

# TOWN OF GARNER



## TOWN COUNCIL MEETING

May 2, 2016  
7:00 P.M.

Garner Police Department  
Training Room

**Town of Garner  
Town Council Agenda  
May 2, 2016**

*Dinner will be served for town officials in the Conference Room at 6:15 p.m.*

The Council will meet in regular session at 7:00 p.m. in the Garner Police Department Training Room located at 912 7<sup>th</sup> Avenue.

A. CALL MEETING TO ORDER/ROLL CALL: Mayor Ronnie Williams

The Council will call for a brief recess at 9:00 p.m.

B. PLEDGE OF ALLEGIANCE: Council Member Kennedy

C. INVOCATION: Council Member Kennedy

D. PETITIONS AND COMMENTS

*This portion of the meeting is to receive comments from the public on items not included in this agenda. Citizens should sign up with the Town Clerk to speak prior to the start of the meeting. The Board is interested in hearing your concerns, but may not take action or deliberate on subject matter brought up during the Petitions and Comments segment. Topics requiring further investigation will be referred to the appropriate town officials or staff and may be scheduled for a future agenda.*

E. ADOPTION OF AGENDA

F. PRESENTATIONS

1. Economic Development Week..... Page 3  
Presenter: Joseph Stallings, Economic Development Director

Recognize the week of May 8-14 as Economic Development Week.

2. National Public Works Week..... Page 5  
Presenter: Paul Cox, Public works Director

Recognize the week of May 15-21, 2016 as National Public Works Week.

3. National Police Week..... Page 7  
Presenter: Captain Joe Binns

Recognize the week of May 15-21-2016 as National Police Week.

G. CONSENT

*All items on the Consent Agenda are considered routine, to be enacted by one motion and without discussion. If a member of the governing body requests discussion of an item, the item will be removed from the Consent Agenda and considered separately.*

1. Multivista Construction Management Contract..... Page 9  
Presenter: Tony Chalk, Town Engineer

Contract with Multivista for construction management documentation service as presented to the Town Council at the April Work Session.

Action: Authorize Contract with Multivista for \$12,000

2. Street Closing SC-16-02..... Page 15  
Presenter: David Bamford, Senior Planner

A street closing petition has been filed by the Town of Garner to close the unimproved portion of a street located on the Garner Indoor Recreation Center site.

Action: Adopt Resolution (2106) 2288 to set Public Hearing for June 6, 2016

H. PUBLIC HEARINGS

1. Conditional Use Permit CUP-SP-16-11, Brice’s Brewing..... Page 19  
Presenter: Brad Bass, Planning Director

A CUP application to establish a brewery and tap room at 1822 Garner Station Boulevard was reviewed by the Planning Commission on April 11, 2016. After the Planning Commission meeting the applicant notified staff of the need to continue the hearing until June 6, 2016. This will allow additional time for the applicant and the property owner to work out minor issues regarding alterations to the building.

Action: Continue Public Hearing to June 6, 2016

2. Conditional Use Zoning CUD-Z-16-01 and Conditional Use Permit CUP-SB-16-02,  
W. Garner Road .....Page 21  
Presenter: David Bamford, Senior Planner

Request to rezone a 18-acre tract located on West Garner Road from R-20 to R-9 C181 and request for Conditional Use Approval of a 41 lot single family subdivision.

Action: Adopt Ordinance (2016) 3814; Consider Permit Approval

I. NEW/OLD BUSINESS

1. Funding Agreement with Wake County.....Page 103  
Presenter: Tony Chalk, Town Engineer

Funding agreement with Wake County to reimburse costs associated with the Town Hall parking lot expansion. This agreement was approved by Wake County on April 18, 2016.

Action: Authorize Agreement

2. Health Care Renewal.....Page 106  
Presenter: BD Sechler, Human Resources Director

At the April 26 Work Session, Council approved staff's recommendation to switch healthcare providers from BCBSNC to Aetna for the FY 16/17 budget year. The Town currently contributes 25% towards dependent coverage. The proposal presented for consideration increases that amount to 33.7%. This increase would require additional funding of \$40,000.

Action: Authorize Aetna as healthcare provider; approve the Town's increased contribution toward dependent health care coverage

J. COMMITTEE REPORTS

K. MANAGER REPORTS

1. garner info

L. ATTORNEY REPORTS

M. COUNCIL REPORTS

N. ADJOURNMENT

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: May 2, 2016		
Subject: Economic Development Week Proclamation		
Location on Agenda: Presentations		
Department: Economic Development		
Contact: Joseph Stallings, Economic Development Director		
Presenter: Joseph Stallings, Economic Development Director		
Brief Summary: Recognize the week of May 8-14 as National Economic Development Week.		
Recommended Motion and/or Requested Action: Presentation of proclamation		
Detailed Notes:		
Funding Source: N/A		
Cost: 0	One Time: <input type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
Manager's Comments and Recommendations:		
Attachments Yes: <input checked="" type="radio"/> No: <input checked="" type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	JS	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		

# PROCLAMATION

**WHEREAS**, economic developers promote economic well-being and quality of life for their communities by creating, retaining, and expanding jobs that facilitate growth, enhance wealth, and provide a stable tax base; and

**WHEREAS**, economic developers stimulate and incubate entrepreneurship in order to help establish the next generation of new businesses, which is the hallmark of the American economy; and

**WHEREAS**, economic developers are engaged in a wide variety of settings including rural and urban, local, state, provincial, and federal governments, public-private partnerships, chambers of commerce, universities, and a variety of other institutions; and

**WHEREAS**, economic developers attract and retain high-quality jobs, develop vibrant communities, and improve the quality of life in their regions; and

**WHEREAS**, economic developers work in the Town of Garner within the State of North Carolina; and

**NOW, THEREFORE**, I, Ronnie S. Williams, Mayor of the Town of Garner, do hereby proclaim May 8<sup>th</sup> - 14<sup>th</sup>, 2016 as

## ECONOMIC DEVELOPMENT WEEK

in the Town of Garner and remind individuals of the importance of this profession in expanding career opportunities and improving quality of life.

In Witness Whereof, I have hereunto set my hand and caused the Great Seal of the Town of Garner, North Carolina, to be affixed the 2nd day of May, 2016.

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Ronnie S. Williams, Mayor

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: May 2, 2016		
Subject: Mayor's Proclamation- National Public Works Week		
Location on Agenda: Presentations		
Department: Public Works		
Contact: Paul Cox		
Presenter: Paul Cox/ Mayor		
Brief Summary:  A Proclamation is presented to the Public Works Department in recognition of National Public Works Week which is May 15-21, 2016.		
Recommended Motion and/or Requested Action: Presentation of Proclamation		
Detailed Notes: n/a		
Funding Source:		
Cost: n/a	One Time: <input checked="" type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
Manager's Comments and Recommendations:          		
Attachments Yes: <input checked="" type="radio"/> No: <input checked="" type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	PEC	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		

# ***PROCLAMATION***

***WHEREAS***, public works services provided in our community are an integral part of our citizens' everyday lives; and

***WHEREAS***, the support of an understanding and informed citizenry is vital to the efficient operation of public works systems and programs such as water, sewers, streets, public buildings, solid waste collection and snow removal; and

***WHEREAS***, the health, safety and comfort of this community greatly depend on these facilities and services; and

***WHEREAS***, the quality and effectiveness of these facilities, as well as their planning, design and construction are vitally dependent upon the efforts and skill of public works personnel; and

***WHEREAS***, the efficiency of the qualified and dedicated personnel who staff public works departments is materially influenced by the people's attitude and understanding of the importance of the work they perform.

***NOW, THEREFORE***, I, Ronnie S. Williams, Mayor of the Town of Garner, do hereby proclaim the week of May 15-21, 2016 as

## ***NATIONAL PUBLIC WORKS WEEK***

in the Town of Garner, and call upon all citizens and civic organizations to acquaint themselves with the issues involved in providing our public works services and to recognize the contributions which public works officials make every day to our health, safety, comfort, and quality of life.

In Witness Whereof, I have hereunto set my hand  
and caused the Great Seal of the Town of  
Garner, North Carolina, to be affixed the 2nd day of  
May, 2016.

---

Ronnie S. Williams, Mayor

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: May 2, 2016		
Subject: Police Week Proclamation		
Location on Agenda: Presentations		
Department: Police		
Contact: Chief Zuidema		
Presenter: Captain Binns		
Brief Summary: The week of May 15-21 is National Police Week; each year the Mayor signs a proclamation recognizing this week.		
Recommended Motion and/or Requested Action: Presentation of proclamation		
Detailed Notes:		
Funding Source: N/A		
Cost: 0	One Time: <input type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
Manager's Comments and Recommendations:		
Attachments Yes: <input checked="" type="radio"/> No: <input checked="" type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	BVZ	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		

## **PROCLAMATION**

### **PEACE OFFICERS' MEMORIAL DAY POLICE WEEK IN GARNER**

**WHEREAS**, The Congress and President of the United States, through Public Law 87-726 signed by President John F. Kennedy in 1962, proclaimed May 15<sup>th</sup> as National Peace Officers Memorial Day and the calendar week in which May 15<sup>th</sup> falls, as National Police Week; and

**WHEREAS**, Public Law 103-322, signed by President William Clinton in 1994, directs that the flag of the United States on all Government buildings be displayed at half-staff on May 15<sup>th</sup> of each year; and

**WHEREAS**, the members of the Garner Police Department play an essential role in safeguarding the rights and freedoms of the Town of Garner; and

**WHEREAS**, it is important that all citizens know and understand the duties, responsibilities, hazards, and sacrifices of their law enforcement agency, and that members of our law enforcement agency recognize their duty to serve the people by safeguarding life and property, by protecting them against violence and disorder, and by protecting the innocent against deception and the weak against oppression; and

**WHEREAS**, the men and women of the Garner Police Department unceasingly provide a vital public service.

**NOW THEREFORE**, I Ronnie S. Williams, Mayor of the Town of Garner, North Carolina, do call upon all citizens of the Town of Garner and upon all patriotic, civic and educational organizations to observe the Week of May 15-21, 2016, as National Police Week with appropriate ceremonies and observances in which all of our people may join in commemorating law enforcement officers, past and present, who by their faithful and loyal devotion to their responsibilities, have rendered a dedicated service to their communities and, in so doing, have established for themselves an enviable and enduring reputation for preserving the rights and security of all citizens.

**FURTHER**, I call upon all citizens of Garner to observe May 15, 2016 as Peace Officers' Memorial Day in honor of those law enforcement officers who, through their courageous deeds, have made the ultimate sacrifice in service to their community or have become disabled in the performance of duty, and let us recognize and pay respect to the survivors of our fallen heroes.

*In Witness Whereof, I have hereunto set my hand  
and caused the Great Seal of the Town of Garner,  
North Carolina, to be affixed the 2<sup>nd</sup> day of  
May, 2016.*

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*Ronnie S. Williams, Mayor*

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: May 2, 2016		
Subject: Approve Professional Services contract with Multivista		
Location on Agenda: Consent		
Department: Engineering		
Contact: Tony Chalk		
Presenter: Tony Chalk, Town Engineer		
Brief Summary:  Multivista presented their construction management documentation services to the Town Council at the April Work Session. Council indicated at the work session to place this item on the consent agenda for their approval.		
Recommended Motion and/or Requested Action: Authorize contract with Multivista for \$12,000.		
Detailed Notes:		
Funding Source: Bond project funds		
Cost: 12,000	One Time: <input checked="" type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
Manager's Comments and Recommendations:          		
Attachments Yes: <input checked="" type="radio"/> No: <input type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:		
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		



**Constructview LLC dba Multivista**

8414 Falls of Neuse Rd., Ste 202, Raleigh, NC, 27615

(919) 802-0254

m.dorman@multivista.com, www.multivista.com

**PROJECT QUOTE & AGREEMENT**

**CLIENT**

**PROJECT**

Name: Town of Garner  
Address: 900 7th Ave  
Garner, NC 27529  
T: 919-773-4420 F: \_\_\_\_\_  
E: tchalk@garnernc.gov

Name: Town of Garner Town Hall  
Description/Type: City/State/Local Government  
Location: 900 7th Ave  
Garner, NC 27529  
Size (SQFT): 26,500  
Start Date: 05/01/2016

Constructview LLC dba Multivista ("MULTIVISTA") is pleased to provide Town of Garner ("CLIENT") with Multivista documentation services for the Town of Garner Town Hall Project in accordance with the Scope and Terms listed in this document and in the accompanying RIDER: Multivista Project Quote Terms and Conditions.

**BILLING / INVOICING CONTACT**

**SITE / FIELD CONTACT**

Name/Title: Tony Chalk  
Company: Town of Garner  
Address: 900 7th Ave  
Garner, NC 27529  
T: 919-773-4420 F: \_\_\_\_\_  
E: tchalk@garnernc.gov

Name/Title: Tony Chalk  
Company: Town of Garner  
Address: 900 7th Ave  
Garner, NC 27529  
T: 919-773-4420 F: \_\_\_\_\_  
E: tchalk@garnernc.gov

# PHOTOGRAPHIC DOCUMENTATION

For complete definitions of all shoot types and scope, please see attached Rider.

## PROGRESSIONS

Progressions shoots occur at regular intervals, following the same shoot path each time, to capture the progress of your project over time.

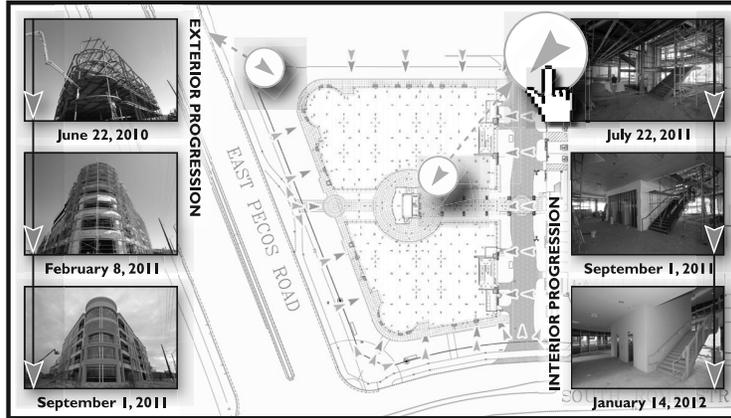
**Exterior**

Exterior Progressions capture the exterior progress of your building, beginning at substantial structural framing.

Max # of Shoots: 12

Frequency: monthly

See Exhibit A for Notes



**Interior**

Interior Progressions capture the interior progress of your project. Shoots begin at substantial interior framing for each building, floor, section or area.

Max # of Shoots: 6

Frequency: stages

See Exhibit A for Notes

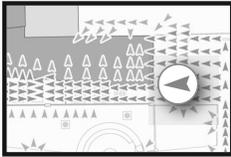
## EXACT-BUILT® SHOOTS

Exact-Built® shoots are designed to capture specific milestones of your projects in great detail.

**Site-Survey**

Comprehensive documentation of all surrounding streets, curbs, sidewalks, landscaping, parking areas, existing structures and neighboring facilities.

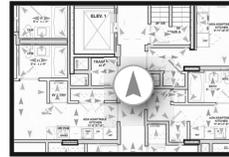
See Exhibit A for Notes



**MEP**

Mechanical, electrical, plumbing (MEP) and all other systems in walls and ceilings are documented post-inspection and pre-insulation, sheet rock or dry wall installation.

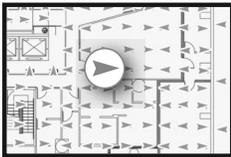
See Exhibit A for Notes



**Pre-Slab**

Capture the pre-slab rough-ins prior to pouring.

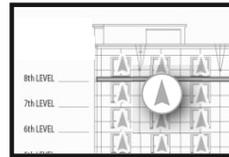
See Exhibit A for Notes



**Elevation**

Door, window and waterproofing conditions of the exterior skin are captured at agreed upon milestone(s).

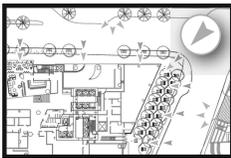
See Exhibit A for Notes



**Existing Condition**

Takes place at any point in time that you specify to capture the project, or a component thereof, in its exact current condition.

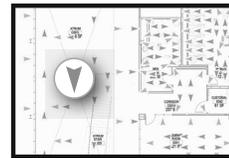
See Exhibit A for Notes



**Finished Interior**

At Certificate of Occupancy or other "finished" milestone, all walls, ceilings and floors in their post-inspection, completed condition are documented in exceptional detail.

See Exhibit A for Notes



**"You Name It"**

Custom Exact-Built® that you design to meet your project's specific needs.

1. Roof Progression

2. Underground EB

3.

4.

See Exhibit A for Notes

## SLIDESHOWS

Slideshows are an included service for all project scopes that include Photographic Documentation. They provide an "executive summary" or overview of your project that is useful for marketing as well as allowing lenders, consultants, committees and executives to quickly review the overall construction. Slideshows can also house photographs taken by the client's project team.



## MULTIVISTA VIDEO

### MULTIVISTA VIDEO SHOOTS

Hours scheduled on-site: \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

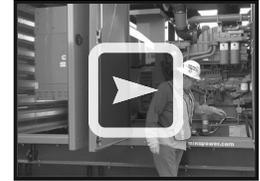
Number of videographers: \_\_\_\_\_

4. \_\_\_\_\_

@ \$/Hour: \$ 175.00

#### Applications & Examples:

- Facility Management: Operations & Maintenance
- Training: Safety
- Construction: Wall Tilt-Up
- Inspections: HVAC / MEP / Inspection
- Events: Groundbreaking



## MULTIVISTA WEBCAM

Camera 1. Fixed  PoE  Cellular  Solar

Camera 2. Select  PoE  Cellular  Solar

Duration: 12.00 Months

Duration: Months

Camera 3. Select  PoE  Cellular  Solar

Camera 4. Select  PoE  Cellular  Solar

Duration: Months

Duration: Months

Connections to be arranged by:  MULTIVISTA  CLIENT

### MULTIVISTA'S COMPLETE WEBCAM SOLUTION INCLUDES:



➤ Access 24/7/365



➤ Mobile Access



➤ Live Streaming



➤ HI-DEF Imagery



➤ Time Lapse Photo & Video Generator



➤ Hosting for Unlimited Users

- 2 Types of Web Cameras.
- Slideshow & Video of Jobsite Progress\*.
- Automated Static Image Archive.
- On-Demand Snapshot Tool.
- View Project Feed Via Your Own Website.

- Easy Access.
- Intuitive Control.
- Onsite Camera Setup & Integration.
- Camera System Monitoring.
- Secure Hosting of Webcam Footage.

\*Live stream not archived, only static captures.

### Fixed Dome Cameras:



### PTZ Dome Cameras:



**PRICING**

Pricing below is inclusive of all services comprising the scope of this Project Quote.

DOCUMENTATION PRICE	TOTAL PRICE	ADJUSTED TOTAL PRICE
Photographic: \$ 12,000.00	Documentation Price: \$ 12,000.00	Total Price: \$ 12,000.00
Video:	Sales Tax:	Add/Alternate(s):
Webcam:	Travel:	
Documentation Price: \$ 12,000.00	Reimbursable Expenses: \$ 0.00	
	Total Price: \$ 12,000.00	<b>Adjusted Total Price: \$ 12,000.00</b>

The Price will be invoiced as follows:

Setup Fee \$ 4,800.00 + (Monthly Invoice \$ 600.00 x 12 Months)

**ADD/ALTS**

	Visits / Hours:	Price:	INITIALS
1. Webcam - \$525/month includes installation Description: 12 month total = \$6300.00		\$ 6,300.00	
2. _____ Description:			
3. _____ Description:			
4. _____ Description:			
5. _____ Description:			

**REIMBURSABLE EXPENSES**

Multivista will be reimbursed for actual expenses incurred plus 0.00 percent (0.0%) for those expenses that are directly related to the Project. Validation of all such expenses will be provided with invoicing. Expenses that are reimbursable include, but are not limited to, reproductions, printing costs, deliverables/parcels and project-specific insurance where the insurance needs exceed Multivista's standard liability policy limits.

For this Project, reimbursable expenses are estimated to be: \$ 0.00  See Exhibit A for details

**ACCEPTANCE**

Multivista will perform all work per the agreed upon scope of services and their Terms and Conditions, contained herein and in the accompanying RIDER to this Project Quote and Agreement. Upon acceptance of this Project Quote and the accompanying RIDER, Multivista will diligently pursue its work until the completion of this project, consistent with the above-referenced scope of services. Your acceptance of this Project Quote constitutes your authorization and direction to Multivista to proceed with this project. Multivista reserves the right to revoke or modify this Project Quote at any time before acceptance of the Project Quote and all terms and conditions contained herein and in the accompanying RIDER or if work has not commenced within ninety (90) days of acceptance.

The foregoing Project Quote is accepted by:

Constructview LLC dba Multivista

Town of Garner

Sign:

Sign:

Print:

Print:

Date:

Date:

**EXHIBIT A**

**Exterior Progressions**

Maximum 11 Visits

**Site-Survey**

Not included

**Pre-Slab**

All structural slabs included, not including hard-scape or stairwells.

**Existing Condition**

Covered in Site Survey

**"You Name It"**

Roof Progression photos are included to cover maximum 3 stages of roof application, as directed by client.

Underground Utility EB (Exact Built) - to capture major tie ins and crossovers of underground utilities. Must be scheduled by client and includes a maximum 8 visits.

**Interior Progressions**

Inclusion of up to 6 interior progressions to include the finished condition progression as the last/final progression, directed by client.

**MEP**

Included as described.

**Elevation**

3-4 Stages of Elevation application.

**Finished Interior**

Covered in Interior Progression to gain efficiency.

**Additional Notes**

Web camera services are not included in project budget, however is listed as a total, all inclusive fee in the ADD/ALT section.

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: May 2, 2016		
Subject: Street Closing SC-16-02		
Location on Agenda: Consent		
Department: Planning		
Contact: Brad Bass, Planning Director		
Presenter: Brad Bass		
<b>Brief Summary:</b> <p>A street closing petition has been filed by the Town of Garner to close the unimproved portion of a street located on the Garner Recreation Center site.</p>		
<b>Recommended Motion and/or Requested Action:</b> <p>Adopt Resolution (2016) 2288 to set public hearing for June 6, 2016.</p>		
<b>Detailed Notes:</b> <p>See attached Staff Report and associated documents.</p>		
Funding Source:		
Cost:	One Time: <input type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
<b>Manager's Comments and Recommendations:</b> <p>None</p>		
Attachments Yes: <input checked="" type="radio"/> No: <input type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	MBB	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		



# Town of Garner Road Closing Staff Report

Garner Town Council  
My 2, 2016

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**ROAD CLOSING APPLICATION:** SC-16-02

**APPLICANT:** Town of Garner

**OWNER:** Town of Garner

**TOWN LIMITS:** Yes

**LOCATION:** East side of Montague Street

**WAKE COUNTY PINS #:** South of 1711623370

**RIGHT OF WAY LENGTH:** 350

**RIGHT OF WAY WIDTH:** 40

**RIGHT OF WAY AREA:** 0.32 Acres (14,000 S.F.)

**ASSOCIATED DEVELOPMENT PLANS:** This right of way closing is associated with the Garner Indoor Recreation Center project (Rezoning application CUD-Z-16-03 and site plan application CUP-SP-16-07).

