Durham-Chapel Hill-Carrboro Metropolitan Planning Organization
Targets for the 2045 LRTP   *(last updated 1/9/18)*

What are the Targets?

The Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) has selected eight performance measures from the MPO's Goals/Objectives/Performance Measures to demonstrate in a brief manner the extent to which the adopted 2045 Metropolitan Transportation Plan (2045 MTP) meets the MPO's Goals. The MPO has set Target values for these selected performance measures, mostly using measurements from the Triangle Regional Model (TRM - the region's travel demand model) and uses values for just the MPO, not the entire region.

The Targets were selected because they are broad measurements and the data is available and relatively reliable. This document also identifies the reasons the Target is important and what changes need to be made in land use, transportation and other policies to meet the Target.

What is the Guide Data?

The Targets have Guide Data for two scenarios to help set the Target values:

- 2015 – This is the current condition. It is the 2015 population and employment using the 2015 transportation network (e.g., highways and transit service). This is the **2015** column and value in the charts.
- 2045e+c – This is the 2045 population and employment using the existing transportation network plus any projects that are committed to being completed. This is the **2045e+c** column and value in the charts.
- 2045 – This shows how a major transportation investment might affect the Target value. It is the 2045 population and employment using the 2045 transportation network, which is budgeted at over $12 billion and includes passenger rail and managed lanes. This is the **2045** column and value in the charts.

What is the Target Range?

There are three Target values -- Good, Better and Best. The use of more than one Target value helps to set a range of values that can be used for comparison.
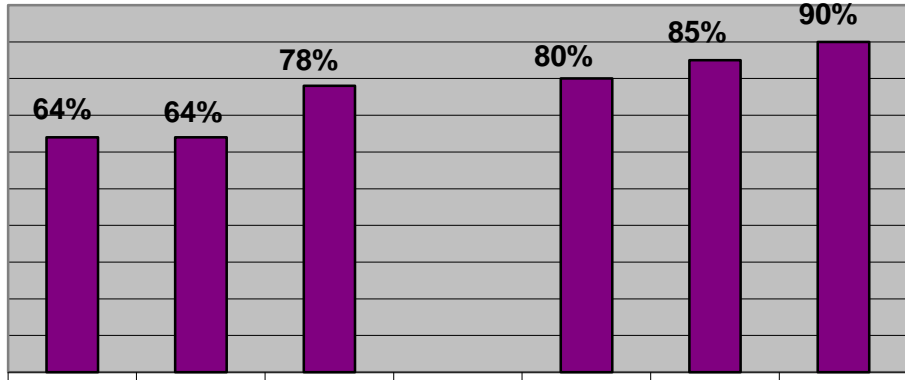
Additional Information

Additional information is available at the DCHC MPO's Web site – www.dchcmpo.org.

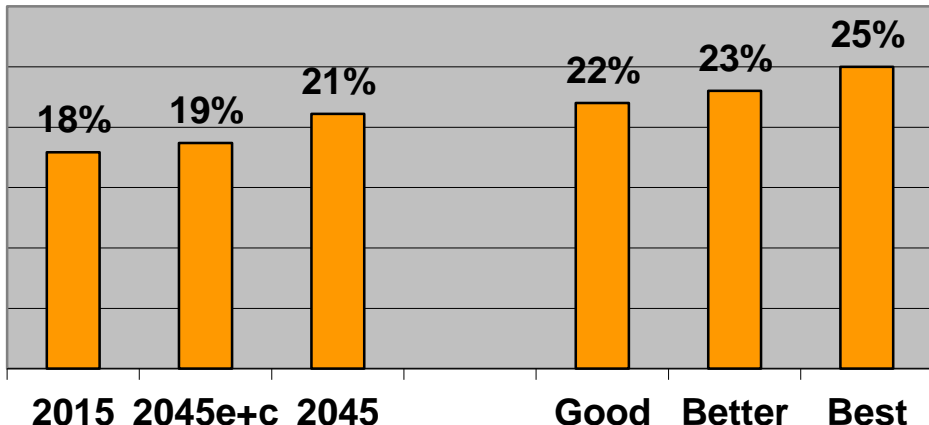You can also contact: Andy Henry, (919) 560-4366, ext. 36419, andrew.henry@durhamnc.gov

