



## TOWN OF CARRBORO

NORTH CAROLINA

### MEMORANDUM

**DATE:** March 19, 2019  
**TO:** Town of Carrboro Board of Aldermen  
**FROM:** Zachary Hallock, Transportation Planner  
**RE:** Cobblestone Drive Traffic Calming Report

#### Summary of the Traffic Calming Request Process

Traffic calming requests in Carrboro are processed in accordance with the [Residential Traffic Management Plan \(RTMP\)](#).

The process defined in the RTMP proceeds as follows:

1. Residents who believe there is a traffic calming issue on their street, may submit a Traffic Calming Request form to the Town
2. Planning staff will assess the request, create an Area of Influence (AoI) map, a list of addresses within the AoI, and provide these to the resident.
3. Residents are to complete the petition with at least 75% of the addresses provided.
4. Planning staff confirm the receipt of the petition with 75% signatures and begin analysis as outlined in the RTMP.
5. The collected data is analyzed under the framework of the RTMP. Based on the results of this analysis, there can be one of three routes taken:
  - a. If the minimum threshold for Stage 1 traffic calming is not met, no further action.
  - b. If the minimum threshold for Stage 2 traffic calming is not met, Stage 1 treatments (which focus on behavior modification through education, outreach, and enforcement) can be implemented.
  - c. If the minimum threshold for Stage 2 traffic calming is met, staff will work to implement Stage 1 traffic calming treatments and perform a follow-up analysis within 3 to 6 months. Stage 2 traffic calming treatments are physical infrastructure improvements, thus (in general) it should be shown that Stage 1 treatments do not properly address the issue prior to beginning detailed work on Stage 2.

#### Background and Requests

During the fall of 2017, planning staff received requests for traffic calming measures along Cobblestone Drive from residents noting speeding on Cobblestone Drive and the desire for a traffic calming solution; such as speed bumps or tables. David Resnik submitted a formal request

through the RTMP related to these concerns on October 19<sup>th</sup>, 2017 and staff prepared an Area of Influence map for the Cobblestone Drive segment in question and associated address list. Staff received the completed petition with over 75% signatures from the affected properties on April 23, 2018 and began preparation to conduct counts once school resumed in the fall. While testing the traffic counting equipment over the summer, the counters were found to be defective; new counters were acquired allowing counts to be taken in November 2018. In August 2018, Stephanie Wade alerted staff that she would take over as the primary point of contact. The Town conducted traffic counts and peak period bike/pedestrian counts during the week of November 14, 2018. Planning Department staff met with Ms. Wade on December 7, 2018, to provide an update on the data collection efforts, to review the next steps in the process and to discuss the tentative schedule for moving forward.

On January 20, 2019 Ryan Oakes alerted staff of a car accident along Cobblestone Drive. Carrboro PD determined that speeding was not a factor in this incident.

## **Evaluation**

This evaluation is based on count data collected during the week of November 14, 2018.

### *Traffic volume and 85<sup>th</sup> percentile speed*

Town staff conducted two-way, 96-hour traffic and speed counts for two mid-block locations along Cobblestone Drive on November 14-17, 2018. These approximate locations are:

- 116 Cobblestone Drive
- 130 Cobblestone Drive

The speed limit on Cobblestone Drive is 25 mph.

The 85<sup>th</sup> percentile speed refers to the speed at which 85% of cars are traveling at or below. For each counter location, the travel direction that had the higher 85% percentile speed was used for the analysis. For both locations, the 85<sup>th</sup> percentile speed was approximately 37 MPH. The data indicates that on the north end (near 130 Cobblestone Drive) over 50% of vehicles are traveling above the posted speed limit, but on the south end (near 116 Cobblestone Drive) this percent rises to higher than 70%.

Cobblestone Drive is classified as a *subcollector*, which is a road that is designed to handle 200-800 vehicle trips per day and provides direct access for up to 100 residences; Cobblestone Drive provides access to approximately 70 residences. Traffic volumes collected along Cobblestone Drive did not exceed the 800 expected vehicles per day threshold for subcollector streets at either location.

The results from the traffic counters are included in the attachments.

### *Bicycle and Pedestrian Volumes*

On Thursday, November 15, 2018 from 7:00-9:00am and 2:30-4:30pm Town staff conducted two-hour, peak period bicycle and pedestrian counts on Cobblestone Drive.

These results are included in the attachments.

### *Bus Stops*

There are no Chapel Hill Transit routes or stops which operate along Cobblestone Drive.

Consulting the list of school bus stops from Chapel Hill-Carrboro City Schools, which was accessed at [http://gps.chccs.k12.nc.us/live\\_chweb/webquery/](http://gps.chccs.k12.nc.us/live_chweb/webquery/), it was found that while there are school bus stops along Pathway Drive and Cates Farm Road, and school buses may drive along Cobblestone Drive, there are no stops along it.

