

Chapel Hill North-South BRT

Technical Committee Meeting 2

March 29, 2018



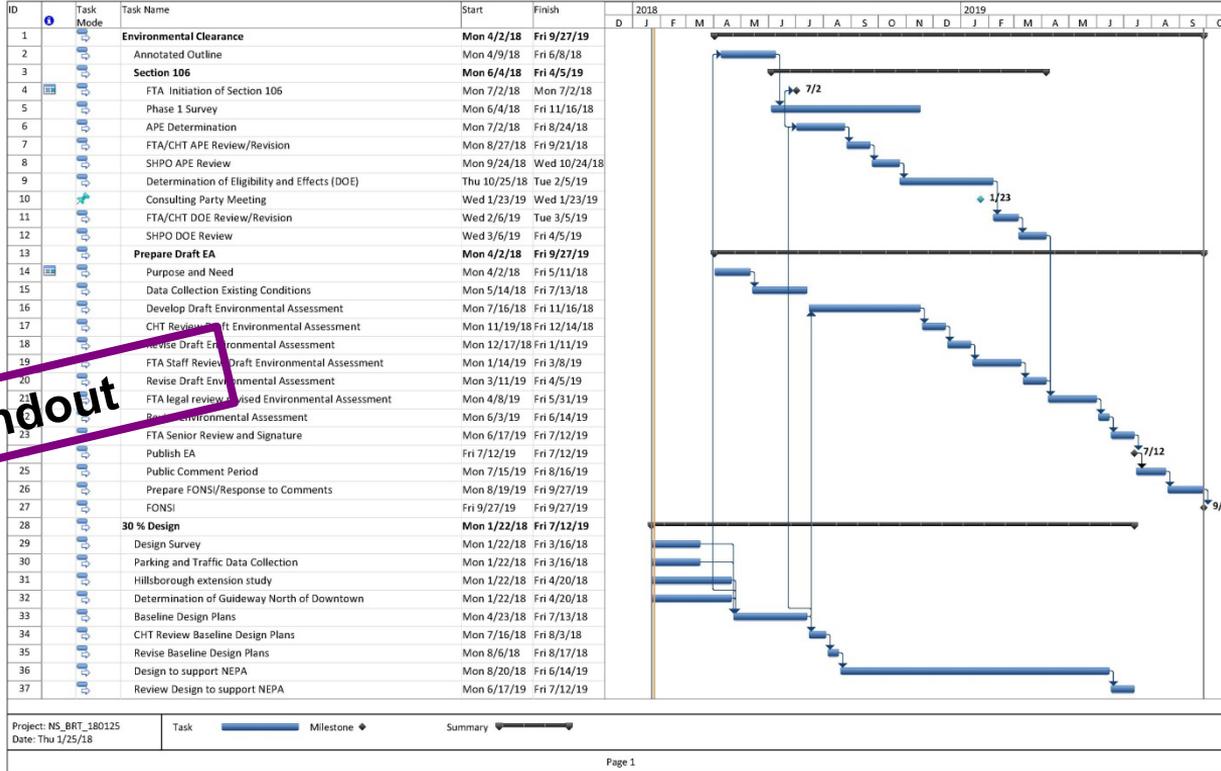
Agenda

- Welcome and Introductions
- Project Schedule for 30% Design and Environmental Assessment
- Design and Planning Tasks
- Other / Next Steps / Next Meeting