Increase Percent of Work Trips by Auto Less than 30 Minutes

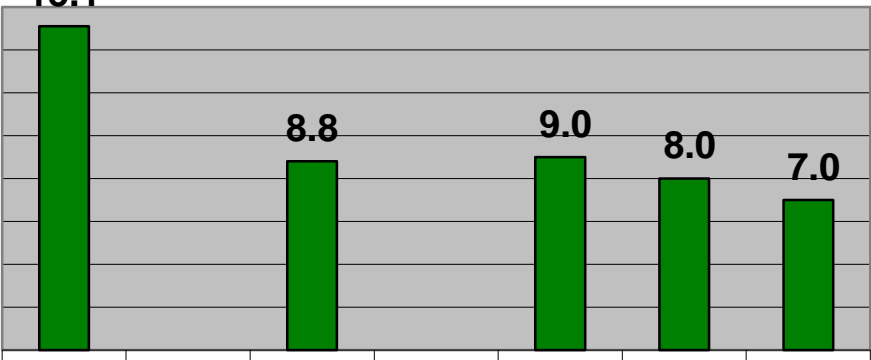| Why Increase Auto Mobility?	How to Increase Auto Mobility?	Trends and Targets		
- Connect People to Jobs – Reduced commute times can increase job opportunities. - Reduce Travel Costs – Mobility Report concludes annual congestion cost is $734 per peak auto commuter in Triangle. - Reduce Travel Time – TRM data shows travel time will double and triple in most major travel corridors without additional investments. - Reduce Pollution – Congestion reduces travel speed and increases pollution.	- Transportation – Implement Congestion Management practices such as traffic signal synchronization and spot improvements at traffic bottlenecks. - Transportation – Increase highway, transit and other transportation mode capacity, especially along critical corridors. - Transportation – Use managed lanes to increase corridor capacity. - Land Use – Permit more mixed-use development. - Policy – Support TDM programs to reduce roadway congestion. Method: From the Triangle Regional Model (TRM, the percent of work trips that are less than 30 minutes.	**(regional data)** **% Auto Trips less than 30 minutes** **(Work Trips)** 81% 62% 69% 75% 80% 85% **2013 2045e+c 2045 Good Better Best**		

⬆ Increase Percent of Jobs within One-Quarter Mile of Frequent Bus Transit or One-Half Mile of Fixed-Guideway Transit

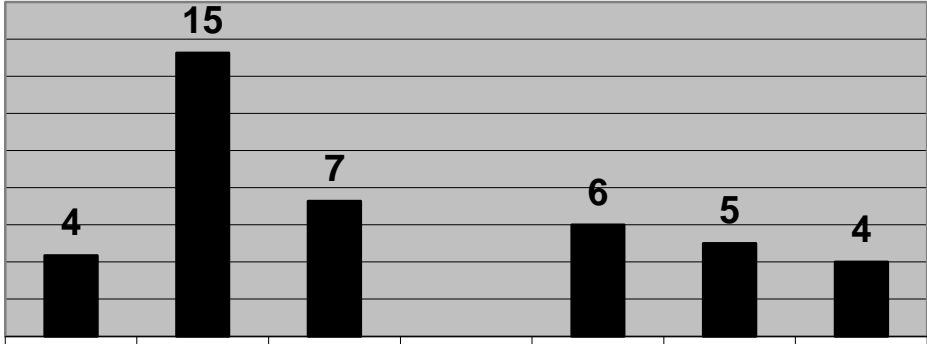| Why Increase Transit Access?	How to Increase Transit Access?	Trends and Targets
▪ <u>Provide opportunity</u> – Approximately 6% of households do not own a vehicle, and carless households have increased at twice the rate of other households. ▪ <u>Reduce Congestion</u> – Congestion wastes time, fuel and money, and contributes to air pollutants. Transit use can help reduce roadway congestion. ▪ <u>Support Personal Health</u> – Lack of exercise is a leading contributor to the obesity epidemic in the U.S. Transit use has shown to induce bicycling and walking trips. ▪ <u>Reverse Transit Disinvestment</u> – Triangle transit investment lags behind comparable regions.	▪ <u>Transportation</u> – Increase transit investment. ▪ <u>Land Use</u> – Permit more concentrated residential and employment development along key travel corridors that best support transit. ▪ <u>Design</u> – Encourage transit-supportive scale, building orientation, connections, public spaces, parking, amenities and other design elements along transit corridors and station areas. <u>Method</u>: Using geographic information software, the location of jobs is compared to the current and planned (2045 MTP) transit network.	**(Not actual data; this measure is under construction)** **% of Jobs Within 1/4 Mile of Bus and 1/2 Mile of Fixed-Guideway** 64% 64% 78% 80% 85% 90% **2015 2045e+c 2045 Good Better Best**

↑ Increase Transit and Non-automobile Trip Share (All Trips)

