

A RESOLUTION ON EXTENDING TRIANGLE TRANSIT SERVICE TO CARRBORO
Draft Resolution No. 7/2012-13

WHEREAS, *Carrboro Vision 2020* (4.13) states that the “town should cooperate with Chapel Hill and other regional entities in a comprehensive transportation plan to include: regional transit service conducted by the Triangle Transit Authority, seamless connections among all the region’s public transit systems, and shorter routes and more frequent service”; and,

WHEREAS, 16.3 percent of Carrboro residents take public transportation to work, according to the 2006-2010 American Community Survey, conducted by the U.S. Census Bureau; and,

WHEREAS, the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization 2035 Long Range Transportation Plan set a goal to “Increase public transit ridership by enlarging the service area and increasing the frequency of service within the urban area”; and,

WHEREAS, on November 15, 2011, the Board of Aldermen adopted a resolution requesting a report on the best approach and logistics associated with locating a Triangle Transit stop at W. Weaver St.; and,

WHEREAS, on February 28, 2012, the Board of Aldermen received the report and directed that analyses be completed on other locations in addition to the W. Weaver St. location;

NOW, THEREFORE BE IT RESOLVED by the Carrboro Board of Aldermen that the Board receives the staff report.

BE IT FURTHER RESOLVED that:

[Intention to extend transit service]

[Option 1] The Board communicates its intention to extend Triangle Transit service to Carrboro.

[Option 2] The Board takes no action on whether to extend Triangle Transit service to Carrboro.

[Location preference]

The Board determines that the priority order for potential bus stop locations is:

Priority #___ - W. Weaver St.

Priority #___ - Wilson Park

Priority #___ - Anderson Park

Priority #___ - Other locations: _____

[Additional guidance, if necessary]

- a. _____
- b. _____
- c. _____

This is the 4th day of September in the year 2012.



TOWN OF CARRBORO

NORTH CAROLINA

MEMORANDUM

DELIVERED VIA: ☐ HAND ☐ MAIL ☐ FAX ☒ EMAIL

DATE: August 29, 2012

TO: David Andrews, Town Manager
Mayor and Board of Aldermen

CC: Christina Moon, Planning Administrator
Patricia McGuire, Planning Director
Anita Jones-McNair, Recreation and Parks Director
George Seiz, Public Works Director
Carolyn Hutchison, Police Chief

FROM: Jeff Brubaker, Transportation Planner JSB

RE: Follow-up Information on Triangle Transit service in Carrboro

This memo presents follow-up information on questions and directions provided by the Board of Aldermen at its February 28, 2012, meeting relating to the feasibility of extending Triangle Transit service to Carrboro. The Board of Aldermen was scheduled to discuss this topic on June 19, but the agenda item was deferred to the fall. Since then, the agenda item has been updated to provide new information. Specifically, *Attachment H* addresses a question from Alderman Johnson regarding the extent to which residents who live near the proposed bus stop locations also work near bus stops served by the assumed route, the Route 405 express service to Durham.

At the February meeting, the Board adopted a resolution requesting three follow-up actions:

- a. Town Staff were asked to look into increasing the time in which a vehicle can remain parked in the W. Weaver Street municipal parking lot;
- b. Town Staff were also asked to evaluate the possible use of the parking lots at Wilson Park, Anderson Park, and the shoulder of HWY 54 for park-and-ride parking; and
- c. Subject to a follow-up report from staff, the Board expressed its intention to communicate to Triangle Transit interest in extending service to the Town of Carrboro.

The memo summarizes Town staff's research on the first two follow-up actions requested by the Board. The first two sections below cover only the Town Code-related actions needed to provide park-and-ride spaces for the studied bus stop locations. The next sections cover the administrative and maintenance impacts of three alternatives: providing no spaces, spaces managed by Triangle Transit, and spaces managed by the Town. Subsequent sections cover

details specific to the potential stop locations. The final section reports updated walk, bike, and drive access markets for each of the three parking lot locations.

Town Code changes to allow long-term parking in certain spaces in the 303 W. Weaver St. municipal parking lot

The Town Code [Sec. 6-19(b)(4)(d)] limits parking duration in this lot to not more than two hours, between 7:00 a.m. and 5:30 p.m. This subsection would need to be amended to designate a certain number of spaces for long-term parking specifically for the purpose of commuting via regional transit. Other subsections – for example, the Carrboro Century Center lot (southwest corner of Greensboro and Weaver Sts.) and the Town Hall/Town Commons lot – have language that designates a certain number of spots for specific purposes and-or time periods.

Carrboro Century Center lot [Sec. 6-19(b)(8)]:

The municipal parking lot located at the southwest corner of the intersection of Greensboro Street and Weaver Street is reserved for visitors and staff of the Carrboro Century Center. Notwithstanding the foregoing, ten designated spaces in the lot are reserved for Carrboro Police Department vehicles from 8:30 a.m. to 5:30 p.m. and one designated space is for parking for not more than 30 minutes. (Amend. 6/22/2004)

Town Hall/Town Commons lot [Sec. 6-19(b)(10)]:

In the municipal parking lot located at Carrboro Town Hall and the Carrboro Town Commons, four designated spaces are reserved for visitor parking for not more than two hours, eight designated spaces are reserved for Town of Carrboro vehicles, and one designated space is reserved for use as a loading zone. (Amend. 6/22/2004)

The language in these subsections is illustrative of the type of language that could potentially be included in a revised Sec. 6-19(b)(4)(d).

Town Code relating to parking in the lots at Town parks

The Town Code, Sec. 14-28, grants authority to the Recreation and Parks Dept. to “adopt rules and regulations governing the use of tennis courts, basketball courts, ball fields, parking lots, etc.” However, it is recommended that any park-and-ride reservation be made by ordinance, not supplementary rules and regulations, for two reasons: (1) to remove any issue about enforceability, and (2) parking space reservations could effect major changes in the use of these facilities.

Park-and-ride programs: two examples from the Triangle

A second condition necessary to create a park-and-ride is a way of ensuring that the spaces are only used for park-and-riders of the Triangle Transit service. Two regional examples of parking verification systems are the UNC Commuter Alternatives Program and the Triangle Transit parking spaces in the American Tobacco District parking deck in Durham. Both of these

examples are different in scale and verification methodology compared to what may be considered in Carrboro, but are illustrative of the types of verification currently used for park-and-ride.

The UNC CAP program issues car window decals to commuting students, faculty, and staff allowing them to park and ride daily to campus from one of UNC's park-and-ride lots. Alternatively, the CAP program offers regional transit passes to commuters who regularly take Triangle Transit to campus. All CAP employees electronically receive printable permits that allow them to park once per month on campus, e.g. in special situations when they need car access to campus. These passes are valid for the S-11 lot south of Manning Dr. at the Dean Smith Arena, and selected other parking lots. CAP students receive one of these parking permits per semester. The CAP program also includes commuters who choose vanpooling, carpooling, bicycling, or walking to campus, so these commuters also receive the once-per-month (employees) or once-per-semester (students) parking passes. This program is administered by the UNC Dept. of Public Safety. The important takeaway for this agenda item is that the method of validating parking in park-and-rides or on campus involves checking a window decal and-or hang tag. More information is available on the UNC Public Safety web page: <http://www.dps.unc.edu/Transit/gettingtowork/CAP/cap.cfm>.

Triangle Transit users also can obtain access to the American Tobacco District North Parking Deck in downtown Durham. Durham Station, which includes Durham Area Transit Authority (DATA) and Triangle Transit bus stops, is adjacent to the deck. They receive an electronic card which is used to open the gate on the parking deck. The access card is free, but users must sign a parking contract and submit a \$15 deposit for the card. As of this writing, there is a waiting list to apply for access cards. There is also covered bicycle parking inside the deck.

Park-and-ride alternatives

The Board has to date identified four potential bus stop locations to be studied: the municipal parking lot on W. Weaver St., Wilson Park, Anderson Park, and along the shoulder of NC-54. Information about the NC-54 shoulder is presented later in this memo, while the information in this section pertains only to the three parking lot options. The network travel time maps in *Attachment C* of the agenda item show that each location has potential walk and bike markets, with the exception of Anderson Park, which has a negligible walk market and is not connected to the Town's sidewalk system. Some passengers may also use Chapel Hill Transit to access a W. Weaver St. or Wilson Park bus stop, although passengers can already use CHT to transfer to Triangle Transit buses in downtown Chapel Hill.

An on-board passenger survey conducted by Triangle Transit indicated that 40% of all respondents accessed their bus by walking; 27% drove, 18% used a local bus, 11% were dropped off, and 3% biked. The survey found a difference in bus stop access mode based on whether passengers rode the bus occasionally (1-2 days/week), frequently (3-4 days/week), or intensively (5-6 days/week):

Occasional riders (52%) are much more likely than others to indicate they walked to their stop. Frequent riders (37%) and intensive riders (30%) are much more likely than occasional riders (15%) to drive to the bus stop.¹

The walk/bike markets, availability of CHT routes, and survey results suggest that a Triangle Transit bus stop in Carrboro would not necessarily be dependent on reserved parking spaces to generate ridership. However, reserved parking spaces could provide additional ridership by serving those who live outside walk/bike markets or far from a CHT bus stop, or need to or prefer to drive for whatever reason, accommodating that proportion that drives to a stop.

Therefore, there is a need to weigh several alternatives: (1) a “do nothing” alternative where no parking spaces are reserved, (2) park-and-ride spaces managed by Triangle Transit, and (3) park-and-ride spaces managed by the Town. Although it is labeled a “do nothing” option, Alternative 1 may nonetheless require enforcement to prevent all-day parking in spots that are not reserved for it.

The description of Alternative 2 is based on information on Triangle Transit’s website and communications with Triangle Transit staff and is not necessarily a conclusive position of Triangle Transit. According to its website, Triangle Transit currently operates 21 park-and-ride locations, some of which are shared with businesses, parks, and transportation terminals, and some of which are stand-alone lots.

Alternative 3 was reviewed by Town staff from various departments, who raised several concerns with a Town-managed park-and-ride system (*Attachment G*). Alternative 3 does not recommend a distinct number of parking spaces that would be needed. The feasibility of managing an entire park-and-ride lot may be different than the feasibility of managing 5-10 spaces within a larger lot otherwise used for other purposes. However, there is a base level of staffing required for managing any number of spaces. The components of a Town-managed system would include, but not necessarily be limited to:

- Designate spaces in Town Code
- Post signs/markings at parking spaces with notification of their restricted use
- Issuance of parking permits
 - Selection of permittees (including selection method if demand exceeds supply)
 - Verification of employment (or full-time education) near bus stop (to ensure people are using the spaces for regional transit park-and-ride)
- Enforcement of non-compliance

Table 1 below presents information on, and pros and cons of, the alternatives in general. Table 2 covers park-and-ride pros and cons at the three specific locations.

¹ [http://www.triangletransit.org/system/uploads/bus_pdfs/Triangle_Transit_Onboard_Survey_-_2009_\(Final\).pdf](http://www.triangletransit.org/system/uploads/bus_pdfs/Triangle_Transit_Onboard_Survey_-_2009_(Final).pdf).

Category	Alt 1: Do nothing	Alt 2: Agreement with Triangle Transit	Alt 3: Town-managed parking spaces
Description	Bus stop is provided but no parking spaces are designated. Relies on walk/bike/feeder bus access.	Triangle Transit would lease spaces and manage their access.	Town would issue hang-tags (or similar) to verify parking.
Pros	<ul style="list-style-type: none"> • Low cost and least staffing requirements 	<ul style="list-style-type: none"> • Park-and-ride amenity provided/managed. • Costs and administration borne by TT. 	<ul style="list-style-type: none"> • Town control of parking set-up.
Cons	<ul style="list-style-type: none"> • Park-and-ride amenity not provided or managed. May encourage unlawful / informal parking in nearby lots. 	<ul style="list-style-type: none"> • Triangle Transit may have a minimum threshold for number of spaces that may exceed the Town's ideal number. • May still result in unlawful / informal parking if more demand than spaces. 	<ul style="list-style-type: none"> • Higher cost and staff impact. • Current hang tag program does not work very well. • Enforcement would be difficult given current PD resource levels. • May still result in unlawful / informal parking if more demand than spaces.
Annual staff hours to manage	0	5-15 (communication with Triangle Transit)	50-75
Cost items	None	None	Signage, hang-tags

Table 1. Description and pros/cons of the three alternative parking management options

Enforcement

The Police Department has concern with the enforcement needs created by park-and-ride spaces. Currently, the PD does not regularly monitor the municipal parking lots but does follow up on complaints. The PD's assessment is that current staffing levels do not permit regular monitoring of lots, and recommends that the Town explore an arrangement whereby it could contract with the Town of Chapel Hill's parking enforcement services to enforce parking regulations.

Lease agreement

As was noted at the February 28th Board meeting, the W. Weaver St. municipal lot is privately owned. A lease agreement was entered into between the property owners and the Town on July 21, 2004. The lease is exclusively for the Town to operate a municipal parking lot. The lease agreement provides that the Town must receive consent from the property owners for any permanent structural alterations, signs, or additions to the lot. This should be taken into consideration before implementation of a parking program in the lot.

Possibility of transit stops at other locations

Wilson Park

Charles Herman Wilson Park has approximately 100 parking spaces. Its only access is via Williams St. Construction is underway on the Wilson Park Multi-use Path, which will provide bicycle and pedestrian access to the park from Estes Drive. Several athletic programs occur at the park throughout the year, including youth baseball and softball and tennis lessons and camps.

Anderson Park

Henry Anderson Park's driveway has perpendicular parking along its length. In the southernmost two lots – next to the tennis courts and dog park – there are approximately 80 spaces. The park's only access is off of NC-54. There are many athletic events and recreational programs at the park throughout the year.

Table 2 compiles information and pros and cons of the three locations – the original W. Weaver St. location and the two park parking lots. Various Town departments contributed to the information provided in the table.

	300 W. Weaver St. municipal parking lot	Wilson Park	Anderson Park
Ownership	Leased by Town	Owned by Town	Owned by Town
Parking spaces	33	~100	~80 (southernmost two lots)
Time limit	2 hrs (between 7:00 a.m. and 5:30 p.m.)	None	None
Pros	<ul style="list-style-type: none"> • Highest business walk market • Highest residential bike market • High residential walk market • Directly served by CW bus, close to J and F buses • Served by sidewalks and bike lanes • Currently includes bike rack • Appears to be some excess capacity in lot • Identified by Triangle Transit staff as possible option • Bus could stop alongside Weaver St. without having to turn around within a parking lot 	<ul style="list-style-type: none"> • Highest residential walk market using 5-min. address and 10-min. population criteria • Moderately high bike market, especially when including access via Frances Shetley and (future) Wilson Park shared use paths • Town owns lot • Currently includes bike rack 	<ul style="list-style-type: none"> • Highest drive market • Moderate bike market • Wide shoulders for bicyclists on NC-54 • Town owns lot • Currently includes bike rack
Cons	<ul style="list-style-type: none"> • Would need lot owner's permission • Will lessen spaces available for 2-hour parking • Liability of vehicles throughout the day or that may be left overnight, which are susceptible to 	<ul style="list-style-type: none"> • Would decrease spaces available for park use • Bus could create unsafe environment given proximity to people using the park • Bus manageability in 	<ul style="list-style-type: none"> • Giving up southernmost 2 lots could restrict spaces for patrons of dog park, disc golf course, walkers, tennis players, joggers and fisherman that utilize those lots during the day.

