tell us who requested that Huntersville do this.

Commissioner Kidwell said I spoke to Commissioner Bradford of Cornelius who said that the Town Manager brought it to their meeting and wanted me to find out if we could do our part on this side. And if we agree, the Town Manager then can go to their Town Manager and work out the details.

Mayor Swain said for the record I believe their Town Manager already talked to our Town Manager and their Mayor already talked to our Mayor and I will say on my part I reminded Mayor Travis that the Town Board had a priority list of traffic improvements and it was something that the Board worked on

collectively and as an entity and had made it our policy and our priority list and for that reason I said that's the direction the Board made a decision during the retreat.

Commissioner McAulay said I would like to make a substitute motion that we take no action on this item at this time and review it at our next retreat.

Commissioner Julian seconded motion.

Commissioner Julian said Mr. Kidwell's intentions though I believe were good, I think they were misdirected. This is my belief of course. I'm just going to read a list of roads that could have lights or turn lanes and so forth – David Kenney Farm, Duke Power has two roads, Blythe Landing, Hubbard, Hagers Ferry, Bayshore, Henry Lane, Cramur Drive, Sunset Drive, Terry Lane, Babe Stillwell and Oliver Hager. So all of those roads could have a light or maybe need a light or eventually will become right out only, so what I would say at this point is I can't say where a light needs to go, if a light needs to go. And then you did mention a traffic light warrant. I would love to see one if DOT issued a warrant. Those are just some of my questions. If you put a light here are you going to tell the people down at Terry Lane they are not important so they don't get a light. I'm not quite sure how we can put one light and not do something for every road on there. I'm going to vote against this until.....but I think a study of the corridor needs to be done so we can set some expectations for the future of where a light goes. They are not going to put a light at every one of them roads. Somebody is going to get right-out only access. When I don't know, who I don't know and I'm not going to be the one to make that judgment.

Commissioner Phillips said I like the idea of this light where it's going because we have so many residents in the Birkdale community that depend on this to get in and out. I think the traffic counts warrant it. I think that when you add that the people from Babe Stilwell can all funnel down to this location it's a traffic calming device for the school, Chesterbrook Academy. It's just a win-win. It slows that traffic down so the people out David Kenney Farm Road can come out and it puts a break in between that traffic, in between Catawba Avenue and Beatties Ford Road. It also slows that traffic down for people getting in and out of the park which we have had a fatality within the last 12 months. We have children right there at the Chesterbrook Academy. I think you know this place in this particular spot with the amount of residents and amount of traffic down Highway 73 I think it warrants the light. I think that we put one at Southlake Christian Academy to protect their children and I feel like the people and the children of Chesterbrook is just as important.

Commissioner Neely said I have a couple of questions if you don't mind and then a statement. Justin, the light at Southlake Christian, who paid for that light.

Justin Carroll, Traffic Engineer, the church paid for the installation of the signal and the construction of the turn-lanes.

Commissioner Neely said so the Town had nothing to do with it.

Mr. Carroll said yes, sir.

Commissioner Neely said the \$3.1 million that Huntersville paid for Exit 25/Highway 73 which is pretty close to Cornelius, did Cornelius contribute anything to that \$3.1 million that we paid for.

Mr. Carroll said not that I'm aware of.

Commissioner Neely said how many access points in and out does Birkdale have.

Mr. Carroll said along 73 three – Birkdale Commons Parkway.....

Commissioner Neely said one of them has a traffic light.

Mr. Carroll said that's correct – Birkdale Commons Parkway.

Commissioner Neely said so Birkdale has three. How about the one community in Cornelius not in Huntersville that wants this light. How many access points do they have.

Mr. Carroll said they have one.

Commissioner Neely said I'm going to agree with Commissioners McAulay and Julian simply because we have a process in this town. And the process has been real simple and it's served us well for many years. One of the reasons that the town has a retreat is that one of the major items that we discuss is transportation in the town. The last retreat wasn't three years ago. It wasn't two years ago. It wasn't a year ago. It wasn't six months ago. It was three months ago. And at that retreat we determined what were the important traffic projects that needed to get done. And there's a list out there. And in the future I'm going to stick by this. If we want to do anything else we need to look at that list and decide what's going to come off the list and that's the way that we handle these things so that's why I'm agreeing with Commissioner McAulay that this get deferred until we decide where money is going to come from and decide who may not get something.

