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# DRAFT Foundational & Other Measures

MVIC: April 1, 2015



# Preview – Today’s Discussion

- ◆ **Is there consensus to include some or all of the foundational measures and targets?**
  - If so, which measures and targets?
  - What additional information or alternatives should staff pursue for possible MVIC action?
- ◆ **Are there “secondary” measures that should be elevated?**
- ◆ **If there is not consensus on targets – should MVIC consider moving forward without regional targets?**



# Background

## March 4 MVIC

- ◆ Members dedicated significant time discussing proposed measures and targets
- ◆ Members requested more information on recent trends to help inform discussion





# Background (cont.)

- ◆ **DRAFT Metro Vision document restructured based on MVIC feedback (link in memo)**
  - All measures included in draft plan (by plan element)
- ◆ **Foundational Measure Supplement (attachment) includes available background information and data**
- ◆ **Staff included an alternate measure (FM9a) for consideration**

## Foundational Measures Supplement

*March 23, 2015*

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# Why include measures?

## What is measured gets done...

- ◆ Builds on foundation set by Board in currently adopted Metro Vision plan
- ◆ Establishes performance measures to track regional progress on outcomes and objectives
- ◆ Foundational Measures: Overall plan performance measures (including target)
- ◆ “Secondary” Measures: Series of measures tied to each plan objective



# FM 1: Housing & Employment in Urban Centers

FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>1</b> Share of region's housing and employment located in urban centers	10.2 percent of region's housing (2014) and 37.5 percent of region's employment (2010)	Increase to 25 percent of region's housing and 50 percent of region's employment by 2040

**New data for 2014 and prior year trends  
not yet available (employment)**

**Staff suggestion:  
Delay discussion until May**



# FM 1: Urban Centers

## Other measures related to Foundational Measure 1

Average urban center mode split

Housing and employment within  
 $\frac{1}{2}$  mile of rapid transit stations,  
or within  $\frac{1}{4}$  mile of high  
frequency bus stops

Health facilities in urban  
centers, in rural town centers,  
within  $\frac{1}{2}$  mile of rapid transit  
stations, or within  $\frac{1}{4}$  mile of high  
frequency bus stops (FM)

Parks and open space in urban  
centers, within  $\frac{1}{2}$  mile of rapid  
transit stations or within  $\frac{1}{4}$  mile  
of high frequency bus stops

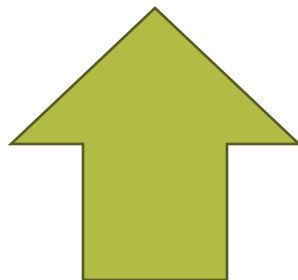
Full service grocery stores in  
urban centers, within  $\frac{1}{2}$  mile of  
rapid transit stations or within  $\frac{1}{4}$   
mile of high frequency bus stops

Subsidized, affordable housing  
units in urban centers, within  $\frac{1}{2}$   
mile of rapid transit stations, or  
within  $\frac{1}{4}$  mile of high frequency  
bus stops



# FM 2: Housing density within UGB/A

FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>2</b> Housing density within the urban growth boundary/area (UGB/A)	1,154 units per square mile (2014)	25 percent increase between 2014 and 2040



**7% increase between  
2006 and 2014**

- Assumes 980 mi<sup>2</sup> UGB/A for entire trend period





# FM 2: Housing Density in UGB/A

## Other measures related to Foundational Measure 2

**Land area in semi-urban areas  
outside the UGB/A**

**Protected land in buffer  
between freestanding  
communities and nearby  
jurisdictions**

**Amount of open space**



# FM 3: Combined cost of housing and transportation

FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>3</b> Combined cost of housing and transportation as a percent of income for a median-income family	Housing costs: 29 percent Transportation costs: 20 percent Combined costs: 49 percent	Decrease to 45 percent by 2040

