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Chapel Hill Town Council
May 13, 2020

NORTH
SOUTH **BUS RAPID TRANSIT**



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Agenda

- Welcome and Introductions
- Project Schedule
- Traffic Engineering Update
- Next Steps

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PROJECT SCHEDULE



NEPA and 30% Design Schedule

- June 2020 – LPA finalized and ready for review.
- June 2020 – Request Revised NEPA Class of Action.
- Late-June 2020 – Draft 30% design plans handed over to NEPA Team.
- March 2021 – NEPA document published for review.

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TRAFFIC ENGINEERING

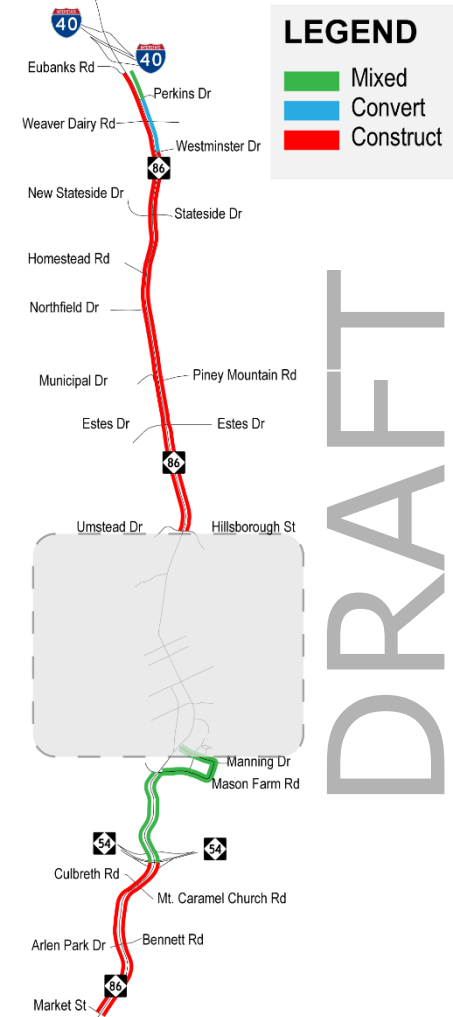
Traffic Engineering Sub-Agenda

- Recap of Past Discussions
- Updates Since Last Meeting
- Overview of Alternatives
- Analysis Results
- Recommendations
- Local or Through Trips?

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How did we get here?

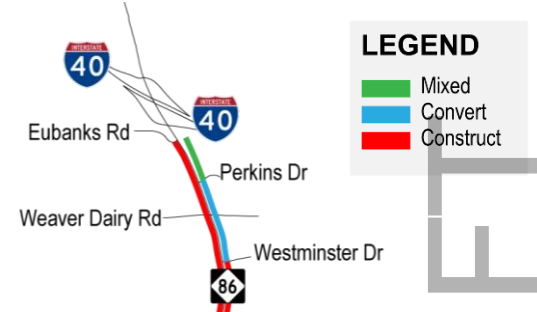
- Traffic analysis evaluated Construct vs. Convert alternatives using 2018, 2024, and 2030 traffic volumes
- Recommending Construct:
 - North of Umstead/Hillsborough
 - Traffic volumes not conducive to removing a lane
- Through downtown – Convert
- Additional analysis requested by Town Council
 - Scenario with lower assumed traffic volumes (mode shift)
 - Evaluate creative signal timing solutions





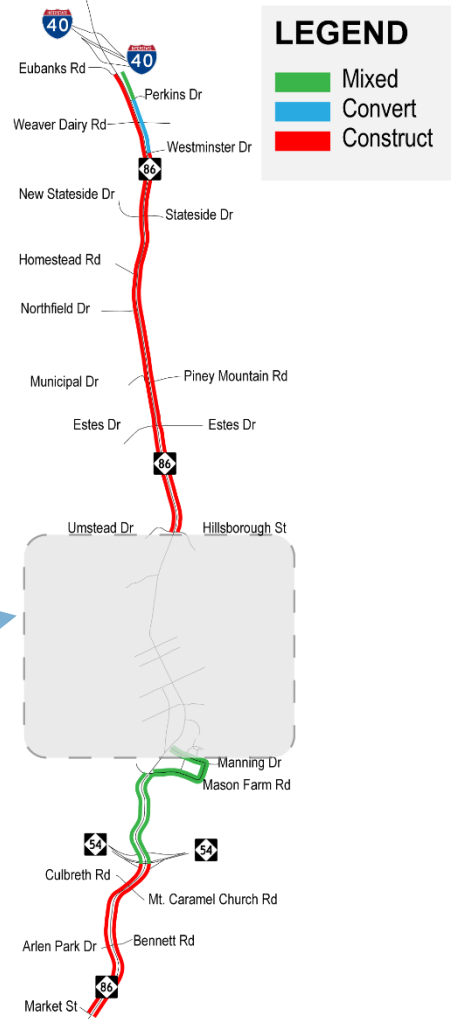
Updates since last time...