**RECOMMENDATION:** Set Public Hearing for June 6, 2016.

**Town of Garner  
Planning Department**

**SC 16-02  
(Unimproved Right-of-Way)**



Applicant: Town of Garner  
Request: Close unused / unimproved right-of-way near Montague Street  
Right of Way: 40 feet wide  
Street length: Approximately 350 feet

**Resolution of Intent (2016) 2288**

A Resolution Declaring the Intention of the Town of Garner Town Council to Consider Closing an Unimproved Right-of-Way off Montague Street directly south of Wake County PIN 1711623370

WHEREAS, G.S. 160A-299 authorizes the Town of Garner Town Council to close public streets and alleys; and

WHEREAS, the Town of Garner Town Council considers it advisable to conduct a public hearing for the purpose of giving consideration to closing the right-of-way of the unimproved section off Montague Street.

NOW, THEREFORE, BE IT RESOLVED by the Town of Garner Town Council that:

(1) A public hearing will be held at 912 7<sup>th</sup> Avenue in the Police Department Training Room at 7:00 p.m. on the 6<sup>th</sup> day of June, 2016 to consider a resolution closing an unimproved right-of-way off Montague Street.

(2) The Town Clerk is hereby directed to publish this Resolution of Intent once a week for four (4) consecutive weeks in the newspaper of general circulation of the area.

(3) The Town Clerk is further directed to transmit by registered or certified mail to each owner of property abutting upon that portion of said street a copy of this Resolution of Intent.

(4) The Town Clerk is further directed to cause adequate notices of this Resolution of Intent and the scheduled public hearing to be posted as required by G.S. 160A-299.

Adopted this 2<sup>nd</sup> day of May, 2016.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
Town Clerk

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: May 2, 2016		
Subject: Brice's Brewing CUP-SP-16-11		
Location on Agenda: Public Hearings		
Department: Planning		
Contact: Brad Bass, Planning Director		
Presenter: Brad Bass		
<b>Brief Summary:</b>  A CUP application to establish a brewery and tap room at 1822 Garner Station Boulevard was reviewed by the Planning Commission on April 11, 2016. After the Planning Commission meeting the applicant notified staff of the need to continue the hearing until June 6, 2016. This will allow additional time for the applicant and the property owner to work out minor issues regarding alterations to the building.		
<b>Recommended Motion and/or Requested Action:</b> Continue the public hearing until June 6, 2016.		
<b>Detailed Notes:</b> See attached letter.		
Funding Source:		
Cost:	One Time: <input type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
<b>Manager's Comments and Recommendations:</b> None		
Attachments Yes: <input checked="" type="radio"/> No: <input type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	MBB	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		

4/26/2016

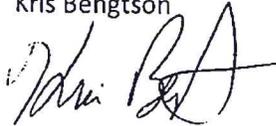
To the Garner Town Council,

My name is Kris Bengtson and I am the owner of Brice's Brewing Company and I am requesting a continuance for public hearing regarding our special use permit.

Thank you for your consideration.

Sincerely,

Kris Bengtson

A handwritten signature in black ink, appearing to read "Kris Bengtson", written in a cursive style.

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: May 2, 2016		
Subject: Rezoning Application CUD-Z-16-01 and Conditional Use Permit CUP-SB-16-02		
Location on Agenda: Public Hearings		
Department: Planning		
Contact: Brad Bass, Planning Director		
Presenter: David Bamford		
Brief Summary:  Request to rezone a 18 acre tract located on West Garner Road from R-20 to R-9 C181 and request for conditional use permit approval of a 41 lot single family subdivision.		
Recommended Motion and/or Requested Action: Approve Ordinance (2016) 3814 and by separate motion approve Conditional Use Permit CUP-SB-16-02.		
Detailed Notes:  See attached staff report and associated documents.		
Funding Source:		
Cost:	One Time: <input type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
Manager's Comments and Recommendations: None		
Attachments Yes: <input checked="" type="radio"/> No: <input type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	MBB	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		

**TOWN OF GARNER  
STAFF REZONING REPORT**

**Town Council  
May 2, 2016**

**APPLICATIONS:** CUD Z 16-01 & CUP SB 16-02

**APPLICANT:** Hopper Communities

**OWNER:** Rex Kelly

**LOCATION OF PROPERTY:** W Garner Road

**WAKE COUNTY PIN #:** 1711351432, 1711258325

**AREA:** 18 acres

**TOWN LIMITS:** Yes

**PRESENT ZONING:** Residential 20 (R-20)

**REQUESTED ZONING:** Residential 9 Conditional Use (R-9 C181)

**OVERLAY DISTRICTS:** Garner Road

**KEY MEETING DATES:**

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Planning Commission: **April 11, 2016 (recommended approval)**

Public Hearing & Town Council Action: **May 2, 2016**

## **EXISTING ZONING**

The existing zoning of the 18-acre site is **Residential 20 (R-20)**. This district allows single-family lots of at least 20,000 square feet (0.46 acres). Under this zoning, the 18-acre rezoning site could accommodate approximately 20-25 single-family lots.

**The following is a list of permitted uses in the R-20 district.**

1. Single-family site built and modular homes
2. Residential Cluster
3. Family Care home
4. Group care home
5. Intermediate care home
6. Community center
7. Child day care up to 3 as home occupation
8. Family child day care up to 8 in home
9. School public or private
10. Public safety facilities (fire, police, rescue, ambulance)
11. Cemetery
12. Public parks, swimming pools, tennis and golf courses
13. Religious institutions
14. Minor utility—elevated water tank
15. Private golf course or country club
16. Bed and breakfast
17. Agriculture or silvi-culture

## **PROPOSED ZONING**

The proposed zoning district is **Residential 9 Conditional Use District 181 (R-9 C181)**. The R-9 district is primarily a residential district allowing single-family lots of at least 9,000 square feet (0.21 acres).

**The following is a list of permitted uses in the R-9 district.**

1. Single-family site built and modular homes
2. Residential cluster
3. Family Care Home
4. Group Care Home
5. Intermediate Care Home
6. Community Center
7. In-home Child Day care (up to 3 children)
8. Family Day care (up to 8 in home)
9. School
10. Public safety: fire, police, rescue squad, ambulance
11. Cemetery
12. Public Parks, swimming pool, tennis courts, golf course
13. Churches, religious institutions
14. Minor utility, elevated water storage tank
15. Private golf course or country club
16. Bed and Breakfast

**The following conditions are proposed.**

1. The development will have no more than 42 single family homes/units.
2. Each house must have at a minimum of 1700 sft. of heated floor space.
3. Each house must have a deck or concrete patio (100 sft. min.).
4. Each House must be constructed of hardiplank, masonry (brick or stone) or vinyl siding (minimum gauge .045).
5. Each house must have a masonry foundation with crawl space (not including the garage) or stem wall slab foundation with a minimum height of 12 inches.
6. *A 15-foot undisturbed buffer will be maintained along the common property line with the Perdue Development. This buffer will begin 30-feet off of the existing W. Garner Road Right-of-way and will run 727-feet along the common property line from this point to the northern most property line of now or formerly Carolyn Hart as shown on Sheet 7 of 7 Buffer Yard Landscape Plan which is included with Preliminary Subdivision Plans.*
7. *A continuous evergreen shrub/tree buffer shall be planted along the common open area in between the Perdue Development and Proposed Lots 27, 28, 37, and 38 as shown on Sheet 7 of 7 Buffer Yard Landscape plan which is included with Preliminary Subdivision Plans.*

**Note:** Conditions 6 and 7 are new based upon meetings with adjacent property owners which were presented at the April 11<sup>th</sup> Planning Commission meeting.

**GARNER ROAD OVERLAY**

This property falls within the **Garner Road Overlay District**. This overlay district establishes additional standards for new commercial development on Garner Road.

The following are prohibited uses within the overlay regardless of zoning.

1. Drive-in movie theaters
2. Adult cabarets and establishments
3. Outside storage of goods not related to sale or use on premises
4. Junkyards, automobile graveyards
5. Commercial greenhouse operations

**SUMMARY OF ZONING REQUEST**

The rezoning site consists of 2 tracts totaling 18 acres. The site has been zoned R-20 since the 1960s. The applicant is requesting a change in development density from R-20 zoning (2.18 units per acre and 20,000 square foot lots) to R-9 (4.84 units per acre and 9,000 square foot lots).

Existing subdivisions in Garner zoned R-9 include: Avery Park, Ashlyn, Foley Station, Northside, Brownstone Village, Southview, The Glens at Bethel, and Sheldon Place.

The applicant originally filed general use rezoning application Z 15-01 last August requesting R-9 zoning. There were neighbor concerns over the uncertainty of the proposed development,

potential traffic, and other impacts to the area. The applicant decided to convert Z 15-01 to a conditional use application to provide more certainty to the community and to hopefully address neighbor concerns.

Conditional use rezoning application CUD Z 16-01 and conditional use subdivision application CUP-SB 16-02 have been filed. Zoning conditions are proposed restricting the maximum number of units to 42. Residential construction standards are also proposed. The subdivision site plan shows 41 single-family lots.

**SURROUNDING ZONING & LAND USE**

North:	MR-1	Residential (Weston Ridge)
South:	SB, I-2, CR	Commercial
East:	R-12, R-20	Residential
West:	R-20	Residential

**NEIGHBORHOOD CHARACTER**

This area of the community is residential on the north side of W Garner Road. Residential densities are mixed with low (R-20), medium (Perdue Street R-12), and higher densities (MR-1 Weston Ridge Subdivision). Non-residential commercial uses are on the south-side of W Garner Road along Vandora Springs Road.

**ZONING HISTORY**

The following is a list of rezoning cases in this area of Garner.

<b>Case</b>	<b>Applicant</b>	<b>Location</b>	<b>Zoning Change</b>
CUD-Z-97-10	Roy Tripp	Near Weston Ridge	MR-1 to MF-1 C74
CUD-Z-00-07	Greens Grill	W Garner Road	CB to SB C103
Z-01-02	Weston Ridge Assoc.	Weston Ridge area	R-20 to MR-1
CUD-Z-06-03	Tony Tate	101 Vandora Springs Rd	CR to I-2 C137
Z-08-01	Ronald Dutton	Vandora Springs Rd	R-20 to SB
Z 15-01	Hopper Communities	Rezoning Site	R-20 to R-9 (Converted to CUD Z 16-01)

## INFRASTRUCTURE

### Water & Sewer Service

The site has access to public water and sewer. Connection will be subject to the Town's 2015 Water Sewer Allocation Policy.

The site plan shows the development will connect to public water on W Garner Road. Sewer connection will be made on Curtiss Drive.

## TRANSPORTATION

The 18-acre rezoning site has approximately 686 feet of road frontage along W Garner Road (SR 1004). W Garner Road is a 2-lane facility with a 60' right-of-way. It is maintained by NC DOT. W Garner Road is classified as a **major thoroughfare** on the *Garner Transportation Plan*. Average daily traffic counts in this area are approximately 11,000 trips per day (2013 AADT). The *Garner Transportation Plan* recommends 3-lanes, which includes a center turn lane. Road improvements, including curb and gutter, are required as part of this proposed development.

The rezoning site also has access to a Town-maintained subdivision street, Curtiss Drive. The development plan (CUP-SB 16-02) shows the proposed subdivision will make a street connection to Curtiss Drive. This street has a 50-foot right of way and stubs-out to the north property line of the rezoning site.

The proposed zoning change from R-20 to R-9 would raise the development intensity on the property. Under the current R-20 zoning, the site could accommodate approximately 20-25 single-family units generating approximately 240 trips per day to and from the site. The proposed subdivision plan (CUP-SB 16-02) shows 41 single-family lots, and it is estimated this would generate approximately 400 trips per day.

## ACCIDENT REPORTS

There have been some questions and concerns about traffic and accidents around the intersection of Vandora Springs Road and W Garner Road. Below are the accidents reports from the Garner PD and NCDOT for this intersection.

### Source: Garner Police Department

- Period January 1, 2010 to December 31, 2014 (5 years)
- 45 accidents at the intersection of Vandora Springs Road and W Garner Road

	<u>INJURY</u>	<u>PROPERTY DAMAGE</u>	<u>Total</u>
<u>Intersection</u>	10	35	45

**Source: NCDOT**

- Period January 1, 2005 to December 31, 2014 (10 years)
- 72 accidents at the intersection of Vandora Springs Road and W Garner Road

	<b><u>INJURY</u></b>	<b><u>PROPERTY DAMAGE</u></b>	<b><u>Total</u></b>
<b><u>Intersection</u></b>	55	17	72

**ENVIRONMENT**

The rezoning site is not within the 100 and 500-year FEMA flood plains.

Topographic data shows that the area drains from W Garner Road to the northeast. There is a 40 to 50-foot elevation drop from the front of the property to the rear of the site. There is about a ½-acre pond on the site as well as several drainage areas or creek beds that are protected by a riparian buffer. These are noted and identified on the development plan.

**STAFF COMMENTARY**

Conformity to Adopted Town Plans

The rezoning site falls within the boundaries of the 2004 *North Garner Plan* and the 2006 *Comprehensive Growth Plan*.

According to the *Town of Garner North Garner Plan*, approximately half of the rezoning site is located within the **High Density** area which is a half-mile radius of the proposed future transit station in the vicinity of Benson Road and W Garner Road. The Plan recommends 10 to 15 units per acre with development to occur in stages. Development would initially occur around the proposed transit station site and expand outward over time. Development at this high density should occur at a point in time when the likelihood of a transit station becomes more certain. Development should also be pedestrian oriented.

The northern half of the rezoning site is within the boundary of the **Medium Density** area on the *North Garner Plan*. Recommended density is 4 to 6 units per acre.

According to the 2006 *Town of Garner Comprehensive Growth Plan*, the rezoning site is located within a **Community Mixed Use Area** around the Community Core at US 70 W and Vandora Springs Road. The Community Core Area is designed to accommodate community-scale retail services needed less frequently than on a daily basis. It is generally characterized as being suitable to act as a hub for a large service area of the community and is typically developed at the intersection of major thoroughfares. The recommended zoning districts for a **Community Mixed Use** area include: NC, O&I, NO, MXD, MF 1, MF2, PUD, and TND. Recommended density is 6 to 10 units per acre.

Also on the 2006 *Town of Garner Comprehensive Growth Plan*, the rezoning site is within a **Neighborhood Primary Residential** area of the Neighborhood Core located to the east at Benson Road and W Garner Road. The recommended zoning districts for this area include: NO, MF 1, R9, R12, PRD, PUD, and TND. Recommended density is 3 to 9 units per acre.

The *North Garner Plan's* recommendations for this area are based around a proposed transit station being in the vicinity of W Garner Road and Benson Road. Due to the uncertainty of this station in the immediate near future, the **Neighborhood Primary Residential** designation, in staff's opinion, is the best fit given the existing development pattern. Should the transit station become more certain in the future, this would trigger the demand for higher density development.

The requested zoning change from Residential 20 (R-20) to Conditional Use Residential 9 (R-9 C181) is consistent with the recommendations of the *Comprehensive Growth Plan* for this area of the community. The proposed R-9 district allows a gross residential density of around 4.84 units per acre. The proposed change is consistent with the **Neighborhood Primary Residential** area and falls within the recommended density of 3 to 9 units per acre. The actual proposed 41-lot subdivision will be at a net density of 2.3 units per acre. Density is slightly less due to the riparian buffers on the site.

## Conditional Use Permit CUP-SB-16-02

### PROJECT DATA:

<b>Acreage:</b>	18.00 acres
<b>Number of Lots:</b>	41
<b>Minimum Lot Size:</b>	9,000 square feet
<b>Parks and Open Space:</b>	Open space requirements have been met. This open space will be owned and maintained by the homeowner's association for the subdivision.  The Parks, Recreation and Cultural Resources Department is recommending a fee-in-lieu of parkland dedication, which is currently \$1,147.00 per dwelling unit.

**Landscape and Buffer Requirements:**

The plan as proposed meets the requirements of the Landscape Ordinance.

Tree cover requirements are met with existing vegetation.

Buffers are not required along the north and west property lines where single family development is adjacent to single family development. The applicant has added a continuous evergreen shrub/tree buffer along a portion of the eastern property line consistent with zoning condition #7.

A 25 foot street buffer has been provided along W. Garner Road.

A protected stream runs through the property and is shown with the required Neuse River buffer. The main road crosses the buffer and will require approval from NCDEQ prior to construction drawing approval.

**Floodplain:**

This site does not contain a FEMA designated floodplain.

**Stormwater Management:**

Please refer to General Comments.

**Fire Protection:**

The Fire Inspector has reviewed the subdivision plan and has approved it for meeting fire protection requirements.

**Water/ Sewer:**

Existing public water and sewer mains will be extended from the north through the site to provide service for the individual parcels and sewer for the land to the west.

Construction drawing approval from the City of Raleigh shall be required prior to final plat recordation.

**Street Access/ Sidewalks:**

The primary subdivision entrance is proposed off W. Garner Road. Secondary access is provided with an extension of Curtis Drive, from the north, to stub out along the west property line in the event that property is redeveloped.

Preliminary comments from NCDOT for the proposed road improvements are needed prior to Town Council review (plans under review at this time).

Sidewalks have been provided as required within the subdivision, including along W. Garner Road.

**General Comments:**

Storm-water management – This project is subject to nitrogen and water quantity requirements. Construction of a wet pond on site will provide treatment for nitrogen and control for the 1, 10 and 25 year storms. A payment to a private mitigation bank will be required.

Mail kiosks – New residential subdivisions are no longer provided door to door mail delivery. The post office is requiring subdivisions to provide centralized kiosks for mail delivery and pick up. The design and locations proposed on this plan have been approved by the Garner Post Master.

**Consistency with Adopted Town Plans and Policies:**

**2006 Comprehensive Growth Plan:** This project is consistent with the Comprehensive Growth Plan.

**2010 Garner Thoroughfare Plan:** This project is consistent with the Transportation Plan (subject to final review by NCDOT).

**Parks & Greenway Plan:** This project, as proposed, is consistent with the Parks and Greenway Plan.

**Unified Development Ordinance Regulations:** This project, as proposed, is consistent with the regulations of the Unified Development Ordinance.

**RECOMMENDATION**

**The Council will need to vote on the rezoning application prior to voting on the conditional use permit application.**

**Rezoning Action**

The Planning Commission and staff find that Rezoning Application CUDZ-16-01 is consistent with the recommendations of the **Comprehensive Growth Plan** for this area of the community. Therefore, staff recommends approval of Rezoning Application CUDZ-16-01 as submitted.

**Note:** **The Council will need to use the attached Rezoning Motion Form as a guide when making a motion on the attached Ordinance regarding this rezoning application.**

### **Conditional Use Permit Action**

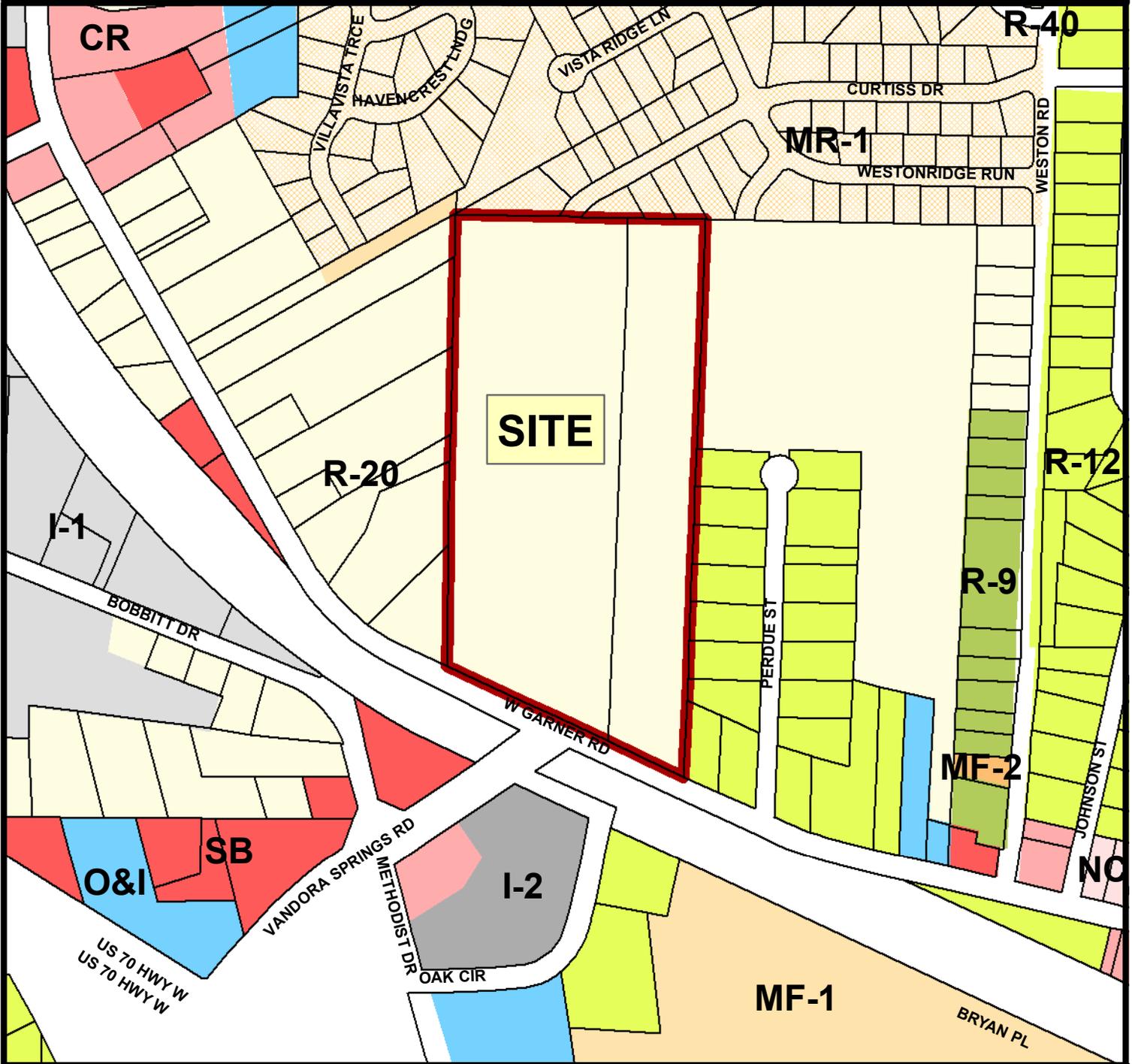
The Planning Commission and staff have reviewed the application and find it to be complete and in compliance with the UDO, therefore we recommend approval of Application CUP-SB-16-02; Kelly's Crossing, with four (4) conditions specific to the project as listed on the attached permit.



**Town of Garner  
Planning Department**

**Conditional Use Applications  
CUD-Z-16-01 & CUP-SB-16-02**

0 250 500  
Feet



OWNER: Rex Kelly  
 APPLICANT: Hopper Communities  
 LOCATION: W Garner Road  
 PARCEL PINS: 1711351432, 1711258325

CURRENT USE: Undeveloped  
 PROPOSED USE: 42 Lot Subdivision  
 CURRENT ZONING: R-20 (Residential)  
 PROPOSED ZONING: R-9 Conditional Use  
 (R-9 C181)  
 ACREAGE: 18

Return to: Stella Gibson  
Town of Garner  
900 7<sup>th</sup> Avenue  
Garner, NC 27529

**ORDINANCE NO. (2016) 3814**

**AN ORDINANCE AMENDING THE TEXT OF THE GARNER UNIFIED DEVELOPMENT ORDINANCE TO CREATE A NEW CONDITIONAL USE ZONING DISTRICT AND TO AMEND THE OFFICIAL ZONING MAP TO APPLY THE NEW ZONING CLASSIFICATION**

WHEREAS, The Town Council has received a petition requesting that a new conditional use zoning district be established and that this new district classification be applied to the applicant's property.

