

Homestead Road Transportation Overview

1. Background

2. Existing Transportation Conditions

- Roadway volumes

- Bike/Ped infrastructure

- Bus Routes and Ridership

- Crash Data

3. Proposed/Current Developments

- Transportation Improvements

- Roadway Capacity

- Key Takeaways

Background

- Interest from the community about traffic impacts of new development along Homestead Road
- Interest from the Transportation and Connectivity Advisory Board on Transportation Impact Analysis (TIA) data after Active Adult Housing Special Use Permit
- Petition to Council from resident related to traffic and transportation improvements planned for the corridor

2. Existing Transportation Conditions

Roadway volumes

Bike/Ped infrastructure

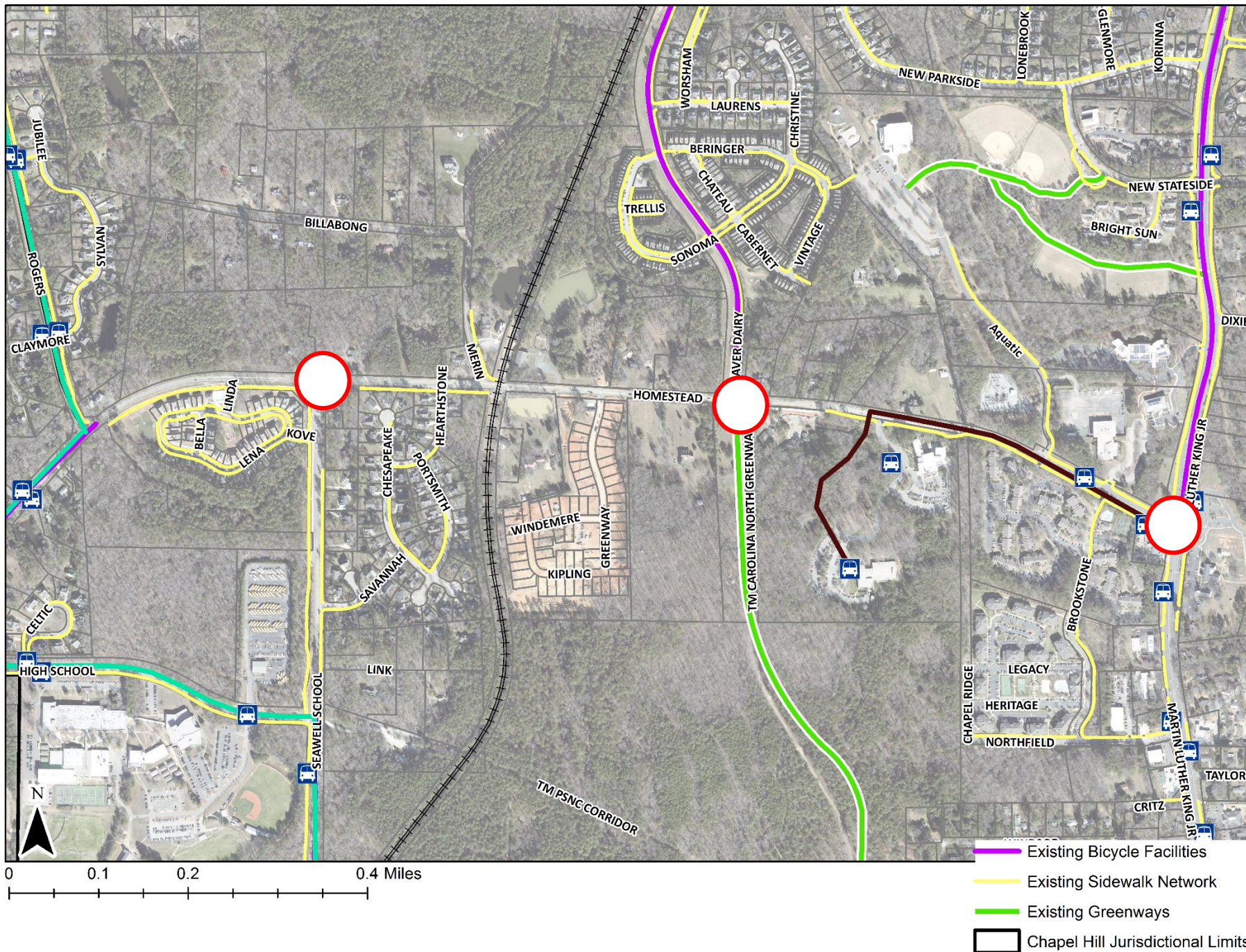
Bus routes and ridership

Crash data

Existing transportation facilities

- 2 lane road
- Turn lanes
- Some sidewalk
- Some bus service

○ Traffic signal





What is Level of Service (LOS)?



Level of Service is a quantitative measure of traffic operational conditions. Ranges of operation are defined for each type of roadway section (signalized intersections, freeways, ramp junctions and weaving sections) and are related to the amount of traffic demand at a given time as compared to the capacity of that type of roadway section.

Six levels of service are defined for each type of roadway section and are given letter designations from A to F, with A representing good operating conditions and F representing unsatisfactory operating conditions.

Intersection

- Highly stable, free-flow condition with little or no congestion
- Delay: <10 seconds/vehicle



- Stable, free-flow condition with little congestion
- Delay: 10 to 20 seconds/vehicle



- Free-flow condition with moderate congestion
- Delay: 20 to 35 seconds/vehicle



- Approaching unstable condition with increasing congestion
- Delay: 35 to 55 seconds/vehicle



- Unstable, congested condition
- Delay: 55 to 80 seconds/vehicle



- Stop and go
- Delay: >80 seconds/vehicle



Roadway

LOS A



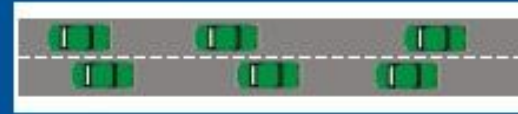
- Free flowing
- Uninterrupted vehicle

LOS B



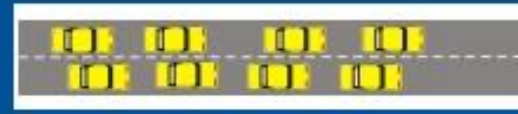
- Stable flow
- Other vehicles are more noticeable

LOS C



- Stable flow
- Vehicle operations affected by other vehicles

LOS D



- High density free flow
- Operation of vehicle is affected by other vehicles

LOS E



- High density traffic flow, nearing capacity
- Operating conditions are extremely poor

LOS F



- Forced or breakdown flow
- Amount of traffic exceeds capacity

Roadway Traffic Conditions

Annual Average Daily Traffic
(cars on the road) for 2017
[Link to all AADT](#)

Note: many AADT station counts
have decreased in the last 10
years despite population growth

Intersection Level of Service
Source: Active Adult Housing
Development TIA Analysis 2017