- Recommending a convert section along northbound MLK near Weaver Dairy
 - We don't need 3 car lanes there
 - Allows for uniformity in road cross section
- Incorporation of 5% reduction in vehicular volumes due to enhancement of bus service
 - Based on a review of other projects in Virginia and Florida
- Continued coordination between Town project team and NCDOT



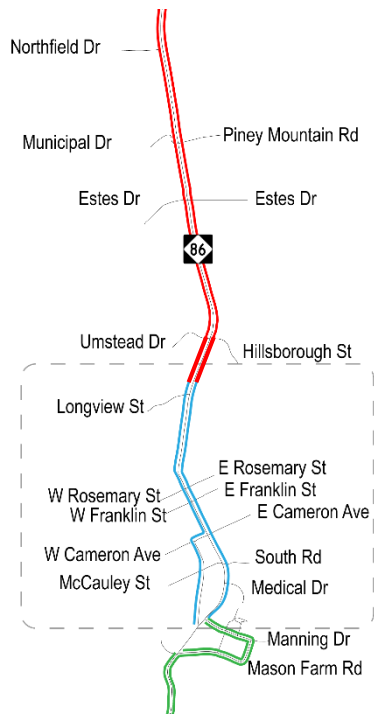
Three alternatives in downtown
evaluated:

- Full Convert
- Partial Convert
- Mixed Traffic

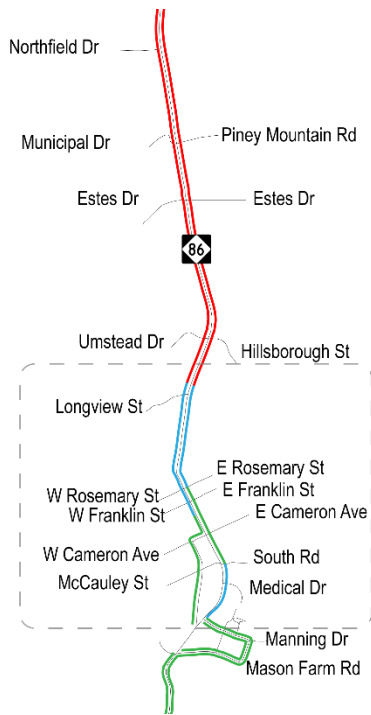


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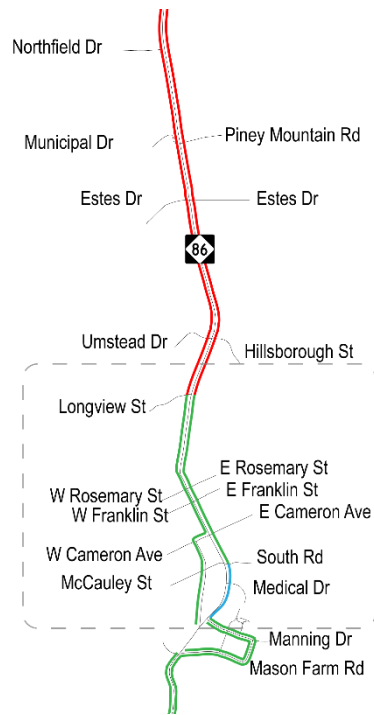
Full Convert