### *Pedestrian Generators*

This analysis determines the network distance (based on existing sidewalks and bike/ped facilities) from the two locations along Cobblestone Drive where count data was collected to parks and retail locations using the ArcGIS Network Analyst. The south end of Cobblestone Drive (approx. 116 Cobblestone) is within 0.6 Miles of Martin Luther King Jr. Park. The north end of Cobblestone Drive (approx. 130 Cobblestone) is not within 0.6 Miles of any parks or retail.

### *Scoring Summary*

A summary of the measured data and assigned points for the traffic calming criteria at the two locations along Cobblestone Drive can be found in the table below.

Cobblestone Drive Traffic Calming Summary

Criteria	116-117 Cobblestone		130-131 Cobblestone	
	Measure	Points	Measure	Points
Traffic Volume (VPD)	554	0	558	0
85th % Speed (MPH)	37.86	26	37.67	26
Pedestrian Volume (Peak Hr)	32	3	32	3
Bicycle Volume (Peak Hr)	6	0	6	0
Bus Stops (School and CHT)	0	0	0	0
Ped Generator Proximity (mi)	0.6	1	>0.6	0
Volume and Speed Points	26		26	
Total Points	30		29	
Threshold for Stage 2 reached?	YES		YES	

### **Next Steps**

While counts at both locations meet the RTMP criteria for Stage 2 traffic calming measures based on the points received for traffic volume and 85<sup>th</sup> percentile speed, staff recommend that Stage 1 traffic calming measures be implemented in the short term, with a follow-up counts and analysis performed in 3 to 6 months to determine their effectiveness. Stage 1 treatments aim to utilized education, outreach, and enforcement to modify behavior without the installation of physical infrastructure improvements.

Examples of Stage 1 Traffic Calming measures include:

- Placement of a speed radar trailer along Cobblestone Drive

- Regular enforcement efforts by Carrboro PD
- Neighborhood Meeting with town staff to discuss concerns
- Neighborhood Block Party to raise awareness and encourage use of the street by non-motorized transportation.

In the event that the follow-up analysis indicates that Stage 2 traffic calming is still warranted, a more detailed work on these devices could begin. Based on discussions among planning staff and conversations with residents, the following potential Stage 2 treatments have been identified:

1. Speed Bumps/Humps: **Resident requested treatment**
  - a. Pros: Observable impact on speeding traffic
  - b. Cons: Have limited area of effectiveness, impacts EMS response times, not recommended on grades over 8%, can impede stormwater
2. Chicanes
  - a. Pros: Easily testable with paint/traffic cones, facilitates creation of a Bike Boulevard along Cobblestone Drive, can be an opportunity to improve stormwater management
  - b. Cons: Residents not familiar with this device
3. Choker/Bulb-out/Neckdown
  - a. Pros: Easily testable with paint/traffic cones, facilitates creation of a Bike Boulevard along Cobblestone Drive, can be an opportunity to improve stormwater management
  - b. Cons: Residents not familiar with this device, may not reduce speeds as much as a Speed Bump based on FHWA research
4. Diagonal Diverter
  - a. Pros: Testable with paint/traffic cones; prevent speeders who are not part of the Cobblestone neighborhood from using to avoid traffic calming on parallel routes, facilitates creation of a Bike Boulevard along Cobblestone Drive
  - b. Cons: Specific location will need to be determined, will impact local residents routing out of the neighborhood, will focus traffic on Cates Farm Rd.

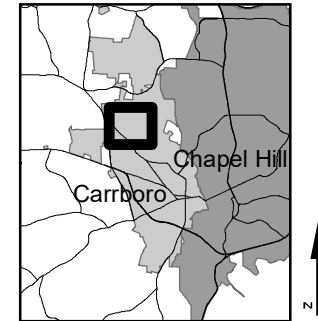
### Possible Timeline



- Immediately: Begin Stage 1 traffic calming measures including: Work with PD to schedule additional targeted enforcement efforts based on the times during the day when speeding is more prevalent as well as placement of the speed radar trailer. Simultaneously work with neighborhood contact to facilitate outreach and education to Cobblestone Drive residents and schedule a neighborhood meeting.
- May: Neighborhood Meeting
- September: Recollect traffic volume and speed data, assess effectiveness of Stage 1 Measures, and provide an update to the Board. *If Stage 2 measures are determined to be needed, staff will begin to develop a Stage 2 design in the fall of 2019.*

## Additional Notes

- Preliminary observations by the Police Department were taken in August 2017, around the time traffic calming requests were first received. At that time, police staff made the following observations about conditions on Cobblestone Drive:
  - Traffic is relatively light, so ramping up enforcement may not achieve the desired results.
  - Police received complaints indicating that residents believe cars are reaching speeds near 40 mph at the bottom of the hill.
  - The Cobblestone Drive location was placed on the RADAR sign rotation.
- Cobblestone Drive is 0.63 miles in length, the section being analyzed for traffic calming is 0.44 miles in length.
- Cobblestone Drive has multiple ingress/egress points to the arterial street system: one route to Homestead Road in the North (Rockgarden Rd to Cates Farm Rd to Autumn Dr, to Stratford Dr), and multiple routes to Hillsborough Road in the South (Pathway Dr to Cates Farm Rd or Parkview Ave or Spring Valley Rd).
- Cobblestone Drive is part of an interconnected network and is paralleled by Cates Farm Road.
- Cobblestone Drive serves approximately 70 residential properties in total.
- The road surface is 26 feet wide, the public right of way is 60 feet wide, there is a sidewalk along the east side of the road, and parking is allowed on both sides of the street.
- Wayfinding design work currently underway to encourage bike/ped route to CHHS and Smith Middle School to Phase 1B Multi-use Path via Cobblestone Drive.