WHEREAS, the Town Council is authorized by the Town Charter to establish conditional use zoning districts:

NOW, THEREFORE, THE TOWN COUNCIL OF THE TOWN OF GARNER ORDAINS:

Section 1. That the Official Zoning Map of the Town of Garner and Extraterritorial Jurisdiction be amended by changing the zoning classification of the property described below from its present zoning to that requested by Hopper Communities in Rezoning Application No. **CUD-Z-16-01 (R-9 C181)**.

Section 2. There is hereby created a new conditional use zoning district, to be known as the Residential 9 Conditional Use District 181 (R-9 **C181**) within this district, all of the regulations that apply to property within the Residential 9 Conditional Use District 181 (**R-9 C181**) zoning district shall be applicable and that all other uses are prohibited except those that are listed as permissible shall require a conditional use permit:

**The following is a list of permitted uses for the proposed R-9 C181 district:**

1. All R-9 uses are permissible.

**The following is a list of site restrictions for the proposed R-9 C181 district:**

1. The development will have no more than 42 single family homes/units.
2. Each house must have at a minimum of 1700 sft. of heated floor space.
3. Each house must have a deck or concrete patio (100 sft. min.).
4. Each House must be constructed of hardiplank, masonry (brick or stone) or vinyl siding (minimum gauge .045).
5. Each house must have a masonry foundation with crawl space (not including the garage) or stem wall slab foundation with a minimum height of 12 inches.
6. A 15-foot undisturbed buffer will be maintained along the common property line with the Perdue Development. This buffer will begin 30-feet off of the existing W. Garner Road Right-of-way and will run 727-feet along the common property line from this point to the northern most property line of now or formerly Carolyn Hart as shown on Sheet 7 of 7 Buffer Yard Landscape Plan which is included with Preliminary Subdivision Plans.

7. A continuous evergreen shrub/tree buffer shall be planted along the common open area in between the Purdue Development and Proposed Lots 27, 28, 37, and 38 as shown on Sheet 7 of 7 Buffer Yard Landscape plan which is included with Preliminary Subdivision Plans.

Section 3. The official Zoning Map of the Town of Garner is amended by changing the zoning classification of the property identified below and as shown on a map in application file:

Owner(s)	Tract No.	Existing Zoning	New Zoning
Hopper Communities (Rex Kelly-owner)	1711351432, 1711258325	Residential 20 (R-20)	Residential 9 Conditional Use (R-9 C181)

Section 4. The Planning Department shall change the Official Zoning Map displayed for the public to reflect this change immediately following adoption of this ordinance. In addition, a copy of this ordinance shall be filed in the Planning Department.

Section 5. All provisions of any town ordinance in conflict with this ordinance are repealed.

Section 6. That the Town Clerk shall cause a duly certified copy of this ordinance to be recorded in the office of the Wake County Register of Deeds.

Section 7. This ordinance shall become effective upon adoption.

Duly adopted this \_\_\_\_ day of May 2016.

\_\_\_\_\_  
MAYOR

ATTEST: \_\_\_\_\_  
TOWN CLERK

**CERTIFICATION OF TOWN CLERK**

I, Stella Gibson, do hereby certify this is a true copy of Ordinance No. (2016) 3814 adopted by the Town Council at their meeting on May 2, 2016. Said Ordinance is recorded in the office of the Town Clerk, Garner Town Hall, Garner, North Carolina.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of the Town of Garner, this 2<sup>nd</sup> day of May, 2016.

\_\_\_\_\_  
Stella Gibson, Town Clerk

# REZONING ACTION MOTION WORKSHEET

Application #: CUD-Z-16-01 from R-20 to R-9 C181

Applicant: Hopper Communities

## MOTION TO APPROVE REZONING REQUEST:

I move that the Council find the following regarding rezoning application CUD-Z-16-01

reasonably complies with the Town's Comprehensive Growth Plan (OR)

does not comply with the Comprehensive Growth Plan;

(AND) that the zoning application CUD-Z-16-01 is reasonable and in the public interest because it will likely (use as many of the following as are appropriate):

allow the development of an appropriate density of housing in the area in which it is located;

allow appropriate types of business at the described location which will provide opportunities for access to goods and/or services useful to the surrounding area;

allow appropriate types of business at the described location which will provide employment opportunities for citizens;

allow the types of businesses at the described location which will enhance the Town's economic development,

allow the types of businesses at the described location which will likely enhance the Town's tax base,

\_\_\_\_\_

\_\_\_\_\_

(AND) I therefore move that the Council

accept the recommendation of the Planning Commission and adopt Ordinance No. \_\_\_\_\_ approving rezoning request number CUD-Z-16-01.

(OR)

adopt Ordinance No. \_\_\_\_\_ approving rezoning request number Z \_\_\_\_\_

**MOTION TO DENY REZONING REQUEST:**

I move that the Council

- deny rezoning request number CUD-Z-16-01; OR
- deny rezoning request number Z-\_\_\_\_\_;

(AND) reasons for denying the Application include that it is not reasonable and is not in the public interest, because (use as many of the following as are appropriate):

- it does not comply with the comprehensive long range plan,
- would allow the development of an excessive density of housing for the area in which it is located;
- it would likely lead to an unacceptable additional level of traffic in the area in which it is located;
- it would allow types of business at the described location which will not be appropriate for the area in which it is located,
- \_\_\_\_\_
- \_\_\_\_\_

**TOWN OF GARNER  
CUP-SB-16-02  
CONDITIONAL USE PERMIT**

<b>APPLICANT</b>	Hopper Communities Attn: Bill Harrell 232 Paraggi Court Clayton, NC 27527
<b>LOCATION</b>	West Garner Road
<b>USE</b>	Residential Subdivision
<b>DATE ISSUED</b>	May 2, 2016

**I. COMPLETENESS OF APPLICATION**

The application is complete.

**II. COMPLIANCE WITH ORDINANCE REQUIREMENTS**

The application complies with all applicable requirements of the Unified Development Ordinance.

**III. GRANTING THE APPLICATION**

The application is granted, subject to the following conditions:

- 1) The applicant shall complete the development strictly in accordance with the plans submitted to and approved by this Town Council, a copy of which is filed in the Town Hall. Any deviations from or changes in these plans must be pointed out specifically to the administrator in writing and specific written approval obtained as provided in the Unified Development Ordinance.
- 2) If any of the conditions affixed hereto or any part thereof shall be held invalid or void, then this permit shall be void and of no effect.
- 3) All applicable permit approvals shall be obtained by the applicant.

**IV. SPECIFIC TO THE PROJECT**

- 1) Prior to approval of construction drawings, written documentation of approval from NCDEQ for road crossing Neuse River buffer shall be received.
- 2) Documentation establishing a Homeowner's Association and Restrictive Covenants shall be submitted to the Town of Garner Planning Department prior to first final plat recordation.
- 3) A fee-in-lieu of parkland dedication shall be paid to the Town of Garner prior to issuance of each building permit.
- 4) The applicant shall be responsible for roadway and traffic signal improvements as required by the NC Department of Transportation.

# MEMORANDUM

**To:** Mr. Bill Harrell  
Hopper Communities, Inc.

**From:** Mike Surasky, P.E., PTOE

**Date:** April 5, 2016

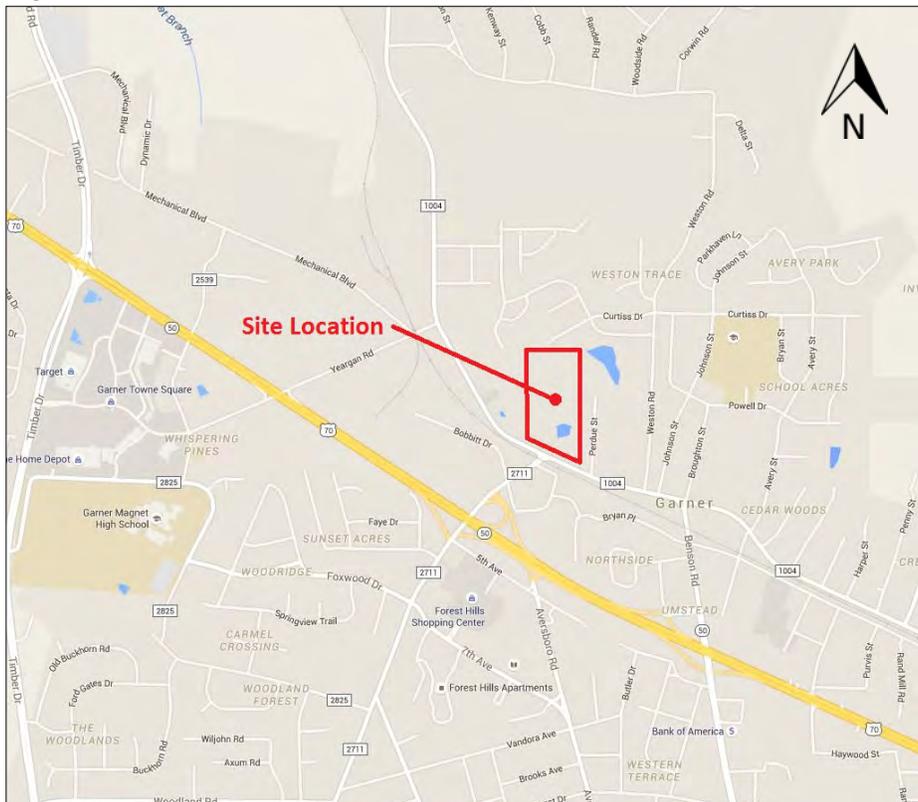
**Subject:** Garner Road Rezoning Traffic Study

## Introduction

The purpose of this technical memorandum is to provide engineering analysis consisting of trip generation, traffic safety evaluation and related discussion as required for the Garner Road Development’s rezoning application.

The 18-acre site is located on the north side of the intersection of the Garner Road (SR 1004) at Vandora Springs Road (SR 2713) intersection and is shown in Figure 1.

*Figure 1: Site Location*



Garner Road is classified by the North Carolina Department of Transportation (NCDOT) as a major collector near the site. NCDOT also reports the Average Annual Daily Traffic (AADT) along Garner Road near the site as being 11,000 vehicles per day (vpd) in 2013.

Vandora Springs Road is classified by NCDOT as a major collector near the site. NCDOT also reports the AADT along Vandora Springs Road as being 10,000 vpd in 2013.

**Land Use**

The 2004 North Garner Plan calls for high density development for this site. According to the plan, a maximum average density of 10 to 15 units per acre is recommended in this area.

What is being proposed is a single-family home development consisting of 42 lots across the 18-acre site. This equates to a density of 2.33 lots per acre or 0.43 acres per lot. Table 1 compares the discussed land uses and the permitted number of lots in each of the development scenarios.

*Table 1: Zoning and Density Comparison*

Land Use Scenario	Units/Acre	Units
High Density Residential*	10-15	180-270
Proposed	2.33	42

\*North Garner Plan: [www.garnernc.gov/Publications/Planning/NorthGarnerPlanFinal.pdf](http://www.garnernc.gov/Publications/Planning/NorthGarnerPlanFinal.pdf)

**Trip Generation**

Estimating the vehicular trips to and from a future development are a critical step in the development decision-making process. This estimated new demand on the transportation system caused by a new development is referred to as trip generation.

The national standard for this estimation is referred to as the *Institute of Transportation Engineers Trip Generation Manual*. The most recent edition, the 9<sup>th</sup>, was published in 2012. It provides the methodology, rates, and equations for numerous land use and building types. Taking this a step further, NCDOT publishes recommendations on using certain aspects of the methodologies presented in the *Trip Generation Manual*; which can be found in their *Rate versus Equation spreadsheet* published on July 1<sup>st</sup>, 2015. It should be noted that all of the trip generation results presented herein conform to the policies and methodologies presented in both the *ITE Trip Generation Manual* as well as the *NCDOT Rate versus Equation spreadsheet*.

Beyond the use presented herein, trip generation results are commonly used in many analysis capacities, including those to:

- Determine or evaluate short or long-term capital improvement projects,
- Predict the effects of congestion management policies such as congestion pricing and travel demand management (TDM) programs,
- Determine site vehicular access needs, and
- Assess impact fees on new development to fund infrastructure improvements.

The results of applying trip generation methodology to the two land use scenarios are listed in Table 2. Note that to be conservative, 10 units per acre was used to determine the total number of units for the high density residential land use scenario.

*Table 2: Trip Generation Results*

Land Use Scenario		High Density Residential	Proposed
ITE Land Use Code		220	210
Units		180 Apartments	42 Single-Family Homes
Weekday	Enter	607	200
	Exit	607	200
	<i>Total</i>	<i>1,214</i>	<i>400</i>
AM Peak Hour	Enter	18	8
	Exit	74	24
	Total	92	32
PM Peak Hour	Enter	76	26
	Exit	41	16
	<i>Total</i>	<i>117</i>	<i>42</i>

**Anticipated Traffic Increases**

From the trip generation results, we are able to add the daily trips generated by the two land use scenarios onto the AADT of Garner and Vandora Springs Roads. It should be noted that this calculation assumes all of the traffic exits the proposed development and uses both Garner and Vandora Springs Roads. This is a conservative assumption considering that, as was discussed previously, the development is planned to have up to four entrances. Table 3 lists the increase in daily traffic for both Garner Road and Vandora Springs Road across the two land use scenarios as compared to 2013 traffic reported by NCDOT.

*Table 3: Anticipated Traffic Increases*

<b>Land Use Scenario</b>	<b>Garner Road (% increase)</b>	<b>Vandora Springs Road (% increase)</b>
High Density Residential	11.0%	12.1%
Proposed	3.6%	4.0%

As shown in the above table, when compared to the traffic increases which would be seen under the high density residential land use scenario, the traffic generated by the proposed development would have a much lesser impact on the nearby roadway network.

**Hourly Traffic Volume Development**

It has been requested that capacity analysis be performed to quantify the proposed development’s potential impact on the operations of the Garner Road at Vandora Springs Road intersection. To do so, turning movement counts were collected by National Data & Surveying Services on Tuesday, February 2, 2016 from 7:00 to 9:00 AM and 4:00 to 6:00 PM. These volumes are illustrated in Figure 2 and Figure 3.

These volumes were then grown at a rate of three percent (3%) per year from what is referred to as the existing year of 2016 to the year in which the development would be fully completed; which is envisioned to be 2018. These increases are referred to as historical growth traffic and is defined as the increase in existing traffic volumes due to general usage increases and non-specific growth in the study area. These volumes are illustrated in Figure 2 and Figure 3. These volumes are added to the existing traffic (i.e. counted volumes) to obtain the 2018 No-Build traffic volumes. The No-Build volumes represent the projected traffic at the intersection in the build-out year without the proposed development traffic. The 2018 No-Build traffic volumes are shown in Figure 2 and Figure 3.

Figure 2: AM Peak Hour No-Build Traffic Volume Development

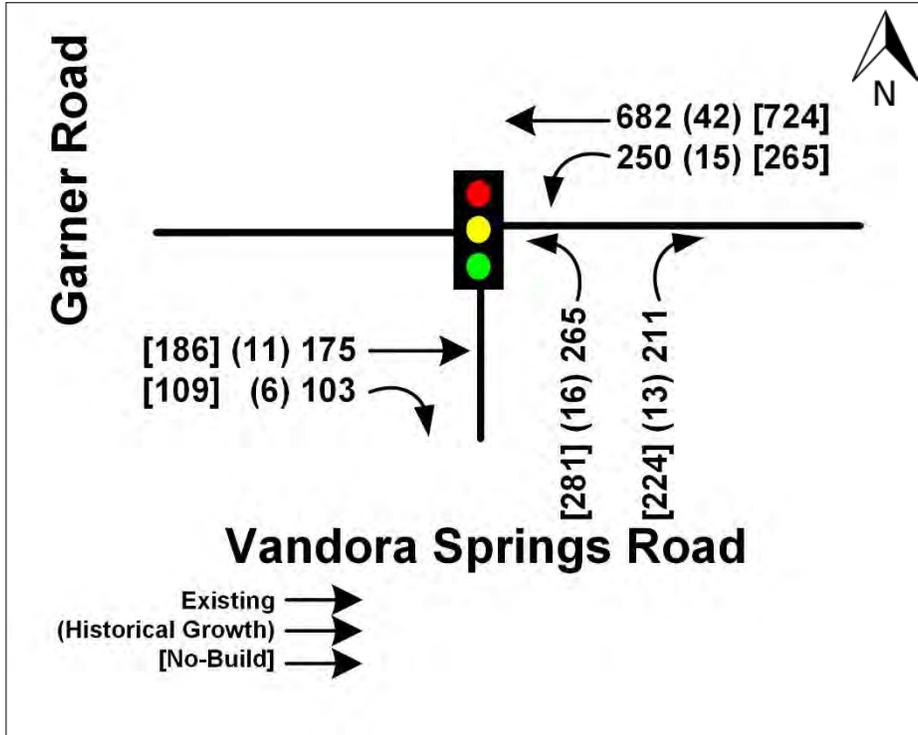
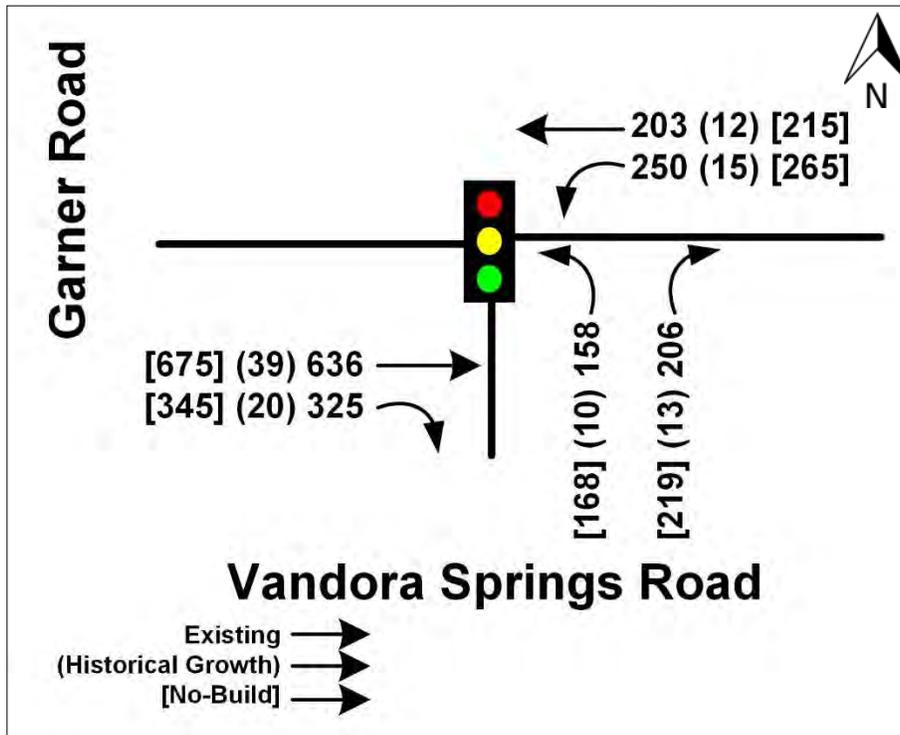
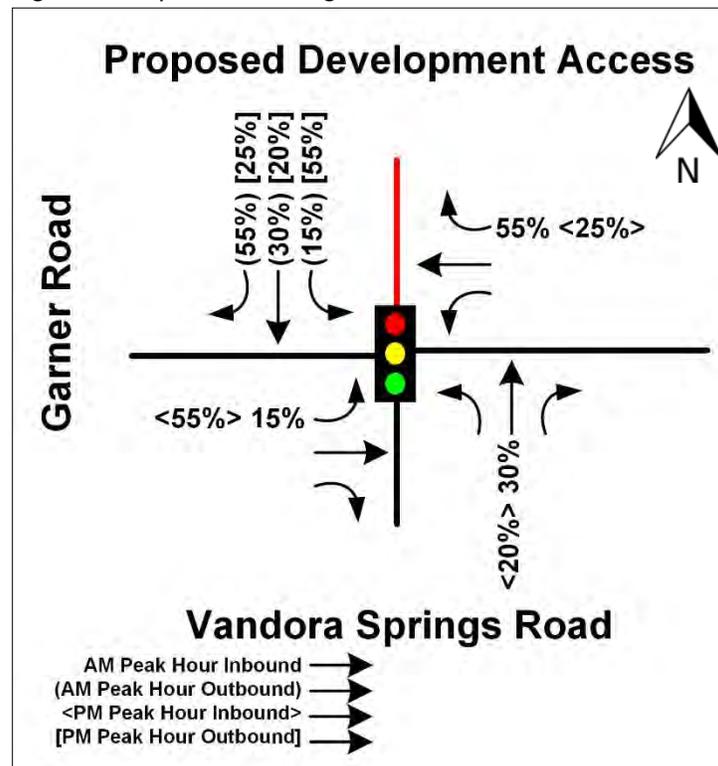


Figure 3: PM Peak Hour No-Build Traffic Volume Development



The proposed development traffic was generated as discussed previously, distributed and assigned to the study intersection. Trip distribution percentages are shown in Figure 4. It should be noted that to model the highly directional volumes along Garner Road in the AM and PM peak hours, separate trip distributions were developed based upon the counted traffic volumes. That is, trip distribution percentages vary between the AM and PM peak hours as shown in Figure 4. Traffic volumes attributed to the proposed development can be found in Figure 5 and Figure 6.

Figure 4: Trip Percent Assignment



It is envisioned that the creation of a southbound approach to the intersection of Garner Road at Vandora Springs Road would cause a portion of the traffic to/from the Weston Ridge and Weston Trace subdivisions to enter/exit from the study intersection. It was estimated that 50 of the single family homes from both neighborhoods would use the new connection to Garner Road/Vandora Springs Road. These trips were generated via the methodology outlined in the Trip Generation Manual as discussed previously for 50 single family homes. The resultant trip generation yields 38 trips (10 in / 28 out) in the AM peak hour and 50 trips (32 in / 18 out) in the PM peak hour. These traffic volumes were distributed and assigned in the same manner as the proposed development traffic discussed previously.

As the Weston Ridge and Weston Trace subdivisions are existing developments, their traffic is currently traveling on the existing roadway network. As such, a proper accounting of the development's traffic should include both additions of traffic onto movements and the subtraction of traffic from previously used movements at the study intersection. To make these adjustments it was assumed that half of the

traffic was previously using Willow Vista Drive and the other half was using Weston Road. Using that assumption, traffic was subtracted from the eastbound through, westbound through, northbound left and northbound right movements to properly account for the redistribution of trips from the two existing subdivisions. These traffic volumes are illustrated in Figure 5 and Figure 6.

The 2018 Build-out traffic volumes include the 2018 No-Build traffic, the proposed development traffic, and the adjacent neighborhood traffic. The AM and PM peak hour 2018 Build traffic volumes are shown in Figure 5 and Figure 6.