AM	Noon	PM
B	A	A

AM	Noon	PM
A	A	B

AM	Noon	PM
C	C	C

2007: 3,800
2017: 3,100

2007: 3,500
2017: 3,300

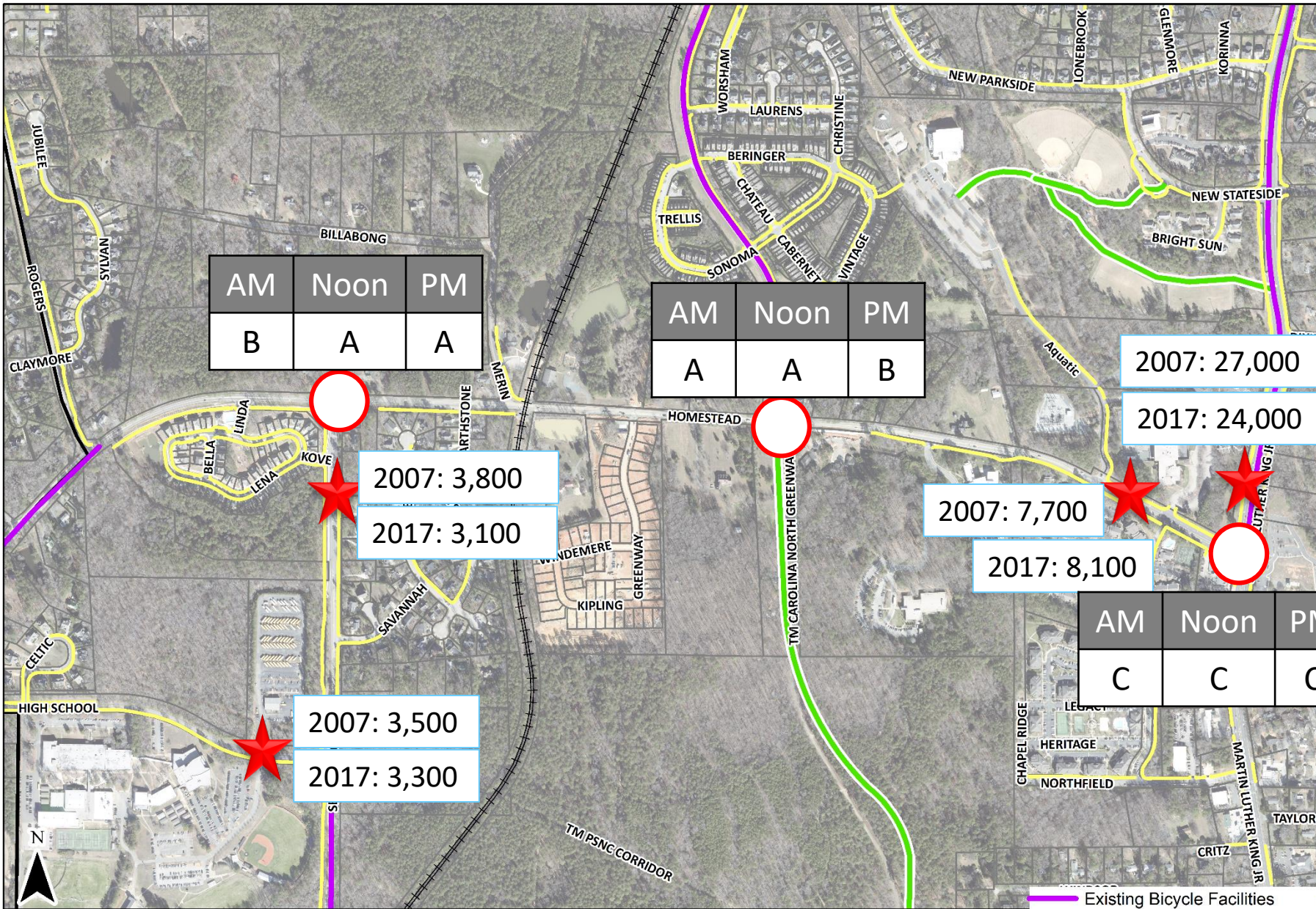
2007: 27,000

2017: 24,000

2007: 7,700

2017: 8,100

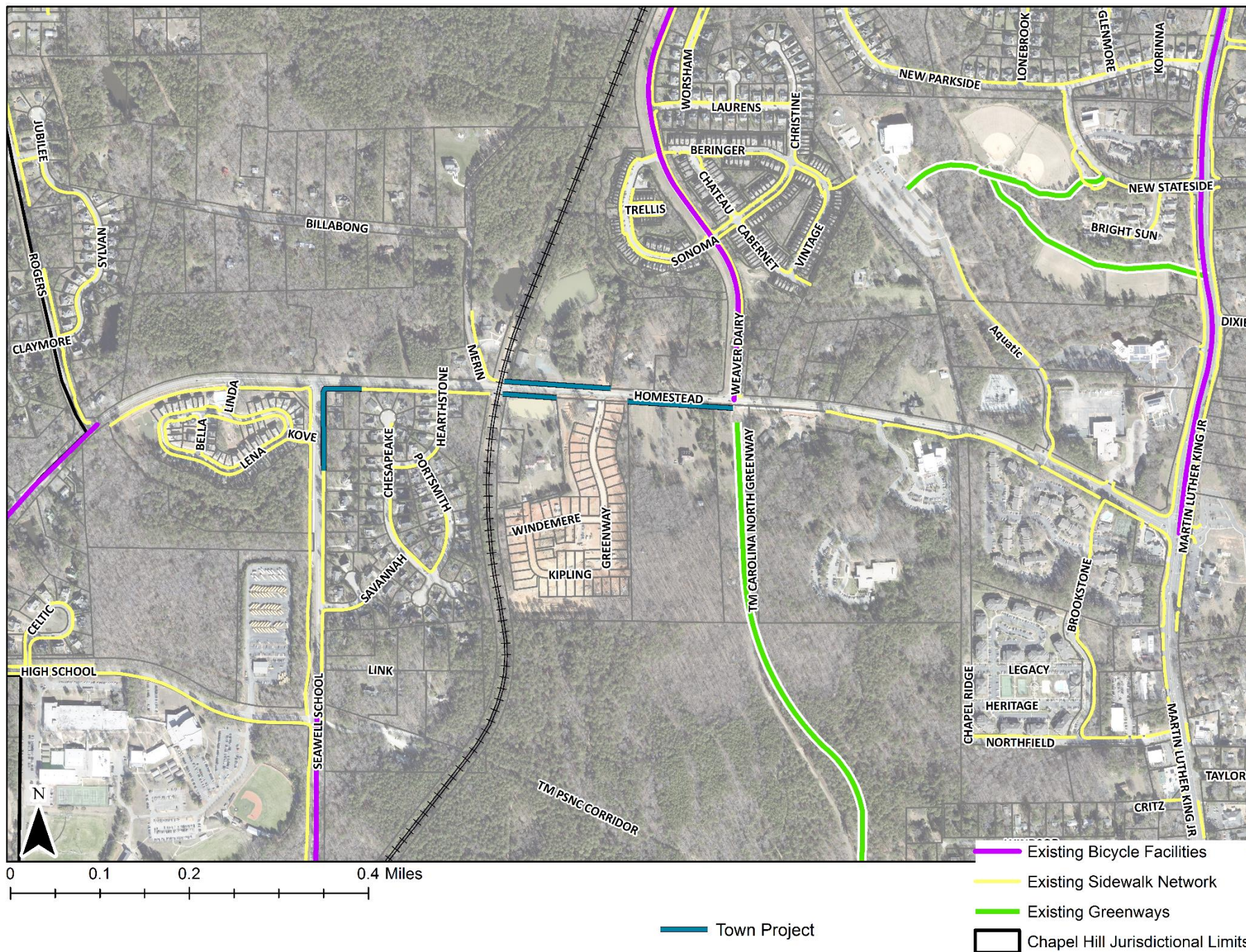
- Existing Bicycle Facilities
- Existing Sidewalk Network
- Existing Greenways
- Chapel Hill Jurisdictional Limits



