

DURHAM • CHAPEL HILL • CARRBORO

DCHC

METROPOLITAN PLANNING ORGANIZATION

PLANNING TOMORROW'S TRANSPORTATION

2050 Metropolitan Transportation Plan – Alternatives Analysis –

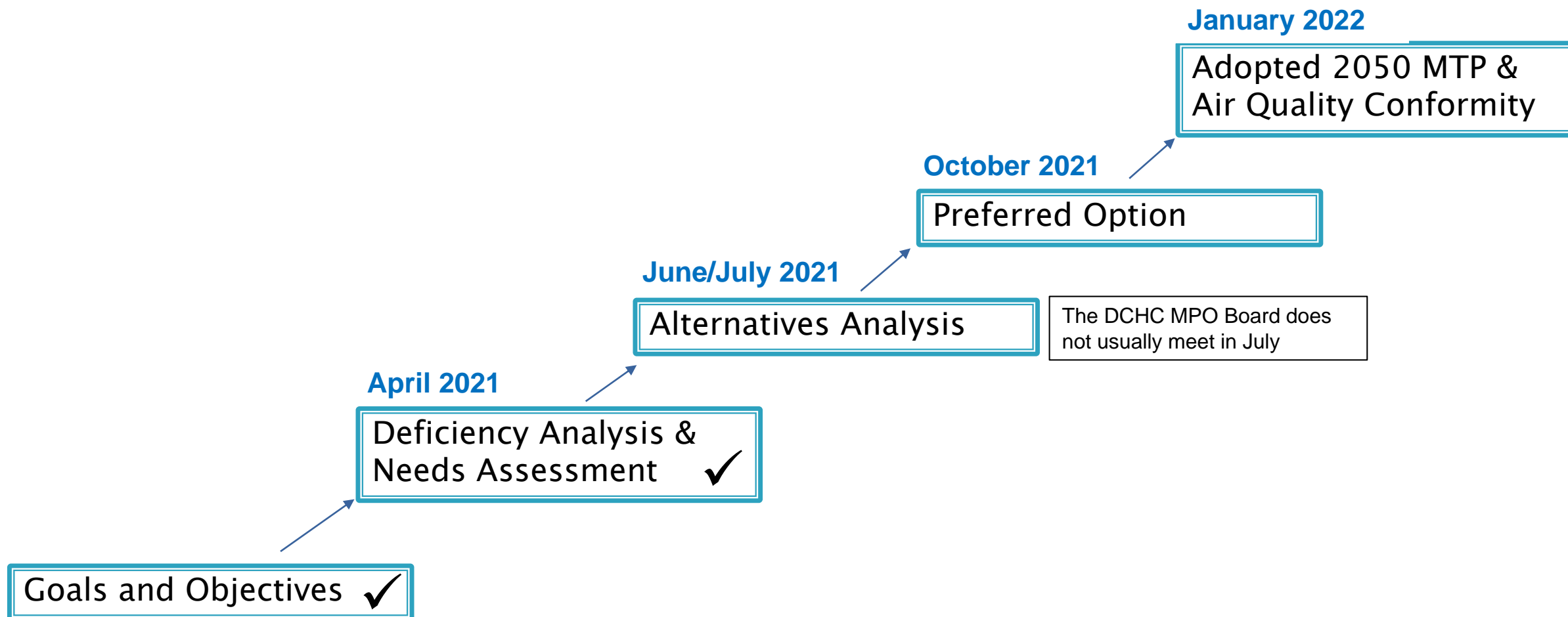
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Presentation Outline

- Schedule
- Alternatives – Development and Mobility foundations
- Metrics and Maps
- Public Engagement
- Today's action

2050 MTP Milestones

MPO Board 6/9/2021 Item 13



- 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 Web site

- ❖ 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

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.

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 And Safe Streets, Active Transport, and Transit

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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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

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

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 low service level (i.e., 8-2-8-2)
 - 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 (i.e., 12-8-12-8)
 - BRT: add US 15-501 (Chapel Hill/Duke/Durham/NCCU-Durham Tech)
 - High frequency bus service in major corridors
 - Most of the 2045 MTP highway projects

The Mobility Investment Foundation

- ***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 BRT-like extensions to Pittsboro and Hillsborough
 - Add high frequency bus service
 - High level of complete streets investments (not in STI), e.g.,
 - › Bus shelters, stop access, etc.
 - › Bicycle lanes
 - Add connector roads to help create more grid networks (e.g., higher bike and pedestrian access)

The Mobility Investment Foundation

- ***Complete Communities Mobility Foundation***
 - Bus advantage improvements:
 - › Along US 15-501 (bus-only lane) and NC 147 (add managed lane)
 - › I-40 (from NC 147 to US 15-501) (add single managed lane)
 - Reduce new and widened roadways in areas that increase mobility to suburban and rural land:
 - › Northern Durham Pkwy (north of I-85)
 - › NC 54 (west of Carrboro)
 - › NC 98 (east of Durham)
 - › NC 751 (Chatham County)
 - Convert NC 147 to 4-lane boulevard (Briggs Av-Swift Av)
 - Convert central Durham one-way pairs to two-way
 - Shift more roadway funding to maintenance

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 (CO ₂) featured. Also calculate ozone (NO _x), 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)