Figure 5: AM Peak Hour Build Traffic Volume Development

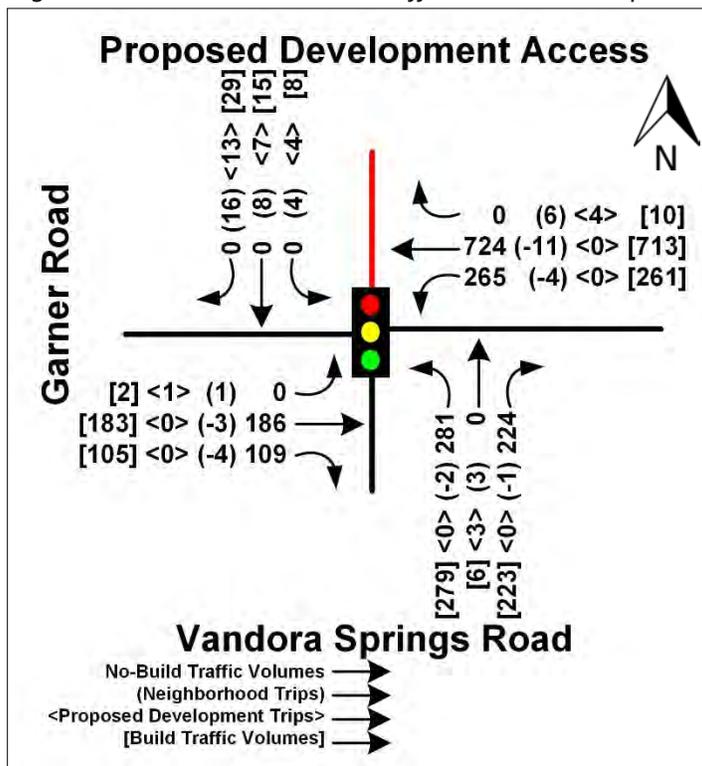
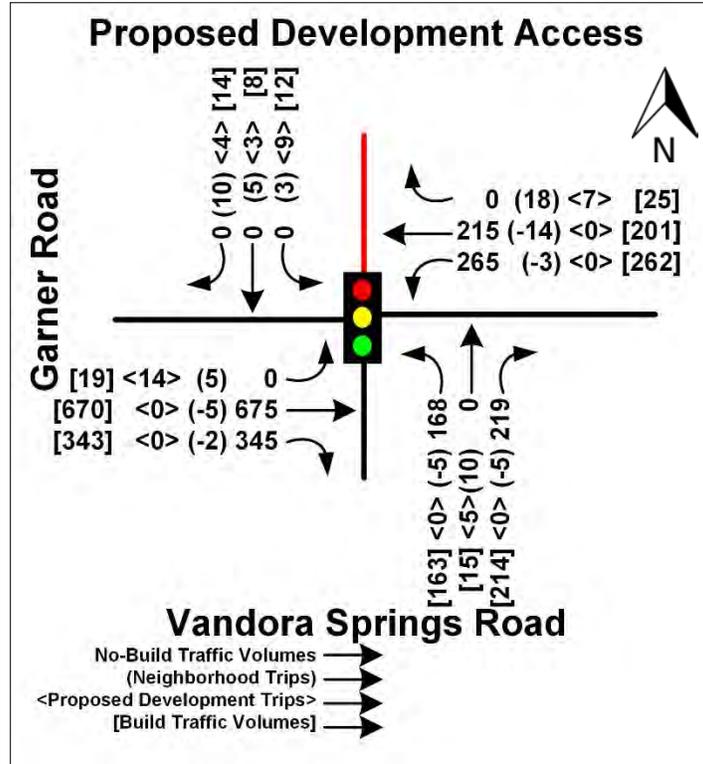


Figure 6: PM Peak Hour Build Traffic Volume Development



It should be noted that this report considers the impacts to the intersection of Garner Road at Vandora Springs Road. It can be postulated that the redistribution of traffic from the Weston Ridge and Weston Trace subdivisions would have a positive impact on adjacent intersections. As traffic volumes are removed from intersections, level of service would improve. Also, as the traffic volumes are accessing Garner Road and/or Vandora Springs Road under the control of a traffic signal as opposed to an unsignalized intersection, it can also be theorized that traffic safety would improve.

Traffic volume calculations are included in the appendix.

## **Capacity Analysis**

The Highway Capacity Manual defines capacity as the maximum suitable flow rate at which vehicles reasonably can be expected to traverse a point during a specified time period. Capacity uses the measure of efficiency, Level-of-Service (LOS), to describe the traffic performance at intersections. LOS is defined for the overall intersection delay for signalized intersections. An acceptable LOS for a signalized intersection is considered to be LOS D or better (i.e. A, B, C or D).

The procedures outlined in the Highway Capacity Manual, 2010 Update were used as guidelines for the analysis of the study intersection. This manual provides procedures for the analysis of both signalized and unsignalized intersections. LOS categories range from LOS "A" (best) to "F" (worst) as shown in Table 4.

*Table 4: Level of Service Criteria*

Level of Service	Signalized Intersection Control Delay (seconds/vehicle)	Intersection LOS Description
A	≤ 10.0	Free flow, insignificant delays
B	10.1-20.0	Stable operation, minimal delays
C	20.1-35.0	Stable operation, acceptable delays
D	35.1-55.0	Restricted flow, common delays
E	55.1-80.0	Maximum capacity, extended delays. Volumes at or near capacity. Long queues form upstream from intersection.
F	> 80.0	Forced flow, excessive delays. Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections.

The LOS analysis was completed through the use of Synchro, version 9.1. The software package categorizes the LOS based on HCM methodology and criteria. According to industry standards, any signalized intersection is considered acceptable if the average delay is at LOS D or better with the LOS A representing little or no delay. Any signalized intersection or approach with a LOS of E or F is considered substandard and may need solutions to improve the operational performance.

Table 5 lists the LOS results from the Synchro capacity analysis across the four analysis scenarios.

*Table 5: Capacity Analysis Summary*

Approach	Time Period	2016 Existing		2018 No-Build		2018 Build	
		LOS	Delay*	LOS	Delay*	LOS	Delay*
Eastbound Garner Road Approach	AM	B	15.7	B	16.5	C	20.6
	PM	C	23.3	C	27.5	D	36.5
Westbound Garner Road Approach	AM	B	12.3	B	13.7	C	27.5
	PM	B	11.2	B	18.3	C	24.7
Northbound Vandora Springs Road Approach	AM	C	34.0	C	34.5	D	54.3
	PM	C	32.8	C	32.5	E	60.6
Southbound Proposed Approach	AM					D	53.3
	PM					D	52.5
Overall	AM	B	19.8	C	20.8	D	35.5
	PM	C	22.6	C	26.5	D	39.0

\*delay is measured in seconds per vehicle

The results of the analyses show that the intersection can accommodate the addition of the southbound approach and operate in an acceptable manner with the recommended improvements in place. These modifications to the study intersection are detailed in the recommendations section. Traffic signal plans, timing data and the Synchro printouts are included in the appendix.

### **Crash Summary**

Ten years of crash data from January 1<sup>st</sup>, 2005 to December 31<sup>st</sup>, 2014 was obtained from the NCDOT Traffic Safety Unit. The intersection analysis report provided was centered on the Garner Road at Vandora Springs Road intersection. The y-line of 150 feet on each approach includes the at-grade railroad crossing on Vandora Springs Road (735324J). The report was initially requested in 2015 by Drew Thomas, the Data and Analysis & Inventory Manager of the NCDOT Rail Division.

A total of 72 crashes were reported during the study period. This results in a total crash rate of 123.22 crashes per 100 million vehicles entered. With regard to severity, one fatal crash occurred in October of 2013 where a vehicle ran-off the road. No class A injuries

*Figure 7: Crash Severity*

were reported, while 4 class B injuries and 24 class C injuries were reported. Crash severity is illustrated in Figure 7.

The most prevalent crash type was left-turn, same roadway. As this is a three-legged intersection, the only two conflicting movements which would produce this crash type is the westbound left-turn conflicting with the eastbound through movement on Garner Road. This crash type represented 23 out of the 72 crashes or approximately 32% of all crashes at the intersection. The second-most prevalent crash type were rear-end crashes which represented 20 out of the 72 or approximately 28 percent. Crash types are shown in Figure 8.

*Figure 8: Crash Types*

It should be noted that through the majority of the crash evaluation timeframe, the westbound left-turn was controlled by a five-section traffic signal head. However, this head was replaced by a four-section traffic signal head within the last three years. As of the writing of this report, there is insufficient evidence to determine whether or not this improvement has a reduced left-turn, same roadway crashes. However, changing from a five-section head with protected/permissive left-turn to a four-section with flashing yellow arrow protected/permissive left-turn has been shown to reduce left-turn crashes by 16.2 percent across all crash severities<sup>1</sup>.

While the one fatal crash was classified as a Ran Off Road – Right crash, further investigation into Federal Rail Administration (FRA) records revealed that the crash involved an Amtrak passenger train. This crash report is also included in the appendix. FRA records do not indicate any other crashes

involving trains or railroad equipment at the crossing during the January 1<sup>st</sup>, 2005 to December 31<sup>st</sup>, 2014 timeframe.

### **Recommendations**

Based on the findings of this study, specific improvements have been identified and should be completed as part of the proposed development. The NCDOT Policy on Street and Driveway Access to North Carolina Highways manual was consulted to determine the appropriate storage for the recommended auxiliary lanes; if warranted.

### **Garner Road at Vandora Springs Road / Proposed Development Access**

- Construct the southbound approach as one (1) ingress lane and two (2) egress lanes. The two egress lanes consisting of a shared thru/right-turn lane and an exclusive left-turn lane. The exclusive left-turn lane will be constructed with 50 feet of full-width storage and appropriate taper.
- Construct an exclusive left-turn lane with 50 feet of full-width storage and appropriate taper on eastbound Garner Road.
- Construct an exclusive right-turn lane with 50 feet of full-width storage and appropriate taper on westbound Garner Road.
- Construct an exclusive northbound thru lane with 25 feet of full-width storage and appropriate taper on northbound Vandora Springs Road
- The above recommendations will require modification of the traffic signal at the intersection of Garner Road at Vandora Springs Road.

The recommended improvements are shown in Figure 9.

*Figure 9: Recommended Improvements*



## **References**

<sup>1</sup>Simpson, C.L. and S.A. Troy. "Safety Effectiveness of Flashing Yellow Arrow: Evaluation of 222 Signalized Intersections in North Carolina". Presented at the 94th Annual Meeting of the Transportation Research Board, Paper No. 15-1593, Washington, D.C., (2015).

**Appendix**

**Traffic Counts**

Project ID: 16-9050-001  
 Location: Vandora Springs Rd & W Garner Rd  
 City: Garner

Day: Tuesday  
 Date: 2/2/2016

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Vandora Springs Rd Northbound					Vandora Springs Rd Southbound					W Garner Rd Eastbound					W Garner Rd Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
7:00 AM	59	0	35	0	94	0	0	0	0	0	0	23	18	0	41	46	164	0	0	210	345
7:15 AM	70	0	43	0	113	0	0	0	0	0	0	50	29	0	79	49	178	0	0	227	419
7:30 AM	64	0	37	0	101	0	0	0	0	0	0	51	17	0	68	42	162	0	0	204	373
7:45 AM	56	0	50	0	106	0	0	0	0	0	0	39	29	0	68	62	192	0	0	254	428
Total	249	0	165	0	414	0	0	0	0	0	0	163	93	0	256	199	696	0	0	895	1565
8:00 AM	75	0	81	0	156	0	0	0	0	0	0	35	28	0	63	97	150	0	0	247	466
8:15 AM	50	0	58	0	108	0	0	0	0	0	0	38	18	0	56	78	115	0	0	193	357
8:30 AM	38	0	42	0	80	0	0	0	0	0	0	43	35	0	78	47	78	0	0	125	283
8:45 AM	40	0	41	0	81	0	0	0	0	0	0	49	30	0	79	49	97	0	0	146	306
Total	203	0	222	0	425	0	0	0	0	0	0	165	111	0	276	271	440	0	0	711	1412
***BREAK***																					
4:00 PM	38	0	39	0	77	0	0	0	0	0	0	124	66	0	190	51	64	0	0	115	382
4:15 PM	52	0	49	0	101	0	0	0	0	0	0	108	76	0	184	70	65	0	0	135	420
4:30 PM	41	0	56	0	97	0	0	0	0	0	0	131	61	0	192	71	56	0	0	127	416
4:45 PM	33	0	50	0	83	0	0	0	0	0	0	142	71	0	213	60	52	0	0	112	408
Total	164	0	194	0	358	0	0	0	0	0	0	505	274	0	779	252	237	0	0	489	1626
5:00 PM	40	0	43	0	83	0	0	0	0	0	0	167	82	0	249	69	40	0	0	109	441
5:15 PM	38	0	47	0	85	0	0	0	0	0	0	184	95	0	279	66	63	0	0	129	493
5:30 PM	47	0	66	0	113	0	0	0	0	0	0	143	77	0	220	55	48	0	0	103	436
5:45 PM	35	0	50	0	85	0	0	0	0	0	0	141	38	0	179	64	55	0	0	119	383
Total	160	0	206	0	366	0	0	0	0	0	0	635	292	0	927	254	206	0	0	460	1753
Grand Total	776	0	787	0	1563	0	0	0	0	0	0	1468	770	0	2238	976	1579	0	0	2555	6356
Apprch %	49.6	0.0	50.4	0.0		0.0	0.0	0.0	0.0		0.0	65.6	34.4	0.0		38.2	61.8	0.0	0.0		
Total %	12.2	0.0	12.4	0.0	24.6	0.0	0.0	0.0	0.0	0.0	0.0	23.1	12.1	0.0	35.2	15.4	24.8	0.0	0.0	40.2	
Cars, PU, Vans	776	0	787	0	1563	0	0	0	0	0	0	1468	770	0	2238	976	1579	0	0	2555	6356
% Cars, PU, Vans	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Project ID: 16-9050-001  
 Location: Vandora Springs Rd & W Garner  
 City: Garner

## PEAK HOURS

Day: Tuesday  
 Date: 2/2/2016

**AM**

Start Time	Vandora Springs Rd Northbound				Vandora Springs Rd Southbound				W Garner Rd Eastbound				W Garner Rd Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
7:15 AM	70	0	43	113	0	0	0	0	0	50	29	79	49	178	0	227	419
7:30 AM	64	0	37	101	0	0	0	0	0	51	17	68	42	162	0	204	373
7:45 AM	56	0	50	106	0	0	0	0	0	39	29	68	62	192	0	254	428
8:00 AM	75	0	81	156	0	0	0	0	0	35	28	63	97	150	0	247	466
Total Volume	265	0	211	476	0	0	0	0	0	175	103	278	250	682	0	932	1686
% App. Total	55.7	0.0	44.3	100	0.0	0.0	0.0	0	0.0	62.9	37.1	100	26.8	73.2	0.0	100	
PHF	0.763				0.000				0.880				0.917				
Cars, PU, Vans	265	0	211	476	0	0	0	0	0	175	103	278	250	682	0	932	1686
% Cars, PU, Vans	100.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**PM**

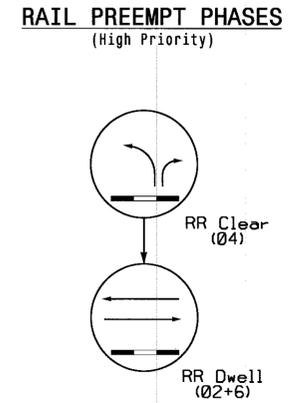
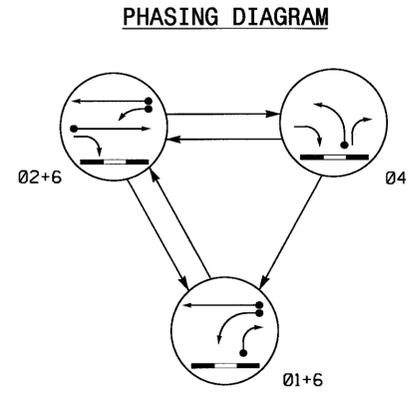
Start Time	Vandora Springs Rd Northbound				Vandora Springs Rd Southbound				W Garner Rd Eastbound				W Garner Rd Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
4:45 PM	33	0	50	83	0	0	0	0	0	142	71	213	60	52	0	112	408
5:00 PM	40	0	43	83	0	0	0	0	0	167	82	249	69	40	0	109	441
5:15 PM	38	0	47	85	0	0	0	0	0	184	95	279	66	63	0	129	493
5:30 PM	47	0	66	113	0	0	0	0	0	143	77	220	55	48	0	103	436
Total Volume	158	0	206	364	0	0	0	0	0	636	325	961	250	203	0	453	1778
% App. Total	43.4	0.0	56.6	100	0.0	0.0	0.0	0	0.0	66.2	33.8	100	55.2	44.8	0.0	100	
PHF	0.805				0.000				0.861				0.878				
Cars, PU, Vans	158	0	206	364	0	0	0	0	0	636	325	961	250	203	0	453	1778
% Cars, PU, Vans	100.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

## **Traffic Volume Calculations**

**Garner Road Rezoning (Garner, NC)**

	Existing (2016)		Historical Growth		No Build (2018)		Trip Distribution (AM Peak)		Trip Distribution (PM Peak)		Neighborhood Connection Trip Assignment		Site Trip Assignment		Build (2018)	
	AM	PM	AM	PM	AM	PM	Enter	Exit	Enter	Exit	AM	PM	AM	PM	AM	PM
<b>Intersection 1 - NC 55 at TW Alexander Drive</b>																
<b>EBL</b>			0	0	0	0	15%		55%		1	5	1	14	2	19
<b>EBT</b>	175	636	11	39	186	675					-3	-5	0	0	183	670
<b>EBR</b>	103	325	6	20	109	345					-4	-2	0	0	105	343
<b>WBL</b>	250	250	15	15	265	265					-4	-3	0	0	261	262
<b>WBT</b>	682	203	42	12	724	215					-11	-14	0	0	713	201
<b>WBR</b>			0	0	0	0	55%		25%		6	18	4	7	10	25
<b>NBL</b>	265	158	16	10	281	168					-2	-5	0	0	279	163
<b>NBT</b>			0	0	0	0	30%		20%		3	10	3	5	6	15
<b>NBR</b>	211	206	13	13	224	219					-1	-5	0	0	223	214
<b>SBL</b>			0	0	0	0		15%	55%		4	3	4	9	8	12
<b>SBT</b>			0	0	0	0		30%	20%		8	5	7	3	15	8
<b>SBR</b>			0	0	0	0		55%	25%		16	10	13	4	29	14

**Traffic Signal Plans**



### TABLE OF OPERATION

SIGNAL FACE	PHASE					
	01+6	02+6	04	RR CLEAR	RR DWELL	RR DWELL
11	←	←	←	←	←	←
21	R	G	R	R	G	Y
22	R	G	R	R	G	Y
41, 42	R	R	G	G	R	R
43	R	R	G	G	R	R
61, 62	G	G	R	R	G	Y
Sign B	OFF	OFF	OFF	ON	ON	*

\* See Note 11

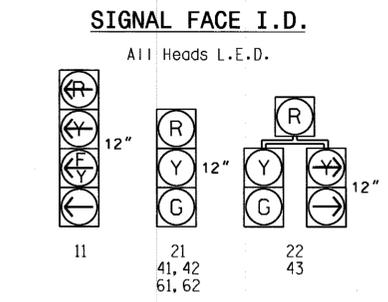
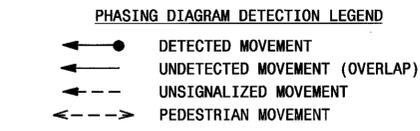
### OASIS 2070 RR PREEMPT

FUNCTION	PRE 1
Interval 1 - Track Clearance Green	14
Interval 1 - Track Clearance Yellow	3.0
Interval 1 - Track Clearance Red	1.9
Interval 2 - Dwell Green	255
Interval 2 - Dwell Yellow	0.0*
Interval 2 - Dwell Red	0.0*
Interval 5 - Exit Green	1
Interval 5 - Yellow	0.0
Interval 5 - Red	0.0
Exit Phase(s)	4
Priority	HIGH
Delay Time	0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	4.0
Red Clear Before Pre	1.8
Dwell Min Time	10
Enable Backup Protection	N
Ped Clear Through Yellow	N
Omit Overlaps	A, B

\* Time defaults to time used for phase during normal operation

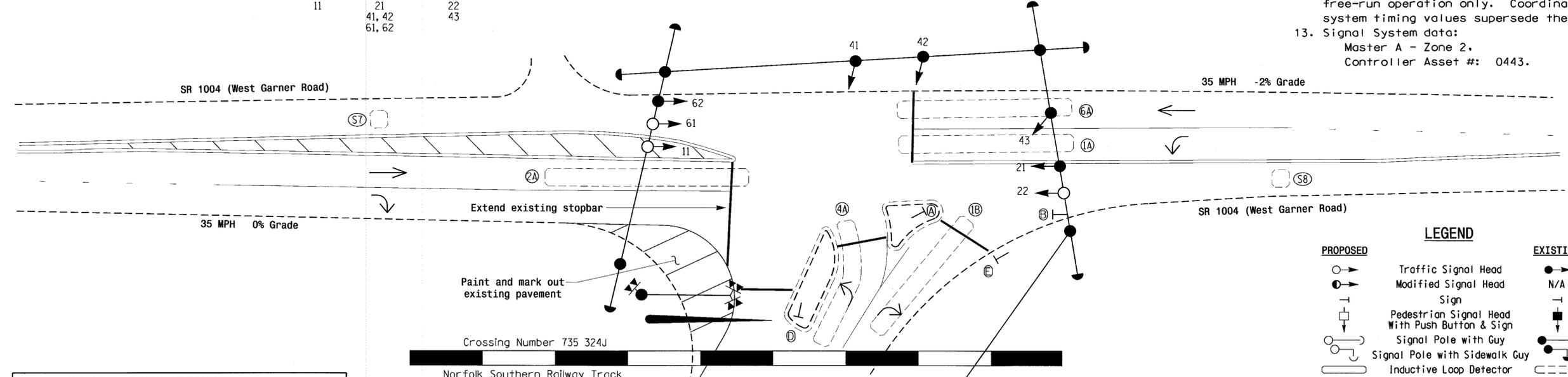
### OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING				SYSTEM LOOP	NEW CARD	
					PHASE	CALLING	EXTENSION	FULL TIME DELAY			
1A	6X60	+5	EXIST	-	1	Y	Y	-	15	-	Y
1B	6X50	+5	EXIST	-	6	Y	Y	-	-	-	Y
2A	6X70	+5	EXIST	-	2	Y	Y	-	-	-	Y
4A	6X45	+5	EXIST	-	4	Y	Y	-	3	-	Y
4B	6X6	75	EXIST	-	4	Y	Y	-	2.0	-	Y
6A	6X60	+5	EXIST	-	6	Y	Y	-	-	-	Y
S7	6X6	+175	EXIST	-	-	-	-	-	-	-	Y
S8	6X6	+190	EXIST	-	-	-	-	-	-	-	Y



This signal was designed for simultaneous preemption.