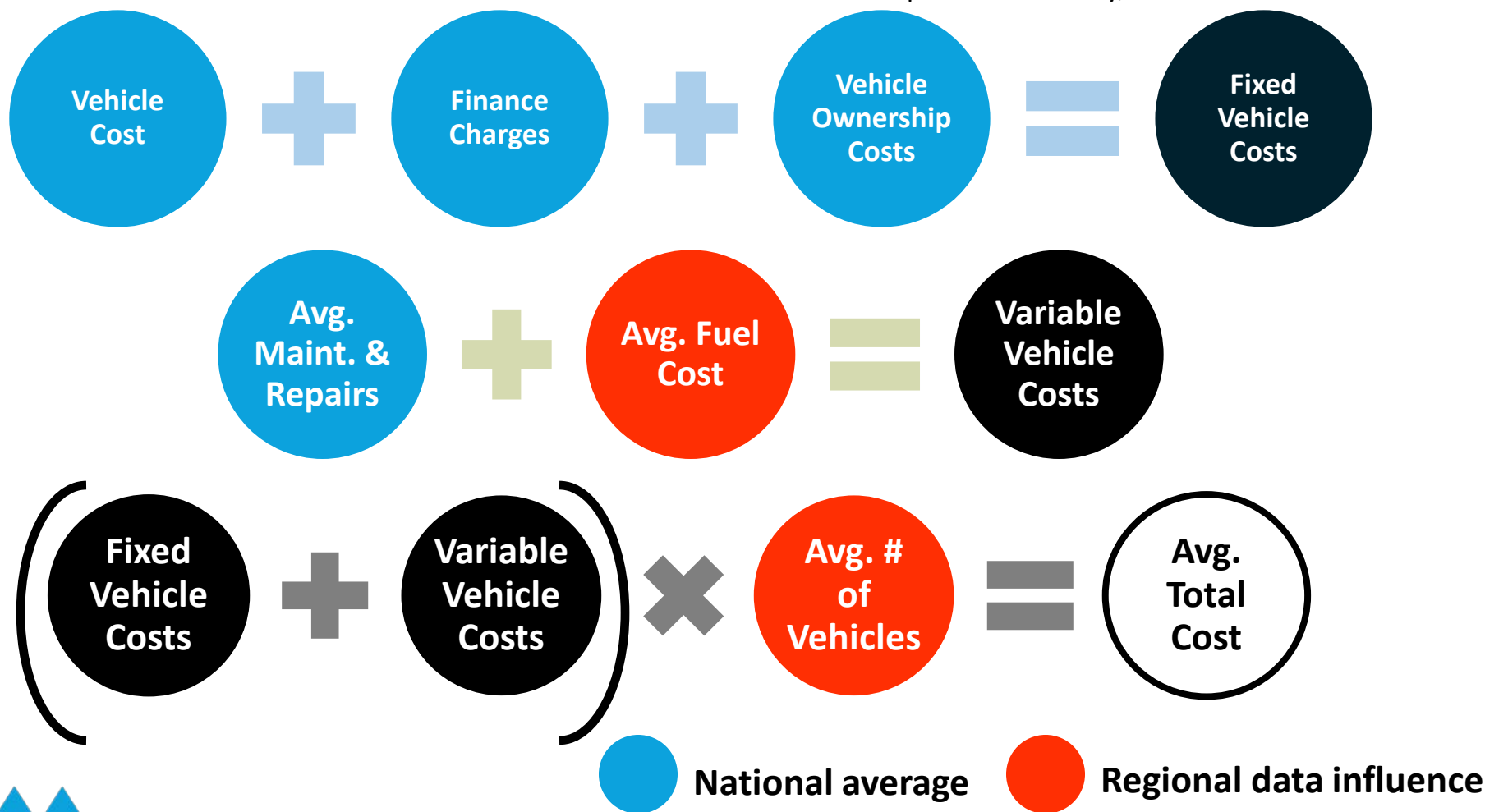
**No trend data available**

**Measure relies on new model from USDOT & HUD:**

- ◆ Housing costs are included in American Community Survey (ACS) data
- ◆ Transportation costs computed based on local household attributes and *national spending averages*