Bicycle and Pedestrian Facilities

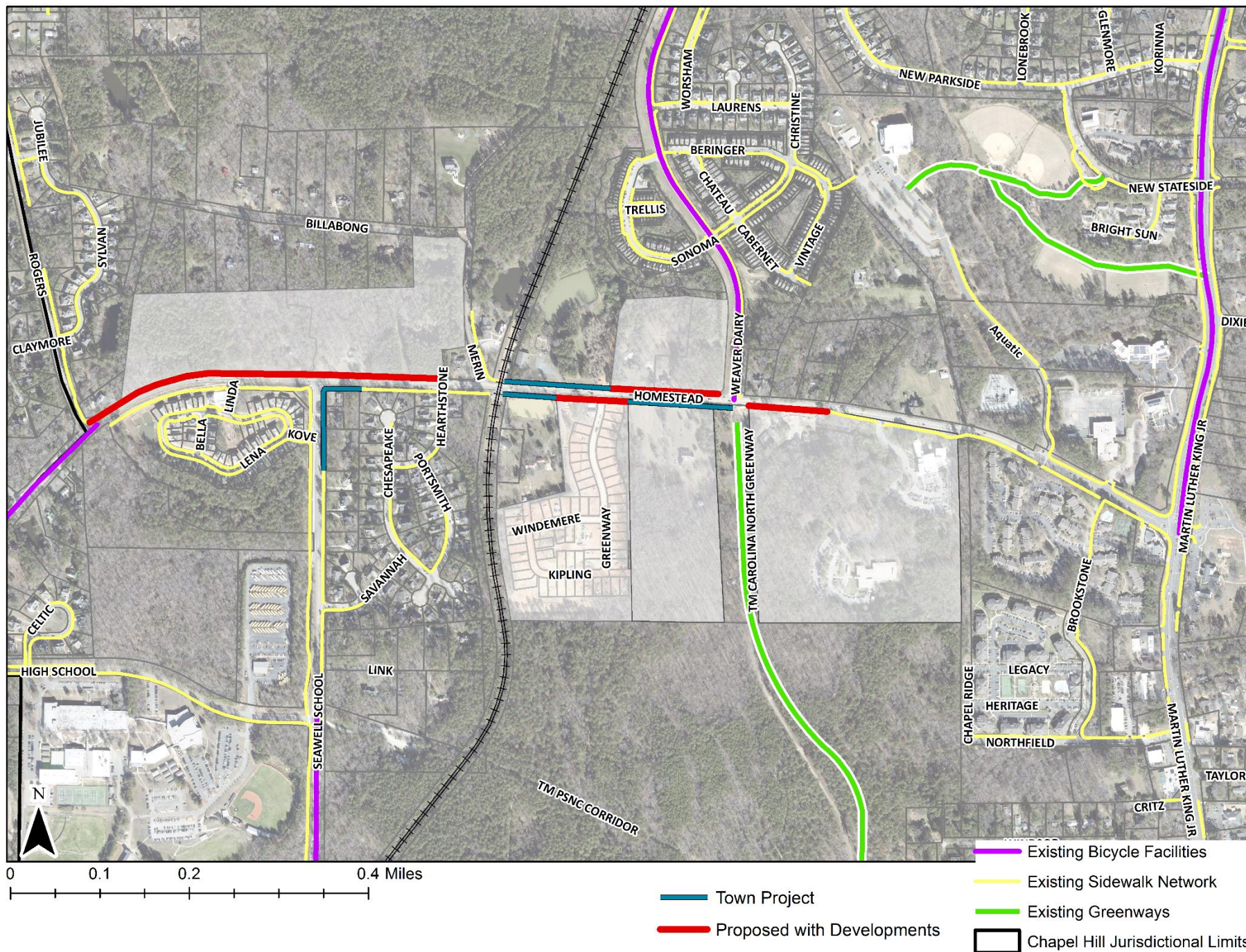
Town Capital Projects:

- 10' multi-use paths and bike lanes along Homestead Rd
- 5' sidewalk gap along Seawell School Rd



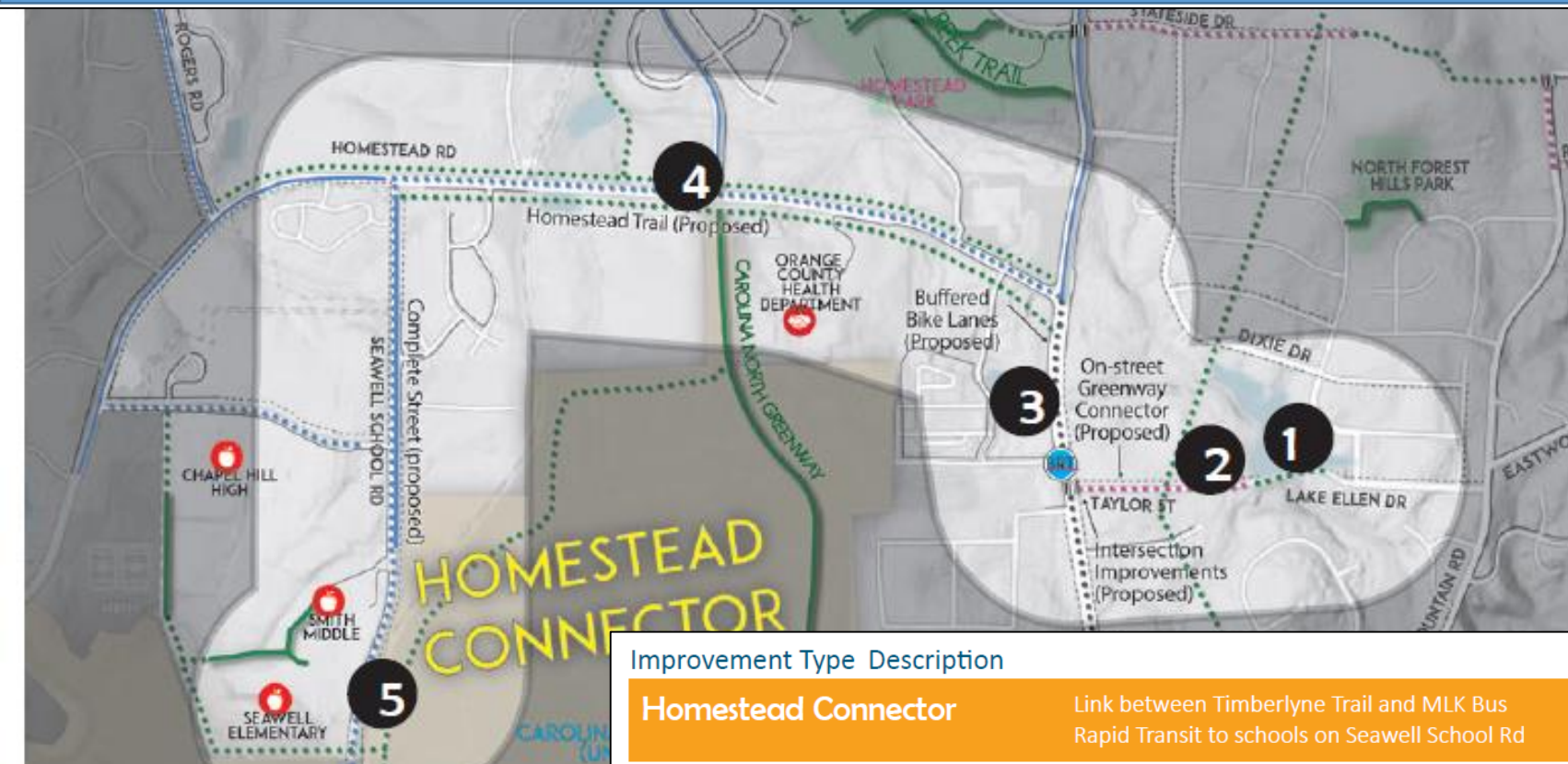
Bicycle and Pedestrian Facilities

Town Project and segments built by developments



Mobility and Connectivity Plan

Mobility Plan recommends multi-use path and bike lanes along Homestead Rd



Improvement Type Description

Homestead Connector

Link between Timberlyne Trail and MLK Bus Rapid Transit to schools on Seawell School Rd

