



The Hickory Regional Planning Commission will hold its regular meeting on **Wednesday, October 26, 2016 at 6:00 p.m. in the City Council Chambers of City Hall**. The following will be the agenda for the Regular Meeting:

#### **AGENDA**

- Parliamentary Call to Order
- Welcome
- Swearing in of New Member
- Roll Call
- Items of Correspondence
- City Council Action
- Approval and Signing of Minutes from the August 24, 2016 Meeting

#### **PRESENTATIONS AND PUBLIC HEARINGS**

1. **Special Use Permit (SUP) 04-13(B)**. Consideration of an amendment to an approval Planned Development Master Plan to permit for the inclusion of multi-family apartment complex. The subject properties, which are currently owned by Brown Operating Company, Inc., are located at 2758 2<sup>nd</sup> Street NE and an unaddressed lot immediately to the north; and are identified as Catawba County parcel numbers 3704-20-92-5480 and 3704-16-92-6536.

#### **OTHER BUSINESS**

1. Consideration of consolidation of November and December meetings.

The Hickory Regional Planning Commission does not discriminate on the basis of disability in the provision of its service as charged by the City Council of the City of Hickory. All meetings are held in accessible facilities. Any person with a disability needing special accommodations should contact the Planning Department at telephone number (828) 323-7422 at least 48 hours prior to the scheduled meeting.

**Attendance Roster**

**FY 16-17**

**Hickory Regional  
Planning Commission**

**Key**

A	Absent	AX	Excused	No meeting
P	Present			Vacant/Not yet appointed

		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Appoint	Expire
Catawba County	Jeff Kerley	P	P											Jun-15	Jun-18
Longview	Randall Mays	P	P											Jun-14	Jun-17
Catawba County	John Eldridge	p	A											Jun-14	Jun-17
Burke County	Vacant														
Brookford	Doug Minton		P											Aug-16	Jun-19
Caldwell County	James Noggle	P	P											Jul-15	Jun-18
Ward 1	Bill McBrayer	P	P											Jul-16	Jun-19
Ward 2	Noah Geoghegan													Jul-16	Jun-19
Ward 3	Junior Hedrick	P	P											Jul-14	Jun-17
Ward 4	Sam Hunt	P	P											Jul-15	Jun-18
Ward 5	Wallace Johnson	P	P											Jul-14	Jun-17
Ward 6	Shanua O'Brien	AX	P											Jul-16	Jun-19

**Hickory Regional Planning Commission**  
**Wednesday, August 24, 2016, 6:00 pm**

A regular meeting of the Hickory Regional Planning Commission (HRPC) was held on Wednesday, August 24, 2016, 6:00 pm, in Council Chambers of the Julian G. Whitener Municipal Building, Hickory NC.

**Members Present:** Randall Mays, Bill McBrayer, Jeff Kerley, Shauna O'Brien, Junior Hedrick, Doug Minton, Jim Noggle, Wallace Johnson and Sam Hunt

**Members Excused:** none

**Members Absent:** John Eldridge

**Others Present:** Principal Planner Cal Overby, Deputy City Attorney Arnita Dula and Minutes Clerk Anne Starnes

**Parliamentary Call to Order & Welcome:** Randall Mays, Chairman, called the meeting to order at 6:00 pm and welcomed everyone present.

**Swearing in of New Member:** Doug Minton, representing the Town of Brookford, was sworn in as a new member of the Commission. Members applauded and welcomed him.

**Roll Call:** Principal Planner Cal Overby stated a quorum was present.

**Items of Correspondence:** none

**City Council Action:** Cal Overby said Rezoning Petition 16-03 went to City Council and was approved.

**Approval and Signing of Minutes from the July 27, 2016 Meeting:** Minutes of the previous meeting were distributed to members in advance. No additions, deletions or corrections to the minutes were stated. Bill McBrayer moved, seconded by Jeff Kerley, to approve the July 27, 2016 minutes as written. The motion carried unanimously.

Mr. Mays said one public hearing was on the Commission's agenda tonight.

**PRESENTATIONS AND PUBLIC HEARINGS**

**1. Special Use Permit (SUP) 16-03.** Request by Hilton Materials, LLC, for the consideration of approval to operate open storage as a principal use in the Industrial (IND) zoning district. The subject property is located at 1360 11<sup>th</sup> Avenue SE and identified as Catawba County parcel 2712-14-43-2806.

All speakers were sworn in by the Minutes Clerk.

**Cal Overby** presented the Staff Report and referred to PowerPoint slides during his presentation.

Referring to slide #2 (Special Use Permit 16-03), Mr. Overby said members would remember that the applicant came before the Commission at a previous meeting in regards to rezoning, which was recently approved by City Council, after being recommended by the Planning Commission. The applicant is Hilton Materials; their agent and legal counsel is Monroe Pannell. The property is located at 1360 11<sup>th</sup> Avenue SE,

is zoned Industrial (IND), and is about an 8-acre parcel of property. The request made by the applicant is for approval of an open storage operation as a principal use. The owner intends to use the property for a business operation specializing in the storage and mixing of materials, including soil, mulch, rock and items of that nature on the site, and would also do some processing of materials into other types of finished products. He said this type of activity requires a Special Use Permit.

Referring to slide #3 (Map 1 – 2014 Aerial Photo), Mr. Overby said the property in question is outlined in red. He noted Lenoir-Rhyne Blvd. and I-40, and said 11<sup>th</sup> Avenue leads to the Martin-Marietta Quarry, which can be seen from the McDonald Parkway. He noted adjacent and nearby properties, occupied by two businesses, the Maymead Asphalt operation, a small furniture business, a NCDOT maintenance yard, and two single-family residences. He said the properties on the north side of 11<sup>th</sup> Avenue are all owned by Martin-Marietta, and members who have been on the Commission for a time will remember that this area was approved for Martin-Marietta to expand their mining operations in the future. He described the businesses to the west, including Charter Communications, a gas station, car dealership, restaurant, and small office park.

Referring to slide #4 (Map 2 – Current Zoning), Mr. Overby said that all properties shown on the map shaded in purple are zoned Industrial, and those in the red color are zoned Commercial, making it a Commercial and Industrial area.

Referring to slide #5 (Map 3 – HBC 2030), Mr. Overby said this map shows the Hickory by Choice Future Land Use Map, and that he added the parcel lines for geography purposes only; the official HBC 2030 map does not contain parcel data, it is more general. He said the area between Lenoir-Rhyne Blvd. to the west and nearly all the way over to Sweetwater Road to the east, is a huge swath of property the City anticipates will be Industrial in the future. He again noted the quarry location, with McDonald Parkway on the other side, along with Corning and other manufacturing facilities.

Referring to slide #6 (Hilton Materials LLC, Special Use Application), Mr. Overby said the small schematic shown was included with the application packet, and shows roughly how the property will be utilized, if the permit is approved. He noted the bulk area and stockpiles of materials, and a paved driveway into the area. He said the driveway would be paved approximately 30-40 ft. inward, for the purpose of not dragging gravel and other materials out onto 11<sup>th</sup> Avenue. He said staff did not see the necessity of having a long, paved driveway, being that most of the property would be used for equipment moving, dump trucks, or other types of moving equipment that would tend to destroy asphalt. He noted a temporary sediment trap for storm water, and skimmer basin area.

Referring to slides #7 through #12 (Special Use Criteria), Mr. Overby said that with regards to the standards, they are outlined in the Staff Report, and also in the Land Development Code, for approval of a Special Use Permit:

- **Consistency with the Hickory by Choice 2030 Plan**
  - The general area is classified as **Industrial** by the Hickory by Choice 2030 Comprehensive Plan.
  - The Hickory by Choice 2030 plan does not specifically reference 11th Avenue SE as an area for future industrial development, but the plan's future land use map identifies an area that borders I-40, and spans from east of Lenoir-Rhyne Boulevard to 21st Street Drive SE (Sweetwater Road) as an area for future industrial growth and expansion.
  - The use being requested is industrial in nature. The proposed operation will consist of machinery and equipment used to mix and process soils and materials.

- **Compliance with the City’s Land Development Code**
  - The schematic plan submitted as part of the application largely complies with the applicable provision of the city’s Land Development Code.
  - If the requested Special Use Permit is approved, the owners/developers will be required to submit plans for permitting. Upon submission, these plans will be reviewed to ensure compliance is being met.
- **Compatibility with adjacent uses**
  - The proposed use is similar to other adjacent industrial uses to the east, but is dissimilar to two grandfathered non-conforming residential uses to the west.
  - Buffering will be retained and/or installed along the property line shared with the residential uses, which is shown on the schematic plan.
  - The property owner has indicated the hours of operation will be limited to the period between 6:00 A.M. and 6:00 P.M. from Monday through Saturday, with limited operation during the same hours on Saturday, and no operations on Sunday.
  - Traffic is not anticipated to noticeably increase.

Mr. Overby noted that the petition information was sent, earlier, to all of the City’s departments. They received a comment back from the Hickory Police Department, saying they were concerned about noise, mainly noise that would be generated toward the two residences next door. The Chief of Police indicated that, in the past, they had received complaints from these residences about noise. Mr. Overby said he talked with Chief Whisnant, as well as Mr. Pannell, counsel for the applicant, and it was agreed that it would be fine, if they limit the hours of operation.

Mr. Overby said he spoke with Chief Whisnant, and communicated this to Mr. Pannell, who asked if they could discuss longer hours of operation, and the conversation continued. Mr. Overby said the hours of operation have since been changed, from what appears in the staff report and on this slide. He said it had changed only in the last couple of days, and apologized that it is not correct in the materials provided to members. The Chief indicated he was good with these expanded hours of operation, but stated that noise could potentially become an issue. Mr. Overby said the hours of operation would now be:

Monday through Friday, 5:30 am to 8:00 pm  
 Saturday, 6:00 am to 6:00 pm  
 Sunday, no operations

Mr. Overby said traffic is not expected to be an issue. The majority of vehicles coming up and down 11<sup>th</sup> Avenue are very large dump trucks and tractor-trailers, that is the majority of the traffic through there, and they are traveling slowly through the intersection. Staff does not have a great concern about the traffic.

- **Mitigation of significant impacts**
  - Any additional identified negative impacts on neighboring properties and the environment shall be mitigated to the extent required by all applicable laws and regulations.
- **Diminution in value of surrounding properties**
  - The proposed operation is located in an area where some of the most intense industrial operations in the city are located, namely the Martin-Marietta quarry and the Maymead

asphalt plant. Given the location of these existing uses, and their proximity to adjacent uses, any diminution in property values has likely already been felt.

- It should also be noted, the property to the north across 13th Avenue SE is the location of an approved expansion area for the Martin-Marietta quarry.

Mr. Overby said the staff has not received any information indicating there would be diminished property values, no increase or decrease whatsoever. With that being said, he noted it should be understood that the area has some very intensive industrial uses. The two residences to the west side of the property have probably been impacted already; their property value as residential properties has likely gone down, while their value has likely gone up as commercial and/or industrial properties. He said it very well may be a wash, and this is his opinion as a member of the staff.

- **Levels of service (police, fire, utilities, etc.)**
  - Adequate police, fire, and transportation infrastructure is in place to serve the proposed development. During plan review, the development project will be required to demonstrate compliance with NC State Fire Code, and obtain driveway permits from the NC Department of Transportation.
  - Both public water and sewer are available to serve the property. The current development plan does not show any structures on the property. However, should this change in the future and a structure is located on the property, a sewer line extension would be necessary to obtain a connection.

Mr. Overby said the City has capacity for all levels of service, and the only item that came up in the conversation was utilities. He said they do have the ability to provide capacity, however, should there be a permanent structure located there in the future, such as an office, and they would need to enhance their utility services.

- **Assurances of continued maintenance**
  - The future operation of the principal and accessory uses shall be maintained in conformance with all existing development standards, specifically Section 9.16, Property Maintenance, of the Hickory Land Development Code.
- **Additional requirements (LDC Section 6.2.18)**
- Open storage uses are prohibited from being located in the required front (street) yard setback.
  - The required setback is 30 feet. The schematic plan provided with the petition shows the storage area will not be within this required setback. This will be further verified during the plan review.
- Open storage uses must be screened from view from major and minor thoroughfares.
  - 11th Avenue SE is not classified as either a major, or a minor, thoroughfare.

Referring to slides #13 & 14 (Special Use Permit - Recommendation), Mr. Overby said that, based on their review and analysis, staff finds that the request is in conformance with the standards for approval contained within the City's Land Development Code, and recommends approval. However, they do offer some conditions to their recommendation for approval, as follows:

1. All aspects of the project, and its subsequent improvements, shall comply with all applicable provisions of the City's Land Development Code, and the Building and Fire Codes of the State of North Carolina;

2. Prior to the initiation of development, plans must be submitted, reviewed, and approved by the City of Hickory;
3. The property owner has indicated the hours of operation will be limited to the period between 6:00 A.M. and 6:00 P.M. from Monday through Saturday, with limited operation during the same hours on Saturday, and no operations on Sunday;
4. Adequate measures shall be designed and installed to control storm water originating on or traversing the property;
5. The owner/developer shall be responsible for any utility connections needed to serve the property;
6. Buffering along the east property line adjacent to the residentially used properties shall be provided;
7. An erosion control permit must be obtained; and
8. A driveway permit from the NC Department of Transportation must be obtained.

Mr. Overby asked for questions from members.

Mr. Mays said that the hours of operation were mitigated to Monday through Friday, 5:30 am to 8:00 pm, Saturday, 6:00 am to 6:00 pm, and Sunday, no operations. Mr. Overby said yes. Mr. McBrayer said he had initially looked at the 6:00 am and thought that was really early, and now it will be even earlier. If he was a neighbor, he said maybe 7:00 am to 6:00 pm would be better. Mr. Overby said it is the Commission's decision, whether to leave or change the hours, if they approve the petition. He said that some of the other uses located in the area begin early, too.

Mr. McBrayer said that regarding buffers, to go to Map 1 with the aerial view, and he would like to know where the residences are located exactly. These were pointed out on the map, noting the homes are to the left, or west of the property. He asked what type of buffer would be located there, between the property and the homes. Mr. Overby said there would be a 30-foot buffer. Mr. McBrayer asked if that would also hold true for the furniture shop on the east side, and Mr. Overby said no, but that Martin-Marietta had built up berms on the other side.

Mr. Mays referred to the schematic map of the property (slide #6), plus the aerial photo, and said that it looks like the buffering is pre-existing with the trees and such located there now. Mr. Overby said yes, there is a lot of vegetation present; when he went to observe the site, it appeared to be a fairly dense area. He said a lot of it would need to be cleared in the future, but currently it is pretty dense.

Mr. McBrayer referred to the eight (8) conditions staff placed on their recommendation for approval and said that #6 appears to be incorrect. He said it states, "Buffering along the east property line...", and asked if this should instead say "west property line." Mr. Overby agreed that yes, it should say "west."

Mr. Hunt asked if the residents in the two homes know about the weekday time change, from 6:00 am to 5:30 am. Mr. Overby said they did not know of the initial hours, nor did they know of the change. He said he had not received any calls from anyone at all, no one has requested information regarding the petition. If they did call, he would have shared the information with them, but no one has called.

Ms. O'Brien said that Chief Whisnant had said there were earlier complaints regarding noise. Mr. Overby said yes, about the Maymead operation, which sometimes runs 24-hours per day.

Mr. Minton asked what number of additional vehicles would be entering and leaving the street each day. Mr. Overby said he was not certain, possibly the applicant could address this later. He said when the City's Traffic Engineer reviewed it, she did not indicate any traffic concerns at this particular location.

Mr. Hunt asked if this is similar to the business across from Killian's Hardware on Springs Road. Mr. Overby said in some regards that it is similar, they would be selling mulch, and would also sell materials such as soil. He said he was not that familiar with the business Mr. Hunt cited, and possibly, it would be very similar.

There were no additional questions for Mr. Overby.

The Staff Report was presented to the Minutes Clerk, and entered into the record as Exhibit A.

Mr. Mays reminded Commission members that this is a quasi-judicial hearing. He said any persons planning to speak tonight must be sworn in by the Clerk. Also, any evidence they want to present must be given to the Clerk. He said proponents would go first, then the opponents, and rebuttal time would follow.

Mr. Mays opened the Public Hearing for Special Use Permit 16-03. He said several people were signed up to speak, and could be sworn in together.

### **PROPONENTS**

**Monroe Pannell** addressed Commission members, saying he is the attorney for the applicant, Kip Hilton. He asked Mr. Hilton to join him at the podium to answer any questions from members, and requested that slide #3 (Map 1 – 2014 Aerial Photo) remain on the screen.

**Kip Hilton** addressed Commission members, saying he is a resident of Caldwell County and has been in the grading business for nearly 30 years, doing much of his work in Catawba, Caldwell and Burke Counties. He is interested in this site as a place to keep materials that come off his different projects; most of his job sites have leftover materials, and he needs a place to put these loads of materials, so it is available to use on his other projects. In regards to the buffer, he will probably plant a buffer along the outer edge. He said there is a lot of vegetation there now, but it is not as dense as it could be. He wants to be a good neighbor to everybody, and not cause any trouble to the neighbors, the City, or anybody concerned.

Speaking to the hours of operation, Mr. Hilton said 5:30 am to 8:00 pm are pretty much the daylight hours during the summertime, and they do get started early sometimes with their trucks and moving equipment, so that is the reason for that (the hours). He said the construction industry, especially in the highway sector, they deal with things that are 24/7, and there is a lot of nighttime work, which is mandated. He hopes that this site might help him with some of the work that will come up on the Highway 321 road project in coming years. He said these are his intentions for using the site.

Mr. Pannell asked how many employees and trucks he has, and Mr. Hilton said he currently has 10 employees, 8 trucks and 15 pieces of equipment. He noted a recent project this year included the McDonald's on Highway 321, and said he typically targets projects of .5-acre on up to 15- to 20-acre sites.

Mr. Mays asked if he would store his equipment on this property, and Mr. Hilton said at times he would, especially when he needs to move a piece of equipment from a job site and park it somewhere for a couple of days before moving it to the next job.

Mr. McBrayer asked if he has met the neighbors, and personally shared his plans with them. Mr. Hilton said he has not.

Mr. Pannell asked him to describe the buffer he proposes, knowing that the ordinance requires a buffer, and Mr. Hilton said he would probably plant some Leyland Cypress, something tall, especially in the back. When he was at the site today, he noticed a clear area in the back, near one house, where the property line goes across a clear area, and there is no buffer there at all right now.

Mr. McBrayer asked if he would consider putting a berm in first, considering the business he is in, then planting the trees, and Mr. Hilton said he would consider that.

Mr. Mays said with the usage planned there, it appears like there will be a lot of clearing to do there. Mr. Hilton said yes, he plans to have the timber cut; he has already obtained an erosion control plan for the site and the driveway permits are in process.

Mr. Pannell addressed **Deputy City Attorney Arnita Dula**, and requested that she bring up her issue now, so they can deal with it at this point. Ms. Dula thanked him and addressed Commission members, saying she wanted to bring to their attention that in the City of Hickory Code Ordinances, Chapter 19, it deals with noises. She said Chapter 19-2 deals with noises that are expressly prohibited. The particular Section is Number 15, which she read aloud. It is specifically related to business noises at night near dwellings, residences, hotels, boarding rooms, etc., between the hours of 8:00 pm and 7:00 am, which could disturb the quiet, peace, and comfort of any citizen. Ms. Dula said that is prohibitive, and she wanted to be certain that members are aware that the operating hours being recommended, specifically the early starting hour, are outside of this. She questioned how to address this because those hours, and the early starting time, are outside of the City Ordinance related to noise.

Mr. Pannell said that she had agreed this is not an absolute prohibition of activity during the times outside of those hours. Ms. Dula said, again, she would not say it is an absolute prohibition, because it addresses noises that specifically disturb the peace, or high volume, or such frequency, so this is the appropriate time to discuss how that would be mitigated.

Mr. McBrayer said that, regarding his question earlier, he knows when equipment is backing up because it makes a noise, and also when a truck raises the bed or dumps its load, and so on, and that, if this is occurring at 5:30 in the morning, it would make him a little ill. Mr. Kerley said he understood that these residences are located in an industrial area. Mr. Mays said yes, but they are still residences, and are being used as such. He asked how does Maymead, with their 24/7 operations at times, get by – have they just not had any complaints lodged against them. Ms. Dula said that is more likely the case than not, but she did not have any information on them. Mr. Mays said that this ordinance, in fact, is speaking more of noises that are a disturbance to the residences, or others, before 7:00 am. Ms. Dula said correct, between the hours of 8:00 pm and 7:00 am. Mr. Mays said that any normal activity that is not creating loud noises would be permitted. Ms. Dula said correct, and read the portion related to creating “loud and disturbing noises of such frequency or such volume as to annoy or disturb the quiet and comfort of any citizen.” She said, so a mitigating action may be needed. Mr. Mays said, so from 5:30 am to 7:00 am, you cannot be out there making loud noises, but he can be doing other work, and Ms. Dula said, pretty much.

Mr. Kerley said that would be very different from what is happening on that road, that if you go out there at 5:30 or 6:00 in the morning, there is a lot of activity, that road is moving and busy. He said he is in the same business as Mr. Hilton, and they run up and down that road early in the morning, so this is not going to generate anything different from what is already there now. Ms. Dula said she was just bringing this to members’ attention, because if it is approved, there is an existing Ordinance that members need to be aware

exists. Mr. Kerley asked if the ordinance applies to all properties zoned Industrial in the county, and Ms. Dula said it applies to property zoned Industrial within the City of Hickory. Mr. Kerley said many people could be in violation of that, and Ms. Dula said members need to be aware of the ordinance, that if the members approve something, and then there are complaints about it, they will go directly to this ordinance. She said that if mitigating factors are not put in place, some type of consideration to address it, then something has been set up that is in violation of the City's own ordinances, and she is bringing this to the Commission's attention.

Mr. Hunt asked what suggestion Ms. Dula had for members. She said Mr. McBrayer had asked questions about buffers and berms, and Mr. Pannell and Mr. Hilton could better address what kinds of mitigating factors could be put in place. Mr. Pannell suggested letting Mr. Hilton address this, and added that he spoke with Chief Whisnant, who had spoken with Brian Frazier, and his concern was that, apparently, there had been some issues with Maymead about nighttime operations, and there were some complaints from residents. He said this was discussed when they went back to the staff last week and asked about extending the hours of 6:00 am to 6:00 pm, which was what they originally proposed, and changing it to 5:30 am to 8:00 pm on weekdays. Mr. Pannell said Mr. Overby had suggested he speak with the Chief of Police, who had informed him that they had an earlier issue with Maymead, and the Chief did not want to create an enforcement issue for his department. Mr. Hilton has said he is interested in running (his business) during daylight hours, and Mr. Pannell suggested that maybe something could be fashioned in that way, although it does not change the ordinance. He said the ordinance clearly says what it says, being somewhat subjective.

Ms. Dula said that, not only for the benefit of the City, but also for the benefit of Mr. Hilton as the applicant, do not put Mr. Hilton in a situation where there is an enforcement action, because of something this body did, in approving something. She said that everyone needs to be aware of what is going on, have a discussion, and consider any measures that can be put into place to buffer it. Mr. Mays asked her if the Commission could put in place "limited operations from 5:30 am to 7:00 am" and thus limit the noise level. Ms. Dula said measures could be put in place, and Mr. Mays asked if that would cover what she is discussing, to reduce early morning noise levels. She suggested letting Mr. Hilton address this, and said that we are only dealing an hour and a half.

Mr. McBrayer said that noise is a subjective thing – what might annoy him might not annoy you. Mr. Mays said if the police get a call, then it is annoying to someone.

Mr. Pannell said the applicant, Mr. Hilton, would suggest changing the hours to 6:00 am to 8:00 pm, realizing that from 6:00 am to 7:00 am, he is faced with the existing noise ordinance. He said that if the Commission states this specifically in the Special Use Permit, if it is granted, then Mr. Hilton is obligated to follow that law anyway, just like following the ones about dust, traffic, or anything.

Mr. Kerley asked if the two houses eventually become commercial uses, which they likely will be one day, then does the noise ordinance go away, since they are no longer residences. Mr. Overby said yes, unless they are places to stay in, such as boarding houses. Ms. Dula said it does not take into consideration commercial uses. Mr. Overby said that likely those residences would no longer be used for such.

Mr. Mays said there is one concession on the table, to change the operating hours to 6:00 am to 8:00 pm. Mr. Hilton noted that, in his plan, all of his stockpile areas are located to the east side, and he is not planning on any heavy operations next to those houses. He said his long-term plan, which the members have not seen, is to eventually build an office structure, a building, and it would likely be built by the houses. He is not planning to do any type of heavy work toward the Lenoir-Rhyne Blvd. side.

Mr. Mays said if the operating hours change to 6:00 am to 8:00 pm, then Mr. Hilton would need to be careful during the hour of 6:00 am to 7:00 am, since any heavy noises might disturb the neighbors. Mr. Hilton said right. Mr. Mays said that Mr. Hilton would need to be very aware of the noise ordinance, and the boundaries of the ordinance, and Mr. Hilton said right.

Mr. Hunt asked about the noise from a concrete crusher, which is very loud. Mr. Hilton said yes, it does make some noise, as does the grinder for mulch. He said he does not anticipate doing any crushing or grinding at those hours, it would mainly be DOT work, any night work that is being done which he could be part of, possibly bringing in and taking out material. He said that he and Mr. Kerley both go to work early in the morning, especially in the summer when it is hot, it helps to beat some of the heat. He said the early morning would mainly be trucks leaving the property. He said that nearly all of his trucks currently drive by this property on a daily basis, so as far as adding any additional traffic, there could be a little bit, but the quarry and asphalt plant are right there, which is one reason why he picked this location.

Mr. McBrayer said the two residential houses are actually zoned Commercial, and that if he was planning to buy property next to those residences, he would be meeting with those property owners. But of course, he said staff indicated there had been no calls from anyone. Mr. Hilton said he believes that one of the houses is currently a rental property, and added that he has no desire to upset anyone in any way, shape or form – they just want to operate their business and be good neighbors.

Mr. McBrayer said he would personally like to see a berm built, prior to planting the trees, that this would be an easy fix in his opinion, and could help if there are any issues later. At the very least, he said it is showing a good faith effort. Mr. Hilton said he would agree to place a berm there, but he did not know how tall it would need to be; it would need to go in with his erosion control plan.

Mr. Overby said he would not want to create a storm water issue, due to the berm. He said there is a down slope to also consider. Mr. Hilton said he believes it can be done properly. Mr. Kerley said they also do not want to impede on the visibility, for coming in and out of the property. Mr. Overby said he did not have an objection to adding a berm, but it needs to be properly designed. Mr. Hilton said there are several large pine trees, shared along the property line, and he anticipates these will remain. He suggested planting a medium height buffer there, and then at the back of the property he would plant taller Leyland Cypress. He suggested he could probably place a berm where there is a bend in the property

Mr. Hunt asked if these changes are going into the Recommendation, and Mr. Mays said that would come later, during discussion and the vote by members.

There were no additional questions for Mr. Pannell or Mr. Hilton.

**Brenda Fox** addressed Commission members, saying she and her husband own the small furniture shop located by the property. She said Mr. Hilton had not visited them either, and they have been there for years. She said she had a few questions. First, she said how much she respects everyone being concerned about the residents there, that it is unfortunate they are living there, and appreciates the concern shown. She asked if the materials would be for sale or for his own use, that she understands that he does not plan to build an office until later, asked what specifically is he going to store there, and said she is glad to see a business coming in to use the property, because they have had street people in there for years.

Mr. Mays said the items being stored there were addressed earlier, including that he would store concrete to crush as stone, he will store soil to use at his job sites, and he will be grinding trees and yard waste as mulch. As for resale, Mr. Mays asked Mr. Hilton to address this, and he said both, the materials will be for his own use and for resale, but he does not intend to open up a big retail operation. Ms. Fox said either way

was fine, she was just curious; they received the information about Hilton Materials and open storage, and she was just curious about what would be stored there, with it being so close by. Mr. Hilton said nothing contaminated, nothing treated will be stored there. Mr. Mays said he would also have his equipment there from time to time.

Ms. Fox said welcome to the neighborhood, and thank you.

There were no questions for Ms. Fox.

**Richard Fox** had signed up to speak, but declined.

There were no other speakers in favor of the petition.

### **OPPONENTS**

None

Mr. Mays asked if there were any additional questions, including for staff or the applicant, and there were none.

The Public Hearing was closed.

Mr. Mays said members had heard the staff report, and that Mr. McBrayer had brought up the point that there are two existing residences to the west of the property. He said the hours of operation had been mitigated to be from 6:00 am to 8:00 pm, Monday through Friday, due to the noise ordinance, and this would need to be established in the record tonight. He said the buffering was another issue brought up tonight, and was another item for discussion.

Mr. McBrayer said the hours of operation would now be Monday through Friday, 6:00 am to 8:00 pm; Saturday, 6:00 am to 6:00 pm; and, Sunday, no operations. Mr. Mays said that right now, in mitigation, those are the acceptable hours; also, he said Mr. Hilton is fully aware of the City's existing noise ordinance, and mainly the 6:00 am to 7:00 am hour.

Mr. McBrayer said if this is approved, and if Mr. Hilton develops a plan for a berm, with vegetation that complies with the drainage plan, does he then need to bring that plan back and submit it to staff. Mr. Overby said yes, it would need administrative approval.

Mr. Mays asked Mr. Kerley what size berm would be appropriate on the west side of the property. Mr. Kerley said that even a small berm makes a big difference in sound deflection, and to build a full-sound berm, that it would be too big, would cost too much, and would cause a lot of potential erosion. He said that even a small berm, when vegetation is set on top, it gives it more height, and quickly. He said you would not want to go too big there, because of the sight distance at the entrance, and also it would divert the water downhill toward I-40. He said adding berms consolidates water. Mr. Mays asked if the berm would create redirection of water, and cause problems on the residences side, it could create a big problem. Mr. Kerley said if a 30-foot double buffer is put there, the sound could still be heard, and the water would go toward the Hendrick property. He said he agreed with Cal, that putting a berm there could create a sight distance problem, and the water would also run right toward the berm, so it will hit the berm and run off the property, possibly toward the Hendrick property.

Mr. Mays said that these two remaining residences are already commercially zoned, and are the last two of many homes that were in that area. He said that without creating hindrances to both sides, the 30-foot buffer with vegetation would be sufficient. Mr. McBrayer said he agreed, and noted these persons had not objected to anything else going on in that area up to now. Mr. Kerley asked if a 30-foot buffer would be required, and Mr. Overby said yes; he discussed the type of vegetation and the distance required between plantings. Mr. McBrayer clarified that a double row, staggered, of an evergreen such as Leyland Cypress and shrubs, would be planted on the berm. Mr. Mays said the plan would need staff approval, which can be taken care of later.

Mr. Mays asked if members want to set any requirements on approval of the petition. He reviewed the Recommended Action in the staff report, pages 4 and 5. He said specifically, in #3, the hours of operation would be amended to, 6:00 am to 8:00 pm on Monday through Friday, 6:00 am to 6:00 pm on Saturday, and no operation on Sunday; in #6, the word *east* would be corrected to *west*, stating that buffering will be along the west property line adjacent to the residentially used properties; and a new item, #9 would be added, stating that the applicant has been made fully aware of the City's Noise Ordinance, in Section 19-2, Sub-Section 15, which states that a noise ordinance is in effect during the hours of 8:00 pm until 7:00 am daily.

Mr. Mays asked if all members were in agreement with the amended conditions for the Recommendation from Staff, #1 through #9. There was agreement, and no further questions or discussion on the petition.

Mr. Mays stated that as a quasi-judicial hearing for a Special Use Permit, members have heard the staff presentation and testimony by the petitioner, have asked questions in regards to the petition, and modified the conditions needed. Mr. Mays asked for a motion to approve or deny the petition.

Bill McBrayer moved, seconded by Jeff Kerley, to approve Special Use Permit 16-03, with the modifications as discussed by members.

Mr. Mays again stated that as a quasi-judicial hearing, there would be a roll call vote, and members would each vote to either approve or deny Special Use Permit 16-03, basing their findings on the staff report, evidence, testimony, findings of fact, or other information they received tonight.

**Mr. Noggle** voted in favor of SUP 16-03, based on the evidence, including the staff report, and verbal testimony by the applicant presented during the public hearing, and noting that he feels the applicant met the review criteria #1 through 9.

**Mr. Hunt** voted in favor of SUP 16-03, based on testimony by the applicant and attorney, the amended recommendation from staff, and that the applicant has met the nine criteria.

**Mr. Johnson** voted in favor of SUP 16-03, based on the testimony during the public hearing tonight, the consistency with the Land Development Code and Hickory by Choice 2030, and on the recommendation from staff, as amended.