	<p>vandalism.</p>	<p>parking lot not ideal</p> <ul style="list-style-type: none"> • Liability of vehicles throughout the day or that may be left overnight, which are susceptible to vandalism • Allowing parking in park lots could impact attendance or use of town facilities in other ways not beneficial. It is highly likely that any problems associated with this arrangement will fall back on the town even if we are not responsible for implementation or monitoring. • Pavement structure may not hold up to bus loading • Williams St. not ideal for bus traffic • Park may need to be shut down during emergencies for extended periods of time, causing stop to be moved 	<p>Furthermore, impact could be even greater on weekends.</p> <ul style="list-style-type: none"> • When shelter is booked for large reservations often times most of the available parking spots are needed and utilized • Bus could create unsafe environment given proximity to people using the park, especially small children near the dog park and pond who are occasionally unattended by parents or guardians. • Bus manageability in parking lot not ideal • Liability of vehicles throughout the day or that may be left overnight, which are susceptible to vandalism. • Negligible walk market • Smallest bike market • No sidewalks along NC-54 • High traffic speeds on NC-54 reduce bike level of service • Allowing parking in park lots could impact attendance or use of town facilities in other ways not beneficial. It is highly likely that any problems associated with this arrangement will fall back on the town even if we are not responsible for implementation or monitoring. • Pavement structure may not hold up to bus loading • Design of entrance to park may be challenging for bus maneuverability • Turn lane into Anderson Park may need lengthening • Park may need to be shut down during emergencies for extended periods of time, causing stop to be moved
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Table 2. Descriptions and pros/cons of the three locations for park-and-ride

Possibility of using NC Highway 54 shoulder for park-and-ride purposes

NCGS 20-140.3 states:

On those sections of highways which are or become a part of the National System of Interstate and Defense Highways and other controlled-access highways, it shall be unlawful for any person:

...

- 5) To stop, park, or leave standing any vehicle, whether attended or unattended, on any part or portion of the right-of-way of said highways, except in the case of an emergency or as directed by a peace officer, or at designated parking areas.

State law thus prohibits the use of the shoulder for parking-and-riding from controlled-access highways. NC-54 has control of access around interchanges. There are no designated parking areas along NC-54.

Other applicable state statutes are as follows:

NCGS Sec. 20-161(b):

No person shall park or leave standing any vehicle upon the shoulder of a public highway unless the vehicle can be clearly seen by approaching drivers from a distance of 200 feet in both directions and does not obstruct the normal movement of traffic.

NCGS Sec. 20-175(a):

No person shall stand in any portion of the State highways, except upon the shoulders thereof, for the purpose of soliciting a ride from the driver of any motor vehicle.

There are several safety concerns about using the shoulder of NC-54 as a park-and-ride option. This could involve parked cars in the clear recovery area of a higher-speed facility and involve people walking on the shoulder. An email from the NCDOT District Engineer in *Attachment F* provides NCDOT comments on this question.

Several alternatives exist that may be a safer and more efficient method of parking-and-riding. Park-and-ride trips on Chapel Hill Transit can make use of one of two formal park-and-ride lots. Two such lots exist currently for Chapel Hill Transit passengers – Jones Ferry/University Lake and Carrboro Plaza. Park-and-ride trips on Triangle Transit could make use of a park-and-ride lot, assuming one the locations being considered as part of this agenda item is implemented. North Carolina residents interested in carpooling can visit SharetheRideNC (<https://sharetheridenc.org/>), the State's carpool matching service. GoTriangle also has carpooling and vanpooling resources at: <http://www.gotriangle.org/rideshare/>. This link is

provided on the Town's Transportation web page:
<http://townofcarrboro.org/pzi/Trans/transportation.htm>.

Transit market estimates

Walk, bike, and drive market sheds for each of the above lot locations – including revised market sheds for the W. Weaver St. lot compared with the February 28 data – were estimated using multimodal network analyst in ArcMap. They represent five-minute and ten-minute travel time service areas. (The earlier W. Weaver St. estimates were based on a distance-based network analysis.) Maps are included in *Attachment C*. Keep in mind that while these maps display the full service areas, Chapel Hill addresses and census blocks are not part of the market estimates in *Attachment E*.

Methodology

The walk and bike market sheds overlap both within and between modes. For example, an address within a five-minute walking distance is also included as being in a five-minute cycling distance. Also, the ten-minute walk and bike markets are cumulative, so they include all addresses within their respective five-minute markets.

The drive market sheds exclude all addresses and census blocks within a ten-minute walk. The ability to estimate drive market sheds (sometimes called catchment areas) is limited because the multimodal network is based only on roads within Orange County. There is the potential for some drive market in Chatham County, especially north central Chatham, but this is not likely to be a very large number. Assuming a downtown Durham/Duke/Duke Hospitals destination, commuters living closer to 15-501 or east of it may be unlikely to backtrack to a Carrboro park-and-ride lot. Furthermore, as home-to-lot distance increases as you go further south into Chatham County, holding the length of the overall (auto + transit) trip constant, people are less likely to drive to the lot.²

The analysis uses the following speeds to calculate travel time:

- Walking speed: 4 ft./sec. (2.73 mph)³
- Cycling speed: 10 mph⁴
- Driving speed: Posted speed limit

Addresses and census blocks in Chapel Hill are not included in the walk and bike markets. It would be more convenient for transit users in most of these areas to continue to board the bus in downtown Chapel Hill. The drive markets also do not include any Chapel Hill addresses or census blocks. This is consistent with research showing that park-and-ride lot users rarely backtrack and market sheds are primarily “upstream” from the destination, generally in a parabolic shape.⁵ However, even after excluding Chapel Hill, the analyses do still include

² Transit Cooperative Research Program. 2004. TCRP Report 95: Park-and-Ride/Pool – Traveler Response to Transportation System Changes, p. 3-30.

³ Manual on Uniform Traffic Control Devices, cited in: American Association of State Highway and Transportation Officials. 2004. *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, p. 10.

⁴ NCDOT. 1994. *North Carolina Bicycle Facilities Planning and Design Guidelines*, p. 16.

⁵ TCRP Report 95, p. 3-30.

backtracking from Carrboro addresses/census blocks. This is most significant in the Anderson Park analysis since the park is on the western edge of town. Also, the drive markets include some “sidetracking” addresses and census blocks that are on the northern end of town, where a park-and-ride option might be less convenient because they are somewhat closer to the Durham destinations served by the 405 route. Therefore, the market estimates should be considered with these caveats. However, the maps indicate that most addresses/census blocks are not backtrackers, so staff feel that the estimates are generally accurate and representational of the extent of markets for each mode.

Another exception to this is that a few Chapel Hill neighborhoods may be particularly well-suited to access a Carrboro bus stop, but for consistency were not included in the market estimates. Village West is just north of the railroad tracks off of Estes Dr, Ironwoods is south of Seawell School Rd. and west of Estes Dr., and North Haven is north of Seawell School Rd. and west of Estes Dr. (only part of which was in the Wilson Park 10-minute bike market). A Wilson Park location in particular may serve cyclists in these neighborhoods. At the same time, the population is not high enough to push Wilson Park ahead of W. Weaver St. in terms of the largest bike markets. Furthermore, Village West is within the W. Weaver St. 10-minute bike market.

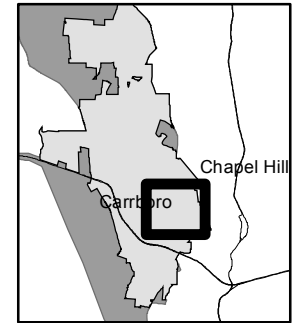
Neighborhood	2010 Population		Within market
	Total	18+	
Village West Apts.	240	132	Wilson Park 5-min bike; W. Weaver St. 10-min bike
Ironwoods	419	312	Wilson Park 10-min bike
North Haven (partial)	56	37	Wilson Park 10-min bike

The analysis includes multi-use paths as part of the walk and bike networks. The Frances Shetley Bikeway, PTA Thrift Store Bike Path, and Libba Cotten Bikeway all serve to enhance and extend the walking and-or bicycling service areas.

Highlights from the data

- W. Weaver St.
 - Largest market for cycling for both residential and commercial locations
 - Largest market for walking for commercial locations
 - Mixed results on drive access
- Wilson Park
 - Generally largest market for walking for residential locations
 - Moderately strong market for cycling
 - Moderate market for driving
- Anderson Park
 - Very small market for walking and cycling compared to the other two destinations
 - Generally largest drive market

**Walking:
5- and 10-minute
service area
to W. Weaver St.**



0 300 600 Feet

**Assumes a 2.73 MPH
walking speed (4 ft/sec).
Source: AASHTO.**

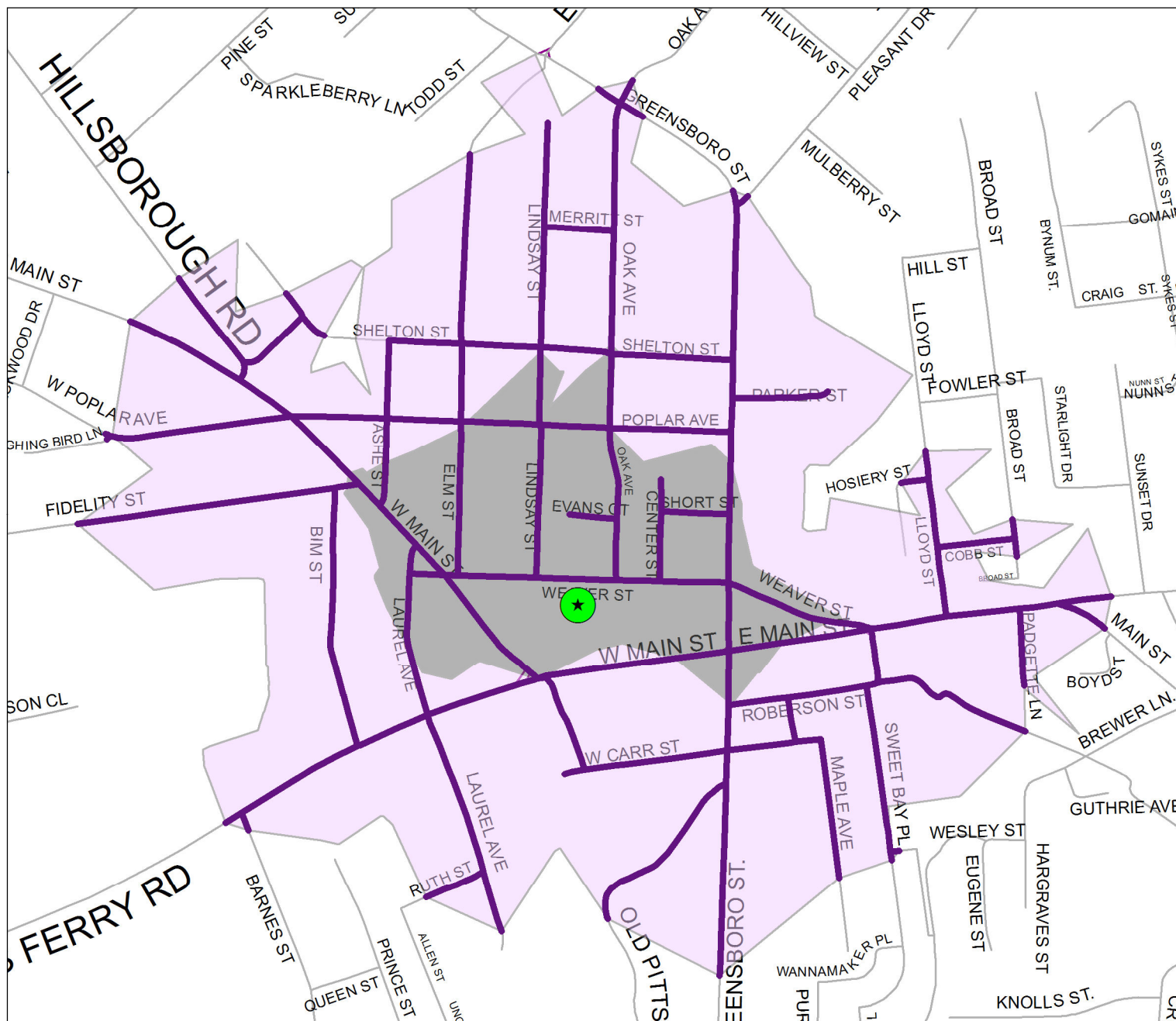
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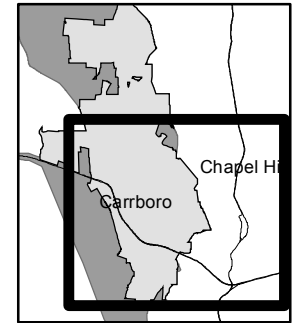


