

2045 Metropolitan Transportation Plan (MTP) Alternatives Analysis

www.bit.ly/DCHC-MTP-Alternatives

MPO Board
August 9, 2017

Presentation Outline

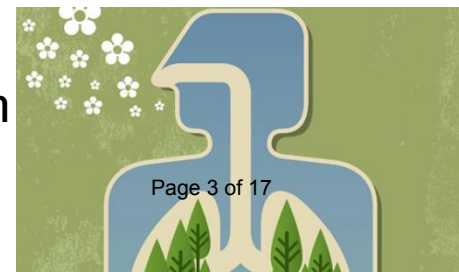
- ▶ Schedule
- ▶ Scenarios
- ▶ Metrics and Maps
- ▶ Today's action

Schedule

Board Actions

- ▶ June – Released Deficiency Analysis ✓
- ▶ August – Release Alternatives Analysis **TODAY**
(full set of public input activities) (Aug 9 – Sept 20)
- ▶ October – Release Locally Preferred Alternative (LPA)
- ▶ December – Adopt 2045 MTP

Air Quality
Determination
Report is not
required.



Schedule

Dates to Remember

- 2/27/18 = MPO must incorporate safety targets
- 4/10/18 = MPO's MTP is frozen (no amendments until it complies)
- 5/27/18 = MTP must be FAST Act compliant

Today's Action

- ▶ Provide comments
- ▶ Release the Alternatives Analysis for a 42-day public comment period.
(August 9 through September 20)

Alternatives Analysis

- ▶ Purpose: staff, public and Board discuss different solutions to deficiencies
- ▶ Preferred Option likely to be combination of the Alternatives Analysis scenarios
- ▶ Alternatives not fiscally-constrained
- ▶ Today's presentation has overview -- Full complement of tables and maps on Web site

Alternatives

Mobility Investment

Development Foundations

Scenario	Highway Network	Transit Network	SE Data
Alternatives			
Mod-MTP	2040 MTP	2040 MTP (i.e., LRT, CRT, BRT)	Community Plan
Mod-Hwy	2040 MTP, plus several major highways+	No Fixed Guideway (i.e., no LRT, CRT, BRT)	Community Plan
Asp-MTP	2040 MTP	2040 MTP (i.e., LRT, CRT, BRT)	AIM High
Asp-Transit	2040 MTP	Fixed Guideway, plus <ul style="list-style-type: none"> LRT to Carrboro CRT to Alamance County 15/30min bus headway 	AIM High
Baseline and E+C			
2013 – Baseline	2013	2013	2013
2015 -- Baseline	2015	2015	2015 – interpolate SE Data
2045 E+C	E+C	E+C	Community Plan

Land Use

SE Data Guide Totals*

Population				
County	2013	2045	2013-45	% change
Chatham*	41,543	72,110	30,567	74%
Durham	286,210	475,091	188,881	66%
Orange	139,289	194,867	55,578	40%
<i>Total</i>	<i>467,042</i>	<i>742,068</i>	<i>275,026</i>	<i>59%</i>
Employment				
County	2013	2045	2013-45	% change
Chatham*	9,339	17,718	8,379	90%
Durham	192,877	342,910	150,033	78%
Orange	64,212	107,791	43,579	68%
<i>Total</i>	<i>266,428</i>	<i>468,419</i>	<i>201,991</i>	<i>76%</i>

Fast growth, especially Durham and Chatham counties.

Employment growth outpaces population growth.

* Only includes portion of Chatham County in the modeling area.

* Guide totals are same for Community Plan (CP) and AIM-High

Land Use

- ▶ **Community Plan (CP)**
 - Based on adopted local land use plans, or “most likely”
 - Used in Deficiency Analysis

- ▶ **AIM–High** (Anchor Institutions & Mainstays)
 - Development proposals push the envelope, but still market possible
 - Based on draft information from DOLRT station area planning project