**Mr. Minton** voted in favor of SUP 16-03, based on the information provided by the applicant during the public hearing tonight, and that the amendments made to the recommendation are appropriate.

**Mr. Mays** voted in favor of SUP 16-03, based on the testimony and evidence presented tonight, that it is consistent with Hickory by Choice 2030, and that the amended recommendation conditions will be adhered to by the applicant.

**Ms. O'Brien** voted in favor of SUP 16-03, based on the information provided and the amended conditions in the staff recommendation, and that the nine review criteria were met.

**Mr. Kerley** voted in favor of SUP 16-03, based on the information presented, the amended conditions in the staff recommendation, and that it will be in a great location along with the other commercial activities.

**Mr. McBrayer** voted in favor of SUP 16-03, based on the testimony presented tonight by all parties, and the amended recommendation from staff, conditions one through nine, as discussed.

**Mr. Hedrick** voted in favor of SUP 16-03, based on the finding of facts, the testimony given tonight, and the amended conditions recommended by the staff and commission.

Mr. Mays advised Mr. Hilton that Special Use Permit 16-03 was unanimously approved by the Hickory Regional Planning Commission.

### **OTHER BUSINESS**

**Appointment of Member to HBC 2030 Update Sub-committee** – Mr. Overby said a vacancy remains on the Hickory by Choice 2030 Update Sub-committee, since Barbara Clemons recently retired from the HRPC and can no longer serve. He named the four current members: Mr. Mays, Mr. Hunt, Mr. Hedrick and Mr. McBrayer. Mr. Mays said that City Council mandated five HRPC members would serve on the sub-committee. He asked for a volunteer, stating that a fifth member would be appointed tonight if no one volunteers to serve. Mr. Overby said the sub-committee is currently two-thirds of the way through their assigned task, and hope to be finished by early 2017. Mr. McBrayer suggested that new member Doug Minton would benefit from serving and having an opportunity to learn more about the City and HRPC. Mr. Mays said meetings are held on the same day as HRPC meetings, the 4<sup>th</sup> Wednesday of each month, from 4:45 to 5:45 pm, in the Planning Conference Room.

Doug Minton volunteered to serve on the HBC 2030 Update Sub-committee. Mr. Mays thanked him, and asked Mr. Overby to send him the necessary information for review.

**New Member Appointment to HRPC** – Mr. Overby said Councilman Vernon Tarleton from Ward 2 had recently appointed a member to replace Ms. Clemons on the HRPC, Noah Geoghegan. The Burke County seat remains open.

Mr. Mays asked if there was any other business for the Commission, and there was none.

**Adjourn:** Bill McBrayer moved, seconded by Shauna O'Brien, to adjourn. There being no further business, the meeting adjourned at 7:20 pm.

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Randall Mays, Chairman  
Hickory Regional Planning Commission

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Anne Starnes, Minutes Clerk  
City of Hickory

## **SPECIAL USE PERMIT ANALYSIS**

**PETITION:** 04-13 (B)

**OWNER:** Brown Operating Company, Inc.

**APPLICANT:** Scott Mitchell, Architect, for Courtyard Properties

**PROPERTY LOCATION:** 2758 2<sup>nd</sup> Street NE and an unaddressed vacant lot immediately to the north.

**PIN:** 3704-20-92-5480 (part) and 3704-16-92-6536

**WARD:** The subject property is located in Ward 6 (Councilwoman Patton)

**ACREAGE:** +/- 7 acres

**REQUESTED ACTION:** The applicant requests an amendment to an approved Planned Development. The proposed amendment would add a 144 unit multi-family apartment complex in the place of 25 residential townhomes.

**BACKGROUND:** The subject property was rezoned from R-3 Residential to Planned Development – Office and Institutional (PD-OI) on August 3, 2004. The planned development master plan approved with this petition consisted of six (6) office buildings that collectively contained 27,300 ft<sup>2</sup> of floor area. One (1) of these office buildings was constructed in 2006, and contains approximately 3,800 ft<sup>2</sup> of floor area (23,500 ft<sup>2</sup> of office space was never constructed).

On February 28, 2007 the Planned Development Master Plan was revised (Petitions 04-13(A) and 06-16) to delete the remaining office space, and replace it with thirty-one (31) residential townhomes, twenty-five (25) of which were located on the properties under consideration.

Six (6) of the approved townhomes were converted into detached single-family residences, which are currently under construction on the south end of the planned development. This conversion was considered to be lessening of the proposed intensity, so the amendment was administratively approved.

Note the OI suffix, and all other planned development suffixes, was dropped from the district name in 2011 with the adoption of the City's new Land Development Code.

**DEVELOPMENT POTENTIAL:** The subject property is currently zoned Planned Development (PD), and the development of the properties is limited to those uses and intensities approved on the planned development's master plan. As outlined in the section above, the properties can be developed for the location of twenty-five (25) residential townhomes.

Deviation from the approved master plan that increase the intensity of development on the properties requires amending by the Hickory Regional Planning Commission in the same manner as the initial approval was granted; which in this case, was an approved Special Use Permit.

**LAND USE AND ZONING: (See Maps 1, and 2 for additional detail)**

- **Subject Property:** The property is currently vacant, and partially graded.
- **North:** The properties to the north are zoned Planned Development (PD) and Medium Density Residential – 2 (R-2). The property is currently zoned PD was initially part of the larger planned development. This property is currently occupied by a 3,800 ft<sup>2</sup> medical office (Viewmont Family Dentistry). The parcels zoned R-2 are occupied by single-family residences.
- **South:** The properties are zoned Planned Development (PD). The properties to the southeast are part of the original planned development. These properties are currently being developed as the location of six (6) single-family residences. The property to the southwest was part of a different planned development (05-02). This property is occupied by a forty-eight (48) unit multi-family residential apartment complex, which is geared toward older adults.  
  
**East:** The properties to the east across 2<sup>nd</sup> Street NE are zoned High-Density Residential – 4 (R-4). The properties are occupied by a recreation field owned by Mt. Olive Lutheran Church, and several single-family residences.
- **West:** The property to the west is zoned Planned Development (PD) and Medium Density Residential – 2 (R-2) and is occupied by a public school (Northview Middle).

**ACCESS:** Access to and from the property is available from 2<sup>nd</sup> Street NE. This roadway is operated and maintained by the City of Hickory.

**SEWER AND WATER:** Public water and sewer are available to serve the proposed development. The developers of the proposed development shall be required to cover all expenses associated with the design, permitting, and installation of water and sewer infrastructure.

**SPECIAL USE PERMIT REVIEW CRITERIA:**

Special Use Permit applications may be approved by the Planning Commission only if it finds all the following criteria have been met:

1. **The proposed use is consistent with the Hickory by Choice 2030 Comprehensive Plan and stated Purpose and Intent of the Land Development Code; (See Map 3 for additional detail)**

*The general area is classified as High Density Residential by the Hickory By Choice 2030 Comprehensive Plan. (Note: The Hickory By Choice 2030 Comprehensive Plan's Future Land Use map does not contain parcel line data, as the general boundaries of the land use categories are not concrete.)*

*The Hickory by Choice 2030 Comprehensive Plan states High Density Residential areas as being land areas located approximately one-half mile from the central point of each mixed use center, allowing for convenient walking or bicycling from home to shop. (HBC 2030, Page 3.8). The Hickory by Choice 2030 Comprehensive Plan indicates the expected residential density in these areas to be 12 to 20 units per acre.*

Table 3.1 of the Hickory by Choice 2030 Comprehensive Plan specifically indicates multi-family residential as being a defining characteristic of areas classified as High Density Residential. Understanding this and the other referenced verbiage; the proposed amendment to the approved Planned Development Master Plan to allow for the inclusion of an apartment complex in the development would be considered to be consist with the Hickory by Choice 2030 Comprehensive Plan.

**Section 1.7 of the Hickory Land Development Code contains its Stated Purpose and Intent. This section contains five (5) specific items which the Land Development Code is intended to uphold. These are as follows:**

1. Implement the Hickory by Choice 2030 Comprehensive Plan;

*As outlined above, the subject properties are located in an area classified as High Density Residential, by the HBC 2030 Comprehensive Plan.*

2. Preserve and protect land, air, water and environmental resources and property values;

*Any and all improvements that are to take place on the property will be required to follow all applicable development regulations.*

3. Promote land use patterns that ensure efficiency in service provision as well as wise use of fiscal resource and governmental expenditures;

*The subject property is located on 2<sup>nd</sup> Street NE, which is adjacent to the Community Center surrounding North Center Street (NC 127) and 29<sup>th</sup> Avenue NE. The Community Center is a mixed use area, with the immediate surrounding areas being appropriate for higher density single and multi-family development. The subject property is adjacent to a high density single-family development, as well as another multi-family apartment complex. Public infrastructure currently in place in the area is sufficient to handle the type of development possible on the subject property.*

4. Regulate the type and intensity of development; and

*Any future development that takes place on the subject property will be regulated by current and future development standards duly adopted by the City of Hickory and the State of North Carolina.*

5. Ensure protection from fire, flood and other dangers.

*Any future development occurring on the subject property will be required to adhere to all state and local building, fire, and flood zone related development regulations. Such regulations will ensure proper protections are provided to ensure surrounding residents, and employees are properly protect as prescribed by law.*

**2. The proposed use complies with all applicable provisions of the Land Development Code;**

*The schematic plan submitted as part of the petition largely complies with the applicable provision of the city's Land Development Code. Upon the approval of the requested Planned Development Master Plan amendment, the property owners / developers will be required to submit fully engineered development plans for permitting. The submitted plans will be reviewed to ensure they comply with all applicable provision of the city's Land Development Code.*

**3. The proposed use is compatible with adjacent uses in terms of scale, site design, operating characteristics (hours of operation, traffic generation, lighting, noise, odor, dust, and other external impacts);**

*The proposed use is similar to the adjacent multi-family apartment complex to the southeast, and is similar in to scale of the middle school to the east .but is dissimilar to two grandfather non-conforming residential uses to the west. Buffering will be required along the property line shared with the single-family residential uses to the northeast, which is shown on the schematic plan.*

*The developer was required to prepare a traffic impact analysis (TIA), as part of the application process. The traffic impact analysis studied the following street intersections:*

- a. 2<sup>nd</sup> Street NE at 26<sup>th</sup> Avenue NE;*
- b. NC 127 at 27<sup>th</sup> Avenue NE;*
- c. 2<sup>nd</sup> Street NE at 27<sup>th</sup> Avenue NE, at the proposed development's driveway;*
- d. 2<sup>nd</sup> Street NE at 28<sup>th</sup> Avenue NE;*
- e. 2<sup>nd</sup> Street NE at 29<sup>th</sup> Avenue NE (future intersection adjacent to Publix); and*
- f. 2<sup>nd</sup> Street NE at the proposed development's second driveway.*

*The traffic impact analysis studied the following scenarios:*

- a. Existing conditions;*
- b. 2018 future no-build conditions;*
- c. 2018 future build-out conditions; and*
- d. 2018 future build-out conditions with improvements (as necessary).*

*The conclusion of the traffic impact analysis indicated no improvements would be recommended at the above listed intersection.*

**4. Any significant impacts on neighboring properties and/or the natural environment resulting from the use will be mitigated or offset;**

*Any identified negative impacts on neighboring properties and the environment shall be mitigated to the extent required by all applicable laws and regulations.*

**5. The proposed use will not cause substantial diminution in value of other property in the neighborhood in which it is to be located;**

*No qualified information has been submitted that would indicate the proposed Planned Development Master Plan amendment would have detrimental impacts on the values of properties in the vicinity.*

**6. Public safety, transportation, and utility services will be available to serve the subject property while maintaining sufficient levels of service for existing development;**

*Adequate public utilities, police services, and fire protection infrastructure is available in sufficient quantities to serve future development on the subject properties.*

*The developer was required to prepare a traffic impact analysis (TIA), as part of the application process. The traffic impact analysis studied the following street intersections:*

- a. 2<sup>nd</sup> Street NE at 26<sup>th</sup> Avenue NE;*
- b. NC 127 at 27<sup>th</sup> Avenue NE;*
- c. 2<sup>nd</sup> Street NE at 27<sup>th</sup> Avenue NE, at the proposed development's driveway;*
- d. 2<sup>nd</sup> Street NE at 28<sup>th</sup> Avenue NE;*
- e. 2<sup>nd</sup> Street NE at 29<sup>th</sup> Avenue NE (future intersection adjacent to Publix); and*
- f. 2<sup>nd</sup> Street NE at the proposed development's second driveway.*

*The traffic impact analysis studied the following scenarios:*

- a. Existing conditions;*
- b. 2018 future no-build conditions;*
- c. 2018 future build-out conditions; and*
- d. 2018 future build-out conditions with improvements (as necessary).*

*The conclusion of the traffic impact analysis indicated no improvements would be recommended at the above listed intersection.*

**7. Adequate assurances of continuing maintenance have been provided;**

*The future operation of the facility shall be maintained in conformance with all existing development standards, specifically Section 9.16, Property Maintenance, of the Hickory Land Development Code.*

**RECOMMENDED ACTION:** Staff recommends approval of the Special Use Permit contingent upon the following conditions:

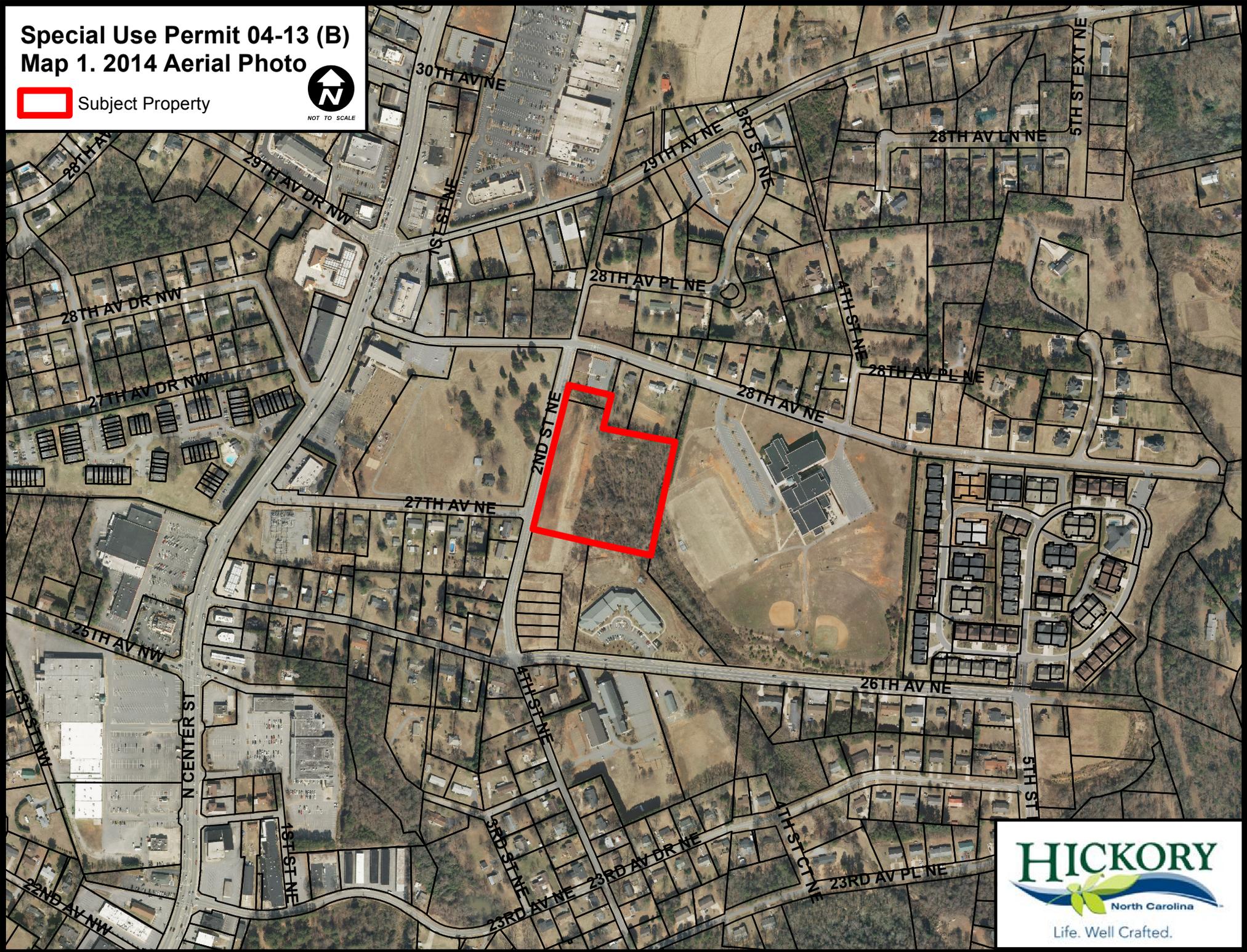
1. All aspects of the project, and its subsequent improvements, shall comply with all applicable provisions of the City's Land Development Code, and the Building and Fire Codes of the State of North Carolina;
2. Fire hydrants shall be provided and distributed in accordance to Chapter 11 of the Hickory City Code and the NC Fire Code. See Section 8.11.9 of the Hickory Land Development Code for minimum requirements.
3. As the area is developed, access to the building and fire hydrants shall be provided in accordance to the NC Fire Code and Chapter 11 of the Hickory City Code.

4. Construction and use of the building shall comply with the NC Fire and Building Code.
5. Prior to the initiation of development; plans must be submitted, reviewed, and approved by the City of Hickory;
6. Adequate measures shall be designed and installed to control stormwater originating on or traversing the property;
7. The developers of the proposed development shall be required to cover all expenses associated with the design, permitting, and installation of water and sewer infrastructure.
8. All utilities, including power, cable, and telephone shall be underground;
9. Outdoor site lighting shall be designed to minimize impact on adjacent properties;
10. A landscaping detail for the development must be provided, which demonstrates compliance with the Hickory Land Development Code;
11. The building elevations facing 2<sup>nd</sup> street NE shall be designed to offer an appearance similar to the elevation detail provided as part of the petition for amendment;
12. Buffering along the northeastern property line adjacent to the existing single-family residences shall be provided;
13. An erosion control permit must be obtained.

**CITIZEN INPUT:** As of October 14, 2016, staff has not received any inquiries regarding this petition.

Special Use Permit 04-13 (B)  
Map 1. 2014 Aerial Photo

 Subject Property





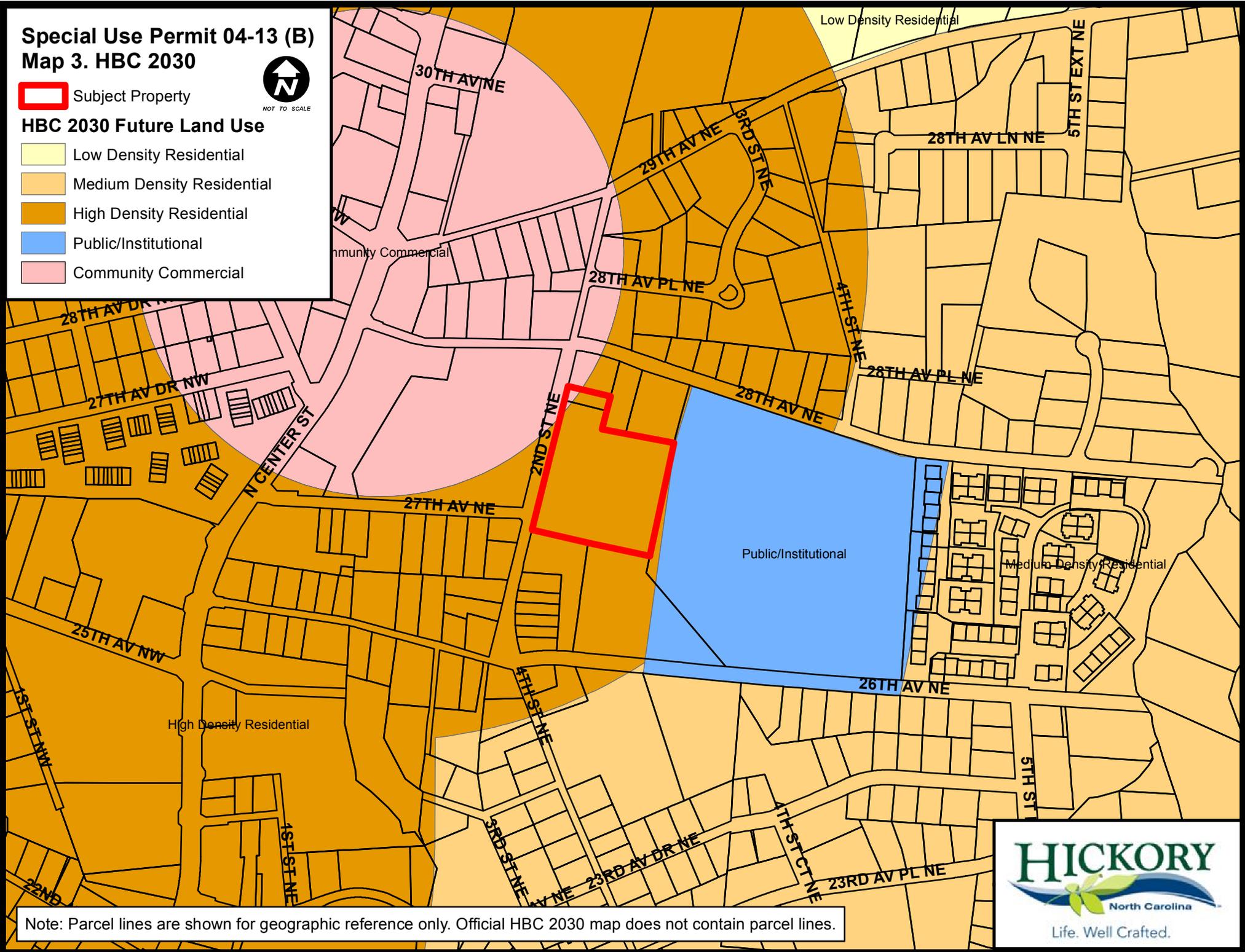
**Special Use Permit 04-13 (B)**  
**Map 3. HBC 2030**

 Subject Property



**HBC 2030 Future Land Use**

-  Low Density Residential
-  Medium Density Residential
-  High Density Residential
-  Public/Institutional
-  Community Commercial



Note: Parcel lines are shown for geographic reference only. Official HBC 2030 map does not contain parcel lines.



**CITY OF HICKORY  
APPLICATION FOR SPECIAL USE PERMIT**

DATE SUBMITTED: September 30, 2016

I (We), the undersigned, do hereby make application for development review for **special use approval**.

1. The property address of the property to be considered for development review is located on 2nd St NE that is between 26<sup>th</sup> Ave NE and 28<sup>th</sup> Ave NE.

PIN

NO. 370420925480 370416926536

Physical (Street) Address: 2758 2<sup>nd</sup> St NE

2. The property is owned by: Brown Operating Company, Inc.

(Attach a copy of the most recent deed, contract for purchase or other legal interest demonstrating an interest in the property.)

Owner Information:

Name: Brown Operating Company, Inc.

Address: PO Box 729 Hickory, NC 28601

3. The application is submitted by: Scott Mitchell  
(If the application is submitted by someone other than the owner proper authorization from the property owner is required.)

Agent Information:

Name: Scott Mitchell

Address: 1776 2<sup>nd</sup> St NW

Phone Number: 828-302-5209

Fax Number: \_\_\_\_\_ Email: scott5209@gmail.com

4. The subject property is located in the PD-OI Zoning District.

5. The purpose of the requested action is to: revise site plan

## **Special Use Review Criteria**

Special uses are those uses that require, because of their inherent nature, intensity, and external effects, special care in the control of their location, site design and methods of operation. Special Use applications may be approved by the Planning Commission only if they find that all of the following criteria have been met:

- A. The proposed use is consistent with the Hickory by Choice 2030 Comprehensive Plan and the stated Purpose and Intent of this Land Development Code;
- B. The proposed use complies with all applicable provisions of this Land Development Code;
- C. The proposed use is compatible with adjacent uses in terms of scale, site design, operating characteristics (hours of operation, traffic generation, lighting, noise, odor, dust, and other external impacts);
- D. Any significant adverse impacts on neighboring properties and/or the natural environment resulting from the use will be mitigated or offset;
- E. The proposed use will not cause substantial diminution in value of other property in the neighborhood in which it is to be located;
- F. Public safety, transportation and utility facilities and services will be available to serve the subject property while maintaining sufficient levels of service for existing development; and
- G. Adequate assurances of continuing maintenance have been provided.

In addition to the information above, some uses may have additional use standards or special use criteria. All applicants must address all applicable standards and criteria. ***30 folded copies of all application materials must be submitted.*** Applicants are also encouraged to submit a digital copy of all application materials.

## **Final Plan Approval**

Prior to issuance of a building permit or other development permit, the Planning Director shall review all final Special Use plans for compliance with all requirements of this Land Development Code, conditions of approval and the Special Use plan presented to the Planning Commission. The Planning Director may require a final Special Use plan to be reviewed by the other departments if he finds that there are technical issues that should be addressed by other departments of the City.

6. OWNER'S AFFIDAVIT

We, the undersigned owner, hereby certify that the information contained herein and submitted in support of this application is true and correct.

By: W. Andrew Wells

W. Andrew Wells, Jr., President

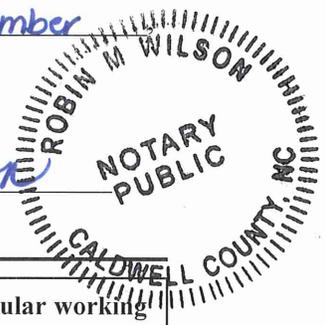
State of North Carolina – County of Catawba

I, the undersigned Notary Public of <sup>Caldwell</sup> the County and State aforesaid, certify that W. Andrew Wells, Jr. personally came before me this day and acknowledged that he is the President of Brown Operating Company, Inc. and that by authority duly given and as the act of such entity he signed the foregoing instrument in its name on its behalf as its act and deed. Witness my hand and Notarial stamp or seal, this 28<sup>th</sup> day of September 2016.

My Commission Expires: 8/9/2019

Robin M. Wilson

Notary Public



**This Application must be submitted to the Planning Department by 5:00 p.m. on the last regular working day of the month preceding the meeting at which it is to be considered by the Planning Commission. Only complete applications will be accepted.**

1389

FILED  
RUTH MACKIE

'81 AUG 19 PM 3 09

*Ruth Mackie*

REGISTER OF DEEDS  
CATAWBA CO., N.C.

Filed this 19th August 1981 at 3:09 P.M.  
and recorded in BOOK 1268 at Page 766.  
Recording Time, Book and Page



Excise Tax \$27.50

Tax Lot No. \_\_\_\_\_ Parcel Identifier No. \_\_\_\_\_  
Verified by \_\_\_\_\_ County on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_  
by \_\_\_\_\_

Mail after recording to \_\_\_\_\_

This instrument was prepared by **William R. Sigmon, SIGMON, CLARK & MACKIE, Attorneys at Law,**  
P. O. Box 1792, Hickory, N. C., 28603

Brief description for the Index **C. C. Rink Estate Property**

### NORTH CAROLINA GENERAL WARRANTY DEED

THIS DEED made this 19th day of August, 1981 between

GRANTOR

GRANTEE

**WILLIE BARNETT LACKEY and  
husband, WALTER S. LACKEY**

**BROWN CONCRETE PAVING COMPANY, INC.**  
North Carolina Corporation

201 South Center Street  
Hickory, N. C. 28601

Enter in appropriate block or column: name, address, and, if appropriate, character of entity, e.g. corporation or partnership.

The designation Grantor and Grantee used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in the City of \_\_\_\_\_, Hickory Township,

Catawba County, North Carolina and more particularly described as follows:

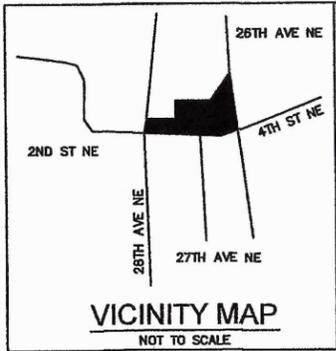
All of Lots Nos. 12 thru 17 of the C. C. Rink Estate Property as they appear upon a certain Map and description of the said C. C. Rink Estate which is registered in the Catawba County Register of Deeds at Plat Book 3 at Page 155, reference to which is hereby made for further description.

For further reference as to chain of title, see deeds recorded in Book 1227, Page 120; Book 363, Page 224; Book 343, Page 348, and Book 330, Page 121, Catawba County Registry.

## **Project Narrative – Courtyard Properties**

The proposed Site Plan revision is consistent with the stated purpose of the Hickory by Choice 2030 Comprehensive Plan and complies with all applicable provisions of the Land Development Code. The proposed site revision from Business to Multi-Family is more complementary to the current pre dominantly residential nature of the surrounding uses, acts as a transition to the Business occupancies being developed to the north, and adds an additional housing option to the area. The layout places the majority of parking in the center of the development and balances building placement to enhance the street edge and minimize the lighting impact and visibility of parking from the street. The layout also features a central clubhouse and playfield as its focal point while providing an interconnected sidewalk system to promote exercise and pedestrian access to the existing sidewalk and bike path running along 2<sup>nd</sup> Street NE to the Neighborhood Shopping District on 29<sup>th</sup> Ave NE which is within easy walking distance. The site plan further works with the existing topography so the ground level of most buildings will be below street level to further minimize impact to the 2 story nature of surrounding residential. Overall, the project's revision to Multi-Family generates less traffic during peak hours, makes trash collection and recycling efforts more efficient, and increases open green space. Adequate public water, sewer, and power are available to site, and there are two proposed entrances from 2<sup>nd</sup> Street NE which spreads automobile trip generation. A traffic study shows minimal impact to the current neighborhood street network.

LEGEND	
1	MAIN ENTRY
2	TRASH DROP LANE
3	COMPACTOR SCREEN WALL
4	RECYCLING CENTER
5	CLUB HOUSE/ LEASING CTR
6	PATIO & POOL
7	MEADOW / PLAYING FIELD
8	BMP
9	GAZEBO / GRILLES
10	INTERCONNECTED SIDEWALKS
11	10 FOOT SETBACK LINE
12	15 FOOT LANDSCAPED BUFFER
13	EXISTING SEWER MH & 8" SEWER LINE
14	DUKE POWER ROW
15	PROPERTY LINE
16	EXISTING FIRE HYDRANT & 8" WATER LINE
17	BIO SWALE
18	EVERGREEN BORDER
19	SECONDARY ENTRY
20	BUILDING TYPE 1 - 3sty 12-2 bedrm , 12-1 bedrm
21	BUILDING TYPE 2 - 3sty 12-2 bedrm , 12-3 bedrm



**PROJECT SUMMARY**

APPROXIMATELY 6.98 ACRES REMAINING EXCLUDING DUKE POWER R.O.W. AND PORTIONS SOLD TO NORTH & SOUTH.