Commissioner Kidwell said just to rebut a couple of things here. A while back the Huntersville Town Board approved a traffic light at the Wynfield Creek Parkway and Gilead Road interchange there. By the traffic counts that we have here, it's about half of what's coming through that intersection over there at 73 and Norman View. And that is correct, there is one neighborhood in Cornelius that's affected with 50-60 homes. We've got one neighborhood in Huntersville with 800 plus homes that's affected. That neighborhood took the time to actually send out a survey to their entire neighborhood to find out who's avoiding that intersection, who is not going through the intersection, what are they doing to get through that intersection. When you have that kind of commitment from a neighborhood and a town neighbor I think that's when you look at priority lists and say hey you know what we need to change that. And also I remember the Town Board meeting in January and when this was brought up we were told.....the retreat....that this was not a Huntersville town issue. But it is a Huntersville town issue. And doing some digging and research we need this traffic light there for our neighbors. I know not everybody on the Board may agree with me, but I mean this is the right thing to do.

Commissioner Bales said Mr. Carroll can you talk to those numbers regarding Wynfield and those traffic numbers.

Mr. Carroll said this particular graph compares the Wynfield Creek Parkway intersection with the Norman View Lane intersection and what you see is these volumes – this is from 6 to 7 in the morning so this is a timeframe on this column and these are traffic volumes. These are the number of vehicles turning right in this particular case during that time and these are the particular volumes going straight or left. So in this case, coming out of Wynfield Creek Parkway making a left onto Gilead that's what these volumes represent. And as you can see this is 143 cars making a left. In comparison this is Norman View Lane exiting onto NC 73 in the same comparison of cars that are turning right, versus cars that are going straight or going left. So with looking at the volume comparisons for the same time of

day the volumes are drastically higher coming out of Wynfield Creek Parkway. Typically for a traffic warrant analysis you would look at the left-turning and through moving cars through an intersection from the side street and in most cases not even accounting for the right turning vehicles when you compare for a traffic signal warrant. In this case I have on the bottom for a Warrant 1 this is 8 hours of the day, you need 53 vehicles to make a left or going through or in a 4 hour warrant you have the minimum of 60, so when you start comparing these thresholds all of these numbers exceed those minimums. When comparing against the left turns or the through on Norman View you actually cannot find one hour of time at which the volumes exceed these warrants in Warrant 1 and Warrant 2 so when NCDOT analyzed and looked at for the warrant analysis you can take a technique where you take the right turning vehicles at the intersection and use a percentage of those to add to this number. That is the case for this intersection. They used 50 percent of the right turning vehicles in this lane to add to the lefts to then try to exceed these numbers in the warrant thresholds. I will add that all of the left turning vehicles during the day for Norman View Lane is 222 between the hours of 7 and 8 at Wynfield Creek Parkway you have 268, so you exceed in that one hour the number of turning vehicles. It's my professional opinion to compare the two is, I'm not sure that's correct that you can say that Wynfield Creek's volumes far exceed the volumes on Norman View.

Commissioner Phillips said I just wanted to for Jeff's clarification when he made the comment about 73. You have to understand that 73 when you are traveling east everything on your right-hand side is one way out/one way in because of geographics of Lake Norman. They are dead end roads. They may have it's inside of them and where they come out and for Mr. Justin is this the new one that the DOT put out or the changed one or the altered one in which the reason they changed their decision.

Mr. Carroll said to get back to some history the NCDOT analyzed these same volumes and in October of 2013 they said it did not meet warrants. We then had an onsite meeting led by Sterling Point's Mr. Ball and asked if we could redistribute trips within Birkdale to then add to this intersection to help increase the number of the vehicles using the side street. NCDOT once again analyzed the data and came back saying even with that redistribution the warrant was not met on January 29, 2014. And then during some course on March 27 we received a letter from DOT saying the decision had been reversed. The warrant had not been met, but as traffic increases on NC 73 that I guess the potential for exiting making right turns off the side streets will become overly burdensome thus a traffic signal could be warranted could be located at this intersection. There is nowhere in there analysis that it said that it was warranted.