Total Length

2.78 miles

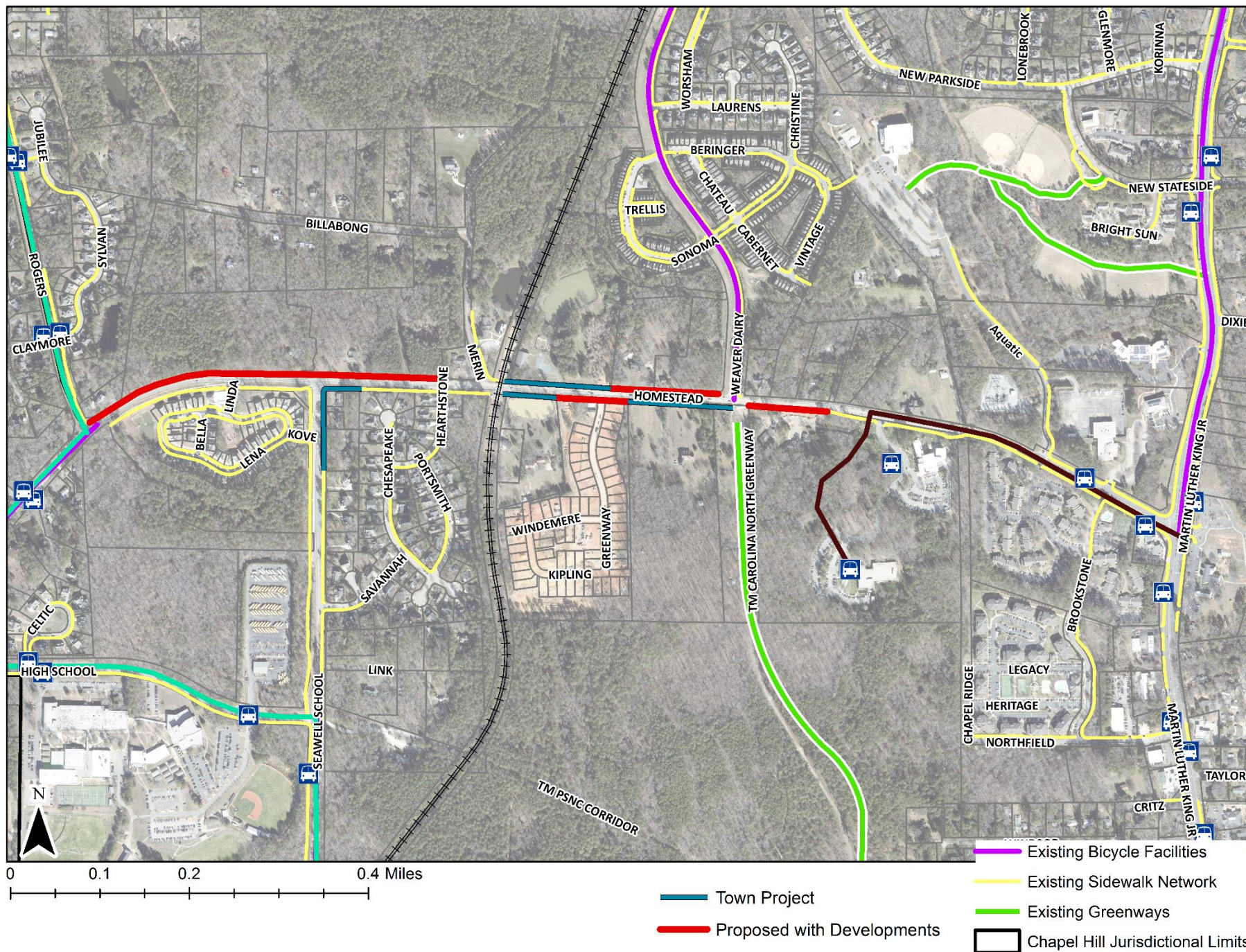
11% Complete

1	Multi-Use Path	Greenway connecting Lake Ellen Dr and Taylor St	0.08 mile
2	On-Street Greenway Connector	Bicycle marking, wayfinding, and sidewalk on Taylor St between Lake Ellen Dr and Martin Luther King Jr Blvd	0.26 mile
3	Buffered Bike Lanes and Sidewalk Gap	Buffered bike lanes on Martin Luther King, Jr. Blvd between Taylor St and Homestead Rd. Sidewalk gap between Taylor St and Homestead Rd (See Complete Street Project on Martin Luther King Jr Blvd)	0.27 mile
4	Homestead Trail	Multi-use path along Homestead Rd between MLK Jr Blvd and Seawell School Rd	1.37 miles
5	Bicycle Lanes and Sidewalk	Complete bike lanes and sidewalk on both sides of Seawell School Rd from Homestead Rd to Seawell Elem. School (Portions complete)	0.80 mile

	EXISTING	PROPOSED	
BICYCLE			Shared Lane Markings
			On-Street Greenway Connector
			Bicycle Lane
			Bicycle Climbing Lane
			Buffered Bicycle Lane
MULTI-USE			Protected Bike Lane/Cycle Track
			Park Path/Greenway (ADA Upgrade)
			Greenway/Multi-Use Path
			Unpaved Greenway
			Overpass
WALK			Underpass
			Crossing Improvement
			Sidewalk

Bus Routes and Ridership

Served by A route and HS route



Chapel Hill Transit Short Range Transit Plan

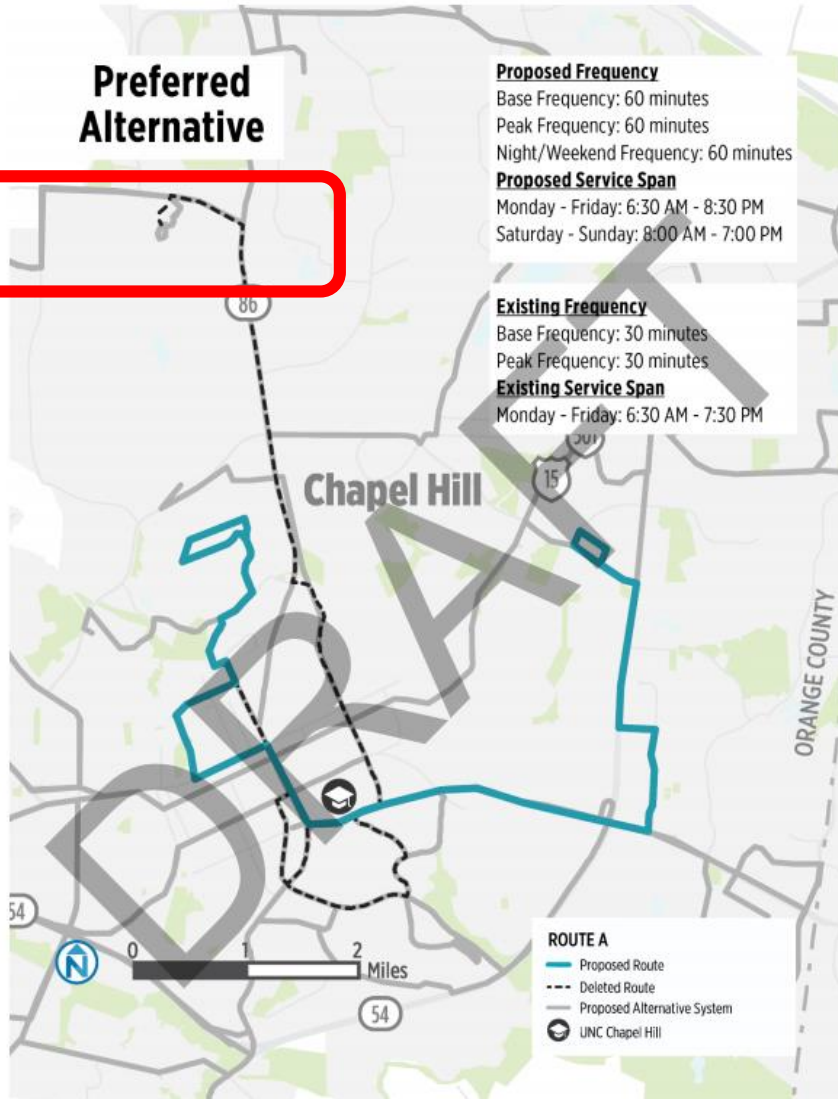
SHORT RANGE TRANSIT PLAN | PREFERRED ALTERNATIVE
Chapel Hill Transit

