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DCHC

METROPOLITAN PLANNING ORGANIZATION

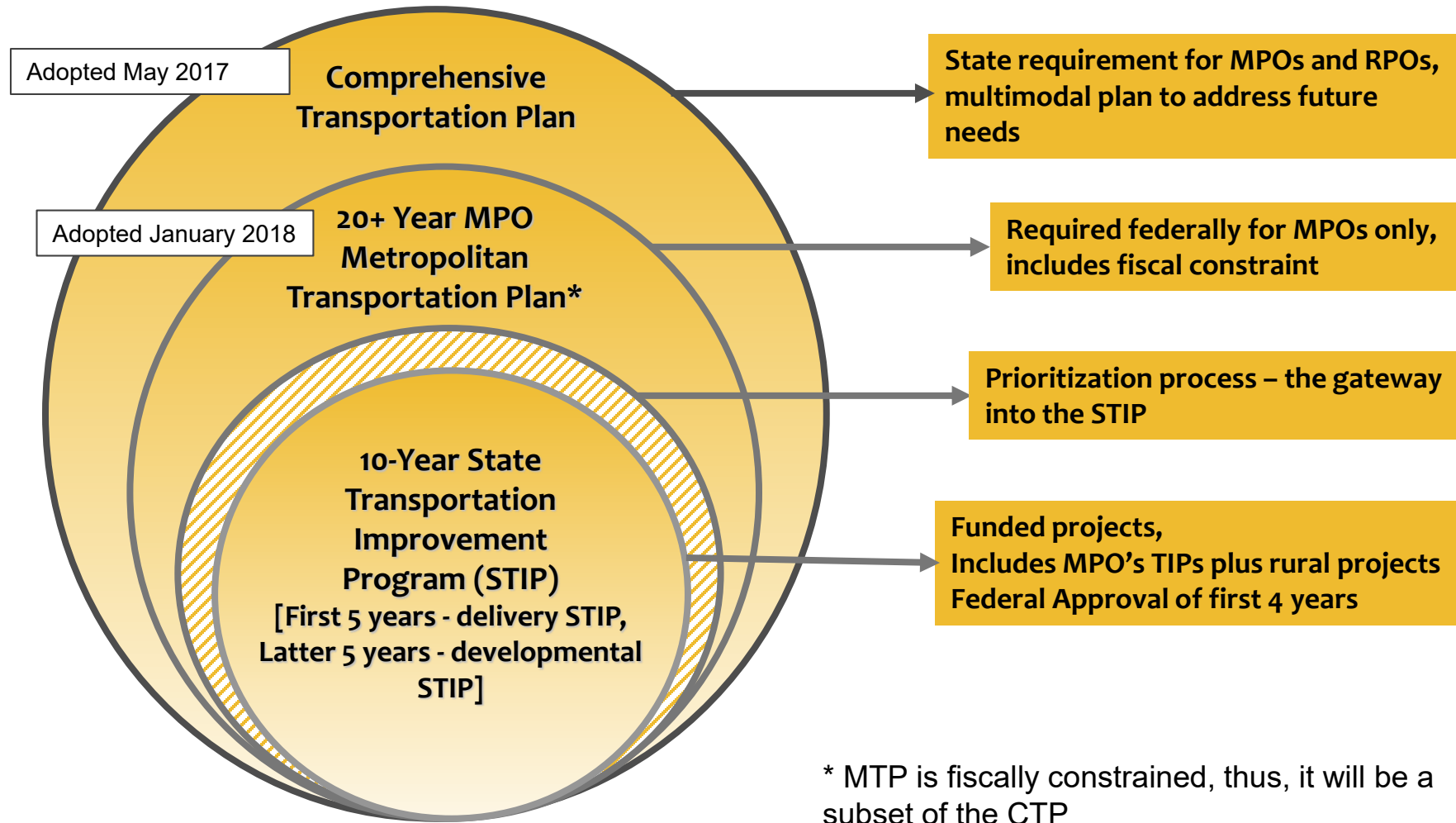**PLANNING TOMORROW'S TRANSPORTATION**