TOWN OF CARRBORO
301 W. Main St.
Carrboro, NC 27510

Created Apr. 23, 2012



**Cycling:
5- and 10-minute
service area
to W. Weaver St.**



0 0.25 0.5 Miles

Assumes a 10 MPH cycling speed

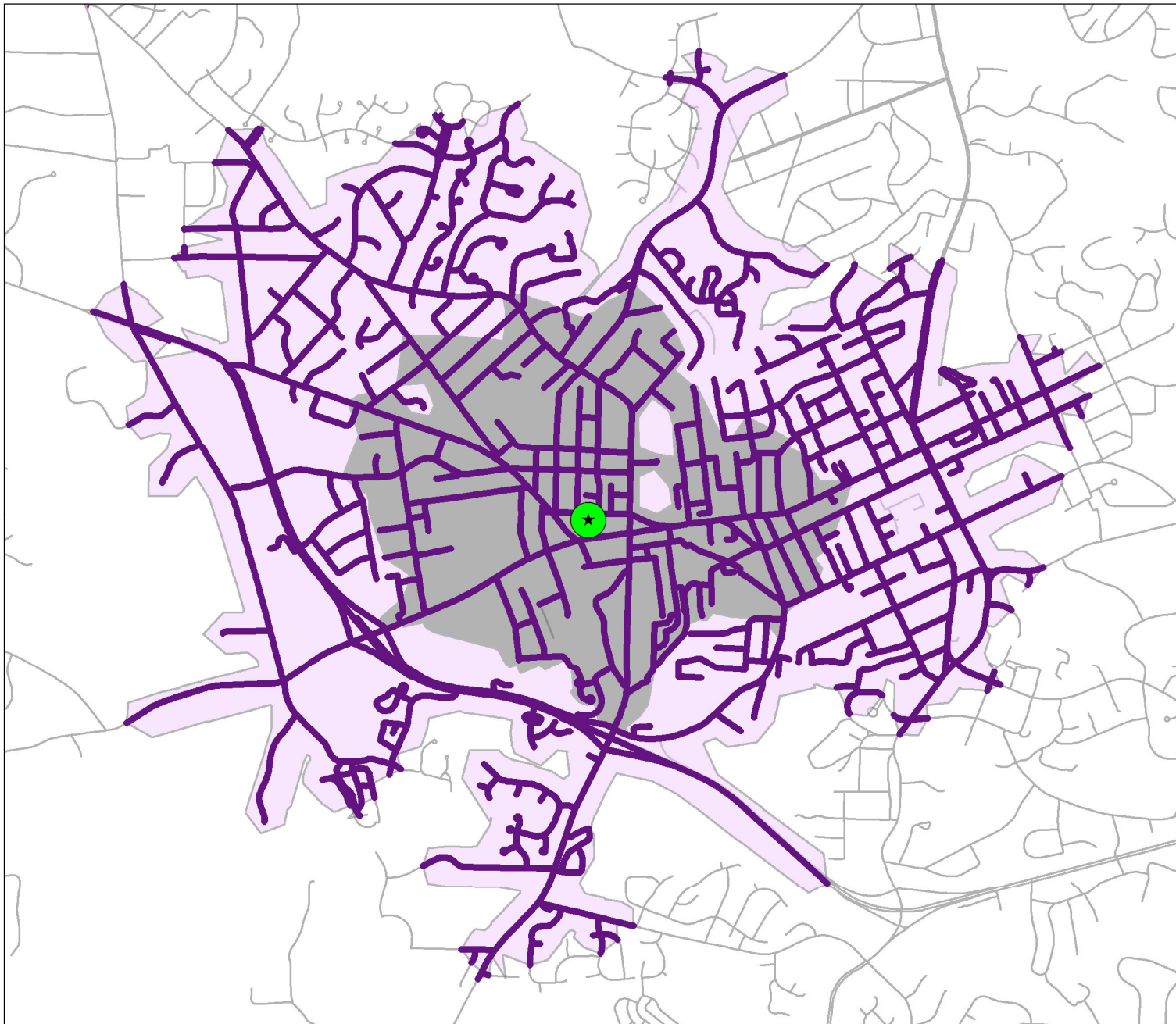
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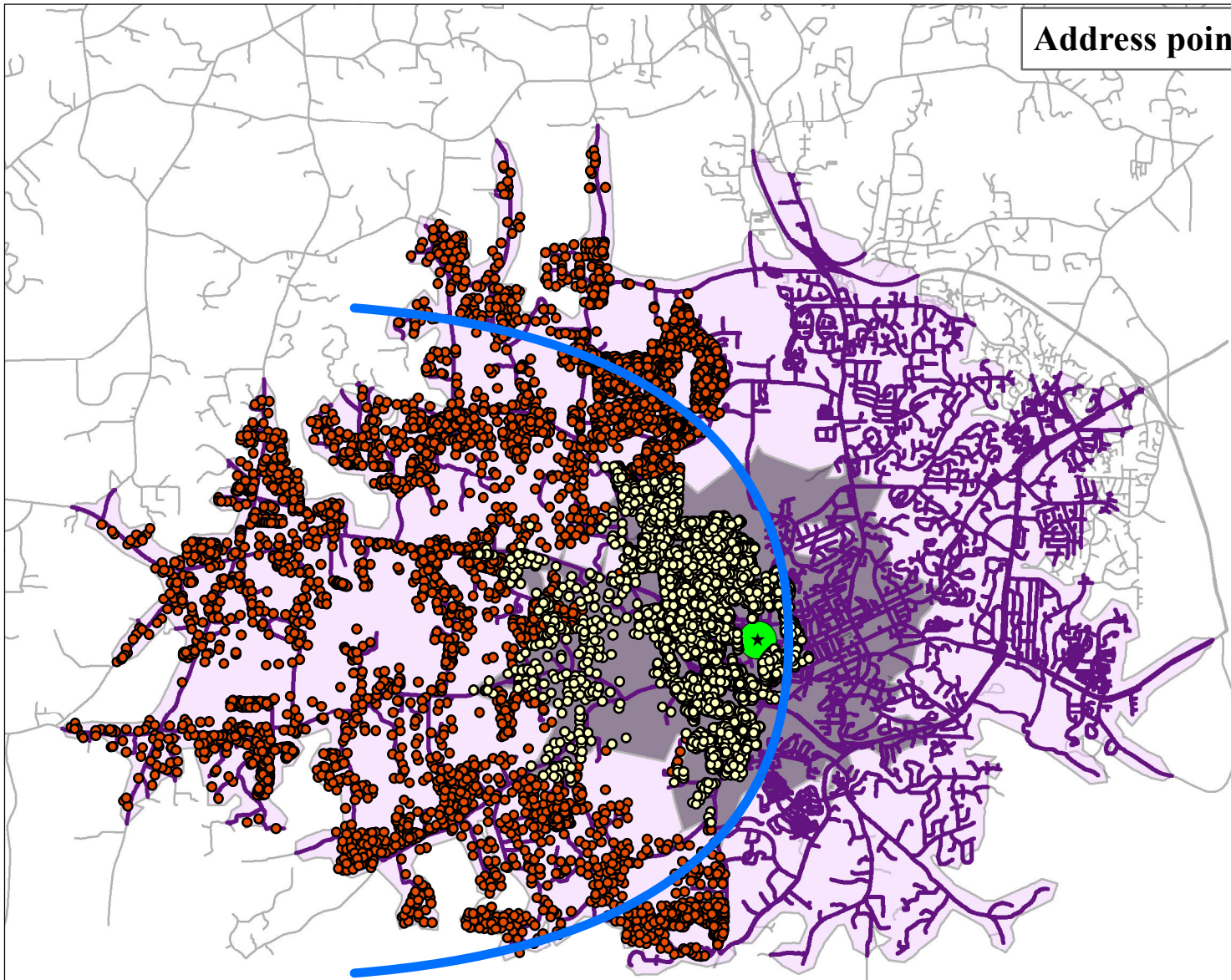


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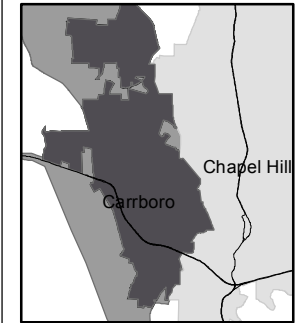
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Address points



**Driving:
5- and 10-minute
service area
to W. Weaver St.**



0 1 2 Miles

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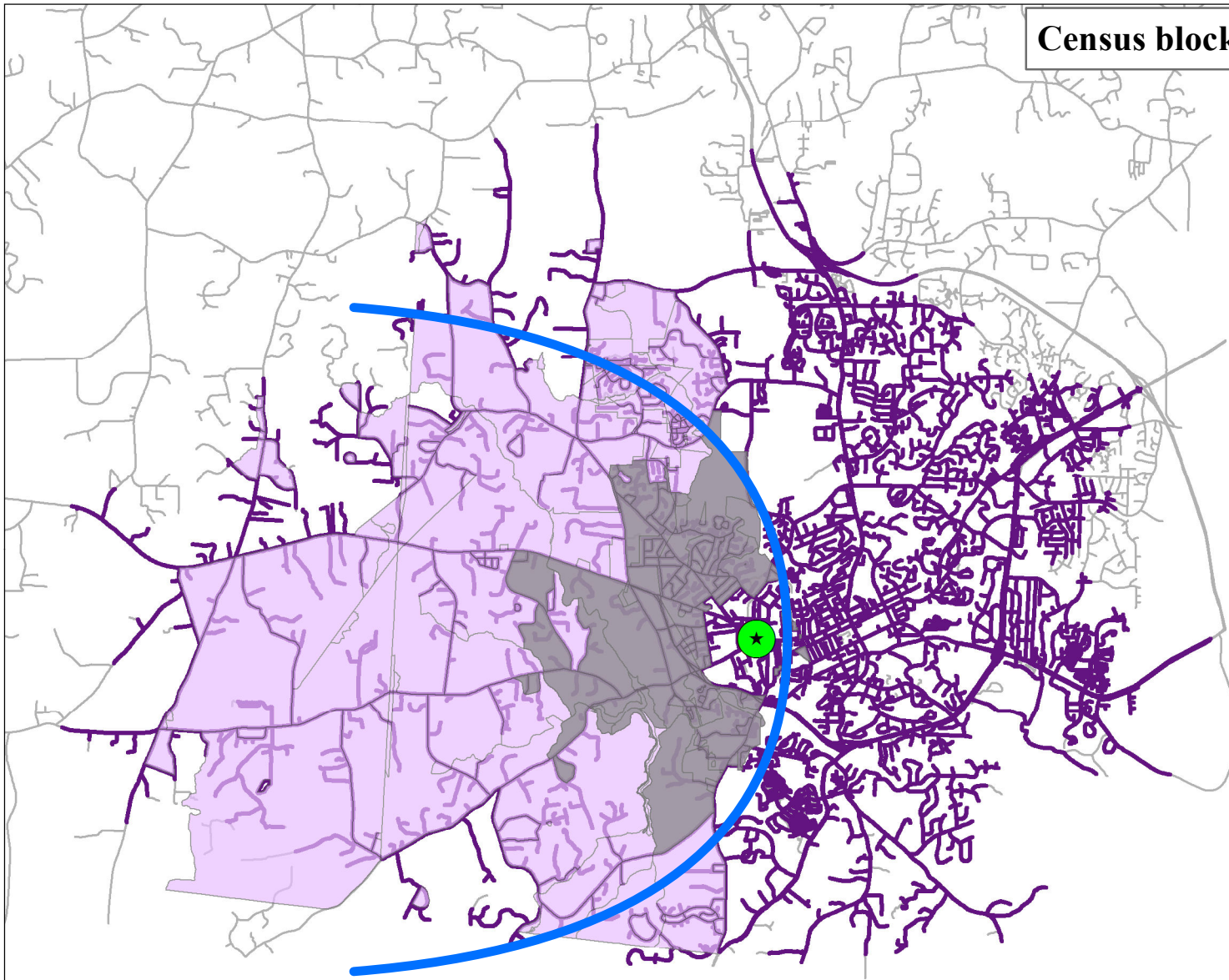
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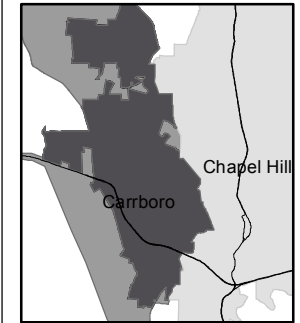
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Created Apr. 23, 2012

Census blocks



**Driving:
5- and 10-minute
service area
to W. Weaver St.**



0 1 2 Miles

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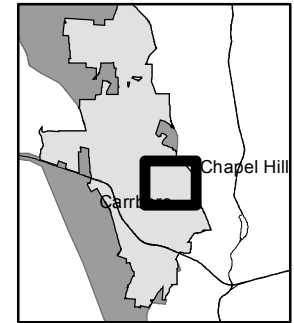
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301 W. Main St.
Carrboro, NC 27510

Created Apr. 23, 2012

Walking: 5- and 10-minute service area to Wilson Park



0 300 600 Feet

Assumes a 2.73 MPH
walking speed (4 ft/sec).
Source: AASHTO.

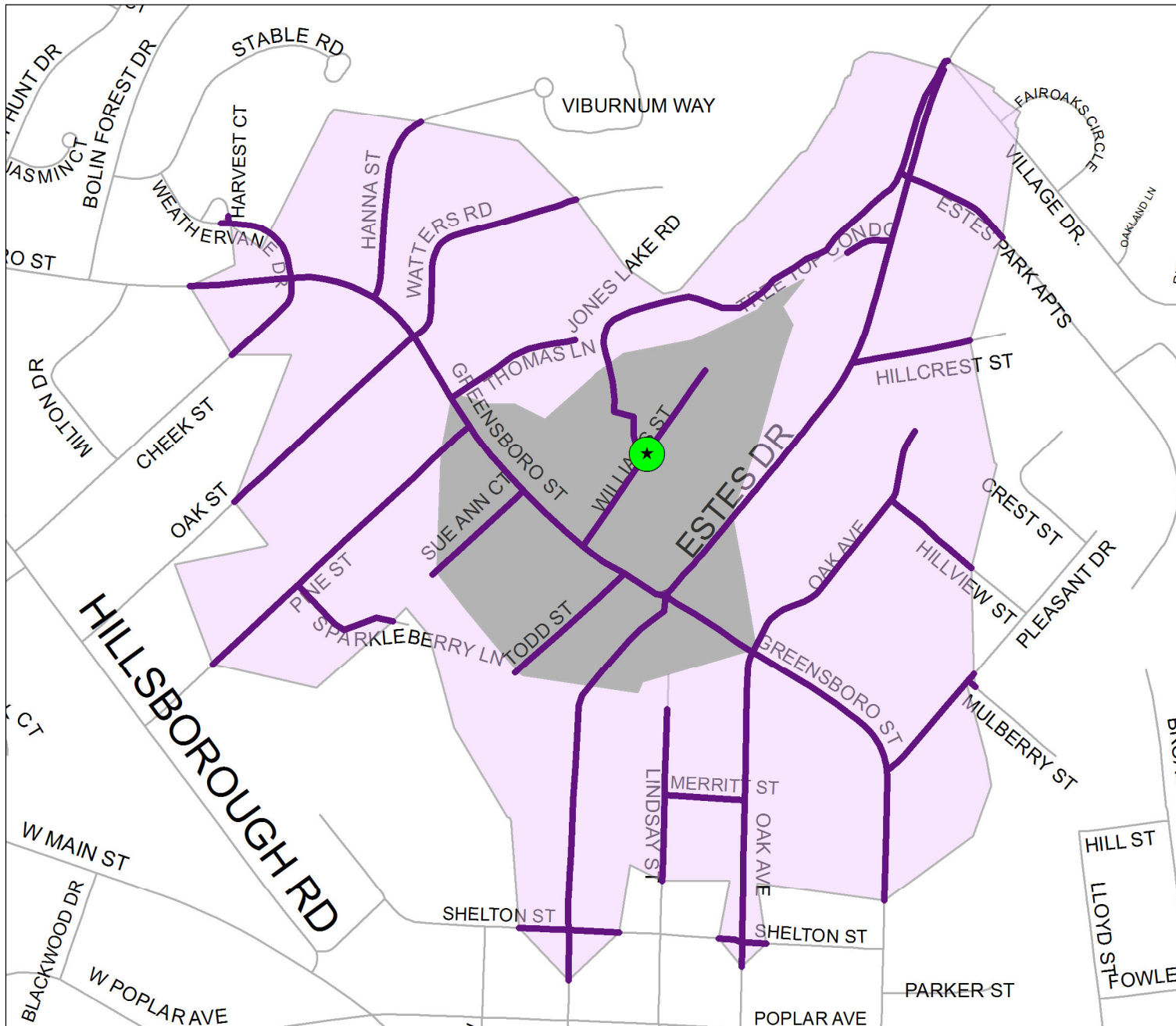
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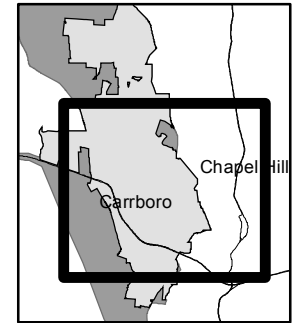


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301 W. Main St.
Carrboro, NC 27510