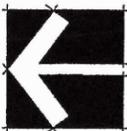
CURRENT ZONING PD-OI, PROPOSED REVISED SITE PLAN FOR:

TWO - TYPE 2 BUILDINGS - 3 story 12-2 bedrm , 12-3 bedrm  
FOUR - TYPE 1 BUILDINGS - 3 story 12-2 bedrm , 12-1 bedrm

SIX BUILDINGS TOTAL - 72- 2 bdrm units, 48 - 1 bdrm units, and 24 - 3 bdrm units for a total of 144 units. DENSITY: 20.63 units/Acre  
1.5 parking spaces/Unit

TOTAL PARKING REQUIRED: 216 SPACES PROVIDED: 216

BUILDING TYPE 1 - 9,198 GSF/FLR BUILDING TYPE 2 - 10,938 GSF/FLR



**COURTYARD PROPERTIES**



Concept Site Plan 09.01.2016

Scott Mitchell, Architect  
scott5209@gmail.com 828.302.5209  
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## Courtyard Properties, llc

Scott Mitchell, Architect  
828.302.5209 scott5209@gmail.com

### Typical Exterior Finish

Type One Building: 30'-6" ground floor to top plate

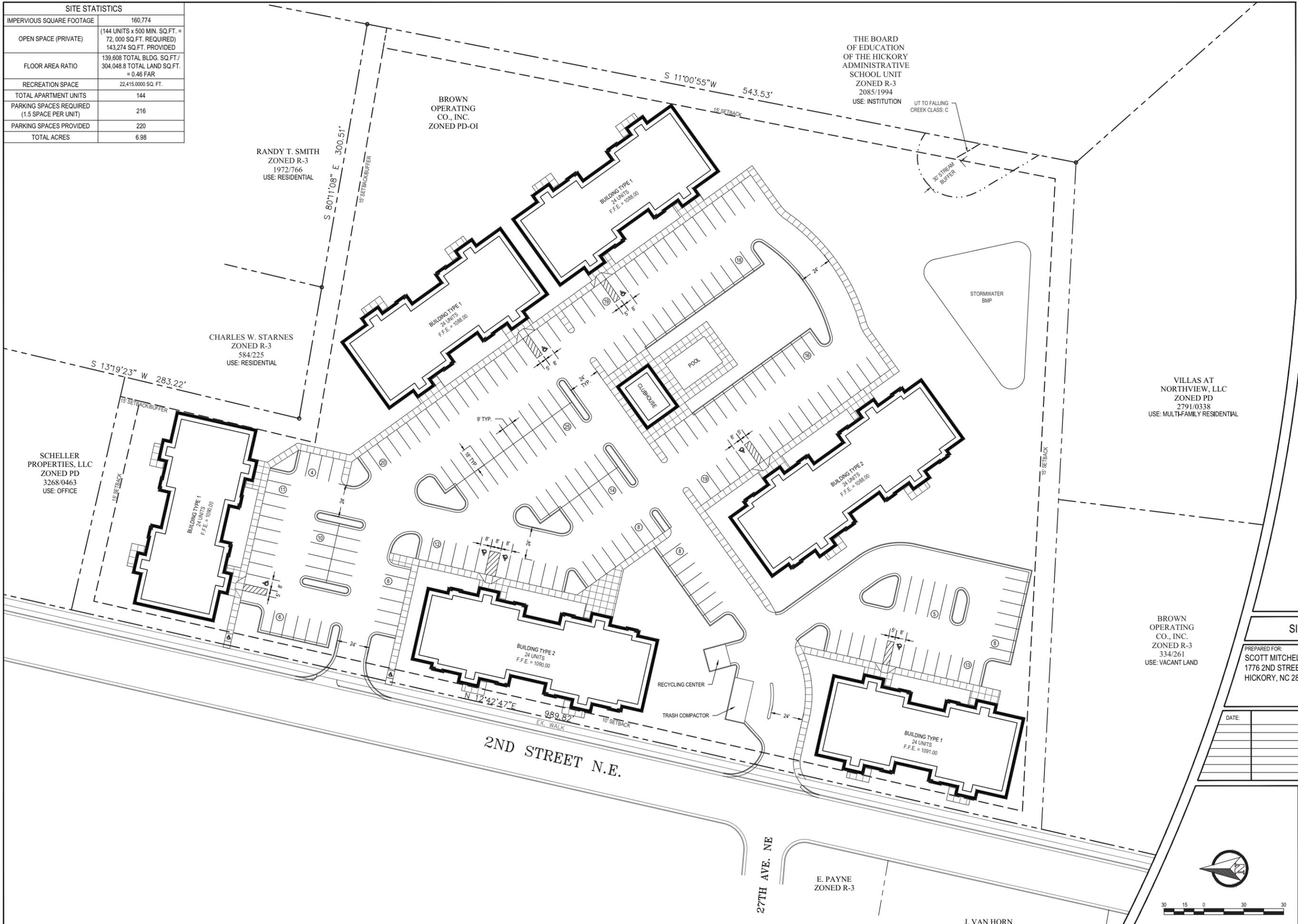
39' 2" ground floor to center line of hip roof

43' - 4" ground floor to roof peak

Roof - Grey/black architectural asphalt shingles

Walls - Architectural mix of brick, cast stone, vinyl siding and complementary trim..

SITE STATISTICS	
IMPERVIOUS SQUARE FOOTAGE	160,774
OPEN SPACE (PRIVATE)	(144 UNITS x 500 MIN. SQ.FT. = 72,000 SQ.FT. REQUIRED) 143,274 SQ.FT. PROVIDED
FLOOR AREA RATIO	139,608 TOTAL BLDG. SQ.FT. / 304,048.8 TOTAL LAND SQ.FT. = 0.46 FAR
RECREATION SPACE	22,415.0000 SQ. FT.
TOTAL APARTMENT UNITS	144
PARKING SPACES REQUIRED (1.5 SPACE PER UNIT)	216
PARKING SPACES PROVIDED	220
TOTAL ACRES	6.98



DO NOT SCALE - PLANS MUST BE RECEIVED AS A COMPLETE SET

**SITE PLAN**

PREPARED FOR:  
SCOTT MITCHELL, AIA  
1776 2ND STREET NW  
HICKORY, NC 28601

DATE:	REVISIONS:

SHEET SIZE:	24"x36"
DATE:	09/26/2016
PROJECT NUMBER:	3100022016
DRAWN BY:	J. EDWARDS
APPROVED BY:	J. CHURCH
SCALE:	1" = 30' (H) (V)
SHEET:	C100



J. VAN HORN





DO NOT SCALE - PLANS MUST BE RECEIVED AS A COMPLETE SET

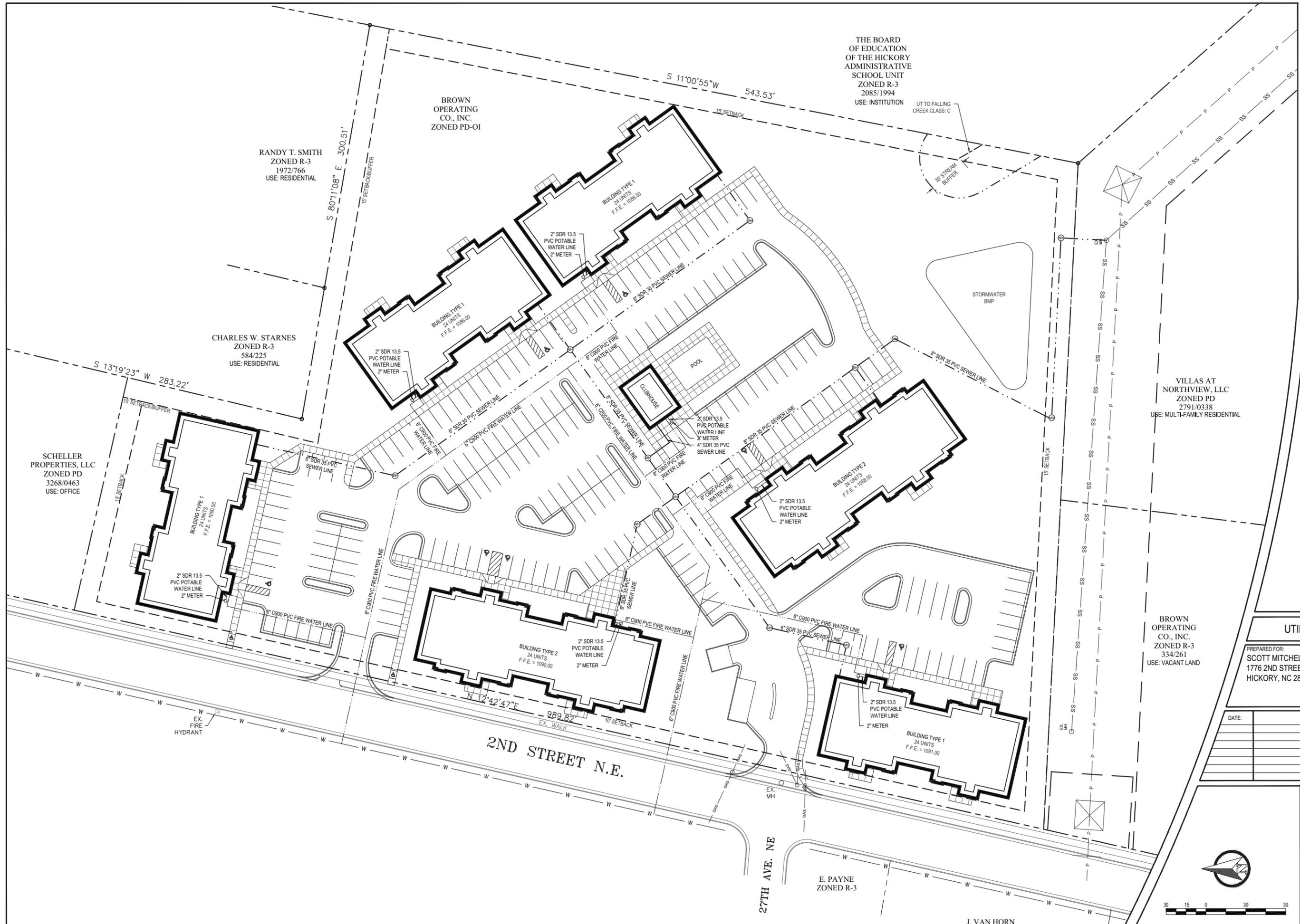
SECOND STREET APARTMENTS

UTILITY PLAN

PREPARED FOR:  
SCOTT MITCHELL, AIA  
1776 2ND STREET NW  
HICKORY, NC 28601

DATE: REVISIONS:

SHEET SIZE:	24"x36"
DATE:	09/26/2016
PROJECT NUMBER:	3100022016
DRAWN BY:	J. EDWARDS
APPROVED BY:	J. CHURCH
SCALE:	1" = 30' (H) (V)
SHEET:	C400



RELEASED FOR AGENCY REVIEW - NOT RELEASED FOR CONSTRUCTION

# TRANSPORTATION IMPACT ANALYSIS

Prepared for Scott Mitchell, Architect

Project Number: 160626  
09/28/2016

## 2nd Street NE Multifamily Development Hickory, NC





# Transportation Impact Analysis

2nd Street NE Multifamily Development  
Hickory, NC

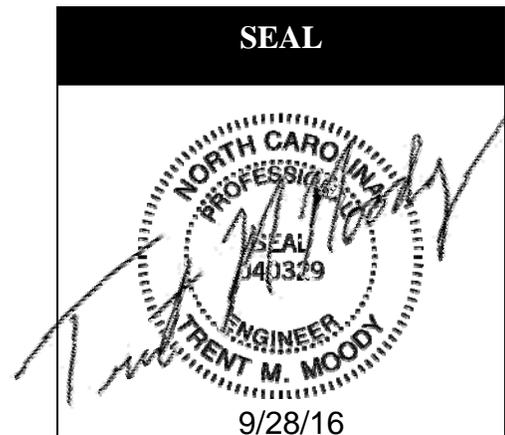
Prepared for Scott Mitchell, Architect  
September 28, 2016

Analysis by: Trent Moody, P.E.

Drafting/Graphics by: Trent Moody, P.E.

Reviewed by: Mary Morgan, P.E.

Sealed by: Trent Moody, P.E.



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**2nd Street NE Multifamily Development – Transportation Impact Analysis**  
**Hickory, NC**  
**Prepared for Scott Mitchell, Architect**  
**September 28, 2016**

## **Executive Summary**

The proposed 2<sup>nd</sup> Street NE Multifamily Development is proposed to be located on the east side of 27<sup>th</sup> Avenue's NE's intersection with 2<sup>nd</sup> Street Drive NE in Hickory, North Carolina. As currently planned, the site will consist of 144 dwelling units. The site proposes two (2) driveways to the site, each to be located on 2<sup>nd</sup> Street Drive NE.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic. The following intersections were included in the study:

- 2nd Street NE at 26th Avenue NE
- NC 127 at 27th Avenue NE
- 2nd Street NE at 27th Avenue NE/Site Access 1
- 2nd Street NE at 28th Avenue NE
- 2nd Street NE at 29th Avenue NE (future intersection)
- 2nd Street NE at Site Access 2

The above-mentioned intersections were analyzed for the following scenarios:

- Existing Conditions
- 2018 Future No Build Conditions
- 2018 Future Build-Out Conditions
- 2018 Future Build-Out with Improvements (as necessary)

The build-out analysis year for this project was assumed to be 2018. The AM (7-9 am) and PM (4-6 pm) peaks were studied.

Information regarding the property was provided by Scott Mitchell, Architect.

### ***Level of Service Results***

Level of service results are summarized by intersection below.

#### ***2nd Street NE at 26th Avenue NE***

This unsignalized intersection currently operates at LOS B in the AM peak and PM peak. In 2018 future no-build conditions, the level of service is expected to remain unchanged. With the addition of site traffic, LOS B is maintained during both the AM and PM peak. No improvements are recommended.

***NC Hwy 127 at 27th Avenue NE***

This unsignalized intersection currently operates at LOS C in the AM peak and LOS D in the PM peak. In 2018 future no-build conditions, the level of service is expected to remain unchanged. With the addition of site traffic, LOS C is maintained during the AM peak, while LOS E is expected during the PM peak. It is typical for stop controlled side streets and driveways intersecting major streets to experience longer delays during peak hours. Should delay and queuing become excessive, traffic can utilize an alternative route to head south via 2<sup>nd</sup> Street NE. The rerouted traffic from this location would be minimal and not anticipated to impact adjacent intersections. No improvements are recommended.

***2nd Street NE at 27th Avenue NE/Site Access 1***

This unsignalized intersection currently operates at LOS B in the AM peak and LOS A during the PM peak. In 2018 future no-build conditions, the level of service is expected to remain unchanged. This intersection will serve as one of the two proposed site access connections to 2<sup>nd</sup> Street in future build conditions. With the addition of site traffic, LOS B is anticipated during both the AM and PM peak. No improvements are recommended.

***2nd Street NE at 28th Avenue NE***

While this intersection is currently under construction due to the committed improvements in the area, it was analyzed as a four-legged, two-way stop controlled intersection in the existing conditions scenario. This is consistent with the conditions of this intersection during the time of traffic data collection. In existing conditions, the intersection operates at LOS D in the AM peak and LOS A during the PM peak. In 2018 future no-build conditions, the intersection will be reconfigured as an all-way stop condition with the buildout of the nearby Publix Supermarket. LOS B is expected in the AM peak, and LOS A is anticipated in the PM peak in no-build conditions. With the addition of site traffic, the level of service is expected to be maintained from no-build conditions. No improvements are recommended.

***2nd Street NE at 29th Avenue NE***

This future unsignalized intersection is to be constructed as a part of the adjacent Publix Supermarket development. In future no-build conditions, this intersection is expected to operate at LOS B during the AM peak and LOS C during the PM peak. With the addition of site traffic, the level of service is expected to be maintained from no-build conditions. No improvements are recommended.

***2nd Street NE at Site Access 2***

This proposed site access is expected to operate at LOS B during the AM peak, and LOS A during the PM peak. No improvements are recommended.

The proposed lane geometry amongst study intersections is illustrated in Figure 11 of the report. Table A summarizes the level of service by intersection denoting the approach of the intersection that experiences the most delay.

<b>Table A - Level of Service Summary</b>			
<b>AM Peak Hour</b>	<b>Existing</b>	<b>2018 No-Build</b>	<b>2018 Build</b>
2nd Street NE at 26th Avenue NE	B (12.7) NB Approach	B (13.1) NB Approach	B (13.9) NB Approach
NC 127 at 27th Avenue NE	C (16.3) WB Approach	C (17.1) WB Approach	C (16.9) WB Approach
2nd Street NE at 27th Avenue NE/Site Access 1	B (10.8) EB Approach	B (11) EB Approach	B (12.1) EB Approach
2nd Street NE at 28th Avenue NE	D (29.8) SB Approach	B (13.9) WB Approach	B (14.2) WB Approach
2nd Street NE at 29th Avenue NE		B (12.4) NB Approach	B (12) NB Approach
2nd Street NE at Site Access 2			B (10.4) WB Approach
<b>PM Peak Hour</b>	<b>Existing</b>	<b>2018 No-Build</b>	<b>2018 Build</b>
2nd Street NE at 26th Avenue NE	B (10.5) SB Approach	B (10.7) SB Approach	B (11.1) SB Approach
NC 127 at 27th Avenue NE	D (26.8) WB Approach	D (30) WB Approach	E (35) WB Approach
2nd Street NE at 27th Avenue NE/Site Access 1	A (9.1) EB Approach	A (9.2) EB Approach	B (10.1) EB Approach
2nd Street NE at 28th Avenue NE	A (9.5) NB Approach	A (7.5) NB Approach	A (7.6) NB Approach
2nd Street NE at 29th Avenue NE		C (17.3) NB Approach	C (17.5) NB Approach
2nd Street NE at Site Access 2			A (9.2) WB Approach

## Summary and Conclusion

The proposed 2nd Street NE Multifamily Development is proposed to be located on the east side of 27th Avenue's NE's intersection with 2nd Street Drive NE in Hickory, North Carolina. As currently planned, the site will consist of 144 dwelling units. The site proposes two (2) driveways to the site, each to be located on 2nd Street Drive NE.

The trip generation indicates that based on the current site plan, the proposed project is projected to generate 15 entering trips and 59 exiting trips during the AM peak. During the PM peak, 63 entering trips, and 34 exiting trips are anticipated.

In conclusion, this analysis has been conducted based on NCDOT and City of Hickory guidelines and has determined the potential traffic impacts of this development. With the build-out of the site, the analysis indicates there will be adequate capacity to accommodate future traffic. It is recommended that all site accesses be designed in accordance with City of Hickory standards as applicable.



**2<sup>nd</sup> Street NE Multifamily Development – Transportation Impact Analysis**  
**Hickory, NC**  
**Prepared for Scott Mitchell, Architect**  
**September 28, 2016**

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**2<sup>nd</sup> Street NE Multifamily Development – Transportation Impact Analysis  
Hickory, NC  
Prepared for Scott Mitchell, Architect  
September 28, 2016**

**1.0 Introduction**

The proposed 2<sup>nd</sup> Street NE Multifamily Development is proposed to be located on the east side of 27<sup>th</sup> Avenue's NE's intersection with 2<sup>nd</sup> Street Drive NE in Hickory, North Carolina. As currently planned, the site will consist of 144 dwelling units. The site proposes two (2) driveways to the site, each to be located on 2<sup>nd</sup> Street Drive NE. Figure 1 illustrates the conceptual site plan. A site location map and a vicinity map denoting study intersections are provided in Figures 2A & 2B, respectively.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic. The following intersections were included in the study:

- 2nd Street NE at 26th Avenue NE
- NC 127 at 27th Avenue NE
- 2nd Street NE at 27th Avenue NE/Site Access 1
- 2nd Street NE at 28th Avenue NE
- 2nd Street NE at 29th Avenue NE (future intersection)
- 2nd Street NE at Site Access 2

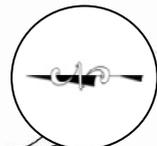
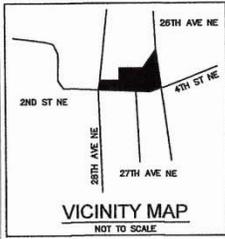
The above-mentioned intersections were analyzed for the following scenarios:

- Existing Conditions
- 2018 Future No Build Conditions
- 2018 Future Build-Out Conditions
- 2018 Future Build-Out with Improvements (as necessary)

The build-out analysis year for this project was assumed to be 2018. The AM (7-9 am) and PM (4-6 pm) peaks were studied.

Information regarding the property was provided by Scott Mitchell, Architect.

- LEGEND**
- 1 MAIN ENTRY
  - 2 TRASH DROP LANE
  - 3 COMPACTOR SCREEN WALL
  - 4 RECYCLING CENTER
  - 5 CLUB HOUSE/ LEASING CTR
  - 6 PATIO & POOL
  - 7 MEADOW/ PLAYING FIELD
  - 8 BMP
  - 9 GAZEBO/ GRILLES
  - 10 INTERCONNECTED SIDEWALKS
  - 11 10 FOOT SETBACK LINE
  - 12 15 FOOT LANDSCAPED BUFFER
  - 13 EXISTING SEWER MH & 8" SEWER LINE
  - 14 DUKE POWER ROW
  - 15 PROPERTY LINE
  - 16 EXISTING FIRE HYDRANT & 8" WATER LINE
  - 17 BIO SWALE
  - 18 EVERGREEN BORDER
  - 19 SECONDARY ENTRY
  - 20 BUILDING TYPE 1 - 3sty 12-2 bedrm , 12-1 bedrm
  - 21 BUILDING TYPE 2 - 3sty 12-2 bedrm , 12-3 bedrm



**PROJECT SUMMARY**

APPROXIMATELY 6.98 ACRES REMAINING EXCLUDING DUKE POWER R.O.W. AND PORTIONS SOLD TO NORTH & SOUTH.

CURRENT ZONING PD-OI, PROPOSED REVISED SITE PLAN FOR:

TWO - TYPE 2 BUILDINGS - 3 story 12-2 bedrm , 12-3 bedrm  
 FOUR - TYPE 1 BUILDINGS - 3 story 12-2 bedrm , 12-1 bedrm

SIX BUILDINGS TOTAL - 72-2 bdrm units, 48-1 bdrm units, and 24-3 bdrm units for a total of 144 units. DENSITY: 20.63 units/Acre  
 1.5 parking spaces/Unit

TOTAL PARKING REQUIRED: 216 SPACES PROVIDED: 216

BUILDING TYPE 1 - 9,198 GSF/FLR BUILDING TYPE 2 - 10,938 GSF/FLR



**COURTYARD PROPERTIES**



Concept Site Plan 09.01.2016

Scott Mitchell, Architect  
 scott5209@gmail.com 828.302.5209

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**FIGURE 1  
 CONCEPTUAL SITE PLAN**





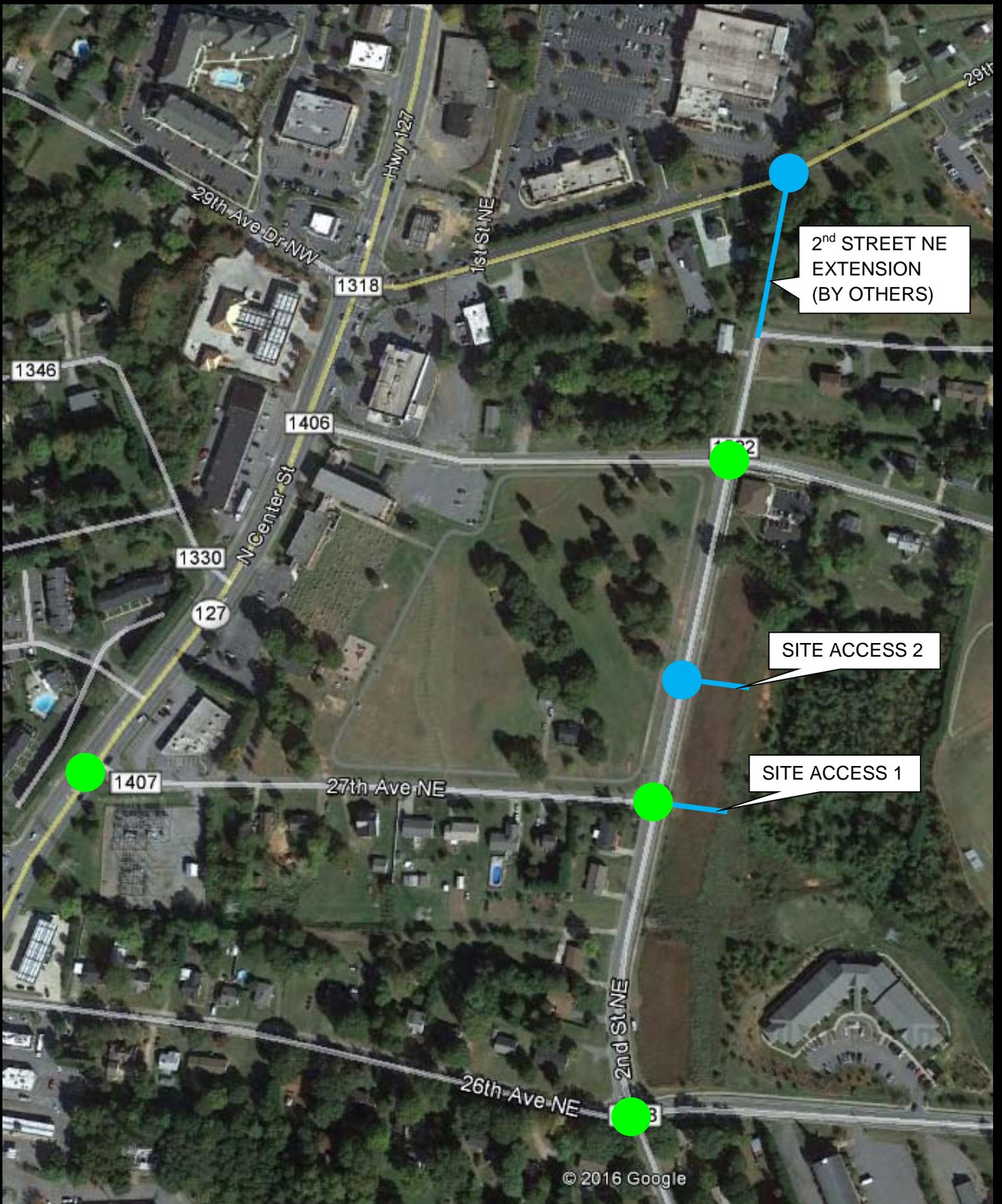


FIGURE 2B  
VICINITY MAP

STUDY INTERSECTIONS  
 EXISTING   
 PROPOSED 

## 2.0 Existing Conditions

### 2.1 Inventory

A field investigation was conducted by DAVENPORT staff to determine the existing roadway conditions in the study area. Table 2.1 presents a summary of this review. Figure 3 illustrates the existing lane geometry.

<b>Table 2.1 - Street Inventory</b>					
<b>Facility Name</b>	<b>Route #</b>	<b>Typical Cross Section</b>	<b>Pavement Width</b>	<b>Speed Limit</b>	<b>Maintained By</b>
Center Street	NC 127	5-lane undivided with TWLTL	Approx. 62'	35 MPH	NCDOT
29 <sup>th</sup> Avenue NE	SR 1404	2-lane undivided	Approx. 22'	35 MPH	NCDOT
28 <sup>th</sup> Avenue NE	N/A	2-lane undivided	Approx. 22'	35 MPH	City of Hickory
27 <sup>th</sup> Avenue NE	N/A	2-lane undivided	Approx. 20'	35 MPH	City of Hickory
26 <sup>th</sup> Avenue NE	N/A	2-lane undivided	Approx. 22'	35 MPH	City of Hickory
2 <sup>nd</sup> Street NE	N/A	2-lane undivided	Approx. 24'	35 MPH	City of Hickory

## 2.2 Existing Traffic Volumes

Existing traffic volumes for this project were collected by DAVENPORT staff. Table 2.2 below contains the dates these counts were conducted. City of Hickory and Catawba County Schools were in session at the time of traffic counts. Data collected as a part of the previously completed transportation impact analysis for Hickory Commons was utilized for the intersection of 28th Avenue NE and 2nd Street NE. For the purpose of this study, a 1% growth rate was applied to the turning movement to account for the age of the original count data. Figure 4 shows existing AM and PM peak hour volumes. The full reports for these volumes can be found in the appendix.

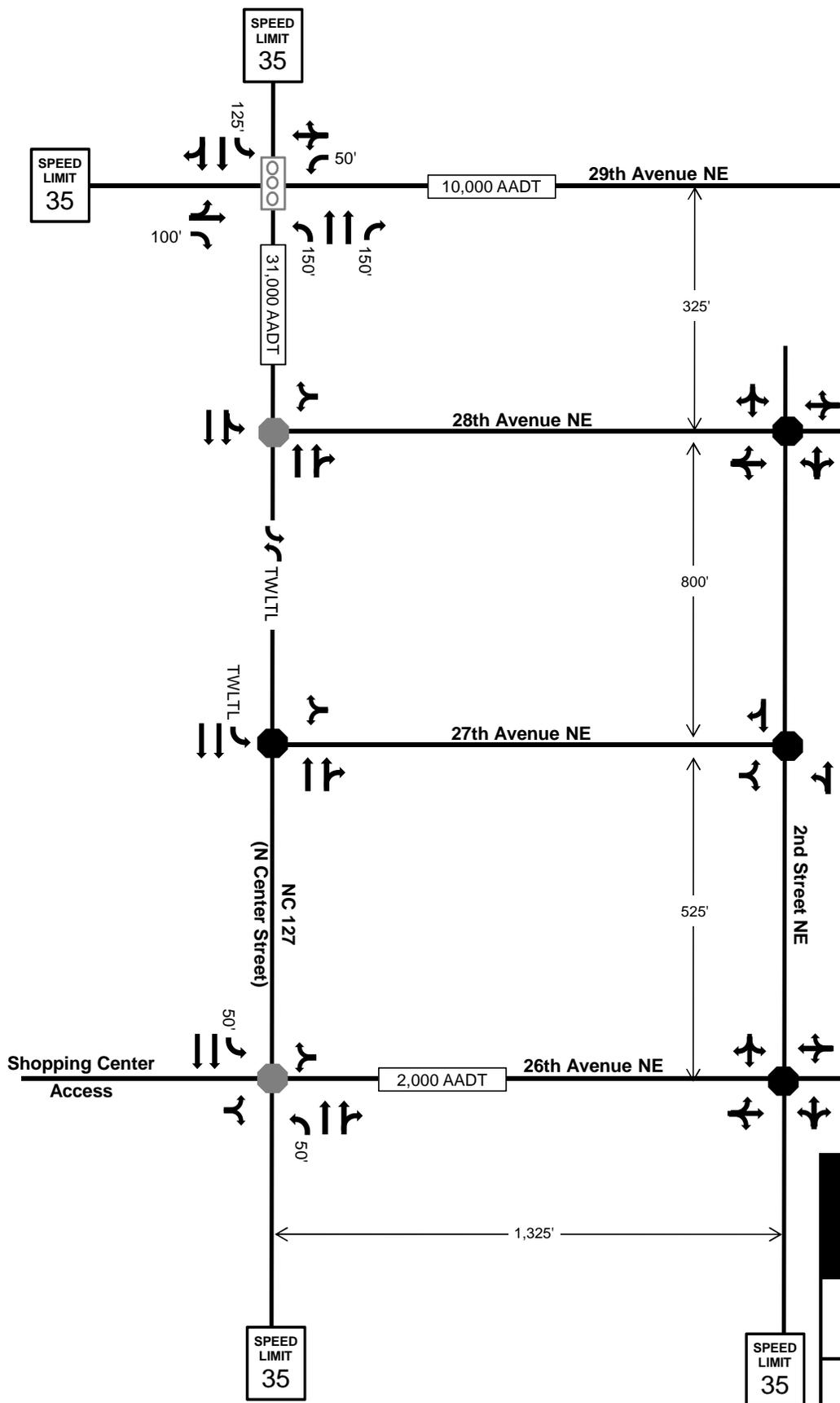
<b>Table 2.2 - Traffic Volume Data</b>		
<b><u>Count Location:</u></b>	<b><u>Date Taken:</u></b>	<b><u>By:</u></b>
28th Avenue NE and 2nd Street NE	4/16/2015	DAVENPORT
2nd Street NE at 26th Avenue NE	9/20/2016	DAVENPORT
NC Hwy 127 at 27th Avenue NE	9/20/2016	DAVENPORT
2nd Street NE at 27th Avenue NE/Site Access 1	9/20/2016	DAVENPORT

## 2.3 Pedestrian and Bicycle Accommodations

Upon field investigation it was noted that nearby pedestrian and bicycle accommodations are present in existing conditions along the proposed site's frontage to 2<sup>nd</sup> Street NE. Sidewalks and bike lanes along the site's frontage provide the traveling public with multiple options in reaching desired destinations such as the proposed Publix Supermarket, and Northview Middle School without the reliance upon a motor vehicle.