2050 Metropolitan Transportation Plan – Alternatives Analysis –

Andy Henry, <u>andrew.henry@durhamnc.gov</u>, May 26, 2021
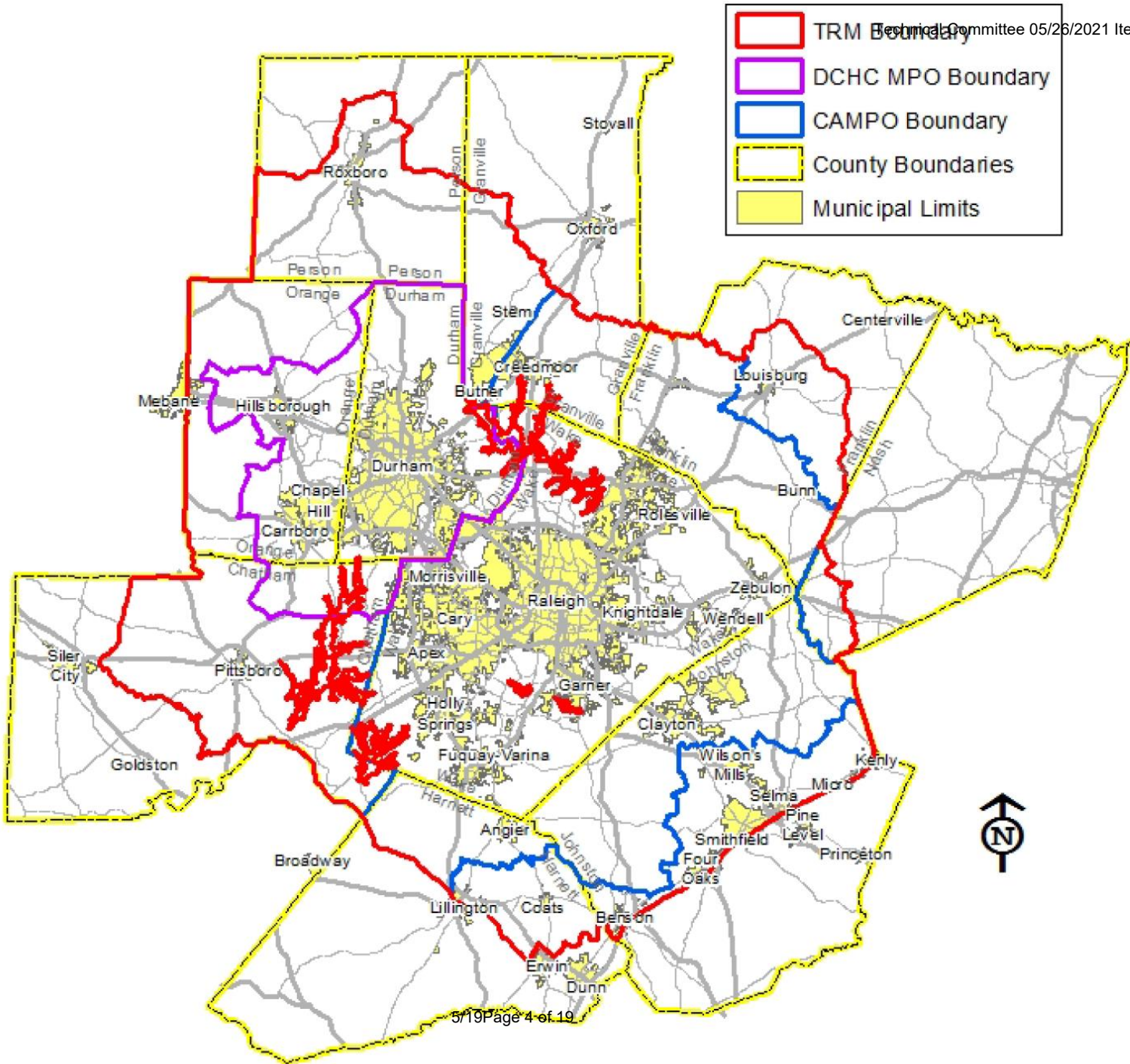
Presentation Outline