Partial Convert



Mixed Traffic



LEGEND

 Mixed

 Convert

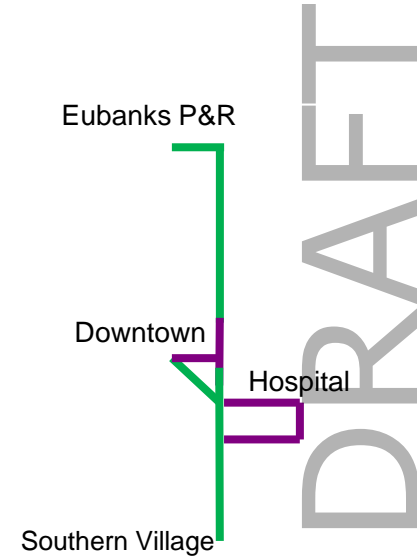
 Construct

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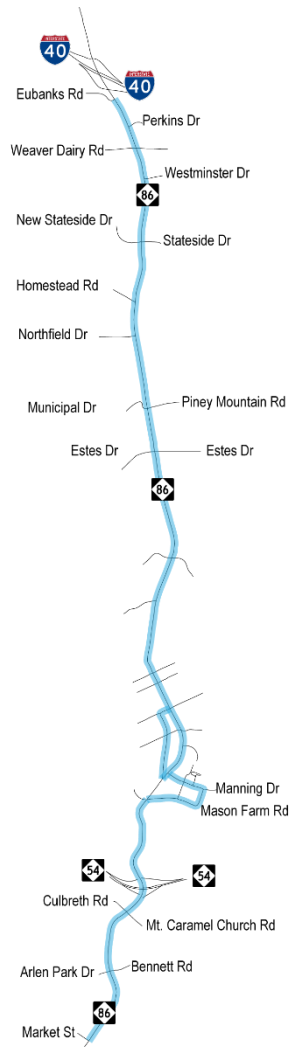
Bicycle and Pedestrian Facilities

- **Green** sections – include one of the following types:
 - Bike Path / Sidewalk
 - Multi-Use Path
 - Bike Lane / Sidewalk
- **Purple** sections – include:
 - Sharrow / Sidewalk
- **Downtown Alternatives:**
 - Generally consistent walking experience among Alts
 - Bike sharing lane with general traffic vs. bus-only





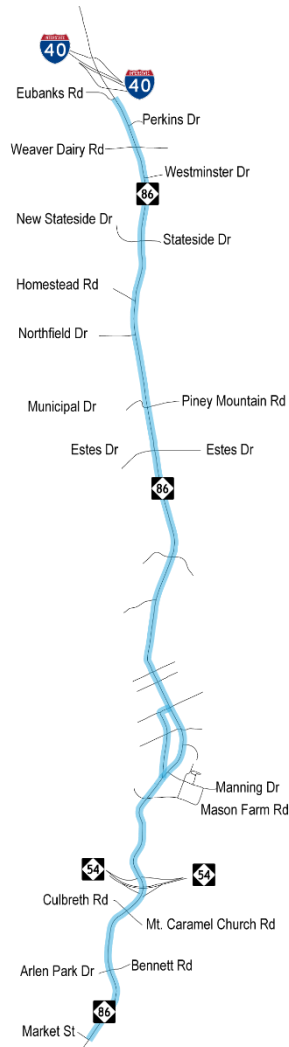
| Average Travel Time - Bus (Eubanks Road to Market Street) | | | | | |
|--|------|-------------------|------------|-------------------|------------|
| Downtown Condition | | AM Peak (minutes) | | PM Peak (minutes) | |
| | | Northbound | Southbound | Northbound | Southbound |
| No Build | 2018 | 27 | 30 | 32 | 35 |
| | 2024 | 28 | 27 | 32 | 38 |
| Full Convert | 2018 | 24 | 25 | 29 | 27 |
| | 2024 | 24 | 25 | 30 | 29 |
| Partial Convert | 2018 | 23 | 24 | 29 | 27 |
| | 2024 | 23 | 25 | 30 | 29 |
| Mixed Traffic | 2018 | 24 | 25 | 29 | 27 |
| | 2024 | 24 | 25 | 30 | 29 |



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| Average Travel Time - General Purpose Vehicles (Eubanks Road to Market Street) | | | | | |
|---|------|-------------------|------------|-------------------|------------|
| Downtown Condition | | AM Peak (minutes) | | PM Peak (minutes) | |
| | | Northbound | Southbound | Northbound | Southbound |
| No Build | 2018 | 18 | 17 | 20 | 22 |
| | 2024 | 19 | 17 | 20 | 23 |
| Full Convert | 2018 | 17 | 16 | 20 | 19 |
| | 2024 | 18 | 16 | 20 | 20 |
| Partial Convert | 2018 | 17 | 16 | 19 | 19 |
| | 2024 | 18 | 16 | 20 | 20 |
| Mixed Traffic | 2018 | 17 | 15 | 19 | 18 |
| | 2024 | 18 | 15 | 19 | 19 |