Created Apr. 12, 2012



**Cycling:
5- and 10-minute
service area
to Wilson Park**



0 0.25 0.5 Miles

Assumes a 10 MPH cycling speed

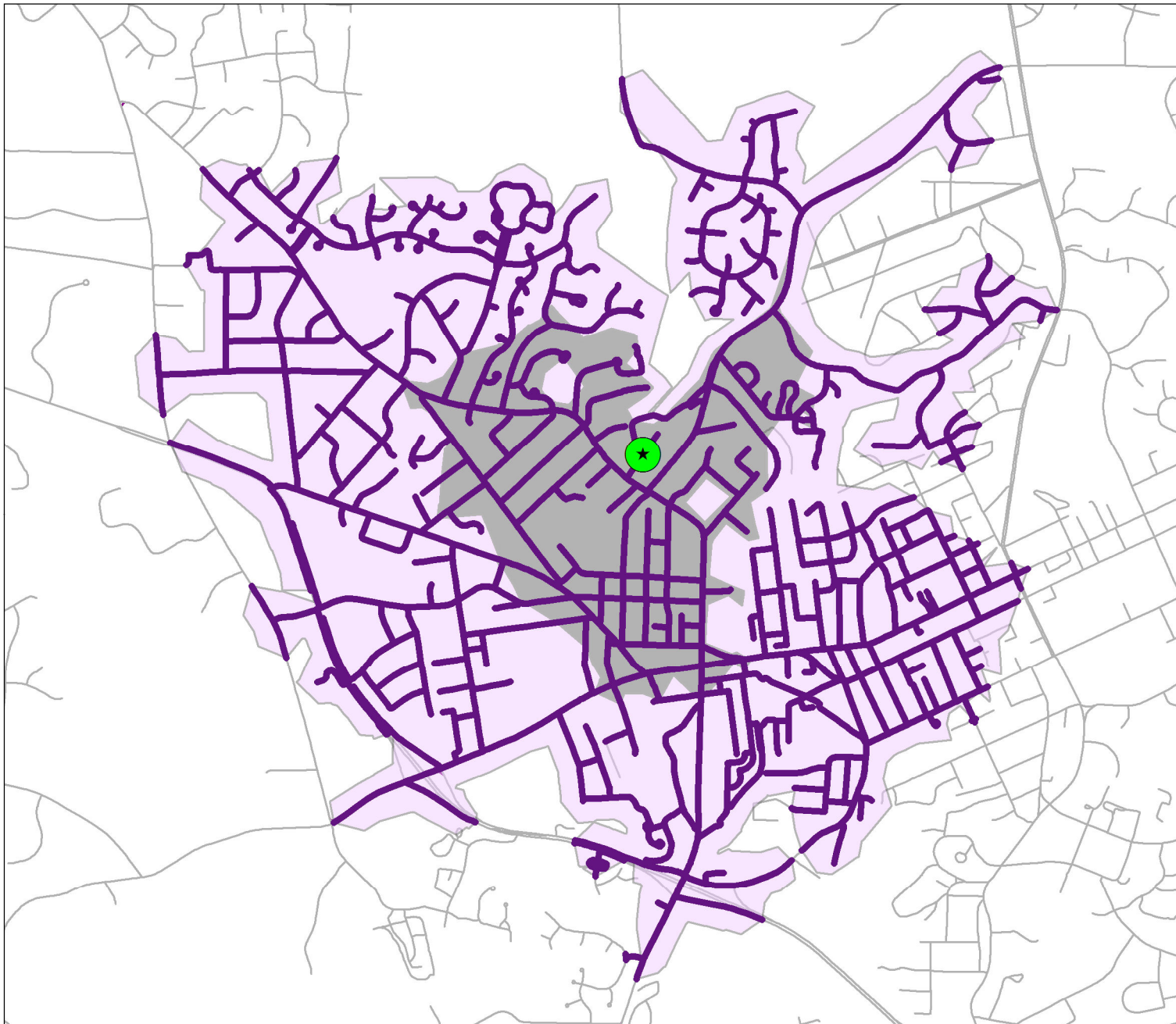
**THIS MAP IS NOT A CERTIFIED SURVEY
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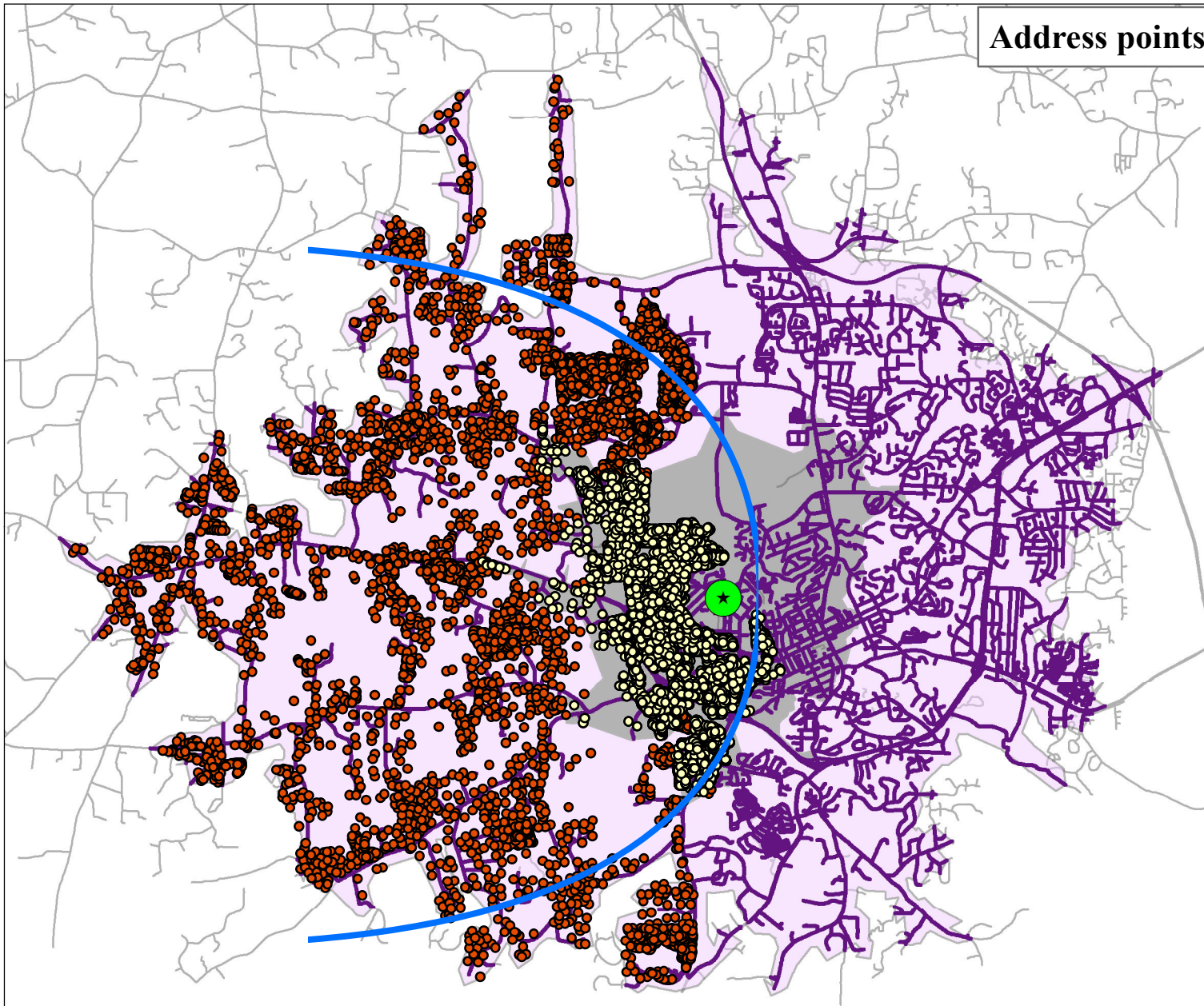


TOWN OF CARRBORO
301 W. Main St.
Carrboro, NC 27510

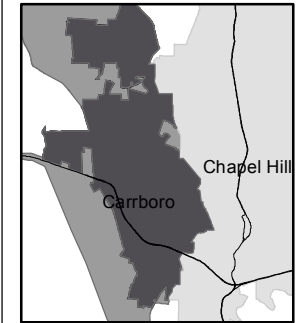
Created Apr. 12, 2012



Address points



**Driving:
5- and 10-minute
service area
to Wilson Park**



0 1 2 Miles

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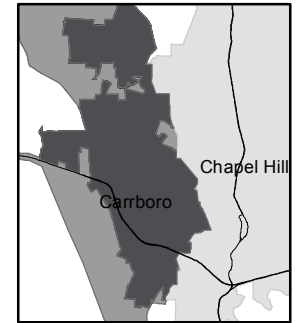


TOWN OF CARRBORO
301 W. Main St.
Carrboro, NC 27510

Created Apr. 24, 2012

Census blocks

**Driving:
5- and 10-minute
service area
to Wilson Park**



0 1 2 Miles

**THIS MAP IS NOT A CERTIFIED SURVEY
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ACCURACY**

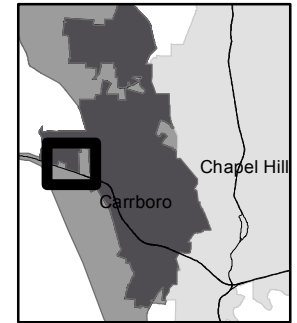
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TOWN OF CARRBORO
301 W. Main St.
Carrboro, NC 27510

Created Apr. 24, 2012

**Walking:
5- and 10-minute
service area
to Anderson Park**



**Note: There are no
pedestrian facilities on
this portion of NC-54.**

0 0.05 0.1 Miles

**Assumes a 2.73 MPH
walking speed (4 ft/sec).
Source: AASHTO.**

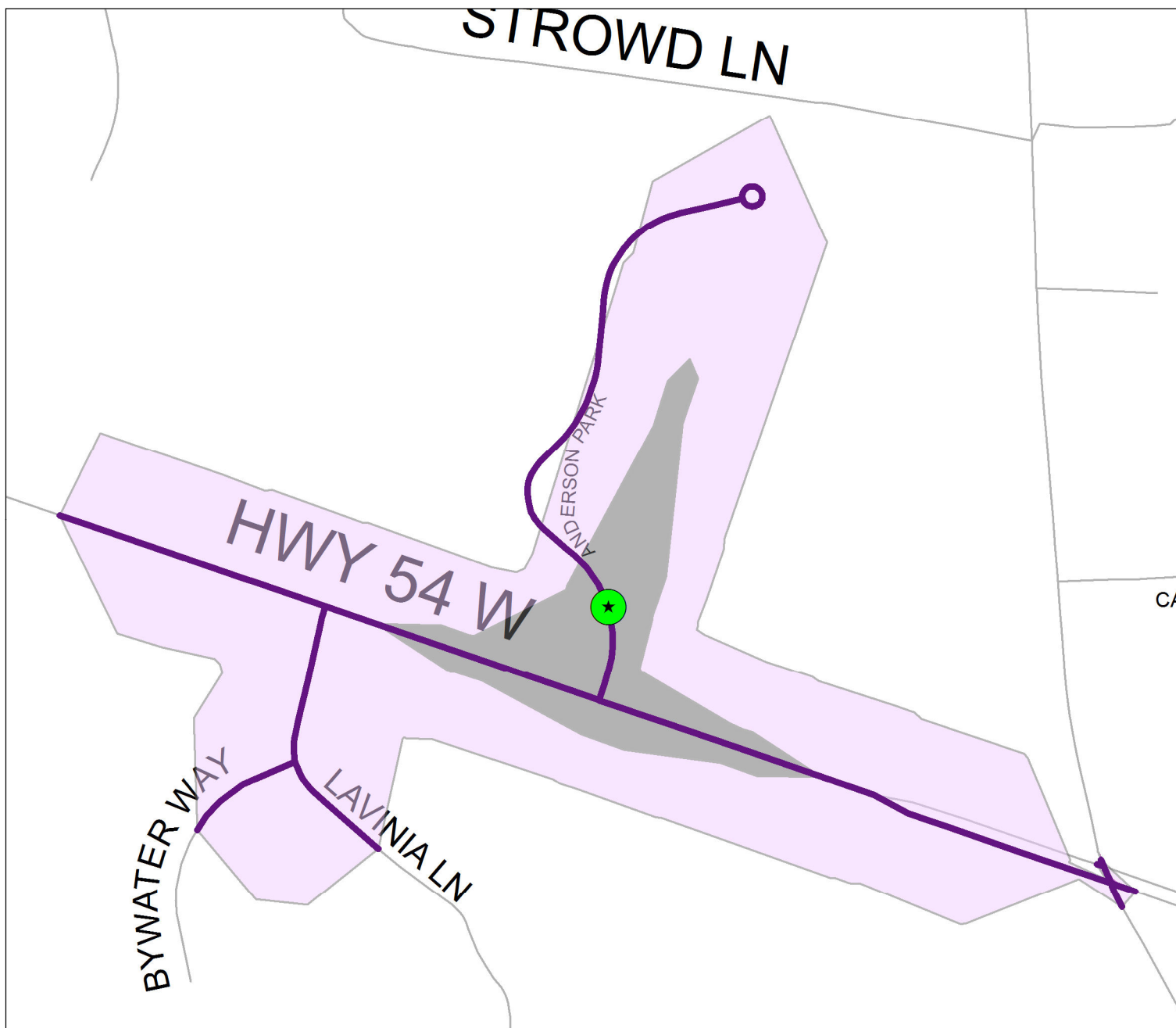
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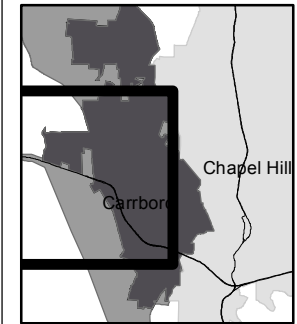