Project Schedule for 2: 30% Design and EA

NEPA and 30% Design Schedule

North-South BRT NEPA and 30% Design Project

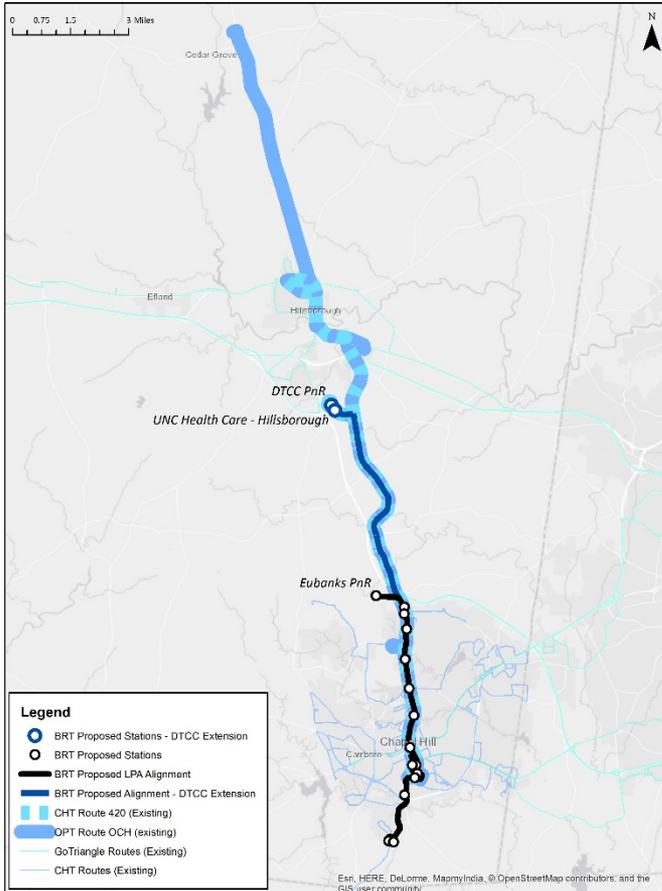


See handout

Design and Planning

3a: Tasks: First 120 Days

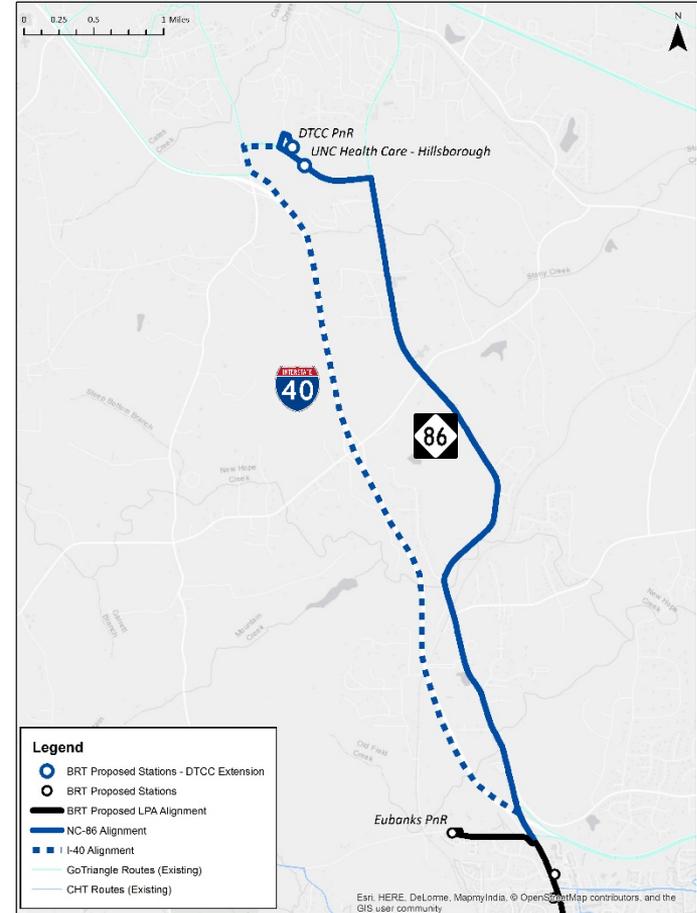
Extension to Hillsborough



- 6.7-mile BRT extension from Eubanks Park-and-Ride to DTCC
- 2 new BRT stops
 - UNC Healthcare – Hillsborough Campus (2 platforms)
 - DTCC Park-and-Ride (1 platform)
- Existing Service
 - GoTriangle Route 420: Hillsborough-Chapel Hill (operated by CHT)
 - Weekday peak-period service
 - 6 Inbound / 3 Outbound AM Trips
 - 6 Outbound / 3 Inbound PM Trips
 - 225 average daily riders
 - OPT Route OCH
 - Weekday mid-day service
 - 60-minute headways
 - 23 average daily riders

Alignment Alternatives Considered

	NC-86	I-40
1-Way Travel Time (mm:ss)	13:40	10:11
Stops	<ul style="list-style-type: none"> ✓ UNC Health-Hillsborough ✓ DTCC 	<ul style="list-style-type: none"> ✓ DTCC
Pros	Direct, en-route access to UNC Healthcare-Hillsborough. Allows for future additional stops if warranted	Faster travel time and slightly lower cost
Cons	Slightly slower travel time, resulting in a little more O&M costs.	Difficult access to UNC Healthcare. Providing direct access will negate travel time and cost savings



Assumptions and Methodology

- Assumes NC-86 alignment with no special guideway treatments (e.g. TSP or dedicated lanes) included in DTCC extension design
- LPA project definition assumed as baseline project alignment. LPA service levels maintained along baseline alignment for all extension service concepts.
- DTCC extension travel time developed independently of proposed LPA alignment and added to LPA travel times to determine total one-way travel times:

Service Pattern 2A Guideway Scenario	LPA Travel Time (mm:ss)	Extension Travel Time (mm:ss)	Total 1-Way Travel Time (mm:ss)
Locally Preferred Alternative	33:10	13:40	46:50