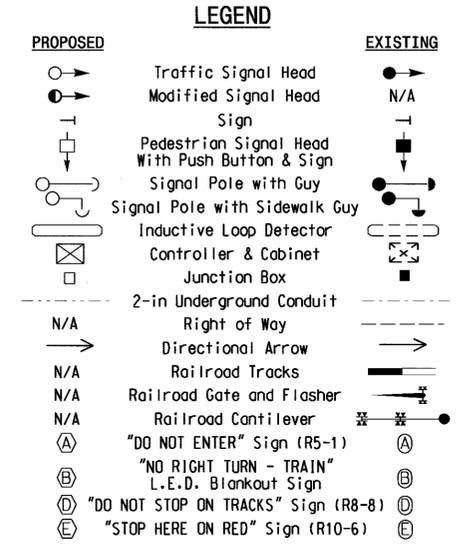
- ### 3 Phase Fully Actuated w/ Railroad Preempt (Garner Signal System)
- #### NOTES
- Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
  - This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
  - Phase 1 may be lagged.
  - Reposition existing signal head numbered 62.
  - Set all detector units to presence mode.
  - In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
  - Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
  - Remove existing "Yield" (R1-2) sign.
  - Remove existing "Left Turn Yield on Green" ball (R10-12) sign.
  - Pavement markings are existing unless otherwise shown.
  - Ensure flashing operation does not alter operation of blankout signs.
  - Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
  - Signal System data:  
Master A - Zone 2.  
Controller Asset #: 0443.



### OASIS 2070 TIMING CHART

FEATURE	PHASE			
	1	2	4	6
Min Green 1 *	7	10	7	10
Extension 1 *	1.0	1.0	1.0	1.0
Max Green 1 *	25	50	25	50
Yellow Clearance	3.0	4.0	3.0	4.0
Red Clearance	1.9	1.8	1.9	1.8
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	-	MIN RECALL	-	MIN RECALL
Vehicle Call Memory	-	-	-	-
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

\* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



### Signal Upgrade

Prepared in the Offices of:

**SR 1004 (West Garner Road) at SR 2713 (Vandora Springs Road)**

Division 5 Wake County Garner

PLAN DATE: March 2014 REVIEWED BY:

PREPARED BY: T. L. Averette REVIEWED BY:

REVISIONS: \_\_\_\_\_

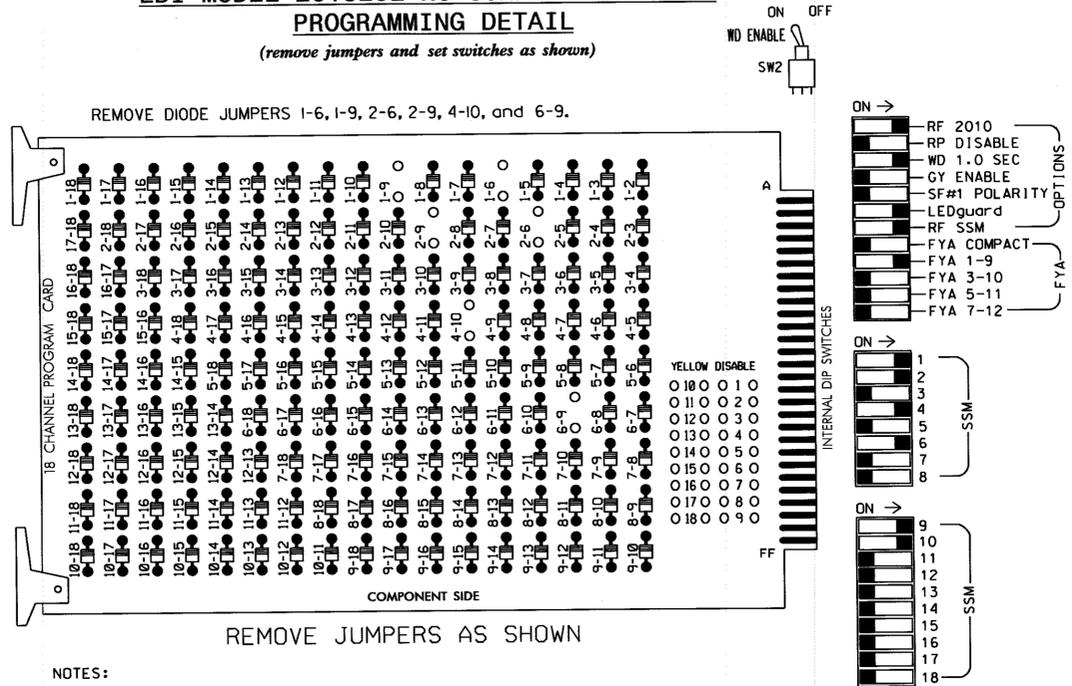
SCALE: 1" = 20'

SIGNATURE: \_\_\_\_\_ DATE: 3/24/14

SIG. INVENTORY NO. 05-0443

25-MAR-2014 09:25 S:\ITS\AS\ITS\_Signal\Signal\Central\Region01\05-0443\050443\_1.qcd\050443.dgn

**EDI MODEL 2018ECL-NC CONFLICT MONITOR  
PROGRAMMING DETAIL**  
(remove jumpers and set switches as shown)



- NOTES:**
- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
  - Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
  - Ensure that Red Enable is active at all times during normal operation.
  - Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

**NOTES**

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Enable Simultaneous Gap-Out for all phases.
- Program phases 2 and 6 for Start Up In Green.
- Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
- The cabinet and controller are part of the Garner Signal System.

**EQUIPMENT INFORMATION**

CONTROLLER.....2070L  
 CABINET.....332 W/ AUX  
 SOFTWARE.....ECONOLITE OASIS V3.03.32E  
 OR LATEST APPROVED VERSION  
 CABINET MOUNT.....BASE  
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE  
 LOAD SWITCHES USED.....S1,S2,S5,S8,AUX S1,AUX S2  
 PHASES USED.....1,2,4,6  
 OVERLAP "A".....1+2  
 OVERLAP "B".....4  
 OVERLAP "C".....NOT USED  
 OVERLAP "D".....NOT USED

**SIGNAL HEAD HOOK-UP CHART**

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	43	21,22	NU	NU	41,42,43	NU	NU	61,62	NU	NU	NU	11	22	NU	NU	NU	NU
RED	*	128				101			134					*				
YELLOW			129			102			135									
GREEN			130			103			136									
RED ARROW													A121					
YELLOW ARROW		126											A122	A125				
FLASHING YELLOW ARROW													A123					
GREEN ARROW	127	127													A126			

NU = Not Used  
 \* Denotes install load resistor. See load resistor installation detail this sheet.  
 \* See pictorial of head wiring in detail below.

**INPUT FILE POSITION LAYOUT**  
(front view)

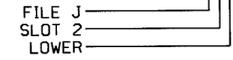
FILE	U	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I"	U	∅ 1	∅ 1	S	S	S	∅ 4	S	S	SYS. DET. S7	S	S	S	S	FS DC ISOLATOR
	L	NOT USED	∅ 2	S	S	S	∅ 4	S	S	SYS. DET. S8	S	S	S	S	ST DC ISOLATOR
"J"	U	S	∅ 6	S	S	S	S	S	S	S	S	S	S	S	PRE1 AC ISOLATOR
	L	S	NOT USED	S	S	S	S	S	S	S	S	S	S	S	NOT USED

EX.: 1A, 2A, ETC. = LOOP NO.'S  
 FS = FLASH SENSE  
 ST = STOP TIME  
 PRE1 = RR PREEMPT  
 \* Wired Input - Do not populate slot with detector card

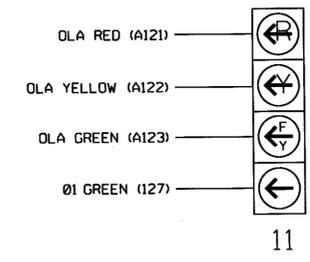
**INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A <sup>1</sup>	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10	26	6	Y	Y			
1B	TB2-5,6	I2U	39	1	2	1	Y	Y			15
2A	TB2-7,8	I2L	43	5	12	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			3
4B	TB4-11,12	I6L	45	7	14	4	Y	Y		2.0	
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
* S7	TB6-9,10	I9U	60	22	11	SYS					
* S8	TB6-11,12	I9L	62	24	13	SYS					

<sup>1</sup>Add jumper from I1-W to J4-W, on rear of input file.  
 INPUT FILE POSITION LEGEND: J2L



**FYA SIGNAL WIRING DETAIL**  
(wire signal head as shown)

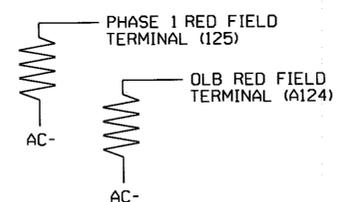


**NOTE**  
 The sequence display for signal head 11 requires special logic programming. See sheet 2 for programming instructions.

**LOAD RESISTOR INSTALLATION DETAIL**  
(install resistors as shown below)

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



Electrical Detail - Sheet 1 of 3

Electrical and Programming Details For: SR 1004 (West Garner Road) at SR 2713 (Vandora Springs Rd)

Division 5 Wake County Garner

Plan Date: March 2014 Reviewed By: JTR

Prepared By: S. Armstrong Reviewed By:

Revisions: INIT. DATE

Signature: John T. Rowe, 3-25-14

Seal: JOHN T. ROWE, P.E. ENGINEER

Sig. Inventory No. 05-0443

**LOGICAL I/O PROCESSOR PROGRAMMING DETAIL  
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE**

*(program controller as shown below)*

- FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS), SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, AND 3.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

LOGICAL I/O COMMAND #1 (+/-COMMAND#)  
IF ACTIVE PHASE #1 IS ON  
AND RED CLEAR ON PHASE #1 IS ON

↓  
SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #50 ON  
SET OUTPUT ASSIGNMENT #51 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

LOGICAL I/O COMMAND #2 (+/-COMMAND#)  
IF ACTIVE PHASE #1 IS ON

↓  
SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #52 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

LOGICAL I/O COMMAND #3 (+/-COMMAND#)  
IF YELLOW ON PHASE #1 IS ON

↓  
SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #51 ON

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

**OUTPUT REFERENCE SCHEDULE**

OUTPUT 50 = Overlap A Red  
OUTPUT 51 = Overlap A Yellow  
OUTPUT 52 = Overlap A Green

**OVERLAP PROGRAMMING DETAIL**

*(program controller as shown below)*

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS  
PHASE: :12345678910111213141516  
VEH OVL PARENTS: :XX  
VEH OVL NOT VEH: :  
VEH OVL NOT PED: :  
VEH OVL GRN EXT: :  
STARTUP COLOR: - RED - YELLOW - GREEN  
FLASH COLORS: - RED - YELLOW X GREEN

← NOTICE GREEN FLASH

PRESS '+' ONCE

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS  
PHASE: :12345678910111213141516  
VEH OVL PARENTS: : X  
VEH OVL NOT VEH: :  
VEH OVL NOT PED: :  
VEH OVL GRN EXT: :  
STARTUP COLOR: - RED - YELLOW - GREEN  
FLASH COLORS: - RED - YELLOW - GREEN

PRESS '+' ONCE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-0443  
DESIGNED: March 2014  
SEALED: 3/24/14  
REVISED: N/A

Electrical Detail - Sheet 2 of 3

	ELECTRICAL AND PROGRAMMING DETAILS FOR:		SR 1004 (West Garner Road) at SR 2713 (Vandora Springs Rd)		
	Prepared in the Offices of:		Division 5 Wake County Garner		
	PLAN DATE: March 2014	REVIEWED BY: JTR	PREPARED BY: S. Armstrong	REVIEWED BY:	
	REVISIONS	INIT.	DATE	SIGNATURE: John T. Rowe DATE: 3-25-14	

SIG. INVENTORY NO. 05-0443

25-MAR-2014 10:38  
S:\p\05\050443\050443\_05\_01a\_xxx.dgn  
S:\p\05\050443\050443\_05\_01a\_xxx.dgn  
S:\p\05\050443\050443\_05\_01a\_xxx.dgn

### RAILROAD PREEMPTION PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions).

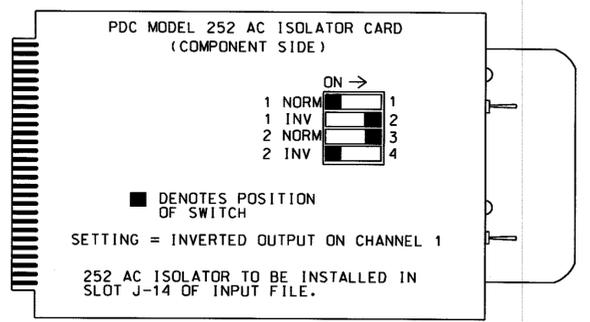
PREEMPTION #1	SETTINGS (NEXT:1-10)							
INTERVAL/TIMING	CLEAR/DWELL PHASES							
GRN	YEL	RED	1	2	3	4	5	6
1	14	3.0	1.9	X				
2	255	0.0	0.0	X	X			
3	0	0.0	0.0					
4	0	0.0	0.0					
5	1	0.0	0.0					

EXIT CALLS	OPTIONS
PRIORITY (Y/N TO SELECT) .....	HIGH
DELAY TIMER (0-255 SEC) .....	0
MIN GREEN BEFORE PRE (0= DEFAULT)...	1
PED CLEAR BEFORE PRE (0= DEFAULT)...	0
YELLOW CLEAR BEFORE PRE (0= DEFAULT)...	4.0
RED CLEAR BEFORE PRE (0= DEFAULT)...	1.8
DWELL MIN TIMER (0-255 SEC) .....	10
DWELL MAX TIMER (0=OFF,1-255MIN) .....	0
DWELL HOLD-OVER TIMER (0-255) .....	0
LATCH CALL? .....	N
LINK TO NEXT PREEMPT? .....	N
ENABLE BACKUP PROTECTION? .....	N
HOLD CLEAR 1 PHASES DURING DELAY? .....	N
FAST GREEN FLASH DWELL PHASES? .....	N
PED CLEARANCE THROUGH YELLOW? .....	N
INHIBIT OVERLAP GREEN EXTENSION? .....	N
SERVICE DURING SOFTWARE FLASH? .....	N
REST IN RED DURING DWELL INTERVAL? .....	N
FLASH DWELL INTERVAL? .....	N
ALLOW PEDS IN DWELL INTERVAL? .....	N
RE-TIME DWELL INTERVAL? .....	N
OVERLAPS:	ABCDEFGHIJKLMNQP
DWELL INT FLASH YELLOW	
OMIT OVERLAPS:	XX

### PREEMPT 1 AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL

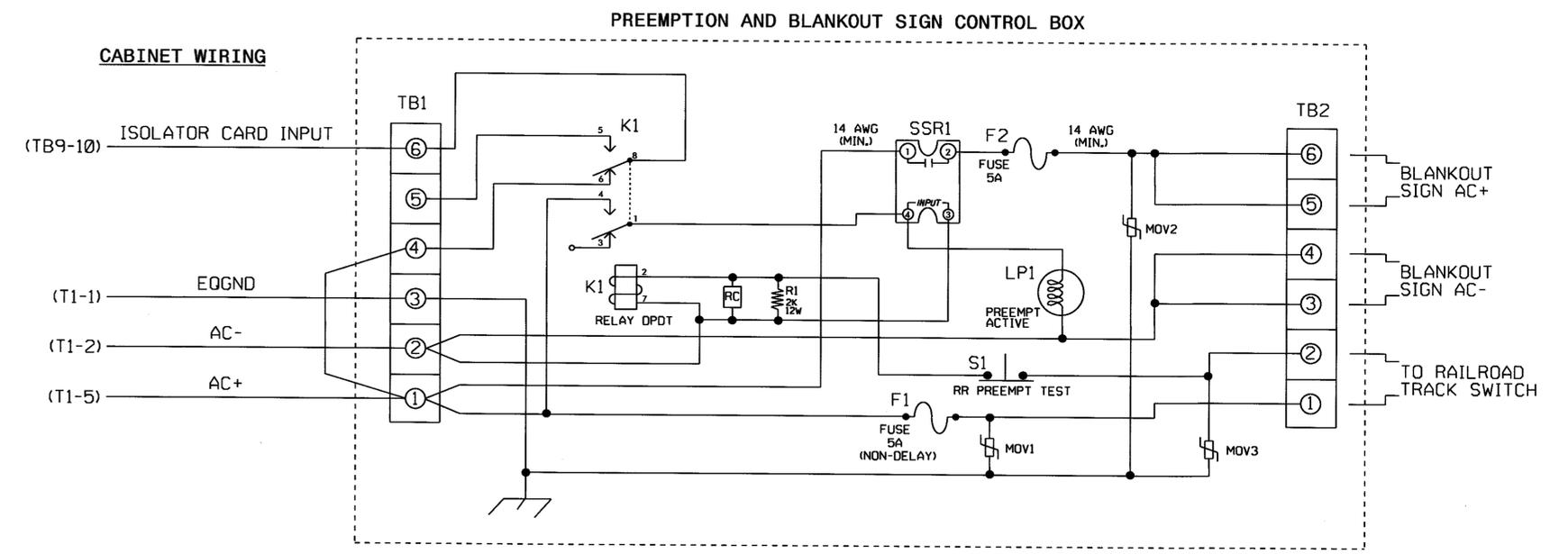
(set DIP switches as shown below)



NOTE: IF ANOTHER MANUFACTURER TYPE OF AC ISOLATOR IS USED, OUTPUT PROGRAMMING IS LIKELY NOT TO EQUATE TO THAT SHOWN ABOVE.

### RAILROAD PREEMPTION WIRING DETAIL

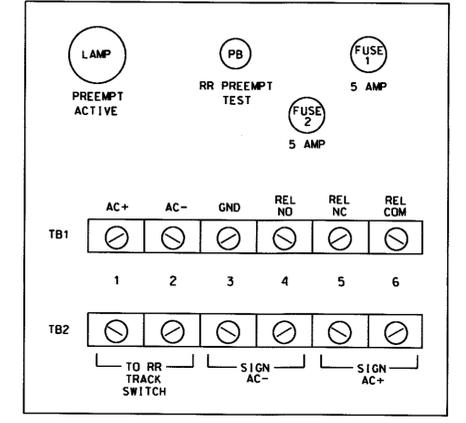
(wire as shown below)



#### NOTES

- Relay K1 is shown in the energized (Preempt not active) normal operation state.
- Relay K1 is a DPDT with 120VAC coil with octal base.
- Relay SSR1 is a SPST (normally open) Solid State Relay with AC input and AC (25 amp) output.
- AC Isolator Card shall activate preemption upon removal of AC+ from the input (as shown above). To accomplish this set invert dip switch on AC Isolator Card.
- IMPORTANT!!** A jumper must be added between input file terminals J14-E and J14-K if not already present. Also, terminal TB9-12 (on input panel) shall be connected to AC neutral (jumper may have to be added).

#### FRONT VIEW



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-0443  
DESIGNED: March 2014  
SEALED: 3/24/14  
REVISED: N/A

Electrical Detail - Sheet 3 of 3

	ELECTRICAL AND PROGRAMMING DETAILS FOR:		SR 1004 (West Garner Road) at SR 2713 (Vandora Springs Rd)		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 008453 JOHN T. ROWE, JR. SIGNATURE: <i>John T. Rowe, Jr.</i> 3-25-14 DATE	
	Division 5	Wake County	Garner	PLAN DATE: March 2014		REVIEWED BY: <i>JTR</i>
	PREPARED BY: S. Armstrong	REVIEWED BY:	REVISIONS	INIT.		DATE
	SIG. INVENTORY NO. 05-0443		750 N. Greenfield Pkwy, Garner, NC 27529			

05-MAR-2014 10:38  
 S:\MTE\SAS\WITS\Sig\01\Sig\01\Workgroups\510\_Mark\res\tr\050443\_sml.ele.xxx.dgn  
 S:\MTE\SAS\WITS\Sig\01\Sig\01\Workgroups\510\_Mark\res\tr\050443\_sml.ele.xxx.dgn

**Traffic Signal Timing Data**

500443 - West Garner Rd @ Vandora Springs Rd  
 3 - Phase Timing 1  
 4/1/2016 1:01 PM

Phase Timing Elements	Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green 1	7	10	0	7	0	10	0	0	0	0	0	0	0	0	0	0
Minimum Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Re-service Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extension 1 (Gap 1)	1.0	1.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Extension 2 (Gap 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Green 1	25	50	0	25	0	50	0	0	0	0	0	0	0	0	0	0
Maximum Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Clearance	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clearance	1.9	1.8	2.0	1.9	2.0	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dont Walk 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dont Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Advance Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk Delay Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alternate Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alternate Dont Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alternate Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max / Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Seconds / Actuation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Variable Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alt Flash Frequency (0-25.5 Hz)	1.0															

500443 - West Garner Rd @ Vandora Springs Rd  
 9 - Coordination Plan 1  
 4/1/2016 1:01 PM

**Coordination Plan #**      1

Cycle length (0-999 sec)	70
Min Transition Cycle (0-999 sec)	60
Max Transition Cycle (0-999 sec)	90

**Offset # or Ring:**

	1	2	3	4
Offsets (0-999 sec)	9	0	0	0
Act Coord Phase Min Green (0-255)	0	0	0	0

**Splits (0-255 sec)**

Phase	1	2	3	4	5	6	7	8
Split	15	25	0	30	0	40	0	0
Phase	9	10	11	12	13	14	15	16
Split	0	0	0	0	0	0	0	0

Verify Plan Data

**Phase/Function Settings:**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phase	2				6											
Float Force Offs																
Hold to Force Off																
Hi Priority Ped																
Dynamic/Backup																

**Options:**

Split/Timing in percent?	N	
*Permissive Mode (0-4)	0	*0 = Auto
Enable Transition Permissive Mode?	N	1 = Open
Adjust Non-Coordinated Splits?	Y	2 = Manual
Cycle Once per Cycle Length?	Y	3 = Window 4 = Walk

**Active Pages:**

Phase Sequence Page (1-12)	1
Phase Timing Page (1-4)	1
Phase Control Page (1-4)	1
OverLap Control Page (1-4)	1
Input Page (1-4)	1
Output Page (1-4)	1

**Global Manual Permissive windows:**

*Applies when "Window" permissive is selected	
Manual Perm 1 End Point (0-255 sec)	0
Manual Perm 2 Start Point (0-255 sec)	0
Manual Perm 2 End Point (0-255 sec)	0

**Manual Permissives by Phase:**

\*Applies when "Manual" permissive is selected

(0-255 sec)	Vehicle		Pedestrian	
	Start	Stop	Start	Stop
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	0	0	0
Phase 9	0	0	0	0
Phase 10	0	0	0	0
Phase 11	0	0	0	0
Phase 12	0	0	0	0
Phase 13	0	0	0	0
Phase 14	0	0	0	0
Phase 15	0	0	0	0
Phase 16	0	0	0	0

500443 - West Garner Rd @ Vandora Springs Rd  
 9 - Coordination Plan 2  
 4/1/2016 1:01 PM

**Coordination Plan # 2**

Cycle length (0-999 sec)	80
Min Transition Cycle (0-999 sec)	70
Max Transition Cycle (0-999 sec)	100

**Offset # or Ring:**

	1	2	3	4
Offsets (0-999 sec)	9	0	0	0
Act Coord Phase Min Green (0-255)	0	0	0	0

**Splits (0-255 sec)**

Phase	1	2	3	4	5	6	7	8
Split	15	35	0	30	0	50	0	0
Phase	9	10	11	12	13	14	15	16
Split	0	0	0	0	0	0	0	0