TOWN OF CARRBORO
301 W. Main St.
Carrboro, NC 27510

Created Apr. 13, 2012



Cycling: 5- and 10-minute service area to Anderson Park



0 0.25 0.5 Miles

Assumes a 10 MPH cycling speed

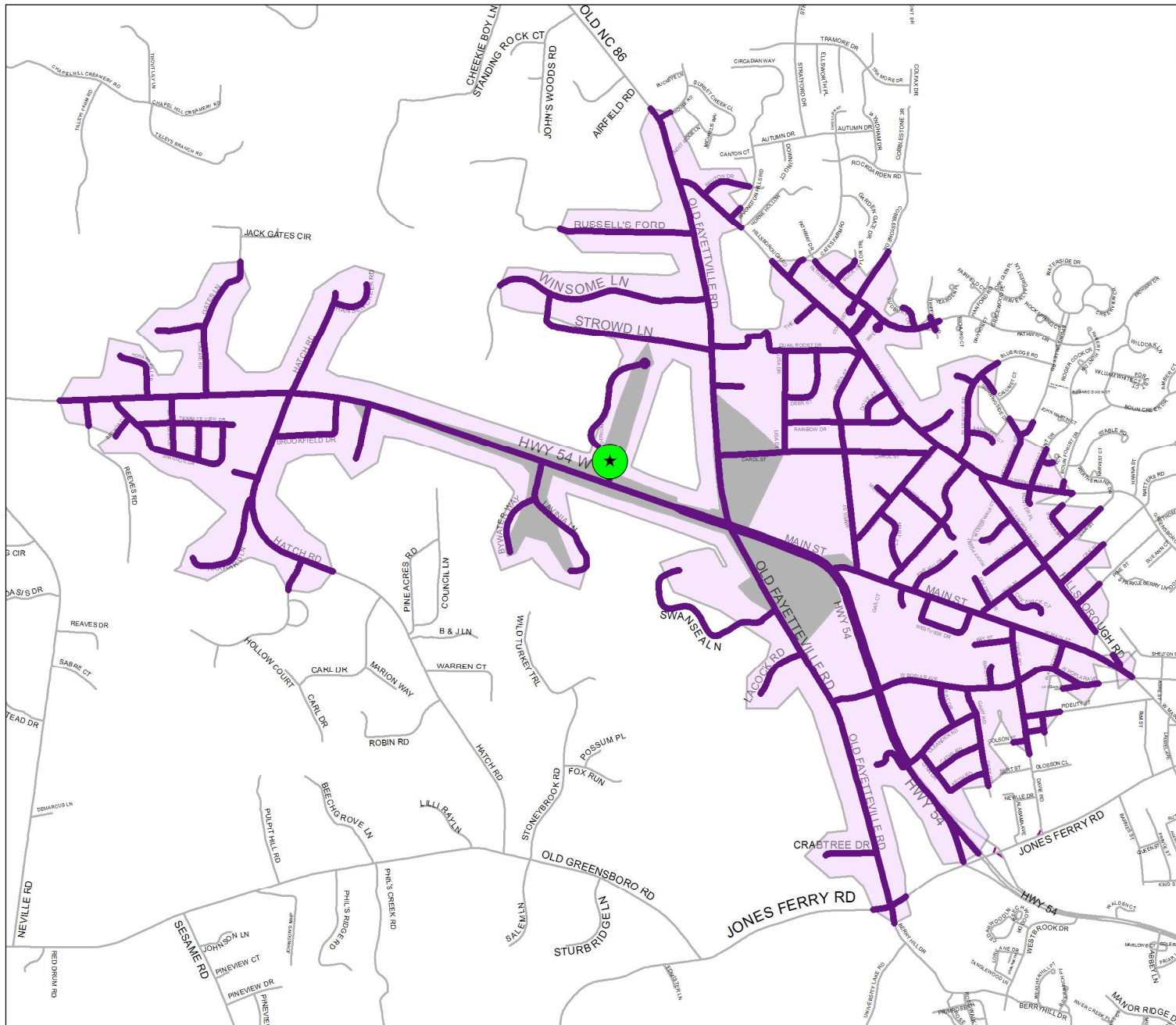
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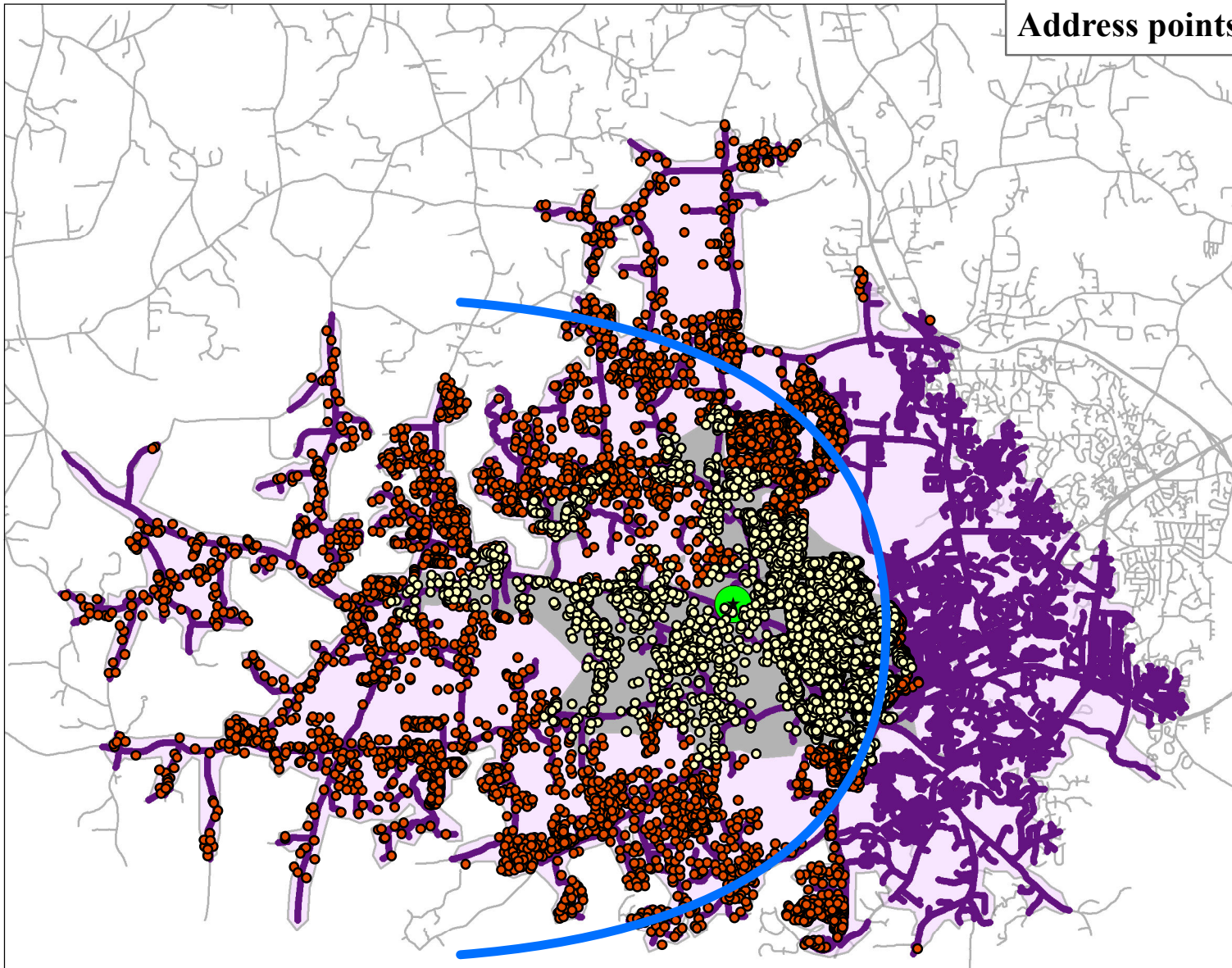


TOWN OF CARRBORO
301 W. Main St.
Carrboro, NC 27510

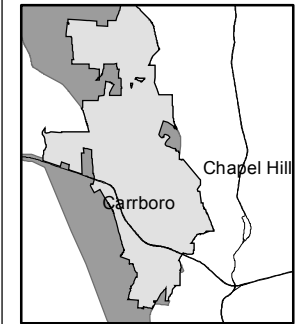
Created Apr. 13, 2012



Address points



**Driving:
5- and 10-minute
service area
to Anderson Park**



0 1 2 Miles

**THIS MAP IS NOT A CERTIFIED SURVEY
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ACCURACY**

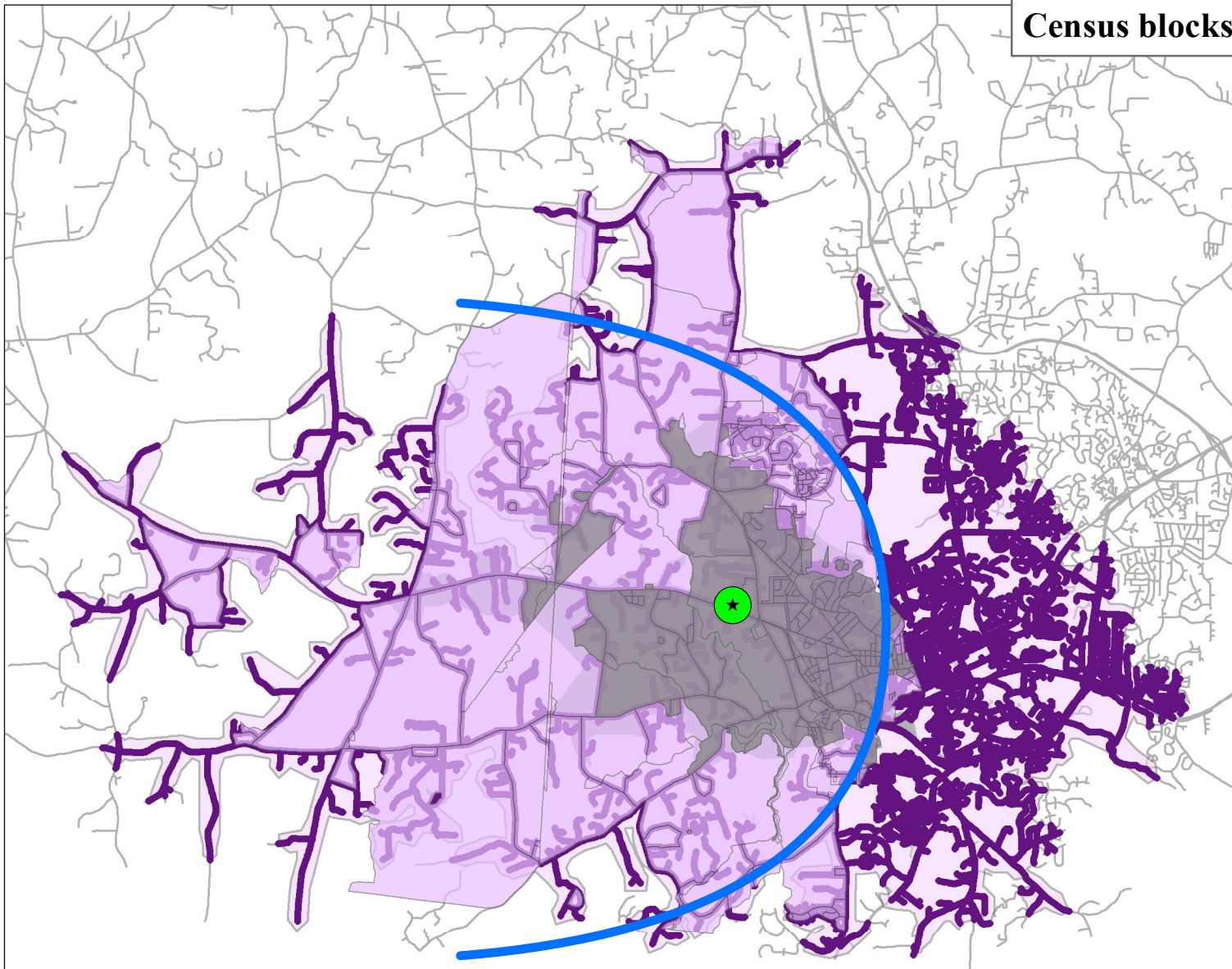
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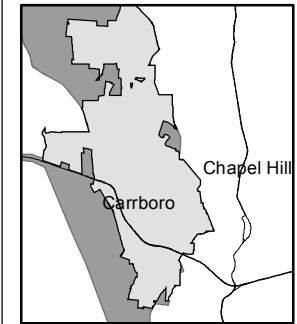
TOWN OF CARRBORO
301 W. Main St.
Carrboro, NC 27510

Created May 7, 2012

Census blocks



**Driving:
5- and 10-minute
service area
to Anderson Park**



0 1 2 Miles

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NO RELIANCE MAY BE PLACED IN ITS
ACCURACY**

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TOWN OF CARRBORO
301 W. Main St.
Carrboro, NC 27510

Created May 7, 2012

T Durham Station
(Gate J)

1

Erwin Rd at
VA Hospital

2

E. Franklin St at
Varsity Theater

3

Manning Dr. at
UNC Hospitals

4

DURHAM STATION to CHAPEL HILL

6:00 am	6:08 am	6:30 am	6:40 am
6:30 am	6:38 am	7:00 am	7:10 am
7:00 am	7:08 am	7:30 am	7:40 am
7:30 am	7:38 am	8:04 am	8:10 am
8:00 am	8:08 am	8:34 am	8:40 am
8:30 am	8:38 am	9:00 am	9:10 am
9:00 am	9:08 am	9:30 am	9:40 am

am

3:15 pm	3:23 pm	3:50 pm	4:00 pm
3:45 pm	3:53 pm	4:20 pm	4:30 pm
4:15 pm	4:23 pm	4:50 pm	5:00 pm
4:45 pm	4:53 pm	5:24 pm	5:35 pm
5:15 pm	5:23 pm	5:54 pm	6:05 pm
5:45 pm	5:53 pm	6:24 pm	6:35 pm
6:15 pm	6:23 pm	6:50 pm	7:00 pm

pm

Manning Dr. at
UNC Hospitals

4

E. Franklin St at
Coffee Shop

3

Erwin Rd at
Duke Hospital

2

T Durham Station
(Gate J)

1

Lawson St. at
Durham Tech (as
Route 700)

0

CHAPEL HILL to DURHAM STATION

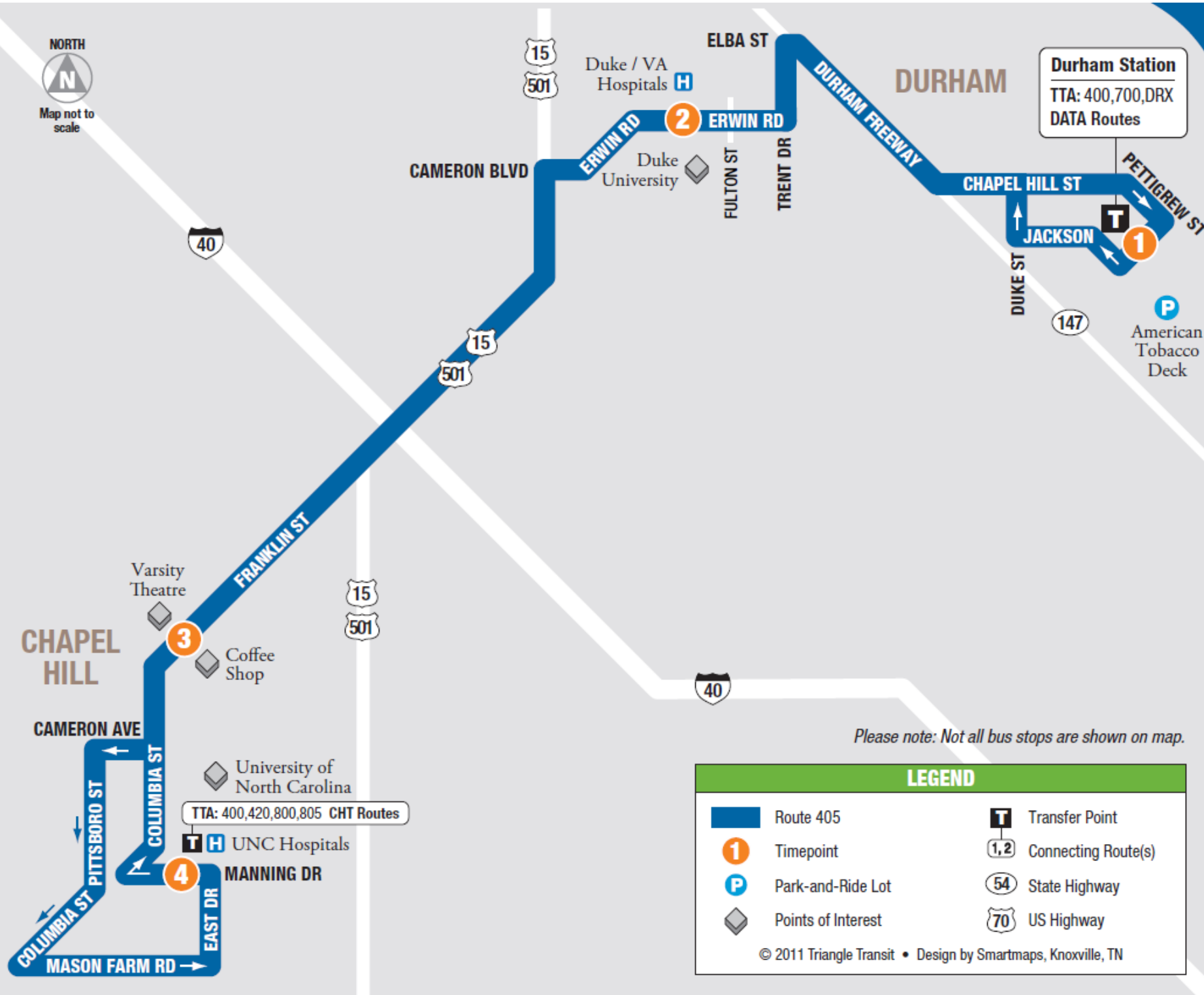
5:50 am	5:56 am	6:15 am	6:25 am	6:39 am
6:20 am	6:26 am	6:45 am	6:55 am	7:09 am
6:50 am	6:56 am	7:15 am	7:25 am	7:39 am
7:15 am	7:21 am	7:45 am	7:55 am	8:09 am
7:45 am	7:51 am	8:15 am	8:25 am	8:39 am
8:15 am	8:21 am	8:45 am	8:55 am	9:09 am
8:45 am	8:51 am	9:15 am	9:25 am	no service

3:10 pm	3:18 pm	3:43 pm	3:55 pm	4:09 pm
3:40 pm	3:48 pm	4:13 pm	4:25 pm	4:39 pm
4:10 pm	4:18 pm	4:43 pm	4:55 pm	5:09 pm
4:40 pm	4:48 pm	5:13 pm	5:25 pm	5:39 pm
5:10 pm	5:18 pm	5:43 pm	5:55 pm	6:09 pm
5:40 pm	5:48 pm	6:13 pm	6:25 pm	6:39 pm
6:10 pm	6:18 pm	6:43 pm	6:55 pm	7:09 pm

Mid-day, night and Saturday service between Chapel Hill and Durham provided on Route 400



Bus stop locations are occasionally changed. Please call 485-RIDE (7433) to verify current bus stop locations, or to request a new bus stop. This timetable shows the times and departures at major stops along the bus route. The bus will also stop at designated bus stop signs along the route. When you want to exit the bus, please press the strip or pull the cord located above the seats at least one-half block before your stop.