Summary of Service Concepts

	DTCC-1	DTCC-2	DTCC-3	DTCC-4	DTCC-5
BRT Service Description	Full BRT service to DTCC during all time periods.	Reduced service to DTCC past Eubanks PnR during all time periods.	Reduced service to DTCC past Eubanks PnR, weekdays only.	30-Minute peak & mid-day service to DTCC past Eubanks PnR, weekdays only.	LPA Alignment Only. No BRT service to DTCC.
Route 420 Modifications	No alignment modifications. Service levels reduced from 9 peak period trips to 4 peak period trips.				Existing 30-minute peak weekday service between downtown Hillsborough and Chapel Hill is maintained. 60-minute mid-day service provided between DTCC and Chapel Hill, for combined 30-minute service with OCH route.
Route OCH Modifications	No alignment or service level modifications.				

Option DTCC – 1

Full Service to DTCC, All Time Periods

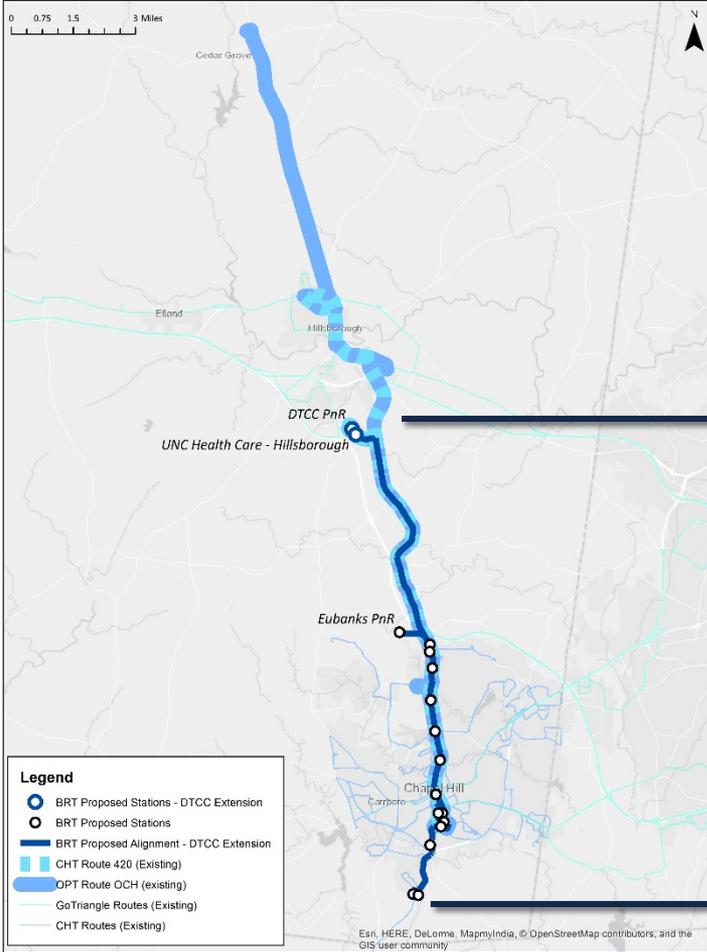
DTCC to Southern Village BRT Headways

	Early	Day	Eve	Late
M-F	20	7.5	10	20
SAT	20	10	20	20
SUN	20	10	20	20

BRT Service Spans by Time Period

	Weekday	Saturday	Sunday
Early	5a – 7a	8a – 10a	8a – 10a
Day	7a – 6p	10a – 6p	10a – 6p
Evening	6p – 8p	6p – 11p	6p – 8p
Late	8p – 11p*	11p – 2a	8p – 11p