Route A

Preferred Alternative

Proposed Frequency
Base Frequency: 60 minutes
Peak Frequency: 60 minutes
Night/Weekend Frequency: 60 minutes
Proposed Service Span
Monday - Friday: 6:30 AM - 8:30 PM
Saturday - Sunday: 8:00 AM - 7:00 PM

Existing Frequency
Base Frequency: 30 minutes
Peak Frequency: 30 minutes
Existing Service Span
Monday - Friday: 6:30 AM - 7:30 PM



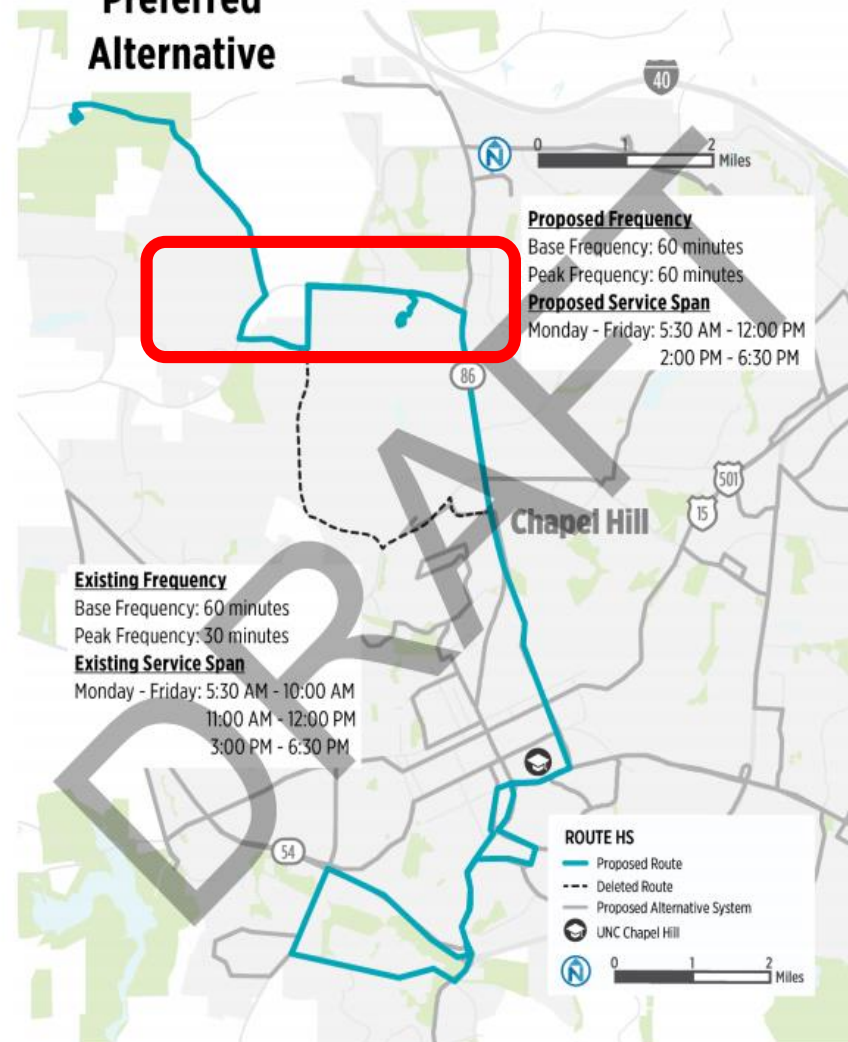
SHORT RANGE TRANSIT PLAN | PREFERRED ALTERNATIVE
Chapel Hill Transit

Route HS

Preferred Alternative

Proposed Frequency
Base Frequency: 60 minutes
Peak Frequency: 60 minutes
Proposed Service Span
Monday - Friday: 5:30 AM - 12:00 PM
2:00 PM - 6:30 PM

Existing Frequency
Base Frequency: 60 minutes
Peak Frequency: 30 minutes
Existing Service Span
Monday - Friday: 5:30 AM - 10:00 AM
11:00 AM - 12:00 PM
3:00 PM - 6:30 PM