Please note: Not all bus stops are shown on map.

LEGEND

Route 405	Transfer Point
Timepoint	Connecting Route(s)
Park-and-Ride Lot	State Highway
Points of Interest	US Highway

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Durham Station
TTA: 400,700,DRX
DATA Routes

TTA: 400,420,800,805 CHT Routes

CW Route - Carrboro / Weaver Street

Weekday Schedule
Year Round

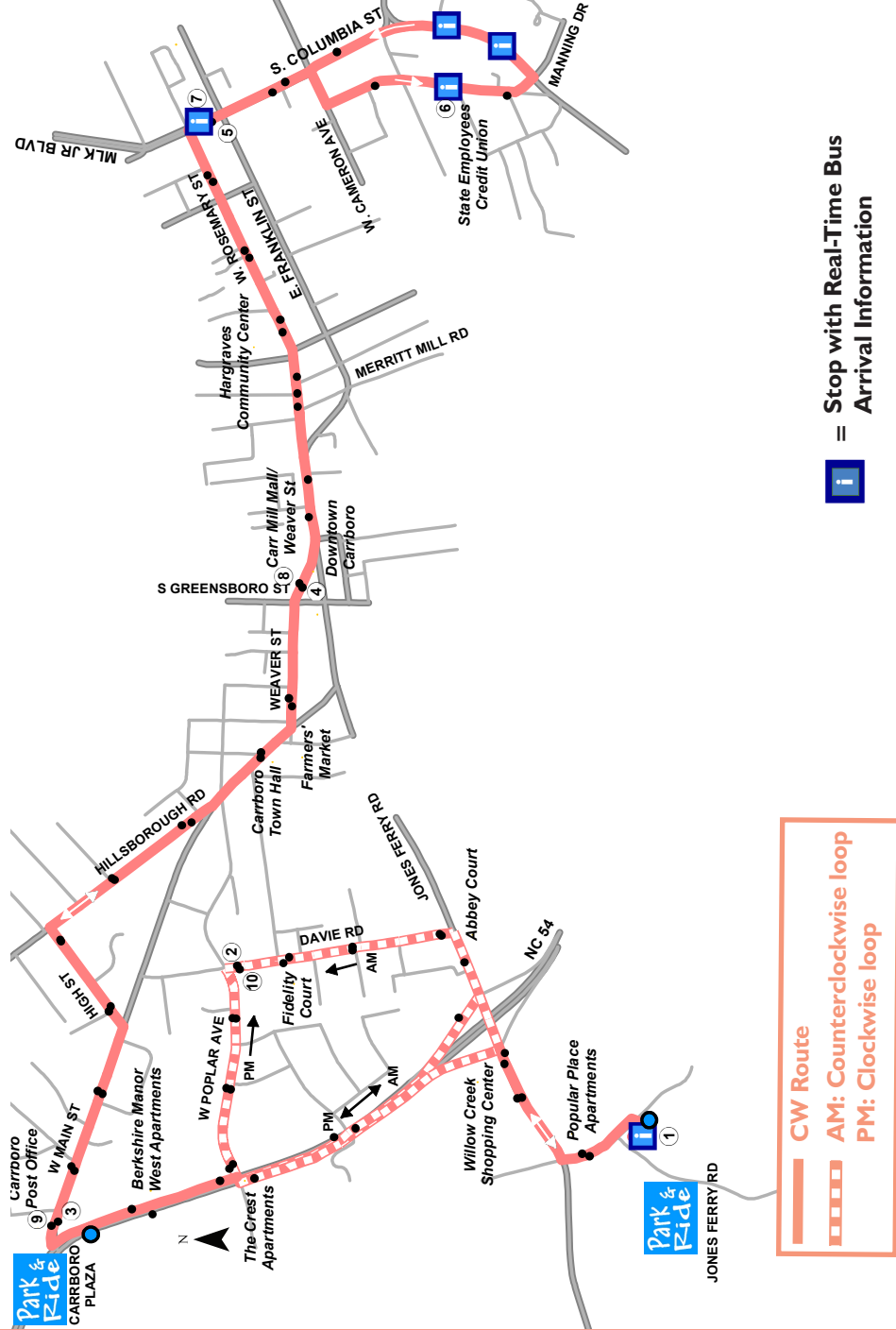
Eastbound

Westbound

	1	2	3	4	5	6	7	8	9	10	1
	Jones Ferry Park and Ride	Dave Rd at W Poplar Ave	W Main St at James St	Weaver St at Century Center	N Columbia St at W Franklin St	Pittsboro St at Credit Union	N Columbia St at Rosemary St	Weaver St at Weaver St Market	W Main St at Carrboro Post Office	Dave Rd at Jones Ferry Park and Ride	
7:20a		7:23	7:27	7:35	7:42	7:46	7:53	8:01	8:07	8:12	
7:50		7:53	7:57	8:05	8:12	8:16	8:23	8:31	8:37	8:42	
8:20		8:23	8:27	8:35	8:42	8:46	8:53	9:01	9:07	9:12	
8:50		8:53	8:57	9:05	9:12	9:16	9:23	9:31	9:37	9:42*	
9:20		9:23	9:27	9:35	9:42	9:46	9:53	10:01	10:07	10:12	
10:20		10:23	10:27	10:35	10:42	10:46	10:53	11:01	11:07	11:12	
11:20		11:23	11:27	11:35	11:42	11:46	11:53	12:01p	12:07	12:10 12:15	
12:20		12:27	12:35	12:42	12:46	12:53	1:01	1:07	1:10	1:15	
1:20		1:27	1:35	1:42	1:46	1:53	2:01	2:07	2:10	2:15	
2:20		2:27	2:35	2:42	2:46	2:53	3:01	3:07	3:10	3:15	
3:20		3:27	3:35	3:42	3:46	3:53	4:01	4:07	4:10	4:15	
3:50		3:57	4:05	4:12	4:16	4:23	4:31	4:37	4:40	4:45	
4:20		4:27	4:35	4:42	4:46	4:53	5:01	5:07	5:10	5:15	
4:50		4:57	5:05	5:12	5:16	5:23	5:31	5:37	5:40	5:45	
5:20		5:27	5:35	5:42	5:46	5:53	6:01	6:07	6:10	6:15*	
5:50		5:57	6:05	6:12	6:16	6:23	6:31	6:37	6:40	6:45	
						7:10	7:17	7:25	7:31	7:39	
						8:00	8:07	8:15	8:21	8:29	
						8:50	8:57	9:05	9:11	9:19	

* TO GARAGE

Trips do not run during break service and go towards campus on the CM Route and away from campus on the CW Route.



All CHT schedules and service levels are subject to change. CHT strives to operate all buses on time, weather, traffic and road conditions may delay buses. All CHT buses can kneel upon customer request.

F Route - Colony Woods / Franklin Street / McDouggle School

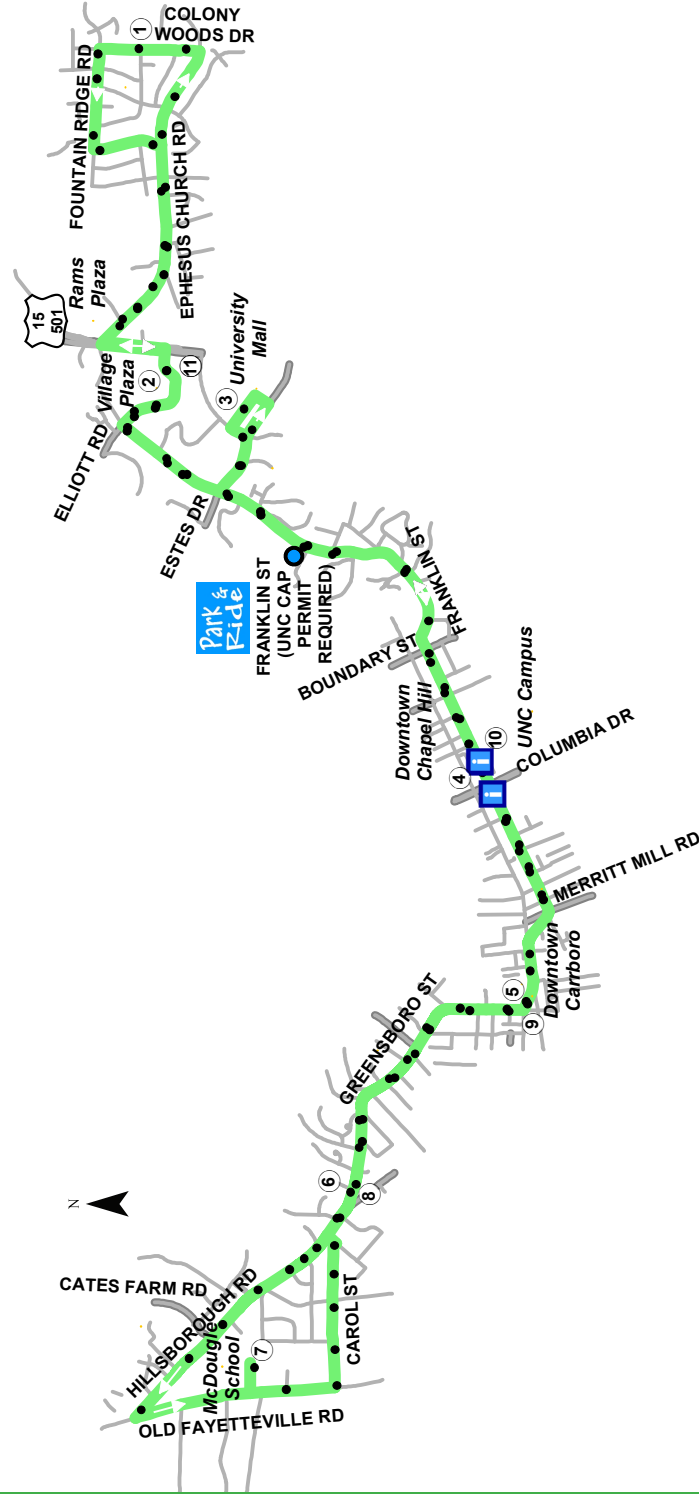
Weekday Schedule
Year Round

Westbound

Eastbound

Colony Woods Dr at Overland Dr	1	2	3	4	5	6	7	McDouggle School	7	8	9	10	3	11	1
7:20	7:29			7:45	7:52	7:57	8:07			6:54	6:58	7:06		7:14	7:20
7:45	7:54	7:59	8:13	8:20	8:24	8:38				7:38	7:42	7:50		7:58	8:04
8:04	8:13	8:20	8:34	8:41	8:45	8:59				8:15	8:20	8:34	8:49	8:56	9:04
										8:46	8:51	9:05	9:20	9:27	9:35
9:04	9:13	9:18	9:32	9:39	9:43	9:57				9:06	9:11	9:25	9:40	9:47	9:55
9:55	10:04	10:09	10:23	10:30	10:34	10:48				10:11	10:16	10:30	10:45	10:52	11:00
11:00	11:09	11:14	11:28	11:35	11:39	11:53				11:06	11:11	11:25	11:40	11:47	11:55
11:55	12:04	12:09	12:23	12:30	12:34	12:48				12:11	12:16	12:30	12:45	12:52	1:00
1:00	1:09	1:14	1:28	1:35	1:39	1:53				1:01	1:06	1:20	1:35	1:42	1:50
										2:01	2:06	2:20	2:35	2:42	2:50
1:50	1:59	2:04	2:18	2:25	2:29	2:43				2:56	3:01	3:15	3:30	3:37	3:45
										3:26	3:31	3:45	4:00	4:07	4:15
2:50	2:59	3:04	3:18	3:25	3:29	3:43				3:59	4:04	4:18	4:33	4:40	4:48
3:45	3:54	3:59	4:13	4:20	4:24	4:38				4:56	5:01	5:15	5:30	5:37	5:45
4:15	4:24	4:29	4:43	4:50	4:54	5:08				5:26	5:31	5:40	5:55	6:02	6:10
4:48	4:57	5:02	5:16	5:23	5:27	5:41				5:56	6:01	6:15	6:30	6:37	6:45
5:45	5:54	5:59	6:13	6:20	6:24	6:38				6:56	7:01	7:15	7:30	7:37	7:45
6:45	6:54	6:59	7:13	7:20	7:24	7:38*									
7:45	7:54	7:59	8:13	8:20	8:24	8:38*									

* - TO GARAGE



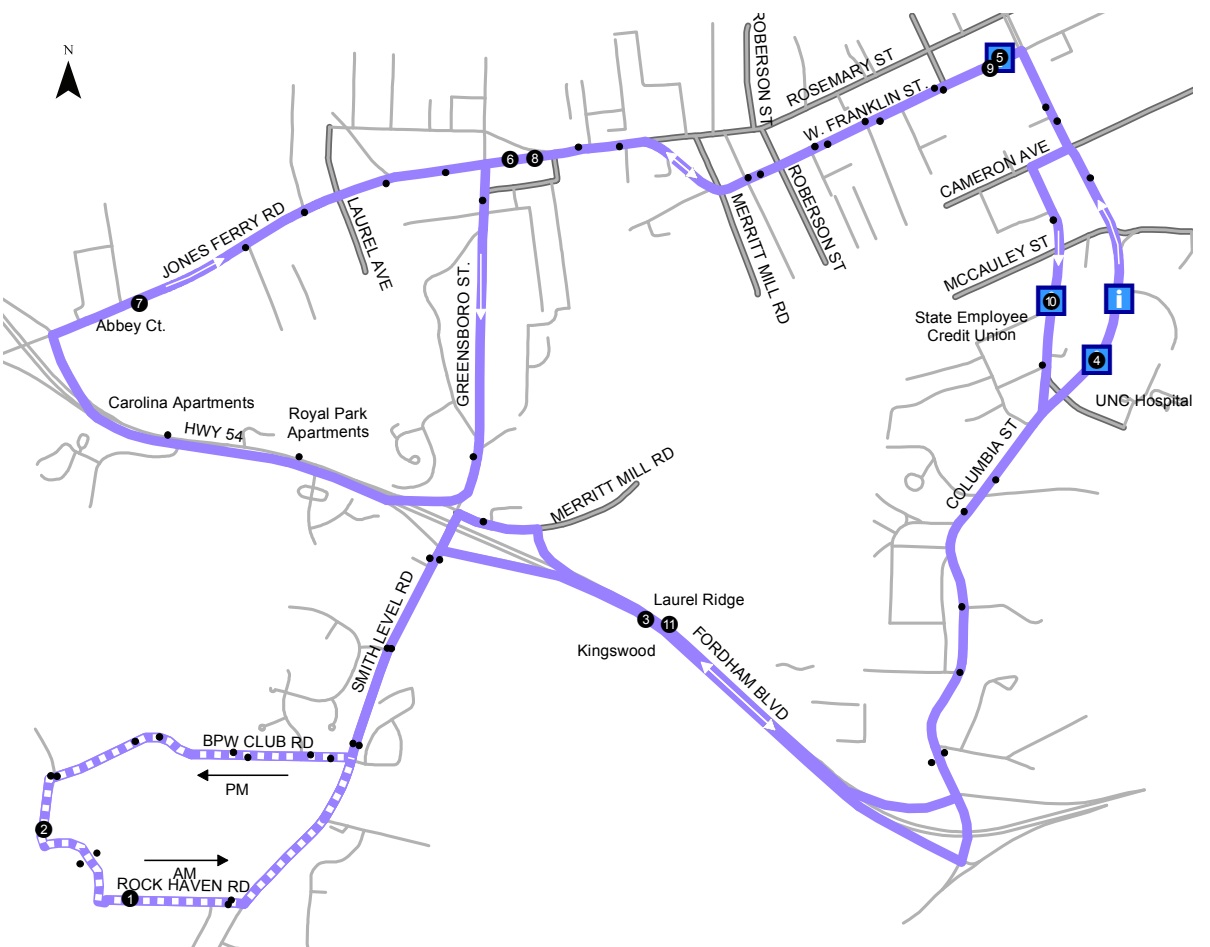
= Stop with Real-Time Bus Arrival Information

All CHT schedules and service levels are subject to change. CHT strives to operate all buses on time. weather, traffic and road conditions may delay buses.
All CHT buses can kneel upon customer request.