* Service operates until 2a on Fridays



Option DTCC – 2

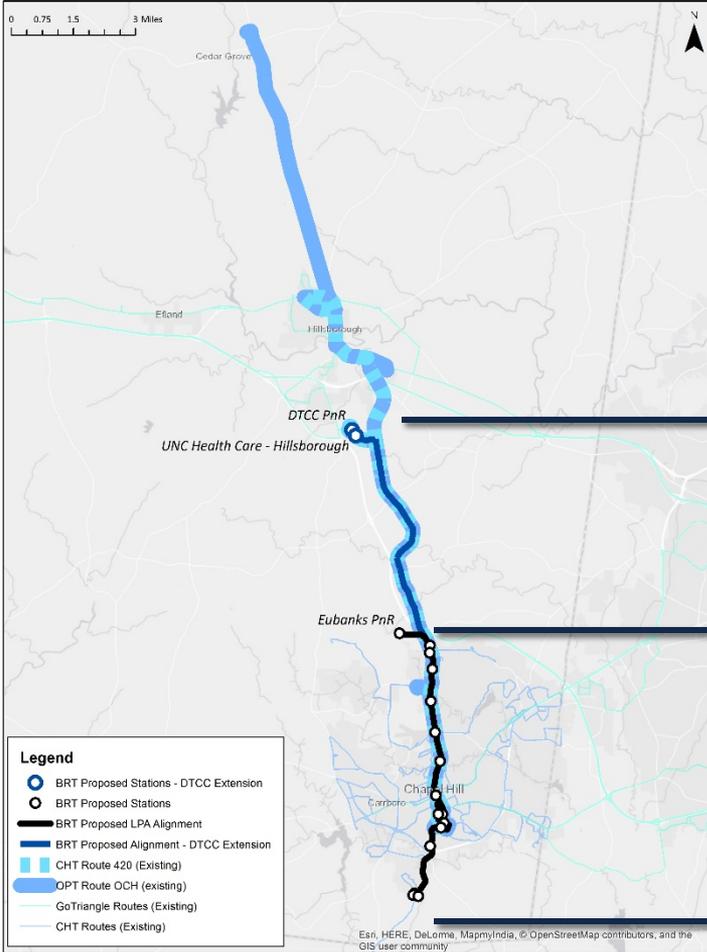
Reduced Service to DTCC past Eubanks PnR, All Time Periods

Eubanks to DTCC BRT Headways

	Early	Day	Eve	Late
M-F	30	15	20	30
SAT	30	20	30	30
SUN	30	20	30	30

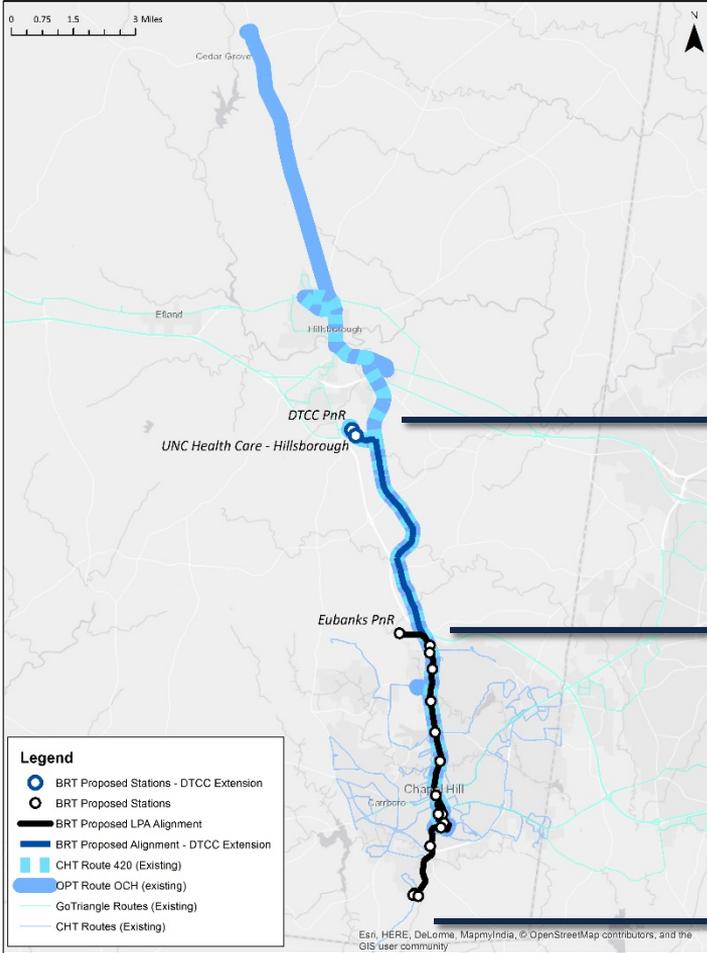
Eubanks to Southern Village BRT Combined Headways