## Cobblestone DR: Area of Influence



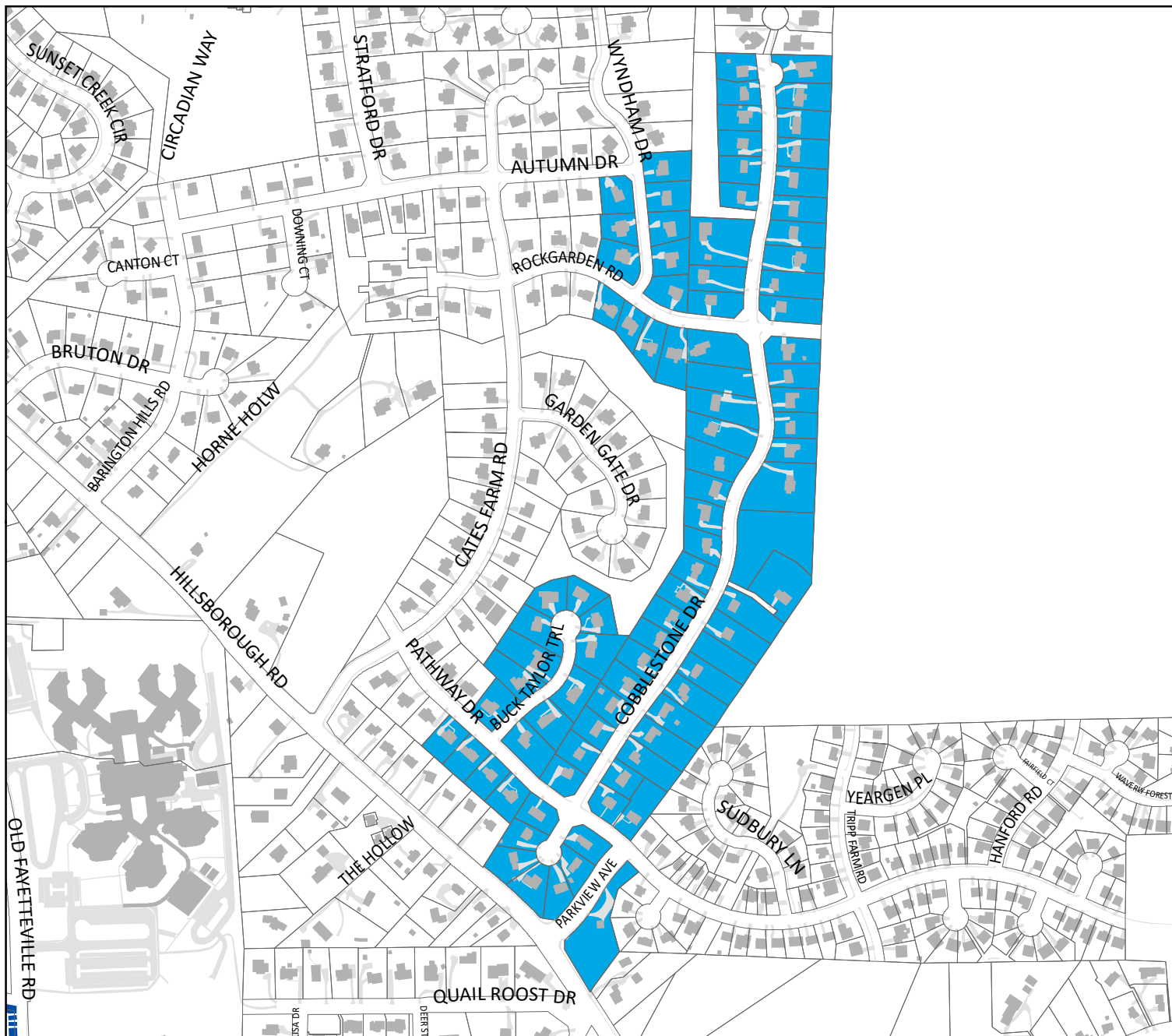
-  Buildings
-  Area of Influence

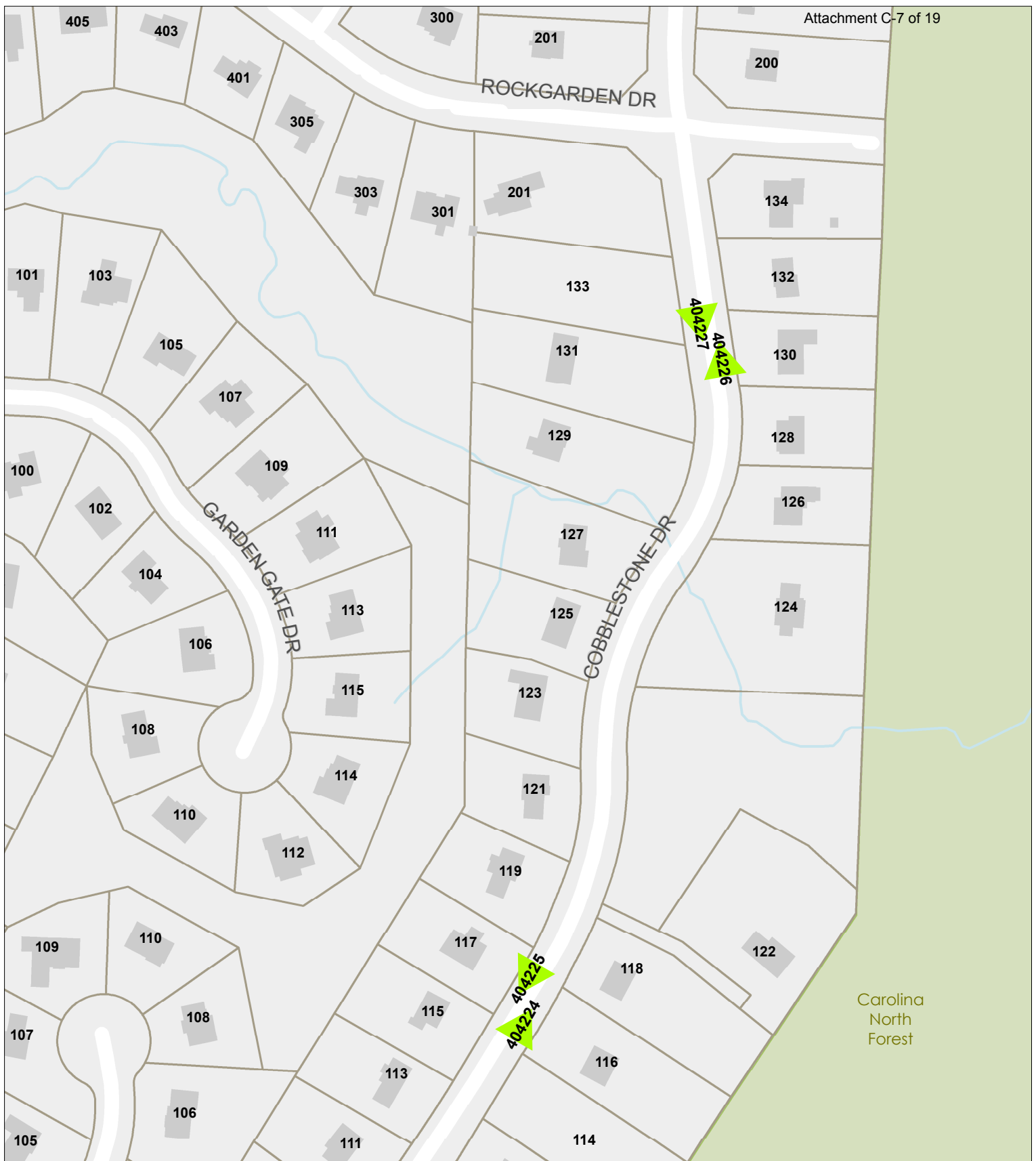
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**TOWN OF CARRBORO**  
301 W. Main St.  
Carrboro, NC 27510  
Printed Feb. 15, 2018





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

Printed Nov 12, 2018

0 45 90 180  
Feet  
NC State Plane Coordinate System (NAD83)

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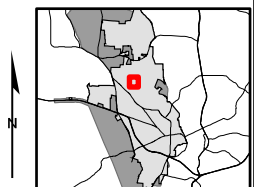
## Cobblestone Traffic Calming Request - Count Locations

**Collection Start:**

**Wednesday, 11/14/2018, 8:00 AM**

**Collection End:**

**Sunday, 11/18/2018, 8:00 AM**



<b>Location</b>	<b>Total Points</b>	<b>Volume/Speed Points</b>	<b>Eligible Stage</b>
116 Cobblestone	30	26	Stage 1 and 2
130 Cobblestone	29	26	Stage 1 and 2