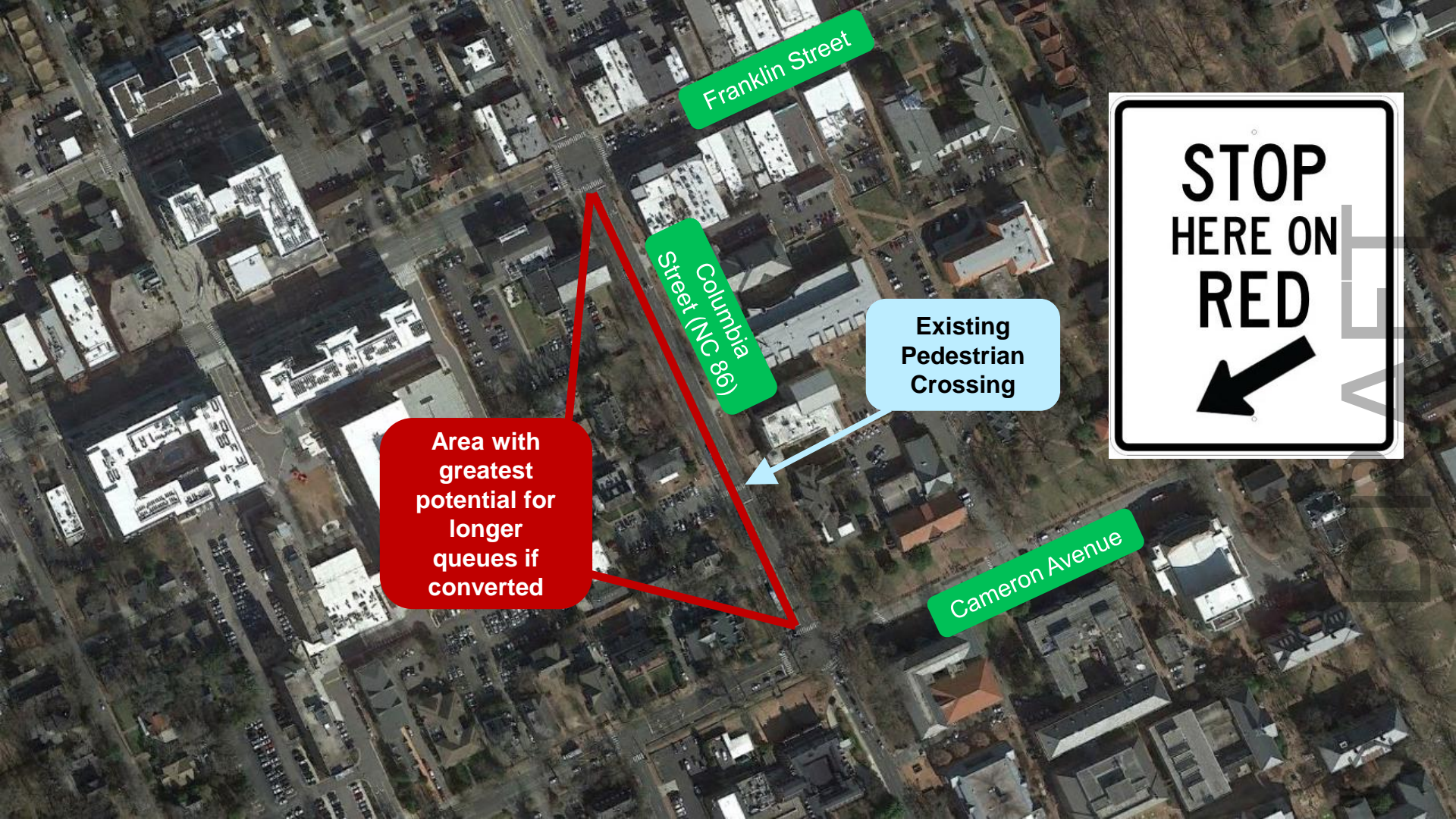
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Vehicular LOS

| Level-of-Service NC 86 at Rosemary Street | | | |
|--|------|---------|---------|
| Condition | | AM Peak | PM Peak |
| No Build | 2018 | C | E |
| | 2024 | C | E |
| Full Convert | 2018 | C/D | E |
| | 2024 | C/D | E |
| Partial Convert | 2018 | C | E |
| | 2024 | C | E |
| Mixed Traffic | 2018 | C | D |
| | 2024 | C | D/E |



| Level-of-Service NC 86 at Franklin Street | | | |
|--|------|---------|---------|
| Condition | | AM Peak | PM Peak |
| No Build | 2018 | C | D |
| | 2024 | C | D |
| Full Convert | 2018 | C | E |
| | 2024 | C | E |
| Partial Convert | 2018 | C | E |
| | 2024 | C | E |
| Mixed Traffic | 2018 | C | D |
| | 2024 | C | D |