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
BLACK = EXISTING GREY = UNANALYZED	
2013 NCDOT AADT	
	### AADT



**FIGURE 3  
EXISTING LANE  
GEOMETRY**

2ND STREET NE MULTIFAMILY  
HICKORY, NC

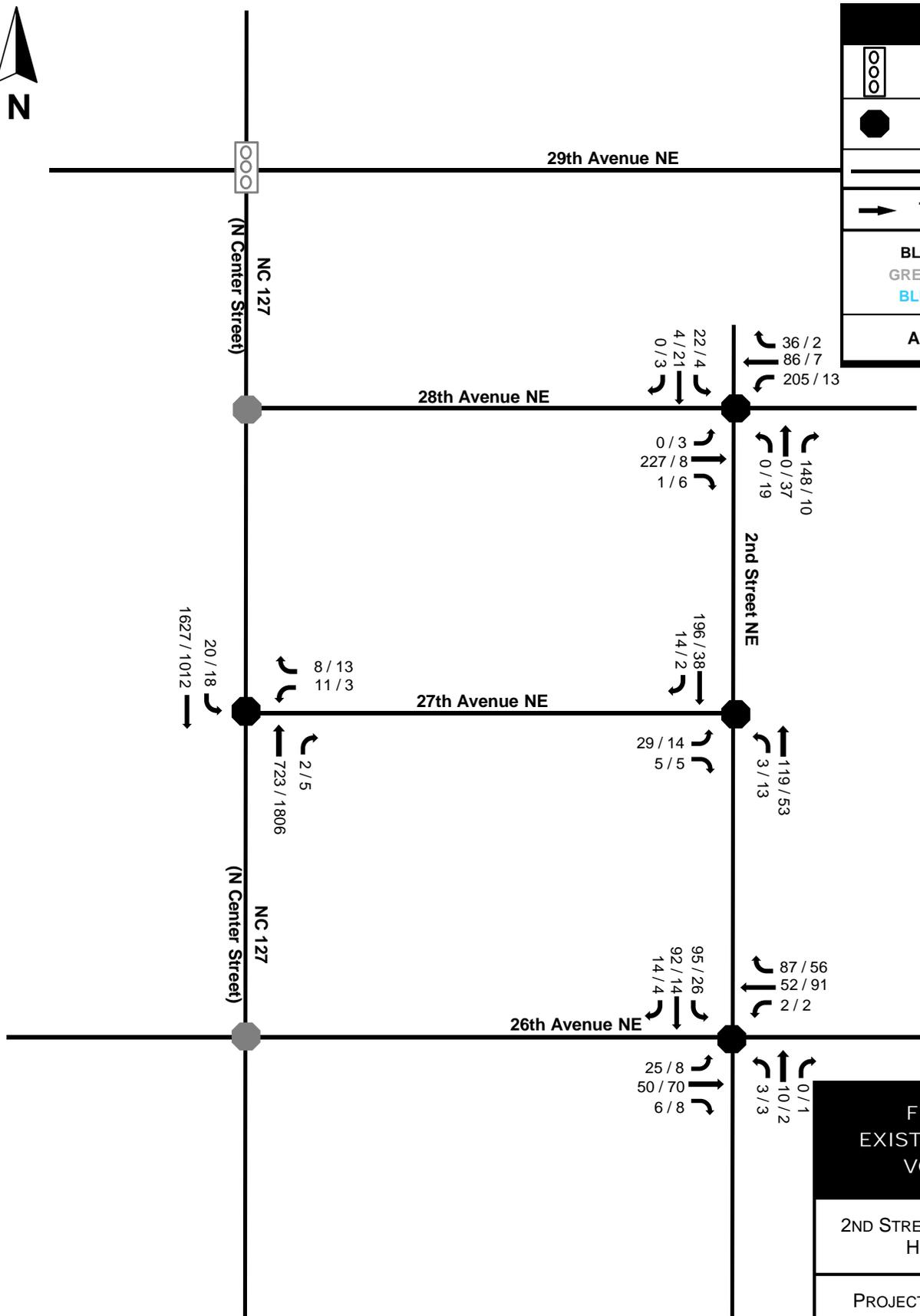
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LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	BLACK = EXISTING
	GREY = UNANALYZED
	BLUE = PROPOSED
AM / PM PEAKS	



**FIGURE 4**  
**EXISTING TRAFFIC VOLUMES**

2ND STREET NE MULTIFAMILY  
HICKORY, NC

PROJECT NUMBER 160626

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### 3.0 Approved Developments and Committed Improvements

#### 3.1 Approved Developments

Approved developments are developments that have been recently approved in the area, but not yet constructed. Per NCDOT and City of Hickory staff, the Hickory Commons development (Publix Supermarket) is proposed to be located southeast of the intersection of N Center Street (NC 127) and 29th Avenue NE/ 29th Avenue Drive NW in Hickory, NC. As a part of the development, a 49,098 square foot supermarket and 4,800 square feet of retail is proposed. Full access to this site is proposed on 29th Avenue NE, 28th Avenue NE, and 2nd Street NE. More information regarding this development may be found in the supporting documents section of the Appendix

#### 3.2 Committed Improvements

Committed Improvements are improvements that are planned by NCDOT, a local municipality, or a developer in the area, but not yet constructed. As a part of the previously referenced Publix Supermarket, 2<sup>nd</sup> Street NE is currently undergoing construction to extend from its existing termination at 28<sup>th</sup> Avenue Place NE, northward to create a new intersection with 29<sup>th</sup> Avenue NE.

In addition to 2nd Street NE's extension, the intersection of 28<sup>th</sup> Avenue NE and 2nd Street NE will be converted to an all-way stop condition. The intersection of NC 127 and 28<sup>th</sup> Avenue will also be modified to restrict left turns. An island median along NC 127 is proposed to be constructed as a part of the Publix Supermarket development and was assumed to be in place in future conditions.

### 4.0 Methodology

#### 4.1 Base Assumptions and Standards

In general, the analysis for this project was conducted utilizing commonly accepted NCDOT standards. The following table contains a summary of the base assumptions:

<b>Table 4.1 - Assumptions</b>	
Peak Hour Factor	0.90
Background Traffic Annual Growth Rate	1.0% per year for all roadways
Analysis Software	Synchro/SimTraffic Version 9.0
Lane widths	12-feet
Truck percentages	2%

## 4.2 Trip Generation

TripGen 2013 software, based on the 9<sup>th</sup> Edition of ITE Trip Generation Manual, was used to develop the projected trips created by this development. Table 4.2 contains the results.

<b>Table 4.2 - ITE Trip Generation</b>									
2nd Street NE Multifamily Development - Hickory, NC									
Average Weekday Driveway Volumes					24 Hour Two-Way	AM Peak Hour		PM Peak Hour	
<u>Land Use</u>	<u>ITE Land Code</u>	<u>Size</u>		<u>Data Source</u>	<u>Volume</u>	<u>Enter</u>	<u>Exit</u>	<u>Enter</u>	<u>Exit</u>
Apartments	220	144	Dwelling Units	Equations	996	15	59	63	34
<b>Total Trips</b>					<b>996</b>	<b>15</b>	<b>59</b>	<b>63</b>	<b>34</b>

## 4.3 Trip Distribution

Residential site trips for this proposed development were distributed based on the existing traffic patterns and engineering judgment. The directional distributions are illustrated in Figure 5. The distribution of the proposed residential site trips are as follows:

- 60% to and from the south on NC 127/2<sup>nd</sup> St NE/4<sup>th</sup> Street NE
- 25% to and from the east on 29<sup>th</sup> Avenue NE
- 15% to and from the north on NC 127

## 4.4 Future No Build Traffic

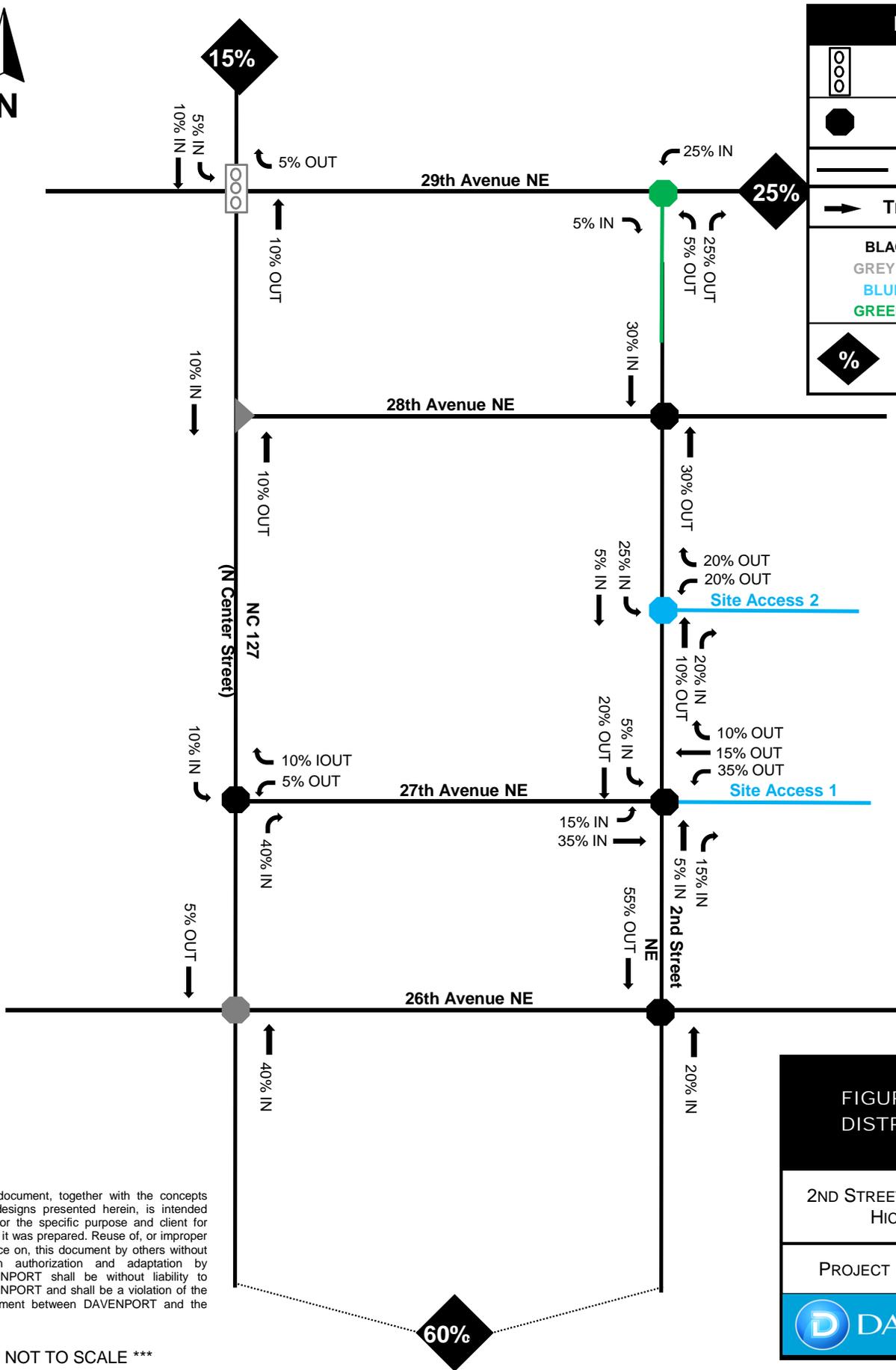
The 2018 future no build traffic volumes were computed by applying a 1.0% compounded annual growth rate to the existing traffic volumes. In addition to the background growth rate, site trips generated by the adjacent Publix supermarket development, and rerouted trips as a result of Publix Supermarket offsite committed improvements were considered in future conditions. Figure 6 shows the approved development trips. Figure 7 illustrates the rerouted trips as a result of the committed improvement to restrict left turns at NC 127 and 28<sup>th</sup> Avenue NE. Figure 8 shows the 2018 future no build traffic volumes for AM and PM peaks.

## 4.5 Total Traffic

The 2018 build-out traffic volumes were obtained by summing 2018 future no build volumes and the site trips due to the proposed project. Site trips are shown in Figure 9. The resulting build volume totals for AM and PM peaks are shown in Figure 10. More information can be found in the Traffic Volume Data section of the appendix.



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
BLACK = EXISTING GREY = UNANALYZED BLUE = PROPOSED GREEN = COMMITTED	
	ORIGIN / DESTINATION %



**FIGURE 5 TRIP DISTRIBUTION**

2ND STREET NE MULTIFAMILY  
HICKORY, NC

PROJECT NUMBER 160626

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\*\*\* NOT TO SCALE \*\*\*



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
BLACK = EXISTING GREY = UNANALYZED BLUE = PROPOSED GREEN = COMMITTED	
AM / PM PEAKS	

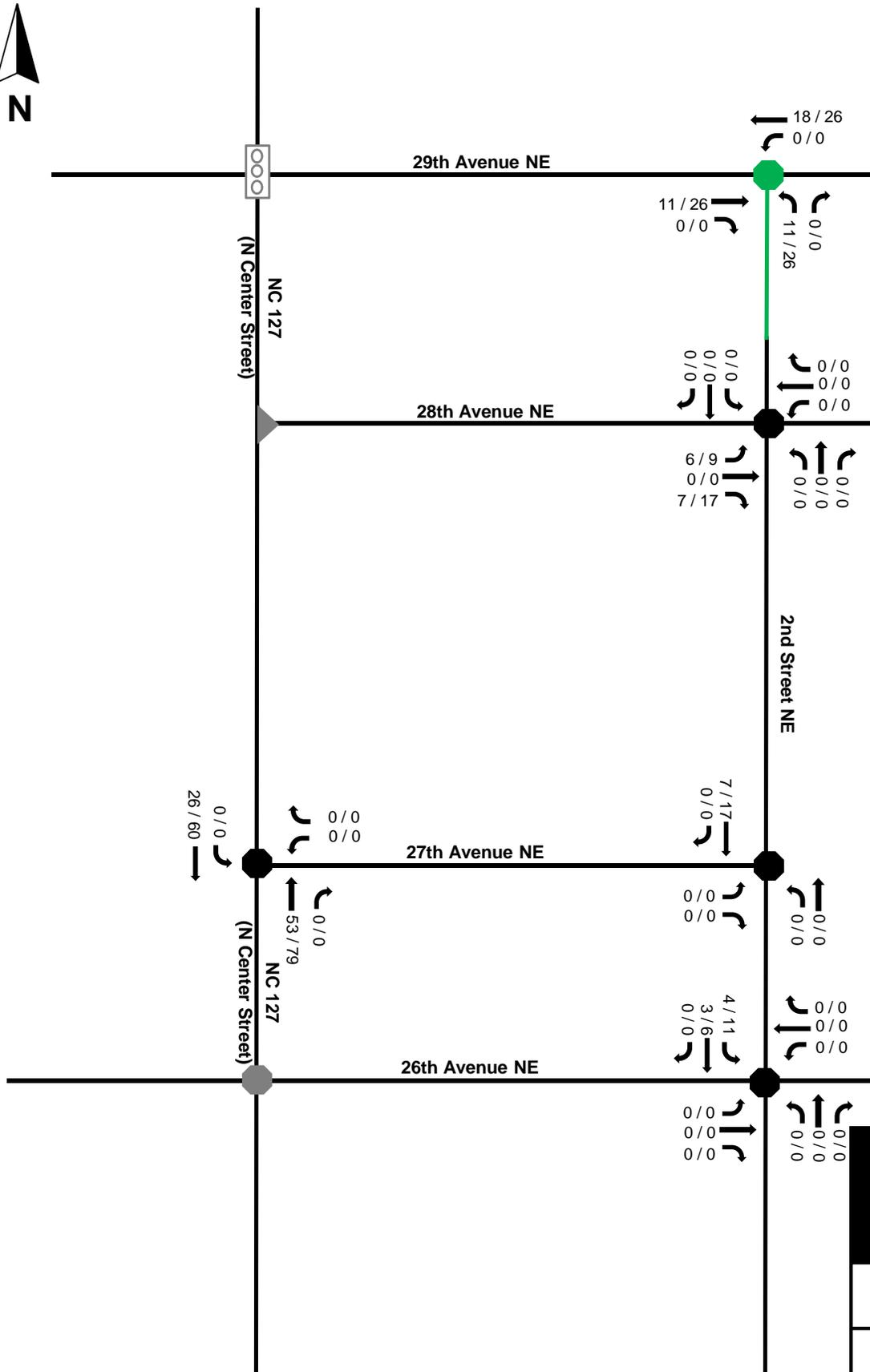


FIGURE 6  
APPROVED  
DEVELOPMENT

2ND STREET NE MULTIFAMILY  
HICKORY, NC

PROJECT NUMBER 160626

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LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
BLACK = EXISTING GREY = UNANALYZED BLUE = PROPOSED GREEN = COMMITTED	
AM / PM PEAKS	

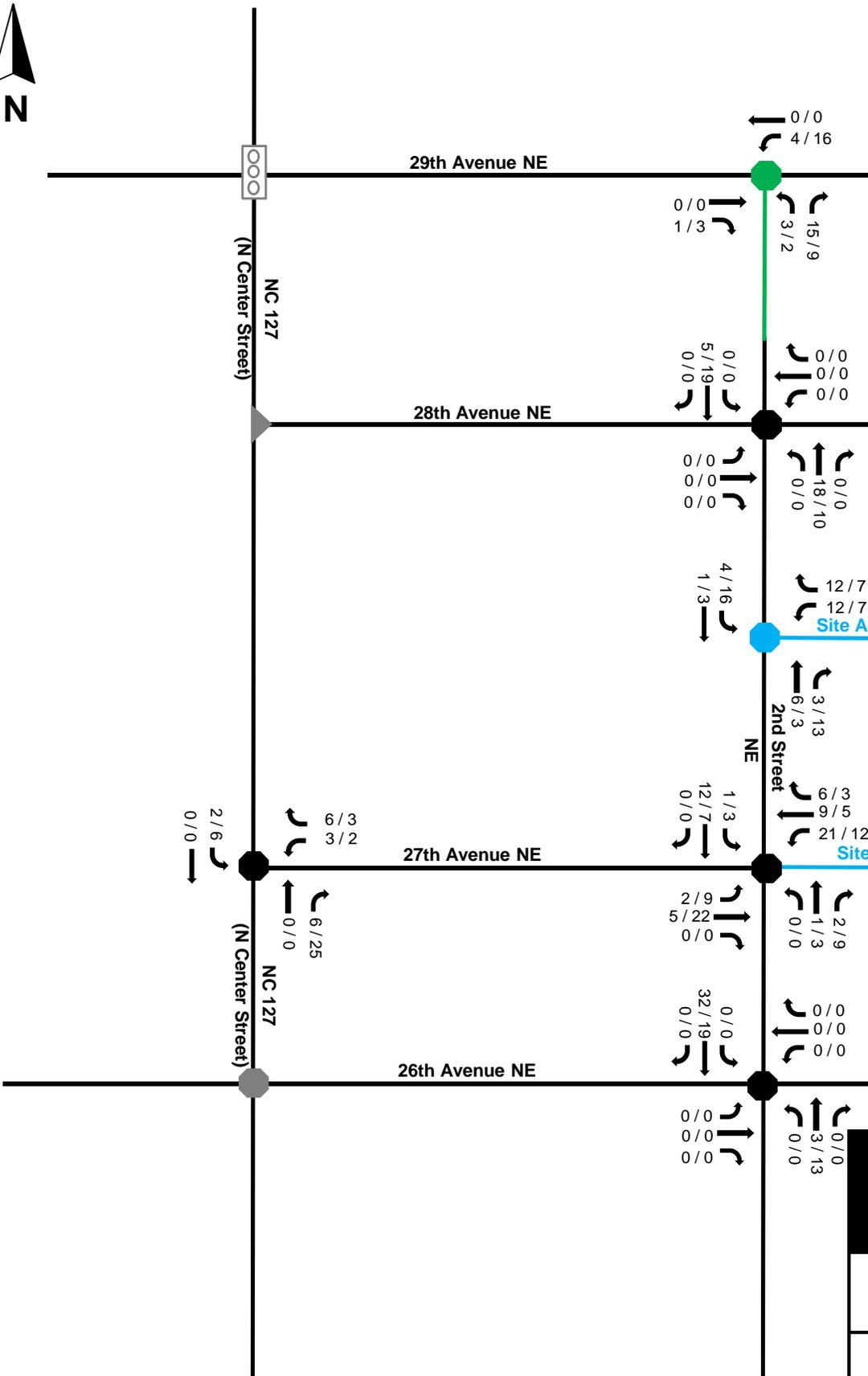


FIGURE 9  
SITE TRIPS

2ND STREET NE MULTIFAMILY  
HICKORY, NC

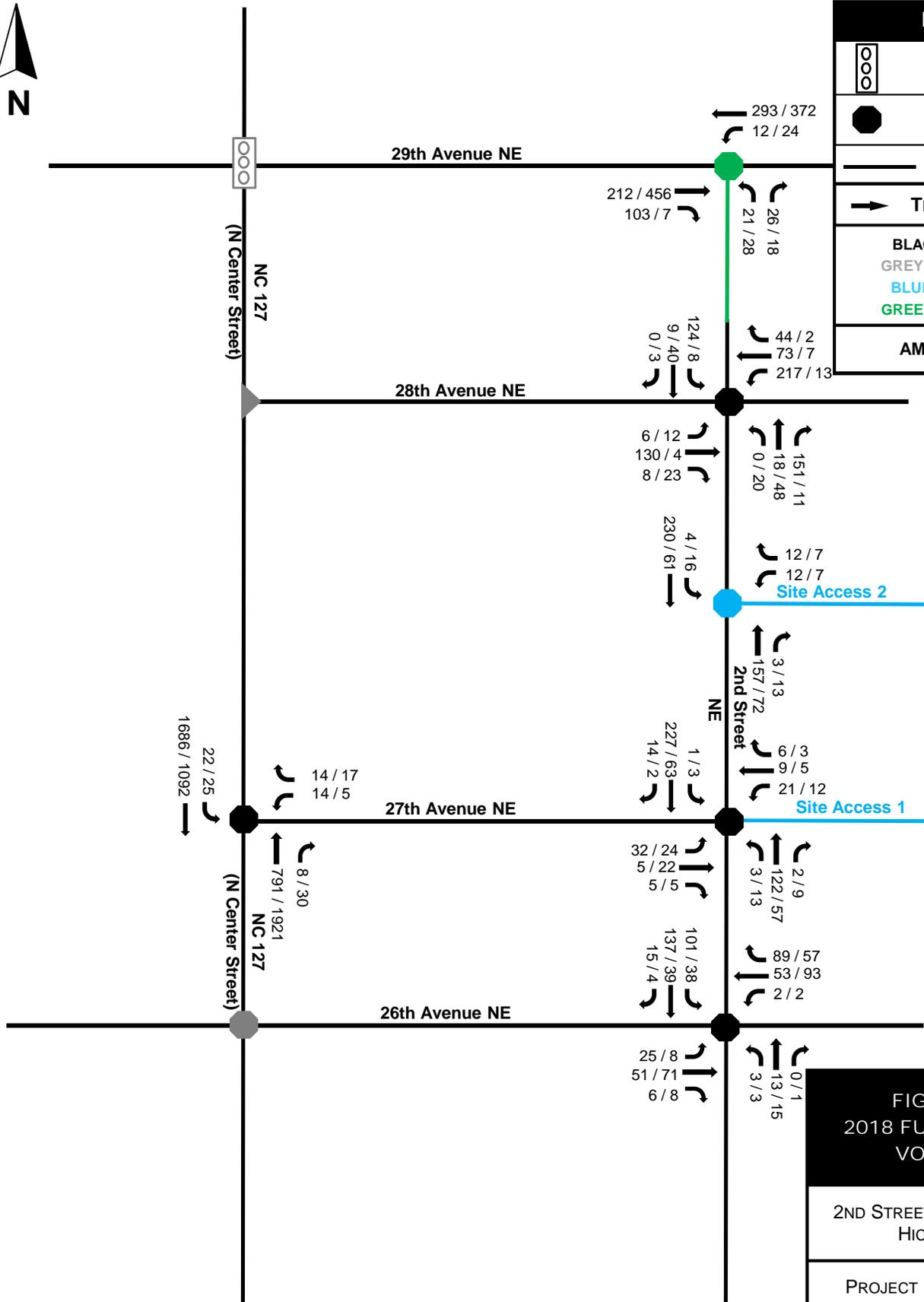
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LEGEND	
	SIGNALIZED INTERSECTION
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BLACK = EXISTING GREY = UNANALYZED BLUE = PROPOSED GREEN = COMMITTED	
AM / PM PEAKS	



**FIGURE 10**  
**2018 FUTURE BUILD**  
**VOLUMES**

**2ND STREET NE MULTIFAMILY**  
**HICKORY, NC**

**PROJECT NUMBER 160626**

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## 5.0 Capacity Analysis

### 5.1 Level of Service Evaluation Criteria

The Transportation Research Board’s Highway Capacity Manual (HCM) utilizes a term “level of service” to measure how traffic operates in intersections and on roadway segments. There are currently six levels of service ranging from A to F. Level of service “A” represents the best conditions and Level of Service “F” represents the worst. Synchro Traffic Modeling software was used to determine the level of service for studied intersections. Note for unsignalized intersection analysis, the level of service noted is for the worst approach of the intersection. This is typically the left turn movement for the side street approach, due to the number of opposing movements. All worksheet reports from the analyses can be found in the Appendix.

**Table 5.1 – Highway Capacity Manual**

Levels of Service and Control Delay Criteria			
Signalized Intersection		Unsignalized Intersection	
Level of Service	Control Delay Per vehicle (sec)	Level of Service	Delay Range (sec)
A	≤ 10	A	≤ 10
B	> 10 and ≤ 20	B	> 10 and ≤ 15
C	> 20 and ≤ 35	C	> 15 and ≤ 25
D	> 35 and ≤ 55	D	> 25 and ≤ 35
E	> 55 and ≤ 80	E	> 35 and ≤ 50
F	> 80	F	> 50

## 5.2 Level of Service Results

The results of the study are discussed by intersection below:

### 2nd Street NE at 26th Avenue NE

This unsignalized intersection currently operates at LOS B in the AM peak and PM peak. In 2018 future no-build conditions, the level of service is expected to remain unchanged. With the addition of site traffic, LOS B is maintained during both the AM and PM peak. No improvements are recommended.

<b>Table 5.2 - 2nd Street NE at 26th Avenue NE</b>					
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)			
		Eastbound	Westbound	Northbound	Southbound
<b>AM Peak Hour</b>					
Existing	<b>NA</b>	A (2.4)	A (0.1)	B (11.1)	B (12.7)
2018 No Build	<b>NA</b>	A (2.4)	A (0.1)	B (11.2)	B (13.1)
2018 Build	<b>NA</b>	A (2.4)	A (0.1)	B (11.3)	B (13.9)
<b>PM Peak Hour</b>					
Existing	<b>NA</b>	A (0.8)	A (0.1)	B (10.2)	B (10.5)
2018 No Build	<b>NA</b>	A (0.7)	A (0.1)	B (10.2)	B (10.7)
2018 Build	<b>NA</b>	A (0.7)	A (0.1)	B (10.8)	B (11.1)

<b>Table 5.3 - 2nd Street NE &amp; 26th Avenue NE</b>				
<b>AM Peak Hour Queues</b>				
<b>Existing</b>	<b>EBLTR</b>	<b>WBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>
Max Queue (ft)	22	15	29	74
95th Percentile Queue (ft)	16	5	33	63
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 No Build</b>	<b>EBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>	
Max Queue (ft)	20	29	98	
95th Percentile Queue (ft)	7	25	69	
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 Build</b>	<b>EBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>	
Max Queue (ft)	24	29	76	
95th Percentile Queue (ft)	14	31	66	
Storage Bay (ft)				
Max Exceeds Storage by				

<b>Table 5.3 (cont.) - 2nd Street NE &amp; 26th Avenue NE</b>				
<b>PM Peak Hour Queues</b>				
<b>Existing</b>	<b>EBLTR</b>	<b>WBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>
Max Queue (ft)	20	15	29	52
95th Percentile Queue (ft)	7	5	30	45
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 No Build</b>	<b>EBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>	
Max Queue (ft)	23	29	29	
95th Percentile Queue (ft)	7	19	38	
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 Build</b>	<b>EBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>	
Max Queue (ft)	19	29	77	
95th Percentile Queue (ft)	6	40	54	
Storage Bay (ft)				
Max Exceeds Storage by				

### **NC Hwy 127 at 27th Avenue NE**

This unsignalized intersection currently operates at LOS C in the AM peak and LOS D in the PM peak. In 2018 future no-build conditions, the level of service is expected to remain unchanged. With the addition of site traffic, LOS C is maintained during the AM peak, while LOS E is expected during the PM peak. It is typical for stop controlled side streets and driveways intersecting major streets to experience longer delays during peak hours. Should delay and queuing become excessive, traffic can utilize an alternative route to head south via 2<sup>nd</sup> Street NE. The rerouted traffic from this location would be minimal and not anticipated to impact adjacent intersections. No improvements are recommended.

<b>Table 5.4 - NC 127 at 27th Avenue NE</b>					
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)			
		Eastbound	Westbound	Northbound	Southbound
<b>AM Peak Hour</b>					
Existing	<b>NA</b>		C (16.3)	A (0)	A (0.1)
2018 No Build	<b>NA</b>		C (17.1)	A (0)	A (0.1)
2018 Build	<b>NA</b>		C (16.9)	A (0)	A (0.1)
<b>PM Peak Hour</b>					
Existing	<b>NA</b>		D (26.8)	A (0)	A (0.3)
2018 No Build	<b>NA</b>		D (30)	A (0)	A (0.3)
2018 Build	<b>NA</b>		E (35)	A (0)	A (0.5)

**Table 5.5 - NC 127 (N. Center St.) & 27th Avenue NE  
AM Peak Hour Queues**

<b>Existing</b>	<b>WBLR</b>	<b>SBL</b>		
Max Queue (ft)	43	31		
95th Percentile Queue (ft)	35	32		
Storage Bay (ft)		200		
Max Exceeds Storage by				
<b>2018 No Build</b>	<b>WBLR</b>	<b>SBL</b>		
Max Queue (ft)	89	53		
95th Percentile Queue (ft)	54	32		
Storage Bay (ft)		200		
Max Exceeds Storage by				
<b>2018 Build</b>	<b>WBLR</b>	<b>SBL</b>		
Max Queue (ft)	111	53		
95th Percentile Queue (ft)	84	41		
Storage Bay (ft)		200		
Max Exceeds Storage by				
<b>PM Peak Hour Queues</b>				
<b>Existing</b>	<b>WBLR</b>	<b>SBL</b>		
Max Queue (ft)	67	51		
95th Percentile Queue (ft)	45	37		
Storage Bay (ft)		200		
Max Exceeds Storage by				
<b>2018 No Build</b>	<b>WBLR</b>	<b>SBL</b>		
Max Queue (ft)	67	53		
95th Percentile Queue (ft)	62	50		
Storage Bay (ft)		200		
Max Exceeds Storage by				
<b>2018 Build</b>	<b>WBLR</b>	<b>SBL</b>		
Max Queue (ft)	197	72		
95th Percentile Queue (ft)	175	59		
Storage Bay (ft)		200		
Max Exceeds Storage by				

**2nd Street NE at 27th Avenue NE/Site Access 1**

This unsignalized intersection currently operates at LOS B in the AM peak and LOS A during the PM peak. In 2018 future no-build conditions, the level of service is expected to remain unchanged. This intersection will serve as one of the two proposed site access connections to 2<sup>nd</sup> Street in future build conditions. With the addition of site traffic, LOS B is anticipated during both the AM and PM peak. No improvements are recommended.

<b>Table 5.6 - 2nd Street NE at 27th Avenue NE/Site Access 1</b>					
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)			
		Eastbound	Westbound	Northbound	Southbound
<b>AM Peak Hour</b>					
Existing	<b>NA</b>	B (10.8)		A (0.2)	A (0)
2018 No Build	<b>NA</b>	B (11)		A (0.2)	A (0)
2018 Build	<b>NA</b>	B (12.1)	B (11.7)	A (0.2)	A (0)
<b>PM Peak Hour</b>					
Existing	<b>NA</b>	A (9.1)		A (1.5)	A (0)
2018 No Build	<b>NA</b>	A (9.2)		A (1.4)	A (0)
2018 Build	<b>NA</b>	B (10.1)	A (9.9)	A (1.2)	A (0.3)

<b>Table 5.7 - 2nd Street NE &amp; 27th Avenue NE/Site Access 1</b>				
<b>AM Peak Hour Queues</b>				
<b>Existing</b>	<b>EBLR</b>			
Max Queue (ft)	50			
95th Percentile Queue (ft)	42			
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 No Build</b>	<b>EBLR</b>	<b>NBLT</b>		
Max Queue (ft)	51	31		
95th Percentile Queue (ft)	48	10		
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 Build</b>	<b>EBLTR</b>	<b>WBLTR</b>	<b>SBLTR</b>	
Max Queue (ft)	52	30	28	
95th Percentile Queue (ft)	46	42	9	
Storage Bay (ft)				
Max Exceeds Storage by				

**Table 5.7 (cont.) - 2nd Street NE & 27th Avenue NE/Site Access 1  
PM Peak Hour Queues**

<b>Existing</b>	<b>EBLR</b>			
Max Queue (ft)	30			
95th Percentile Queue (ft)	33			
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 No Build</b>	<b>EBLR</b>			
Max Queue (ft)	30			
95th Percentile Queue (ft)	38			
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 Build</b>	<b>EBLTR</b>	<b>WBLTR</b>	<b>SBLTR</b>	
Max Queue (ft)	53	30	26	
95th Percentile Queue (ft)	43	38	9	
Storage Bay (ft)				
Max Exceeds Storage by				

### **2nd Street NE at 28th Avenue NE**

While this intersection is currently under construction due to the committed improvements in the area, it was analyzed as a four-legged, two-way stop controlled intersection in the existing conditions scenario. This is consistent with the conditions of this intersection during the time of traffic data collection. In existing conditions, the intersection operates at LOS D in the AM peak and LOS A during the PM peak. In 2018 future no-build conditions, the intersection will be reconfigured as an all-way stop condition with the buildout of the nearby Publix Supermarket. LOS B is expected in the AM peak and LOS A is anticipated in the PM peak in no-build conditions. With the addition of site traffic, the level of service is expected to be maintained from no-build conditions. No improvements are recommended.