Performance Measures*

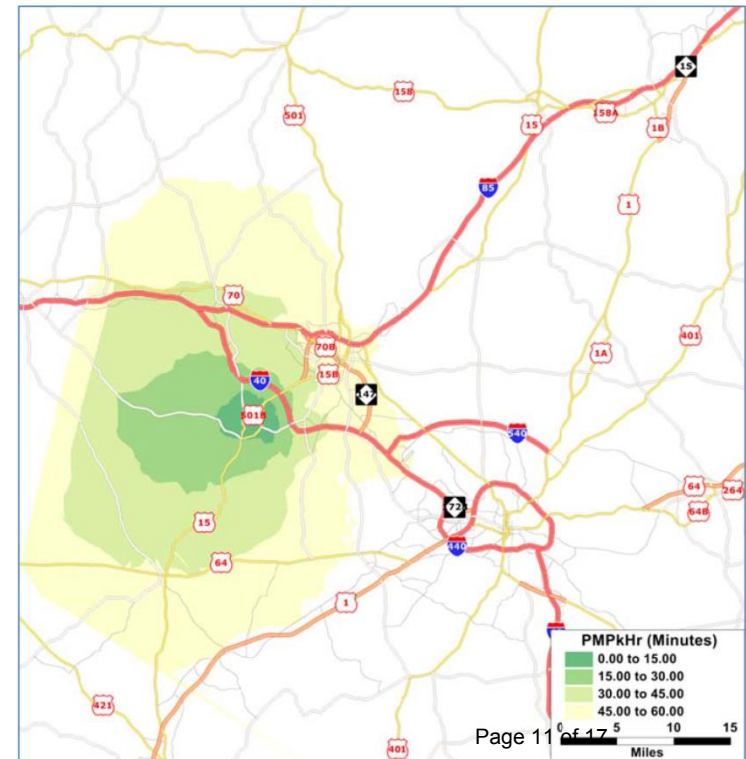
- ▶ General indicators of overall system:
 - Mobility Performance (e.g., travel time)
 - Mode Choice
 - Travel volume (e.g., VMT, VHT)
- ▶ Not specific to corridor or project.
- ▶ Useful for overall comparison of MTP Alternatives

	Name =	Baseline	E+C	Mod	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

Travel Isochrones

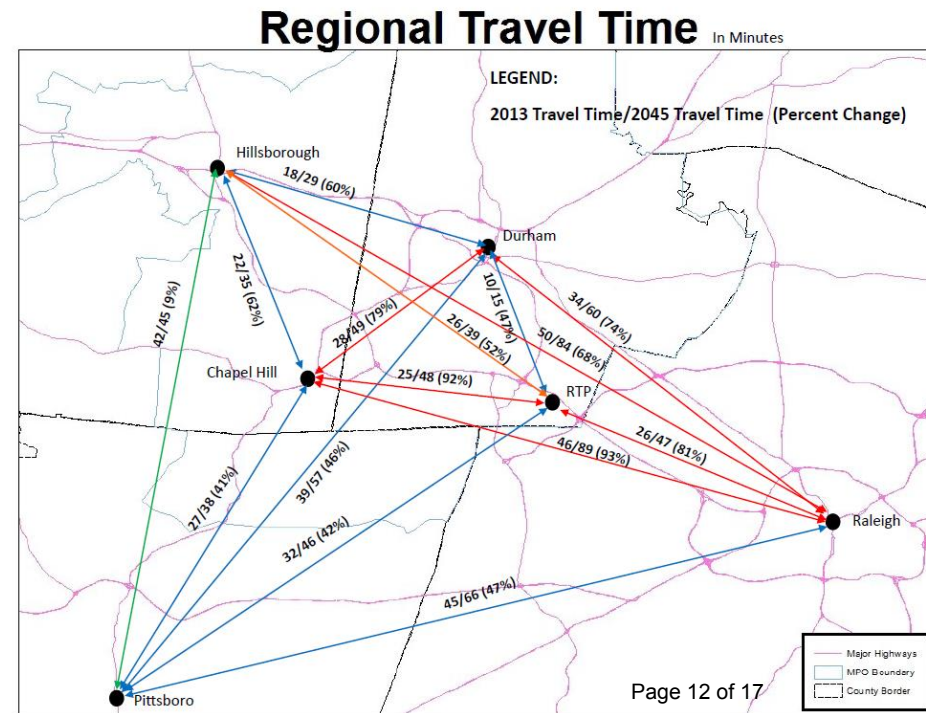
- ▶ More specific than Performance Measures – can start to see corridor mobility.
- ▶ Based on afternoon commute from four selected centers:
 - Downtown Durham
 - Chapel Hill/Carrboro
 - RTP
 - Downtown Raleigh
- ▶ Map illustrates “contours” for 15–, 30–, 45–minute, etc. commutes from the centers.
- ▶ Four maps (scenarios) for each center:

2045 E+C



Travel Time

- ▶ Shows mobility forecasts to/from regional centers.
- ▶ Uses AM and PM peak hour (“peak of the peak”).
- ▶ Based on commute to/from six selected centers:
 - Downtown Durham
 - Chapel Hill/Carrboro
 - RTP
 - Hillsborough
 - Pittsboro
 - Downtown Raleigh
- ▶ Presented for each scenario:
 - Tables with morning and afternoon peak hour
 - Map of afternoon peak hour



Congestion Maps (V/C)

- ▶ Maps show the daily forecasted congestion on specific road segments
- ▶ "V/C" means the traffic volume divided by the traffic capacity of the road segment. (For example, a volume of 9,000 vehicles on a road that is capable of carrying 10,000 vehicles will produce a V/C of 0.9.)
- ▶ A V/C of 1.0 is equal to a Level of Service (LOS) of "E", which can be described as:

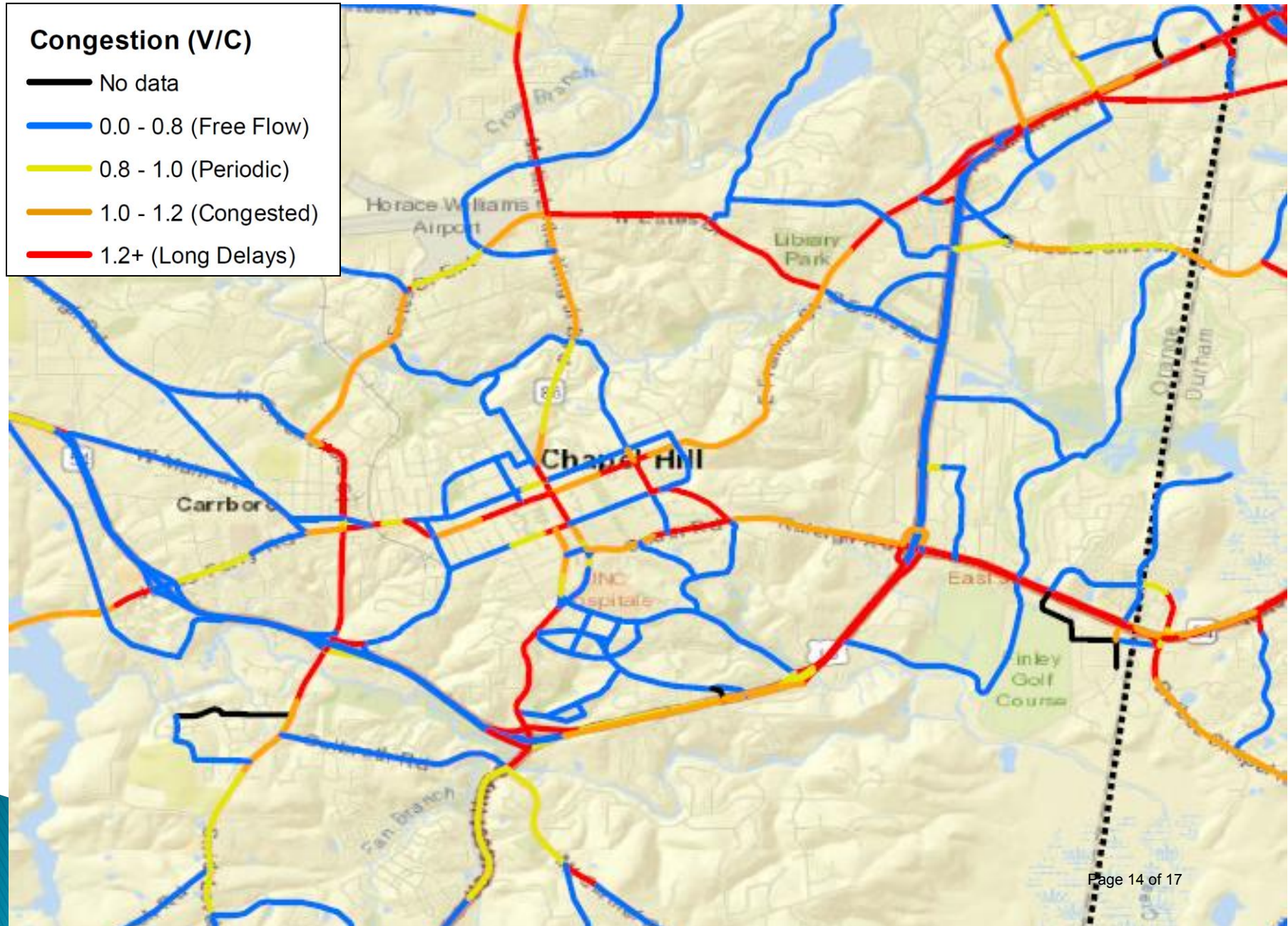
Limit of acceptable delay, unstable flow, poor signal progression, traffic near roadway capacity, frequent cycle failures.