Franklin Street

Columbia Street (NC 86)

Cameron Avenue

Area with greatest potential for longer queues if converted

Existing Pedestrian Crossing



Vehicular LOS

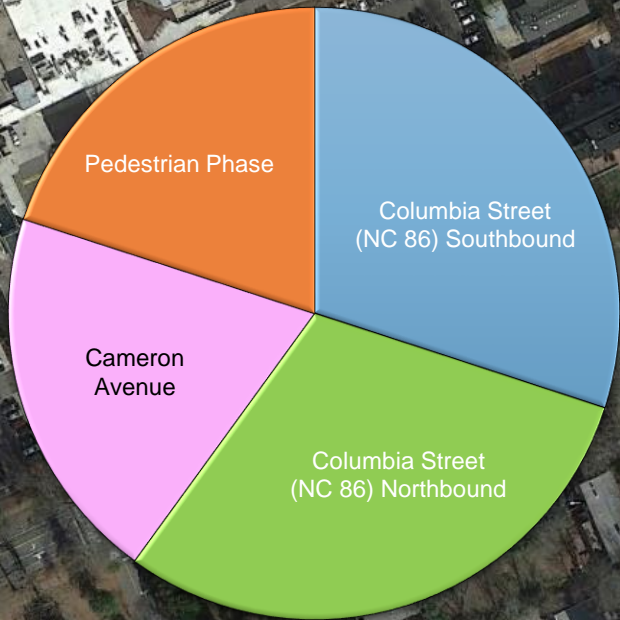
Columbia
Street (NC 86)

Cameron Avenue

Level-of-Service NC 86 at Cameron Avenue

| Condition | | AM Peak | PM Peak |
|-----------------|------|---------|---------|
| No Build | 2018 | D | E |
| | 2024 | D | E |
| Full Convert | 2018 | D | E/F |
| | 2024 | D | E/F |
| Partial Convert | 2018 | D | D |
| | 2024 | D | D |
| Mixed Traffic | 2018 | C/D | D |
| | 2024 | C/D | D |

Existing Phasing

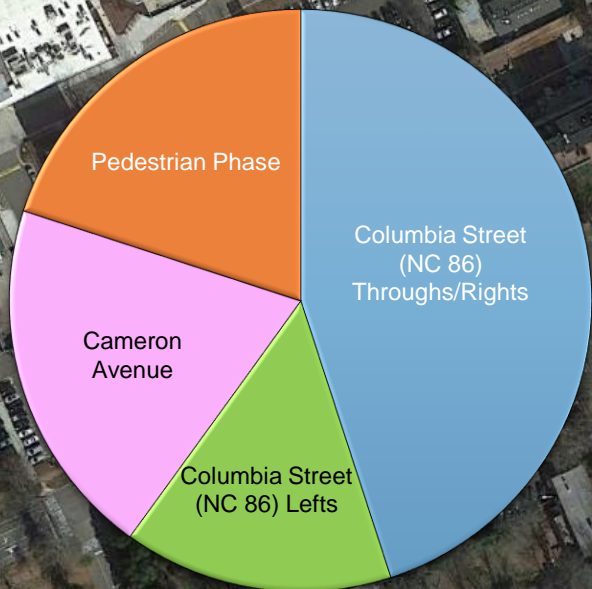


Columbia
Street (NC 86)

Cameron Avenue

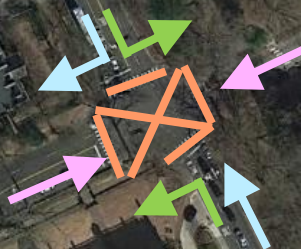


Proposed Phasing



Columbia
Street (NC 86)

Cameron Avenue



Findings for Downtown



- Full Convert **can be considered** further
 - If signal phasing change is made at Columbia Street / Cameron Avenue
- Partial Convert **can be considered** further
- Mixed Traffic **can be considered** further
- NCDOT concurrence on findings
- Final locally-preferred alternative should be chosen based on downtown priorities:
 - Consistent cross section
 - Vehicular vs. bus operations