Commissioner Bales said Mr. Carroll, you have on here a list of the Top 10. From me just looking at this process.....I'm looking for the Birkdale Commons Parkway Extension. Is that on our list.

Mayor Swain said it's on the capital improvement list.

Commissioner Bales said in your expert opinion would doing the extension and bringing that traffic over to Babe Stilwell and putting a light there, would that not impact more people within this development on the south side of 73.

Mr. Carroll said I believe it's a viable alternative. Once this section of Birkdale Commons Parkway extension is connected over to Babe Stilwell there will be an ability for folks on the south side of Birkdale to filter up to Birkdale Commons Parkway along with folks in the central area to then work their way over to a point here with Babe Stilwell and 73 and then even possibly get an option with making a connector road into the park creating a better situation, a four leg intersection at that location. I'm not

saying volumes would warrant there but just taking a look at that, that might be a better solution, a better signalized location, but it's worth mentioning having that discussion I feel.

Commissioner Bales said I would personally like to see that discussion. I would also like to commend Commissioner Kidwell for bringing this to the table because I do feel these citizens on this side of Huntersville do need to be taken care of. I'm just not sure that's the best location. My thought process being the Birkdale Commons Extension with a possible light at Babe Stilwell looks like it would meet the needs of more citizens and we could move traffic a little bit better but I'm not the engineer. I will leave that to you. But I would like to see us have that further discussion at retreat.

Mayor Swain said I just need to ask a question for clarification. Whose road is this.

Mr. Carroll said it's NCDOT's.

Mayor Swain said so if there are warranted changes, who usually pays for it. What is the standard. Who's supposed to pay for it.

Mr. Carroll said if it's on a program from DOT, it's DOT's responsibility.

Commissioner Julian said listening to what Commissioner Bales was saying there definitely makes a lot of sense. There's another connection right here. I don't know if it can ever be made or not. I don't know the status of it.....David Kenney Road coming through to Birkdale Parkway. One day that will be made. Not any time soon but at some point as traffic gets bad I think more and more people will want that. But this does allow the whole area to move around.

Commissioner Bales said I just think that it warrants further discussion.

Commissioner Kidwell said on Gilead Road, looking at the traffic counts on eastbound/westbound 73 somewhere in there 8 hours of 18,000 cars. What do we have on Gilead Road.

Mr. Carroll said for Gilead it's around 15,000 cars a day. With traffic signal warrants once you exceed a certain threshold for the main line, it flattens out. It becomes a point at which you see these numbers the 53 and 60 no matter what volume it increases on your main line – those numbers stay the same. That's still the threshold. Those numbers don't get lower as the volume on the main line goes up – so those are the minimum thresholds.

Commissioner Kidwell said the blue dot.....I'm asking for the traffic signal there. The extension here and a possible if it ever warrants it like you said, what's the timeline on that extension.

Mayor Swain said it's in the CIP. It's something that we went over. It's in FY 16. Also, nobody mentioned where they anticipate the money coming from.

Commissioner McAulay said neither have they talked about how much money, Mayor.

Mayor Swain said and what project would suffer of the Top 10.

Commissioner Neely said just a couple of final points. Thank you Commissioner Phillips for reminding me about traffic patterns on 73. I can assure you based upon the size of my credit card bills from my wife shopping along 73 and my visiting and buying local along 73 I'm well aware of the traffic driving 73,

but thank you for enlightening me again. As it relates to the people of Huntersville, Commissioner Kidwell, I agree with you. I've been elected to represent the people of Huntersville, that includes the people of Birkdale. I appreciate all the hard work they've done. I understand their desire to have a light there. I go back to there is a process. It's been in place for a long time. It has served us well. And if we go through the process from the beginning what we would have is the discussion that we are having now, what are the alternatives, where's it going to come from, what's going to be taken off the top 10 list, do we have the right top 10 list, that's the way we've always done things in the past so there are no surprises and that we can represent all of the people of Huntersville to the fullest extent of our knowledge base through the discussions at the retreat as it relates to transportation, so I go back to Commissioner McAulay I don't know half hour to 45 minutes ago that we move forward and do this at a later date when we have more information and we go through the appropriate process.