116-117 Cobblestone Drive  
Traffic Calming Criteria

Attachment C-9 of 19

Criteria	Application	Collected Data	Points	Notes
<i>Traffic Volume</i>	Criteria - 5 points for every 20% of volume that exceeds the expected number of vehicles per day (vpd) on the street, based on the function of the street (75 vpd for minor streets, 200 vpd for local streets, and 800 vpd for subcollector and collector streets).	554	0	Cobblestone Drive is classified as a subcollector
<i>85th Percentile Speed</i>	Criteria - 2 points for every mph that the 85th percentile speed exceeds the posted speed limit.	37.86 MPH (NB)	26	Data from HDM counter
<i>Pedestrian Volume</i>	Criteria - 1 point for every 10 pedestrians if the street has a sidewalk, 5 points per 10 pedestrians if no sidewalk. Counts are made in either the peak traffic hour or the hour when students are traveling to or from school.	32	3	Street has sidewalk
<i>Bicycle Volume</i>	Criteria - 1 point for every 10 cyclists if the street has bike lanes, 3 points per 10 cyclists if no bike lanes. Counts are made in either the peak traffic hour or the hour when students are traveling to or from school.	6	0	Street does not have bike lane
<i>Bus Stops</i>	Criteria - 1 point for each transit stop and 2 points for each school bus stop on the street.	0	0	No transit or school bus stops
<i>Proximity to Pedestrian Generator (Retail and Parks)</i>	Criteria - 5 points if within .2 miles, 3 points if within .4 miles, 1 point if within .6 miles.	0.6	1	Based on network distance
<i>Speed and Volume Points</i>				26
<b>Total Points</b>				30
<b>Eligible Traffic Calming Stages</b>				Stage 1 and 2

130-133 Cobblestone Drive  
Traffic Calming Criteria

Attachment C-10 of 19

Criteria	Application	Collected Data	Points	Notes
<i>Traffic Volume</i>	Criteria - 5 points for every 20% of volume that exceeds the expected number of vehicles per day (vpd) on the street, based on the function of the street (75 vpd for minor streets, 200 vpd for local streets, and 800 vpd for subcollector and collector streets).	558	0	Cobblestone Drive is classified as a subcollector
<i>85th Percentile Speed</i>	Criteria - 2 points for every mph that the 85th percentile speed exceeds the posted speed limit.	37.67 MPH (NB)	26	Data from HDM counter
<i>Pedestrian Volume</i>	Criteria - 1 point for every 10 pedestrians if the street has a sidewalk, 5 points per 10 pedestrians if no sidewalk. Counts are made in either the peak traffic hour or the hour when students are traveling to or from school.	32	3	Street has sidewalk
<i>Bicycle Volume</i>	Criteria - 1 point for every 10 cyclists if the street has bike lanes, 3 points per 10 cyclists if no bike lanes. Counts are made in either the peak traffic hour or the hour when students are traveling to or from school.	6	0	Street does not have bike lane
<i>Bus Stops</i>	Criteria - 1 point for each transit stop and 2 points for each school bus stop on the street.	0	0	No transit or school bus stops
<i>Proximity to Pedestrian Generator (Retail and Parks)</i>	Criteria - 5 points if within .2 miles, 3 points if within .4 miles, 1 point if within .6 miles.	0	0	Based on network distance
<i>Speed and Volume Points</i>				26
<b>Total Points</b>				29
<b>Eligible Traffic Calming Stages</b>				Stage 1 and 2

**Speed and Volume Calculations - Cobblestone Drive Traffic Calming Evaluation**

November 14-17, 2018

Cobblestone Drive classified as subcollector/collector for this analysis. Serves approximately 70 properties total.

Location	ADT			Expected VPD	% Diff	Points	85th Percentile (calc)		85th Percentile (HDM)		Speed Limit	Difference (calc)		Difference (HDM)		Points (calc)		Points (HDM)	
	NB	SB	Total				NB	SB	NB	SB		NB	SB	NB	SB	NB	SB	NB	SB
116 Cobblestone	247	290	537	800	-33%	0	36	34	37.86	34.57	25	11	9	12.86	9.57	22	18	26	20
130 Cobblestone	213	306	519	800	-35%	0	36	31	37.67	32.91	25	11	6	12.67	7.91	22	12	26	16