Bus and Traffic interactions in a dedicated curb lane environment



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Bus and Traffic interactions in a dedicated curb lane environment

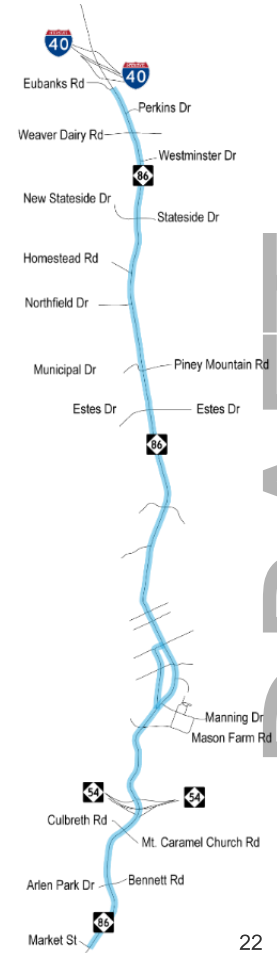


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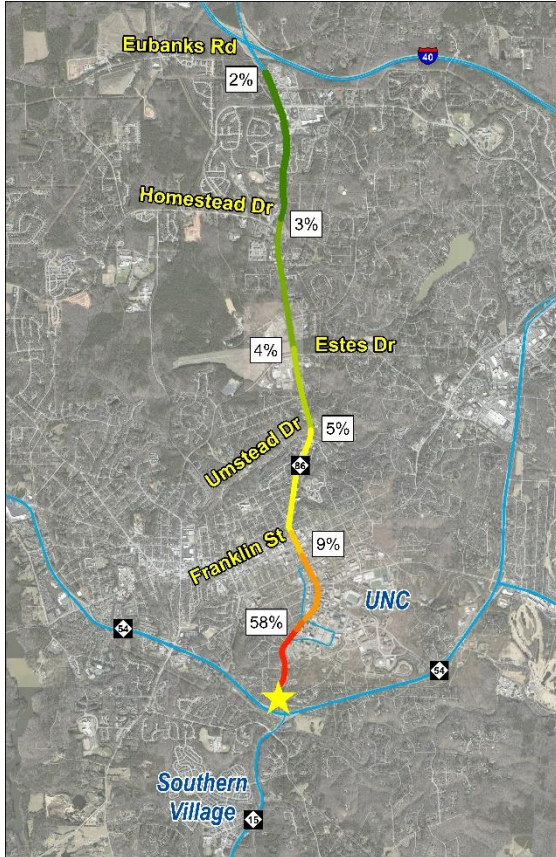
Streetlight Data - Local or Through Trips?

- Streetlight uses location-based services on cell phones
- Used “gates” on NC 86 to determine the origin and destination of trips
 - Helps identify percentage of through trips on corridor
 - Helps identify key destinations



How far do people drive? (Northbound)

Origin: NC 54/US 15-501 Interchange (AM Peak)



Legend:



Starting point

XX%

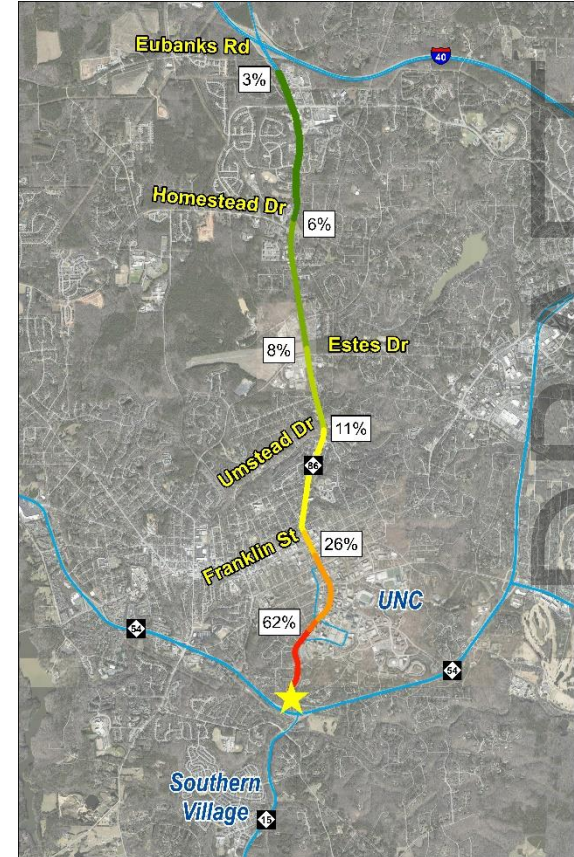
Percent of starting point traffic remaining at each location