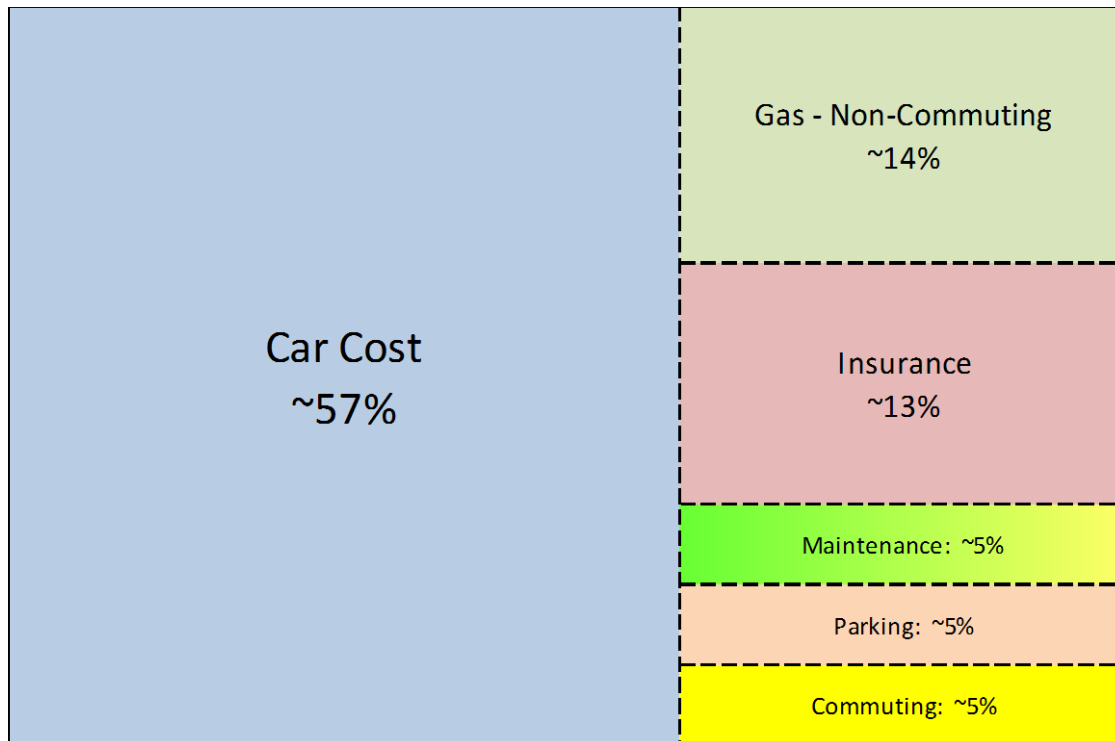
# Average Vehicle Related Costs (2010) for US Households

Source: Consumer Expenditure Survey, US Bureau of Labor Statistics

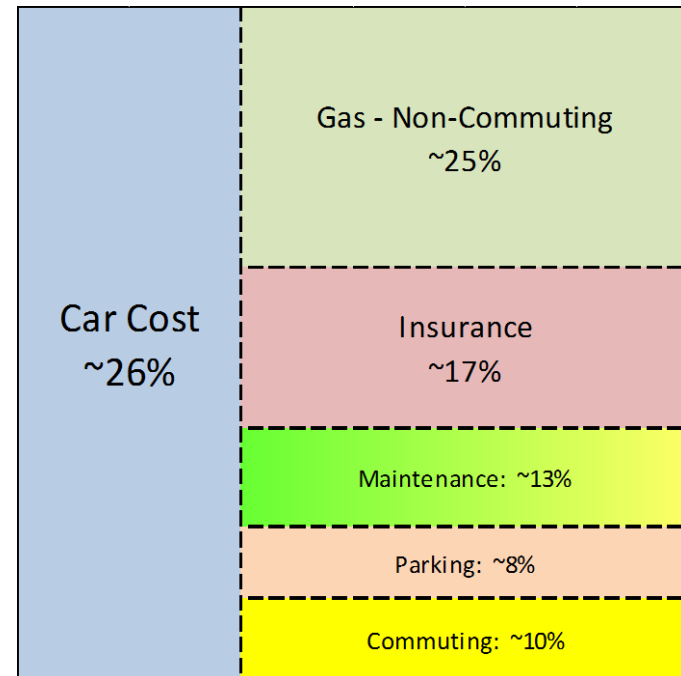


# Transportation Costs

Annual Transportation Costs: **Typical New Car**



Long-Owned Used Car





# FM 3: Other Measures Related to Transportation Costs (Examples)

## High Correlation

- Average weekday delay
- Lane-miles of RRS with severe congestion (FM)
- Annual average weekday VMT per capita (FM)
- Number of traffic fatalities (FM)
- Petroleum fuel burned

## Moderate Correlation

- Transit mode share to work
- Share of population with good transit-job accessibility
- Bicycle and pedestrian mode share to work
- Non-SOV mode share to work
- Compressed natural gas (CNG) and electric vehicles