Mayor Swain called for the vote to review this item at next retreat.

Motion carried 4 to 2, with Commissioners Kidwell and Phillips opposed.

Resolution – Coal Ash. Mayor Swain said you all have the resolution. There were some changes made to this based on some of your comments.

Commissioner McAulay made a motion to not act on this.

Commissioner Kidwell seconded motion.

Commissioner McAulay said my reasons are that there are things in here, statements of fact that I do not know. Also I think Duke Power, Duke Energy, whatever the current name is is a great planner. They started buying property, the water rights, right after the first World War for Lake Norman, which we would probably say locally was an engine, a lot of people say it's an engine that drives us. I somewhat disagree. But I think that there are a lot of regulators that are looking at it including Duke Energy and I think there is a question of who is going to bear the cost and if it comes as it was written or whatever that cost is also on all of us. There are a lot of current and retired Duke Energy, Duke Power employees in our area that helped engineer many of the things that have happened in the Town of Huntersville to my knowledge and there's also the question of their pay and their pension plans and their stock that they hold now. Duke was one of the major employers in our area so therefore I think that we should leave it alone and let others handle it.

Mayor Swain called for the vote not to take action on resolution.

Motion carried unanimously.

Proposed Resolution attached hereto as Attachment No. 4.

Planning Board Appointments. There are a total of four seats that will expire on June 30, 2014 – three of which are Town Seats and one is an ETJ Seat. Membership shall begin July 1, 2014 and expire June 30, 2017. Three members currently sitting in Town and ETJ Seats would like to be considered for reappointment and one currently sitting in a Town Seat does not want to be considered. Charles Clatterbaugh and Nick Walsh have submitted applications to be considered for Town Seats.

Jack Simoneau, Planning Director, said we are asking you to continue this item because the Town Board has directed staff to prepare a text amendment that reduces the Planning Board from eleven members

ElectriCities Update

Roy Jones, CEO of ElectriCities, presented overview of ElectriCities. *(PowerPoint Presentation attached)*

Planning Update – Jack Simoneau, Planning Director

- Updated the Board on Population and Permitting and ETJ development pressure. *(Refer to attachments)*
- Presented PowerPoint presentation on downtown redevelopment. *(PowerPoint Presentation attached)*

Transportation Update – Bill Coxe, Transportation Planner

- Updated Board on Downtown Transportation System Plan. *(PowerPoint presentation attached hereto)*
- Updated Board on NCDOT TIP. *(Refer to Attachment)*

Public Works and Engineering – Max Buchanan, Public Works Director/Town Engineer

- Updated Board on Large Roadway Projects
 - o Main Street improvements can be done in 5 years, prior to work at US 21/Gilead Road.
 - o Reviewed directional crossover proposal for Gilead Road at the shopping centers. *Refer to Attachment.* Proposes to use flex bars to implement access control. Commissioner Boone suggested a formal presentation be made for area businesses to get their feedback before implementing.
 - o Reviewed options for Main Street improvements. *Refer to Attachment.*
 - o Birkdale Commons Parkway Extension should be completed by July 1. House on property still needs to be moved or burned.
 - o Stumptown Road Extension – meeting with railroad officials on February 24 to discuss RR crossings.
 - o Townley Road Bridge – not critical until Cornelius does their connection from Westmoreland.
- Reviewed status of roadway projects on Top Ten list. *Refer to Attachment.*
 - o Commissioner Kidwell requested staff look at installing a right-turn lane on Beatties Ford Road onto McIlwaine.
 - o Commissioner Phillips inquired about the installation of a traffic signal at Norman View and Highway 73. Mr. Buchanan explained that a signal is not warranted at that intersection.
- Reviewed sidewalk priority ranking. *PowerPoint attached hereto.*
- Most communities are supplementing Powell Bill funds with tax dollars for maintaining streets. In the next two to four years the Board will need to make a decision if they want to supplement the Powell Bill funds, because the Powell Bill funds do not cover costs of all maintenance work that needs to be done.
- The Town is working on a partnership with Mecklenburg County to unify process for development infrastructure acceptance. Staff may ask for the Board to decide in the future at what point do we accept streets in Huntersville when developer finishes.
- Staff is trying to develop ordinances to be included in the Public Works Chapter of the Code of Ordinances and that will come to the Board in the next couple of months for consideration.
- Proposals were received for solid waste collection. The lowest bid was from Unity, however in discussions with them they had not included the tipping fee. The two lowest are Advanced and Republic. Republic's bid was for a 7 year contract. The Board directed Staff to meet with