Higher remaining traffic

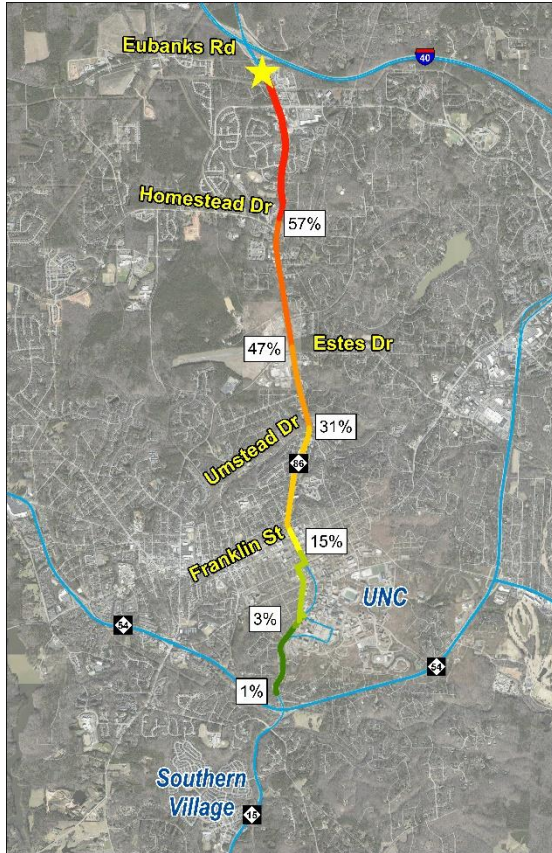
Lower remaining traffic

Origin: NC 54/US 15-501 Interchange (PM Peak)



How far do people drive? (Southbound)

Origin: I-40/Eubanks Road (AM Peak)



Legend:



Starting point

XX%

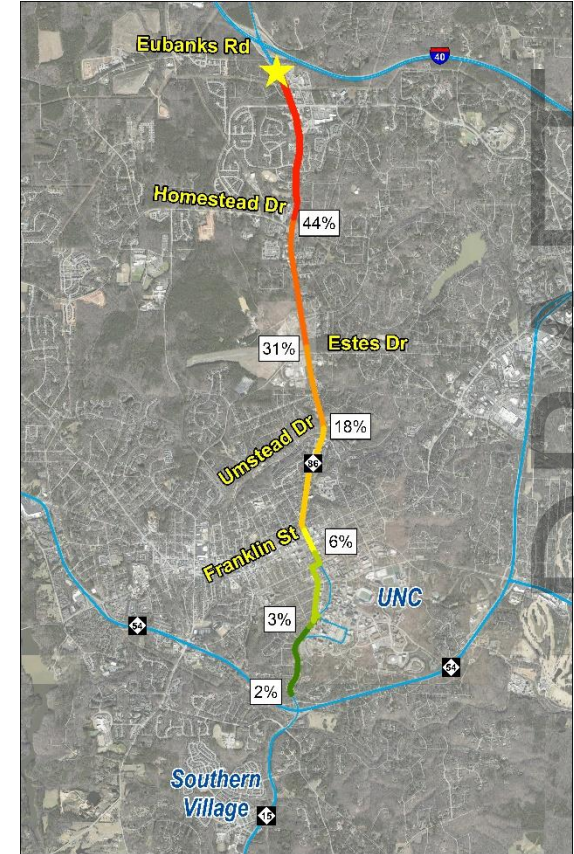
Percent of starting point traffic remaining at each location