Date: November 15, 2018

Cobblestone Drive

7:00 am to 9:00 am AND 2:30 pm to 4:30 pm

AM Weather: 34 and Clear

PM Weather: 54 and Clear

Location: Cobblestone Drive just North of Pathway Drive

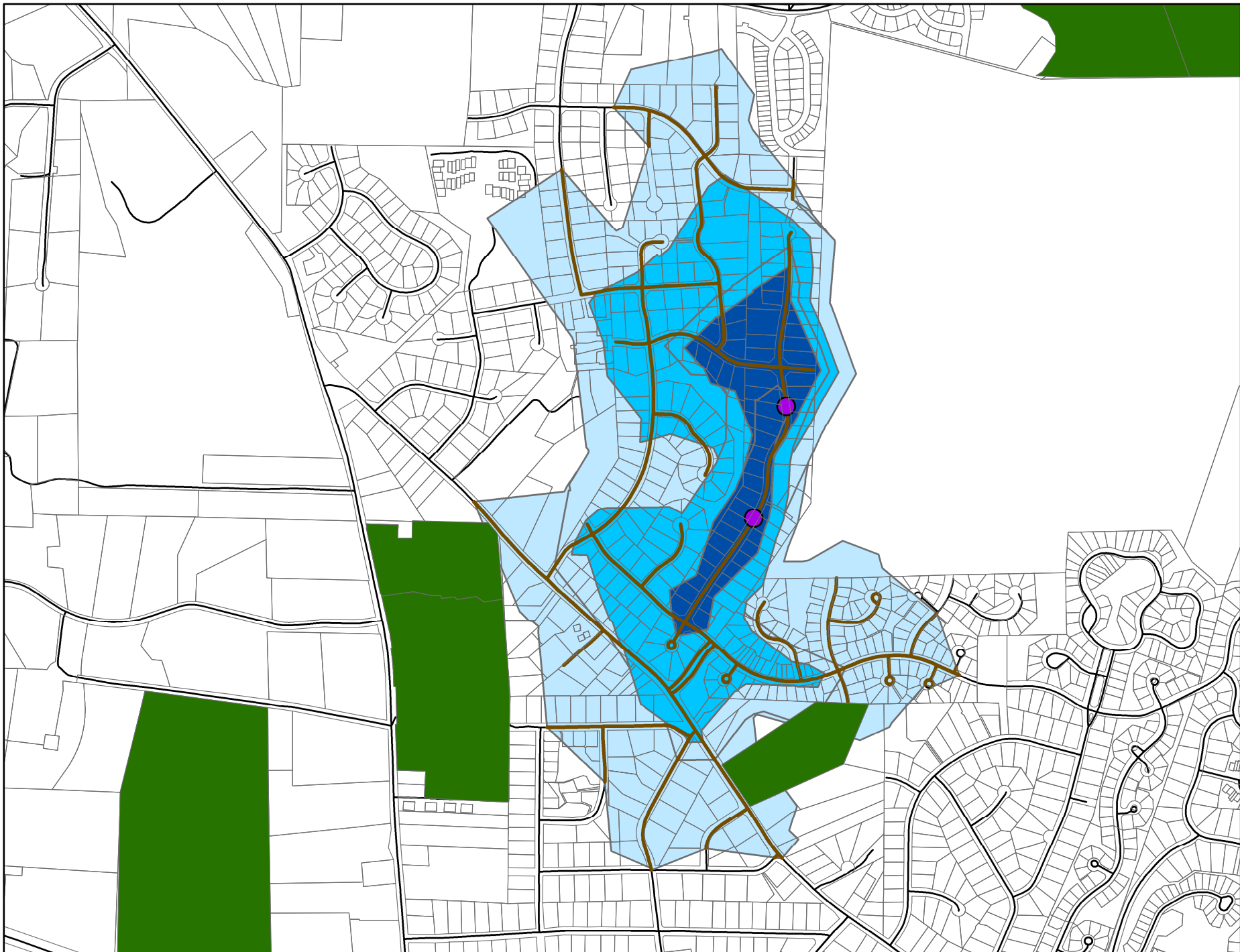
Counter: Zach Hallock

15-min Period	Bikes	Ped	Bike 1-Hr	Ped 1-Hr
7:00 AM	0	2		
7:15 AM	0	2		
7:30 AM	1	3		
7:45 AM	0	2	1	9
8:00 AM	0	4	1	11
8:15 AM	0	2	1	11
8:30 AM	2	2	2	10
8:45 AM	1	1	3	9
2:30 PM	5	11		
2:45 PM	0	12		
3:00 PM	0	4		
3:15 PM	1	5	6	32
3:30 PM	1	6	2	27
3:45 PM	2	5	4	20
4:00 PM	0	3	4	19
4:15 PM	0	1	3	15
<b>AM Total</b>	4	18		
<b>PM Total</b>	9	47		
<b>Peak Hour</b>	6	32		