Cleveland L. Spruill
Chief of Police

HUNTERSVILLE POLICE DEPARTMENT

9630 Julian Clark Avenue P.O. Box 664 Huntersville, N.C. 28070
(704) 464-5400 Fax (704) 947-9200

MEMORANDUM

DATE: March 25, 2015
TO: Greg Ferguson, Town Manager
FROM: Cleveland L. Spruill, Chief of Police 
SUBJECT: Analysis of Automobile Crashes at Sam Furr Road and Norman View Lane

The purpose of this memorandum is to document the results of my analysis of automobile crashes that occurred at or near the intersection of Sam Furr Road and Norman View Lane between January 2010 and January 2015. This analysis was conducted to clarify concerns about safety at the intersection. In addition, it considers what impact a traffic light at this intersection may have had on past automobile crashes and how a traffic light at this location could impact accidents at the intersection in the future.

The chart below highlights traffic crashes at the intersection of Sam Furr Road and Norman View Lane that occurred between January 26, 2010 and January 26, 2015. It should be noted that several of these accidents did not actually occur in the intersection but were included due to their close proximity. The chart also indicates whether a traffic light at the intersection would likely have prevented the crash from occurring.

| Crash Date | Type Crash | Causal Factors | light Impact |
|------------|-------------------------------------|------------------------------|--------------|
| 04/17/2010 | Rear End Collision | Follow Too Close/Inattention | No |
| 05/17/2010 | Ran Off Road-Single Car vs Pole | Driver Inattention | No |
| 08/13/2010 | Ran off Road – Swerved to Miss Deer | Nature | No |
| 01/23/2012 | Rear End Collision | Follow Too Close/Inattention | No |
| 11/21/2012 | Head On – Crossed Center Line | Driver Fell Asleep | No |
| 12/21/2012 | Ran Off Road | Driver Inattention | No |
| 09/21/2013 | Ran Off the Road | Driver Inattention | No |
| 12/04/2013 | Ran Off Road | Driver Inattention | No |
| 01/13/2014 | Rear End Collision–Bus W/flashers | Driver Inattention | No |
| 03/14/2014 | Rear End Collision | Follow Too Close | No |
| 12/14/2014 | Roll Over | Alcohol/DUI | No |

*** Honor * Professionalism * Dedication to Duty ***

There was an average of 2 crashes per year or 1 crash every 166 days (1 every 5.5 months) at or near the intersection of Sam Furr Road and Norman View Lane. It should also be noted that during calendar year 2011, there were no crashes reported at the intersection of Sam Furr Road and Norman View Lane. Of the 11 crashes that occurred at or near the intersection since 2010, 1 involved an intoxicated driver, 1 involved a driver who fell asleep and collided with oncoming traffic after crossing the center line, 1 involved a driver who ran off the road while attempting to avoid striking a deer and 1 driver failed to pay attention and ran into the rear of a stopped school bus that had its flashers on with its stop sign activated. Three (3) crashes occurred when drivers were distracted or failed to pay attention and ran off the road. The remaining four crashes occurred when drivers who were following too close or not paying attention, ran into the rear of a vehicle stopped or slowing in front of them. It is my opinion that a stop light at this intersection would not have prevented any of these 11 crashes from occurring.

On October 29, 2013, a fatality vehicle crash occurred on Sam Furr Road at the entrance to Blythe Landing. This crash did not occur at or near the intersection with Norman View Lane. However, I reviewed the facts of this crash and will share them with you for further clarification. The fatality crash involved a driver who was traveling at a high rate of speed crossed the center line into oncoming traffic and then crossed back over and collided with a vehicle that was attempting to make a left turn into the entrance of Blythe Landing. The causal factors that contributed to this crash included excessive speed, disregarding traffic laws and reckless driving. I am of the opinion that a stop light at the intersection of Sam Furr Road and Norman View Lane would not have prevented this crash from occurring.