**Table 5.8 - 2nd Street NE at 28th Avenue NE**

Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)			
		Eastbound	Westbound	Northbound	Southbound
<b>AM Peak Hour</b>					
Existing	NA	A (0.1)	A (5.8)	B (11.7)	D (29.8)
2018 No Build	<b>NA</b>	B (10.1)	B (13.9)	A (9.7)	B (10.7)
2018 Build	<b>NA</b>	B (10.3)	B (14.2)	B (10.1)	B (10.8)
<b>PM Peak Hour</b>					
Existing	NA	A (1.2)	A (4.3)	A (9.5)	A (9.4)
2018 No Build	<b>NA</b>	A (7.1)	A (7.4)	A (7.5)	A (7.3)
2018 Build	<b>NA</b>	A (7.2)	A (7.5)	A (7.6)	A (7.5)

**Table 5.9 - 2nd Street NE & 28th Avenue NE  
AM Peak Hour Queues**

<b>Existing</b>	<b>EBLTR</b>	<b>WBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>
Max Queue (ft)	53	72	54	52
95th Percentile Queue (ft)	23	58	61	45
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 No Build</b>	<b>EBLTR</b>	<b>WBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>
Max Queue (ft)	68	171	56	78
95th Percentile Queue (ft)	63	102	57	65
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 Build</b>	<b>EBLTR</b>	<b>WBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>
Max Queue (ft)	91	119	77	74
95th Percentile Queue (ft)	66	97	59	61
Storage Bay (ft)				
Max Exceeds Storage by				
<b>PM Peak Hour Queues</b>				
<b>Existing</b>	<b>NBLTR</b>	<b>SBLTR</b>		
Max Queue (ft)	31	32		
95th Percentile Queue (ft)	32	44		
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 No Build</b>	<b>EBLTR</b>	<b>WBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>
Max Queue (ft)	31	30	54	51
95th Percentile Queue (ft)	40	38	53	46
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 Build</b>	<b>EBLTR</b>	<b>WBLTR</b>	<b>NBLTR</b>	<b>SBLTR</b>
Max Queue (ft)	31	53	49	79
95th Percentile Queue (ft)	40	40	41	57
Storage Bay (ft)				
Max Exceeds Storage by				

**2nd Street NE at 29th Avenue NE**

This future unsignalized intersection is to be constructed as a part of the adjacent Publix Supermarket development. In future no-build conditions, this intersection is expected to operate at LOS B during the AM peak and LOS C during the PM peak. With the addition of site traffic, the level of service is expected to be maintained from no-build conditions. No improvements are recommended.

<b>Table 5.10 - 2nd Street NE at 29th Avenue NE</b>					
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)			
		Eastbound	Westbound	Northbound	Southbound
<b>AM Peak Hour</b>					
2018 No Build	NA	A (0)	A (0.3)	B (12.4)	
2018 Build	NA	A (0)	A (0.4)	B (12)	
<b>PM Peak Hour</b>					
2018 No Build	NA	A (0)	A (0.3)	C (17.3)	
2018 Build	NA	A (0)	A (0.8)	C (17.5)	

<b>Table 5.11 - 2nd Street NE &amp; 29th Avenue NE</b>				
<b>AM Peak Hour Queues</b>				
<b>2018 No Build</b>	<b>WBLT</b>	<b>NBLR</b>		
Max Queue (ft)	31	15		
95th Percentile Queue (ft)	20	18		
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 Build</b>	<b>WBLT</b>	<b>NBLR</b>		
Max Queue (ft)	31	73		
95th Percentile Queue (ft)	18	33		
Storage Bay (ft)				
Max Exceeds Storage by				
<b>PM Peak Hour Queues</b>				
<b>2018 No Build</b>	<b>WBLT</b>	<b>NBLR</b>		
Max Queue (ft)	70	58		
95th Percentile Queue (ft)	35	37		
Storage Bay (ft)				
Max Exceeds Storage by				
<b>2018 Build</b>	<b>WBLT</b>	<b>NBLR</b>		
Max Queue (ft)	55	58		
95th Percentile Queue (ft)	44	34		
Storage Bay (ft)				
Max Exceeds Storage by				

**2nd Street NE at Site Access 2**

This proposed site access is expected to operate at LOS B during the AM peak, and LOS A during the PM peak. No improvements are recommended.

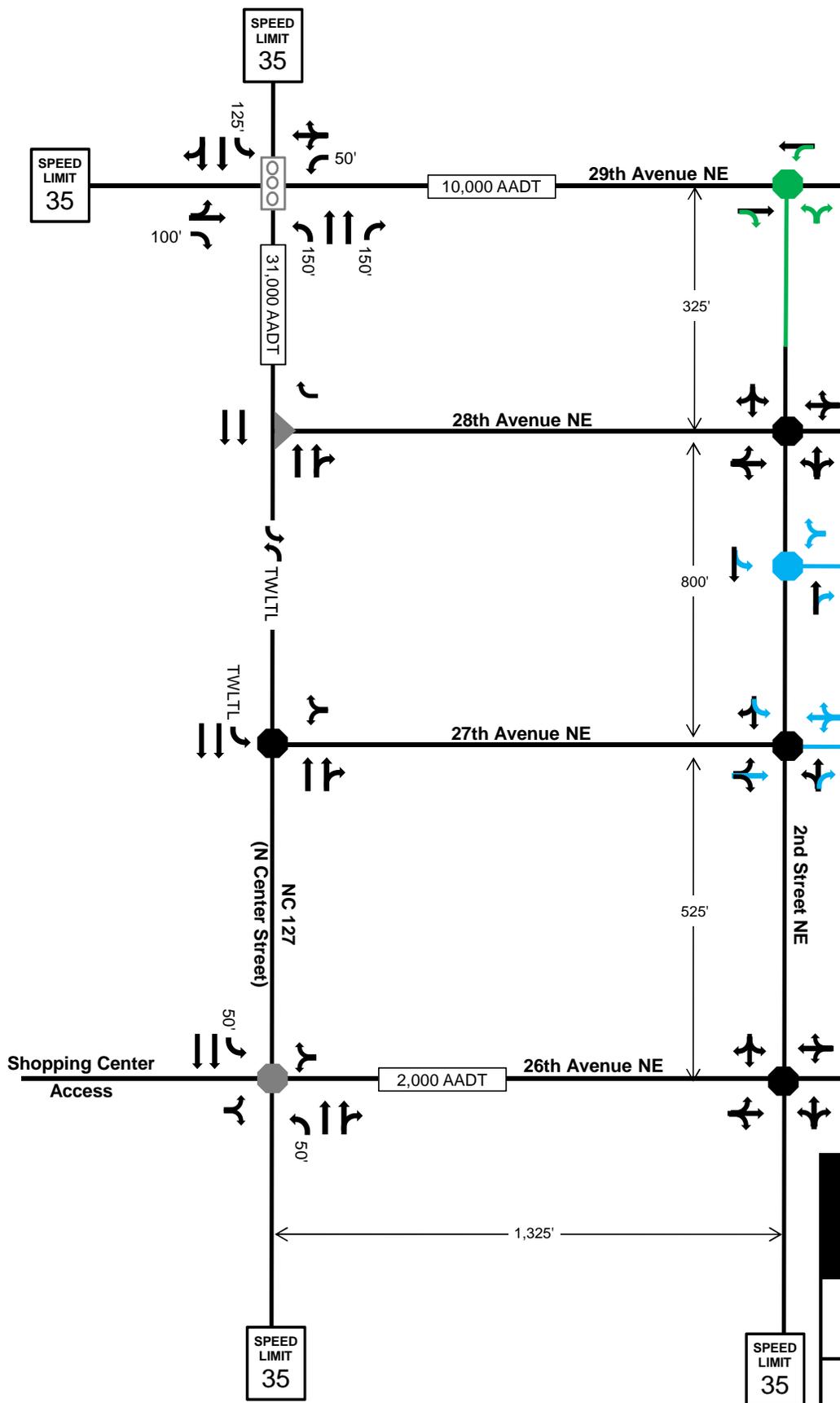
<b>Table 5.12 - 2nd Street NE at Site Access 2</b>					
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)			
		Eastbound	Westbound	Northbound	Southbound
<b>AM Peak Hour</b>					
2018 Build	NA		B (10.4)	A (0)	A (0.1)
<b>PM Peak Hour</b>					
2018 Build	NA		A (9.2)	A (0)	A (1.6)

<b>Table 5.13 - 2nd Street NE &amp; Site Access 2</b>				
<b>AM Peak Hour Queues</b>				
2018 Build	WBLR			
Max Queue (ft)	51			
95th Percentile Queue (ft)	44			
Storage Bay (ft)				
Max Exceeds Storage by				
<b>PM Peak Hour Queues</b>				
2018 Build	WBLR	SBLT		
Max Queue (ft)	30	31		
95th Percentile Queue (ft)	24	10		
Storage Bay (ft)				
Max Exceeds Storage by				

The proposed lane geometry amongst study intersections is illustrated in Figure 11.



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
BLACK = EXISTING	
GREY = UNANALYZED	
BLUE = PROPOSED	
GREEN = COMMITTED	



**FIGURE 11**  
FUTURE LANE  
GEOMETRY

2ND STREET NE MULTIFAMILY  
HICKORY, NC

PROJECT NUMBER 160626

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## **6.0 Summary and Conclusion**

The proposed 2<sup>nd</sup> Street NE Multifamily Development is proposed to be located on the east side of 27<sup>th</sup> Avenue's NE's intersection with 2<sup>nd</sup> Street Drive NE in Hickory, North Carolina. As currently planned, the site will consist of 144 dwelling units. The site proposes two (2) driveways to the site, each to be located on 2<sup>nd</sup> Street Drive NE.

The trip generation indicates that based on the current site plan, the proposed project is projected to generate 15 entering trips and 59 exiting trips during the AM peak. During the PM peak, 63 entering trips, and 34 exiting trips are anticipated.

In conclusion, this analysis has been conducted based on NCDOT and City of Hickory guidelines and has determined the potential traffic impacts of this development. With the build-out of the site, the analysis indicates there will be adequate capacity to accommodate future traffic. It is recommended that all site accesses be designed in accordance with City of Hickory standards as applicable.

# Appendix

## *Trip Generation*

## Trip Generation Summary - Alternative 1

Project: 2nd Street NE Multifamily Development  
 Alternative: Alternative 1

Open Date: 9/20/2016  
 Analysis Date: 9/20/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
220	APT 1	498	498	996	15	59	74	63	34	97
	144 Dwelling Units									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

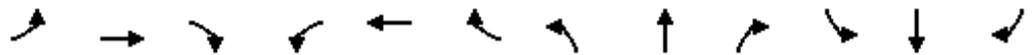
Total PM Peak Hour Internal Capture = 0 Percent

## *Level of Service Analysis*

*2nd Street NE at 26th Avenue NE*

HCM Unsignalized Intersection Capacity Analysis  
 100: 4th Street NE/2nd Street NE & 26th Avenue NE

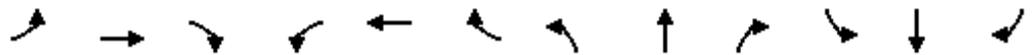
09/28/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	25	50	6	2	52	87	3	10	0	95	92	14
Future Volume (Veh/h)	25	50	6	2	52	87	3	10	0	95	92	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	56	7	2	58	97	3	11	0	106	102	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	155			63			293	274	60	232	230	106
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	155			63			293	274	60	232	230	106
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	98	100	85	84	98
cM capacity (veh/h)	1425			1540			562	619	1006	702	656	948
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	91	157	14	224								
Volume Left	28	2	3	106								
Volume Right	7	97	0	16								
cSH	1425	1540	606	693								
Volume to Capacity	0.02	0.00	0.02	0.32								
Queue Length 95th (ft)	2	0	2	35								
Control Delay (s)	2.4	0.1	11.1	12.7								
Lane LOS	A	A	B	B								
Approach Delay (s)	2.4	0.1	11.1	12.7								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			6.6									
Intersection Capacity Utilization			40.2%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 100: 4th Street NE/2nd Street NE & 26th Avenue NE

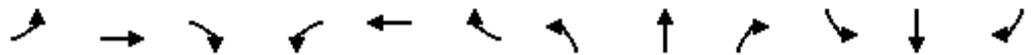
09/28/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	25	51	6	2	53	89	3	10	0	101	105	15
Future Volume (Veh/h)	25	51	6	2	53	89	3	10	0	101	105	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	57	7	2	59	99	3	11	0	112	117	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	158			64			304	278	60	234	232	108
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			64			304	278	60	234	232	108
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	98	100	84	82	98
cM capacity (veh/h)	1422			1538			540	616	1005	699	654	945
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	92	160	14	246								
Volume Left	28	2	3	112								
Volume Right	7	99	0	17								
cSH	1422	1538	598	689								
Volume to Capacity	0.02	0.00	0.02	0.36								
Queue Length 95th (ft)	2	0	2	40								
Control Delay (s)	2.4	0.1	11.2	13.1								
Lane LOS	A	A	B	B								
Approach Delay (s)	2.4	0.1	11.2	13.1								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			7.1									
Intersection Capacity Utilization			41.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 100: 4th Street NE/2nd Street NE & 26th Avenue NE

09/28/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	25	51	6	2	53	89	3	13	0	101	137	15
Future Volume (Veh/h)	25	51	6	2	53	89	3	13	0	101	137	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	57	7	2	59	99	3	14	0	112	152	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	158			64			322	278	60	236	232	108
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			64			322	278	60	236	232	108
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	98	100	84	77	98
cM capacity (veh/h)	1422			1538			501	616	1005	695	654	945
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	92	160	17	281								
Volume Left	28	2	3	112								
Volume Right	7	99	0	17								
cSH	1422	1538	592	682								
Volume to Capacity	0.02	0.00	0.03	0.41								
Queue Length 95th (ft)	2	0	2	50								
Control Delay (s)	2.4	0.1	11.3	13.9								
Lane LOS	A	A	B	B								
Approach Delay (s)	2.4	0.1	11.3	13.9								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			7.9									
Intersection Capacity Utilization			43.2%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 100: 4th Street NE/2nd Street NE & 26th Avenue NE

09/27/2016



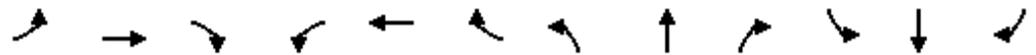
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	70	8	2	91	56	3	2	1	26	14	4
Future Volume (Veh/h)	8	70	8	2	91	56	3	2	1	26	14	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	78	9	2	101	62	3	2	1	29	16	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	163			87			248	268	82	238	241	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	163			87			248	268	82	238	241	132
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	96	98	100
cM capacity (veh/h)	1416			1509			685	634	977	709	655	917

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	96	165	6	49
Volume Left	9	2	3	29
Volume Right	9	62	1	4
cSH	1416	1509	701	703
Volume to Capacity	0.01	0.00	0.01	0.07
Queue Length 95th (ft)	0	0	1	6
Control Delay (s)	0.8	0.1	10.2	10.5
Lane LOS	A	A	B	B
Approach Delay (s)	0.8	0.1	10.2	10.5
Approach LOS			B	B

Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization		19.1%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis  
 100: 4th Street NE/2nd Street NE & 26th Avenue NE

09/27/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	71	8	2	93	57	3	2	1	38	20	4
Future Volume (Veh/h)	8	71	8	2	93	57	3	2	1	38	20	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	79	9	2	103	63	3	2	1	42	22	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	166			88			255	272	84	242	244	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	166			88			255	272	84	242	244	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	94	97	100
cM capacity (veh/h)	1412			1508			673	630	976	705	652	914
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	97	168	6	68								
Volume Left	9	2	3	42								
Volume Right	9	63	1	4								
cSH	1412	1508	693	696								
Volume to Capacity	0.01	0.00	0.01	0.10								
Queue Length 95th (ft)	0	0	1	8								
Control Delay (s)	0.7	0.1	10.2	10.7								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.7	0.1	10.2	10.7								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			2.6									
Intersection Capacity Utilization			20.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 100: 4th Street NE/2nd Street NE & 26th Avenue NE

09/27/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	8	71	8	2	93	57	3	15	1	38	39	4
Future Volume (Veh/h)	8	71	8	2	93	57	3	15	1	38	39	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	79	9	2	103	63	3	17	1	42	43	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	166			88			266	272	84	250	244	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	166			88			266	272	84	250	244	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	97	100	94	93	100
cM capacity (veh/h)	1412			1508			646	630	976	685	652	914
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	97	168	21	89								
Volume Left	9	2	3	42								
Volume Right	9	63	1	4								
cSH	1412	1508	643	676								
Volume to Capacity	0.01	0.00	0.03	0.13								
Queue Length 95th (ft)	0	0	3	11								
Control Delay (s)	0.7	0.1	10.8	11.1								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.7	0.1	10.8	11.1								
Approach LOS			B	B								
<b>Intersection Summary</b>												
Average Delay			3.5									
Intersection Capacity Utilization			26.3%		ICU Level of Service				A			
Analysis Period (min)			15									

*NC Hwy 127 at 27th Avenue NE*

# HCM Unsignalized Intersection Capacity Analysis

## 200: NC 127 (N. Center St.) & 27th Avenue NE

09/28/2016



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	8	723	2	20	1627
Future Volume (Veh/h)	11	8	723	2	20	1627
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	9	803	2	22	1808
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1752	402			805	
vC1, stage 1 conf vol	804					
vC2, stage 2 conf vol	948					
vCu, unblocked vol	1752	402			805	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	98			97	
cM capacity (veh/h)	257	597			815	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	21	535	270	22	904	904
Volume Left	12	0	0	22	0	0
Volume Right	9	0	2	0	0	0
cSH	340	1700	1700	815	1700	1700
Volume to Capacity	0.06	0.31	0.16	0.03	0.53	0.53
Queue Length 95th (ft)	5	0	0	2	0	0
Control Delay (s)	16.3	0.0	0.0	9.5	0.0	0.0
Lane LOS	C			A		
Approach Delay (s)	16.3	0.0		0.1		
Approach LOS	C					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			55.0%	ICU Level of Service	A	
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 200: NC 127 (N. Center St.) & 27th Avenue NE

09/28/2016



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑↑		↘	↑↑
Traffic Volume (veh/h)	11	8	791	2	20	1686
Future Volume (Veh/h)	11	8	791	2	20	1686
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	9	879	2	22	1873
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1860	440			881	
vC1, stage 1 conf vol	880					
vC2, stage 2 conf vol	980					
vCu, unblocked vol	1860	440			881	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	98			97	
cM capacity (veh/h)	240	564			763	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	21	586	295	22	936	936
Volume Left	12	0	0	22	0	0
Volume Right	9	0	2	0	0	0
cSH	318	1700	1700	763	1700	1700
Volume to Capacity	0.07	0.34	0.17	0.03	0.55	0.55
Queue Length 95th (ft)	5	0	0	2	0	0
Control Delay (s)	17.1	0.0	0.0	9.9	0.0	0.0
Lane LOS	C			A		
Approach Delay (s)	17.1	0.0		0.1		
Approach LOS	C					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			56.6%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 200: NC 127 (N. Center St.) & 27th Avenue NE

09/28/2016



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	14	791	8	22	1686
Future Volume (Veh/h)	14	14	791	8	22	1686
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	16	879	9	24	1873
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1868	444			888	
vC1, stage 1 conf vol	884					
vC2, stage 2 conf vol	984					
vCu, unblocked vol	1868	444			888	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	97			97	
cM capacity (veh/h)	238	561			758	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	32	586	302	24	936	936
Volume Left	16	0	0	24	0	0
Volume Right	16	0	9	0	0	0
cSH	335	1700	1700	758	1700	1700
Volume to Capacity	0.10	0.34	0.18	0.03	0.55	0.55
Queue Length 95th (ft)	8	0	0	2	0	0
Control Delay (s)	16.9	0.0	0.0	9.9	0.0	0.0
Lane LOS	C			A		
Approach Delay (s)	16.9	0.0		0.1		
Approach LOS	C					
Intersection Summary						
Average Delay	0.3					
Intersection Capacity Utilization	56.6%			ICU Level of Service	B	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis  
 200: NC 127 (N. Center St.) & 27th Avenue NE

09/27/2016



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	13	1806	5	18	1012
Future Volume (Veh/h)	3	13	1806	5	18	1012
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	14	2007	6	20	1124
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
			TWLTL	TWLTL		
Median storage veh)			2	2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2612	1006			2013	
vC1, stage 1 conf vol	2010					
vC2, stage 2 conf vol	602					
vCu, unblocked vol	2612	1006			2013	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	94			93	
cM capacity (veh/h)	86	239			280	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	17	1338	675	20	562	562
Volume Left	3	0	0	20	0	0
Volume Right	14	0	6	0	0	0
cSH	182	1700	1700	280	1700	1700
Volume to Capacity	0.09	0.79	0.40	0.07	0.33	0.33
Queue Length 95th (ft)	8	0	0	6	0	0
Control Delay (s)	26.8	0.0	0.0	18.9	0.0	0.0
Lane LOS	D		C			
Approach Delay (s)	26.8	0.0	0.3			
Approach LOS	D					

Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			60.1%	ICU Level of Service	B	
Analysis Period (min)	15					

# HCM Unsignalized Intersection Capacity Analysis

## 200: NC 127 (N. Center St.) & 27th Avenue NE

09/27/2016



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	13	1921	5	18	1092
Future Volume (Veh/h)	3	13	1921	5	18	1092
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	14	2134	6	20	1213
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2784	1070			2140	
vC1, stage 1 conf vol	2137					
vC2, stage 2 conf vol	646					
vCu, unblocked vol	2784	1070			2140	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	94			92	
cM capacity (veh/h)	73	217			249	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	17	1423	717	20	606	606
Volume Left	3	0	0	20	0	0
Volume Right	14	0	6	0	0	0
cSH	161	1700	1700	249	1700	1700
Volume to Capacity	0.11	0.84	0.42	0.08	0.36	0.36
Queue Length 95th (ft)	9	0	0	6	0	0
Control Delay (s)	30.0	0.0	0.0	20.7	0.0	0.0
Lane LOS	D			C		
Approach Delay (s)	30.0	0.0		0.3		
Approach LOS	D					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			63.3%	ICU Level of Service	B	
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 200: NC 127 (N. Center St.) & 27th Avenue NE

09/27/2016



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	5	17	1921	30	25	1092
Future Volume (Veh/h)	5	17	1921	30	25	1092
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	19	2134	33	28	1213
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2813	1084			2167	
vC1, stage 1 conf vol	2150					
vC2, stage 2 conf vol	662					
vCu, unblocked vol	2813	1084			2167	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	91			88	
cM capacity (veh/h)	72	212			243	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	25	1423	744	28	606	606
Volume Left	6	0	0	28	0	0
Volume Right	19	0	33	0	0	0
cSH	145	1700	1700	243	1700	1700
Volume to Capacity	0.17	0.84	0.44	0.12	0.36	0.36
Queue Length 95th (ft)	15	0	0	10	0	0
Control Delay (s)	35.0	0.0	0.0	21.7	0.0	0.0
Lane LOS	E			C		
Approach Delay (s)	35.0	0.0		0.5		
Approach LOS	E					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			64.1%		ICU Level of Service	C
Analysis Period (min)			15			

*2nd Street NE at 27th Avenue NE/Site  
Access 1*

# HCM Unsignalized Intersection Capacity Analysis

## 300: 2nd Street NE & 27th Avenue NE

09/28/2016



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	5	3	119	196	14
Future Volume (Veh/h)	29	5	3	119	196	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	32	6	3	132	218	16
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	364	226	234			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	364	226	234			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	99	100			
cM capacity (veh/h)	634	813	1333			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	38	135	234			
Volume Left	32	3	0			
Volume Right	6	0	16			
cSH	657	1333	1700			
Volume to Capacity	0.06	0.00	0.14			
Queue Length 95th (ft)	5	0	0			
Control Delay (s)	10.8	0.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.8	0.2	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			1.1			
Intersection Capacity Utilization			21.2%	ICU Level of Service	A	
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 300: 2nd Street NE & 27th Avenue NE

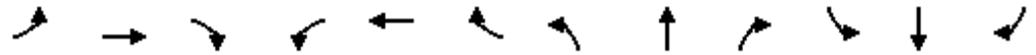
09/28/2016



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	5	3	121	215	14
Future Volume (Veh/h)	30	5	3	121	215	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	6	3	134	239	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	387	247	255			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	387	247	255			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	99	100			
cM capacity (veh/h)	615	792	1310			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	39	137	255			
Volume Left	33	3	0			
Volume Right	6	0	16			
cSH	637	1310	1700			
Volume to Capacity	0.06	0.00	0.15			
Queue Length 95th (ft)	5	0	0			
Control Delay (s)	11.0	0.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.0	0.2	0.0			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			1.1			
Intersection Capacity Utilization		22.2%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 300: 2nd Street NE & 27th Avenue NE/Site Access 1

09/28/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	32	5	5	21	9	6	3	122	2	1	227	14
Future Volume (Veh/h)	32	5	5	21	9	6	3	122	2	1	227	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	36	6	6	23	10	7	3	136	2	1	252	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	417	406	260	414	413	137	268			138		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	417	406	260	414	413	137	268			138		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	99	99	96	98	99	100			100		
cM capacity (veh/h)	533	533	779	539	528	911	1296			1446		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	48	40	141	269								
Volume Left	36	23	3	1								
Volume Right	6	7	2	16								
cSH	555	577	1296	1446								
Volume to Capacity	0.09	0.07	0.00	0.00								
Queue Length 95th (ft)	7	6	0	0								
Control Delay (s)	12.1	11.7	0.2	0.0								
Lane LOS	B	B	A	A								
Approach Delay (s)	12.1	11.7	0.2	0.0								
Approach LOS	B	B										
<b>Intersection Summary</b>												
Average Delay			2.2									
Intersection Capacity Utilization			23.3%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 300: 2nd Street NE & 27th Avenue NE

09/27/2016



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	5	13	53	38	2
Future Volume (Veh/h)	14	5	13	53	38	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	6	14	59	42	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	130	43	44			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130	43	44			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	856	1027	1564			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	73	44			
Volume Left	16	14	0			
Volume Right	6	0	2			
cSH	897	1564	1700			
Volume to Capacity	0.02	0.01	0.03			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.1	1.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.1	1.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization		20.2%		ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 300: 2nd Street NE & 27th Avenue NE

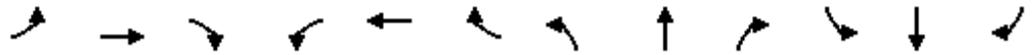
09/27/2016



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	5	13	54	56	2
Future Volume (Veh/h)	14	5	13	54	56	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	6	14	60	62	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	151	63	64			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	151	63	64			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	833	1002	1538			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	22	74	64			
Volume Left	16	14	0			
Volume Right	6	0	2			
cSH	873	1538	1700			
Volume to Capacity	0.03	0.01	0.04			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.2	1.4	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.2	1.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			20.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 300: 2nd Street NE & 27th Avenue NE/Site Access 1

09/27/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	24	22	5	12	5	3	13	57	9	3	63	2
Future Volume (Veh/h)	24	22	5	12	5	3	13	57	9	3	63	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	24	6	13	6	3	14	63	10	3	70	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	179	178	71	191	174	68	72			73		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	179	178	71	191	174	68	72			73		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	97	99	98	99	100	99			100		
cM capacity (veh/h)	769	708	991	738	711	995	1528			1527		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	57	22	87	75								
Volume Left	27	13	14	3								
Volume Right	6	3	10	2								
cSH	759	757	1528	1527								
Volume to Capacity	0.08	0.03	0.01	0.00								
Queue Length 95th (ft)	6	2	1	0								
Control Delay (s)	10.1	9.9	1.2	0.3								
Lane LOS	B	A	A	A								
Approach Delay (s)	10.1	9.9	1.2	0.3								
Approach LOS	B	A										
<b>Intersection Summary</b>												
Average Delay			3.8									
Intersection Capacity Utilization			18.8%		ICU Level of Service				A			
Analysis Period (min)			15									

*2nd Street NE at 28th Avenue NE*

# HCM Unsignalized Intersection Capacity Analysis

## 400: 2nd Street NE & 28th Avenue NE

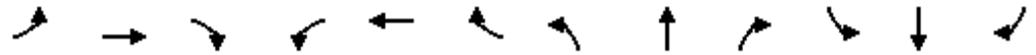
09/28/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	4	229	1	205	87	36	4	4	148	22	4	4
Future Volume (Veh/h)	4	229	1	205	87	36	4	4	148	22	4	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	254	1	228	97	40	4	4	164	24	4	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	137			255			842	856	254	1002	836	117
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	137			255			842	856	254	1002	836	117
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			83			98	98	79	84	98	100
cM capacity (veh/h)	1447			1310			242	243	784	150	250	935
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	259	365	172	32								
Volume Left	4	228	4	24								
Volume Right	1	40	164	4								
cSH	1447	1310	710	177								
Volume to Capacity	0.00	0.17	0.24	0.18								
Queue Length 95th (ft)	0	16	24	16								
Control Delay (s)	0.1	5.8	11.7	29.8								
Lane LOS	A	A	B	D								
Approach Delay (s)	0.1	5.8	11.7	29.8								
Approach LOS			B	D								
<b>Intersection Summary</b>												
Average Delay			6.2									
Intersection Capacity Utilization			54.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 400: 2nd Street NE & 28th Avenue NE

09/28/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	132	8	217	74	44	4	4	151	125	4	4
Future Volume (vph)	6	132	8	217	74	44	4	4	151	125	4	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	147	9	241	82	49	4	4	168	139	4	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	163	372	176	147
Volume Left (vph)	7	241	4	139
Volume Right (vph)	9	49	168	4
Hadj (s)	0.01	0.08	-0.53	0.21
Departure Headway (s)	5.4	5.1	5.1	5.8
Degree Utilization, x	0.24	0.53	0.25	0.24
Capacity (veh/h)	609	668	629	552
Control Delay (s)	10.1	13.9	9.7	10.7
Approach Delay (s)	10.1	13.9	9.7	10.7
Approach LOS	B	B	A	B

Intersection Summary			
Delay		11.8	
Level of Service		B	
Intersection Capacity Utilization	56.8%		ICU Level of Service B
Analysis Period (min)		15	

# HCM Unsignalized Intersection Capacity Analysis

## 400: 2nd Street NE & 28th Avenue NE

09/28/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	132	8	217	74	44	4	18	151	125	9	4
Future Volume (vph)	6	132	8	217	74	44	4	18	151	125	9	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	147	9	241	82	49	4	20	168	139	10	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	163	372	192	153
Volume Left (vph)	7	241	4	139
Volume Right (vph)	9	49	168	4
Hadj (s)	0.01	0.08	-0.49	0.20
Departure Headway (s)	5.5	5.2	5.2	5.9
Degree Utilization, x	0.25	0.54	0.28	0.25
Capacity (veh/h)	597	655	621	547
Control Delay (s)	10.3	14.2	10.1	10.8
Approach Delay (s)	10.3	14.2	10.1	10.8
Approach LOS	B	B	B	B

### Intersection Summary

Delay	12.0
Level of Service	B
Intersection Capacity Utilization	57.8%
ICU Level of Service	B
Analysis Period (min)	15

# HCM Unsignalized Intersection Capacity Analysis

## 400: 2nd Street NE & 28th Avenue NE

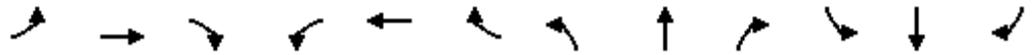
09/27/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	3	8	6	13	7	2	19	37	10	4	21	3
Future Volume (Veh/h)	3	8	6	13	7	2	19	37	10	4	21	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	9	7	14	8	2	21	41	11	4	23	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	10			16			70	56	12	87	59	9
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	10			16			70	56	12	87	59	9
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			98	95	99	100	97	100
cM capacity (veh/h)	1610			1602			892	826	1068	849	823	1073
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>								
Volume Total	19	24	73	30								
Volume Left	3	14	21	4								
Volume Right	7	2	11	3								
cSH	1610	1602	874	846								
Volume to Capacity	0.00	0.01	0.08	0.04								
Queue Length 95th (ft)	0	1	7	3								
Control Delay (s)	1.2	4.3	9.5	9.4								
Lane LOS	A	A	A	A								
Approach Delay (s)	1.2	4.3	9.5	9.4								
Approach LOS			A	A								
<b>Intersection Summary</b>												
Average Delay			7.5									
Intersection Capacity Utilization			16.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 400: 2nd Street NE & 28th Avenue NE