**Verify Plan Data**

**Phase/Function Settings:**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phase	2					6										
Float Force Offs																
Hold to Force Off																
Hi Priority Ped																
Dynamic/Backup																

**Options:**

Split/Timing in percent?	N	
*Permissive Mode (0-4)	0	*0 = Auto
Enable Transition Permissive Mode?	N	1 = Open
Adjust Non-Coordinated Splits?	Y	2 = Manual
Cycle Once per Cycle Length?	Y	3 = Window
		4 = Walk

**Active Pages:**

Phase Sequence Page (1-12)	1
Phase Timing Page (1-4)	1
Phase Control Page (1-4)	1
OverLap Control Page (1-4)	1
Input Page (1-4)	1
Output Page (1-4)	1

**Global Manual Permissive windows:**

*Applies when "Window" permissive is selected	
Manual Perm 1 End Point (0-255 sec)	0
Manual Perm 2 Start Point (0-255 sec)	0
Manual Perm 2 End Point (0-255 sec)	0

**Manual Permissives by Phase:**

\*Applies when "Manual" permissive is selected

(0-255 sec)	Vehicle		Pedestrian	
	Start	Stop	Start	Stop
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	0	0	0
Phase 9	0	0	0	0
Phase 10	0	0	0	0
Phase 11	0	0	0	0
Phase 12	0	0	0	0
Phase 13	0	0	0	0
Phase 14	0	0	0	0
Phase 15	0	0	0	0
Phase 16	0	0	0	0

500443 - West Garner Rd @ Vandora Springs Rd  
 9 - Coordination Plan 3  
 4/1/2016 1:01 PM

Coordination Plan # 3

Cycle length (0-999 sec)	80
Min Transition Cycle (0-999 sec)	70
Max Transition Cycle (0-999 sec)	100

<b>Offset # or Ring:</b>	1	2	3	4
Offsets (0-999 sec)	60	0	0	0
Act Coord Phase Min Green (0-255)	0	0	0	0

<b>Splits (0-255 sec)</b>								
Phase	1	2	3	4	5	6	7	8
Split	15	40	0	25	0	55	0	0
Phase	9	10	11	12	13	14	15	16
Split	0	0	0	0	0	0	0	0

Verify Plan Data

Phase/Function Settings:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phase		2				6										
Float Force Offs																
Hold to Force Off																
Hi Priority Ped																
Dynamic/Backup																

Options:

Split/Timing in percent?	N	(Y/N)
*Permissive Mode (0-4)	0	*0 = Auto
Enable Transition Permissive Mode?	N	1 = Open
Adjust Non-Coordinated Splits?	Y	2 = Manual
Cycle Once per Cycle Length?	Y	3 = Window
		4 = Walk

Active Pages:

Phase Sequence Page (1-12)	1
Phase Timing Page (1-4)	1
Phase Control Page (1-4)	1
OverLap Control Page (1-4)	1
Input Page (1-4)	1
Output Page (1-4)	1

Global Manual Permissive windows:

*Applies when "Window" permissive is selected	
Manual Perm 1 End Point (0-255 sec)	0
Manual Perm 2 Start Point (0-255 sec)	0
Manual Perm 2 End Point (0-255 sec)	0

Manual Permissives by Phase:

\*Applies when "Manual" permissive is selected

(0-255 sec)	Vehicle		Pedestrian	
	Start	Stop	Start	Stop
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	0	0	0
Phase 9	0	0	0	0
Phase 10	0	0	0	0
Phase 11	0	0	0	0
Phase 12	0	0	0	0
Phase 13	0	0	0	0
Phase 14	0	0	0	0
Phase 15	0	0	0	0
Phase 16	0	0	0	0



**Synchro Reports**

Lanes, Volumes, Timings  
1: Vandora Springs Road & Garner Road

2016 Existing Traffic Conditions

Timing Plan: AM Peak

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	175	103	250	682	265	211
Future Volume (vph)	175	103	250	682	265	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	0%			-2%	-2%	
Storage Length (ft)		175	125		0	425
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1801	1531	1728	1819	1728	1546
Flt Permitted			0.550		0.950	
Satd. Flow (perm)	1801	1531	1000	1819	1728	1546
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	35	
Link Distance (ft)	496			695	796	
Travel Time (s)	9.7			13.5	15.5	
Peak Hour Factor	0.88	0.88	0.92	0.92	0.76	0.76
Adj. Flow (vph)	199	117	272	741	349	278
Shared Lane Traffic (%)						
Lane Group Flow (vph)	199	117	272	741	349	278
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2	6			4
Detector Phase	2	2	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	10.0	7.0	10.0	7.0	7.0
Minimum Split (s)	22.5	22.5	11.9	22.5	22.5	11.9
Total Split (s)	35.0	35.0	15.0	50.0	30.0	15.0
Total Split (%)	43.8%	43.8%	18.8%	62.5%	37.5%	18.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	1.8	1.8	1.9	1.8	1.9	1.9
Lost Time Adjust (s)	-0.8	-0.8	0.1	-0.8	0.1	0.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	37.0	37.0	50.8	50.8	19.2	33.0
Actuated g/C Ratio	0.46	0.46	0.64	0.64	0.24	0.41
v/c Ratio	0.24	0.17	0.38	0.64	0.84	0.44
Control Delay	15.9	15.6	9.0	13.5	46.7	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.9	15.6	9.0	13.5	46.7	18.0
LOS	B	B	A	B	D	B
Approach Delay	15.7			12.3	34.0	
Approach LOS	B			B	C	

Lanes, Volumes, Timings  
 1: Vandora Springs Road & Garner Road

Lane Group	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 50th (ft)	59	33	53	206	165	95
Queue Length 95th (ft)	115	74	108	389	190	107
Internal Link Dist (ft)	416			615	716	
Turn Bay Length (ft)		175	125			425
Base Capacity (vph)	833	708	727	1155	540	664
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.17	0.37	0.64	0.65	0.42

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 9 (11%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 19.8  
 Intersection Capacity Utilization 58.9%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 1: Vandora Springs Road & Garner Road



Lanes, Volumes, Timings  
1: Vandora Springs Road & Garner Road

2016 Existing Traffic Conditions  
Timing Plan: PM Peak

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	636	325	250	203	158	206
Future Volume (vph)	636	325	250	203	158	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	0%			-2%	-2%	
Storage Length (ft)		175	125		0	425
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1801	1531	1728	1819	1728	1546
Flt Permitted			0.161		0.950	
Satd. Flow (perm)	1801	1531	293	1819	1728	1546
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	35	
Link Distance (ft)	496			695	796	
Travel Time (s)	9.7			13.5	15.5	
Peak Hour Factor	0.88	0.88	0.92	0.92	0.76	0.76
Adj. Flow (vph)	723	369	272	221	208	271
Shared Lane Traffic (%)						
Lane Group Flow (vph)	723	369	272	221	208	271
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2	6			4
Detector Phase	2	2	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	10.0	7.0	10.0	7.0	7.0
Minimum Split (s)	22.5	22.5	11.9	22.5	22.5	11.9
Total Split (s)	40.0	40.0	15.0	55.0	25.0	15.0
Total Split (%)	50.0%	50.0%	18.8%	68.8%	31.3%	18.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	1.8	1.8	1.9	1.8	1.9	1.9
Lost Time Adjust (s)	-0.8	-0.8	0.1	-0.8	0.1	0.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes
Recall Mode	C-Min	C-Min	None	C-Min	None	None
Act Effect Green (s)	40.7	40.7	57.1	57.1	12.9	29.3
Actuated g/C Ratio	0.51	0.51	0.71	0.71	0.16	0.37
v/c Ratio	0.79	0.47	0.66	0.17	0.75	0.48
Control Delay	26.6	17.0	16.4	4.8	47.7	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	17.0	16.4	4.8	47.7	21.4
LOS	C	B	B	A	D	C
Approach Delay	23.3			11.2	32.8	
Approach LOS	C			B	C	

Lanes, Volumes, Timings  
 1: Vandora Springs Road & Garner Road

Lane Group	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 50th (ft)	291	117	38	30	100	99
Queue Length 95th (ft)	#532	208	#144	67	128	120
Internal Link Dist (ft)	416			615	716	
Turn Bay Length (ft)		175	125			425
Base Capacity (vph)	916	778	421	1297	432	575
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.47	0.65	0.17	0.48	0.47

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 60 (75%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 22.6  
 Intersection Capacity Utilization 68.6%  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Vandora Springs Road & Garner Road



Lanes, Volumes, Timings  
1: Vandora Springs Road & Garner Road

2018 No-Build Traffic Conditions

Timing Plan: AM Peak

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Volume (vph)	186	109	265	724	281	224
Future Volume (vph)	186	109	265	724	281	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	0%			-2%	-2%	
Storage Length (ft)		175	125		0	425
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1801	1531	1728	1819	1728	1546
Flt Permitted			0.535		0.950	
Satd. Flow (perm)	1801	1531	973	1819	1728	1546
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	35	
Link Distance (ft)	496			695	796	
Travel Time (s)	9.7			13.5	15.5	
Peak Hour Factor	0.88	0.88	0.92	0.92	0.76	0.76
Adj. Flow (vph)	211	124	288	787	370	295
Shared Lane Traffic (%)						
Lane Group Flow (vph)	211	124	288	787	370	295
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2	6			4
Detector Phase	2	2	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	10.0	7.0	10.0	7.0	7.0
Minimum Split (s)	22.5	22.5	11.9	22.5	22.5	11.9
Total Split (s)	35.0	35.0	15.0	50.0	30.0	15.0
Total Split (%)	43.8%	43.8%	18.8%	62.5%	37.5%	18.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	1.8	1.8	1.9	1.8	1.9	1.9
Lost Time Adjust (s)	-0.8	-0.8	0.1	-0.8	0.1	0.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	36.0	36.0	50.1	50.1	19.9	34.0
Actuated g/C Ratio	0.45	0.45	0.63	0.63	0.25	0.42
v/c Ratio	0.26	0.18	0.41	0.69	0.86	0.45
Control Delay	16.6	16.2	9.7	15.2	47.9	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	16.2	9.7	15.2	47.9	17.7
LOS	B	B	A	B	D	B
Approach Delay	16.5			13.7	34.5	
Approach LOS	B			B	C	

Lanes, Volumes, Timings  
 1: Vandora Springs Road & Garner Road

Lane Group	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 50th (ft)	65	37	59	237	175	98
Queue Length 95th (ft)	122	77	115	436	202	115
Internal Link Dist (ft)	416			615	716	
Turn Bay Length (ft)		175	125			425
Base Capacity (vph)	810	689	705	1138	540	680
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.18	0.41	0.69	0.69	0.43

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 9 (11%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 20.8  
 Intersection Capacity Utilization 62.0%  
 Analysis Period (min) 15

Intersection LOS: C  
 ICU Level of Service B

Splits and Phases: 1: Vandora Springs Road & Garner Road



Lanes, Volumes, Timings  
1: Vandora Springs Road & Garner Road

2016 Existing Traffic Conditions

Timing Plan: PM Peak

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	675	345	265	215	168	219
Future Volume (vph)	675	345	265	215	168	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	0%			-2%	-2%	
Storage Length (ft)		175	125		0	425
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1801	1531	1728	1819	1728	1546
Flt Permitted			0.118		0.950	
Satd. Flow (perm)	1801	1531	215	1819	1728	1546
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	35	
Link Distance (ft)	496			695	796	
Travel Time (s)	9.7			13.5	15.5	
Peak Hour Factor	0.88	0.88	0.92	0.92	0.76	0.76
Adj. Flow (vph)	767	392	288	234	221	288
Shared Lane Traffic (%)						
Lane Group Flow (vph)	767	392	288	234	221	288
Turn Type	NA	Perm	pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2	6			4
Detector Phase	2	2	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	10.0	7.0	10.0	7.0	7.0
Minimum Split (s)	22.5	22.5	11.9	22.5	22.5	11.9
Total Split (s)	40.0	40.0	15.0	55.0	25.0	15.0
Total Split (%)	50.0%	50.0%	18.8%	68.8%	31.3%	18.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	1.8	1.8	1.9	1.8	1.9	1.9
Lost Time Adjust (s)	-0.8	-0.8	0.1	-0.8	0.1	0.1
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes
Recall Mode	C-Min	C-Min	None	C-Min	None	None
Act Effect Green (s)	39.6	39.6	56.4	56.4	13.6	30.4
Actuated g/C Ratio	0.50	0.50	0.70	0.70	0.17	0.38
v/c Ratio	0.86	0.52	0.77	0.18	0.76	0.49
Control Delay	32.2	18.3	29.0	5.1	47.4	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	18.3	29.0	5.1	47.4	21.0
LOS	C	B	C	A	D	C
Approach Delay	27.5			18.3	32.5	
Approach LOS	C			B	C	

Lanes, Volumes, Timings  
 1: Vandora Springs Road & Garner Road

Lane Group	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 50th (ft)	343	135	68	33	106	101
Queue Length 95th (ft)	#581	224	#217	74	134	128
Internal Link Dist (ft)	416			615	716	
Turn Bay Length (ft)		175	125			425
Base Capacity (vph)	891	757	381	1283	432	593
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.52	0.76	0.18	0.51	0.49

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 60 (75%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 26.5  
 Intersection Capacity Utilization 72.0%  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Vandora Springs Road & Garner Road



Lanes, Volumes, Timings

2018 Build Traffic Conditions

1: Vandora Springs Road/Proposed Development Access & Garner Road

Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	183	105	261	713	10	279	6	223	8	15	29
Future Volume (vph)	2	183	105	261	713	10	279	6	223	8	15	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	11	12	11	12	11	12	12	12
Grade (%)		0%			-2%			-2%			0%	
Storage Length (ft)	50		175	125		50	0		25	50		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1801	1531	1728	1819	1599	1728	1881	1546	1770	1680	0
Flt Permitted	0.950			0.502			0.950			0.950		
Satd. Flow (perm)	1770	1801	1531	913	1819	1599	1728	1881	1546	1770	1680	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		496			695			796			742	
Travel Time (s)		9.7			13.5			15.5			14.5	
Peak Hour Factor	0.90	0.88	0.88	0.92	0.92	0.90	0.76	0.90	0.76	0.90	0.90	0.90
Adj. Flow (vph)	2	208	119	284	775	11	367	7	293	9	17	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	208	119	284	775	11	367	7	293	9	49	0
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	7	1	6	3	7	4	1	3	8	
Permitted Phases			2	6		6			4			
Detector Phase	5	2	7	1	6	3	7	4	1	3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	5.0	7.0	10.0	5.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	14.0	22.5	9.5	11.9	22.5	12.0	9.5	22.5	11.9	12.0	14.0	
Total Split (s)	15.0	45.0	35.0	20.0	50.0	15.0	35.0	40.0	20.0	15.0	20.0	
Total Split (%)	12.5%	37.5%	29.2%	16.7%	41.7%	12.5%	29.2%	33.3%	16.7%	12.5%	16.7%	
Yellow Time (s)	5.0	4.0	3.5	3.0	4.0	5.0	3.5	3.0	3.0	5.0	5.0	
All-Red Time (s)	2.0	1.8	1.0	1.9	1.8	2.0	1.0	1.9	1.9	2.0	2.0	
Lost Time Adjust (s)	-2.0	-0.8	-0.8	0.1	-0.8	0.0	0.5	0.1	0.1	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	3.7	5.0	5.0	7.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	
Act Effect Green (s)	9.0	50.3	84.6	68.5	65.7	86.2	28.0	30.5	46.4	16.0	11.3	
Actuated g/C Ratio	0.08	0.42	0.70	0.57	0.55	0.72	0.23	0.25	0.39	0.13	0.09	
v/c Ratio	0.02	0.28	0.11	0.46	0.78	0.01	0.91	0.01	0.49	0.04	0.31	
Control Delay	52.0	27.6	7.7	17.8	31.3	9.5	72.1	36.7	32.4	42.9	55.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.0	27.6	7.7	17.8	31.3	9.5	72.1	36.7	32.4	42.9	55.3	
LOS	D	C	A	B	C	A	E	D	C	D	E	
Approach Delay		20.6			27.5			54.3			53.3	
Approach LOS		C			C			D			D	

Lanes, Volumes, Timings

2018 Build Traffic Conditions

1: Vandora Springs Road/Proposed Development Access & Garner Road

Timing Plan: AM Peak

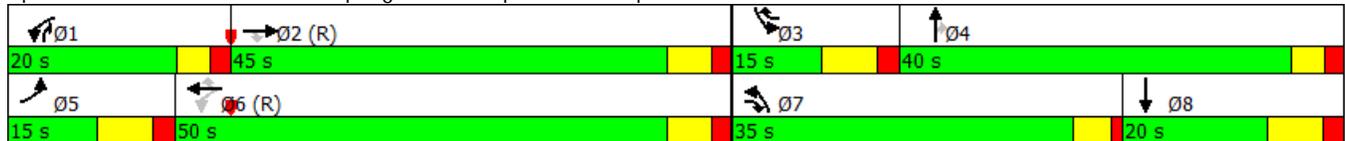
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	1	113	30	118	469	3	272	3	122	7	36	
Queue Length 95th (ft)	10	183	57	188	#918	14	314	16	177	24	74	
Internal Link Dist (ft)		416			615			716			662	
Turn Bay Length (ft)	50		175	125		50			25	50		
Base Capacity (vph)	147	754	1104	627	996	1167	432	606	627	257	210	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.01	0.28	0.11	0.45	0.78	0.01	0.85	0.01	0.47	0.04	0.23	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 9 (8%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 35.5  
 Intersection Capacity Utilization 78.0%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service D

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Vandora Springs Road/Proposed Development Access & Garner Road



Lanes, Volumes, Timings

2018 Build Traffic Conditions

1: Vandora Springs Road/Proposed Development Access & Garner Road

Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	670	343	262	201	25	163	15	214	12	8	14
Future Volume (vph)	19	670	343	262	201	25	163	15	214	12	8	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	11	12	11	12	11	12	12	12
Grade (%)		0%			-2%			-2%			0%	
Storage Length (ft)	0		175	125		0	0		25	50		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.904	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1801	1531	1728	1819	1599	1728	1881	1546	1770	1684	0
Flt Permitted	0.950			0.071			0.950			0.950		
Satd. Flow (perm)	1770	1801	1531	129	1819	1599	1728	1881	1546	1770	1684	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		496			695			796			742	
Travel Time (s)		9.7			13.5			15.5			14.5	
Peak Hour Factor	0.90	0.86	0.86	0.91	0.81	0.90	0.84	0.90	0.78	0.90	0.90	0.90
Adj. Flow (vph)	21	779	399	288	248	28	194	17	274	13	9	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	779	399	288	248	28	194	17	274	13	25	0
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	7	1	6	3	7	4	1	3	8	
Permitted Phases			2	6		6			4			
Detector Phase	5	2	7	1	6	3	7	4	1	3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	5.0	7.0	10.0	5.0	5.0	7.0	7.0	5.0	7.0	
Minimum Split (s)	14.0	22.5	9.5	11.9	22.5	12.0	9.5	22.5	11.9	12.0	22.5	
Total Split (s)	15.0	60.0	20.0	15.0	60.0	15.0	20.0	30.0	15.0	15.0	25.0	
Total Split (%)	12.5%	50.0%	16.7%	12.5%	50.0%	12.5%	16.7%	25.0%	12.5%	12.5%	20.8%	
Yellow Time (s)	5.0	4.0	3.5	3.0	4.0	5.0	3.5	3.0	3.0	5.0	5.0	
All-Red Time (s)	2.0	1.8	1.0	1.9	1.8	2.0	1.0	1.9	1.9	2.0	2.0	
Lost Time Adjust (s)	-2.0	-0.8	-0.8	0.1	-0.8	0.0	0.5	0.1	0.1	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	3.7	5.0	5.0	7.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	
Act Effect Green (s)	9.6	56.1	77.2	85.9	79.7	96.9	14.8	13.8	41.2	12.7	9.9	
Actuated g/C Ratio	0.08	0.47	0.64	0.72	0.66	0.81	0.12	0.12	0.34	0.11	0.08	
v/c Ratio	0.15	0.93	0.41	0.68	0.21	0.02	0.91	0.08	0.52	0.07	0.18	
Control Delay	53.6	48.6	11.9	38.1	11.2	6.2	94.2	47.7	37.7	49.5	54.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.6	48.6	11.9	38.1	11.2	6.2	94.2	47.7	37.7	49.5	54.0	
LOS	D	D	B	D	B	A	F	D	D	D	D	
Approach Delay		36.5			24.7			60.6			52.5	
Approach LOS		D			C			E			D	

Lanes, Volumes, Timings

2018 Build Traffic Conditions

1: Vandora Springs Road/Proposed Development Access & Garner Road

Timing Plan: PM Peak

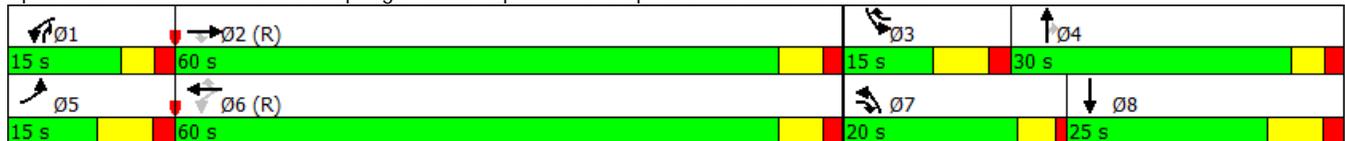
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	16	562	141	159	67	0	150	13	-227	8	18	
Queue Length 95th (ft)	41	#763	193	#324	138	19	#258	34	216	30	47	
Internal Link Dist (ft)		416			615			716			662	
Turn Bay Length (ft)			175	125					25	50		
Base Capacity (vph)	150	841	987	423	1208	1306	216	391	531	204	280	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.93	0.40	0.68	0.21	0.02	0.90	0.04	0.52	0.06	0.09	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 60 (50%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.93  
 Intersection Signal Delay: 39.0  
 Intersection Capacity Utilization 78.0%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service D

- Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: Vandora Springs Road/Proposed Development Access & Garner Road