## FM 3: Combined cost of housing and transportation (continued)

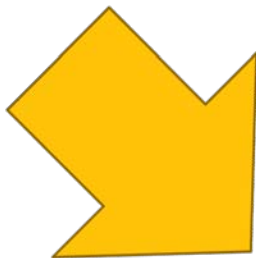
### **Staff suggestions:**

- ◆ Remove from H+T cost foundational measures (FM3)
- ◆ Keep in list of secondary measures to help compare our region to others when data is available
- ◆ Consider other measures that can be surrogates for transportation costs, particularly VMT



# FM 4: Share of the region's households that are housing cost burdened

FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>4</b> Share of the region's households that are housing cost burdened (spending 30 percent or more of income on housing)	36.2 percent (2013)	Reduce to 25 percent by 2040



**2.2 percentage point decrease, 2010-2013**

- American Community Survey (ACS) data lag:
  - Relies on 5-year sample from ACS
  - Trend covers period where region is emerging from recession
  - Period ending 2014 available in December 2015



# FM 4: Cost burdened households

## Other measures related to Foundational Measure 4

**Regional housing unit type  
mix**

**Housing affordability gap**

**Subsidized, affordable  
housing units in urban  
centers, within ½ mile of rapid  
transit stations, or within ¼  
mile of high frequency bus  
stops**





## FM 5: Share of health facilities in urban centers, in rural town centers, or near high frequency transit

FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>5</b> Share of health facilities in urban centers, in rural town centers, within ½ mile of rapid transit stations, or within ¼ mile of high frequency bus stops	54.4 percent (2013)	Increase to 75 percent by 2040

**No trend data available (CDPHE data)**

### Promising trends:

- ◆ Rapid transit network expansion, connecting existing facilities and opening up new sites for development
- ◆ Existing and potential new urban centers focused around major health facilities (e.g. Fitzsimons, RidgeGate West Village, etc.)



# FM 5: Other Measures Related to Health Facility Access

## Other measures related to Foundational Measure 5

**Housing and employment within ½ mile of rapid transit stations, or within ¼ mile of high frequency bus stops**

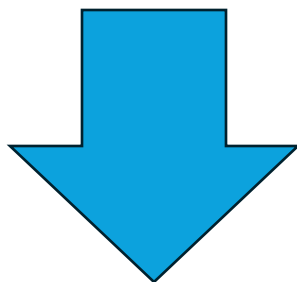
**Number of demand response trips provided by non-RTD public transportation service providers**

**Seniors living independently**



# FM 6: Surface transportation related greenhouse gas emissions per capita

FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>6</b> Surface transportation related greenhouse gas emissions per capita	26.8 lbs./person (2010)	60 percent decrease between 2010 and 2040



**42% decrease currently projected, 2010-2040**

- Per capita decrease primarily due to more efficient engines and more alternative fuel vehicles



# FM 6: Other Measures Related to GHG Emissions

## Other measures related to Foundational Measure 6

**Annual average weekday  
VMT**

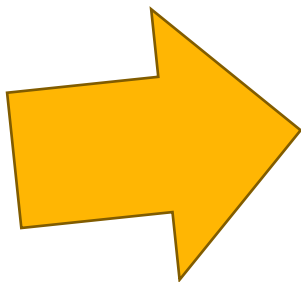
**Number of air quality  
violation days**

**Petroleum fuel burned**



# FM 7: Non-SOV mode share to work

FOUNDATIONAL MEASURE	BASELINE	TARGET
7 Non-SOV (single occupancy vehicle) mode share to work	25.5 percent (2013)	Increase to 35 percent by 2040



**Currently projecting  
~ 3 percentage point increase  
by 2040**

- Target retained from *Metro Vision 2035*
- Current trend is inconclusive (see attachment)
- Closely aligned with congestion, per capita VMT, and per capita GHG measures



# FM 7: Other related measures

**Miles of roadways with protected bike lanes, striped bike lanes, or parallel multi-use paths**

**Miles or share of Regional Roadway System (RRS) arterial roadways in urbanized area with sidewalks on both sides of road**

**Transit mode share to work**

**Share of population with good transit-job accessibility (100,000 jobs within 45 mins.)**

**Bicycle and pedestrian mode share to work**

**Miles of off-street multi-use trails**

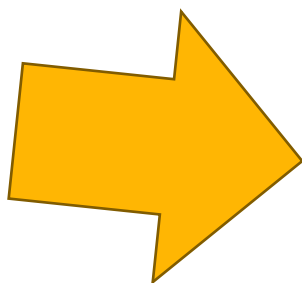
**VMT percent of total PMT (person miles traveled)**