09/27/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	4	23	13	7	2	20	38	11	8	21	3
Future Volume (vph)	12	4	23	13	7	2	20	38	11	8	21	3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	4	26	14	8	2	22	42	12	9	23	3

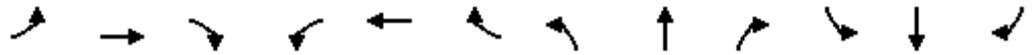
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	43	24	76	35
Volume Left (vph)	13	14	22	9
Volume Right (vph)	26	2	12	3
Hadj (s)	-0.27	0.10	0.00	0.03
Departure Headway (s)	3.9	4.3	4.1	4.1
Degree Utilization, x	0.05	0.03	0.09	0.04
Capacity (veh/h)	893	814	858	846
Control Delay (s)	7.1	7.4	7.5	7.3
Approach Delay (s)	7.1	7.4	7.5	7.3
Approach LOS	A	A	A	A

Intersection Summary

Delay	7.3
Level of Service	A
Intersection Capacity Utilization	15.3% ICU Level of Service A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis  
 400: 2nd Street NE & 28th Avenue NE

09/27/2016



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	4	23	13	7	2	20	48	11	8	40	3
Future Volume (vph)	12	4	23	13	7	2	20	48	11	8	40	3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	4	26	14	8	2	22	53	12	9	44	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	43	24	87	56
Volume Left (vph)	13	14	22	9
Volume Right (vph)	26	2	12	3
Hadj (s)	-0.27	0.10	0.00	0.03
Departure Headway (s)	4.0	4.4	4.1	4.2
Degree Utilization, x	0.05	0.03	0.10	0.06
Capacity (veh/h)	870	794	852	844
Control Delay (s)	7.2	7.5	7.6	7.5
Approach Delay (s)	7.2	7.5	7.6	7.5
Approach LOS	A	A	A	A

Intersection Summary			
Delay		7.4	
Level of Service		A	
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

*2nd Street NE at 29th Avenue NE*

# HCM Unsignalized Intersection Capacity Analysis

## 500: 2nd Street NE & 29th Avenue NE

09/28/2016

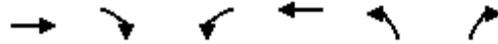


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Volume (veh/h)	212	102	8	293	18	11
Future Volume (Veh/h)	212	102	8	293	18	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	236	113	9	326	20	12
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			349		636	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			349		636	292
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	98
cM capacity (veh/h)			1210		438	747
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	349	335	32			
Volume Left	0	9	20			
Volume Right	113	0	12			
cSH	1700	1210	519			
Volume to Capacity	0.21	0.01	0.06			
Queue Length 95th (ft)	0	1	5			
Control Delay (s)	0.0	0.3	12.4			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.3	12.4			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization			31.9%	ICU Level of Service	A	
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 500: 2nd Street NE & 29th Avenue NE

09/28/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↙	↘
Traffic Volume (veh/h)	212	103	12	293	21	26
Future Volume (Veh/h)	212	103	12	293	21	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	236	114	13	326	23	29
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			350		645	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			350		645	293
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	96
cM capacity (veh/h)			1209		432	746
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	350	339	52			
Volume Left	0	13	23			
Volume Right	114	0	29			
cSH	1700	1209	565			
Volume to Capacity	0.21	0.01	0.09			
Queue Length 95th (ft)	0	1	8			
Control Delay (s)	0.0	0.4	12.0			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.4	12.0			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			1.0			
Intersection Capacity Utilization			35.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 500: 2nd Street NE & 29th Avenue NE

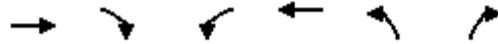
09/27/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	456	4	8	372	26	9
Future Volume (Veh/h)	456	4	8	372	26	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	507	4	9	413	29	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			511		940	509
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			511		940	509
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		90	98
cM capacity (veh/h)			1054		290	564
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	511	422	39			
Volume Left	0	9	29			
Volume Right	4	0	10			
cSH	1700	1054	331			
Volume to Capacity	0.30	0.01	0.12			
Queue Length 95th (ft)	0	1	10			
Control Delay (s)	0.0	0.3	17.3			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.3	17.3			
Approach LOS			C			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			36.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 500: 2nd Street NE & 29th Avenue NE

09/27/2016



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Volume (veh/h)	456	7	24	372	28	18
Future Volume (Veh/h)	456	7	24	372	28	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	507	8	27	413	31	20
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			515		978	511
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			515		978	511
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		89	96
cM capacity (veh/h)			1051		271	563
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	515	440	51			
Volume Left	0	27	31			
Volume Right	8	0	20			
cSH	1700	1051	340			
Volume to Capacity	0.30	0.03	0.15			
Queue Length 95th (ft)	0	2	13			
Control Delay (s)	0.0	0.8	17.5			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.8	17.5			
Approach LOS			C			
<b>Intersection Summary</b>						
Average Delay			1.2			
Intersection Capacity Utilization			49.3%	ICU Level of Service	A	
Analysis Period (min)			15			

## *2nd Street NE at Site Access 2*

# HCM Unsignalized Intersection Capacity Analysis

## 600: 2nd Street NE & Site Access 2

09/28/2016



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	12	157	3	4	228
Future Volume (Veh/h)	12	12	157	3	4	228
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	13	174	3	4	253
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	436	176			177	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	436	176			177	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	575	868			1399	
<b>Direction, Lane #</b>	<b>WB 1</b>	<b>NB 1</b>	<b>SB 1</b>			
Volume Total	26	177	257			
Volume Left	13	0	4			
Volume Right	13	3	0			
cSH	692	1700	1399			
Volume to Capacity	0.04	0.10	0.00			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	10.4	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.4	0.0	0.1			
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization		25.2%		ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 600: 2nd Street NE & Site Access 2

09/27/2016



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	7	72	13	16	61
Future Volume (Veh/h)	7	7	72	13	16	61
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	8	80	14	18	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	191	87			94	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	191	87			94	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	788	971			1500	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	94	86			
Volume Left	8	0	18			
Volume Right	8	14	0			
cSH	870	1700	1500			
Volume to Capacity	0.02	0.06	0.01			
Queue Length 95th (ft)	1	0	1			
Control Delay (s)	9.2	0.0	1.6			
Lane LOS	A		A			
Approach Delay (s)	9.2	0.0	1.6			
Approach LOS	A					
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization		20.8%		ICU Level of Service		A
Analysis Period (min)			15			

## *Queueing Analysis*

Queuing and Blocking Report  
 AM Existing

09/28/2016

Intersection: 100: 4th Street NE/2nd Street NE & 26th Avenue NE

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	22	15	29	74
Average Queue (ft)	3	1	10	42
95th Queue (ft)	16	5	33	63
Link Distance (ft)	939	850	493	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 200: NC 127 (N. Center St.) & 27th Avenue NE

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	43	31
Average Queue (ft)	13	9
95th Queue (ft)	35	32
Link Distance (ft)	1038	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: 2nd Street NE & 27th Avenue NE

Movement	EB
Directions Served	LR
Maximum Queue (ft)	50
Average Queue (ft)	17
95th Queue (ft)	42
Link Distance (ft)	1038
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

# Queuing and Blocking Report

## AM Existing

09/28/2016

### Intersection: 400: 2nd Street NE & 28th Avenue NE

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	53	72	54	52
Average Queue (ft)	4	27	39	19
95th Queue (ft)	23	58	61	45
Link Distance (ft)	701	877	659	342
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

### Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report  
 2018 AM No-Build

09/28/2016

Intersection: 100: 4th Street NE/2nd Street NE & 26th Avenue NE

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	20	29	98
Average Queue (ft)	1	6	41
95th Queue (ft)	7	25	69
Link Distance (ft)	939	493	529
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: NC 127 (N. Center St.) & 27th Avenue NE

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	89	53
Average Queue (ft)	14	8
95th Queue (ft)	54	32
Link Distance (ft)	1038	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: 2nd Street NE & 27th Avenue NE

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	51	31
Average Queue (ft)	22	1
95th Queue (ft)	48	10
Link Distance (ft)	1038	529
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 400: 2nd Street NE & 28th Avenue NE

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	68	171	56	78
Average Queue (ft)	43	57	39	43
95th Queue (ft)	63	102	57	65
Link Distance (ft)	701	877	659	568
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: G & A U c ^ ^ A P O B A G c @ E ^ } ^ A P O

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	31	15
Average Queue (ft)	4	9
95th Queue (ft)	20	18
Link Distance (ft)	591	568
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0
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Intersection: 100: 4th Street NE/2nd Street NE & 26th Avenue NE

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	24	29	76
Average Queue (ft)	2	9	44
95th Queue (ft)	14	31	66
Link Distance (ft)	939	493	522
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: NC 127 (N. Center St.) & 27th Avenue NE

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	111	53
Average Queue (ft)	32	14
95th Queue (ft)	84	41
Link Distance (ft)	1037	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: 2nd Street NE & 27th Avenue NE/Site Access 1

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	52	30	28
Average Queue (ft)	24	22	1
95th Queue (ft)	46	42	9
Link Distance (ft)	1037	359	284
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 400: 2nd Street NE & 28th Avenue NE**

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	91	119	77	74
Average Queue (ft)	39	61	37	40
95th Queue (ft)	66	97	59	61
Link Distance (ft)	701	877	318	568
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 500: 2nd Street NE & 29th Avenue NE**

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	31	73
Average Queue (ft)	3	13
95th Queue (ft)	18	33
Link Distance (ft)	591	568
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Intersection: 600: 2nd Street NE & Site Access 2**

Movement	WB
Directions Served	LR
Maximum Queue (ft)	51
Average Queue (ft)	20
95th Queue (ft)	44
Link Distance (ft)	278
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

**Network Summary**

Network wide Queuing Penalty: 0

Queuing and Blocking Report  
 PM Existing

09/28/2016

Intersection: 100: 4th Street NE/2nd Street NE & 26th Avenue NE

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	20	15	29	52
Average Queue (ft)	1	1	9	25
95th Queue (ft)	7	5	30	45
Link Distance (ft)	939	850	493	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 200: NC 127 (N. Center St.) & 27th Avenue NE

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	67	51
Average Queue (ft)	13	11
95th Queue (ft)	45	37
Link Distance (ft)	1038	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: 2nd Street NE & 27th Avenue NE

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	11
95th Queue (ft)	33
Link Distance (ft)	1038
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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Intersection: 400: 2nd Street NE & 28th Avenue NE

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Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	32
Average Queue (ft)	30	20
95th Queue (ft)	32	44
Link Distance (ft)	659	342
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Network Summary

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Network wide Queuing Penalty: 0

Intersection: 100: 4th Street NE/2nd Street NE & 26th Avenue NE

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	23	29	29
Average Queue (ft)	1	4	26
95th Queue (ft)	7	19	38
Link Distance (ft)	939	493	529
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: NC 127 (N. Center St.) & 27th Avenue NE

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	67	53
Average Queue (ft)	25	19
95th Queue (ft)	62	50
Link Distance (ft)	1038	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: 2nd Street NE & 27th Avenue NE

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	15
95th Queue (ft)	38
Link Distance (ft)	1038
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

---

**Intersection: 400: 2nd Street NE & 28th Avenue NE**

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Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	30	54	51
Average Queue (ft)	17	15	29	21
95th Queue (ft)	40	38	53	46
Link Distance (ft)	701	877	659	568
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

---

**Intersection: 500: 2nd Street NE & 29th Avenue NE**

---

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	70	58
Average Queue (ft)	7	13
95th Queue (ft)	35	37
Link Distance (ft)	591	568
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

---

**Network Summary**

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Network wide Queuing Penalty: 0

Queuing and Blocking Report  
2018 PM Build

09/28/2016

Intersection: 100: 4th Street NE/2nd Street NE & 26th Avenue NE

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	19	29	77
Average Queue (ft)	1	18	32
95th Queue (ft)	6	40	54
Link Distance (ft)	939	493	522
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: NC 127 (N. Center St.) & 27th Avenue NE

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	197	72
Average Queue (ft)	75	24
95th Queue (ft)	175	59
Link Distance (ft)	1037	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: 2nd Street NE & 27th Avenue NE/Site Access 1

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	53	30	26
Average Queue (ft)	26	16	1
95th Queue (ft)	43	38	9
Link Distance (ft)	1037	359	284
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 400: 2nd Street NE & 28th Avenue NE

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	53	49	79
Average Queue (ft)	17	15	30	32
95th Queue (ft)	40	40	41	57
Link Distance (ft)	701	877	318	568
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 500: 2nd Street NE & 29th Avenue NE

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	55	58
Average Queue (ft)	13	13
95th Queue (ft)	44	34
Link Distance (ft)	591	568
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 600: 2nd Street NE & Site Access 2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	30	31
Average Queue (ft)	6	1
95th Queue (ft)	24	10
Link Distance (ft)	278	318
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

## *Traffic Volume Data*

# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

Counted by:A Anderson

File Name : 16-0626 2nd Street NE and 26th Avenue NE

Site Code : 00160626

Start Date : 9/20/2016

Weather:Clear

Page No : 1

## Groups Printed- Cars - Buses and Trucks - Bicycles

Start Time	2nd Street NE Southbound				26 Avenue NE Westbound				2nd Street NE Northbound				26 Avenue NE Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
07:00 AM	2	20	29	51	44	10	0	54	0	4	2	6	0	7	12	19	130
07:15 AM	6	42	40	88	33	15	0	48	0	4	0	4	0	13	8	21	161
07:30 AM	6	25	21	52	2	15	1	18	0	1	1	2	4	11	2	17	89
07:45 AM	0	2	2	4	2	12	1	15	0	0	0	0	2	19	1	22	41
Total	14	89	92	195	81	52	2	135	0	9	3	12	6	50	23	79	421
08:00 AM	1	2	6	9	0	23	2	25	0	1	0	1	3	24	2	29	64
08:15 AM	0	1	7	8	2	13	0	15	0	0	0	0	2	10	0	12	35
08:30 AM	0	1	4	5	3	10	0	13	0	0	1	1	2	17	0	19	38
08:45 AM	4	0	4	8	2	9	2	13	0	1	0	1	1	18	1	20	42
Total	5	4	21	30	7	55	4	66	0	2	1	3	8	69	3	80	179
*** BREAK ***																	
04:00 PM	2	6	8	16	4	20	0	24	0	0	0	0	2	16	2	20	60
04:15 PM	3	4	4	11	8	15	0	23	0	0	1	1	3	12	0	15	50
04:30 PM	4	5	7	16	9	14	1	24	0	0	0	0	1	13	4	18	58
04:45 PM	0	2	2	4	6	19	0	25	0	1	0	1	2	24	1	27	57
Total	9	17	21	47	27	68	1	96	0	1	1	2	8	65	7	80	225
05:00 PM	0	4	5	9	13	28	1	42	0	0	1	1	2	16	2	20	72
05:15 PM	1	5	13	19	10	27	0	37	1	0	1	2	1	19	2	22	80
05:30 PM	2	3	4	9	12	19	1	32	0	1	1	2	4	14	1	19	62
05:45 PM	1	2	4	7	21	17	0	38	0	1	0	1	1	21	3	25	71
Total	4	14	26	44	56	91	2	149	1	2	3	6	8	70	8	86	285
Grand Total	32	124	160	316	171	266	9	446	1	14	8	23	30	254	41	325	1110
Apprch %	10.1	39.2	50.6		38.3	59.6	2		4.3	60.9	34.8		9.2	78.2	12.6		
Total %	2.9	11.2	14.4	28.5	15.4	24	0.8	40.2	0.1	1.3	0.7	2.1	2.7	22.9	3.7	29.3	
Cars	32	122	160	314	167	265	8	440	1	14	8	23	28	252	41	321	1098
% Cars	100	98.4	100	99.4	97.7	99.6	88.9	98.7	100	100	100	100	93.3	99.2	100	98.8	98.9
Buses and Trucks	0	2	0	2	4	1	1	6	0	0	0	0	1	2	0	3	11
% Buses and Trucks	0	1.6	0	0.6	2.3	0.4	11.1	1.3	0	0	0	0	3.3	0.8	0	0.9	1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	3.3	0	0	0.3	0.1

# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

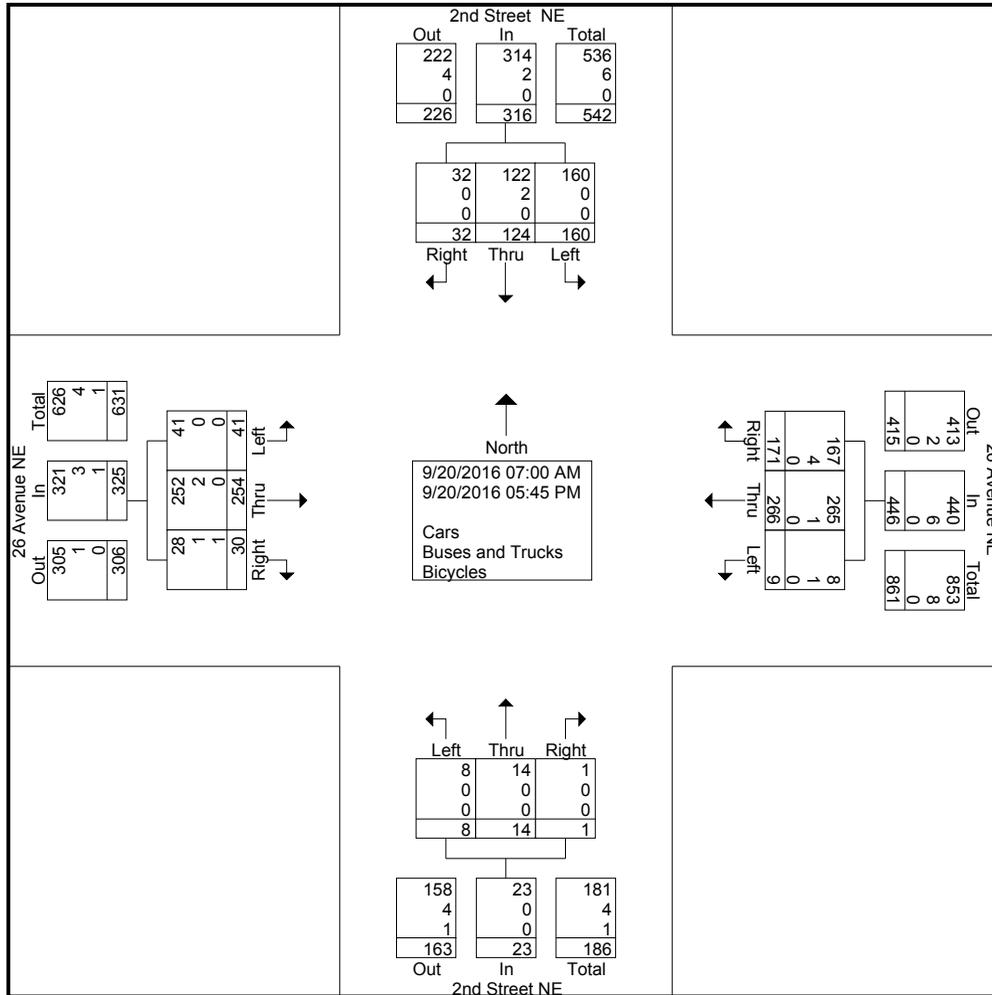
Ph:(336)744-1636

File Name : 16-0626 2nd Street NE and 26th Avenue NE

Site Code : 00160626

Start Date : 9/20/2016

Page No : 2



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

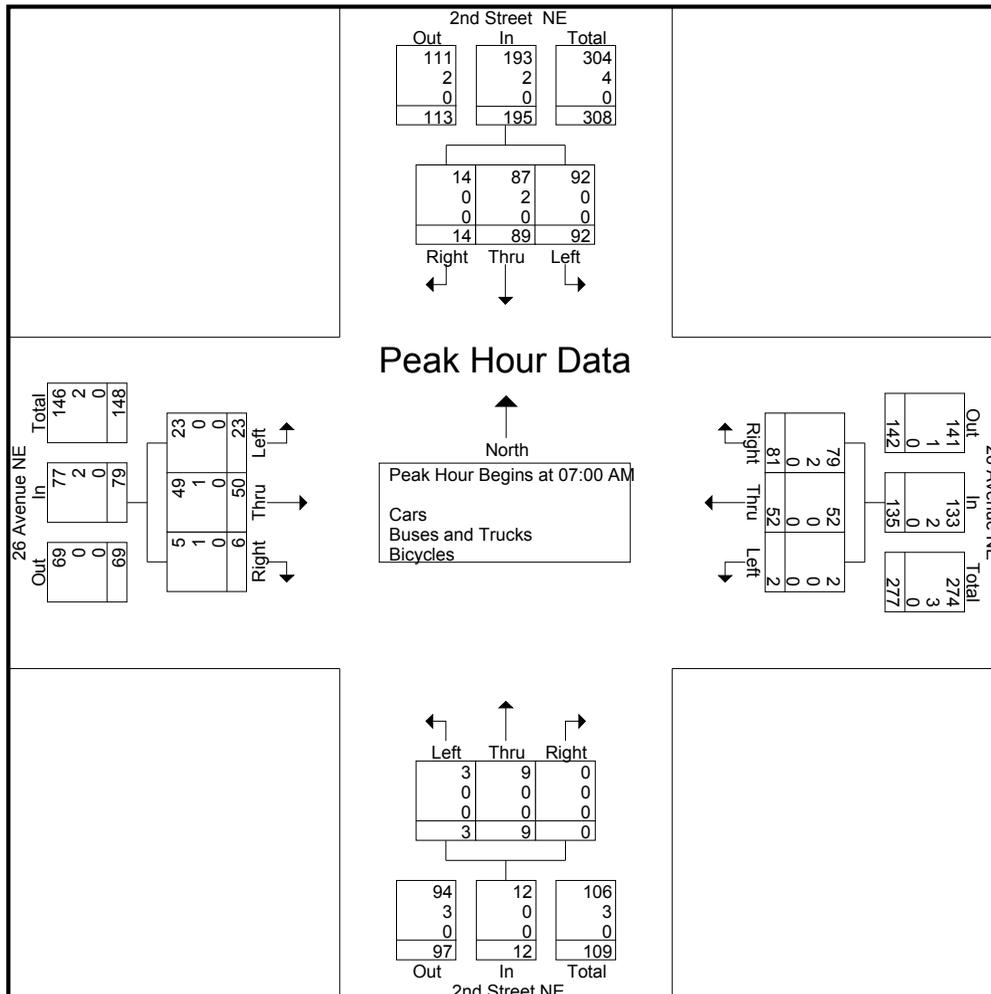
File Name : 16-0626 2nd Street NE and 26th Avenue NE

Site Code : 00160626

Start Date : 9/20/2016

Page No : 3

Start Time	2nd Street NE Southbound				26 Avenue NE Westbound				2nd Street NE Northbound				26 Avenue NE Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	2	20	29	51	44	10	0	54	0	4	2	6	0	7	12	19	130
07:15 AM	6	42	40	88	33	15	0	48	0	4	0	4	0	13	8	21	161
07:30 AM	6	25	21	52	2	15	1	18	0	1	1	2	4	11	2	17	89
07:45 AM	0	2	2	4	2	12	1	15	0	0	0	0	2	19	1	22	41
Total Volume	14	89	92	195	81	52	2	135	0	9	3	12	6	50	23	79	421
% App. Total	7.2	45.6	47.2		60	38.5	1.5		0	75	25		7.6	63.3	29.1		
PHF	.583	.530	.575	.554	.460	.867	.500	.625	.000	.563	.375	.500	.375	.658	.479	.898	.654
Cars	14	87	92	193	79	52	2	133	0	9	3	12	5	49	23	77	415
% Cars	100	97.8	100	99.0	97.5	100	100	98.5	0	100	100	100	83.3	98.0	100	97.5	98.6
Buses and Trucks	0	2	0	2	2	0	0	2	0	0	0	0	1	1	0	2	6
% Buses and Trucks	0	2.2	0	1.0	2.5	0	0	1.5	0	0	0	0	16.7	2.0	0	2.5	1.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

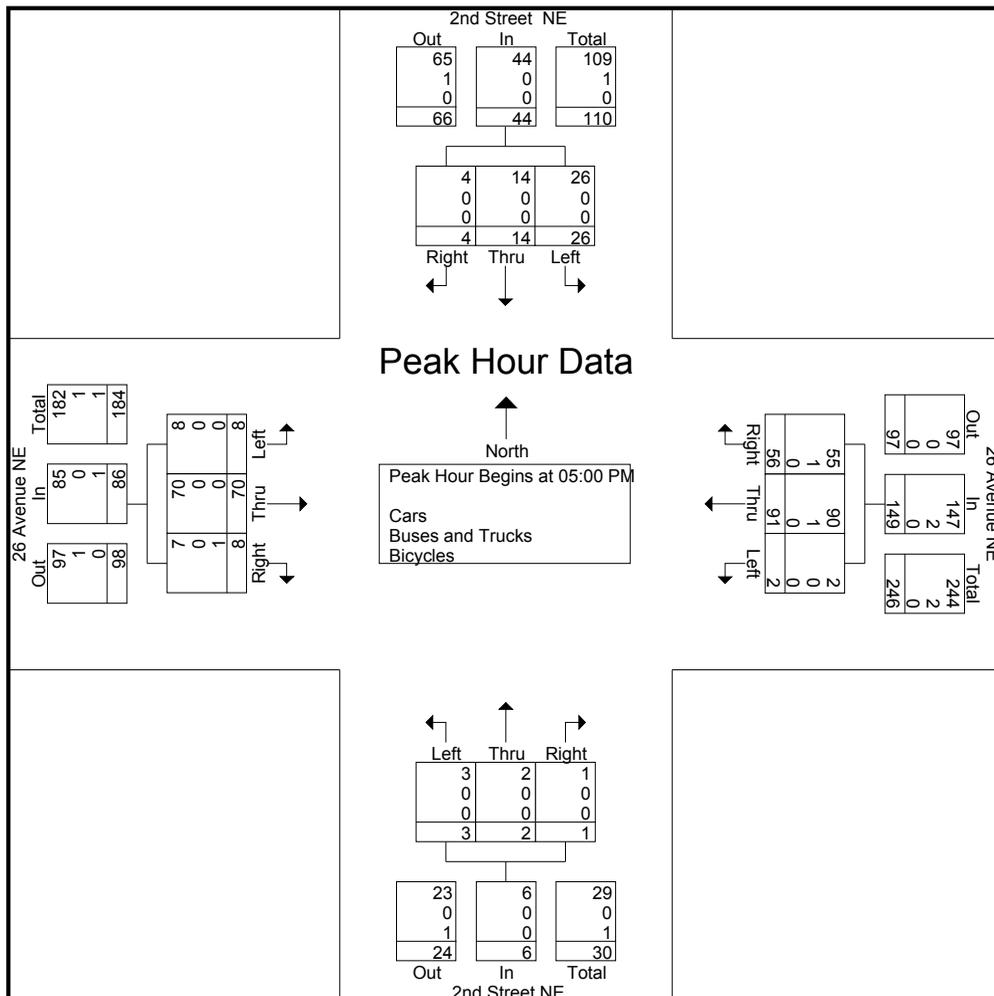
File Name : 16-0626 2nd Street NE and 26th Avenue NE

Site Code : 00160626

Start Date : 9/20/2016

Page No : 4

Start Time	2nd Street NE Southbound				26 Avenue NE Westbound				2nd Street NE Northbound				26 Avenue NE Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	4	5	9	13	28	1	42	0	0	1	1	2	16	2	20	72
05:15 PM	1	5	13	19	10	27	0	37	1	0	1	2	1	19	2	22	80
05:30 PM	2	3	4	9	12	19	1	32	0	1	1	2	4	14	1	19	62
05:45 PM	1	2	4	7	21	17	0	38	0	1	0	1	1	21	3	25	71
Total Volume	4	14	26	44	56	91	2	149	1	2	3	6	8	70	8	86	285
% App. Total	9.1	31.8	59.1		37.6	61.1	1.3		16.7	33.3	50		9.3	81.4	9.3		
PHF	.500	.700	.500	.579	.667	.813	.500	.887	.250	.500	.750	.750	.500	.833	.667	.860	.891
Cars	4	14	26	44	55	90	2	147	1	2	3	6	7	70	8	85	282
% Cars	100	100	100	100	98.2	98.9	100	98.7	100	100	100	100	87.5	100	100	98.8	98.9
Buses and Trucks	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
% Buses and Trucks	0	0	0	0	1.8	1.1	0	1.3	0	0	0	0	0	0	0	0	0.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	12.5	0	0	1.2	0.4





# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

Counted by :N.Baskett

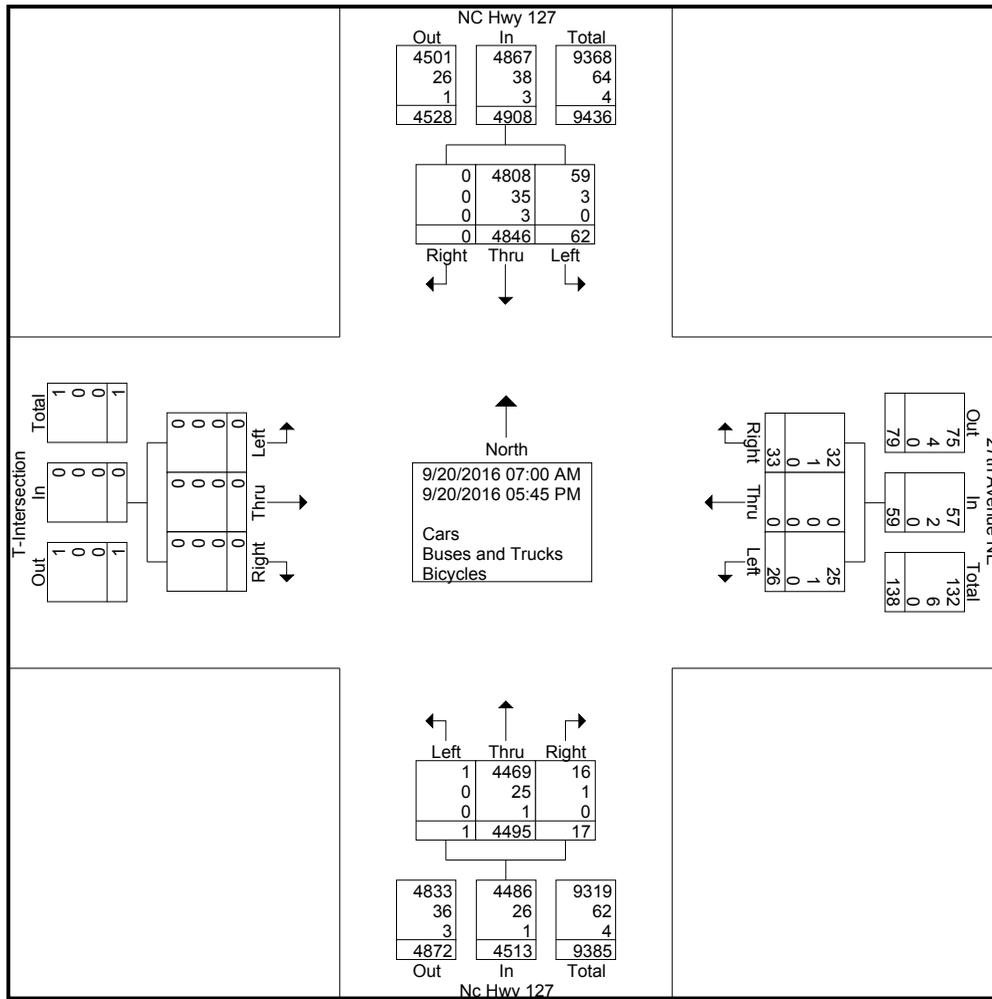
File Name : 160626 NC Hwy 127 and 27th Avenue NE