**NCDOT Crash Records**



**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Intersection Analysis Report**

Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
9	101861872	10/20/2006 12:51	LEFT TURN, DIFFERENT ROADWAYS	\$ 7000	0	0	0	3	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 30 MPH Dir: E	Veh Mnvr / Ped Actn: 4	Obj Strk:										
Unit	2 : 2	Alchl/Drgs: 0	Speed: 30 MPH Dir: W	Veh Mnvr / Ped Actn: 8	Obj Strk:										
10	101880124	11/08/2006 20:04	LEFT TURN, SAME ROADWAY	\$ 3300	0	0	0	0	1	4	1	3	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4	Obj Strk:										
Unit	2 : 2	Alchl/Drgs: 2	Speed: 35 MPH Dir: W	Veh Mnvr / Ped Actn: 8	Obj Strk:										
11	101889965	11/17/2006 13:38	REAR END, SLOW OR STOP	\$ 1200	0	0	0	0	3	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: N	Veh Mnvr / Ped Actn: 1	Obj Strk:										
Unit	2 : 2	Alchl/Drgs: 0	Speed: 0 MPH Dir: N	Veh Mnvr / Ped Actn: 7	Obj Strk:										
12	101904429	12/04/2006 07:22	REAR END, SLOW OR STOP	\$ 1100	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: N	Veh Mnvr / Ped Actn: 1	Obj Strk:										
Unit	2 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: N	Veh Mnvr / Ped Actn: 4	Obj Strk:										
13	101924357	12/29/2006 16:52	REAR END, SLOW OR STOP	\$ 50	0	0	0	1	1	4	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 30 MPH Dir: N	Veh Mnvr / Ped Actn: 7	Obj Strk:										
Unit	2 : 4	Alchl/Drgs: 0	Speed: 30 MPH Dir: N	Veh Mnvr / Ped Actn: 7	Obj Strk:										
14	101934974	01/09/2007 12:48	LEFT TURN, DIFFERENT ROADWAYS	\$ 3500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 30 MPH Dir: E	Veh Mnvr / Ped Actn: 4	Obj Strk:										
Unit	2 : 1	Alchl/Drgs: 0	Speed: 30 MPH Dir: W	Veh Mnvr / Ped Actn: 8	Obj Strk:										
15	101973362	02/28/2007 17:24	REAR END, SLOW OR STOP	\$ 4400	0	0	0	0	1	1	1	3	0	0	
Unit	1 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 1	Obj Strk:										
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 1	Obj Strk:										
Unit	3 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 1	Obj Strk:										
Unit	4 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 11	Obj Strk:										
16	102070347	06/21/2007 17:32	FIXED OBJECT	\$ 2000	0	0	0	0	1	1	1	3	0	6	1
Unit	1 : 10	Alchl/Drgs: 0	Speed: 35 MPH Dir: S	Veh Mnvr / Ped Actn: 7	Obj Strk: 64										
Unit	2 : 4	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4	Obj Strk:										
17	102108706	08/08/2007 16:31	HEAD ON	\$ 15000	0	0	1	1	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 1	Speed: 35 MPH Dir: W	Veh Mnvr / Ped Actn: 8	Obj Strk:										
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4	Obj Strk:										

**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Intersection Analysis Report**

Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
18	102143528	08/18/2007 13:01	REAR END, SLOW OR STOP	\$ 900	0	0	0	2	1	1	1	1	0	0	
Unit	1 : 32	Alchl/Drgs: 7	Speed: 20 MPH Dir: S		Veh Mnvr / Ped Actn: 4				Obj Strk:						
Unit	2 : 2	Alchl/Drgs: 0	Speed: 15 MPH Dir: S		Veh Mnvr / Ped Actn: 4				Obj Strk:						
19	102211033	12/07/2007 07:35	LEFT TURN, SAME ROADWAY	\$ 4000	0	0	0	0	2	1	3	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: S		Veh Mnvr / Ped Actn: 8				Obj Strk:						
Unit	2 : 4	Alchl/Drgs: 0	Speed: 25 MPH Dir: E		Veh Mnvr / Ped Actn: 4				Obj Strk:						
20	102259216	02/11/2008 19:31	REAR END, SLOW OR STOP	\$ 100	0	0	0	2	1	5	1	1	0	3	1
Unit	1 : 3	Alchl/Drgs: 0	Speed: 3 MPH Dir: E		Veh Mnvr / Ped Actn: 4				Obj Strk:						
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: E		Veh Mnvr / Ped Actn: 1				Obj Strk:						
21	102202055	02/20/2008 06:49	BACKING UP	\$ 1200	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 16	Alchl/Drgs: 0	Speed: 5 MPH Dir: N		Veh Mnvr / Ped Actn: 10				Obj Strk:						
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: N		Veh Mnvr / Ped Actn: 1				Obj Strk:						
22	102279116	03/08/2008 18:58	LEFT TURN, SAME ROADWAY	\$ 6000	0	0	0	2	1	4	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 4 MPH Dir: SW		Veh Mnvr / Ped Actn: 8				Obj Strk:						
Unit	2 : 1	Alchl/Drgs: 0	Speed: 25 MPH Dir: E		Veh Mnvr / Ped Actn: 4				Obj Strk:						
23	102281291	03/10/2008 21:00	REAR END, SLOW OR STOP	\$ 0	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 32	Alchl/Drgs: 7	Speed: 35 MPH Dir: N		Veh Mnvr / Ped Actn: 4				Obj Strk:						
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: N		Veh Mnvr / Ped Actn: 1				Obj Strk:						
24	102293893	03/30/2008 09:32	SIDESWIPE, SAME DIRECTION	\$ 2200	0	0	0	2	1	1	2	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 25 MPH Dir: N		Veh Mnvr / Ped Actn: 5				Obj Strk:						
Unit	2 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: N		Veh Mnvr / Ped Actn: 4				Obj Strk:						
25	102321780	04/10/2008 16:21	REAR END, SLOW OR STOP	\$ 2300	0	0	0	0	1	1	1	3	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: N		Veh Mnvr / Ped Actn: 1				Obj Strk:						
Unit	2 : 3	Alchl/Drgs: 0	Speed: 45 MPH Dir: N		Veh Mnvr / Ped Actn: 4				Obj Strk:						
26	102352419	06/19/2008 16:23	REAR END, SLOW OR STOP	\$ 100	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 7	Alchl/Drgs: 0	Speed: 30 MPH Dir: N		Veh Mnvr / Ped Actn: 1				Obj Strk:						
Unit	2 : 32	Alchl/Drgs: 7	Speed: 30 MPH Dir: N		Veh Mnvr / Ped Actn: 1				Obj Strk:						

**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Intersection Analysis Report**

Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
27	102351760	06/29/2008 13:56	LEFT TURN, DIFFERENT ROADWAYS	\$ 1500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 10 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
Unit	2 : 2	Alchl/Drgs: 0	Speed: 30 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
28	102400973	09/01/2008 07:35	FIXED OBJECT	\$ 350	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 32	Alchl/Drgs: 7	Speed: 45 MPH Dir: W	Veh Mnvr / Ped Actn: 4		Obj Strk: 58									
29	102411543	09/20/2008 12:24	LEFT TURN, SAME ROADWAY	\$ 2000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
30	102411751	09/21/2008 09:26	LEFT TURN, SAME ROADWAY	\$ 2300	0	0	0	1	1	1	1	1	0	3	1
Unit	1 : 5	Alchl/Drgs: 0	Speed: 5 MPH Dir: E	Veh Mnvr / Ped Actn: 8		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 25 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
31	102447358	10/23/2008 08:16	LEFT TURN, SAME ROADWAY	\$ 1500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
Unit	2 : 2	Alchl/Drgs: 0	Speed: 40 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
32	102530001	02/02/2009 06:59	BACKING UP	\$ 6500	0	0	0	0	1	1	1	1	0	6	1
Unit	1 : 4	Alchl/Drgs: 0	Speed: 35 MPH Dir: S	Veh Mnvr / Ped Actn: 10		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: N	Veh Mnvr / Ped Actn: 1		Obj Strk:									
33	102581557	04/13/2009 10:52	ANGLE	\$ 4000	0	0	0	1	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 25 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
34	102594183	05/07/2009 09:16	REAR END, SLOW OR STOP	\$ 4000	0	0	0	0	2	1	2	1	0	3	1
Unit	1 : 3	Alchl/Drgs: 0	Speed: 35 MPH Dir: N	Veh Mnvr / Ped Actn: 11		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: N	Veh Mnvr / Ped Actn: 1		Obj Strk:									
35	102646585	07/17/2009 13:38	LEFT TURN, SAME ROADWAY	\$ 10400	0	0	2	0	1	1	2	3	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 30 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
36	102646199	07/20/2009 16:48	ANGLE	\$ 6500	0	0	0	3	1	1	2	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 10 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									

**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Intersection Analysis Report**

Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									
37	102694664	09/30/2009 08:12	REAR END, SLOW OR STOP	\$ 750	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn:	11	Obj Strk:									
Unit	2 : 32	Alchl/Drgs: 7	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									
38	102732199	10/26/2009 20:08	LEFT TURN, SAME ROADWAY	\$ 2000	0	0	0	3	2	4	3	1	0	3	1
Unit	1 : 4	Alchl/Drgs: 0	Speed: 10 MPH Dir: W	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 4	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									
39	102732202	10/27/2009 07:34	LEFT TURN, SAME ROADWAY	\$ 900	0	0	0	2	2	3	2	1	0	0	
Unit	1 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: N	Veh Mnvr / Ped Actn:	4	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 5	Speed: 5 MPH Dir: E	Veh Mnvr / Ped Actn:	8	Obj Strk:									
40	102754427	12/02/2009 14:57	LEFT TURN, SAME ROADWAY	\$ 7000	0	0	0	1	2	1	2	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: S	Veh Mnvr / Ped Actn:	8	Obj Strk:									
41	102793876	01/26/2010 19:49	LEFT TURN, SAME ROADWAY	\$ 7500	0	0	0	1	1	4	1	1	0	3	1
Unit	1 : 5	Alchl/Drgs: 0	Speed: 10 MPH Dir: W	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 2	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									
42	102799416	02/03/2010 11:42	RAN OFF ROAD - RIGHT	\$ 1500	0	0	0	0	1	1	1	3	0	6	1
Unit	1 : 32	Alchl/Drgs: 7	Speed: 15 MPH Dir: S	Veh Mnvr / Ped Actn:	7	Obj Strk: 64									
43	102848728	04/14/2010 16:24	ANGLE	\$ 1700	0	0	0	0	1	1	2	3	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 2	Alchl/Drgs: 0	Speed: 45 MPH Dir: W	Veh Mnvr / Ped Actn:	4	Obj Strk:									
44	102852022	04/21/2010 16:37	REAR END, SLOW OR STOP	\$ 2000	0	0	0	0	1	1	2	3	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: S	Veh Mnvr / Ped Actn:	1	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 25 MPH Dir: S	Veh Mnvr / Ped Actn:	11	Obj Strk:									
45	102861864	05/03/2010 12:57	RAN OFF ROAD - RIGHT	\$ 1300	0	0	0	0	1	1	2	3	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: N	Veh Mnvr / Ped Actn:	11	Obj Strk: 34									
46	102871960	05/14/2010 11:55	LEFT TURN, DIFFERENT ROADWAYS	\$ 10000	0	0	0	2	1	1	1	3	0	3	1
Unit	1 : 2	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									

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Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
Unit	2 : 4	Alchl/Drgs: 0	Speed: 35 MPH Dir: W	Veh Mnvr / Ped Actn:	8	Obj Strk:									
47	102918487	07/07/2010 17:09	LEFT TURN, SAME ROADWAY	\$ 9800	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 2	Alchl/Drgs: 0	Speed: 35 MPH Dir: W	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 5	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									
48	102982268	09/29/2010 07:25	REAR END, SLOW OR STOP	\$ 900	0	0	0	2	2	1	2	1	0	3	1
Unit	1 : 5	Alchl/Drgs: 0	Speed: 30 MPH Dir: N	Veh Mnvr / Ped Actn:	1	Obj Strk:									
Unit	2 : 2	Alchl/Drgs: 0	Speed: 25 MPH Dir: N	Veh Mnvr / Ped Actn:	4	Obj Strk:									
49	102996449	10/15/2010 16:52	LEFT TURN, SAME ROADWAY	\$ 17500	0	0	1	0	1	1	1	3	0	3	1
Unit	1 : 2	Alchl/Drgs: 0	Speed: 40 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: S	Veh Mnvr / Ped Actn:	1	Obj Strk:									
50	103056932	12/11/2010 19:42	SIDESWIPE, OPPOSITE DIRECTION	\$ 2000	0	0	0	0	2	4	3	1	12	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn:	1	Obj Strk:									
Unit	2 : 32	Alchl/Drgs: 7	Speed: 30 MPH Dir: W	Veh Mnvr / Ped Actn:	4	Obj Strk:									
51	103075878	01/12/2011 15:04	REAR END, SLOW OR STOP	\$ 1200	0	0	0	0	1	1	1	3	0	6	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: N	Veh Mnvr / Ped Actn:	1	Obj Strk:									
Unit	2 : 32	Alchl/Drgs: 7	Speed: 35 MPH Dir: N	Veh Mnvr / Ped Actn:	4	Obj Strk:									
52	103087994	01/26/2011 17:55	HEAD ON	\$ 6500	0	0	0	1	2	4	2	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									
Unit	2 : 4	Alchl/Drgs: 0	Speed: 35 MPH Dir: W	Veh Mnvr / Ped Actn:	8	Obj Strk:									
53	103108846	03/03/2011 15:37	LEFT TURN, SAME ROADWAY	\$ 6500	0	0	0	5	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: SW	Veh Mnvr / Ped Actn:	8	Obj Strk:									
54	103114646	03/13/2011 15:30	REAR END, SLOW OR STOP	\$ 1700	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 1	Alchl/Drgs: 0	Speed: 15 MPH Dir: N	Veh Mnvr / Ped Actn:	4	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 10 MPH Dir: N	Veh Mnvr / Ped Actn:	4	Obj Strk:									
55	103123022	03/20/2011 20:20	LEFT TURN, SAME ROADWAY	\$ 3500	0	0	0	0	1	4	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 15 MPH Dir: W	Veh Mnvr / Ped Actn:	8	Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 30 MPH Dir: E	Veh Mnvr / Ped Actn:	4	Obj Strk:									

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Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
56	103169136	06/01/2011 15:34	HEAD ON	\$ 2500	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 2	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 25 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
57	103231339	08/17/2011 16:05	REAR END, SLOW OR STOP	\$ 400	0	0	0	1	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: N	Veh Mnvr / Ped Actn: 1		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: N	Veh Mnvr / Ped Actn: 4		Obj Strk:									
58	103240203	08/30/2011 17:29	LEFT TURN, DIFFERENT ROADWAYS	\$ 2300	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 2	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
Unit	2 : 5	Alchl/Drgs: 0	Speed: 30 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
59	103345874	12/29/2011 18:24	LEFT TURN, SAME ROADWAY	\$ 2300	0	0	0	0	1	4	1	1	0	1	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: N	Veh Mnvr / Ped Actn: 4		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: SE	Veh Mnvr / Ped Actn: 8		Obj Strk:									
60	103346887	01/03/2012 13:00	SIDESWIPE, SAME DIRECTION	\$ 1250	0	0	0	0	1	1	1	1	0	6	1
Unit	1 : 2	Alchl/Drgs: 0	Speed: 10 MPH Dir: N	Veh Mnvr / Ped Actn: 4		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 15 MPH Dir: N	Veh Mnvr / Ped Actn: 7		Obj Strk:									
61	103610448	11/21/2012 19:45	ANGLE	\$ 8500	0	0	0	3	1	4	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 10 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
62	103616188	11/30/2012 19:32	LEFT TURN, SAME ROADWAY	\$ 11000	0	0	0	0	1	4	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 30 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
63	103619440	12/03/2012 16:30	LEFT TURN, DIFFERENT ROADWAYS	\$ 1100	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 30 MPH Dir: E	Veh Mnvr / Ped Actn: 7		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									
64	103641432	12/27/2012 17:32	LEFT TURN, DIFFERENT ROADWAYS	\$ 4500	0	0	0	3	1	4	1	1	0	3	1
Unit	1 : 4	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4		Obj Strk:									
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: W	Veh Mnvr / Ped Actn: 8		Obj Strk:									

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Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op
65	103691329	02/28/2013 17:46	LEFT TURN, SAME ROADWAY	\$ 3200	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4	Obj Strk:										
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: W	Veh Mnvr / Ped Actn: 8	Obj Strk:										
66	103693288	03/01/2013 07:52	LEFT TURN, SAME ROADWAY	\$ 11500	0	0	0	2	1	1	1	1	0	3	1
Unit	1 : 4	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4	Obj Strk:										
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: SW	Veh Mnvr / Ped Actn: 8	Obj Strk:										
67	103708216	03/19/2013 23:20	LEFT TURN, SAME ROADWAY	\$ 10000	0	0	0	0	1	4	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 25 MPH Dir: W	Veh Mnvr / Ped Actn: 8	Obj Strk:										
Unit	2 : 1	Alchl/Drgs: 0	Speed: 35 MPH Dir: E	Veh Mnvr / Ped Actn: 4	Obj Strk:										
68	103732813	04/19/2013 08:53	BACKING UP	\$ 1000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 3 MPH Dir: S	Veh Mnvr / Ped Actn: 10	Obj Strk:										
Unit	2 : 1	Alchl/Drgs: 0	Speed: 0 MPH Dir: S	Veh Mnvr / Ped Actn: 1	Obj Strk:										
69	103983293	10/04/2013 21:44	RAN OFF ROAD - RIGHT	\$ 22000	1	0	0	0	1	4	1	2	0	6	1
Unit	1 : 4	Alchl/Drgs: 0	Speed: 20 MPH Dir: S	Veh Mnvr / Ped Actn: 7	Obj Strk:										
Unit	2 : 26	Alchl/Drgs: 7	Speed: 0 MPH Dir:	Veh Mnvr / Ped Actn:	Obj Strk:										
70	104027606	04/04/2014 14:27	SIDESWIPE, SAME DIRECTION	\$ 1000	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 5 MPH Dir: S	Veh Mnvr / Ped Actn: 8	Obj Strk:										
Unit	2 : 1	Alchl/Drgs: 0	Speed: 10 MPH Dir: S	Veh Mnvr / Ped Actn: 7	Obj Strk:										
71	104078076	06/03/2014 10:29	REAR END, SLOW OR STOP	\$ 100	0	0	0	1	1	1	1	1	0	3	1
Unit	1 : 22	Alchl/Drgs: 0	Speed: 0 MPH Dir:	Veh Mnvr / Ped Actn: 1	Obj Strk:										
Unit	2 : 4	Alchl/Drgs: 0	Speed: 35 MPH Dir: W	Veh Mnvr / Ped Actn: 4	Obj Strk:										
72	104078080	06/10/2014 11:14	REAR END, SLOW OR STOP	\$ 2700	0	0	0	0	1	1	1	1	0	3	1
Unit	1 : 1	Alchl/Drgs: 0	Speed: 20 MPH Dir: E	Veh Mnvr / Ped Actn: 4	Obj Strk:										
Unit	2 : 11	Alchl/Drgs: 0	Speed: 0 MPH Dir: E	Veh Mnvr / Ped Actn: 1	Obj Strk:										

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Acc No	Crash ID	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
					F	A	B	C	R	L	W	Ch	Ci	Dv	Op

**Legend for Report Details:**

- Acc No - Accident Number
- Injuries: F - Fatal, A - Class A, B - Class B, C - Class C
- Condition: R - Road Surface, L - Ambient Light, W - Weather
- Rd Ch - Road Character
- Rd Ci - Roadway Contributing Circumstances
- Trfc Ctl - Traffic Control: Dv - Device, Op - Operating
- Alchl/Drugs - Alcohol Drugs Suspected
- Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action
- Obj Strk - Object Struck

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**Summary Statistics**

**High Level Crash Summary**

<b>Crash Type</b>	<b>Number of Crashes</b>	<b>Percent of Total</b>
Total Crashes	72	100.00
Fatal Crashes	1	1.39
Non-Fatal Injury Crashes	28	38.89
Total Injury Crashes	29	40.28
Property Damage Only Crashes	43	59.72
Night Crashes	20	27.78
Wet Crashes	10	13.89
Alcohol/Drugs Involvement Crashes	4	5.56

**Crash Severity Summary**

<b>Crash Type</b>	<b>Number of Crashes</b>	<b>Percent of Total</b>
Total Crashes	72	100.00
Fatal Crashes	1	1.39
Class A Crashes	0	0.00
Class B Crashes	4	5.56
Class C Crashes	24	33.33
Property Damage Only Crashes	43	59.72

**Vehicle Exposure Statistics**

**Annual ADT = 16000**

**Total Vehicle Exposure = 58.43 (MEV)**

<b>Crash Rate</b>	<b>Crashes Per 100 Million Vehicles Entered</b>
Total Crash Rate	123.22
Fatal Crash Rate	1.71
Non Fatal Crash Rate	47.92
Night Crash Rate	34.23
Wet Crash Rate	17.11
EPDO Rate	607.54

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**Miscellaneous Statistics**

Severity Index =	4.93
EPDO Crash Index =	355.00
Estimated Property Damage Total = \$	298125.00

**Accident Type Summary**

<b>Accident Type</b>	<b>Number of Crashes</b>	<b>Percent of Total</b>
ANGLE	4	5.56
BACKING UP	3	4.17
FIXED OBJECT	3	4.17
HEAD ON	4	5.56
LEFT TURN, DIFFERENT ROADWAYS	8	11.11
LEFT TURN, SAME ROADWAY	23	31.94
RAN OFF ROAD - RIGHT	3	4.17
REAR END, SLOW OR STOP	20	27.78
SIDESWIPE, OPPOSITE DIRECTION	1	1.39
SIDESWIPE, SAME DIRECTION	3	4.17

**Injury Summary**

<b>Injury Type</b>	<b>Number of Injuries</b>	<b>Percent of Total</b>
Fatal Injuries	1	1.82
Class A Injuries	0	0.00
Class B Injuries	6	10.91
Class C Injuries	48	87.27
Total Non-Fatal Injuries	54	98.18
Total Injuries	55	100.00

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**Monthly Summary**

<b>Month</b>	<b>Number of Crashes</b>	<b>Percent of Total</b>
Jan	5	6.94
Feb	8	11.11
Mar	9	12.50
Apr	6	8.33
May	3	4.17
Jun	6	8.33
Jul	3	4.17
Aug	6	8.33
Sep	5	6.94
Oct	6	8.33
Nov	5	6.94
Dec	10	13.89

**Daily Summary**

<b>Day</b>	<b>Number of Crashes</b>	<b>Percent of Total</b>
Mon	11	15.28
Tue	10	13.89
Wed	17	23.61
Thu	10	13.89
Fri	13	18.06
Sat	5	6.94
Sun	6	8.33

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**Hourly Summary**

<b>Hour</b>	<b>Number of Crashes</b>	<b>Percent of Total</b>
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	1	1.39
0600-0659	2	2.78
0700-0759	7	9.72
0800-0859	3	4.17
0900-0959	3	4.17
1000-1059	2	2.78
1100-1159	3	4.17
1200-1259	5	6.94
1300-1359	5	6.94
1400-1459	2	2.78
1500-1559	4	5.56
1600-1659	10	13.89
1700-1759	8	11.11
1800-1859	3	4.17
1900-1959	6	8.33
2000-2059	4	5.56
2100-2159	2	2.78
2200-2259	1	1.39
2300-2359	1	1.39

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**Light and Road Conditions Summary**

<b>Condition</b>	<b>Dry</b>	<b>Wet</b>	<b>Other</b>	<b>Total</b>
Day	45	5	0	50
Dark	16	4	0	20
Other	1	1	0	2
<b>Total</b>	<b>62</b>	<b>10</b>	<b>0</b>	<b>72</b>

**Object Struck Summary**

<b>Object Type</b>	<b>Times Struck</b>	<b>Percent of Total</b>
DITCH	1	20.00
OTHER FIXED OBJECT	3	60.00
UTILITY POLE	1	20.00