- Schedule

- Alternatives – Development and Mobility foundations

- Metrics and Maps

- Public Engagement

- Today's action
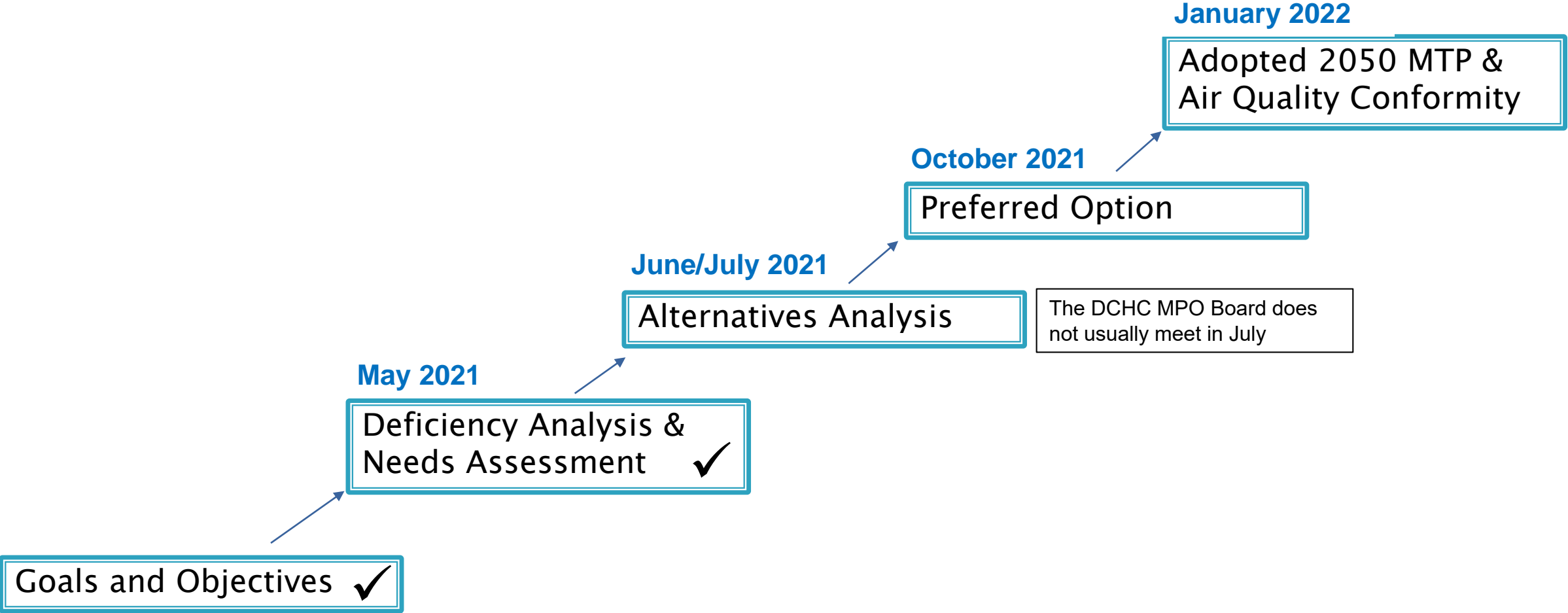
Transportation Planning Framework

Adopted May 2017

Comprehensive Transportation Plan

State requirement for MPOs and RPOs, multimodal plan to address future needs

Adopted January 2018

20+ Year MPO Metropolitan Transportation Plan*

Required federally for MPOs only, includes fiscal constraint

Prioritization process – the gateway into the STIP

10-Year State Transportation Improvement Program (STIP)
[First 5 years - delivery STIP, Latter 5 years - developmental STIP]

Funded projects, Includes MPO's TIPs plus rural projects Federal Approval of first 4 years

* MTP is fiscally constrained, thus, it will be a subset of the CTP

What is Model Area?

DCHC MPO is responsible for Durham, Orange, Chatham and Person counties' SE Data.

2050 MTP Milestones

January 2022

Adopted 2050 MTP & Air Quality Conformity

October 2021

Preferred Option

June/July 2021

Alternatives Analysis

The DCHC MPO Board does not usually meet in July

May 2021

Deficiency Analysis & Needs Assessment ✓

Goals and Objectives ✓

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Alternatives Analysis

- Purpose: staff, public and Board discuss different land use and transportation possibilities

- *Preferred Option* likely to be mixture of the assumptions and projects from Alternatives Analysis scenarios

- Alternatives not fiscally-constrained

- Today's presentation has overview -- Full complement of tables and maps on <u>Web</u> site

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Context

❖ The "MTP" is the foundation for other plans and studies
(these are transit examples, but the context applies to roads or other modes)

- ❑ 2050 Metropolitan Transportation Plan
  - Long term, regional (multi-MPO) scale, fiscally constrained, meets federal AQ standards

- ❑ County Transit Plan updates in Wake, Durham and Orange Counties

- ❑ Project Studies and Designs:
  - **Bus Rapid Transit** in the four Wake Transit Plan corridors and in Chapel Hill
  - **Commuter Rail** in Wake, Johnston and Durham Counties
  - Relocation of GoTriangle's **Regional Transit Center**