Site Code : 00160626

Start Date : 9/20/2016

Page No : 2

Weather:Clear



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

Counted by :N.Baskett

File Name : 160626 NC Hwy 127 and 27th Avenue NE

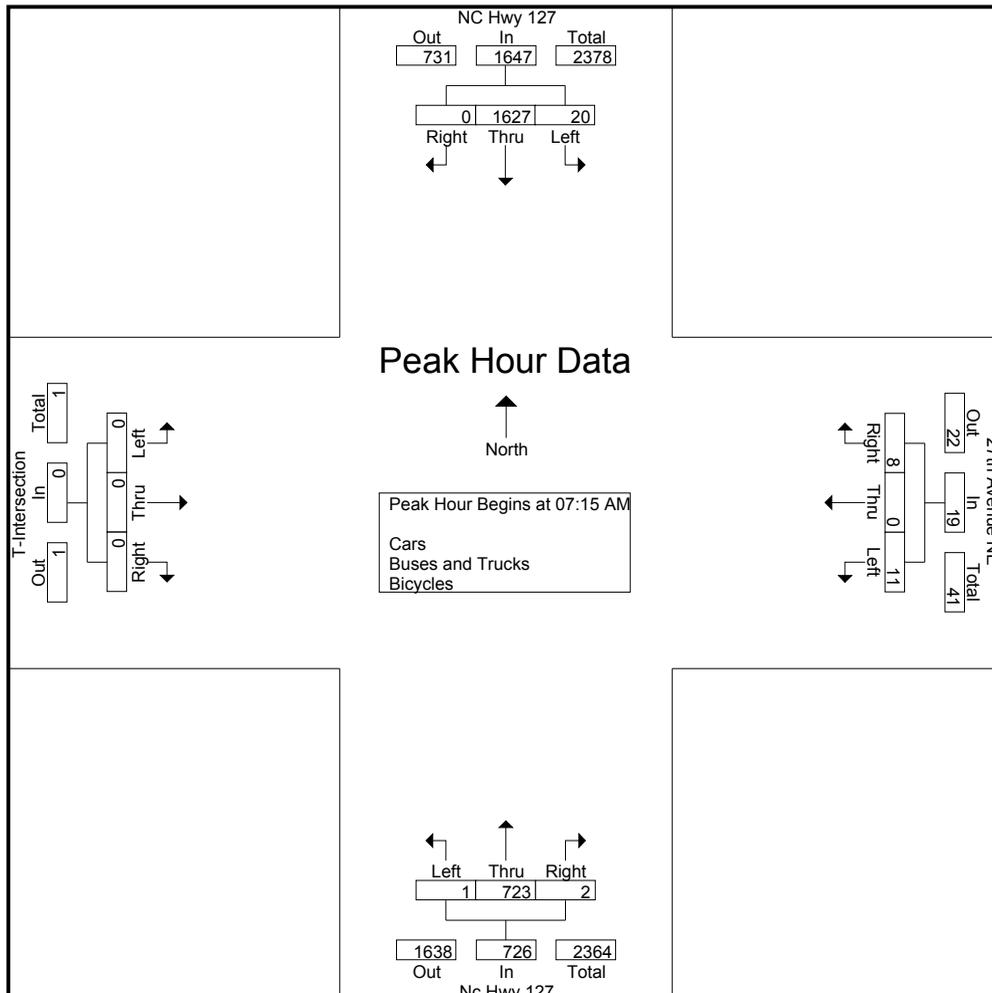
Site Code : 00160626

Start Date : 9/20/2016

Page No : 3

Weather:Clear

Start Time	NC Hwy 127 Southbound				27th Avenue NE Westbound				Nc Hwy 127 Northbound				T-Intersection Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
<b>Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1</b>																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	392	11	403	7	0	5	12	1	228	1	230	0	0	0	0	645
07:30 AM	0	332	5	337	1	0	2	3	0	201	0	201	0	0	0	0	541
07:45 AM	0	478	2	480	0	0	0	0	1	138	0	139	0	0	0	0	619
08:00 AM	0	425	2	427	0	0	4	4	0	156	0	156	0	0	0	0	587
Total Volume	0	1627	20	1647	8	0	11	19	2	723	1	726	0	0	0	0	2392
% App. Total	0	98.8	1.2		42.1	0	57.9		0.3	99.6	0.1		0	0	0		
PHF	.000	.851	.455	.858	.286	.000	.550	.396	.500	.793	.250	.789	.000	.000	.000	.000	.927



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

Counted by :N.Baskett

File Name : 160626 NC Hwy 127 and 27th Avenue NE

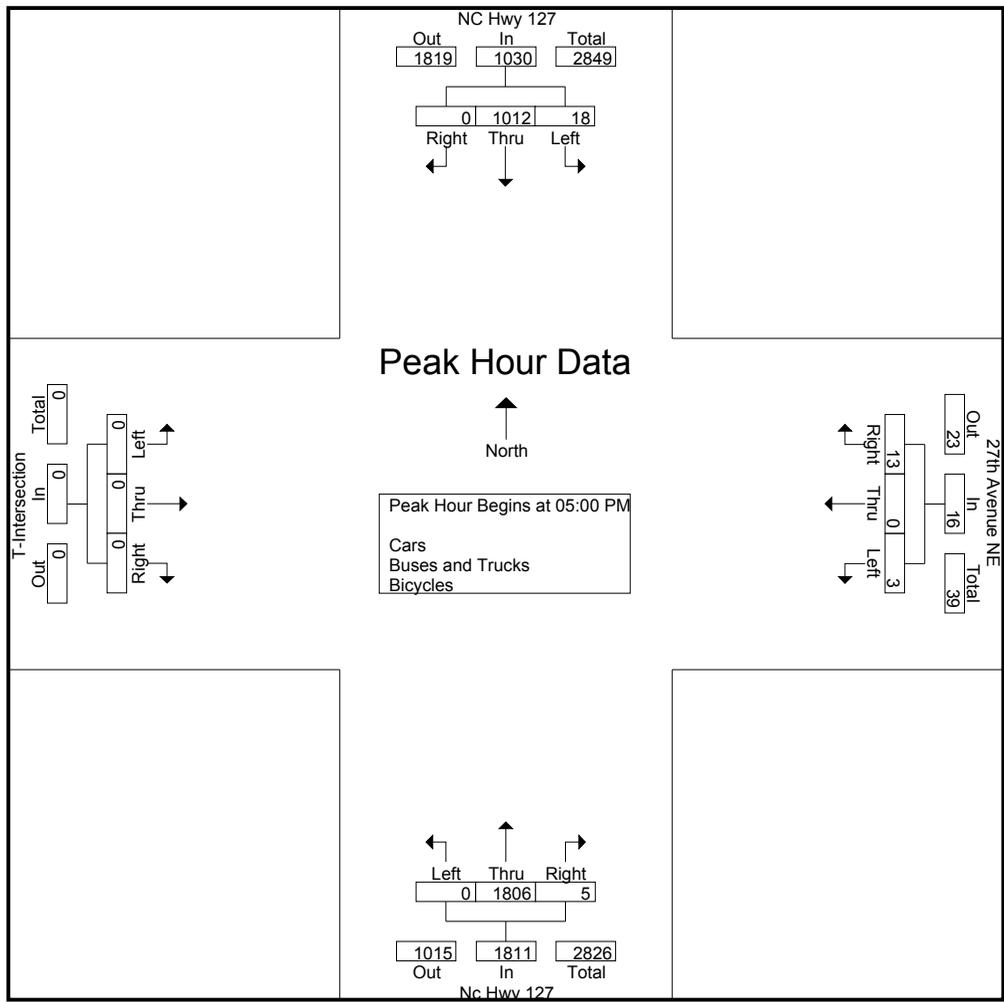
Site Code : 00160626

Start Date : 9/20/2016

Weather:Clear

Page No : 4

Start Time	NC Hwy 127 Southbound				27th Avenue NE Westbound				Nc Hwy 127 Northbound				T-Intersection Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
<b>Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1</b>																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	242	3	245	5	0	1	6	1	462	0	463	0	0	0	0	714
05:15 PM	0	238	6	244	1	0	0	1	1	467	0	468	0	0	0	0	713
05:30 PM	0	265	3	268	3	0	2	5	2	479	0	481	0	0	0	0	754
05:45 PM	0	267	6	273	4	0	0	4	1	398	0	399	0	0	0	0	676
Total Volume	0	1012	18	1030	13	0	3	16	5	1806	0	1811	0	0	0	0	2857
% App. Total	0	98.3	1.7		81.2	0	18.8		0.3	99.7	0		0	0	0		
PHF	.000	.948	.750	.943	.650	.000	.375	.667	.625	.943	.000	.941	.000	.000	.000	.000	.947



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

Counted by:D.Davis  
U-Turns under Bike group and Ped column

File Name : 2nd St NE & 27th Ave NE 7-9am & 4-6pm

Site Code : 00160626

Start Date : 9/20/2016

Page No : 1

Weather: Clear

## Groups Printed- Cars - Trucks and Buses - Bikes

Start Time	27th Ave NE Eastbound					T-Intersection Westbound					2nd Street NE Northbound					2nd Street NE Southbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total			
07:00 AM	5	0	1	1	6	0	0	0	0	0	1	32	0	0	33	0	26	3	0	29	1	68	69
07:15 AM	17	0	2	1	19	0	0	0	0	0	0	71	0	0	71	0	81	2	0	83	1	173	174
07:30 AM	4	0	1	0	5	0	0	0	0	0	1	12	0	1	13	0	81	9	0	90	1	108	109
07:45 AM	3	0	1	1	4	0	0	0	0	0	1	4	0	2	5	0	8	0	0	8	3	17	20
Total	29	0	5	3	34	0	0	0	0	0	3	119	0	3	122	0	196	14	0	210	6	366	372
08:00 AM	2	0	2	0	4	0	0	0	0	0	1	1	0	0	2	0	6	0	0	6	0	12	12
08:15 AM	0	0	3	0	3	0	0	0	0	0	3	1	0	2	4	0	5	1	0	6	2	13	15
08:30 AM	0	0	1	3	1	0	0	0	0	0	2	2	0	2	4	0	4	1	0	5	5	10	15
08:45 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	0	4	1	1	5	1	9	10
Total	2	0	6	3	8	0	0	0	0	0	8	6	0	4	14	0	19	3	1	22	8	44	52
04:00 PM	2	0	0	2	2	0	0	0	0	0	1	11	0	0	12	0	9	0	0	9	2	23	25
04:15 PM	0	0	2	0	2	0	0	0	0	0	2	5	0	0	7	0	11	0	0	11	0	20	20
04:30 PM	0	0	2	0	2	0	0	0	0	0	1	6	0	2	7	0	10	1	0	11	2	20	22
04:45 PM	0	0	1	0	1	0	0	0	0	0	2	7	0	0	9	0	4	1	0	5	0	15	15
Total	2	0	5	2	7	0	0	0	0	0	6	29	0	2	35	0	34	2	0	36	4	78	82
05:00 PM	3	0	1	0	4	0	0	0	0	0	4	12	0	0	16	0	6	0	0	6	0	26	26
05:15 PM	1	0	1	0	2	0	0	0	0	0	2	7	0	0	9	0	22	0	0	22	0	33	33
05:30 PM	4	0	2	0	6	0	0	0	0	0	3	10	0	0	13	0	4	0	0	4	0	23	23
05:45 PM	6	0	1	0	7	0	0	0	0	0	3	19	0	0	22	0	6	2	0	8	0	37	37
Total	14	0	5	0	19	0	0	0	0	0	12	48	0	0	60	0	38	2	0	40	0	119	119
Grand Total	47	0	21	8	68	0	0	0	0	0	29	202	0	9	231	0	287	21	1	308	18	607	625
Apprch %	69.1	0	30.9			0	0	0			12.6	87.4	0			0	93.2	6.8					
Total %	7.7	0	3.5		11.2	0	0	0		0	4.8	33.3	0		38.1	0	47.3	3.5		50.7	2.9	97.1	
Cars	47	0	21		76	0	0	0		0	29	199	0		236	0	282	21		304	0	0	616
% Cars	100	0	100	100	100	0	0	0	0	0	100	98.5	0	88.9	98.3	0	98.3	100	100	98.4	0	0	98.6
Trucks and Buses	0	0	0		0	0	0	0		0	0	3	0		3	0	1	0		1	0	0	4
% Trucks and Buses	0	0	0	0	0	0	0	0	0	0	0	1.5	0	0	1.2	0	0.3	0	0	0.3	0	0	0.6
Bikes	0	0	0		0	0	0	0		0	0	0	0		1	0	4	0		4	0	0	5
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	11.1	0.4	0	1.4	0	0	1.3	0	0	0.8





# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

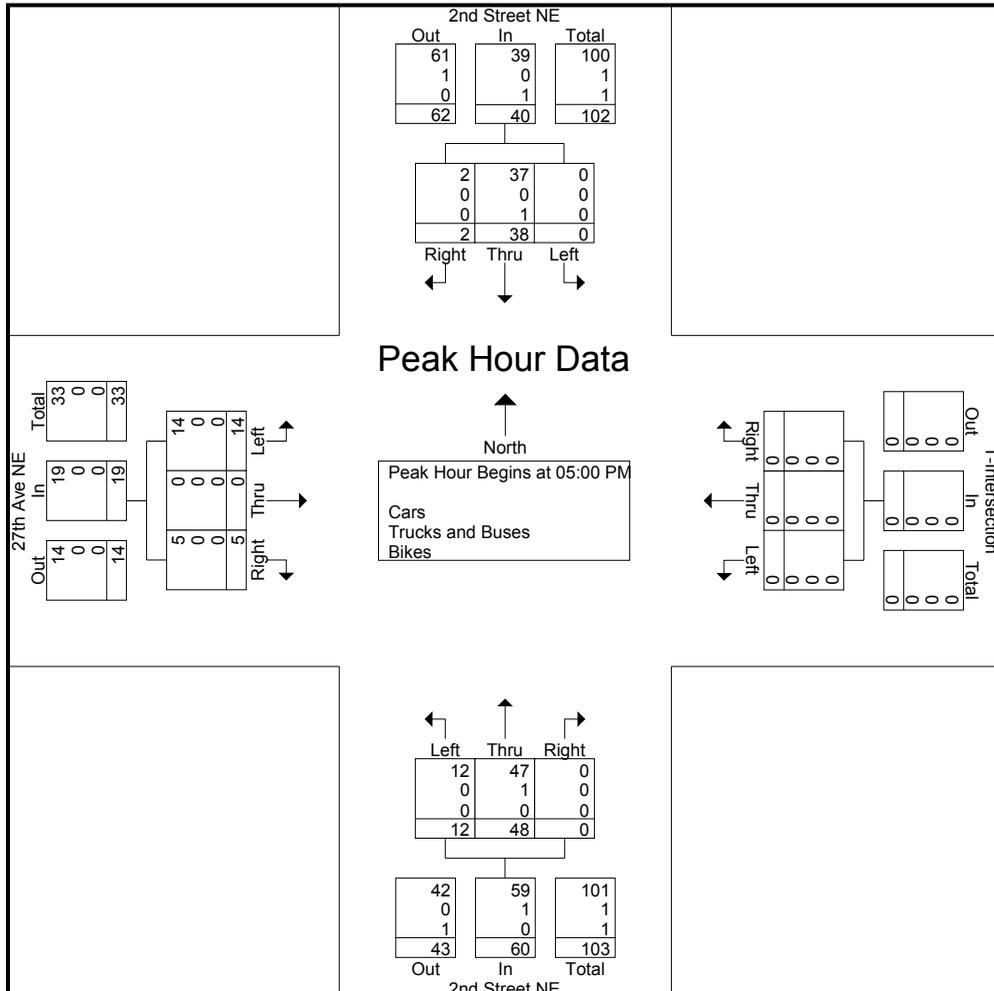
File Name : 2nd St NE & 27th Ave NE 7-9am & 4-6pm

Site Code : 00160626

Start Date : 9/20/2016

Page No : 4

Start Time	27th Ave NE Eastbound				T-Intersection Westbound				2nd Street NE Northbound				2nd Street NE Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	3	0	1	4	0	0	0	0	4	12	0	16	0	6	0	6	26
05:15 PM	1	0	1	2	0	0	0	0	2	7	0	9	0	22	0	22	33
05:30 PM	4	0	2	6	0	0	0	0	3	10	0	13	0	4	0	4	23
05:45 PM	6	0	1	7	0	0	0	0	3	19	0	22	0	6	2	8	37
Total Volume	14	0	5	19	0	0	0	0	12	48	0	60	0	38	2	40	119
% App. Total	73.7	0	26.3		0	0	0		20	80	0		0	95	5		
PHF	.583	.000	.625	.679	.000	.000	.000	.000	.750	.632	.000	.682	.000	.432	.250	.455	.804
Cars	14	0	5	19	0	0	0	0	12	47	0	59	0	37	2	39	117
% Cars	100	0	100	100	0	0	0	0	100	97.9	0	98.3	0	97.4	100	97.5	98.3
Trucks and Buses	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% Trucks and Buses	0	0	0	0	0	0	0	0	0	2.1	0	1.7	0	0	0	0	0.8
Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	2.6	0	2.5	0.8



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

Counted by: M. Davenport

File Name : 28th Ave @ 2nd Street

Site Code : 01111111

Start Date : 4/16/2015

Page No : 1

Weather: Rain

## Groups Printed- Cars - Trucks and Buses - Bikes

Start Time	2nd Street Southbound					28th Avenue Westbound					2nd Street Northbound					28th Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total			
07:00 AM	10	1	0	0	11	39	15	13	0	67	0	0	19	0	19	0	62	0	0	62	0	159	159
07:15 AM	7	2	0	0	9	93	41	13	0	147	0	0	39	0	39	0	136	0	0	136	0	331	331
07:30 AM	2	0	0	0	2	35	27	8	0	70	0	0	7	0	7	0	21	1	0	22	0	101	101
07:45 AM	3	1	0	0	4	5	3	2	0	10	0	0	1	0	1	0	8	0	0	8	0	23	23
Total	22	4	0	0	26	172	86	36	0	294	0	0	66	0	66	0	227	1	0	228	0	614	614
08:00 AM	0	1	0	1	1	3	5	2	0	10	0	1	2	0	3	0	5	0	1	5	2	19	21
08:15 AM	0	3	0	0	3	4	3	1	1	8	0	3	1	0	4	0	6	0	0	6	1	21	22
08:30 AM	2	1	0	0	3	3	4	3	1	10	1	3	0	1	4	0	6	3	0	9	2	26	28
08:45 AM	2	2	0	0	4	4	8	0	1	12	0	3	2	2	5	0	10	0	1	10	4	31	35
Total	4	7	0	1	11	14	20	6	3	40	1	10	5	3	16	0	27	3	2	30	9	97	106
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	3	2	0	0	5	4	3	1	0	8	1	1	10	1	12	0	40	0	0	40	1	65	66
02:15 PM	1	4	0	0	5	42	15	6	0	63	1	4	16	2	21	0	29	0	0	29	2	118	120
02:30 PM	2	2	0	0	4	39	27	5	0	71	3	2	24	0	29	1	19	1	0	21	0	125	125
02:45 PM	1	5	0	0	6	12	12	6	1	30	1	2	2	0	5	0	13	0	0	13	1	54	55
Total	7	13	0	0	20	97	57	18	1	172	6	9	52	3	67	1	101	1	0	103	4	362	366
03:00 PM	0	5	0	0	5	9	7	1	0	17	1	7	0	0	8	2	4	0	0	6	0	36	36
03:15 PM	1	5	1	0	7	3	6	1	0	10	1	6	4	0	11	1	11	0	0	12	0	40	40
03:30 PM	2	2	1	0	5	18	7	3	0	28	1	2	3	1	6	0	6	0	0	6	1	45	46
03:45 PM	5	3	0	0	8	13	8	1	0	22	2	3	2	0	7	0	5	2	0	7	0	44	44
Total	8	15	2	0	25	43	28	6	0	77	5	18	9	1	32	3	26	2	0	31	1	165	166

# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

File Name : 28th Ave @ 2nd Street

Site Code : 01111111

Start Date : 4/16/2015

Page No : 2

## Groups Printed- Cars - Trucks and Buses - Bikes

Start Time	2nd Street Southbound					28th Avenue Westbound					2nd Street Northbound					28th Avenue Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total			
04:00 PM	1	7	0	0	8	4	7	1	0	12	2	5	1	0	8	0	2	0	0	2	0	30	30
04:15 PM	4	5	1	0	10	3	4	0	0	7	1	1	0	0	2	1	4	3	0	8	0	27	27
04:30 PM	0	3	0	0	3	1	0	4	0	5	1	2	1	0	4	1	2	1	0	4	0	16	16
04:45 PM	2	6	0	0	8	5	1	0	0	6	3	9	2	1	14	1	0	2	0	3	1	31	32
Total	7	21	1	0	29	13	12	5	0	30	7	17	4	1	28	3	8	6	0	17	1	104	105
05:00 PM	0	6	0	0	6	2	1	0	0	3	2	7	0	0	9	0	4	1	0	5	0	23	23
05:15 PM	1	7	0	0	8	5	1	2	0	8	3	3	2	1	8	0	3	1	1	4	2	28	30
05:30 PM	1	2	3	0	6	1	4	0	0	5	5	6	3	0	14	2	1	2	0	5	0	30	30
05:45 PM	4	3	0	0	7	2	0	1	0	3	1	4	0	0	5	0	2	4	0	6	0	21	21
Total	6	18	3	0	27	10	6	3	0	19	11	20	5	1	36	2	10	8	1	20	2	102	104
Grand Total	54	78	6	1	138	349	209	74	4	632	30	74	141	9	245	9	399	21	3	429	17	1444	1461
Apprch %	39.1	56.5	4.3			55.2	33.1	11.7			12.2	30.2	57.6			2.1	93	4.9					
Total %	3.7	5.4	0.4		9.6	24.2	14.5	5.1		43.8	2.1	5.1	9.8		17	0.6	27.6	1.5		29.7	1.2	98.8	
Cars	54	77	5		137	330	206	73		613	30	72	133		244	8	384	18		413	0	0	1407
% Cars	100	98.7	83.3	100	98.6	94.6	98.6	98.6	100	96.4	100	97.3	94.3	100	96.1	88.9	96.2	85.7	100	95.6	0	0	96.3
Trucks and Buses	0	1	1		2	19	3	1		23	0	2	8		10	1	15	1		17	0	0	52
% Trucks and Buses	0	1.3	16.7	0	1.4	5.4	1.4	1.4	0	3.6	0	2.7	5.7	0	3.9	11.1	3.8	4.8	0	3.9	0	0	3.6
Bikes	0	0	0		0	0	0	0		0	0	0	0		0	0	0	2		2	0	0	2
% Bikes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.5	0	0.5	0	0	0.1

# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

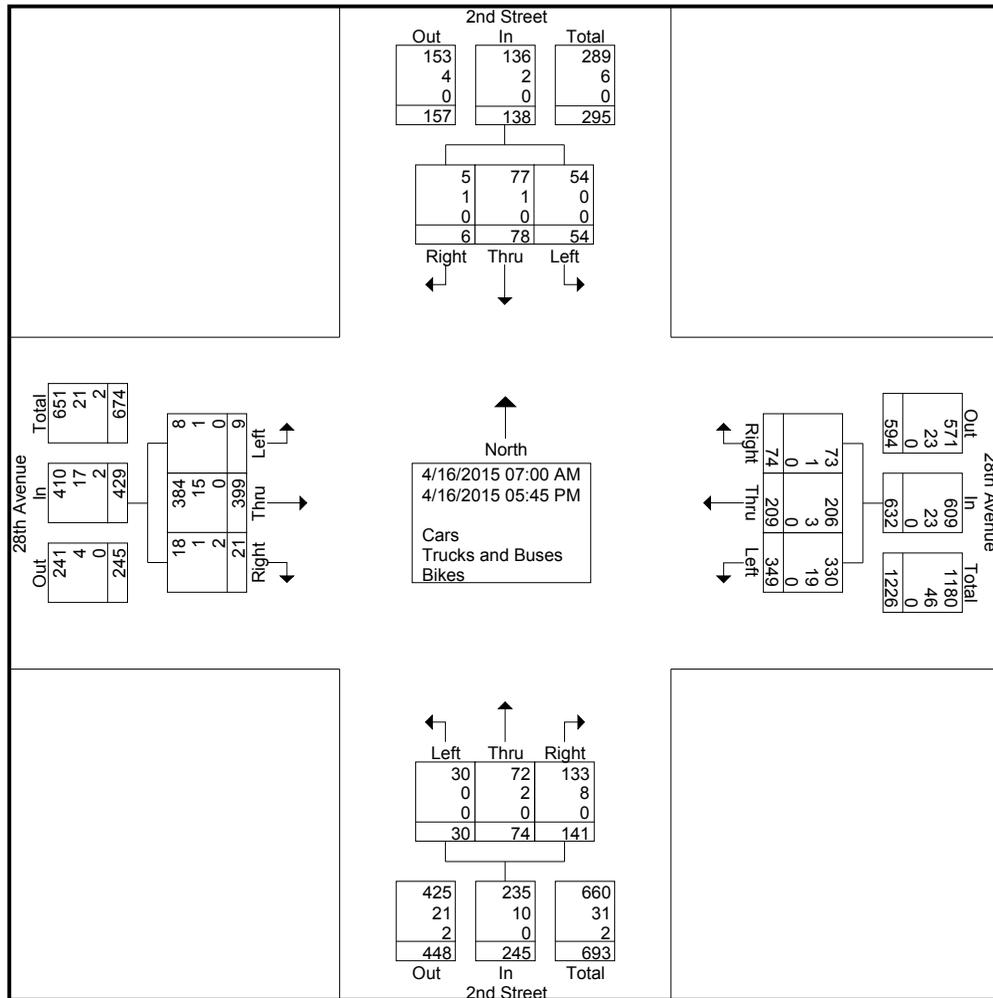
Ph:(336)744-1636

File Name : 28th Ave @ 2nd Street

Site Code : 01111111

Start Date : 4/16/2015

Page No : 3



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

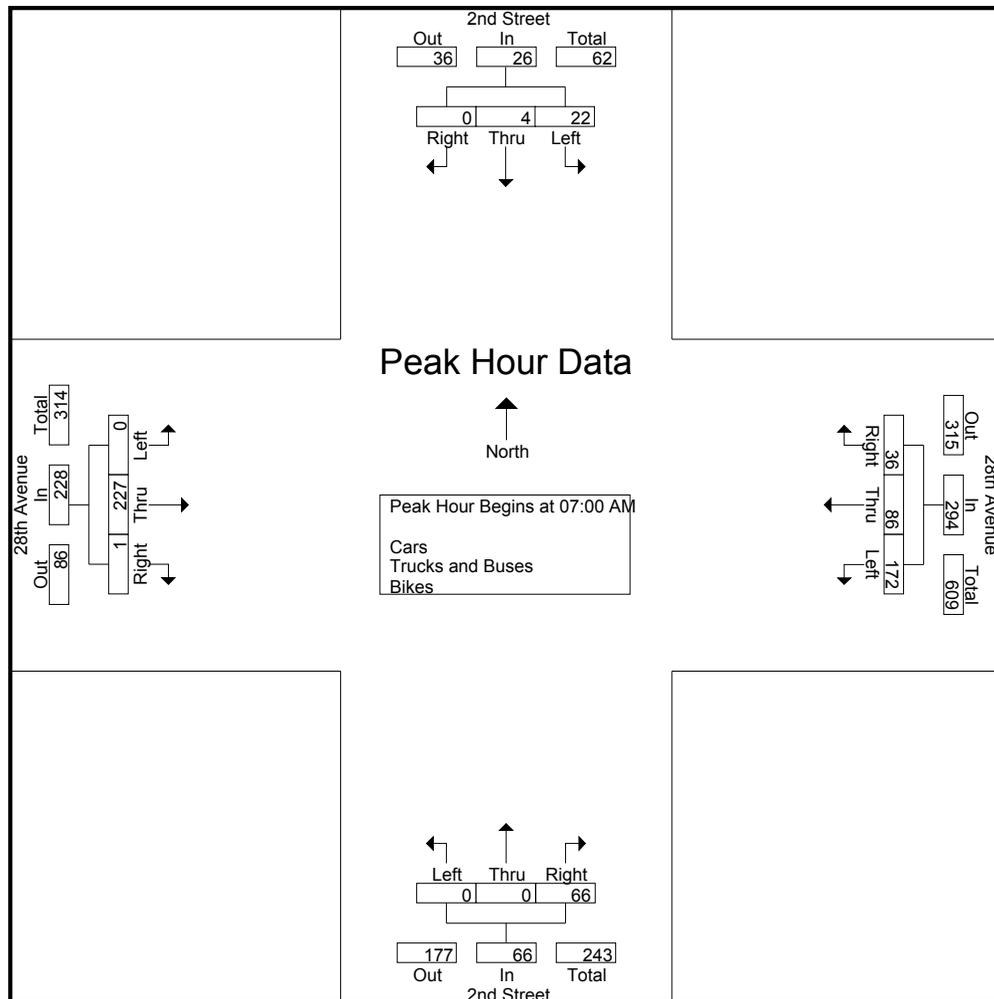
File Name : 28th Ave @ 2nd Street

Site Code : 01111111

Start Date : 4/16/2015

Page No : 4

Start Time	2nd Street Southbound				28th Avenue Westbound				2nd Street Northbound				28th Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 7:00:00 AM to 8:45:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 7:00:00 AM																	
7:00:00 AM	10	1	0	11	39	15	13	67	0	0	19	19	0	62	0	62	159
7:15:00 AM	7	2	0	9	93	41	13	147	0	0	39	39	0	136	0	136	331
7:30:00 AM	2	0	0	2	35	27	8	70	0	0	7	7	0	21	1	22	101
7:45:00 AM	3	1	0	4	5	3	2	10	0	0	1	1	0	8	0	8	23
Total Volume	22	4	0	26	172	86	36	294	0	0	66	66	0	227	1	228	614
% App. Total	84.6	15.4	0		58.5	29.3	12.2		0	0	100		0	99.6	0.4		
PHF	.550	.500	.000	.591	.462	.524	.692	.500	.000	.000	.423	.423	.000	.417	.250	.419	.464



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

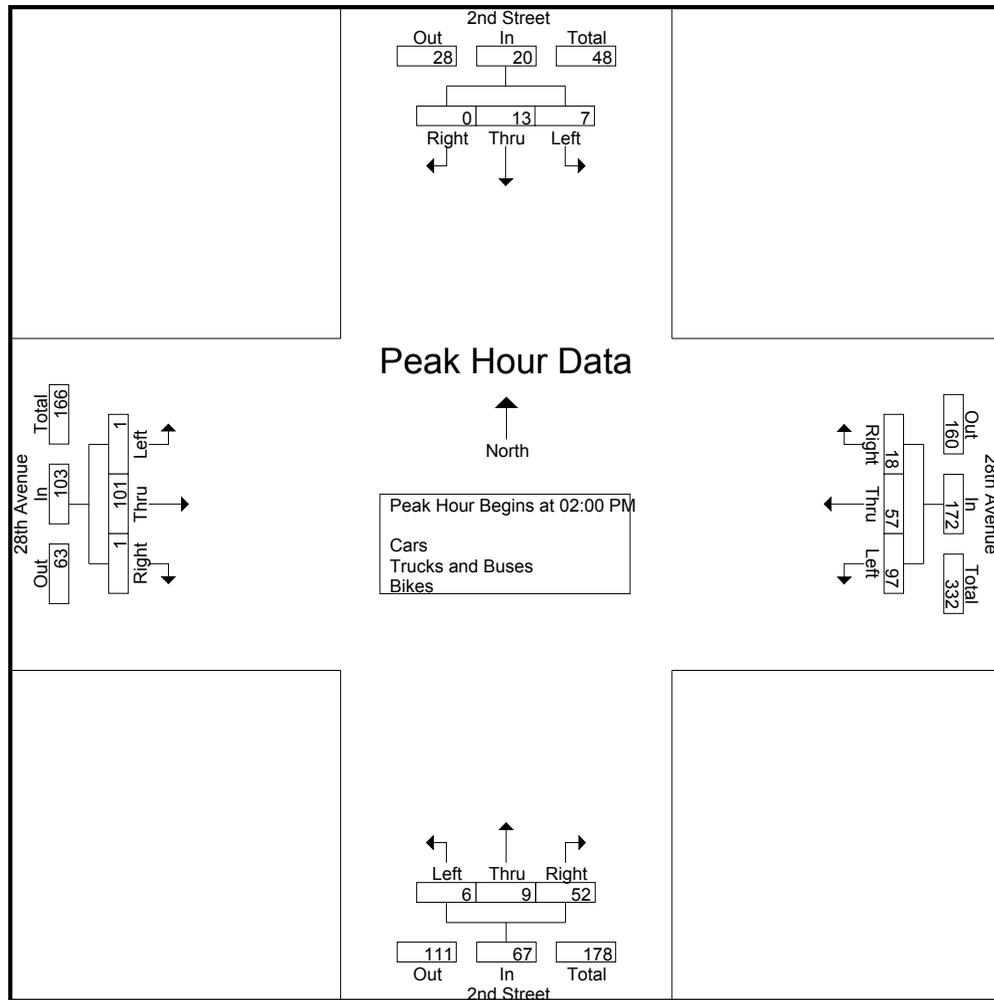
File Name : 28th Ave @ 2nd Street

Site Code : 01111111

Start Date : 4/16/2015

Page No : 5

Start Time	2nd Street Southbound				28th Avenue Westbound				2nd Street Northbound				28th Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 2:00:00 PM to 3:45:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 2:00:00 PM																	
2:00:00 PM	3	2	0	5	4	3	1	8	1	1	10	12	0	40	0	40	65
2:15:00 PM	1	4	0	5	42	15	6	63	1	4	16	21	0	29	0	29	118
2:30:00 PM	2	2	0	4	39	27	5	71	3	2	24	29	1	19	1	21	125
2:45:00 PM	1	5	0	6	12	12	6	30	1	2	2	5	0	13	0	13	54
Total Volume	7	13	0	20	97	57	18	172	6	9	52	67	1	101	1	103	362
% App. Total	35	65	0		56.4	33.1	10.5		9	13.4	77.6		1	98.1	1		
PHF	.583	.650	.000	.833	.577	.528	.750	.606	.500	.563	.542	.578	.250	.631	.250	.644	.724