Eastbound				Westbound		Eastbound				Westbound			
Rock Haven Rd at Rock Creek West	Highland Hills Apts	NC 54 East at Kingswood	S Columbia St at Health Sciences Library	W Franklin St at Caribou Coffee	E Main St at Jade Palace	Jones Ferry Rd at Abbey Court Apts	E Main St at Weaver St Realty	W Franklin St at University Baptist	Pittsboro St at Credit Union	NC 54 at Laurel Ridge Apts	Highland Hills Apts	Rock Haven Rd at Rock Creek West	
1	2	3	4	5	6	7	8	9	10	11	2	1	
						6:25	6:28	6:34	6:40	6:44		6:49	
						6:40	6:43	6:49	6:55	6:59		7:04	
						6:55	6:58	7:04	7:10	7:14		7:19	
6:30a	6:32	6:38	6:45	6:52	6:59	7:10	7:13	7:19	7:25	7:29		7:34	
6:45	6:47	6:53	7:00	7:07	7:14	7:25	7:28	7:34	7:40	7:44		7:49	
7:00	7:02	7:08	7:15	7:22	7:29	7:40	7:43	7:49	7:55	7:59		8:04	
7:15	7:17	7:23	7:30	7:37	7:44	7:55	7:58	8:04	8:10	8:14		8:19	
7:30	7:32	7:38	7:45	7:52	7:59	8:10	8:13	8:19	8:25	8:29		8:34	
7:45	7:47	7:53	8:00	8:07	8:14	8:25	8:28	8:34	8:40	8:44		8:49	
8:00	8:02	8:08	8:15	8:22	8:29	8:40	8:43	8:49	8:55	8:59		9:04	
8:15	8:17	8:23	8:30	8:37	8:44	8:55	8:58	9:04	9:10	9:14		9:19	
8:30	8:32	8:38	8:45	8:52	8:59	9:10	9:13	9:19	9:25	9:29		9:34	
8:45	8:47	8:53	9:00	9:07	9:14	9:25	9:28	9:34	9:40	9:44		9:49	
9:00	9:02	9:08	9:15	9:22	9:29	9:40	9:43	9:49	9:55	9:59		10:04	
9:15	9:17	9:23	9:30	9:37	9:44	9:55	9:58	10:04	10:10	10:14		10:19	
9:30	9:32	9:38	9:45	9:52	9:59	10:10	10:13	10:19	10:25	10:29		10:34	
9:45	9:47	9:53	10:00	10:07	10:14	10:25	10:28	10:34	10:40*			11:04	
10:00	10:02	10:08	10:15	10:22	10:29	10:40	10:43	10:49	10:55	10:59		11:04	
10:20	10:22	10:28	10:35	10:42	10:49	11:00	11:03	11:09	11:15	11:19		11:24	
10:40	10:42	10:48	10:55	11:02	11:09	11:20	11:23	11:29	11:35	11:39		11:44	
11:00	11:02	11:08	11:15	11:22	11:29	11:40	11:43	11:49	11:55	11:59	12:04	12:09	
11:20	11:22	11:28	11:35	11:42	11:49	12:00p	12:03	12:09	12:15	12:19	12:24	12:29	
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12:20		12:28	12:35	12:42	12:49	1:00	1:03	1:09	1:15	1:19	1:24	1:29	
12:40		12:48	12:55	1:02	1:09	1:20	1:23	1:29	1:35	1:39	1:44	1:49	
1:00		1:08	1:15	1:22	1:29	1:40	1:43	1:49	1:55	1:59	2:04	2:09	
1:20		1:28	1:35	1:42	1:49	2:00	2:03	2:09	2:15	2:19	2:24	2:29	
									2:25	2:29	2:34	2:39	
1:40		1:48	1:55	2:02	2:09	2:20	2:23	2:29	2:35	2:39	2:44	2:49	
2:00		2:08	2:15	2:22	2:29	2:40	2:43	2:49	2:55	2:59	3:04	3:09	
2:15		2:23	2:30	2:37	2:44	2:55	2:58	3:04	3:10	3:14	3:19	3:24	
2:30		2:38	2:45	2:52	2:59	3:10	3:13	3:19	3:25	3:29	3:34	3:39	
2:45		2:53	3:00	3:07	3:14	3:25	3:28	3:34	3:40	3:44	3:49	3:54	
3:00		3:08	3:15	3:22	3:29	3:40	3:43	3:49	3:55	3:59	4:04	4:09	
3:15		3:23	3:30	3:37	3:44	3:55	3:58	4:04	4:10	4:14	4:19	4:24	
3:30		3:38	3:45	3:52	3:59	4:10	4:13	4:19	4:25	4:29	4:34	4:39	
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6:00		6:08	6:15	6:22	6:29	6:40	6:43	6:49*					
6:15		6:23	6:30	6:37	6:44	6:55	6:58	7:04	7:10	7:14	7:19	7:24*	
6:30		6:38	6:45	6:52	6:59	7:10	7:13	7:19*					
7:00		7:11	7:16	7:20	7:25	7:32	7:35	7:40	7:43	7:47	7:52	7:56	
8:00		8:11	8:16	8:20	8:25	8:32	8:35	8:40	8:43	8:47	8:52	8:56	
9:00		9:11	9:16	9:20	9:25	9:32	9:35	9:40	9:43	9:47	9:52	9:56	
10:00		10:11	10:16	10:20	10:25	10:32	10:35	10:40	10:43	10:47	10:52	10:56	
11:00		11:11	11:16	11:20	11:25	11:32	11:35	11:40	11:43	11:47	11:52	11:56	

Trips don't run during break service. * TO GARAGE

J Route - Carrboro / Downtown Chapel Hill / Jones Ferry Road



 = Stop with Real-Time Bus Arrival Information

 J Route

 AM: Clockwise loop

 PM: Counter-Clockwise loop

All CHT schedules and service levels are subject to change. CHT strives to operate all buses on time, weather, traffic and road conditions may delay buses.
All CHT buses can kneel upon customer request.

Walk and Bike Markets

Stop	WALK								BIKE							
	5-min				10-min				5-min				10-min			
	Addresses		2010 Population		Addresses		2010 Population		Addresses		2010 Population		Addresses		2010 Population	
	Residential	Business	Total	18+	Residential	Business	Total	18+	Residential	Business	Total	18+	Residential	Business	Total	18+
W. Weaver St. at Municipal Lot	62	100	160	138	597	300	1,082	943	2,298	357	3,919	3,414	6,935	481	12,558	10,452
Wilson Park	131	0	0	0	532	0	2,260	1,911	1,210	186	2,507	2,108	5,082	428	8,273	6,901
Anderson Park	0	0	0	0	12	0	0	0	101	38	472	429	2,423	76	3,046	2,581

Walk and Bike Market Notes

Italics = clipped to remove Chapel Hill locations

Flag = No census block centroids in Wilson Park 5-min walk area or Anderson Park 5- and 10-min walk areas. See addresses to estimate population within area.

Drive Market

Stop	DRIVE					
	5-min			10-min		
	Addresses		2010 Population	Addresses		2010 Population
	Residential	Total	18+	Residential	Total	18+
W. Weaver St. at Municipal Lot	8,181	11,403	9,284	12,823	19,971	15,287
Wilson Park	7,142	14,163	11,494	11,774	22,614	17,429
Anderson Park	8,126	15,263	12,319	13,905	27,008	21,042

Drive Market Notes

Excludes most CH addresses

Excludes addresses and census blocks within 10-min-walk census blocks. Because Anderson Park did not have walk market, no addresses or census blocks excluded from drive market.

May exclude some Chatham County residential areas

While an effort has been made to account for a disincentive to "backtrack" to a park-and-ride location, drive markets may still include some addresses and-or census blocks with significant backtracks, depending in part on the bus route destinations. They should be taken as general estimates only. A finer-grained analysis could involve residential surveys and-or market study of other park-and-rides in the region to determine likelihood of backtracking. Such an analysis is beyond the scope of this agenda item.

Neighborhoods in Chapel Hill *Assumes completion of Wilson Park Multi-use Path*

For consistency, these neighborhoods were not included in the above data, but they may be accessible to the markets shown below.

Neighborhood	2010 Population		Within market
	Total	18+	
Village West Apts.	240	132	Wilson Park 5-min bike; W. Weaver St. 10-min bike
Ironwoods	419	312	Wilson Park 10-min bike
North Haven (partial)	56	37	Wilson Park 10-min bike

Jeff,

In follow up to our conversation, I have verified that this portion of NC 54 is a partial controlled access facility in that controlled access right of way is present in the area of the grade separated interchanges. I am of the opinion that the cited statute would apply in these areas. You may also wish to review 20-161 and 136-89.58. As we discussed, I do not believe that using the roadway shoulder on this route is advisable due to obvious safety and operational concerns and I am not in a position to support such a request. I would encourage the Town to consider alternative accommodation for park and ride and car pool options such as use of existing commercial parking lots or purpose-built facilities that provide safe and accessible accommodation. Feel free to contact me if I can be of further assistance in this matter.

C. N. Edwards Jr., PE
District Engineer
North Carolina Department of Transportation
P. O. Box 766
115 E. Crescent Square Drive
Graham, NC 27253
(336)570-6833

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From: Jeff Brubaker [<mailto:JBrubaker@ci.carrboro.nc.us>]
Sent: Friday, April 20, 2012 5:29 PM
To: Edwards, Charles N
Subject: NC-54 bypass

Chuck,

Would NC-54 bypass be considered a controlled-access facility west/north of Jones Ferry Road? I know it is from Jones Ferry Road going east/south.

I am asking in order to answer a Board member question about whether vehicles could park on NC-54 for the purposes of taking transit. § 20-140.3. Unlawful use of National System of Interstate and Defense Highways and other controlled-access highways would seem to prohibit such for controlled-access, unless a parking facility is built, but I haven't found a statute that would necessarily prohibit it on non-controlled-access highways.

Here are some other applicable statutes:

NCGS Sec. 20-161(b) states:

No person shall park or leave standing any vehicle upon the shoulder of a public highway unless the vehicle can be clearly seen by approaching drivers from a distance of 200 feet in both directions and does not obstruct the normal movement of traffic.

NCGS Sec. 20-175(a) states:

No person shall stand in any portion of the State highways, except upon the shoulders thereof, for the purpose of soliciting a ride from the driver of any motor vehicle.

Thanks for help you can provide,

Jeff

Jeff Brubaker, AICP

Transportation Planner

Town of Carrboro

301 W. Main St.

Carrboro, NC 27510

Phone: 919-918-7329

[Carrboro transportation web page](#)

Town of Carrboro, NC Website - <http://www.townofcarrboro.org> E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.



Town of Carrboro
Public Works Department

Memorandum

To: George Seiz

From: David Poythress

Cc:

Re: Triangle Transit bus stop – park and ride – 303 W. Weaver(PPL), Wilson and Anderson Parks Date: May 22, 2012

W. Weaver St. PPL – I would suggest not designating the lot as a Park & Ride lot due to the limited number of spaces and reducing its potential to serve town staff as parking pressures increase in the future for Town Hall and particularly the Century Center facilities for staff and event parking needs. The loss of Public Parking spaces within the W. Weaver St. block could restrict business growth for both new and existing businesses located nearby.

If 303 W. Weaver were used for park and ride, I would recommend limiting the number of park and ride permits to around (6) spaces. I assume the rider would park in the lot and then walk out to W. Weaver St. bus stop.

Wilson and Anderson Park facilities

1. Will the existing facility pavement structure hold up to routine bus traffic vehicle loading? Should we perform pavement and soil borings to understand what we have there now? Typically where bus routing and stops have been added along public streets, we observe within a short period of time, pavement deformation and break down of the existing pavement structure necessitating repairs to increase pavement or concrete thickness to accommodate the weight of the buses and the forces imposed upon the pavement structure from stopping or turning movements. I would anticipate an increase in pavement maintenance cost as a result of the bus usage due to inadequate pavement structure. Ex. Buses is an after-thought to the original park parking lot facility pavement structure design.
2. Turning movements. Assuming the buses would be entering the park facilities and needing to turnaround, has there been a turning movement analysis of how the buses could or could not maneuver within the parking lot facilities without hitting a parked vehicle or other complications with turning movements? I know I have heard CH Transit folks insisting that they do not want their drivers having to make backward travel movements.
3. Anderson Park at the entrance to NC 54. Would the town need to improve the entrance to accommodate the bus? As you are aware, there is a center island with a sign that may restrict the bus access requiring its removal.
4. Anderson Park at the entrance to NC 54. Will the NC 54 deceleration/turn lane need to be lengthened and improved to accommodate the bus access?
5. Is Williams St. suitable to route buses down to Wilson Park? Street is narrow with vertical curb on one side and narrow shoulder on opposite side. Seems like there could be issues with turning out of the park due to the steep incline and narrow Williams St. street width.
6. The ability to secure the park facilities during times of emergencies where there has been damage within the park but the town prioritizes its recovery response to address essential town facilities. (Ex. Public streets, town hall and Century Center facilities) There have been several instances over the years where extreme weather events have necessitated the closure of the park in order to utilize town recovery resources. Examples: Snow/ice – clearing of the park entrance and parking lot is not a high priority. Hurricane Fran – down trees, broken hanging limbs. Ice storm – same – down trees/broken hanging limbs.
 - a. Note: Depending upon the severity of damage, "normal life" may be restored for a large segment of the public while we are still trying to assess and plan for park damage restoration efforts.



What I am trying to say is the pressure will be on to restore park and ride facilities as soon as possible but due to our available resources, can we afford the time and resources trying to accommodate the park and ride folks when our efforts need to be spent elsewhere for the greater good?

7. How many Carrboro residents is it estimated will actually use the Park & Ride or will those who use the P&R be outside of Carrboro?
8. In the event we need vehicles moved due to an emergency or some other reason, how could we contact those who use the Park and Ride?
9. Other concerns for utilization of park facilities as park and ride facilities:
 - a. Concerns for the bus movements within the parking areas and conflicts with pedestrians and private vehicle movements.
 - b. There are a couple of annual events or reservations that are leased thru P&R that utilizes a significant number of parking spaces for the event or reservation. Example: UNC department rentals
 - c. The Park and Ride addition could restrict P&R ability to accommodate large rentals or town events where additional parking and access could be needed.
 - d. The additional parking could restrict PW facility maintenance depending upon where the Park and Ride spaces are designated.
 - e. If Park and Ride is permitted, what will be the next amenities requested? Shelters, benches, etc.