Higher remaining traffic

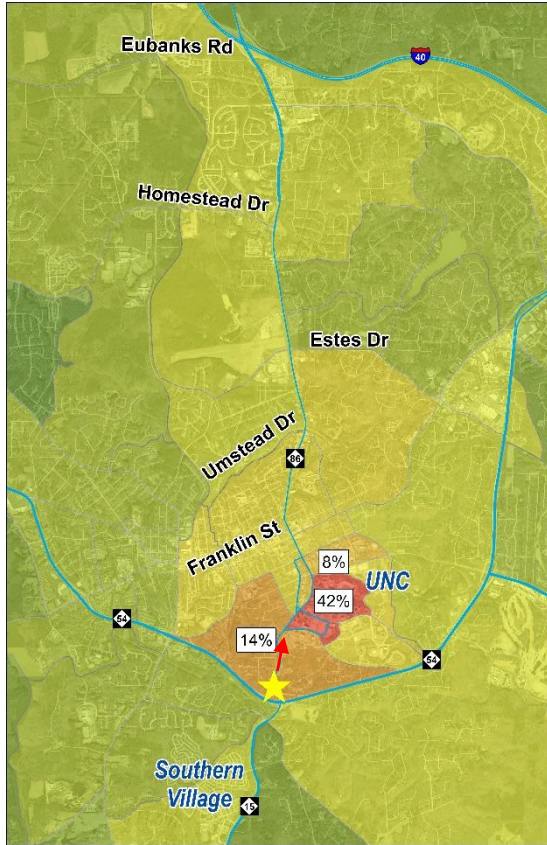
Lower remaining traffic

Origin: I-40/Eubanks Road (PM Peak)



Where do vehicles stop?

Origin: NC 54/US 15-501 Interchange (Daily)



Legend:



Starting point

XX%

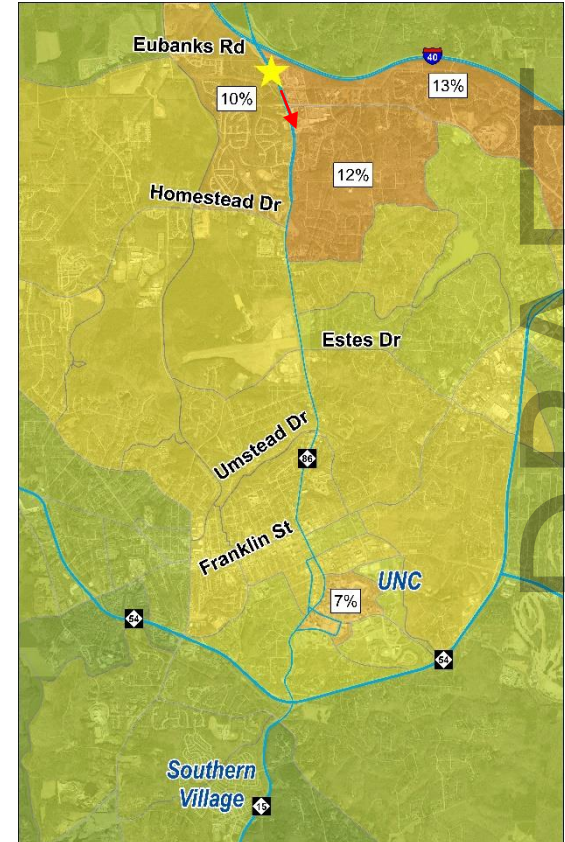
Percent of starting point traffic that stops in noted area



Higher attraction to area

Lower attraction to area

Origin: I-40/Eubanks Road (Daily)



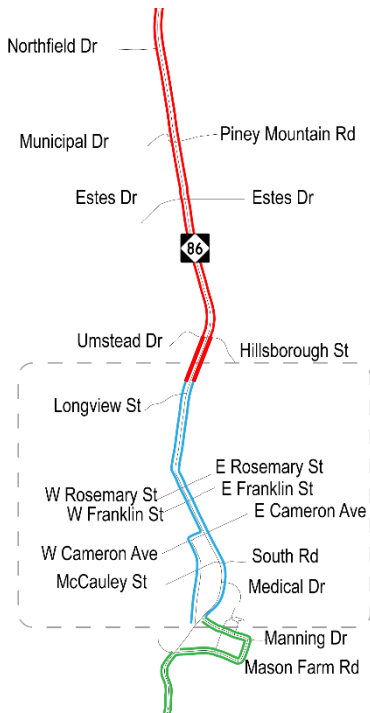
Recommendations for Downtown



- Full Convert
 - Using signal phasing change at Columbia Street / Cameron Avenue
- NCDOT concurrence on findings
- Final locally-preferred alternative should be chosen based on downtown priorities:
 - Consistent cross section
 - Vehicular vs. bus operations

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Full Convert



LEGEND

 Mixed

 Convert

 Construct

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OTHER / NEXT STEPS



Other / Next Steps

- Request adoption of the recommended LPA for NSBRT
- Environmental Review
- Evaluate Small Starts information to improve rating for August/September 2020 FTA evaluation request

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