**Share of region's employees with access to EcoPass**



# FM 8: Daily vehicle miles traveled per capita

FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>8</b> Daily vehicle miles traveled (VMT) per capita	25.4 daily VMT per capita (2010)	Reduce 10 percent from the 2010 level by 2040

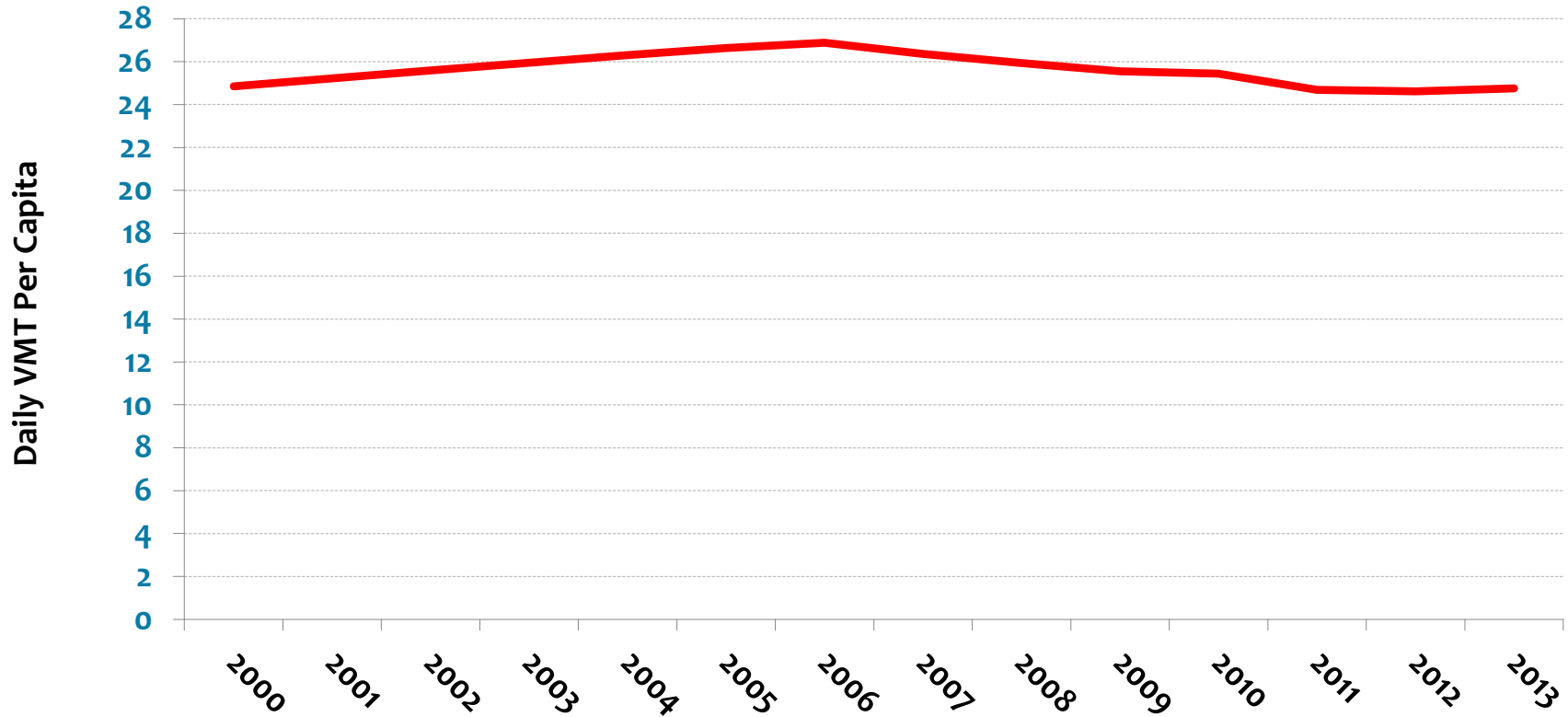


**Per capita VMT decreasing slightly or holding steady**

- Target retained from *Metro Vision 2035*

# Per Capita VMT Trends

VMT per Capita (2000 - 2013)  
(March 30, 2014)



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# FM 8: Other Measures Related to VMT Per Capita