**Vehicle Type Summary**

<b>Vehicle Type</b>	<b>Number Involved</b>	<b>Percent of Total</b>
LIGHT TRUCK (MINI-VAN, PANEL)	3	2.11
MOTOR SCOOTER OR MOTOR BIKE	1	0.70
OTHER	1	0.70
PASSENGER CAR	85	59.86
PICKUP	16	11.27
SCHOOL BUS	2	1.41
SINGLE UNIT TRUCK (2-AXLE, 6-TIRE)	1	0.70
SINGLE UNIT TRUCK (3 OR MORE AXLES)	1	0.70
SPORT UTILITY	16	11.27
UNKNOWN	8	5.63
UNKNOWN HEAVY TRUCK	1	0.70
VAN	7	4.93

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Yearly Totals Summary

Accident Totals

<u>Year</u>	<u>Total Accidents</u>	<u>Fatal Accidents</u>	<u>Injury Accidents</u>	<u>Property Damage Only Accidents</u>
2005	5	0	2	3
2006	8	0	3	5
2007	6	0	2	4
2008	12	0	4	8
2009	9	0	6	3
2010	10	0	4	6
2011	9	0	3	6
2012	5	0	2	3
2013	5	1	1	3
2014	3	0	1	2
Total	72	1	28	43

Injury Totals

<u>Year</u>	<u>Fatal Injuries</u>	<u>Class A, B, or C Injuries</u>
2005	0	4
2006	0	5
2007	0	4
2008	0	7
2009	0	12
2010	0	6
2011	0	7
2012	0	6
2013	1	2
2014	0	1
Total	1	54

Miscellaneous Totals

<u>Year</u>	<u>Property Damage</u>	<u>EPDO Index</u>
2005	\$ 26625	19.80
2006	\$ 21150	30.20
2007	\$ 29800	20.80
2008	\$ 19550	41.60
2009	\$ 42050	53.40
2010	\$ 54200	39.60

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<b>Year</b>	<b>Property Damage</b>	<b>EPDO Index</b>
2011	\$ 26900	31.20
2012	\$ 26350	19.80
2013	\$ 47700	88.20
2014	\$ 3800	10.40
<b>Total</b>	<b>\$ 298125</b>	<b>355.00</b>

**Type of Accident Totals**

<b>Year</b>	<b>Left Turn</b>	<b>Right Turn</b>	<b>Run Off Road &amp;</b>					<b>Other</b>
			<b>Rear End</b>	<b>Fixed Object</b>	<b>Angle</b>	<b>Side Swipe</b>		
2005	3	0	1	0	0	0	1	
2006	3	0	4	1	0	0	0	
2007	2	0	2	1	0	0	1	
2008	5	0	4	1	0	1	1	
2009	4	0	2	0	2	0	1	
2010	4	0	2	2	1	1	0	
2011	4	0	3	0	0	0	2	
2012	3	0	0	0	1	1	0	
2013	3	0	0	1	0	0	1	
2014	0	0	2	0	0	1	0	
<b>Total</b>	<b>31</b>	<b>0</b>	<b>20</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>7</b>	

**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Intersection Analysis Report**

**Study Criteria**

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000033575	41000033575			76.8	8.4	16000	

Request Date	Courier Service	Phone No.	Ext.	Fax No.
1/16/2015	MSC1556	919-733-5564		

County			Municipality			Y-Line Ft.	Begin Date	End Date	Years
Name	Code	Div.	Name	Code					
WAKE	91	5	All and Rural		150	01/01/2005	12/31/2014	10.00	

Location Text	Requestor
SR 1004/Garner Rd at SR 2713/Vandora Springs Rd - RR Crossing #735324J	Drew Thomas, PE Data Analysis & Inventory Manager

Included Accidents
103346887
103983293
101889965
102530001
103345874
101690475
102793876
102996449
103693288

Excluded Accidents
101719966
102125279
102243392
102395831
101534670

**Fiche Roads**

Name	Code
SR 1004	40001004
SR 2713	40002713
GARNER	50011494
VANDORA SPRINGS	50031548

**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Intersection Analysis Report**

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**Intersection Road Combinations**

<b>Name</b>	<b>Code</b>	<b>Code</b>	<b>Name</b>
GARNER	50011494	50031548	VANDORA SPRINGS

**FRA Crash Records**

1. Name of Reporting Railroad <b>Amtrak (National Railroad Passenger Corporation) [ATK]</b>				1a. Alphabetic Code <b>ATK</b>		1b. Railroad Accident/Incident No. <b>130128</b>	
2. Name of Other Railroad or Other Entity Filing for Equipment Involved in Train Accident/Incident				2a. Alphabetic Code		2b. Railroad Accident/Incident No.	
3. Name of Railroad or Other Entity Responsible for Track Maintenance (single entry) <b>Norfolk Southern Railway Company [NS]</b>				3a. Alphabetic Code <b>NS</b>		3b. Railroad Accident/Incident No. <b>XXX</b>	
4. U.S. DOT Grade Crossing ID No. <b>735324J</b>				5. Date of Accident/Incident month   day   year <b>1   0   0   4   2013</b>		6. Time of Accident/Incident <b>9:38</b> AM <input type="checkbox"/> PM <input checked="" type="checkbox"/>	
7. Nearest Railroad Station <b>RALEIGH</b>		8. Subdivision <b>SOUTHERN</b>		9. County <b>WAKE</b>		10. State Abbr. <b>NC</b> Code <b>37</b>	
11. City (if in a city)			12. Highway Name or No. <b>VANDORA SPRINGS</b>			Public <input checked="" type="checkbox"/> Private <input type="checkbox"/>	
Highway User Involved				Rail Equipment Involved			
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle A. Auto D. Pick-up truck G. School Bus K. Pedestrian Code B. Truck E. Van H. Motorcycle M. Other (specify) A				17. Equipment 1. Train (units pulling) 2. Train (units pushing) 3. Train (standing) 4. Car(s) (moving) 5. Car(s) (standing) 6. Light loco(s) (moving) 7. Light loco(s) (standing) 8. Other (specify) A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL D. EMU Locomotive(s) E. DMU Locomotive(s) Code <b>1</b>			
14. Vehicle Speed (est. mph at impact) <b>0</b>		15. Direction (geographical) 1. North 2. South 3. East 4. West Code <b>2</b>		18. Position of Car Unit in Train <b>1</b>			
16. Position 1. Stalled or stuck on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped on crossing by traffic 5. Blocked on crossing by gates Code <b>2</b>				19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user Code <b>1</b>			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither Code <b>4</b>				20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither Code <b>4</b>			
20c. State here the name and quantity of the hazardous material released, if any							
21. Temperature (specify if minus) <b>87</b> °F		22. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark Code <b>4</b>		23. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow Code <b>1</b>			
24. Type of Equipment (single entry) 1. Freight Train 2. Passenger Train-Pulling 3. Commuter Train-Pulling 4. Work Train 5. Single Car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Maint./inspect. car A. Spec. MoW Equip. B. Passenger Train-Pushing C. Commuter Train-Pushing D. EMU E. DMU Code <b>2</b>				25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry Code <b>1</b>		26. Track Number or Name <b>SINGLE MAIN TRACK</b>	
27. FRA Track Class (1-9,X) <b>4</b>		28. Number of Locomotive Units <b>2</b>		29. Number of Cars <b>9</b>		30. Consist Speed (Recorded speed if available) R. Recorded <b>60</b> mph E. Estimated Code <b>E</b>	
31. Time Table Direction 1. North 2. South 3. East 4. West Code <b>4</b>				32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other (specify) 12. None Code(s) <b>01 02 06</b>			
33. Signaled Crossing Warning (See reverse side for instructions and codes) Code <b>1</b>				34. Roadway Conditions A. Dry B. Wet C. Snow/Slush D. Ice E. Sand, Mud, Dirt, Oil, Gravel F. Water (Standing, Moving) Code <b>A</b>			
35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach Code <b>1</b>			36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown Code <b>1</b>			37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown Code <b>2</b>	
38. Highway User's Age <b>59</b>		39. Highway User's Gender 1. Male 2. Female Code <b>2</b>		40. Highway User Went Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown Code <b>2</b>		41. Highway User 1. Went around the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other (specify) 6. Went around/thru temporary barricade (if yes, see instructions) 7. Went thru the gate 8. Suicide/Attempted suicide Code <b>4</b>	
42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown Code <b>2</b>			43. View of Track Obscured by (primary obstruction) 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other (specify) 8. Not Obstructed Code <b>8</b>				
Casualties to:		Killed		Injured		44. Driver was 1. Killed 2. Injured 3. Uninjured Code <b>1</b>	
46. Highway-Rail Crossing Users <b>1</b>		<b>0</b>		47. Highway Vehicle Property Damage (est. dollar damage) <b>\$22,000</b>		48. Total Number of Vehicle Occupants (including driver) <b>1</b>	
49. Railroad Employees <b>0</b>		<b>1</b>		50. Total Number of People on Train (include passengers and train crew) <b>48</b>		51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No Code <b>2</b>	
52. Passengers on Train <b>0</b>		<b>0</b>		53a. Special Study Block Video Taken? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Video Used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
53b. Special Study Block		54. Narrative Description (Be specific, and continue on separate sheet if necessary) <b>TRAIN 91 OPERATING WITH LOCOMOTIVES E/79-E/159 AND 9 CARS STRUCK AN OCCUPIED VEHICLE AT MP H85.96, VANDORA SPRINGS RD CROSSING. AMTRAKS EQUIPMENT DAMAGE IS \$5,000.00.</b>					
55. Typed Name and Title				56. Signature		57. Date	

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: May 2, 2016		
Subject: Funding Agreement with Wake County		
Location on Agenda: Old/New Business		
Department: Engineering		
Contact: Tony Chalk, Town Engineer		
Presenter: Tony Chalk, Town Engineer		
<p>Brief Summary:</p> <p>Funding agreement with Wake County to reimburse costs associated with new Town Hall parking lot expansion. Agreement was approved by Wake County Commissioners at their April 18th meeting.</p>		
<p>Recommended Motion and/or Requested Action:</p> <p>Review and approve agreement.</p>		
<p>Detailed Notes:</p> <p>Wake County agrees to reimburse Town for costs related to the design, engineering, and construction of the parking lot expansion at the new Town Hall.</p>		
Funding Source:		
Cost:	One Time: <input type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
<p>Manager's Comments and Recommendations:</p> <p>This is consistent with preliminary discussions between the Town and Wake County.</p>		
Attachments Yes: <input checked="" type="radio"/> No: <input type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	TC	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		

**STATE OF NORTH CAROLINA**

**FUNDING AGREEMENT**

**COUNTY OF WAKE**

This Agreement entered into this the\_\_ day of April 2016, by and between the County of Wake, a body politic, (County) and the Town of Garner, a municipal corporation, (Municipality).

**WITNESSETH**

1. The County and the Municipality maintain a continuing contractual relationship, through which the County owns and operates a Regional Library on County property at 908 Seventh Avenue, in Garner, NC, and patrons visiting the Regional Library park on property owned by the Town of Garner; and
2. By resolution adopted by the Wake County Board of Commissioners and the Garner Town Council, in May 2014, Wake County was authorized to convey a special warranty deed and drainage easement to the Town to facilitate the renovation of the Police Headquarters Station; and
3. The Municipality completed the renovation of a structure at 900 Seventh Avenue, in January 2016, into a new Police Headquarters Station adjacent to Wake County Southeast Regional Library; and
4. The new entrance area for the Police Headquarters Station displaced some existing parking spaces at Southeast Regional Library. As part of the above resolution, the Municipality agreed to reconstruct fourteen (14) dedicated parking spaces for the library in the area immediately north of the library; and
5. The Town is building a new Town Hall Complex northeast of the Library on the site of the existing Town Administrative Complex which provides an opportunity to further expand available parking that is needed for the library at a reduced cost and increased efficiency by bidding the work as part of the Town Hall construction. The County and the Municipality desire to enter into an agreement to provide for the County to pay the Municipality to design, engineer and construct forty (40) more parking spaces for library patrons, in addition to those described above, to be adjacent to and north of the parking area that the Municipality has recently reconstructed for Southeast Regional Library as part of the Police Station project (hereinafter "Project"); and
6. This Agreement is entered into to provide the conditions of funding for the Project to be paid by the County out of Capital Improvement Program funds for the reimbursement of costs related to the design, engineering, and construction of the additional forty (40) dedicated parking spaces for patrons of the Southeast Regional Library ("Parking Lot Expansion").

NOW THEREFORE, in consideration of the mutual promises and covenants contained herein the County and the Municipality agree as follows:

1. The Municipality agrees to provide design development review documents and construction documents prepared by a North Carolina licensed landscape architect or engineer, and the Municipality shall submit copies of such documents to Wake County's Office of Facilities Design & Construction for review. Facilities Design & Construction shall have no responsibility for construction selection or oversight.
2. The Municipality agrees to furnish the County with copies of construction documents sealed by a North Carolina registered architect or professional engineer.

3. It is understood that the Municipality has solicited bids for the Town Hall project. Pricing for the parking expansion has been submitted as a bid alternative to the Town Hall bid request. The Municipality agrees to submit the results of the alternate bids for the parking expansion to Wake County's Office of Facilities Design and Construction.
4. Subject to advance written approval and the limits of this Funding Agreement, the County agrees to pay for costs associated with the Project and directly related to the parking lot expansion, to include design services for parking layout, landscape design, civil engineering, and construction to include paving, curb and gutter, storm drainage, utility pathways for area lighting, landscaping and erosion control. A contingency is included for the parking expansion work itself and is also intended to address minor pavement repairs to the existing parking area adjacent to the west library entrance that the County may additionally request.
5. The County agrees to reimburse the Municipality in an amount not to exceed One Hundred Fifty Thousand and no/1.00s Dollars (\$150,000.00), for design, engineering and construction of the Project. This reimbursement also includes a construction contingency of approximately 12% of the cost of construction. County will reimburse the Municipality for the actual final costs within thirty (30) days of receipt of a request from the Municipality after substantial completion and acceptance of the work from the contractor as determined by the Municipality's project architect, and agreed to by the County. The Municipality shall provide documentation of the costs incurred for the Project.
6. County will contract directly with Duke Energy Progress to install and maintain area lighting for the parking expansion. Construction scope by Town's contractor shall include installation of sleeves to allow for routing of lighting conductors under new pavements as necessary. Parking lot design shall include location of area lights for coordination with Duke Energy Progress.
7. It is mutually understood that the new parking area will be located on property owned by the Town of Garner. The Municipality shall retain ownership of the property; however, the County shall have the right of exclusive use of the parking expansion area for library patrons. The parties agree to execute a cross easement, license, and/or other recordable document acceptable to the County Attorney and Town Attorney allowing each party access and use of the other party's property in the above referenced parking lot expansion for as long as the County premises are used for a public library. This is intended to be consistent with the covenants in the deed conveying the property.
8. The reimbursement of construction funds constitutes the sole consideration for this access. Except as set out in this Agreement, the Municipality shall be responsible for all costs now or in the future related to the parking lot expansion, including construction, maintenance, replacement, repair, taxes, insurance, and other related costs, with no additional contribution from Wake County.

Executed as of the day and year first above written.

TOWN OF GARNER  
 900 7<sup>th</sup> Avenue  
 Garner, NC 27529

COUNTY OF WAKE  
 PO Box 550  
 Raleigh, NC 27602

\_\_\_\_\_  
 Town Manager

\_\_\_\_\_  
 County Manager

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

\_\_\_\_\_  
 Garner Finance Director

\_\_\_\_\_  
 Wake County Finance Officer

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: May 2, 2016		
Subject: Health Care Renewal		
Location on Agenda: Old/New Business		
Department: Human Resources		
Contact: BD Sechler		
Presenter: BD Sechler		
<p><b>Brief Summary:</b></p> <p>At the 4/26/16 Work Session, Council approved the staff's recommendation to switch health care providers from BCBSNC to Aetna for the FY 16/17 budget year.</p> <p>The Town currently contributes 25% towards dependent coverage. The proposal presented for consideration increases that amount to 33.7%. This increase would require additional funding of \$40,000.</p>		
<p><b>Recommended Motion and/or Requested Action:</b></p> <p>Approval of Aetna. Approval of the increase to 33.7% TOG contribution toward dependent health care coverage</p>		
<p><b>Detailed Notes:</b></p> <p>Council asked staff to return for the 5/2/16 Council Meeting for further discussion on the amount of funding the Town would provide towards dependent health care coverage.</p>		
<p><b>Funding Source:</b></p> <p>General fund.</p>		
Cost:	One Time: <input type="radio"/>	Annual: <input checked="" type="radio"/> No Cost: <input checked="" type="radio"/>
<p><b>Manager's Comments and Recommendations:</b></p> <p>Change of healthcare provider pros and cons have been fully vetted and is feasible to minimize cost increase to Town and employees while still offering close to equivalent coverage.</p>		
<p>Attachments Yes: <input checked="" type="radio"/> No: <input type="radio"/></p>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	BDS	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		



# Town of Garner

## Health Plan Cost & Contribution Renewal Comparison

Current BCBSNC Plan vs. New Aetna Plan with Current Dependent Coverage Cost Contributions & Proposed Contributions

Renewal Effective Date: July 1, 2016

Report Date: April 28, 2016

Enrollment Counts					Annual Totals
Enrollment Tier	Employee Only	Employee & Spouse	Employee & Child(ren)	Family	All Combined
Employees	114	4	40	10	168
Retirees	28	2	3	1	34

BCBSNC Monthly Costs & Contributions:					Annual Totals
	100% Town Contribution for Employees	25% Town Contribution for Employees' Dependent Coverage	100% Town Contribution for Retirees	0% Town Contribution for Retirees' Dependents	
Enrollment Tier	Employee Only	Employee & Spouse	Employee & Child(ren)	Family	All Combined
Total Cost (Premium)	\$523.53	\$1,229.65	\$906.77	\$1,627.08	\$1,663,298
Town Contribution for Employees & Dependents of Employees	\$523.53	\$700.06	\$619.34	\$799.42	\$1,143,006
Employee Contribution	\$0.00	\$529.59	\$287.43	\$827.66	\$262,706
Town Contribution for Retirees Only	\$523.53	\$523.53	\$523.53	\$523.53	\$213,600
Retiree Contribution	\$0.00	\$529.59	\$287.43	\$827.66	\$43,986

Aetna Renewal Monthly Costs & Contributions:					Annual Totals
	100% Town Contribution for Employees	25% Town Contribution for Employees' Dependent Coverage	100% Town Contribution for Retirees	0% Town Contribution for Retirees' Dependents	
Enrollment Tier	Employee Only	Employee & Spouse	Employee & Child(ren)	Family	All Combined
Total Cost (Premium)	\$680.88	\$1,599.23	\$1,179.30	\$2,116.11	\$2,163,209
Difference	\$157.35	\$369.58	\$272.53	\$489.03	\$499,911
Town Contribution for Employees & Dependents of Employees	\$680.88	\$910.47	\$805.49	\$1,039.69	\$1,486,544
Difference	\$157.35	\$210.41	\$186.15	\$240.27	\$343,539
Employee Contribution	\$0.00	\$688.76	\$373.81	\$1,076.42	\$341,660
Difference	\$0.00	\$159.17	\$86.38	\$248.76	\$78,954
Town Contribution for Retirees Only	\$680.88	\$680.88	\$680.88	\$680.88	\$277,799
Difference	\$523.53	\$311.30	\$408.35	\$191.85	\$64,199
Retiree Contribution	\$0.00	\$918.35	\$498.42	\$1,435.23	\$57,206
Difference	\$0.00	\$918.35	\$498.42	\$1,435.23	\$13,220

Aetna Renewal Monthly Costs & Contributions:					Annual Totals
	100% Town Contribution for Employees	33.7% Town Contribution for Employees' Dependent Coverage	100% Town Contribution for Retirees	0% Town Contribution for Retirees' Dependents	
Enrollment Tier	Employee Only	Employee & Spouse	Employee & Child(ren)	Family	All Combined
Total Cost (Premium)	\$680.88	\$1,599.23	\$1,179.30	\$2,116.11	\$2,163,209
Difference	\$157.35	\$369.58	\$272.53	\$489.03	\$499,911
Town Contribution for Employees & Dependents of Employees	\$680.88	\$990.36	\$848.85	\$1,164.55	\$1,526,175
Difference	\$157.35	\$290.30	\$229.51	\$365.13	\$383,170
Employee Contribution	\$0.00	\$608.87	\$330.45	\$951.56	\$302,029
Difference	\$0.00	\$79.28	\$43.02	\$123.90	\$39,323
Town Contribution for Retirees Only	\$680.88	\$680.88	\$680.88	\$680.88	\$277,799
Difference	\$523.53	\$311.30	\$408.35	\$191.85	\$64,199
Retiree Contribution	\$0.00	\$918.35	\$498.42	\$1,435.23	\$57,206
Difference	\$0.00	\$918.35	\$498.42	\$1,435.23	\$13,220



# Town of Garner

## Health Plan Cost & Contribution Proposal Comparison

New Aetna Plan with Current Dependent Coverage Cost Contributions & Proposed Contributions

Renewal Effective Date: July 1, 2016

Report Date: April 28, 2016

Enrollment Counts					Annual Totals
Enrollment Tier	Employee Only	Employee & Spouse	Employee & Child(ren)	Family	All Combined
Employees	114	4	40	10	168
Retirees	28	2	3	1	34

Aetna Renewal Monthly Costs & Contributions:					Annual Totals
	100% Town Contribution for Employees				
	25% Town Contribution for Employees' Dependent Coverage				
	100% Town Contribution for Retirees				
	0% Town Contribution for Retirees' Dependents				
Enrollment Tier	Employee Only	Employee & Spouse	Employee & Child(ren)	Family	All Combined
Total Cost (Premium)	\$680.88	\$1,599.23	\$1,179.30	\$2,116.11	\$2,163,209
Town Contribution for Employees & Dependents of Employees	\$680.88	\$910.47	\$805.49	\$1,039.69	\$1,486,544
Employee Contribution	\$0.00	\$688.76	\$373.81	\$1,076.42	\$341,660
Town Contribution for Retirees Only	\$680.88	\$680.88	\$680.88	\$680.88	\$277,799
Retiree Contribution	\$0.00	\$918.35	\$498.42	\$1,435.23	\$57,206

Aetna Renewal Monthly Costs & Contributions:					Annual Totals
	100% Town Contribution for Employees				
	33.7% Town Contribution for Employees' Dependent Coverage				
	100% Town Contribution for Retirees				
	0% Town Contribution for Retirees' Dependents				
Enrollment Tier	Employee Only	Employee & Spouse	Employee & Child(ren)	Family	All Combined
Total Cost (Premium)	\$680.88	\$1,599.23	\$1,179.30	\$2,116.11	\$2,163,209
Difference	\$0.00	\$0.00	\$0.00	\$0.00	\$0
Town Contribution for Employees & Dependents of Employees	\$680.88	\$990.36	\$848.85	\$1,164.55	\$1,526,175
Difference	\$0.00	\$79.89	\$43.36	\$124.86	\$39,631
Employee Contribution	\$0.00	\$608.87	\$330.45	\$951.56	\$302,029
Difference	\$0.00	-\$79.89	-\$43.36	-\$124.86	-\$39,631
Town Contribution for Retirees Only	\$680.88	\$680.88	\$680.88	\$680.88	\$277,799
Difference	\$0.00	\$0.00	\$0.00	\$0.00	\$0
Retiree Contribution	\$0.00	\$918.35	\$498.42	\$1,435.23	\$57,206
Difference	\$0.00	\$0.00	\$0.00	\$0.00	\$0