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

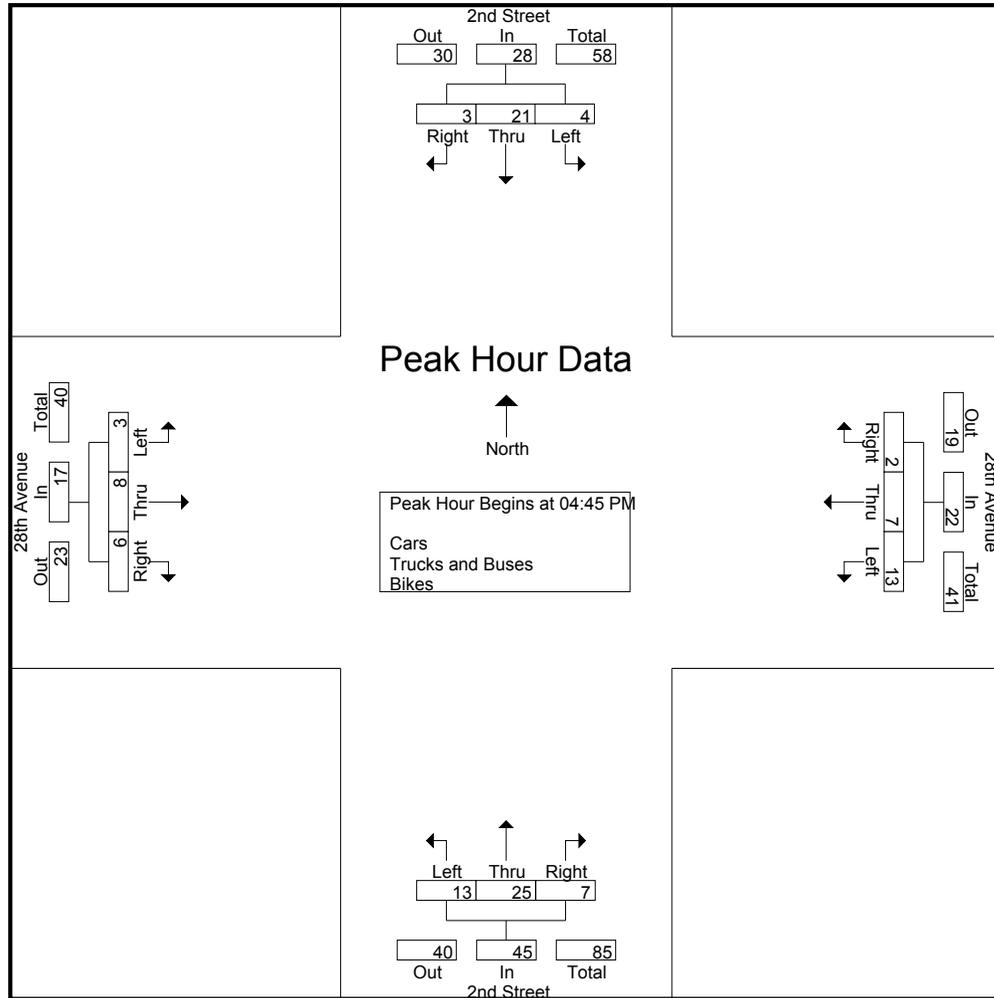
File Name : 28th Ave @ 2nd Street

Site Code : 01111111

Start Date : 4/16/2015

Page No : 6

Start Time	2nd Street Southbound				28th Avenue Westbound				2nd Street Northbound				28th Avenue Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 4:45:00 PM																	
4:45:00 PM	2	6	0	8	5	1	0	6	3	9	2	14	1	0	2	3	31
5:00:00 PM	0	6	0	6	2	1	0	3	2	7	0	9	0	4	1	5	23
5:15:00 PM	1	7	0	8	5	1	2	8	3	3	2	8	0	3	1	4	28
5:30:00 PM	1	2	3	6	1	4	0	5	5	6	3	14	2	1	2	5	30
Total Volume	4	21	3	28	13	7	2	22	13	25	7	45	3	8	6	17	112
% App. Total	14.3	75	10.7		59.1	31.8	9.1		28.9	55.6	15.6		17.6	47.1	35.3		
PHF	.500	.750	.250	.875	.650	.438	.250	.688	.650	.694	.583	.804	.375	.500	.750	.850	.903



100

26th Avenue NE at 2nd Street NE										
AM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL	23	23	2	25	25			25		25
EBT	50	50		50	51			51		51
EBR	6	6		6	6			6		6
WBL	2	2		2	2			2		2
WBT	52	52		52	53			53		53
WBR	81	81	6	87	89			89		89
NBL	3	3		3	3			3		3
NBT	9	9	1	10	10			10	3	13
NBR	0	0		0	0			0		0
SBL	92	92	3	95	97	4		101		101
SBT	89	89	3	92	94	3	8	105	32	137
SBR	14	14	0	14	15			15		15
Total	421		15	436	445	7		460	35	495

100

26th Avenue NE at 2nd Street NE										
PM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL	8			8	8			8		8
EBT	70			70	71			71		71
EBR	8			8	8			8		8
WBL	2			2	2			2		2
WBT	91			91	93			93		93
WBR	56			56	57			57		57
NBL	3			3	3			3		3
NBT	2			2	2			2	13	15
NBR	1			1	1			1		1
SBL	26			26	27	11		38		38
SBT	14			14	14	6		20	19	39
SBR	4			4	4			4		4
Total	285		0	285	291	17		308	31	339

200

NC 127 at 27th Avenue NE										
AM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL	0	0		0	0			0		0
EBT	0	0		0	0			0		0
EBR	0	0		0	0			0		0
WBL	11	11		11	11			11	3	14
WBT	0	0		0	0			0		0
WBR	8	8		8	8			8	6	14
NBL	0	0		0	0			0		0
NBT	723	723		723	738	53		791		791
NBR	2	2		2	2			2	6	8
SBL	20	20		20	20			20	2	22
SBT	1627	1627		1627	1660	26		1686		1686
SBR	0	0		0	0			0		0
Total	2391		0	2391	2439	79		2518	16	2535

200

NC 127 at 27th Avenue NE										
PM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL	0			0	0			0		0
EBT	0			0	0			0		0
EBR	0			0	0			0		0
WBL	3			3	3			3	2	5
WBT	0			0	0			0		0
WBR	13			13	13			13	3	17
NBL	0			0	0			0		0
NBT	1806			1806	1842	79		1921		1921
NBR	5			5	5			5	25	30
SBL	18			18	18			18	6	25
SBT	1012			1012	1032	60		1092		1092
SBR	0			0	0			0		0
Total	2857		0	2857	2914	139		3053	37	3090

300

27th Avenue NE at 2nd Street NE/Site Access 1										
AM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL	29	29		29	30			30	2	32
EBT	0	0		0	0			0	5	5
EBR	5	5		5	5			5		5
WBL	0	0		0	0			0	21	21
WBT	0	0		0	0			0	9	9
WBR	0	0		0	0			0	6	6
NBL	3	3		3	3			3		3
NBT	119	119		119	121			121	1	122
NBR	0	0		0	0			0	2	2
SBL	0	0		0	0			0	1	1
SBT	196	196		196	200	7	8	215	12	227
SBR	14	14		14	14			14		14
Total	366		0	366	373	7		388	58	447

300

27th Avenue NE at 2nd Street NE/Site Access 1										
PM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL	14			14	14			14	9	24
EBT	0			0	0			0	22	22
EBR	5			5	5			5		5
WBL	0			0	0			0	12	12
WBT	0			0	0			0	5	5
WBR	0			0	0			0	3	3
NBL	12		1	13	13			13		13
NBT	48		5	53	54			54	3	57
NBR	0			0	0			0	9	9
SBL	0			0	0			0	3	3
SBT	38			38	39	17		56	7	63
SBR	2			2	2			2		2
Total	119		6	125	128	17		145	74	218

400

28th Avenue NE at 2nd Street NE										
AM Peak	2015 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL	0	0		0	0	6		6		6
EBT	227	229		229	234		-102	132		132
EBR	1	1		1	1	7		8		8
WBL	172	174	31	205	209		8	217		217
WBT	86	87		87	89		-15	74		74
WBR	36	36		36	37		7	44		44
NBL	0	0		0	0			0		0
NBT	0	0		0	0			0	18	18
NBR	66	67	81	148	151			151		151
SBL	22	22		22	23		102	125		125
SBT	4	4		4	4			4	5	9
SBR	0	0		0	0			0		0
Total	614		112	732	747	13		760	22	784

400

28th Avenue NE at 2nd Street NE										
PM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL	3	3		3	3	9		12		12
EBT	8	8		8	8		-4	4		4
EBR	6	6		6	6	17		23		23
WBL	13	13		13	13			13		13
WBT	7	7		7	7			7		7
WBR	2	2		2	2			2		2
NBL	13	13	6	19	20			20		20
NBT	25	25	12	37	38			38	10	48
NBR	7	7	3	10	11			11		11
SBL	4	4		4	4		4	8		8
SBT	21	21		21	22			22	19	41
SBR	3	3		3	3			3		3
Total	112		22	135	138	26		164	29	192

500

29th Avenue NE at 2nd Street NE										
AM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL		0		0	0			0		0
EBT	197	197		197	201	11		212		212
EBR		0		0	0		102	102	1	103
WBL		0		0	0		8	8	4	12
WBT	270	270		270	275	18		293		293
WBR		0		0	0			0		0
NBL		0		0	0	11	7	18	3	21
NBT		0		0	0			0		0
NBR		0		0	0		11	11	15	26
SBL		0		0	0			0		0
SBT		0		0	0			0		0
SBR		0		0	0			0		0
Total	467		0	467	476	40		644	22	667

600

2nd Street NE at Site Access 2										
AM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL		0		0	0			0		0
EBT		0		0	0			0		0
EBR		0		0	0			0		0
WBL		0		0	0			0	12	12
WBT		0		0	0			0		0
WBR		0		0	0			0	12	12
NBL		0		0	0			0		0
NBT	148	148	0	148	151			151	6	157
NBR		0		0	0			0	3	3
SBL		0		0	0			0	4	4
SBT	177	177	31	208	212	7	8	227	1	228
SBR		0		0	0			0		0
Total	325		31	356	363	7		378	37	416

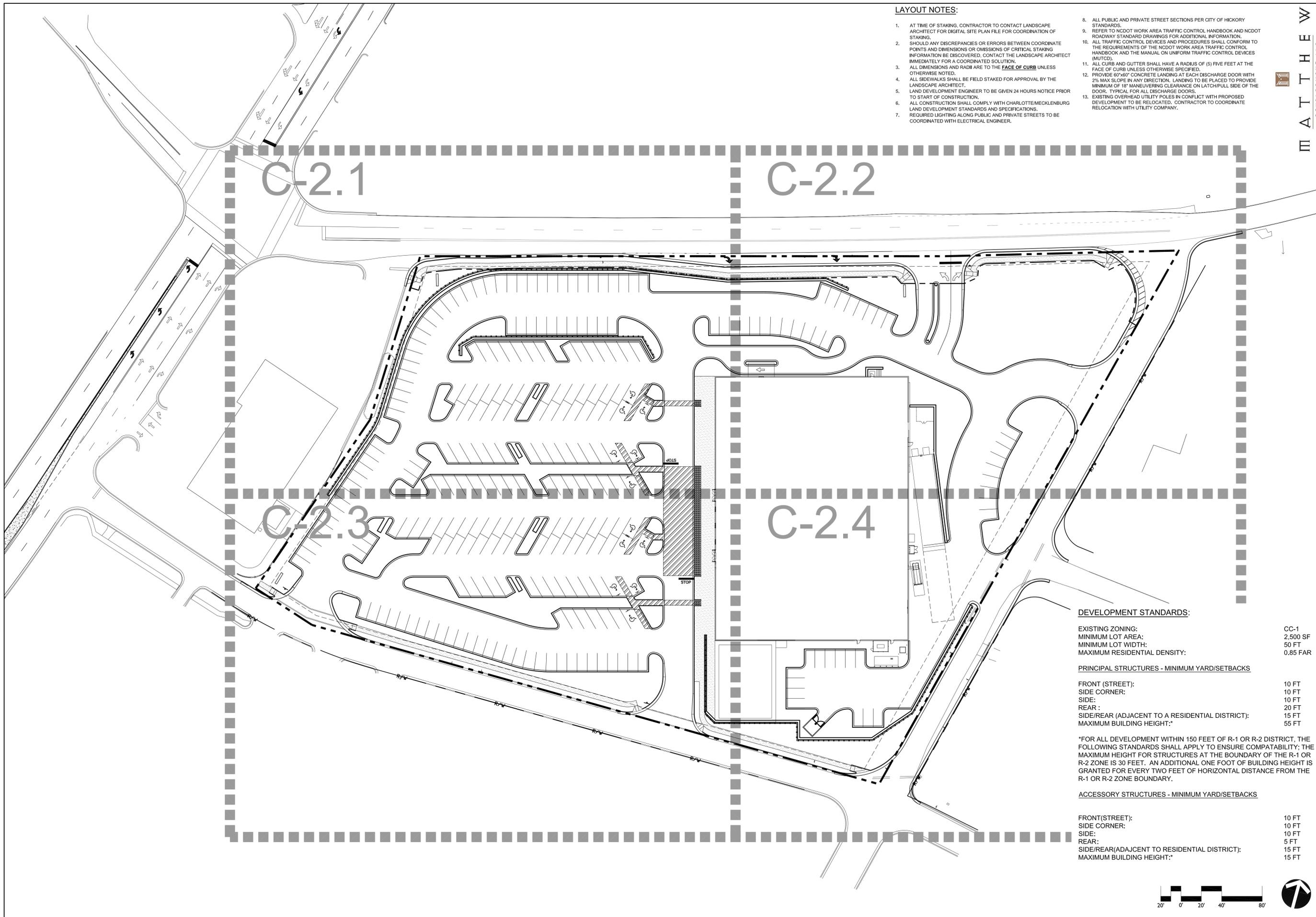
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29th Avenue NE at 2nd Street NE										
PM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL				0	0			0		0
EBT	422			422	430	26		456		456
EBR				0	0		4	4	3	7
WBL				0	0		8	8	16	24
WBT	339			339	346	26		372		372
WBR				0	0			0		0
NBL				0	0	26	0	26	2	28
NBT				0	0			0		0
NBR				0	0		9	9	9	18
SBL				0	0			0		0
SBT				0	0			0		0
SBR				0	0			0		0
Total	761		0	761	776	78		875	29	905

600

2nd Street NE at Site Access 2										
PM Peak	2016 TMC	2016 TMC	Balancing	2016 Base	2018 Projected	Appd Dev	Publix Reroute	2018 Future No Build	Site Trips	Future Build
EBL				0	0			0		0
EBT				0	0			0		0
EBR				0	0			0		0
WBL				0	0			0	7	7
WBT				0	0			0		0
WBR				0	0			0	7	7
NBL				0	0			0		0
NBT	62		5	67	68			68	3	72
NBR				0	0			0	13	13
SBL				0	0			0	16	16
SBT	40		0	40	41	17		58	3	61
SBR				0	0			0		0
Total	102		5	107	109	17		126	49	176

## *Supporting Documentation*



**LAYOUT NOTES:**

1. AT TIME OF STAKING, CONTRACTOR TO CONTACT LANDSCAPE ARCHITECT FOR DIGITAL SITE PLAN FILE FOR COORDINATION OF STAKING.
2. SHOULD ANY DISCREPANCIES OR ERRORS BETWEEN COORDINATE POINTS AND DIMENSIONS OR OMISSIONS OF CRITICAL STAKING INFORMATION BE DISCOVERED, CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY FOR A COORDINATED SOLUTION.
3. ALL DIMENSIONS AND RADII ARE TO THE **FACE OF CURB** UNLESS OTHERWISE NOTED.
4. ALL SIDEWALKS SHALL BE FIELD STAKED FOR APPROVAL BY THE LANDSCAPE ARCHITECT.
5. LAND DEVELOPMENT ENGINEER TO BE GIVEN 24 HOURS NOTICE PRIOR TO START OF CONSTRUCTION.
6. ALL CONSTRUCTION SHALL COMPLY WITH CHARLOTTE-MECKLENBURG LAND DEVELOPMENT STANDARDS AND SPECIFICATIONS.
7. REQUIRED LIGHTING ALONG PUBLIC AND PRIVATE STREETS TO BE COORDINATED WITH ELECTRICAL ENGINEER.
8. ALL PUBLIC AND PRIVATE STREET SECTIONS PER CITY OF HICKORY STANDARDS.
9. REFER TO NCDOT WORK AREA TRAFFIC CONTROL HANDBOOK AND NCDOT ROADWAY STANDARD DRAWINGS FOR ADDITIONAL INFORMATION.
10. ALL TRAFFIC CONTROL DEVICES AND PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF THE NCDOT WORK AREA TRAFFIC CONTROL HANDBOOK AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
11. ALL CURBS AND GUTTER SHALL HAVE A RADIUS OF (5) FIVE FEET AT THE FACE OF CURB UNLESS OTHERWISE SPECIFIED.
12. PROVIDE 60"x60" CONCRETE LANDING AT EACH DISCHARGE DOOR WITH 2% MAX SLOPE IN ANY DIRECTION. LANDING TO BE PLACED TO PROVIDE MINIMUM OF 18" MANEUVERING CLEARANCE ON LATCH/PULL SIDE OF THE DOOR. TYPICAL FOR ALL DISCHARGE DOORS.
13. EXISTING OVERHEAD UTILITY POLES IN CONFLICT WITH PROPOSED DEVELOPMENT TO BE RELOCATED. CONTRACTOR TO COORDINATE RELOCATION WITH UTILITY COMPANY.

MATTHEW DEVELOPMENT, LLC  
 DEVELOPMENT, LLC

**LandDesign**  
 223 N Graham Street - Charlotte, NC 28202  
 T: 704-333-0325 F: 704-333-3746  
 www.LandDesign.com



9-3-15

**DEVELOPMENT STANDARDS:**

EXISTING ZONING: CC-1  
 MINIMUM LOT AREA: 2,500 SF  
 MINIMUM LOT WIDTH: 50 FT  
 MAXIMUM RESIDENTIAL DENSITY: 0.85 FAR

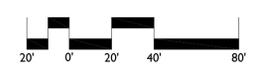
**PRINCIPAL STRUCTURES - MINIMUM YARD/SETBACKS**

FRONT (STREET): 10 FT  
 SIDE CORNER: 10 FT  
 SIDE: 10 FT  
 REAR: 20 FT  
 SIDE/REAR (ADJACENT TO A RESIDENTIAL DISTRICT): 15 FT  
 MAXIMUM BUILDING HEIGHT: 55 FT

\*FOR ALL DEVELOPMENT WITHIN 150 FEET OF R-1 OR R-2 DISTRICT, THE FOLLOWING STANDARDS SHALL APPLY TO ENSURE COMPATIBILITY; THE MAXIMUM HEIGHT FOR STRUCTURES AT THE BOUNDARY OF THE R-1 OR R-2 ZONE IS 30 FEET. AN ADDITIONAL ONE FOOT OF BUILDING HEIGHT IS GRANTED FOR EVERY TWO FEET OF HORIZONTAL DISTANCE FROM THE R-1 OR R-2 ZONE BOUNDARY.

**ACCESSORY STRUCTURES - MINIMUM YARD/SETBACKS**

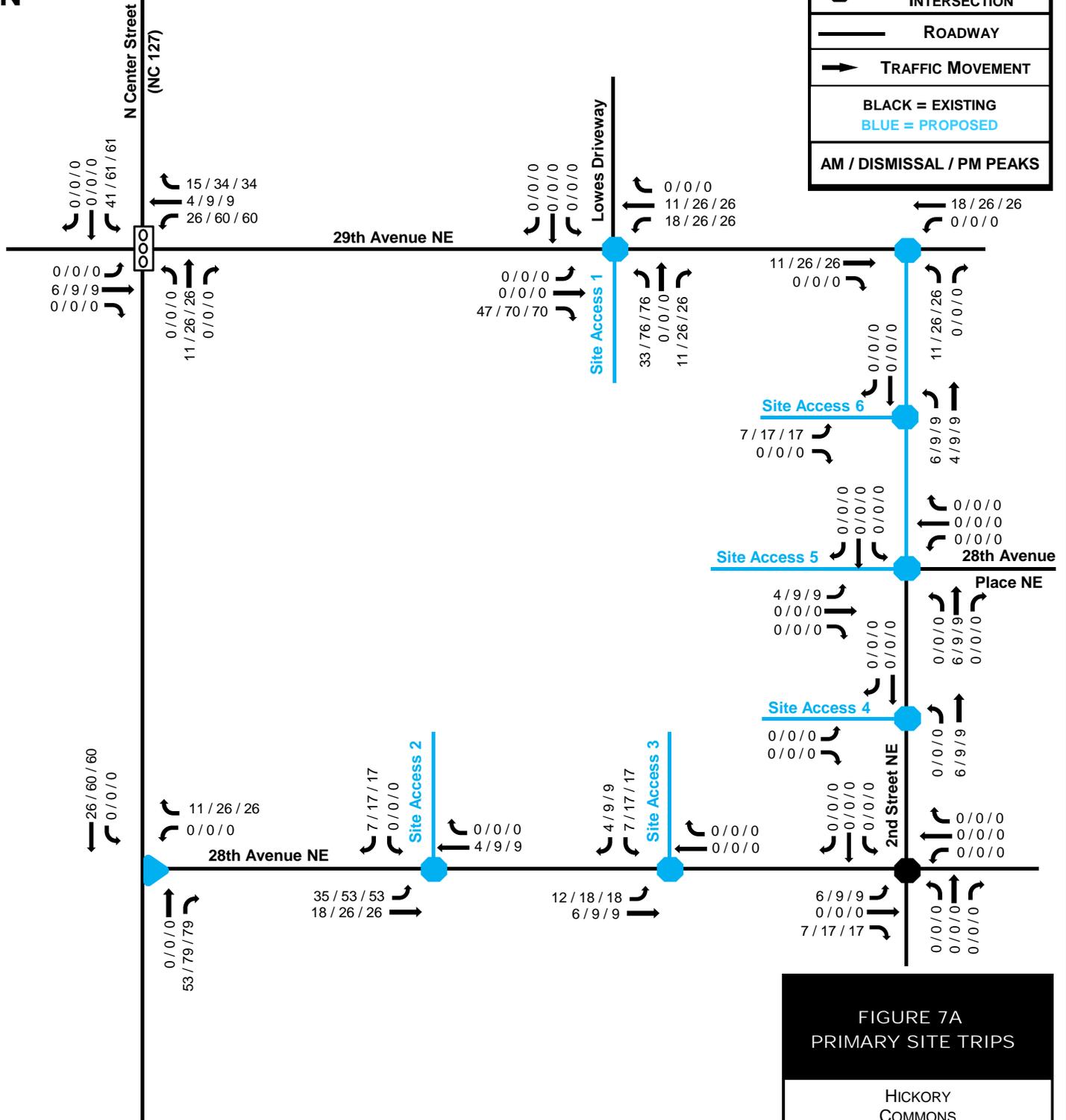
FRONT(STREET): 10 FT  
 SIDE CORNER: 10 FT  
 SIDE: 10 FT  
 REAR: 5 FT  
 SIDE/REAR(ADAJCENT TO RESIDENTIAL DISTRICT): 15 FT  
 MAXIMUM BUILDING HEIGHT: 15 FT



**PUBLIX - HICKORY**  
**COMMERCIAL**  
 MATTHEW DEVELOPMENT, LLC HICKORY, CATWABA COUNTY, NORTH CAROLINA  
**LAYOUT PLAN**

REVISIONS:  
 9-3-15 - REVISED PER NCDOT COMMENTS

DATE: AUGUST 14, 2015  
 DESIGNED BY: KST  
 DRAWN BY: MEK  
 CHECKED BY: MEK  
 SCALE: 1/2"=40'  
 PROJECT #: 1015133  
 SHEET #: **C-2.0**



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	BLACK = EXISTING
	BLUE = PROPOSED
AM / DISMISSAL / PM PEAKS	

FIGURE 7A  
PRIMARY SITE TRIPS

HICKORY  
COMMONS

PROJECT NUMBER 15-024

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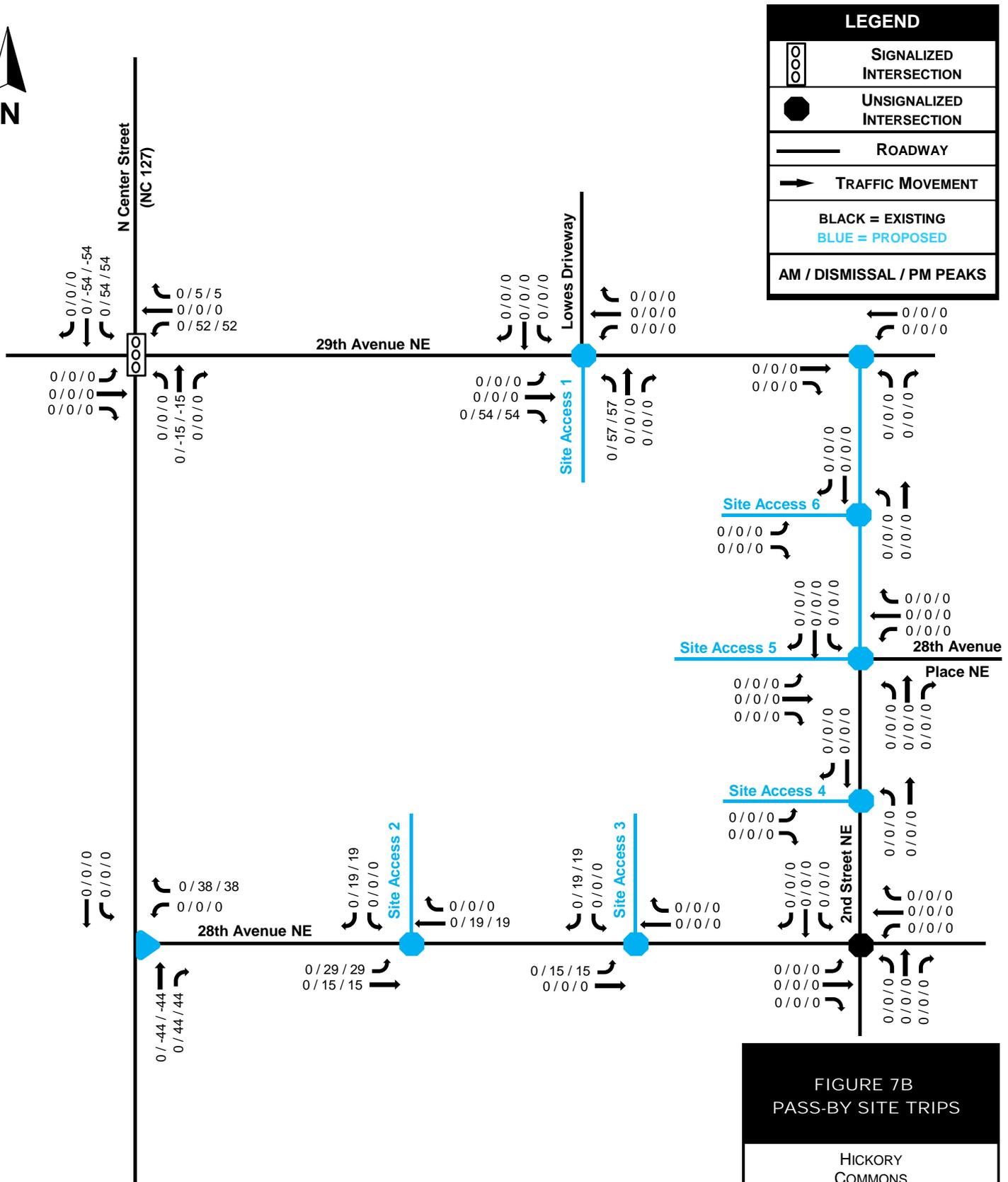


FIGURE 7B  
PASS-BY SITE TRIPS

HICKORY  
COMMONS

PROJECT NUMBER 15-024



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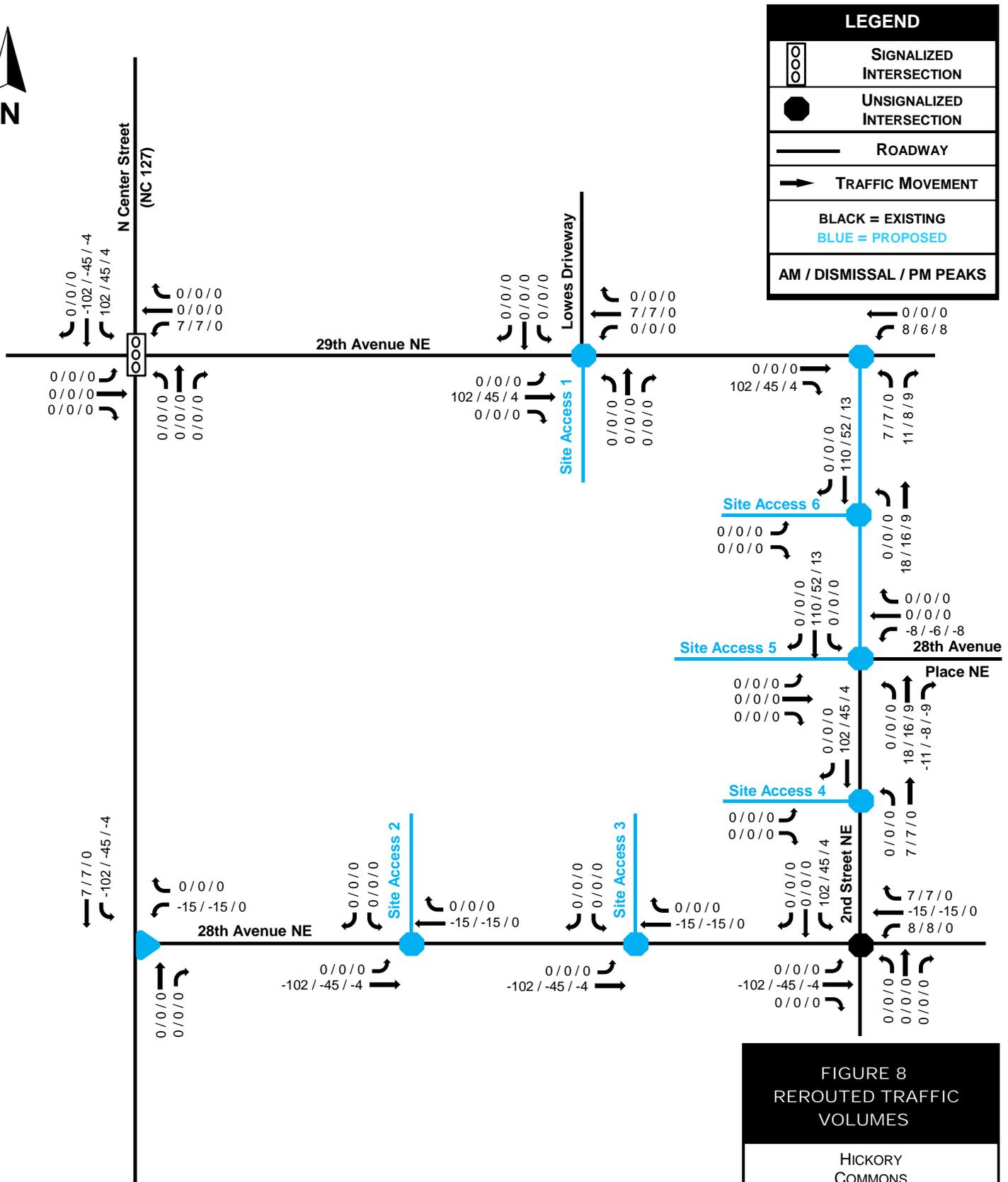


FIGURE 8  
REROUTED TRAFFIC  
VOLUMES

HICKORY  
COMMONS

PROJECT NUMBER 15-024



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