Preferred Option recommends removing Route A service to Homestead

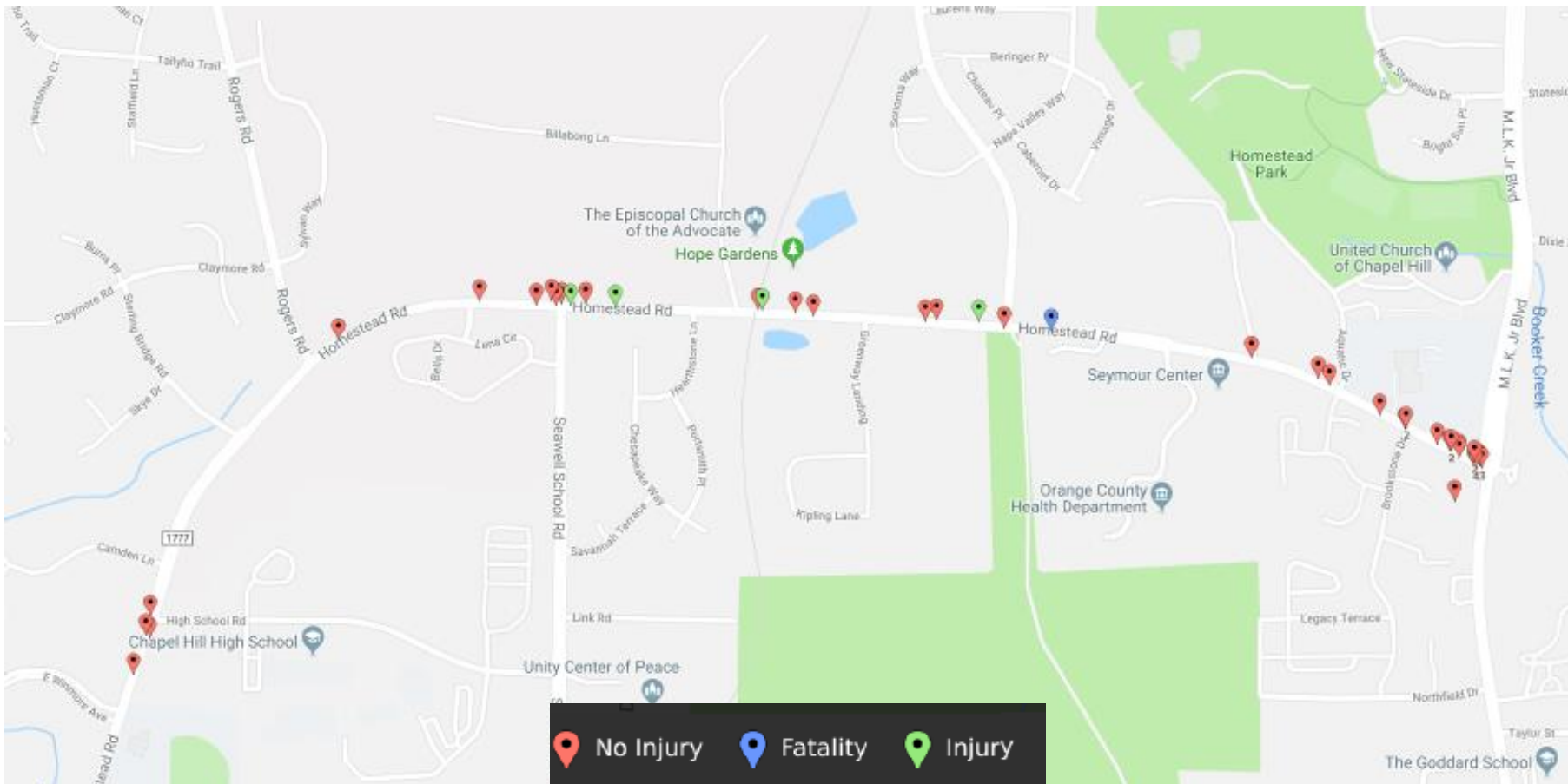
Expands service on Route HS

Reduces frequency from 30 min to 60 min

Crash Data 2015-2018

- Total of 43 crashes over 3 years
- 1 of these involved a pedestrian fatality in 2015. None of the other crashes involved bike/ped.