	Early	Day	Eve	Late
M-F	15	7.5	10	15
SAT	15	10	15	15
SUN	15	10	15	15



Option DTCC – 3

Reduced Service to DTCC past Eubanks PnR, Weekdays Only



Eubanks to DTCC BRT Headways

	Early	Day	Eve	Late
M-F	30	15	20	--
SAT	--	--	--	--
SUN	--	--	--	--

Eubanks to Southern Village BRT Combined Headways

	Early	Day	Eve	Late
M-F	15	7.5	10	20
SAT	20	10	20	20
SUN	20	10	20	20

Option DTCC – 4

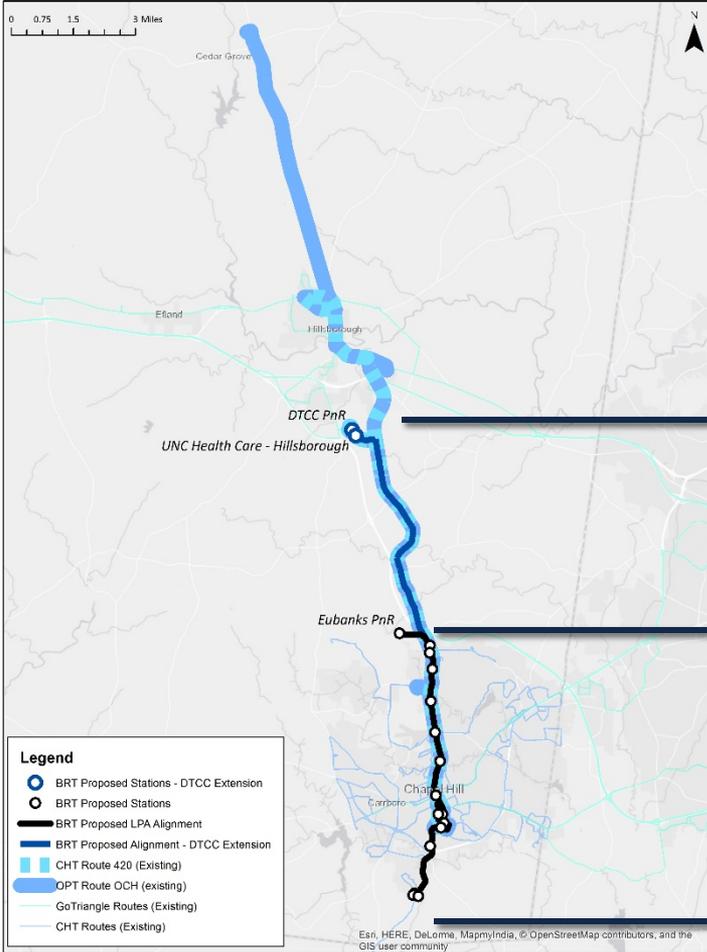
30-Minute Peak & Mid-Day Service to DTCC past Eubanks PnR,
Weekdays Only

Eubanks to DTCC BRT Headways

	Early	Day	Eve	Late
M-F	30	30	--	--
SAT	--	--	--	--
SUN	--	--	--	--

Eubanks to Southern Village BRT Combined Headways

	Early	Day	Eve	Late
M-F	15	7.5	10	20
SAT	20	10	20	20
SUN	20	10	20	20



Option DTCC – 5

LPA Alignment + Enhanced Route 420 Weekday Service Levels

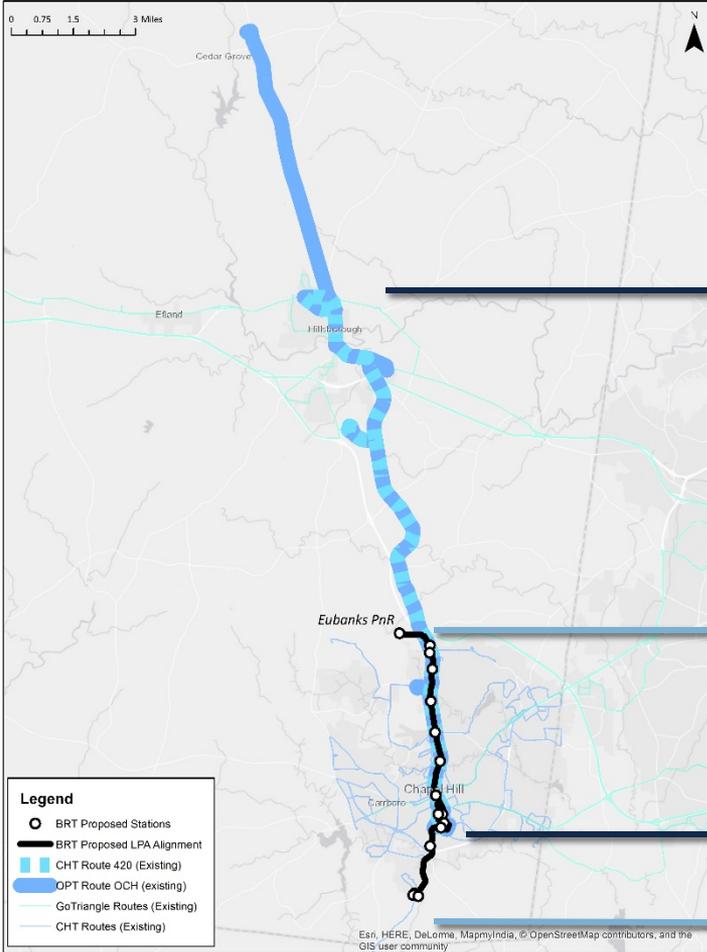
DTCC to Chapel Hill Bus Headways*

	Early	Day	Eve	Late
M-F	60	30	--	--
SAT	--	--	--	--
SUN	--	--	--	--

* Service levels to downtown Hillsborough and Cedar Grove remain consistent with existing.