- ▶ Web site has interactive map, and county-level and close-up poster maps

Moderate1 Scenario

Orange and Red are bad!

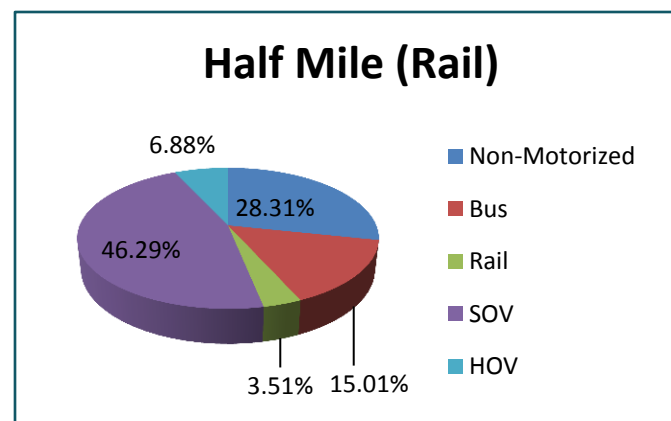
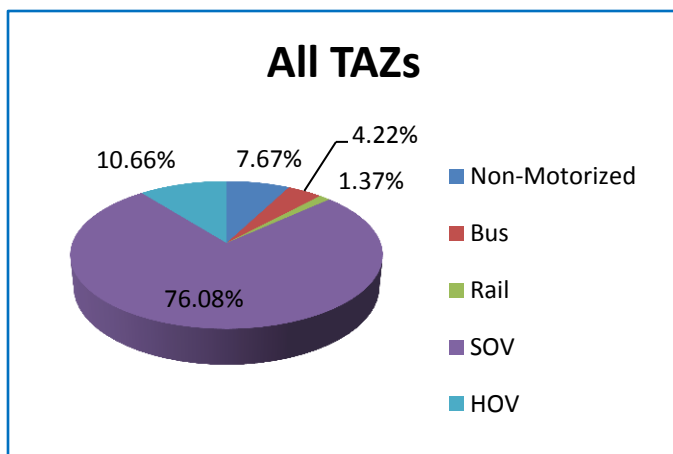
MPO Board 8/9/2017 Item 13



Improved!

Travel Choice Neighborhoods

- ▶ Formerly called “transit TAZs” in 2040 MTP
- ▶ Compares mode choice for region with areas that have access to high end transit





Corridors

- ▶ New metric for DCHC MPO
- ▶ Shows congestion level and travel delay costs for selected corridors

			TTI				VOT/ hour/mile			
Route	From	To	2013 Base	2045 E+C	Moderate	Moderate	2013 Base	2045 E+C	Moderate	Moderate
I-40										
I-40 EB (NC147 to NC 540)	NC 147	NC 540	1.2	2	1.8	1.7	\$446	\$2,968	\$2,158	\$2,040
I-40WB (NC 540 to NC147)	NC 540	NC 147	1.1	1.5	1.3	1.3	\$298	\$1,406	\$831	\$854
I-40EB (US 15/501 to NC 147)	US 15/501	NC 147	1.2	2.4	2	2.2	\$331	\$3,188	\$2,124	\$2,720
I-40WB (NC 147 to US 15/501)	NC 147	US 15/501	1.2	1.8	1.7	1.8	\$388	\$1,742	\$1,500	\$1,642

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