Five of the 11 crashes that occurred at or near the intersection involved rear end crashes. This pattern of drivers running into the back of stopped or slowing vehicles suggests that safety at the intersection may not benefit from a stop light. With the increased frequency of vehicles stopping due to the stop light the potential for increased rear end collisions does exist.

My analysis concluded that the intersection of Sam Furr Road and Norman View Lane is a relatively safe intersection averaging only 1 crash every 166 days (1 every 5.5 months) and that none of the 11 crashes that occurred at or near the intersection during the past five (5) years could have been prevented if a traffic light had been there.

2014 Traffic Crash Study: NC Hwy 73: Between West Catawba Av. and Beatties Ford Rd.

**2014 Traffic Crash Study: NC Highway 73: Between West Catawba AV. and
Beatties Ford Rd.**

Prepared:

11/20/2014

By: M. L. Yates HP164

Traffic Safety Section



2014 Traffic Crash Study: NC Hwy 73: Between West Catawba Av. and Beatties Ford Rd.

Summary:

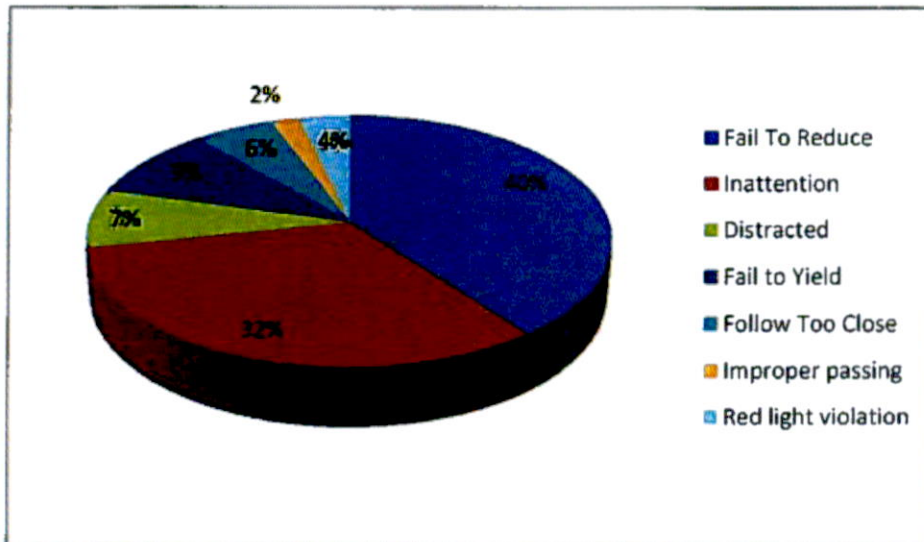
According to Huntersville Police Department's internal records there have been 36 traffic collisions reported on NC Highway 73 between West Catawba Av. and Beatties Ford Rd. from January 1, 2014 through November 19, 2014. The data shows that 75 percent of these crashes are rear end slow/stopped collisions and that a driver of one of the vehicles contributed to the crash by failing to reduce speed 40 percent of the time. The study also shows that an injury was reported in 44 percent of the crashes reported during this time frame.

There have been two crashes reported at the intersection of NC Hwy 73 and Norman View Ln., (Report numbers: 20140113150607; 20140314152606), during this time frame with the most recent occurring on 03/14/2014. Both crashes were rear end collisions on NC Hwy 73 with the driver of unit 2 having contributing circumstances of failing to reduce speed, inattention, and following too closely. Furthermore, the two crashes mentioned above are the only two collisions in the entire 16300 block range of NC Hwy 73. According to the data there is only one collision at this intersection/block range every 5 and half months which, in my opinion, does not meet the criteria of being a problematic or hazardous traffic area.

In my opinion, the majority of the crashes researched in this study could have been prevented if the drivers of the vehicles involved had been more attentive and maintained an appropriate distance from the vehicle in front of them during times of heavy traffic.