Eubanks to Southern Village BRT Headways

	Early	Day	Eve	Late
M-F	20	7.5	10	20
SAT	20	10	20	20
SUN	20	10	20	20



Incremental Operating Statistics and Costs

		Alternatives				
		DTCC-1	DTCC-2	DTCC-3	DTCC-4	DTCC-5
Background Bus	Hours	-1,375	-1,375	-1,375	-1,375	2,863
	Miles	-41,650	-41,650	-41,650	-41,650	66,815
	Peak Buses	-1	-1	-1	-1	0
	Annual Cost	-\$188,900	-\$188,900	-\$188,900	-\$188,900	\$291,100
BRT	Hours	22,500	17,600	11,200	7,200	0
	Miles	501,300	300,000	193,500	97,500	0
	Peak BRT Buses	5	3	3	2	0
	Fleet BRT Buses	7	4	4	3	0
	Annual Cost	\$2,607,200	\$1,759,400	\$1,170,200	\$685,600	0
Change from LPA		\$2,418,300	\$1,570,500	\$981,300	\$496,700	\$291,100

Notes:

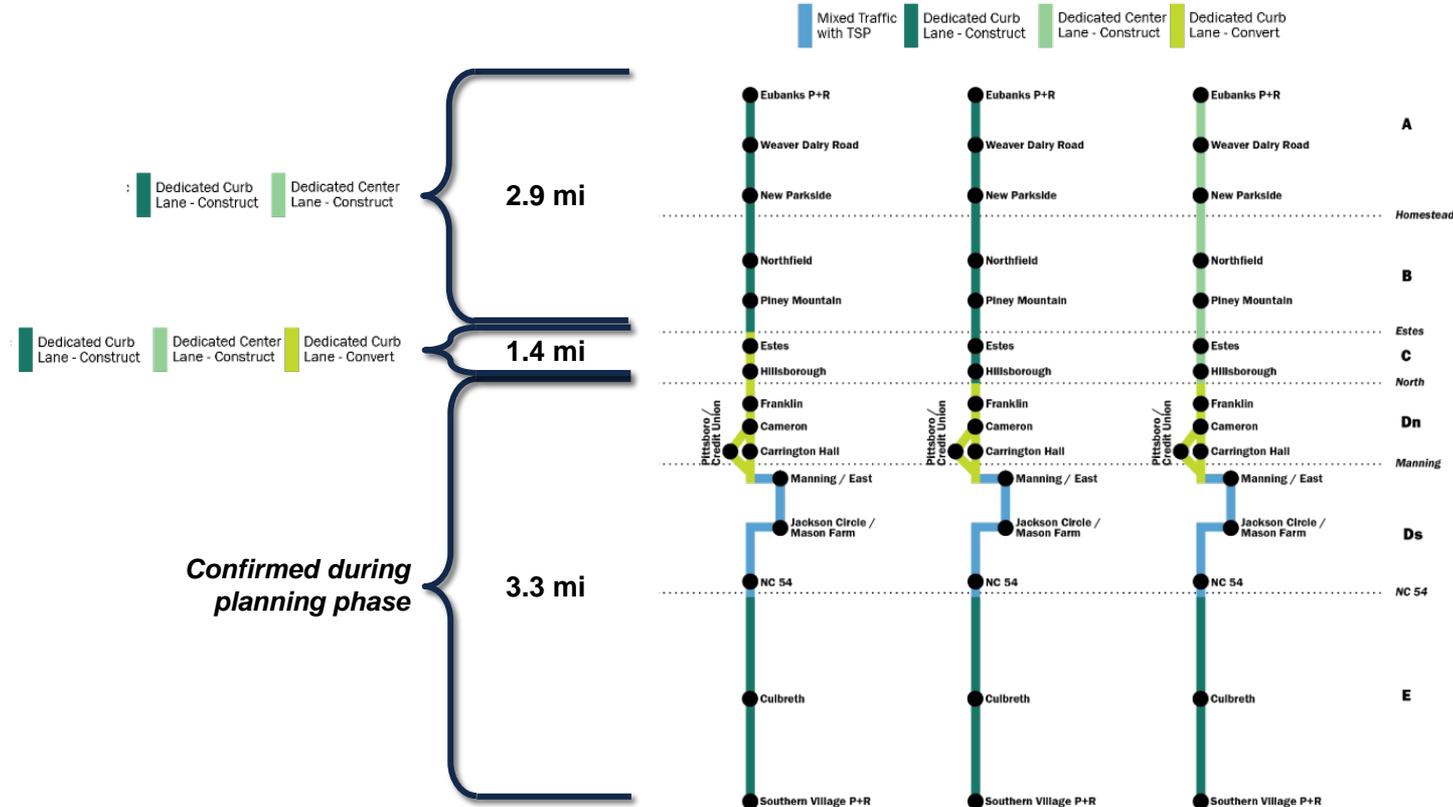
1. Costs in 2015 dollars.