Why Increase This Share?	How to Increase Transit & Non-Motorized Share?	Trends and Targets		
▪ Reduce Pollution – Automobiles are major emitters of carbon monoxide, nitrogen oxides (ozone precursor), carbon dioxide (greenhouse gas), and several other toxins that are linked to increased health ailments or climate change. ▪ Reduce Congestion – The percent of congested peak travel miles in the Triangle has risen steadily the last several decades. Transit, bicycle and walking trips can replace vehicle trips to help abate the growing congestion problem. ▪ Support Personal Health – Lack of exercise is a leading contributor to the obesity in the U.S.	▪ Transportation – Increase investment in transit, bicycle and pedestrian facilities and programs. ▪ Transportation – Require bicycle and pedestrian facilities on new and improved roadways, as appropriate. ▪ Ordinance – Require transit, bicycle and pedestrian facilities and supportive design in new and renovated developments. ▪ Land Use – Permit more concentrated residential and employment development along key travel corridors. ▪ Land Use – Permit more mixed-use development. ▪ Land Use – Encourage shorter block lengths and greater roadway connectivity. ▪ Policy – Support TDM and Best Workplaces for Commuters ▪ Method: From Triangle Regional Model (TRM), total bicycle and pedestrian trips, divided by total trips for all modes.	**Transit & Non-Motorized Trip Share (All Trips)** 18% 19% 21% 22% 23% 25% 2015 2045e+c 2045 Good Better Best		

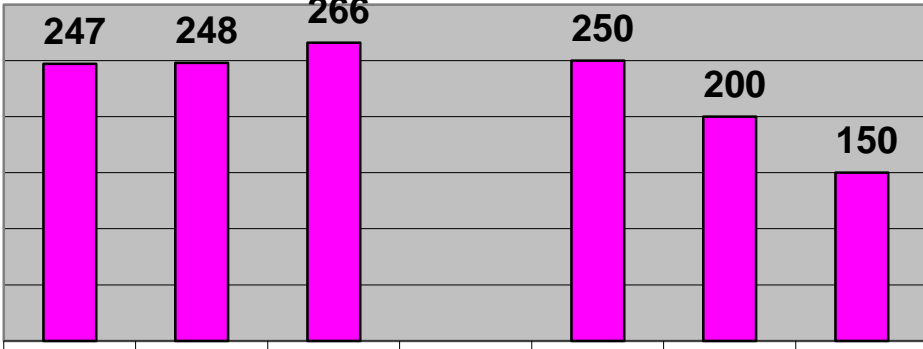# Reduce Mobile Source Emissions (CO$_2$ emissions)

Why Reduce Emissions?	How to Reduce Emissions?	Trends and Targets
▪ Support Environment – Greenhouse gases are causing climate change. An estimated 39% of the greenhouse gases in Durham County are from the vehicle emissions. ▪ Reduce Pollution – Pollutants such as carbon monoxide, nitrogen oxides (ozone precursor), and particulate matter are linked to increased health ailments.	▪ Local Initiative – Support efforts of Durham greenhouse gas local action plan. ▪ Land Use – Permit more concentrated residential and employment development along key travel corridors. Study concludes that 10% density increase results in 4.3% emissions reduction in urban areas. ▪ Land Use – Permit more mixed-use development to reduce automobile trips. ▪ Transportation – Increase investment and ordinance support for bicycle and pedestrian facilities and programs. ▪ Policy – Support TDM programs to reduce roadway congestion and vehicle miles travelled. Method: Triangle Regional Model and Mobile6 emissions model; GHG based on local plan.	**Greenhouse Gas Change** (daily per capita CO2 emissions from transportation sector - in kilograms) 15.1 8.8 9.0 8.0 7.0 2013 2045 Good Better Best