❖ Opportunities & challenges to consider…

- ❑ … post-COVID conditions

- ❑ … technology change

- ❑ … balancing transportation *demand* concerns with *supply* concerns

- ❑ … rethinking land use, affordable housing, transit fare & parking policies

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Connect2050 -- the Metropolitan Transportation Plan

1. Build the Planning Tools (CommunityViz & Transportation Model)

2. Set Vision, Goals, Objectives, Performance Measures, Targets

3. Establish the Scenario Framework

4. Create the Development & Mobility Investment Foundations for Each Scenario

5. Adopt Population and Job Guide Targets to 2050

6. Conduct a "Deficiency and Needs" Analysis

7. Refine and Use Tools to Create Detailed Scenarios

8. Conduct Alternatives Analysis of Scenarios

9. Select a Preferred Scenario

10. Complete 2050 MTP Report

11. Adopt the 2050 MTP and Demonstrate Air Quality Conformity

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Scenario World – a reminder

The future is uncertain, so scenarios are created to represent a simplified world so we can better understand relationships and inform decisions …

… Scenarios are **NOT** the real world. Nor are they discrete "packages" of investments from which a single choice must be made.

We want to be accurate, but our main goal with scenarios is to depict reasonable, transparent, documented and adaptable elements that can be used to build a feasible plan.

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Scenario Framework

❖ Four scenarios that match a development foundation with a mobility foundation: 2 have been completed; 2 are underway

Connect 2050 Scenario Framework			Mobility Investment Foundation				
			Existing & Committed	Trend	Mobility Corridors	Complete Communities*	Comprehensive Transport Plan
Development Foundation	Existing or Underway		basis for all scenarios				
	Community Plans		Deficiency & Needs Scenario	Plans & Trends Scenario			
	Opportunity Places (Key Hubs; REINVEST Neighborhoods)				Shared Leadership Scenario	All Together Scenario	
	Build-Out						If unlimited $ & capacity growth

* More focused investment on Complete <u>And</u> Safe Streets, Active Transport, and Transit

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The Development Foundation
-- a focus on important trip origins and destinations --

❖ *Key Hubs*

Hubs	Description	Examples
Anchors	Places with the highest concentrations of jobs and services, plus places with moderate intensity and an anchor institution that can influence mobility-based policy decisions	• Metropolitan CBDs • Major Universities • Medical Centers • Research Triangle Park
Mainstays	Places with regionally significant concentrations of jobs, either outright or in comparison to their surroundings	• Many mid-sized town and city centers • Some suburban centers, often along major transportation corridors

❖ *REINVEST Neighborhoods – equity centered places*

RE	Race/Ethnicity – the degree to which a neighborhood is home to people who are Black, Indigenous or People of Color (BIPOC).
IN	Income – the degree to which people in the neighborhood live in households with lower annual incomes.
VE	Vehicles – the degree to which households in the neighborhood report having no vehicles available
ST	Status – the degree to which a neighborhood has a specific characteristic, e.g. the # of legally-binding, affordability-restricted (LBAR) housing units

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The Development Foundation
-- a focus on important travel origins and destinations --

❖ ***Community Plans*** *Development Foundation*

Engagement based

- ❑ Created through local planner input in 2020 (and subsequent revisions)
- ❑ Represents adopted plans and/or likely plan updates
- ❑ Where provided, incorporates "committed" development
- ❑ "Asserts" development at Anchor Institutions like universities based on campus plans and discussions with staff

❖ ***Opportunity Places*** *Development Foundation*

Mechanically derived – 4 main elements

- ❑ Anchor institutions – increased asserted development
- ❑ Mobility hubs – more intense, mixed use development in ~2 dozen places; largely at previously identified "activity centers" in CommunityViz
- ❑ Frequent transit corridors – TOD development on developable parcels
- ❑ Affordable housing opportunity sites – asserted "LIHTC-like" projects on undeveloped public land through GIS-based criteria

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The Mobility Investment Foundation

- ***Existing + Committed*** *Mobility Foundation*
  - Commuter Rail Transit, RTP to Raleigh (not to downtown Durham)
  - No BRT
  - Committed improvements to local and regional bus connections
  - Includes highway projects to be constructed by 2025, e.g., East End Connector