Cost and Vehicle Requirement Summary

Option		Total Annual O&M Cost*	Cost Increment over LPA	BRT Fleet Vehicle Increment over LPA
LPA	LPA Alignment	\$3,364,300	--	--
DTCC-1	Full Service to DTCC, All Time Periods	\$5,782,600	\$2,418,300	7
DTCC-2	Reduced Service to DTCC, All Time Periods	\$4,934,800	\$1,570,500	4
DTCC-3	Reduced Service to DTCC, Weekdays Only	\$4,345,600	\$981,300	4
DTCC-4	30-Minute Peak & Mid-Day Service to DTCC, Weekdays Only	\$3,861,000	\$496,700	3
DTCC-5	LPA Alignment + Enhanced Route 420 Service Levels	\$3,655,400	\$291,100	n/a

* Total Costs Reflect Cost over No-Build

Three Options Analysis



Design

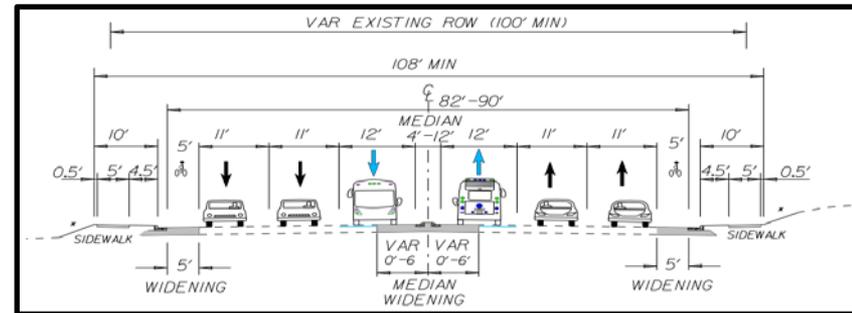
- Draft report on center running guideway
 - Downtown to Eubanks Road
- Current design includes:
 - February 2017 aerial
 - March 2017 existing right-of-way (GIS)
 - MLK Jr. Blvd guideway options
 - Proposed travel lanes
 - Preliminary BRT station locations
 - Active transportation options
 - Existing conditions noted
- Plan sets and roll plots for each LPA segment



Design

Center running guideway option

- Additional widening at intersections
 - Additional construction cost & ROW
- BRT & bus operations
- Pedestrian access to BRT stations
- Traffic operations
 - Left turns / U-turns
 - Distance between signals
- Active transportation



Design

Curbside guideway option

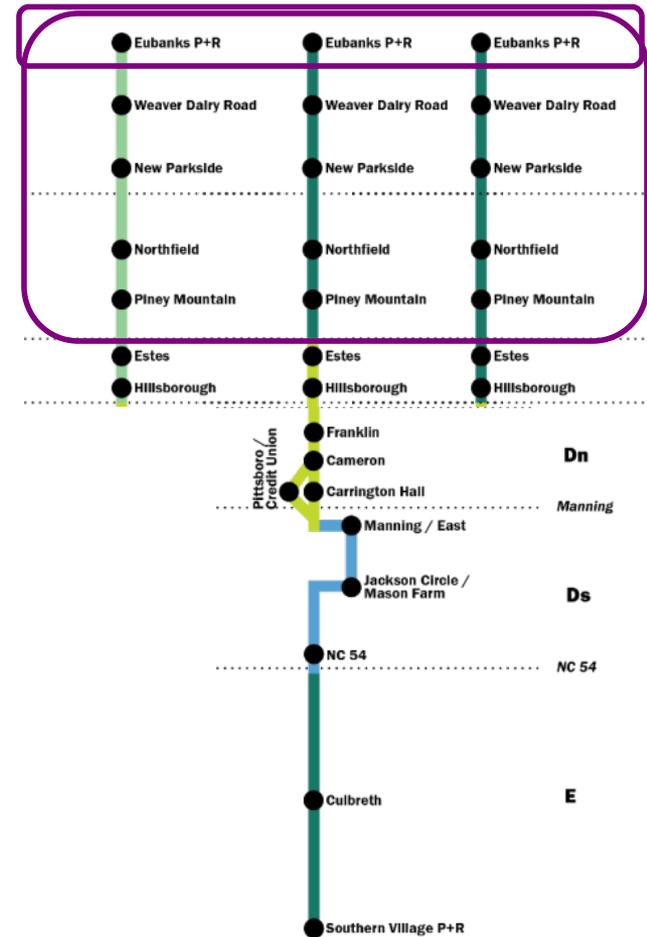
- Southern Village to North Street
 - Guideway set in LPA
 - Preliminary BRT station location options
 - Southern Village
 - Jackson Circle / Mason Farm
 - Active transportation options
- North Street to Estes Drive
 - 3 guideway options, each with active transportation options
 - Preliminary BRT station locations