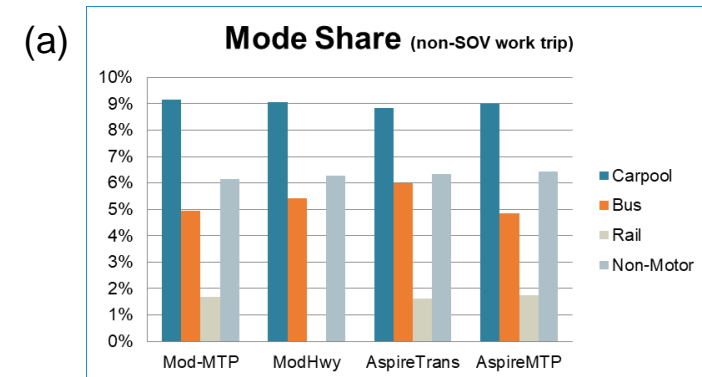
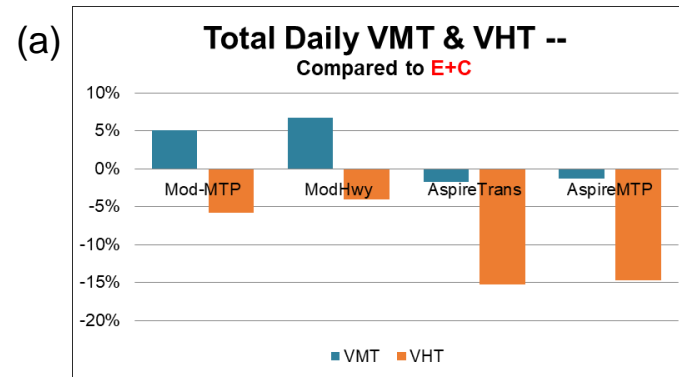
Triangle Regional Model (TRM) Measures

- 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

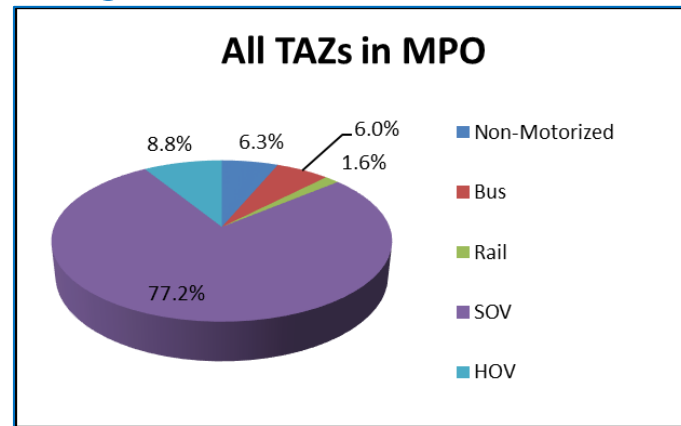
- Graphics will compare alternatives



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

Compare Scenarios by...

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

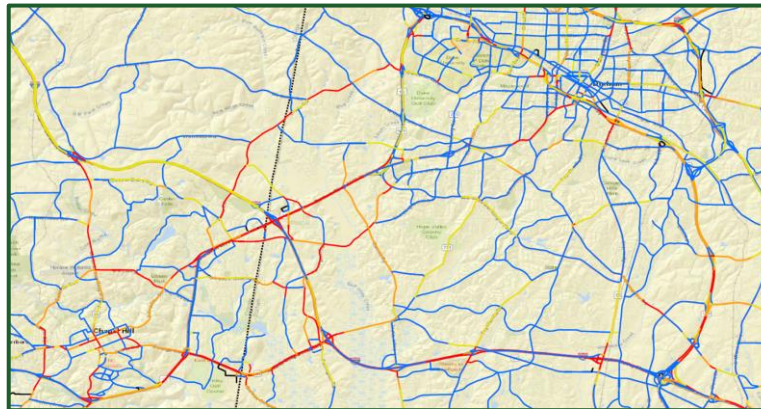


Travel time

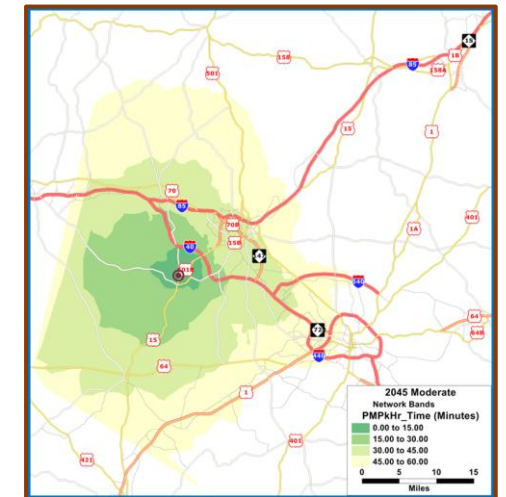
Compare 2013 and M1: PM Peak Travel time (percent increase)

From	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%	

Congestion maps



Travel Isochrones



- Open house/Pop-ups (possibly in person)
- Survey – feedback on trade-offs
- Communities of concern – special effort through survey, in-person
- Materials – summarized, more accessible
- Local boards & commissions
- Length – 42 days

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