DRIVER CONTRIBUTING CIRCUMSTANCE

| Fail To Reduce | Inattention | Distracted | Fail to Yield | Follow Too Close | Improper passing | Red light violation |
|----------------|-------------|------------|---------------|------------------|------------------|---------------------|
| 21 | 17 | 4 | 5 | 3 | 1 | 2 |



The above chart emphasizes an overwhelming majority of the reported crashes are caused by motorist's not paying attention and/or failing to reduce speed to avoid colliding with another vehicle. These numbers are consistent with the report that 75% of the reported crashes are rear end collisions.

Sam Furr & Norman View

- ☐ Huntersville is a very safe place to live and drive
 - 2012 and 2013 Movoto Top Ten Safest Cities in N.C.
 - 2012 AAA Carolinas Outstanding Traffic Safe Community Award (make strong effort to make our state roads safer).
 - Open Quadrant Left, at Sam Furr & Statesville example of innovative approach to address traffic safety issues
- ☐ Huntersville's record is clear that there has been a demonstrated commitment to traffic safety by Police and elected officials

Sam Furr & Norman View

- ☐ 5 Accidents @ Intersection since Jan. 2013
 - Vehicle Crossed Center Line-Head on Collision
 - 2 Involved single vehicle accidents-Ran off Road
 - 2 Involved rear end collisions – Hit stopped vehicles
- ☐ None of the accidents involved major injuries or would have been avoided had there been a light
- ☐ Rear End Collisions only 2 at the intersection
- ☐ Many traffic challenges along Sam Furr and other major thoroughfares throughout the Town
- ☐ Best practices support traffic study and prioritization
- ☐ Other Sam Furr Intersections higher accident rates (Terry, Pineknoll, Brown Mill, Babe Stillwell)
- ☐ Traffic light may not be viable solution (Could increase)
- ☐ Other options (Variable Lane Delineators/Right turn only)
- ☐ Cornelius may choose to install on their own



YOUR Life Matters!

Choose to Be Safe in Your Own Neighborhood

Demand Intersection Safety at HWY 73 and Norman View

Your life matters. Your family and friends' lives matter. Your teenage child who just learned to drive matters. Your 92-year old grandmother matters. Your unborn child ... matters.

THE FACTS: Intersection HWY 73 & Norman View is Dangerous and Who's at Risk

- HWY 73 was designed for 7,500 vehicles per day but, instead, is burdened with 23,000 cars and trucks per day per NCDOT – over 3X the amount of traffic projected – difficult not only for motorists to cross, but nearly impossible for pedestrians
- NCDOT plans to make HWY 73 a four-lane road in 2022 (subject to change based on funding)
- ① NCDOT studies establish this is an extremely unsafe intersection (2013/14)
- ② 7 accidents occurred at this intersection; several of them were our neighbors from Birkdale – in fact, one was a woman who was pregnant with her first child
- ③ Although occurring a few hundred yards away, a fatal accident occurred in 2014 involving a young teacher from Southlake Christian Academy due to unsafe traffic volume on HWY 73
- Over half of Birkdale's 872 residents are directly impacted by this intersection
- Chesterbrook Academy has 180 children whose parents (many of whom are Birkdale residents) and school bus drivers traverse this intersection daily
- Future new construction using HWY 73 (only a mile away): 52 single-family retirement homes (community) ... and more on the way

How does it rank among other intersections in the area?

THE GOOD NEWS – FROM CORNELIUS

Due to 15 months of legwork done by Sterling Point neighbors, the Town of Cornelius has graciously offered to pay for half the cost of the traffic signal if the Town of Huntersville would pay for the other half.

THE BAD NEWS – BUT SOMETHING "BIRKDALE" CAN OVERCOME

Although over 800 signatures were secured from Birkdale / Huntersville citizens who petitioned for a stoplight, four of the Huntersville town commissioners voted "NO" to requests to make this intersection safe ... on two separate occasions. However, in 2014, the Town of Huntersville spent \$200,000 on a refreshment stand for a community ballpark, but they do not seem to be able to find \$35,000 for a life-saving stoplight. In these four commissioners' view — by way of their actions — a Coke and a candy bar are more important than your life.

Now the responsibility of reasonably protecting our loved ones within our neighborhood is on the shoulders of Birkdale residents.