- ***Trend*** *Mobility Foundation*
  - Commuter Rail Transit, West Durham-Raleigh-Clayton at <u>low</u> service level
  - North-South BRT in Chapel Hill
  - Most of the 2045 MTP highway projects

The Mobility Investment Foundation

- ***Mobility Corridors*** *Mobility Foundation*
  - Commuter Rail Transit at high service level
  - BRT: add US 15-501 (Durham/Chapel Hill)
  - High frequency bus service in major corridors
  - Most of the 2045 MTP highway projects

- ***Complete Communities*** *Mobility Foundation*
  - Commuter Rail Transit, add low service extension to Mebane
  - BRT: add NC 147 (Durham/RTP), NC 54 (Chapel Hill/Durham/RTP), and extensions to Pittsboro and Hillsborough
  - Add high frequency bus service
  - High level of complete streets investments
  - Add connector roads
  - Do not include roadway improvements in US 15-501 and NC 147 corridors

Performance Measures

- Staff will produce Performance Measures (PMs) for each scenario – PMs are aligned with the Goals and Objectives

  (See Goals/Objectives/Performance Measures attached to today's agenda – indicates which PMs available for Alternatives Analysis.)

- Some PMs by low-income, minority, and zero-car household

- Some PMs not available for Alternatives Analysis:
  - PMs that cannot be forecast, e.g., federal safety, travel time reliability, infrastructure condition
  - PMs not affected by development and mobility foundation changes, e.g., TDM program effectiveness.

| DCHC Goals	DCHC Objectives	Performance Measures
I. Protect the Human and Natural Environment and Minimize Climate Change	a) Reduce transportation sector emissions b) Achieve net zero carbon emissions	a) and b) Total and per capita transportation GHG (CO2) featured. Also calculate ozone (NOx), CO (carbon monoxide), and particulate matter emissions, and energy consumption (in vehicles)
	c) Reduce negative impacts on natural and cultural environment	c) Proportion of planned investment in existing highways (i.e., dollars for existing highways, as opposed to new highways)

Triangle Regional Model (TRM) Measures

- Table will be useful for overall comparison of MTP Alternatives

(a)

| Name =	Baseline	E+C	ModMTP	ModHwy	AspireTrans	AspireMTP
SE Data ==>	2013	2045	2045 CP	2045 CP	2045 AIM High	2045 AIM High
Transportation Network ==>	2013	E+C	2040 MTP	2040 MTP/ Hwy+, No FG	2040 MTP/ Transit+	2040 MTP
1 **Performance Measures**						
1.1.1 Total Vehicle Miles Traveled (VMT-daily)	12,698,821	21,108,837	22,179,755	22,533,494	20,751,593	20,822,867
1.1.1a Total Vehicle Miles Traveled (VMT-per capita	30	31	33	34	31	31
1.2.1 Total Vehicle Hours Traveled (VHT-daily)	314,735	665,310	626,849	638,079	563,611	567,436
1.2.1a Total Vehicle Hours Traveled (VHT-per capita	0.75	0.99	0.93	0.95	0.84	0.85

- Graphics will compare alternatives

(a)

(a)
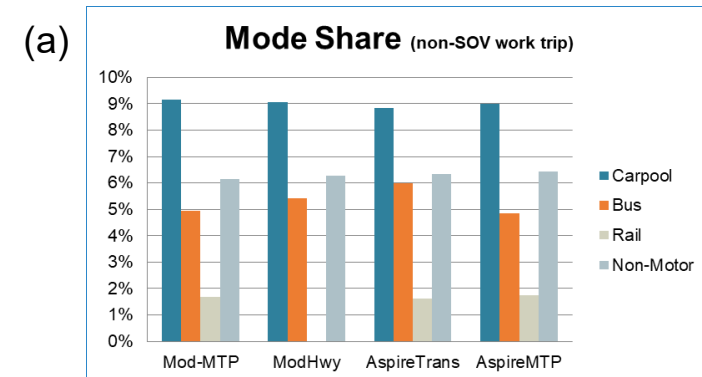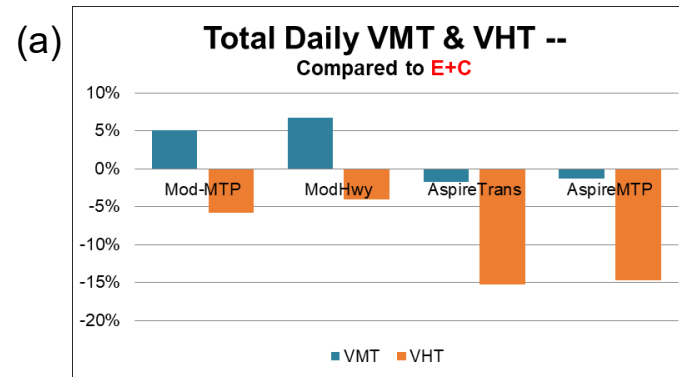
(a) Table and graphics are examples from 2045 MTP process.