Design

Curbside guideway option

- Estes Drive to Eubanks Road
 - 2 guideway options, each with active transportation options
 - Preliminary BRT station locations
- Caraway Village
 - Eubanks Road improvements by developer
 - Access to P&R lot



Traffic

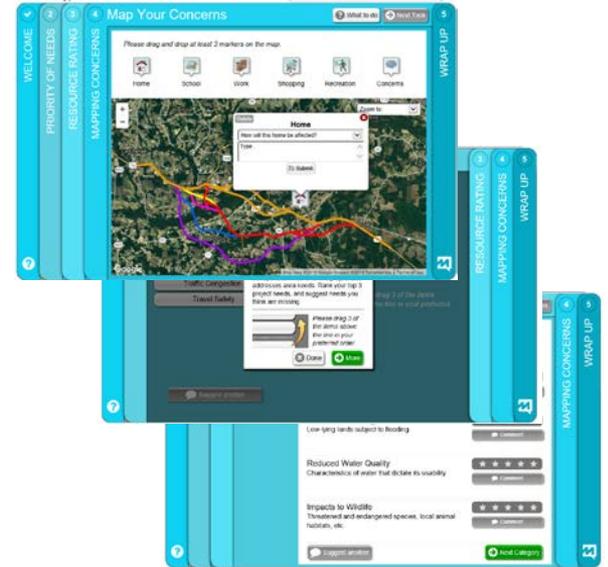
- AM & PM Peak Traffic Data Collection (completed)
- Special Event Traffic Data Collection (completed)
- Traffic model/microsimulation development
- Meeting with NCDOT
- Existing traffic signal inventory database



Public Engagement

Development Steps:

- Public Engagement Plan: **submitted**
- Logo/Branding: *under development*
- Messaging: *under development*
- Website: *under development*
- MetroQuest: *coming soon*
- FAQs: *coming soon*



Public Engagement

- Media/Social Media/MetroQuest/Website
- Key Stakeholder Outreach
- Local Business Outreach
- Stakeholder Design Charrettes



Design and Planning

3b: Tasks: After 120 Days

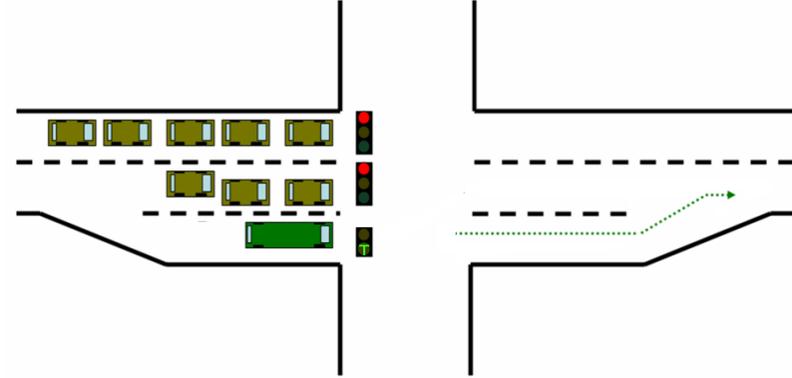
Design

- Design refinements
 - BRT station
 - Grade 2% or flatter
 - Platform size
 - Additional field surveys at box culverts
 - Construction limits
 - Additional ROW needed?
 - Retaining walls or grass slopes
- Design information to traffic modelers and for active transportation
- Preferred Alternative for NEPA



Traffic

- Refine Traffic model / microsimulation
- Final microsimulation model for opening year (2020) and design year (2040)
- Recommendations for improvements (signal operations, phasing modifications, TSP and turn restrictions) in Concept of Operations Plan
- Traffic Signal Operations Analysis Report



Public Engagement

- Media/social media/website
- Continual stakeholder outreach
- Continual business outreach
- Stakeholder design charrettes
- Convey findings/decisions



Planning

- Station area planning
- Bike and pedestrian integration



Other / Next Steps / 4: Next Meeting

Next Steps / Next Meeting

- Technical Committee: Late April 2018
- Policy Committee: Late May 2018
- Agenda
 - Results of extension study to DTCC Hillsborough
 - Refined guideway options throughout the corridor
 - Engagement update