From: [Anita Jones-McNair](#)
To: [Jeff Brubaker](#)
Subject: RE: Triangle Transit bus stop - parking
Date: Thursday, May 24, 2012 10:51:45 AM

Jeff:

Here are some general departmental concerns that come to mind:

1. Giving up the southernmost two lots at Anderson Park could restrict the space available for patrons of the dog park, disc golf course, walkers, tennis players, joggers and fisherman that utilize those lots during the day. Furthermore, the impact could be even greater on weekends.
2. At Anderson, when the shelter is booked for large reservations often times most of the available parking spots are needed and utilized.
3. At Anderson if the bus would need to enter the park it would create a possible unsafe environment with a large vehicle and pedestrians in the same vicinity. Frequently there are small children near the dog park and pond who are occasionally unattended by parents or guardians.
4. Also the overall bus manageability (turning radius, etc.) throughout the parks may be a concern.
5. Liability of vehicles throughout the day or that may be left at Anderson and Wilson overnight causing a possible increase in vandalism in the those parks.
6. If parking becomes overcrowded at Anderson and Wilson Park during sports seasons, etc. and with the addition of vehicle parking for buses could lead to patrons seeking parking in adjacent neighborhoods and streets.
7. Allowing parking in park lots could impact attendance or use of town facilities in other ways not beneficial. It is highly likely that any problems associated with this arrangement will fall back on the town even if we are not responsible for implementation or monitoring.

From: Michael Brough [\[mailto:brough@broughlawfirm.com\]](mailto:brough@broughlawfirm.com)
Sent: Tuesday, May 22, 2012 4:48 PM
To: Carolyn A. Hutchison; Jeff Brubaker; George E. Seiz; Annette Stone; Anita Jones-McNair
Cc: Christina Moon; Patricia J. McGuire
Subject: RE: Triangle Transit bus stop - parking

I think that any policy that implements any of the alternatives discussed below should be enacted by an ordinance, rather than by a "supplementary rule or regulation" promulgated administratively under Section 14-28 of the Town Code. I say that for two reasons: (1) to remove any issue about enforceability, and (2) some of the suggestions would effect major changes in the use of these facilities.

Mike

From: Carolyn A. Hutchison [\[mailto:CHutchison@ci.carrboro.nc.us\]](mailto:CHutchison@ci.carrboro.nc.us)

Sent: Tuesday, May 22, 2012 3:53 PM
To: Jeff Brubaker; George E. Seiz; Annette Stone; Anita Jones-McNair
Cc: Christina Moon; Patricia J. McGuire; Michael Brough
Subject: RE: Triangle Transit bus stop - parking

Jeff,

You've captured my concerns.

Thanks.

Carolyn

From: Jeff Brubaker
Sent: Monday, May 21, 2012 12:44 PM
To: George E. Seiz; Annette Stone; Carolyn A. Hutchison; Anita Jones-McNair
Cc: Christina Moon; Patricia J. McGuire; Michael Brough
Subject: Triangle Transit bus stop - parking

All,

Your input, comments, and edits are respectfully requested on the below information....

Per Trish's direction, I would like to gather more information from Town departments on the pros and cons and fiscal and staff impacts of a park-and-ride provision at each of the three locations the Board of Aldermen directed that staff research for the potential for a Triangle Transit bus stop. The three locations are shown in the column headers in the table below.

	300 W. Weaver St. municipal parking lot	Wilson Park	Anderson Park
Ownership	Leased by Town	Owned by Town	Owned by Town
Parking spaces	33	~100	~80 (southernmost two lots)
Time limit	2 hrs (between 7:00 a.m. and 5:30 p.m.)	None	None

The Town Code, Sec. 14-28, does grant authority to the Rec/Parks Dept. to "adopt rules and

regulations governing the use of tennis courts, basketball courts, ball fields, **parking lots**, etc.” This would seem to apply to the question of designating spaces if Wilson Park or Anderson Park were the chosen stops and if the Town were interested in having reserved park-and-ride spaces.

The components of a parking validation program would be:

- Designate spaces in Town Code
- Post signs/markings at parking spaces with notification of their restricted use
- Issuance of parking permits
 - Selection of permittees (including selection method if demand exceeds supply)
 - Verification of employment near bus stop (ensure people are using the spaces for regional transit park-and-ride)
- Enforcement of non-compliance

So far, issues that have been raised have been:

- Lack of resources for enforcement
 - Potential solutions
 - Contract with Town of Chapel Hill to provide parking monitoring/enforcement
 - Hire parking/monitoring enforcement staff
- Current hang-tag program for businesses does not work very well
- More hang tags than spaces would encourage people to park illegally
 - Potential solution: Issue # of hang tags equal to supply
- W. Weaver St. lot lease agreement: would need to get owner’s permission for installation of signs
- Wilson and Anderson Park: how would parking affect availability for daytime recreational program parking?

The *draft* table below shows some alternative arrangements that could be considered:

	Alt 1: Do nothing	Alt 2: Agreement with Triangle Transit	Alt 3: Town-managed parking spaces
Description	Bus stop is provided but no parking spaces are designated. Relies on walk/bike/feeder bus access. If stop is at Wilson or Anderson parks, people may choose to park there.	Triangle Transit would lease spaces and manage their access.	Town would issue hang-tags
Pros	Low cost	Park-and-ride amenity provided/managed. Some costs and	Park-and-ride amenity provided/managed by Town. Town can control parking set-up.

		administration borne by TT.	
Cons	Park-and-ride amenity not provided or managed. May encourage unlawful / informal parking in nearby lots.	Triangle Transit may have a minimum threshold for number of spaces they would want to lease that may exceed the number the Town would like to provide. May still result in unlawful / informal parking if more demand than spaces.	Higher cost and staff impact. Enforcement would be difficult given current PD resource levels. May still result in unlawful / informal parking if more demand than spaces.
Annual staff hours to manage	0	0-10 (communication with Triangle Transit)	?? (selection, verification of employment, enforcement)
Operating cost items	None	None	Signage, hang-tags

Thanks for any info you can provide. After this info has been reviewed this week, I'd like to set up a meeting next week to finalize the info to be provided to the Board.

Jeff

Jeff Brubaker, AICP

Transportation Planner

Town of Carrboro

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TOWN OF CARRBORO

NORTH CAROLINA

MEMORANDUM

DELIVERED VIA: ☐ HAND ☐ MAIL ☐ FAX ☒ EMAIL

DATE: August 29, 2012

TO: David Andrews, Town Manager
Mayor and Board of Aldermen

CC: Christina Moon, Planning Administrator
Patricia McGuire, Planning Director

FROM: Jeff Brubaker, Transportation Planner JSB

RE: Additional information on home-work flows: where people in Carrboro are going when they take transit to work



“An Onboard Survey of Users of Triangle Transit” from 2009 captures the home and work ZIP codes of passengers. The map above shows what percentages of all survey respondents *both lived in the 27510 ZIP code (central Carrboro) and worked in one of the ZIP codes shown*. The percentages may seem small, but remember that the highest ZIP-to-ZIP share is only 4.7% (27713 – Southern Durham – to 27599 – UNC-Chapel Hill).

Overall, 1.7% of respondents lived in the 27510 ZIP code. The ZIP code where the greatest proportion of 27510 residents worked was 27601, which is downtown Raleigh, at 0.4%.

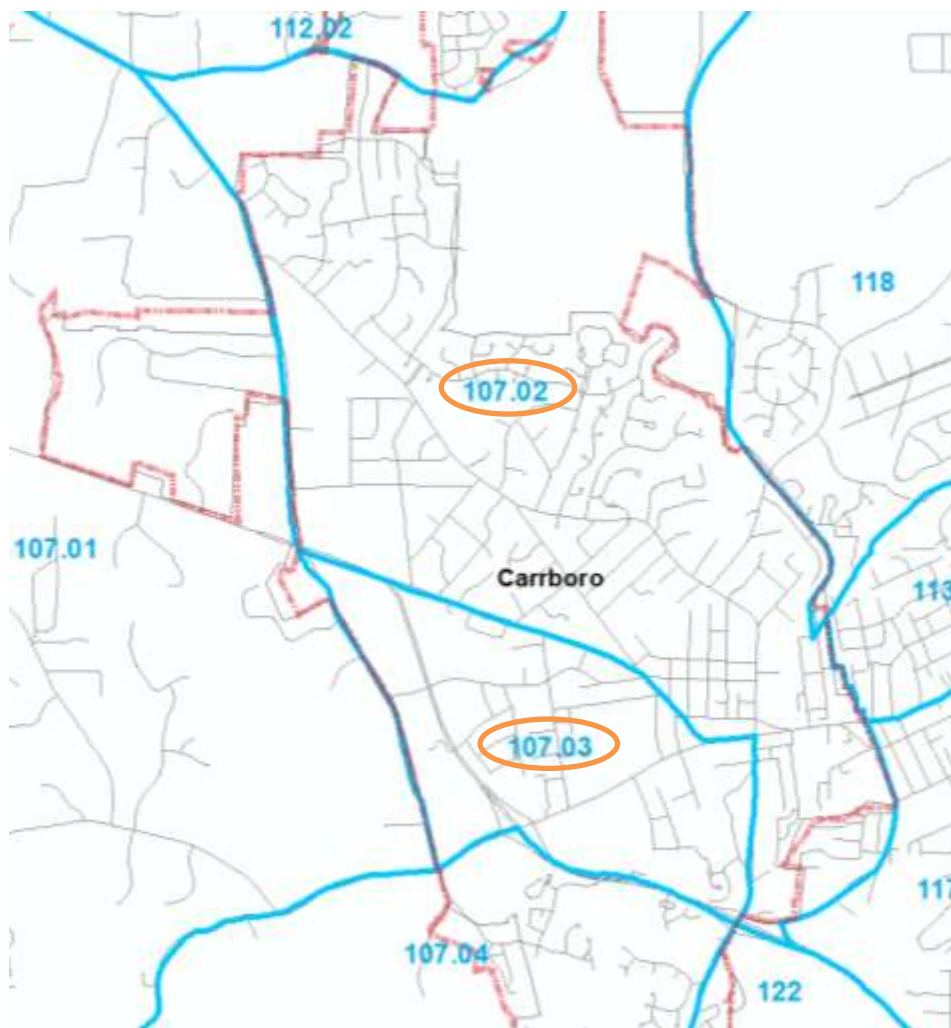
Census Tract Home-to-Work Flows

While the above map is interesting in that it shows where Triangle Transit passengers who live in Carrboro work, it does not disaggregate by lower than ZIP code. The Census Bureau’s Census Transportation Planning Package (CTPP) is a set of special census tabulations that tie census data to place of work in addition to place of residence. This allows transportation planners to estimate travel flows between home and work.

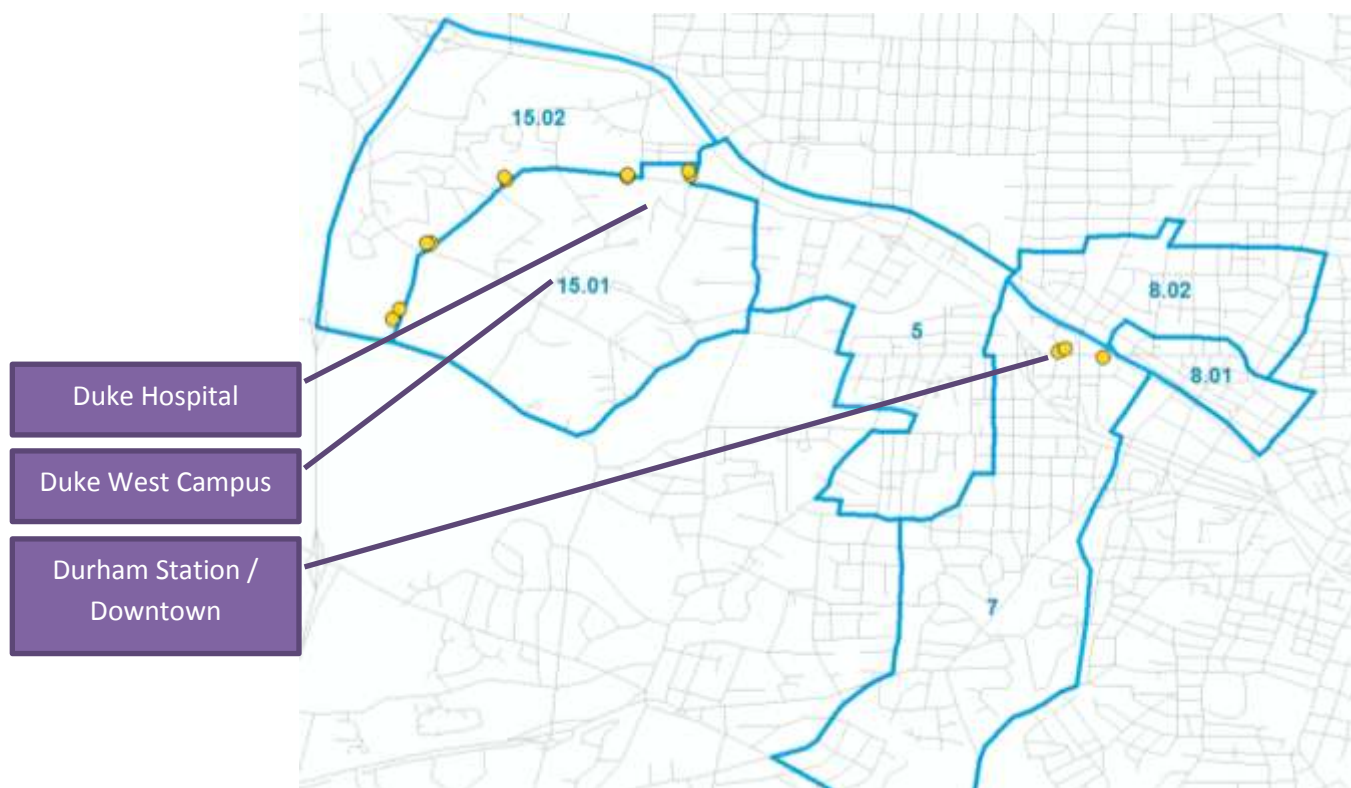
The CTPP can give an estimate of the number of people who live within certain areas of Carrboro and work in the vicinity of Route 405 bus stops. Unfortunately, several factors affect the degree of confidence we can have in the accuracy of the data:

- The latest data available for Carrboro is from the 2000 census.
- The data is based on a sample, rather than a full count, so it is subject to sampling error. The average sampling rate for the 2000 census “long form” (the longer questionnaire with questions about housing, socioeconomic status, commuting, etc.) was 1 out of every 6 housing units.
- Census tracts are used as the geography. While generally smaller than ZIP code areas, in 2000, most of Carrboro was included in just two census tracts, with other areas of Carrboro stretching into small portions of three other tracts. The 2000 CTPP also estimates data for the smaller geography of traffic analysis zones (TAZs), but these estimates are based on very small sample sizes.

For trip origins, the analysis uses the two census tracts that were mostly within Town limits in 2000, 107.02 and 107.03.



For trip destinations, the analysis uses six census tracts that either contain, or are immediately adjacent to, the stops on Route 405 in Durham (shown as dots).



Some census tracts extend well beyond the stops. At the same time, the walking distance from some stops extends beyond the selected census tracts. Commercial destinations in downtown Durham have likely expanded since 2000. Despite these caveats, we can make a rough approximation of the total people living in the two Carrboro census tracts that work in locations served by Route 405.

		Durham						
	Census Tract	5	7	8.01	8.02	15.01	15.02	Total
Carrboro	107.02	10	25	25	0	65	50	175
	107.03	0	4	30	20	35	10	99
	Total	10	29	55	20	100	60	274

The table shows the number of workers residing in each Carrboro census tract (rows) who work in each Durham census tract (columns). The total shown is 274. While, again, this is a rough estimate, it is evidence of a level of commuting from central Carrboro to destinations in the vicinity of the 405 route. Duke's west campus, Duke Hospitals, the VA Hospital, the American Tobacco District, and the majority of downtown Durham are served by the 405 route. The ability to transport a bike on the front of buses and the Bull City Connector in downtown Durham may also extend the reach of commuters to their work destinations. This analysis also does not include student travel demand or travel for other trip purposes.

Overall, Census 2000 data show that 1,330 Carrboro residents commuted to somewhere in Durham. The commute from central Carrboro to areas in the vicinity of 405 stops therefore represented 20% of the Carrboro-Durham commute.