	Crashes	Injury	Fatal
2015	16	1	1
2016	9	2	0
2017	14	2	0
2018	4	0	0



3. Proposed/Current Developments

Transportation Improvements

Roadway Capacity

Homestead Road Project Map

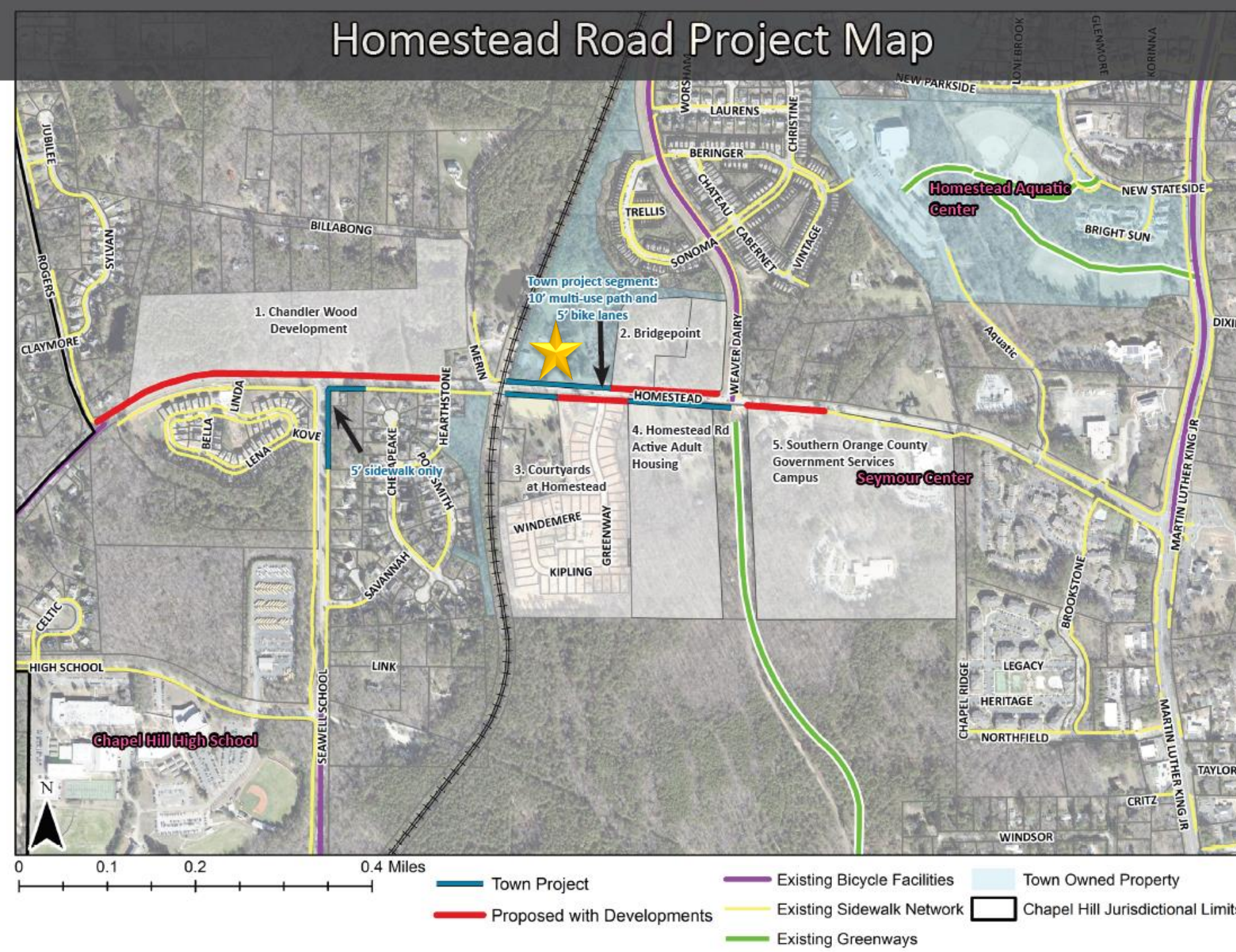
Development Activity

5 development plans

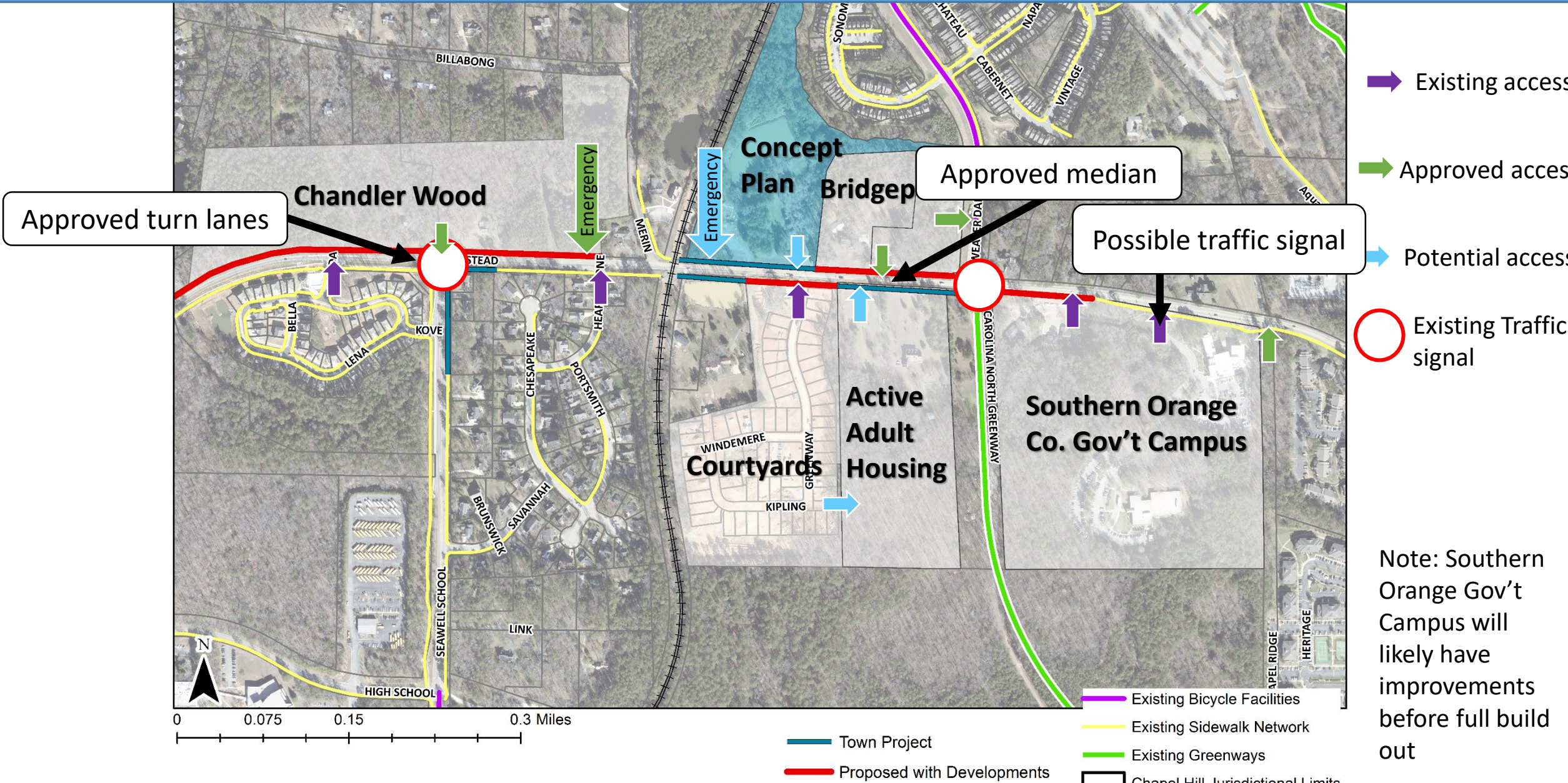
1 almost completed
(Courtyards at Homestead)

1 still in review (Homestead Rd Active Adult Housing)

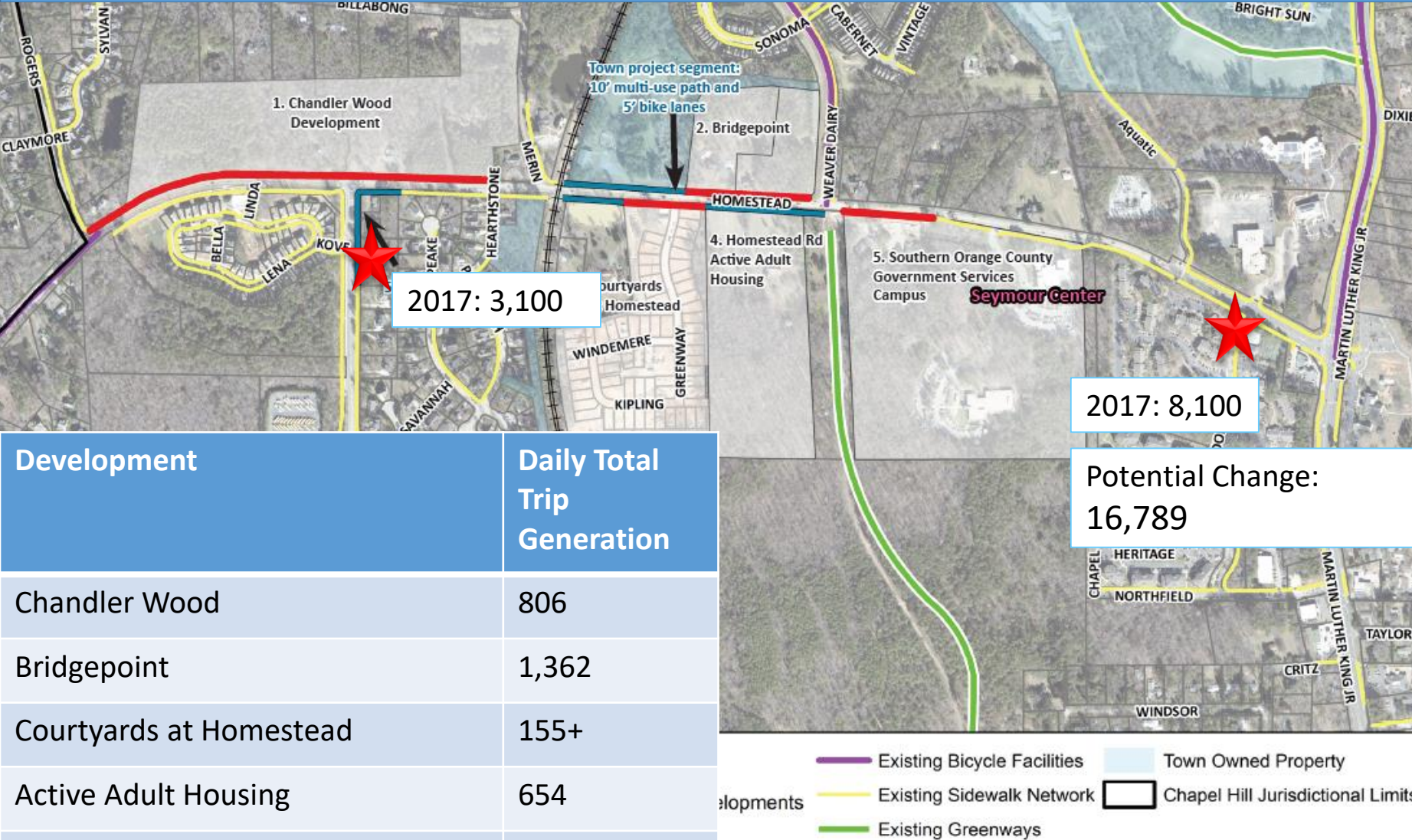
★ Concept Plan



Full picture of road improvements



Potential Cumulative Traffic Impact



Development	Daily Total Trip Generation
Chandler Wood	806
Bridgepoint	1,362
Courtyards at Homestead	155+
Active Adult Housing	654
Southern Orange Co. Gov't	5,712