# Cobblestone Drive Traffic Calming Request: Pedestrian generator network analysis map: Parks

Attachment C-13 of 19

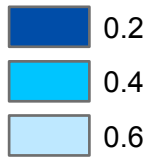
## Legend



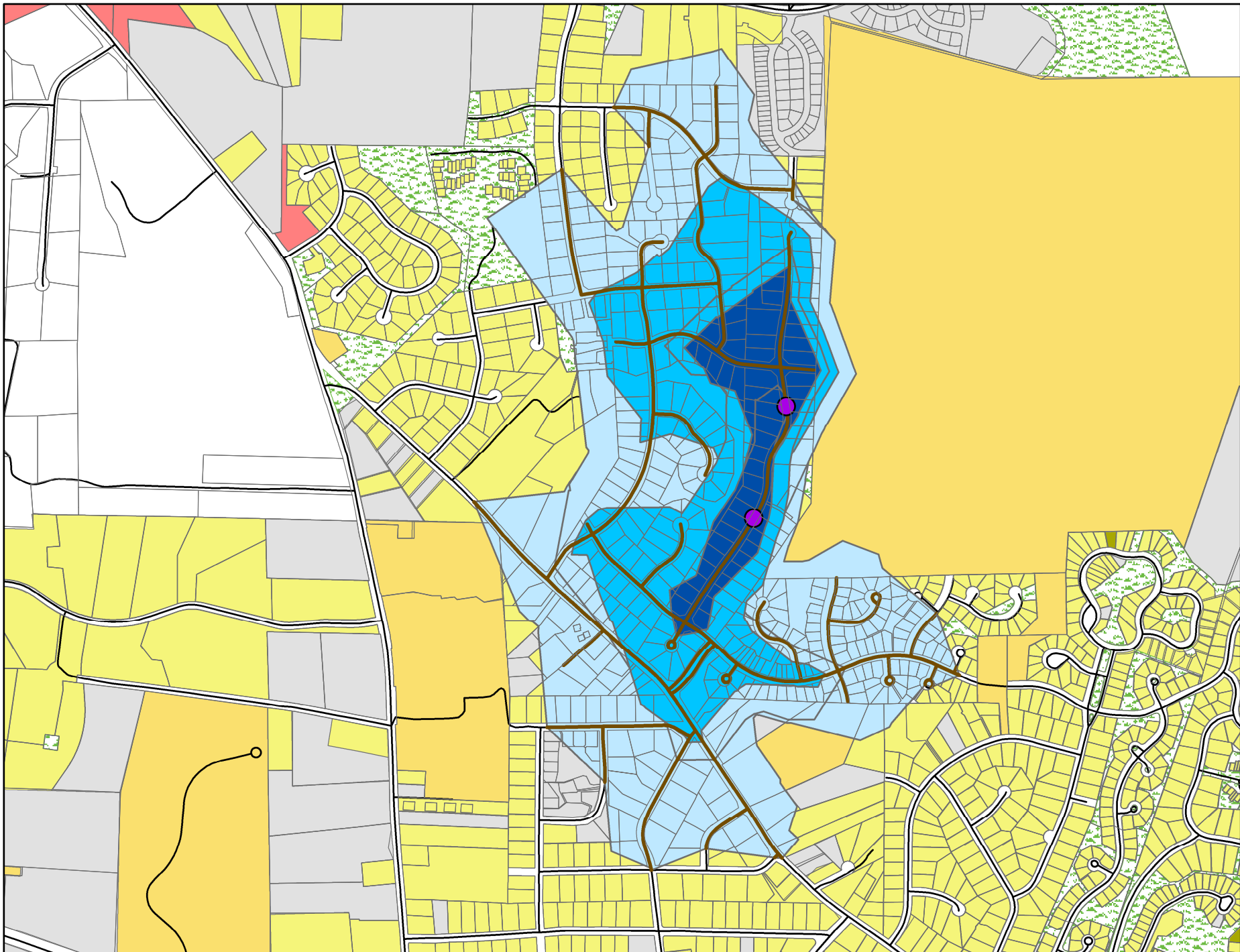
# Cobblestone Drive Traffic Calming Request: Pedestrian generator network analysis map: Retail

Attachment C-14 of 19

## Legend



## Land Use



**User Information:**

Attachment C-15 of 19

Address: 116 COBBLESTONE DRIVE  
Grade: 01  
Program:

[Edit User Information](#)**Select a School:**

School Name	Sch Distance Walk	Sch Distance Drive	Eligibility Description	Grades
<a href="#">MCDOUGLE ELEM</a>	0.56 mi.	0.56 mi.	Eligible because of hazard	01
<a href="#">CARRBORO ELEM</a>	1.77 mi.	2.15 mi.	Eligible	01
<a href="#">SEAWELL ELEM</a>	2.94 mi.	3.21 mi.	Eligible	01
<a href="#">NORTHSIDE ELEMENTARY SCH</a>	3.32 mi.	3.32 mi.	Eligible	01
<a href="#">GLENWOOD ELEM</a>	14.03 mi.	5.29 mi.	Eligible	01

**Stop List : CARRBORO ELEM**

Number	Stop Time	Stop Description	Distance To Stop	Bus Number	Route Number	School Bell Time	Frequency
1	07:14 AM	BARINGTON HILLS RD & BRUTON DR	0.81 mi.	111	111	07:50 AM	MTWUF--
2	07:20 AM	HILLSBOROUGH RD & SIMPSON ST	0.83 mi.	111	111	07:50 AM	MTWUF--
3	02:51 PM	PATHWAY DR & HANFORD RD	0.54 mi.	111	111	02:30 PM	MTWUF--
4	02:59 PM	STRATFORD DR & AUTUMN DR	0.58 mi.	111	111	02:30 PM	MTWUF--

[View the Map](#)



**User Information:**

Attachment C-16 of 19

Address: 116 COBBLESTONE DRIVE  
Grade: 10  
Program:

[Edit User Information](#)**Select a School:**

School Name	Sch Distance Walk	Sch Distance Drive	Eligibility Description	Grades
<a href="#">CARRBORO HIGH SCHOOL</a>	N/A	3.94 mi.	Eligible	10
<a href="#">CHAPEL HILL HS</a>	2.24 mi.	2.51 mi.	Eligible	10

**Stop List : CARRBORO HIGH SCHOOL**

Number	Stop Time	Stop Description	Distance To Stop	Bus Number	Route Number	School Bell Time	Frequency
1	07:51 AM	106 ABERDEEN CT	0.89 mi.	E60	E60	08:45 AM	MTWUF--
2	07:56 AM	OLD FAYETTEVILLE RD (PINEGROVE MHP)	1.16 mi.	E60	E60	08:45 AM	MTWUF--
3	04:18 PM	106 ABERDEEN CT	0.89 mi.	E80	E80	03:55 PM	MTWUF--
4	04:21 PM	OLD FAYETTEVILLE RD (PINEGROVE MHP)	1.16 mi.	E80	E80	03:55 PM	MTWUF--

[View the Map](#)



**User Information:**

Attachment C-17 of 19

Address: **116 COBBLESTONE DRIVE**  
Grade: **10**  
Program:

[Edit User Information](#)**Select a School:**

School Name	Sch Distance Walk	Sch Distance Drive	Eligibility Description	Grades
<a href="#">CARRBORO HIGH SCHOOL</a>	N/A	3.94 mi.	Eligible	10
<a href="#">CHAPEL HILL HS</a>	2.24 mi.	2.51 mi.	Eligible	10

**Stop List : CHAPEL HILL HS**

Number	Stop Time	Stop Description	Distance To Stop	Bus Number	Route Number	School Bell Time	Frequency
1	08:16 AM	PATHWAY DR & COBBLESTONE DR	0.19 mi.	44	44	08:45 AM	MTWUF--
2	08:15 AM	PATHWAY DR & WRENN PL	0.28 mi.	44	44	08:45 AM	MTWUF--
3	04:13 PM	PATHWAY DR & COBBLESTONE DR	0.19 mi.	247	247	03:55 PM	MTWUF--
4	04:13 PM	PATHWAY DR & WRENN PL	0.28 mi.	247	247	03:55 PM	MTWUF--

[View the Map](#)

**User Information:**

Attachment C-18 of 19

Address: 116 COBBLESTONE DRIVE  
Grade: 01  
Program:

[Edit User Information](#)**Select a School:**

School Name	Sch Distance Walk	Sch Distance Drive	Eligibility Description	Grades
<a href="#">MCDOUGLE ELEM</a>	0.56 mi.	0.56 mi.	Eligible because of hazard	01
<a href="#">CARRBORO ELEM</a>	1.77 mi.	2.15 mi.	Eligible	01
<a href="#">SEAWELL ELEM</a>	2.94 mi.	3.21 mi.	Eligible	01
<a href="#">NORTHSIDE ELEMENTARY SCH</a>	3.32 mi.	3.32 mi.	Eligible	01
<a href="#">GLENWOOD ELEM</a>	14.03 mi.	5.29 mi.	Eligible	01

**Stop List : MCDOUGLE ELEM**

Number	Stop Time	Stop Description	Distance To Stop	Bus Number	Route Number	School Bell Time	Frequency
1	07:19 AM	W MAIN ST @ BERKSHIRE MANOR	1.04 mi.	76	76	07:50 AM	MTWUF--
2	07:20 AM	611 HILLSBOROUGH RD	1.05 mi.	E15	E15	07:50 AM	MTWUF--
3	02:43 PM	W MAIN ST @ BERKSHIRE MANOR	1.04 mi.	76	76	02:30 PM	MTWUF--
4	02:43 PM	611 HILLSBOROUGH RD	1.05 mi.	E15	E15	02:30 PM	MTWUF--

[View the Map](#)

**User Information:**

Address: 116 COBBLESTONE DRIVE

Grade: 06

Program:

[Edit User Information](#)**Select a School:**

School Name	Sch Distance Walk	Sch Distance Drive	Eligibility Description	Grades
MCDUGLE MIDDLE	1.34 mi.	1.34 mi.	Within walk distance of school	06
<a href="#">SMITH MS</a>	2.74 mi.	3.01 mi.	Eligible	06

**Stop List : SMITH MS**

Number	Stop Time	Stop Description	Distance To Stop	Bus Number	Route Number	School Bell Time	Frequency
1	07:50 AM	CATES FARM RD & PATHWAY DR	0.37 mi.	19	19	08:20 AM	MTWUF--
2	07:51 AM	CATES FARM RD & AUTUMN DR	0.49 mi.	19	19	08:20 AM	MTWUF--
3	03:40 PM	CATES FARM RD & PATHWAY DR	0.37 mi.	254	254	03:10 PM	MTWUF--
4	03:32 PM	CATES FARM RD & AUTUMN DR	0.49 mi.	22	22	03:10 PM	MTWUF--

[View the Map](#)