## Other measures related to Foundational Measure 8

**VMT percent of total PMT  
(person miles traveled)**

**Non-SOV mode share to work  
(FM)**

**Combined cost of housing and  
transportation (FM)**



# FM 9: Severely congested roadways on the Regional Roadway System

FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>9</b> Severely congested roadways on the Regional Roadway System (RRS)	1,172 lane miles (2011)	Not to increase above 2,000 lane miles through 2040



**Currently anticipating an increase to over 3,000 congested lane miles**

- Population and employment growth will have direct impact on traffic congestion



# FM 9: Other Measures Related to Congested Roadways

## Other measures related to Foundational Measure 9

**Average travel time variation (TTV) (peak vs. off peak)**

**Average weekday delay (person hours and vehicle hours) on the RRS**

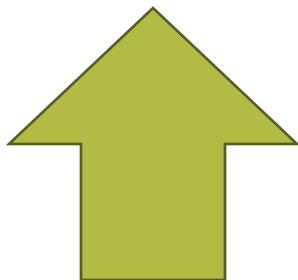
**VMT percent of total PMT (person miles traveled)**

**Travel time to employment centers**



# Alt. FM 9: Average travel time variation (TTV)

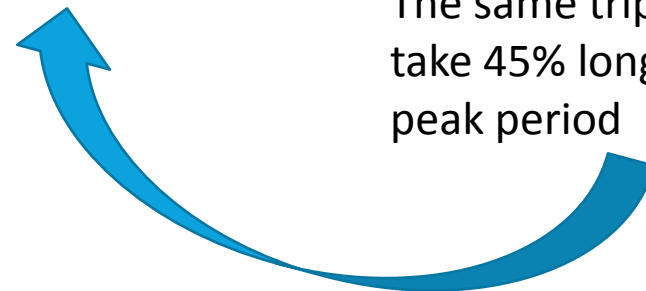
FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>9a</b> Average travel time variation (TTV) (peak vs. off-peak)	1.22 in 2011	1. <u>XX</u> in 2040



**Currently anticipating an increase to 1.45**

The same trip would take 45% longer during peak period

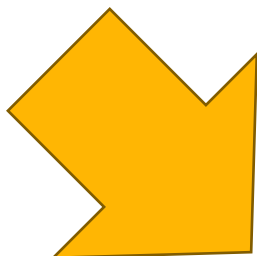
- Alternative way to measure traffic congestion





# FM 10: Number of traffic fatalities

FOUNDATIONAL MEASURE	BASELINE	TARGET
<b>10</b> Number of traffic fatalities	176 (2013)	Less than 100 per year by 2040



**Trending downward:  
66 fewer fatalities in  
2013 than in 2000**

- USDOT and CDOT working to move *Towards Zero Deaths*
- Downward trend due to improvements in vehicle technology, emergency response, enforcement, education, and other safety improvements.



# FM 10: Other Measures Related to Transportation Safety

## Other measures related to Foundational Measure 10

**Rate of fatal crashes per VMT**

**Rate of surface transportation related fatalities per 100,000 population**

**Annual total of serious injury crashes and injuries**

**Rate of serious injury crashes per VMT**

**Rate of serious injuries per 100,000 population**

**Annual number of bicyclist and pedestrian fatalities and serious injuries**



# Today's Discussion

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  - ◆ What additional information or alternatives should staff pursue for possible MVIC action?
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# FM 3: Other Measures Related to Transportation Costs

## High Correlation

- Average weekday delay
- Lane-miles of RRS with severe congestion
- Annual average weekday VMT per capita
- Number of traffic fatalities
- Rate of fatal crashes per VMT
- Rate of traffic related fatalities per 100,000 population
- Annual total of serious injury crashes and injuries
- Rate of serious injury crashes per VMT
- Rate of serious injuries per 100,000 population
- Annual number of bicyclist and pedestrian fatalities and serious injuries
- Petroleum fuel burned

**Note: Other measures related to housing costs listed after FM 4**

## Moderate Correlation

- Transit mode share to work
- Share of population with good transit-job accessibility
- Annual RTD boardings
- RTD transit on-time performance
- Bicycle and pedestrian mode share to work
- Share of housing and employment within ½ mile of bicycle travel way facility
- Miles of off-street multi-use trails
- Bridge structural ratings
- Share of the CDOT and arterial roadway system with high or moderate drivability life or fair/good pavement condition
- Non-SOV mode share to work
- Annual average weekday VMT
- Surface transportation related GHG emissions
- Compressed natural gas (CNG) and electric vehicles