Total 8,689

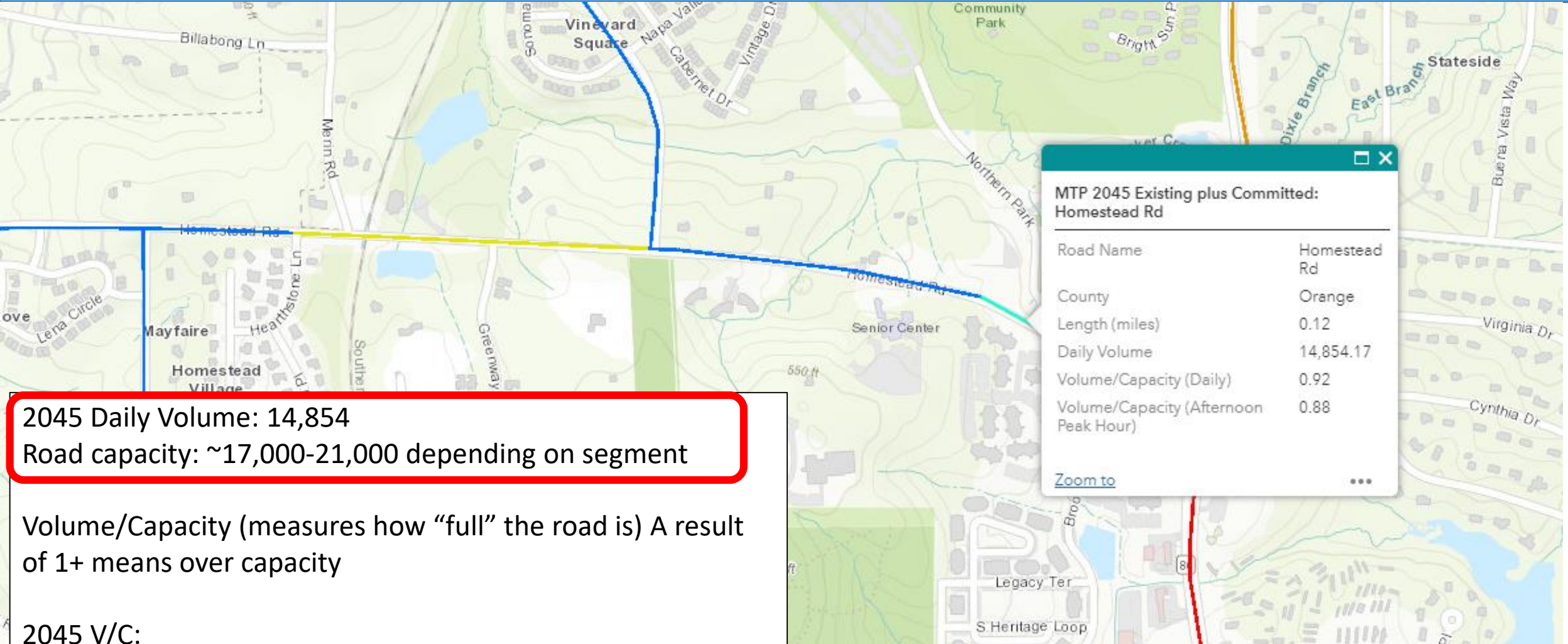
Assumptions

- Every development is built out
- Mode split stays the same (same % of people walk, bike, bus, drive around)
- Everyone drives towards MLK
- AADT does not decrease

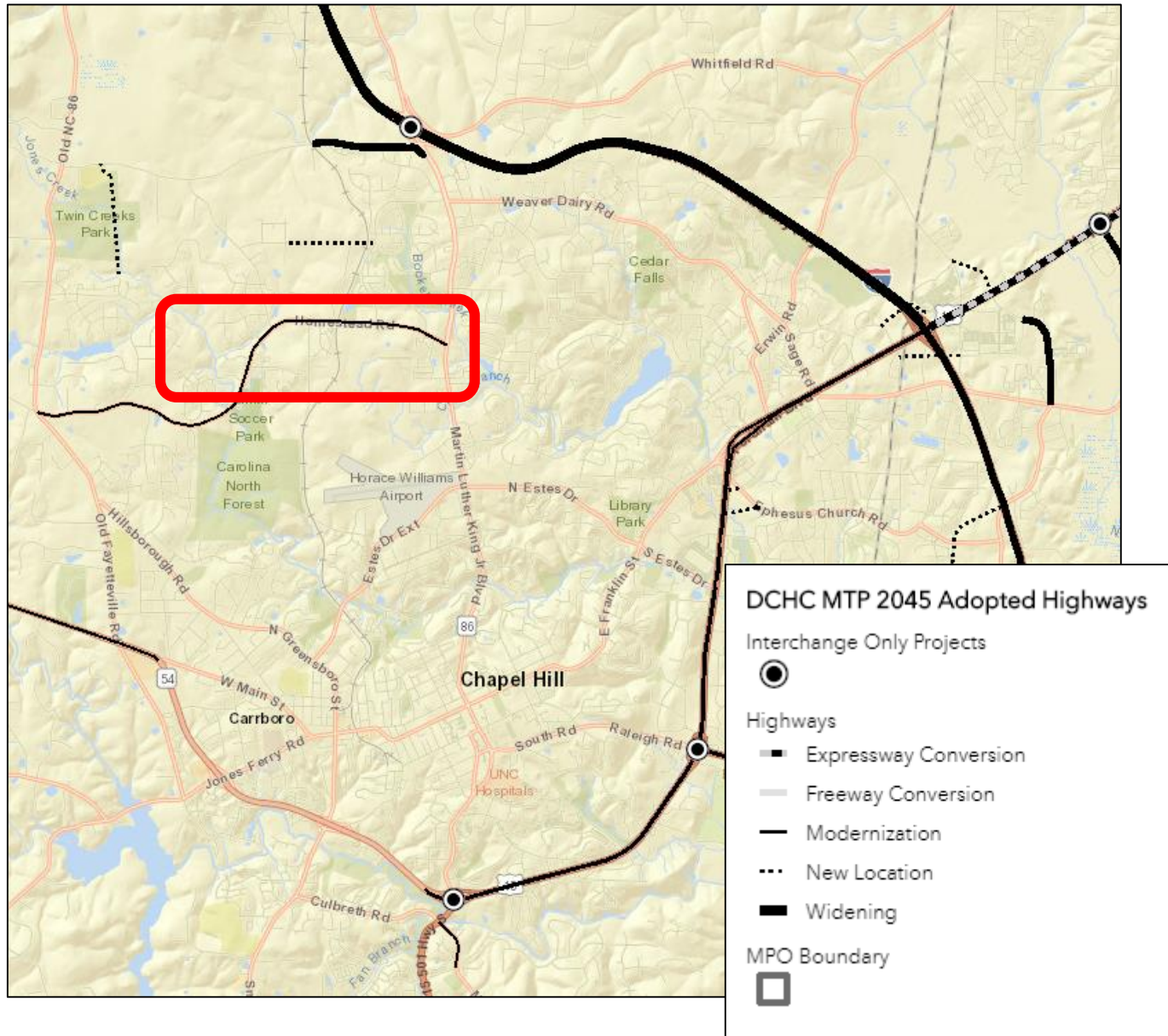
What we know

- AADT has decreased town-wide in the last 10 years
- There has been a 4% increase between 2011-2015 in bike/ped/transit mode shifts (Mobility Plan goal is 35% by 2025)

Roadway Capacity



2045 Metropolitan Transportation Plan



Homestead Road is identified for **roadway modernization** in the 2045 Metropolitan Transportation Plan

Modernization can mean:

- future intersection improvements
- turn lanes
- traffic control devices
- bicycle, pedestrian and transit facilities

Homestead Road is not planned for roadway widening by the Town, DCHC MPO, or NCDOT.

Key takeaways

- Roadway
 - Existing and Future Traffic Volumes can be accommodated with planned operational improvements (turn lanes, signal timing, sidewalk, bike lanes)
- Bike/Ped
 - Ongoing projects will help with mobility and safety issues
 - There are some gaps
- Transit
 - Service levels are changing but coverage is expanding
 - There could be future need for additional safe pedestrian crossings once transit stops are determined