Other Measures

Compare Scenarios by…

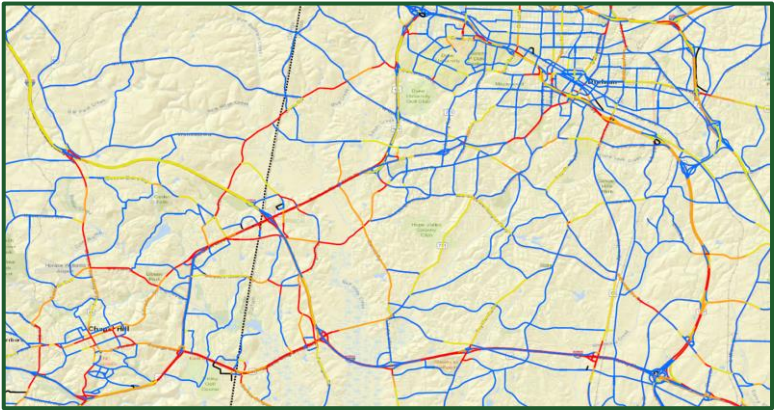### Mode split in Travel Choice Neighborhoods (i.e., high level of transit service)
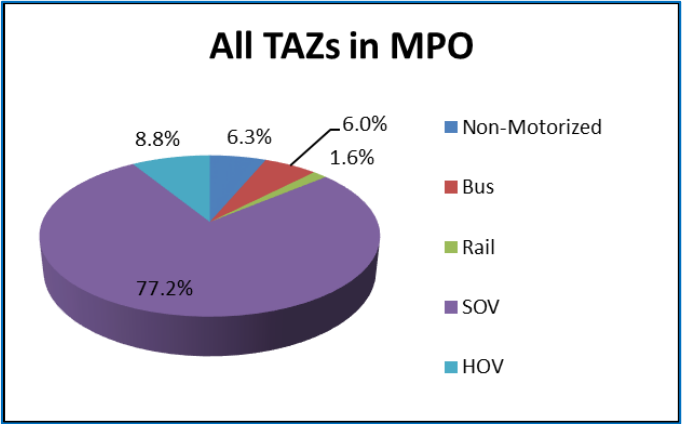
Travel time

Compare 2013 andM1: PM Peak Travel time (percent increase)						
	To					
	Durham	RTP	Raleigh	CH/Carrboro	Hillsborough	Pittsboro
Durham DT		29%	46%	36%	37%	43%
RTP	31%		58%	32%	31%	43%
Raleigh DT	36%	41%		35%	28%	41%
CH/Carrboro	61%	43%	50%		63%	40%
Hillsborough	21%	17%	29%	24%		5%
Pittsboro	23%	18%	30%	12%	4%	

(From)

Congestion maps

Travel Isochrones
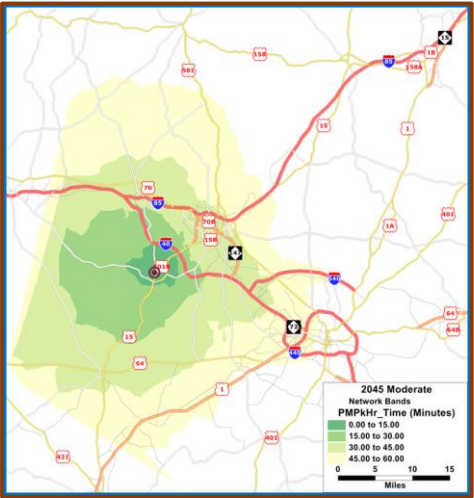
Public Engagement

- Open house/Pop-ups (possible)

- Survey – feedback on trade-offs

- Communities of concern – special effort through survey, in-person

- Materials – summarized, more accessible

- Local boards & commissions

- Length – 42 days

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Today's Action

- Provide comments

- Recommend that the Board permit staff to release Alternatives Analysis when model completed and documents ready – late June/early July

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