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⬇ Reduce Daily Travel Delay (per capita) (in minutes)
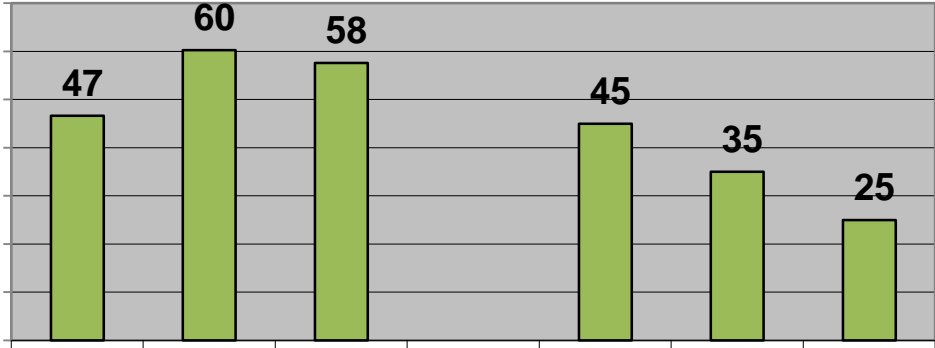
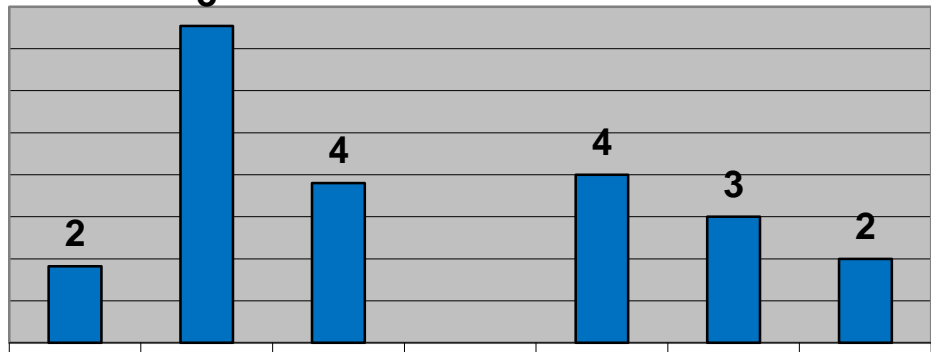| Why Reduce Travel Delay?	How to Reduce Travel Delay?	Trends and Targets
▪ <u>Reduce In-Vehicle Travel Time</u> – The Travel model estimates that the average peak-hour travel time in the western Triangle will increase 22% from 2015 to 2035. ▪ <u>Reduce Emissions</u> – Vehicle delay produces greater amounts of emissions that increase health ailments and climate change. ▪ <u>Support Job Opportunities</u> – Shorter travel times can increase the size of a particular labor shed.	▪ <u>Transportation</u> – Implement Congestion Management Program practices such as traffic signal synchronization and spot improvements at traffic bottlenecks. ▪ <u>Transportation</u> – Increase highway, transit and other transportation mode capacity. ▪ <u>Land Use</u> – Permit more mixed-use development. <u>Method</u>: Triangle Regional Model (TRM), total daily travel delay divided by the population.	**Daily Travel Delay (Per Capita)** **(minutes)** 2015: 4 2045e+c: 15 2045: 7 Good: 6 Better: 5 Best: 4

Reduce Vehicle Crashes (per 100 million miles traveled)

Why Reduce Crashes?	How to Reduce Crashes?	Trends and Targets

▪ <u>Reduce Costs</u> – Crashes cost $173m (million), $226m, and 643m in losses each year, in Chatham, Orange and Durham counties, respectively.
 	
▪ <u>Minimize congestion and delay</u> – Crashes are a major contributor to non-recurring traffic delay.
	▪ <u>Transportation</u> – Invest in transportation projects that increase safety.
	▪ <u>Design</u> – Prioritize project designs that enhance motorist, pedestrian and bicyclist safety.
	▪ <u>Policies</u> – Support polices related to graduated drivers licensing, cell phone/texting, impaired driving, seat belts and booster seats, and speed limits.
	
	<u>Method</u>: From North Carolina Traffic Engineering Accident Analysis System (TEAAS).
		Vehicle Crashes
		(per 100 million miles traveled)
		
		247 248 266 250
		                                    200
		                                          150
		
		2008 2012 2016 Good Better Best

Reduce Pedestrian and Bicycle Crashes (per capita)

Why Reduce Crashes?	How to Reduce Crashes?	Trends and Targets
▪ <u>Encourage active transportation</u> – Walking and cycling have many proven benefits: has positive effects on our <u>health</u>; reduces vehicle <u>congestion</u> and <u>emissions</u>; has relatively low capital and operations <u>costs</u>; and improves transportation <u>equity</u> and <u>choice</u>.	▪ <u>Facilities</u> – The safety benefits of investing in pedestrian and bicycle facilities are significant and well documented. ▪ <u>Education</u> – Informed pedestrians and bicyclists are less likely to be involved in a crash. ▪ <u>Enforcement</u> – Increased enforcement has been shown to reduce crash risk for pedestrians and bicyclists. <u>Method</u>: From North Carolina Traffic Engineering Accident Analysis System (TEAAS).	**Bicycle and Pedestrian Crashes** **(per 100,000 population)** 2008: 47 2012: 60 2016: 58 Good: 45 Better: 35 Best: 25

Reduce Truck Delay (minutes per trip)

Why Reduce Truck Delay?	How to Reduce Truck Delay?	Trends and Targets
▪ <u>Support Economic Development</u> – Travel model estimates that truck delay will increase fourfold from 2015 to 2045 without additional transportation investments. ▪ <u>Reduce Emissions</u> – Truck delay produces greater amounts of emissions that increase health ailments and climate change.	▪ <u>Transportation</u> – Implement Congestion Management Program practices such as traffic signal synchronization and spot improvements at traffic bottlenecks. ▪ <u>Transportation</u> – Increase highway investments on major roadways. ▪ <u>Land Use</u> – Permit more mixed-use development. <u>Method</u>: Triangle Regional Model (TRM), total daily truck delay divided by the number of truck trips.	**Truck Delay** **(minutes per trip)** 2015: 2 2045e+c: 8 2045: 4 Good: 4 Better: 3 Best: 2